Character Strengths and Mental Health:

The Relationship between Social Intelligence and Subjective Well-Being through Perceived

Social Support among Young Adults

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Abstract

Background: Research in the field of positive psychology has shown that strength-based interventions are effective in increasing an individual's subjective well-being and that personal strengths can act as a buffer against stressors. However, it is not clear how those relationships work exactly. **Objective:** This research aimed to investigate the relationship between the character strength social intelligence and the subjective well-being measures life satisfaction, positive affect, and negative affect as possibly mediated by perceived social support among young adults. Due to the amount of stress and life-changing events during early adulthood, establishing a relationship between character strengths and subjective well-being among young adults might be particularly useful. **Method:** A convenience sample of 141 participants between 18 and 25 years was investigated using self-report measures of the variables of interest. The data was analysed using Pearson's correlations, regression analyses and bootstrapping. **Results:** It was found that higher levels of social intelligence led to increased life satisfaction and positive affect but did not significantly relate to negative affect. The effect of social intelligence on life satisfaction and positive affect was mediated by perceived social support. **Conclusion:** The findings are in line with concepts of positive psychology and indicate that strengths-based interventions emphasising social intelligence can be effective in fostering positive emotions among young adults but do not countervail negative emotions. These insights can be used to design strengths-based interventions to enhance the subjective well-being of young adults and to develop buffers against negative aspects. Further, it should be investigated whether the same patterns are found for other character strengths and whether other strengths can act as a buffer against negative aspects.

Introduction

In previous years, studies of psychology have moved away from the study of psychopathology in the direction of positive psychology. Positive psychology, unlike traditional forms of psychology, focuses on increasing the well-being of individuals (Alex Linley, Joseph, Harrington, & Wood, 2006). One aspect of positive psychology is to focus on an individual's character strengths instead of their weaknesses and problems. Several studies found that personal strengths can be used to improve mental well-being or to buffer symptoms of mental disorders and stressors in individuals (Duan, 2016; Govindji & Linley, 2007; Park, 2004). Character strengths can be defined as a group of positive traits, capacities and processes that are energising and are reflected in thoughts, feelings and behaviours (Jach, Sun, Loton, Chin, & Waters, 2018; Park, 2004). Specific strengths-based interventions aimed at populations reaching from primary school children to elderly people were shown to have a positive effect on well-being (Ghielen, Van Woerkom, & Christina Meyers, 2017). Most of them promote positive activities through strengths identification and strengths use, which in turn trigger positive emotions and increase the well-being of an individual. For all age groups, strengths-based interventions show a positive influence on well-being and performance in different areas of life, such as job performance or personal growth (Ghielen et al., 2017). Individuals who effectively use and identify their strengths are more successful in coping with challenges of every-day life and balancing their emotions and therefore experience greater subjective as well as psychological well-being (Ghielen et al., 2017; Govindji & Linley, 2007). These findings demonstrate that focusing on character strengths of individuals can enhance their well-being and is a crucial aspect to research and interventions in positive psychology.

Although much is already known about the positive effects of character strengths on the mental health of individuals, much of that research was conducted with high-school students or specific occupational groups such as nurses or caregivers (Jach et al., 2018; Piqueras, Salvador, Soto-Sanz, Mira, & Pérez-González, 2020; Trujillo et al., 2016), whereas the highest prevalence of mental health issues was displayed in young adults. Among those, the most prevalent problems are depression and anxiety (Bültmann et al., 2020; "Mental Health Information," 2019). A long term study in the US conducted from 2005 to 2014 found that the prevalence of major depressive episodes among young adults increased from 8.8% to 9.6% during the respective period of time (Mojtabai, Olfson, & Han, 2016). Accordingly, also suicidal ideation of young adults in the US from 2009 to 2015 rose from 6.1% to 8.2% which is a significant increase (Han et al., 2018). While a sample of exclusively Dutch young adults

showed no difference in mental health prevalence from 2007 to 2017, nevertheless it is estimated that around 20% of that age group suffered from a mental disorder during the past year (van der Velden, Das, & Muffels, 2018). As can be seen from the research, there are relatively high prevalence rates of mental health issues among young adults. Possible reasons for those upward trends are major economic downturn that affects mental health of individuals, increasing levels of stress among young adults and the lack of suitable coping strategies (Han et al., 2018; Mojtabai et al., 2016). Furthermore, many young adults and university students are confronted with the so-called quarter-life crisis when trying to gain autonomy, develop their identity or built a career which generates overwhelming distress (Martin, 2017). Individuals in young adulthood go through major life transitions, such as university-to-work transition, and must make important decisions concerning their future life which might cause struggles and a lot of stress (Martin, 2017). Therefore, it is relevant to learn more about personal strengths and their relationship to well-being since such insights can be used to support the young adults in stressful phases and enhance their mental health.

Research found that strengths use among a population of university students, mostly young adults between 18 and 25 years, was a significant predictor for their levels of subjective well-being and that strengths-based interventions are positively associated with life satisfaction and positive affect (Ghielen et al., 2017; Proctor, Maltby, & Linley, 2011). As mentioned before, a great deal of research on character strengths and their relation to well-being has been conducted among other populations, whereas young adults who display the highest rates of mental disorders and often report stressful phases and personal struggles might profit from such insights in particular. Establishing a possible relationship between specific character strengths and subjective well-being might be useful for designing specifically targeted interventions that promote or complement strengths identification and use to increase resilience. A particular character strength that should be investigated is social intelligence.

