The Relationships

Between Fear of Rejection, Perceived Social Support and Problematic Social Media Use

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Abstract

The increasing concern over problematic social media use among university students prompted this study about the relationship between fear of rejection, problematic social media use (PSMU), and perceived social support among students. The study aims to understand these variables' influence on PSMU to reduce its prevalence.

The study involved 120 university students aged 18 to 25. The Multidimensional Scale of Perceived Social Support (MSPSS) and the Rejection Sensitivity Questionnaire (RSQ), and the Bergen Social Media Addiction Scale (BSMAS) were used to measure perceived social support, fear of rejection and PSMU, respectively. Linear regression analyses were conducted to assess the relationships between the variables. A multiple linear regression analysis explored the mediating role of perceived social support on the relationship between PSMU and fear of rejection.

The outcomes revealed a positive relationship between fear of rejection and PSMU (R^2 = .15, $F(1,118) = 20.93$, $p < .001$) and a significant negative relationship between fear of rejection and perceived social support (R^2 = .23, $F(1,118) = 35.92$, $p < .001$). The findings did not support a negative association between perceived social support and problematic social media use (PSMU) or a negative moderating effect of perceived social support on the relationship between fear of rejection and PSMU.

The online disinhibition effect may explain the relationship between fear of rejection and PSMU, while higher levels of social withdrawal in rejection-sensitive people potentially explain the negative relationship between fear of rejection and perceived social support. The absence of the moderating effect of perceived social support might be explained by the fact that this study did not independently measure online social support.

The Relationships Between Fear of Rejection, Perceived Social Support and Problematic Social Media Use

In today's fast-paced world, digital media has become an integral part of our lives, and with its pervasive use come inevitable negative consequences. One such consequence is the development of behaviours related to internet addiction (Lopez-Fernandez & Kuss, 2020). These behaviours can manifest in symptoms such as obsessive thoughts about the internet, internet-use tolerance, diminished impulse control, and mental withdrawal symptoms. While the term 'internet addiction' is frequently used in the literature, physical dependence does not comprise one of the symptoms of addictive behaviour related to internet addiction (Pakpour et al., 2017). Consequently, Davis (2001) advocates using the term 'problematic internet use' (PIU) instead of 'internet addiction disorder', a viewpoint adopted in this report. PIU refers to compulsive internet use that interferes with daily functioning, causing work-related and social problems. It can harm the user and their environment by decreasing productivity and increasing social isolation (Schermer et al., 2020; Tandon et al., 2020). Research suggests that 6% of internet users experience PIU, which is higher among adolescents and young adults (Lopez-Fernandez & Kuss, 2020; Lozarno-Blasco et al., 2022). Problematic internet use (PIU) can be classified into general and specific categories. General PIU refers to problematic use of the internet overall. In contrast, specific PIU touches on problematic use of specific internet functionalities, such as gaming or social media use (Spada, 2014).

Problematic Social Media Use

Experiencing PIU symptoms while using social media platforms such as Instagram and TikTok is a distinct form of specific PIU, referred to as problematic social media use (PSMU). Social media's unique feature of fast, reciprocal social interaction between users could adversely affect psychosocial well-being (Kietzmann et al., 2011; Shannon et al., 2022). There is a growing body of evidence suggesting that PSMU could be a legitimate mental disorder, with studies pointing to its negative consequences, including loneliness, high stress, depression, lower bonding social capital, and similarities to the DSM-5-classified gaming addiction disorder (Pantic, 2014; Ryan et al., 2017; Steinfield et al., 2008; Van Den Eijnden et al., 2016). Spending two or more hours daily on social media is related to lower life satisfaction and mental health problems (Dobrean & Păsărelu, 2016). Adolescents' and young adults' mental health seems to be most negatively affected by problematic internet use, specifically

PSMU (Shannon et al., 2022). Young adult students face extensive social, academic, and mental impairments related to PSMU (Hawi & Samaha, 2017; Kross et al., 2013; Tandon et al., 2021). However, most research on this topic focuses solely on adolescents under 18.

Fear of Rejection and PSMU

A theoretical framework which could explain the causal factors of PSMU is called the social compensation hypothesis (Poley & Luo, 2012; Weidman et al., 2022; Zywica & Danowski, 2008). This hypothesis, applied to the context of internet use, proposes that individuals with higher levels of fear of rejection or social anxiety are more likely to form online connections because they are aiming to compensate for the social needs that are not fulfilled in real life. Hence, they put more effort into interacting online. Social media platforms may serve as safe environments where individuals who fear rejection, embarrassment, or humiliation can satisfy their social needs (Esfandiari et al., 2013; Weidman et al., 2022). However, this behaviour could increase the risk of PSMU by increasing real-life social isolation leading to lower real-life social support (Casale et al., 2022; Prievara et al., 2019).

Moreover, Ali et al. (2021) found that fear of negative evaluation is conveyed into fear of rejection, which sets the serial link between social interaction anxiety and PSMU. Fear of rejection can be defined as a constant fear of being excluded in social contexts and a higher attentiveness towards signals of social rejection (Schaan et al., 2020). An extensive study by Marino et al. (2023) found that fear of rejection indirectly mediates the relationship between social anxiety and compulsory social media use, which shares conceptual similarities with PSMU.

Perceived Social Support and PSMU

Using online survey research among adolescents aged 14 to 24, Prievara et al. (2019) conclude that PIU relates negatively to social support. They state that higher levels of perceived social support could protect adolescents from developing PIU symptoms. Perceived social support is defined as subjective percipience of the availability and effectiveness of help from one's social network if needed (Langens & Schüler, 2005; Luchtefeld, 2022). Moreover, Choo et al. (2021) conclude that children and adolescents who experience positive growth of peer support also show a downward trend in PIU symptoms. In contrast, societal rejection and a perceived lack of social support in real life are significant cognitive factors in developing forms of PIU (Davis, 2001; Lui et al., 2021).