Social Intelligence

The original work on character strengths stems from Peterson and Seligman (2004) whose aim was to understand the "good life" and therefore to assign as much meaning to positive as well as negative aspects of an individual. They identified the six virtues wisdom, courage, humanity, justice, temperance, and transcendence each composed of several matching strengths that are trait-like and stable over time (Peterson & Seligman, 2004). As each individual possesses different strengths to a varying extent, each person displays a distinct character profile (Niemiec, 2013; Peterson & Seligman, 2004). The work on character

strengths and the new classification has been highly influential for the practice of positive psychology during the previous years.

One of the identified character strengths is social intelligence. Social intelligence can be defined as the ability to understand one's own and other's intentions, feelings and thoughts and it belongs to the virtue of humanity ("Character Strengths," 2020; Peterson & Seligman, 2004). It is the exclusively human capacity to navigate and negotiate social relations and interactions on an interpersonal level (Aminpoor, 2013; Peterson & Seligman, 2004). Among young adults, higher levels of social intelligence are positively associated with a secure attachment which in later life promotes emotional skills and emotional-regulative abilities, and lower levels were negatively associated with dismissal and fearful attachment (Anwer, Malik, Maqsood, & Rehman, 2017). Much research on social intelligence so far has focused on its consequences for economic success, communication or peer victimization rather than its effect on general well-being (Lau, 2016; Lepore & Kliewer, 2019; Sternberg & Li, 2020). However, social systems and suppositional social intelligence also play a crucial role in predicting the mental health of individuals by enhancing emotional skills and facilitating the development of social networks, which often seems to be underestimated (Han et al., 2018; Lau, 2016). Furthermore, social intelligence and associated skills are still developing and consolidating throughout adolescence and early adulthood (Lau, 2016), indicating that interventions on social intelligence might be particularly effective during those years of life. Especially during the major life-transitions which young adults undergo, effective use of social intelligence could be beneficial. To design such interventions and to facilitate the development of social intelligence, more research is needed to discover its underlying mechanisms and effects. Social intelligence is an essential factor in developing social systems and a strong predictor for interpersonal relations, both play a crucial role in the mental health of individuals. Whereas previous studies have mostly focused on the relation of social intelligence with performance and success, the present study will focus on the relationship between social intelligence and subjective well-being.

Subjective Well-Being

For a long time, mental health has been defined as the absence of psychopathology. A more recent definition encompasses three components, namely psychological well-being, social well-being and emotional well-being, which altogether constitute subjective well-being. Subjective well-being is an individual's appraisal and evaluation of their own lives, including both reflective as well as cognitive judgements of aspects such as positive versus negative emotions and global judgements on life satisfaction (Diener, Oishi, & Tay, 2018; Proctor et

al., 2011). Life satisfaction is considered as an essential part of mental health and was found to be highly influential for various areas of life such as behavioural, interpersonal, and social outcomes and the overall well-being of adolescents and young adults (Proctor, Linley, Maltby, & Port, 2017). It is a rather stable variable which is likely to predict the subjective perception of one's life circumstances (Proctor et al., 2017). If young adults experience greater life satisfaction, they are likely to experience an increased level of overall subjective well-being (Proctor et al., 2017). As life satisfaction can be considered as an influential element of subjective well-being among young adults, it will be used as a measure for subjective well-being in this study.

Another measure of subjective well-being will be positive and negative affect. The components of positive and negative affect are concerned with the frequency of encountering positive and negative emotions in everyday life. Previous research has shown that positive affect during childhood and youth is positively correlated with mental health in young adulthood as well as long-term mental health and is a predictor for fewer risky health behaviours (Hoyt, Chase-Lansdale, McDade, & Adam, 2012). For instance, a study among college students found that larger negative affect is associated with drinking and a greater likelihood of developing a dependency, while positive affect is associated with fewer symptoms (Simons, Wills, & Neal, 2014). Also, the frequency of positive and negative affect is associated with the quality of social relationships and the amount of reported conflict in young adults (Berry, Willingham, & Thayer, 2000). Overall, the components of positive and negative affect influence important areas of life that contribute to the general well-being of individuals. As findings clearly indicate the relevance of life satisfaction and positive and negative affect for the general mental health of young adults, this research will emphasize both.

Social Intelligence, Social Support and Subjective Well-Being

Research on the relationship between social intelligence and well-being among young adults and adolescents already revealed some interesting findings. For instance, Lepore and Kliewer (2019) found that higher levels of social intelligence might protect adolescents from psychological harm such as peer victimization and depressive symptoms and therefore conclude that the use and training of social intelligence might serve as prevention strategy that should be integrated into interventions. Additionally, Rezaei and Bahadori Khosroshahi (2018) found that social skills and social intelligence were positively related to life satisfaction and positive affect which is in line with other findings in this field (Duan, 2016; Proctor et al., 2017). However, it is still debated how this relationship works exactly.

A factor that might mediate the relationship between social intelligence and subjective well-being could be social support. Social support can be defined as the protection and assistance that one receives from others in various life situations. The support can be tangible as well as intangible (Langford, Bowsher, Maloney, & Lillis, 1997; Rowsell, Ciarrochi, Deane, & Heaven, 2014). If individuals have higher levels of social intelligence, they are presumed to be better able to sense the feelings of others, behave in socially acceptable ways and might also be more likely to have proficient social support systems which can be used as a buffer and support against psychological harm (Lepore & Kliewer, 2019; Rowsell et al., 2014). Rowsell et al. (2014) conducted a longitudinal study among high school students and found that students who have higher levels of emotional intelligence, which is a subcategory of social intelligence, are more likely to have stronger social support which in turn is associated with higher levels of health and well-being. This might be the case because people who perceive higher levels of social support are also more skilled in receiving social support, sharing their emotions, asking for information or requiring outside help from social services and social networks which facilitates the handling of stressful situations (Fasihi Harandi, Mohammad Taghinasab, & Dehghan Nayeri, 2017). Furthermore, Milner, Krnjacki, and LaMontagne (2016) found that especially younger people under the age of 30 derive more benefits from social support compared to older age groups. For instance, there is some evidence that young adults derive their self-definition from social support systems which help them to build their own identity and to overcome the challenges they are faced with during life-transitions (Milner et al., 2016). It was repeatedly found that social support is in general positively associated with (mental) health of individuals (Fasihi Harandi et al., 2017; Langford et al., 1997; Reid, Holt, Bowman, Espelage, & Green, 2016). However, it has not yet been researched whether there is a direct connection between social intelligence, social support, and increased well-being in young adults. In this research, it is hypothesised that a relationship between social intelligence and subjective well-being among young adults is mediated by the level of perceived social support (see Figure 1). This relationship is hypothesised for both life satisfaction, and positive and negative affect.
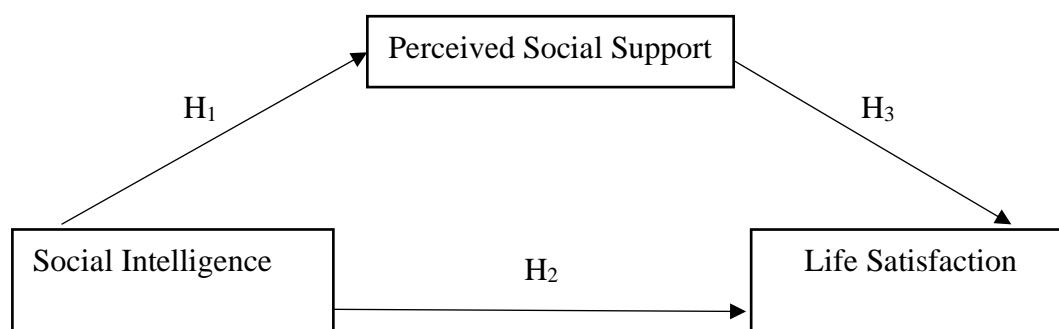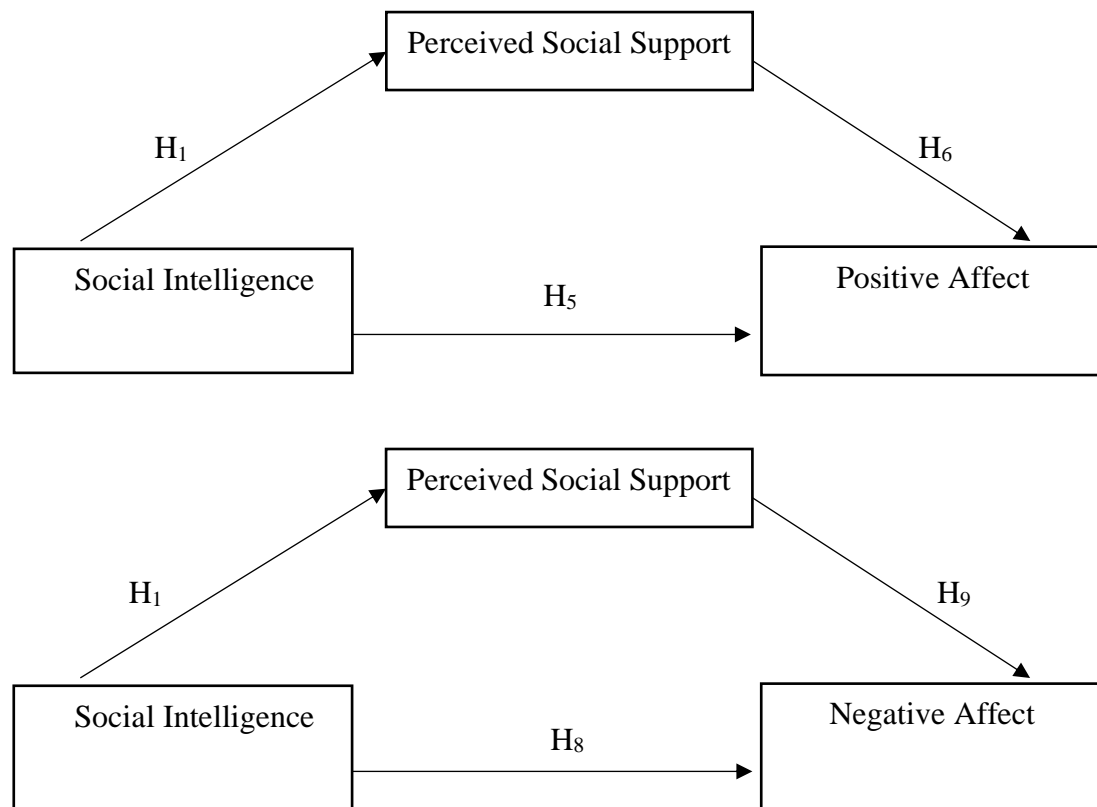
Figure 1: Expected relation between social intelligence and life satisfaction, positive affect, and negative affect through perceived social support.

Altogether, social intelligence, perceived social support and the components life satisfaction and positive and negative affect have been chosen as main concepts of this study to answer the question "To what extent does social intelligence predict subjective well-being of young adults through perceived social support?". The hypothesised relationships are as follows:

H_1: Young adults who have higher levels of social intelligence perceive higher levels of social support.

H_2: Young adults who have higher levels of social intelligence have higher levels of life satisfaction.

H_3: Young adults who perceive higher levels of social support have higher levels of life satisfaction.

H4: Young adults who have higher levels of social intelligence have higher levels of life satisfaction because they perceive higher levels of social support (mediation).

H_5: Young adults who have higher levels of social intelligence have higher levels of positive affect.

H$_6$: Young adults who perceive higher levels of social support have higher levels of positive affect.

H$_7$: Young adults who have higher levels of social intelligence have higher levels of positive affect because they perceive higher levels of social support (mediation).

H$_8$: Young adults who have higher levels of social intelligence have lower levels of negative affect.

H$_9$: Young adults who perceive higher levels of social support have lower levels of negative affect.

H$_{10}$: Young adults who have higher levels of social intelligence have lower levels of negative affect because they perceive higher levels of social support (mediation).

Methods

Design

A cross-sectional survey design was employed. Participants were asked to fill out a questionnaire to measure the independent variable "social intelligence", the dependent variables "life satisfaction", "positive affect" and "negative affect" and the mediator variable "perceived social support". The study was part of a larger study on strengths use and the survey measured several other variables but those were not used in this study. The design of this study, as well as the generated survey, were approved by the Ethics Committee BMS of the University of Twente (request number 200274).

Participants

In total, 181 participants responded to the survey. Of those, 23 were deleted because of missing data and 17 because they did not correspond to the age range of 18 to 25 years, using listwise deletion. The analysed sample consisted of 141 participants between 18 and 25 years. It was a convenience sample aggregated through SONA system, which is a university platform to reach participants who in turn receive partial study credits for their participation. Additionally, a snowballing technique was used to reach many participants through social media and personal contacts. Exclusion criterion for the study was a self-reported diagnosis with a serious mental illness such as depression, anxiety disorder, psychotic disorder and substance use disorders within the previous three years.

Materials

The survey contained the "VIA-72"(Peterson & Seligman, 2004), the "Multidimensional Scale of Perceived Social Support" (MSPSS) (Zimet, Dahlem, Zimet, & Farley, 1988), the "Positive and Negative Affect Schedule" (PANAS) (Watson, Clark, &

Tellegen, 1988), and the "Satisfaction with Life Scale" (SWLS) (Diener, Emmons, Larsen, & Griffin, 1985).

Social Intelligence. The VIA-72 was used to measure levels of social intelligence. The survey encompasses the three most internally consistent items from each subscale derived from the original VIA Inventory of Strengths (Peterson & Seligmann, 2004). The scale measures all 24 character strengths with three items each. An example item for the social intelligence scale is "I know how to handle myself in different social situations". Items are rated on a 5-point Likert scale from (1) "very much unlike me" to (5) "very much like me". The scale produces a mean score, with 5 being the highest and 1 the lowest possible score. The scale has adequate reliability ($\alpha = .75$; subscale Social Intelligence $\alpha = .77$) and validity coefficients ranging from .36 to .48 ("Character Strengths," 2020). In the present sample, Cronbach's alpha for the social intelligence subscale was adequate with $\alpha = .66$. This was considered acceptable as the subscale has only three items (Field, 2005).

Perceived social support. The MSPSS assesses the level of social support as an individual perceives it. The survey encompasses three subscales that assess perceived social support from family, friends and significant others (Zimet et al., 1988). It is most widely used to measure social support among various groups of individuals and across different cultures. An example item is "I have a special person who is a real source of comfort to me". The scale has good reliability when used with young adults and undergraduate students ($\alpha = .88$) and validity coefficients ranging from .66 to .77 (Osman, Lamis, Freedenthal, Gutierrez, & McNaughton-Cassill, 2014). It encompasses 12 items which are answered on a 7-point Likert scale ranging from (1) "very strongly agree" to (7) "very strongly disagree". In the present study, the scale displayed excellent reliability ($\alpha = .91$).

Positive and Negative Affect. To measure positive and negative affect the PANAS was used. It measures the frequency of positive and negative affect as experienced by individuals in their everyday lives. The scale measures the two largely independent concepts of positive affect (PA) and negative affect (NA) with 10 items each. Whereas higher scores on PA indicate "high energy, full concentration, and pleasurable engagement" and lower scores indicate "sadness and lethargy", higher scores on NA indicate "subjective distress and unpleasurable engagement" and lower scores indicate "a state of calmness and serenity" (Watson et al., 1988). Although the factor structure of the PANAS has been criticised, it is time-efficient in application and scoring and a well-studied scale to measure the two dimensions of PA and NA in non-clinical contexts (Merz et al., 2013). Participants are asked to rate a list of 20 adjectives, examples of which are "interested", "guilty", "enthusiastic" and

"nervous". Adjectives are rated based on the extent they experienced those feelings/states on average during the past week on a 5-point Likert scale ranging from (1) "very slightly or not at all" to (5) "extremely". Research on the original scale of the PANAS among a population of different age groups indicated good reliability for both subscales of PA ($\alpha = .88$) and NA ($\alpha = .87$) (Merz et al., 2013), confirming the two-factor model of the PANAS. Based on that, the scale can be used without concerns about its reliability. Also in the present study, both subscales showed good reliability with coefficients of $\alpha = .78$ for PA and $\alpha = .85$ for NA.

Life Satisfaction. To measure life satisfaction, the SWLS was used. The scale measures the general life satisfaction using five items that participants should agree or disagree with (Diener et al., 1985). An example item is "If I could live my life over, I would change almost nothing". Items are rated on a 7-point Likert scale ranging from (1) "strongly disagree" to (7) "strongly agree". A review of several studies on the psychometric properties of the SWLS confirms that the scale has adequate reliability ($\alpha = .78$) and positive correlations with other measures of subjective well-being (around $r = .50$) when conducted among a non-psychiatric population (Corrigan, Kolakowsky-Hayner, Wright, Bellon, & Carufel, 2013). Good reliability ($\alpha = .82$) was also displayed in the present sample.

In addition to the aforementioned scales, the survey in this study also included several demographic questions. Participants were asked for their age, gender, nationality, occupation and whether they were diagnosed with a serious mental illness. The questions served to sort the data according to the exclusion/ inclusion criteria of the study.

Procedure

Participants were asked to fill out the survey via the online survey platform Qualtrics. Before the start of the questionnaire, an informed consent (Appendix A) was presented. Participants were informed about the aim of the study, that their data will be anonymised, that they could withdraw participation at each point of the survey without having to give a reason, and that the data will not be shared beyond the study team. After giving their consent to the terms and conditions electronically, participants could start the survey. The estimated time for answering all questions was 20 minutes.

Data Analysis

The data was analysed using IBM SPSS Statistics 24. First, the dataset was checked for missing values. Participations with unfinished responses or missing values were not used for further analysis and were removed from the dataset using listwise deletion. Also, participants that did not correspond to the age range were removed from the dataset using

listwise deletion. Furthermore, frequency analyses were performed to check the distribution of data and whether it looked plausible and normal.

Overall, the data was normally distributed and met the assumptions for the following analyses. To analyse the hypothesised relationships, the first step was to perform a correlation analysis with Pearson's correlation to get a general overview. Next, mediation was tested using linear regression analyses. Several models were tested, namely, the independent variable (IV) social intelligence with the mediating variable (M) perceived social support and dependent variable (DV) life satisfaction; IV social intelligence with M perceived social support and DV positive affect; IV social intelligence with M perceived social support and DV negative affect. Following, bootstrapping was used to estimate the mediation effects. This was done using the PROCESS macro for SPSS by Hayes (2017).

Results

The analysed sample consisted of 141 young adults between the age of 18 and 25 years ($M = 21.89$, SD = 1.652). Of those, 33.3% were male, 66% female and 0.7% other or rather not say. Furthermore, 2.1% were Dutch, 88.7% German and 9.2% of other nationality. 85.8% were students, 12.8% employed, 0.7% reported being self-employed and an equal percentage unemployed. The mean values of social intelligence were moderate and mean values for perceived social support were rather high, while the mean values of the dependent variables ranged from moderate to rather high (Table 1).

Table 1

Participant Characteristics (N = 141)

	Mean	SD
Age	21.89	1.657
Social Intelligence	3.83	.70
Perceived Social Support	5.89	.89
Life Satisfaction	25.67	5.29
Positive Affect	32.07	6.51
Negative Affect	20.67	7.31

Performing correlation analyses using Pearson's correlations, the independent variable social intelligence, as well as the mediator variable perceived social support were found to be

significantly correlated with the dependent variables life satisfaction and positive affect but not with negative affect. Correlation coefficients are displayed in Table 2.

Table 2

Pearson's Correlations between variables (N = 141)

|	Life Satisfaction	Positive Affect	Negative Affect	Perceived Social Support
Social Intelligence	.264**	.229**	-.088	.264**
Perceived Social Support	.596**	.326**	-.076	-

Pearson's significance level. *$p < .05$, **$p < .001$.

Social Intelligence and Perceived Social Support

Testing a regression model with the independent variable social intelligence and dependent variable perceived social support displayed a significant relationship ($b = .325$, $t(139) = 3.114$, $p = .002$). H$_1$ could be confirmed as the results imply that social intelligence positively predicts perceived social support for young adults.

Mediation model Social Intelligence and Life Satisfaction through Perceived Social Support

There was a significant mediating effect of social intelligence on life satisfaction through perceived social support ($b = 1.086$, 95% BCa CI [.4709, 1.7922]). The direct effect of social intelligence on life satisfaction ($b = 1.986$, $t(139) = 3.225$, $p = .002$) was no longer significant with the mediator included ($b = .899$, $t(138) = 1.707$, $p = .090$). The relationship between social intelligence and the mediator perceived social support was significant ($b = .325$, $t(139) = 3.114$, $p = .000$). The mediator was significantly related to life satisfaction ($b = 3.342$, $t(138) = 8.076$, $p = .000$). 36.8% of variance in life satisfaction was explained by the independent variables social intelligence and perceived social support ($R^2 = .368$, $F(2, 138) = 40.209$, $p = .000$). H$_2$, H$_3$ and H$_4$ were confirmed. The results show that increased social intelligence predicts increased life satisfaction for young adults, and that this relationship is mediated by perceived social support. The concluded relationship is illustrated in Figure 2.

$b = .325, p = .002$ Perceived Social Support $b = 3.342, p = .000$

Social Intelligence   Life Satisfaction

Direct effect: $b = 1.986, p = .002$
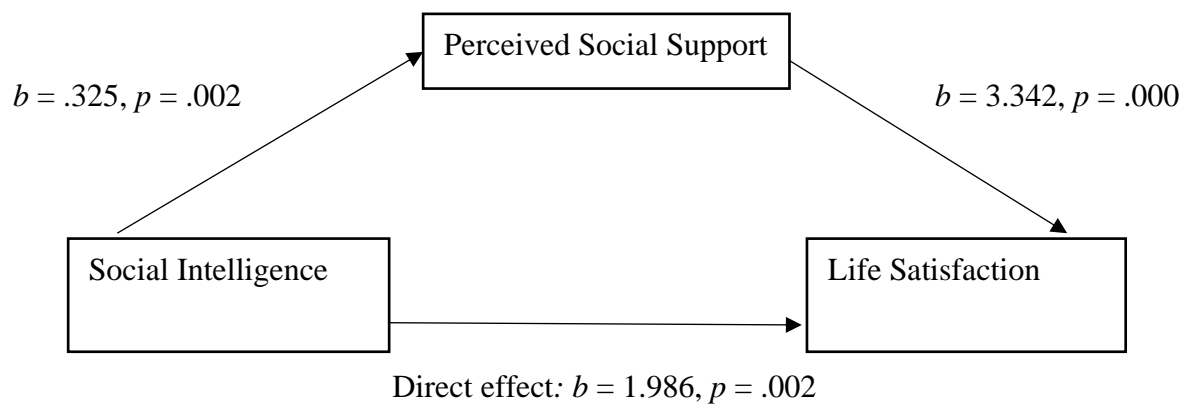
Indirect effect: $b = 1.086$, 95% CI [.4709, 1.7922]

Figure 2: Model of social intelligence as a predictor for life satisfaction, mediated by perceived social support. The confidence interval for the indirect effect is a BCa bootstrapped CI based on 5000 samples.

Mediation model Social Intelligence and Positive Affect through Perceived Social Support

There was a significant indirect effect of social intelligence on positive affect through perceived social support ($b = .679$, 95% BCa CI [.2435, 1.2441]). The direct effect of social intelligence on positive affect was significant ($b = 2.123$, $t(139) = 2.768$, $p = .006$) but did not remain significant when including the mediator ($b = 1.444$, $t(138) = 1.891$, $p = .061$). As previously stated, the relationship between social intelligence and the mediator was significant ($b = .325$, $t(139) = 3.114$, $p = .002$). The mediator significantly predicted the dependent variable ($b = 2.091$, $t(138) = 3.487$, $p = .001$). The independent variables social intelligence and perceived social support accounted for 12.9% of variance in positive affect ($R^2 = .129$, $F(2, 138) = 10.219$, $p = .000$). H$_5$, H$_6$ and H$_7$ could be confirmed as the present results show that social intelligence positively predicts positive affect for young adults, and that the relationship is mediated by perceived social support. The estimated relationships are displayed in Figure 3.
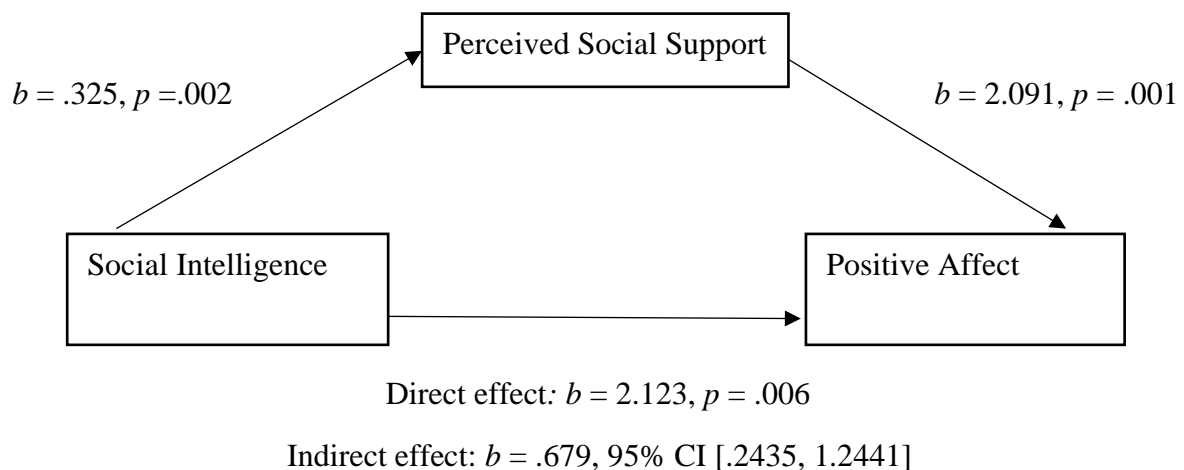
Direct effect: $b = 2.123$, $p = .006$

Indirect effect: $b = .679$, 95% CI [.2435, 1.2441]

Figure 3: Model of social intelligence as a predictor of positive affect, mediated by perceived social support. The confidence interval for the indirect effect is a BCa bootstrapped CI based on 5000 samples.

Mediation model Social Intelligence and Negative Affect through Perceived Social Support

There was no significant indirect effect of social intelligence on negative affect through perceived social support (b = -.150, 95% BCa CI [-.8449, .3299]). Neither was there a significant direct effect of social intelligence on negative affect ($b = -.919$, $t(139) = -1.047$, $p = .297$) nor a significant effect of perceived social support on negative affect ($b = -.463$, $t(138) = -.648$, $p = .518$). Therefore, H_8, H_9 and H_{10} were rejected. The results show that social intelligence and perceived social support do not predict levels of negative affect for young adults.

The results indicate that H_1, H_2, H_3, H_4, H_5, H_6 and H_7 can be confirmed as the relationships between social intelligence and life satisfaction as well as positive affect are mediated by perceived social support. Whereas H_8, H_9 and H_{10} are rejected as there are no significant relationships between social intelligence, perceived social support and negative affect.

Discussion

The present findings are in large part concordant with previous studies in the field. In line with Duan (2016), Govindji and Linley (2007), Ghielen et al. (2017) and Park (2004) it could be confirmed that levels of character strengths, specifically social intelligence (Rezaei & Bahadori Khosroshahi, 2018), are a significant predictor for levels of life satisfaction and positive affect among young adults. Furthermore, it could be confirmed that the predicted

mediating effect of perceived social support plays a crucial role as well. As previously predicted by Rowsell et al. (2014), higher levels of social intelligence are significantly related to higher levels of perceived social support. Moreover, significant relationships between perceived social support and the subjective well-being measures life satisfaction and positive affect could be established which again confirms the results of several previous studies (Fasihi Harandi et al., 2017; Langford et al., 1997; Reid et al., 2016). Lastly, the hypothesised mediating effect of perceived social support on the relationship between social intelligence and subjective well-being measures was confirmed. Henceforth, it can be concluded that, among young adults, higher levels of social intelligence lead to higher levels of perceived social support which consequently lead to higher levels of life satisfaction and positive affect and therefore to increased levels of subjective well-being. Based on those findings, it is suggested that higher levels of social intelligence facilitate the development and use of social support systems which young adults use as a resource to master stressful events and life-transitions successfully. With higher levels of social intelligence young adults seem to gain more proficient abilities to perceive the social support they receive as they are more aware of the feelings and intentions of other people and are more likely to draw on the support they receive (Fasihi Harandi et al., 2017). Young adults who are more proficient in making use of social support systems can use those as a resource for mastering stressful events, life-transitions or identity building (Milner et al., 2016), and thereby enhance positive emotions which are reflected in increasing levels of life satisfaction and positive affect. Another explanation for this relationship could be that perceived social support among young adults can increase their subjective well-being regardless of the challenges they encounter. As personal relations are enhanced by increased levels of social intelligence, social support might not necessarily be a resource to master stressful situations, but merely experiencing the support from friends and family might increase subjective well-being among young adults.

In contrast, the hypothesised relationships between social intelligence, perceived social support, and negative affect could not be confirmed in this study. Previous studies found that higher levels of various character strengths can act as a buffer against negative symptoms such as depressive symptoms, anxiety or negative affect and that this relationship is likewise mediated by perceived social support (Lepore & Kliewer, 2019; Rowsell et al., 2014). However, none of those relationships could be confirmed in the present study. It seems that increased levels of social intelligence and perceived social support do not alleviate negative emotions among young adults. Despite the assumption that young adults with higher levels of social intelligence are more proficient in making use of social support, it seems that

this holds for enhancing the positive aspects but that they might still be inhibited to disclose negative emotions. While increased levels of social intelligence lead to more awareness of other person's intentions and feelings, it might also cause increased vulnerability to social desirability bias so that individuals with proficient social skills might also be more cautious when revealing negative emotions because of a fear of being rejected or judged in a negative way (Rosenfeld, Imai, & Shapiro, 2016). The relationship between social intelligence, social support, and negative affect should be emphasised in future research.

What is important to note from the present findings is the accordance with concepts of positive psychology. The key-principle of positive psychology is to focus on the positive aspects of an individual with fewer regards to negative aspects or problems that a person encounters (Alex Linley et al., 2006). The same tendency could be seen in the present study. It was found that social intelligence and accordingly perceived social support can significantly increase levels of the positive aspects life satisfaction and positive affect but do not decrease negative affect. The findings support the view that character strengths and specifically social intelligence should be used to promote and increase subjective well-being by increasing levels of life satisfaction and positive affect. It can be implied that, among young adults, levels of social intelligence and perceived social support play a crucial role in fostering positive emotions but cannot explain negative emotions. Character strengths and perceived social support can nevertheless be used as predictors for subjective well-being as increases in life satisfaction and positive affect can lead to increased subjective well-being regardless of constant levels of negative affect (Proctor et al., 2017). However, the assumption from previous research that character strengths can act as protective factors against negative aspects and psychological symptoms should be reconsidered. Previous research found that character strengths can act as a buffer against psychological symptoms and negative aspects of subjective well-being (Duan, 2016; Lepore & Kliewer, 2019; Piqueras et al., 2020; Rowsell et al., 2014) which is not supported regarding the findings of the present study. From the present study, it seems that the protective function of character strengths is not generalisable to all strengths, as negative affect did not decrease despite increasing levels of social intelligence. Another consideration is that the protective function of character strengths is not present across the general population. Previous studies that identified character strengths as a buffer against psychological symptoms were conducted among adolescents and college students (Duan, 2016; Lepore & Kliewer, 2019). As the results could not be confirmed with a sample of young adults, it might imply that character strengths have varying functions among different populations.

The discrepancy of findings on negative affect from previous studies might have various reasons. In the present study, there was one measure of the negative dimension of subjective well-being, namely negative affect, however, no measures of depressive symptoms, perceived stress levels or anxiety were included. As previous researchers such as Piqueras et al. (2020) and Duan (2016) explicitly found effects of character strengths on those variables, negative affect alone might not be representative for the negative dimension of subjective well-being. Furthermore, negative affect is a sensitive aspect to measure and participants might be inhibited to disclose such sensitive information about themselves or want to respond in a socially acceptable way (Rosenfeld et al., 2016). Although confidentiality and anonymity were ensured to participants, social desirability bias cannot be controlled for completely. Additionally, the study was conducted using self-report measures. To obtain more reliable and accurate results, future studies should use longitudinal designs with larger samples obtained through probability sampling.

The sample mainly consisted of German, female students and was therefore not very representative for all young adults between 18 and 25 years. However, nationality, gender and occupation did not significantly influence the variables of interest (Appendix B) so the results can still be generalised to an international population with different occupations. Moreover, this study made use of well-established surveys to measure the variables of interested. All measures are validated, implying that the measures obtained are reliable and can be used as a basis for future research. Additionally, two of three proposed mediation models were initially confirmed and can also serve as a starting point for future research in the field.

As indicated before, the assumption that character strengths act as a buffer against negative aspects was not found to be true for young adults. Therefore, future research should investigate whether character strengths have the same functions across all age groups, or whether there are differences in the functioning of character strengths across the life span. Such insights can potentially avoid efforts that aim at character strengths which eventually do not have a protective function for young adults or are not significant for improving their subjective well-being. This could be done by replicating the present study design with different target groups such as adolescents or older adults. Further, the present study could be modified so that measures of various character strengths are taken into account. Like that, it could be investigated whether the assumption that character strengths, in general, have a protective function is true, or whether that is only the case for specific strengths. The same holds for the finding that social intelligence enhances well-being, as it could be investigated whether that is also the case for other character strengths. Identifying the character strengths

that are most beneficial and effective for improving young adult's subjective well-being is needed to develop specifically adapted interventions. Additionally, future research on the topic should include several measures of the negative dimension of subjective well-being such as depressive symptoms, anxiety, or perceived stress. That would allow for a more differentiated view on negative aspects of well-being and give more insights into the protective functions of character strengths and how they can be used most effectively. Lastly, future research should investigate whether there are other mediating variables than perceived social support, such as the quality of interpersonal relations or the size of social support systems, that can explain the relationship between social intelligence and subjective well-being. Exploring such relations in more detail can provide more insights into the mechanisms through which character strengths and perceived social support foster positive emotions and eventually could be used as buffers against negative emotions. Such findings allow the development of specifically targeted interventions to enhance the subjective well-being of young adults, as current interventions are often aimed at the general population but do not differentiate the functioning of character strengths for different populations.

   The findings emphasise and support the use of positive psychological interventions that promote the use and development of character strengths and specifically social intelligence. As was previously outlined by several researchers, especially during early adulthood it is crucial to strengthen and develop social intelligence (Anwer et al., 2017; Lau, 2016) as it can lead to higher subjective well-being by increasing levels of life satisfaction and positive affect and can, therefore, act as counteractive compensation in this particularly stressful period in life. Furthermore, the importance of perceived social support and its mediating role was proven. It can be assumed that higher abilities to sense other person's feelings and to behave accordingly promote interpersonal relations which can be used as a potential enhancer of positive aspects in life. The focus should not only be on the individual aspects but also the societal aspects of social intelligence since social support plays a crucial role when increasing subjective well-being. However, as there was no effect found on negative affect, future research should focus on ways to decrease negative symptoms and examine the function of character strengths as buffers against negative symptoms.

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Appendices

Appendix A

Informed Consent

Thank you for wanting to participate in our study. Please read the following information carefully.

The aim of this study is to investigate the relationship between character strengths and mental health of individuals.

By proceeding to the next page, I agree that …

I understand that I consent voluntary to the study. I can refuse to answer questions and can withdraw from the study at any time without having to give a reason.

I understand that the data collected in this online survey will be treated strictly confidential. All analysis of the collected data occurs anonymously and only for the purpose of this study. If the data is published, measures will be taken to ensure that no data of any individual is recognizable as such.

I understand that personal information collected about me that can identify me will not be shared beyond the study team.

I understand that all information I provide will be anonymized.

If you have any further questions, please contact the researchers:

Lili Bechler: l.d.bechler@student.utwente.nl

Joanna Greiwe: j.greiwe@student.utwente.nl

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If you have questions about your rights as a research participant, or wish to obtain more information, ask questions, or discuss any concerns about this study with someone other than the researcher(s), please contact the Secretary of the Ethics Committee of the Faculty of Behavioural, Management and Social Sciences at the University of Twente by ethicscommittee-bms@utwente.nl

Appendix B

Regression Analyses Demographics on Variables of Interest

Regression Analysis Age (IV) on Social Intelligence (DV) and Perceived Social Support (DV)

Age does not significantly influence Social Intelligence ($b = .010$, $t = .285$, $p = .776$) and Perceived Social Support ($b = .027$, $t = .594$, $p = .554$).

Regression Analysis Gender (IV) on Social Intelligence (DV) and Perceived Social Support (DV)

Gender does not significantly influence Social Intelligence ($b = .025$, $t = .206$, $p = .837$) and Perceived Social Support ($b = .110$, $t = .707$, $p = .481$).

Regression Analysis Nationality (IV) on Social Intelligence (DV) and Perceived Social Support (DV)

Nationality does not significantly influence Social Intelligence ($b = .199$, $t = 1.105$, $p = .271$) and Perceived Social Support ($b = -.237$, $t = -1.035$, $p = .303$).

Regression Analysis Occupation (IV) on Social Intelligence (DV) and Perceived Social Support (DV)

Occupation does not significantly influence Social Intelligence ($b = -.027$, $t = -.620$, $p = .536$) and Perceived Social Support ($b = .010$, $t = .172$, $p = .864$).