Continually, Langens and Schüler (2005) found a relationship between fear of rejection and social support. They indicated that people who experience low levels of perceived social support tend to experience higher levels of fear of rejection. Vice versa, perceived social support that occurs offline limits the need for online social support (Longman et al., 2009). Moreover, perceived social support could improve the self-esteem of adolescents, thereby promoting mental health, where low mental health and PSMU tend to be related (Dobrean & Păsărelu, 2016; Liu et al., 2021)

Aim of the study

Altogether, higher fear of rejection and specific PIU seem related (Ali et al. 2021; Marino et al. 2023). One's fear of rejection may manifest into maladaptive self-cognitions that enhance PSMU, and individuals who fear rejection may satisfy their needs for social connection on social media platforms (Weidman et al., 2022; Zywica & Danowski, 2008). Higher levels of perceived social support are also supposed to be a protective factor against PIU, while higher levels of fear of rejection are associated with lower levels of perceived social support (Langens and Schüler, 2005; Prievara et al., 2019). Nevertheless, the relationships between fear of rejection, perceived social support and PSMU have not been investigated yet (Ali et al. 2021; Choo et al. 2021; Marino et al. 2023; Prievara et al. 2019).

Also, the specific role of perceived social support in PSMU and its connection with fear of rejection among university students is still unknown. At the same time, there is evidence that University students experience academic, social, and mental problems related to their relatively high social media use, where students' life satisfaction is lower when PSMU levels are higher (Kross et al., 2013; Sahin 2017). These findings suggest that PSMU is a significant concern among University students. Investigating the relationship between fear of rejection, perceived social support, and PSMU in this population is vital to gain insights into students' digital, social, and mental well-being.

Hence, this study investigates the links between fear of rejection, perceived social support, and PSMU, focusing on university students between 18 and 25 years old. Investigating the role of fear of rejection and perceived social support on PSMU in university students can contribute to the knowledge needed to intervene in PSMU behaviour, ultimately contributing to students' digital, social, and mental well-being. In addition to examining the direct relationships between fear of rejection, PSMU and perceived social support, this study also explores the possible moderating role of perceived social support on the relationship between

fear of rejection and problematic social media use. The purpose of exploring moderation is to understand how perceived social support may influence the strength or direction of the relationship between fear of rejection and PSMU. This is particularly relevant given the documented connections between low perceived social support and both heightened levels of fear of rejection and PSMU, as well as the observed relationship between elevated fear of rejection and PSMU in previous studies (Ali et al. 2021; Choo et al. 2021; Marino et al. 2023; Prievara et al. 2019). These findings might indicate that social support is not solely related to fear of rejection and PSMU independently but that higher levels of social support may also influence the relationship between fear of rejection and PSMU (Figure 1). Additionally, worrying about being isolated or unable to connect to one's social support network was a positive moderator in the relationship between fear of rejection and PSMU (Ali et al., 2021). This being the case, it can be speculated that students with higher levels of social support might not turn to problematic use of social media to satisfy their social needs, next to the speculation that students who feel socially supported might be less fearful of being rejected due to having a broader fundament of social support.

Altogether, this study aims to answer the following questions: 'How are problematic social media use, fear of rejection, and perceived social support associated with each other?' and 'To what extent does perceived social support moderate the relationship between fear of rejection and problematic social media use?'. The hypotheses are as follows:

Hypothesis 1: Fear of rejection predicts PSMU.

Hypothesis 2: Higher perceived social support is associated with lower fear of rejection.

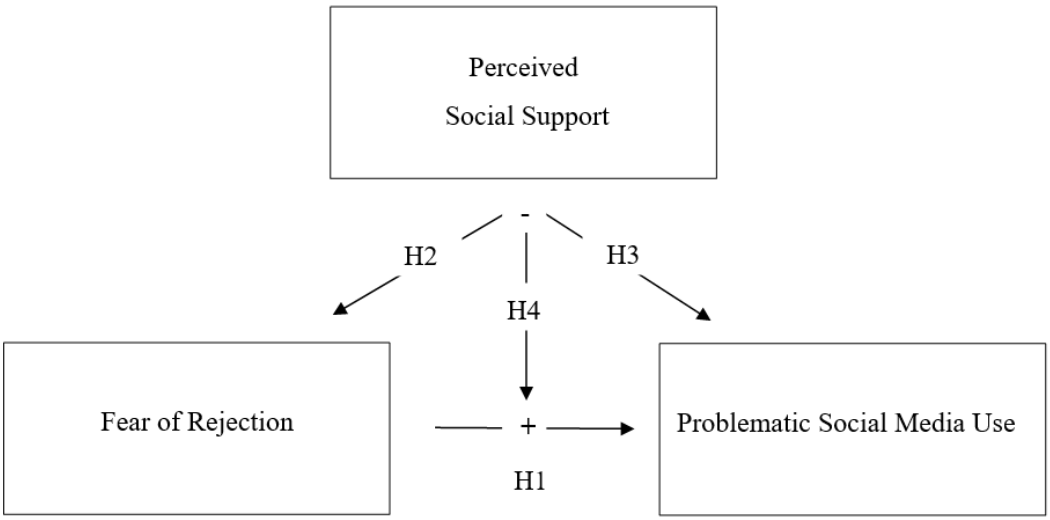
Hypothesis 3: A higher level of perceived social support relates to lower PSMU.

Hypothesis 4: Perceived social support negatively moderates the relationship between fear of rejection and PSMU.

By investigating these hypotheses and answering the research question, this study aims to extend the existing knowledge on PSMU to contribute to the prevention and reduction of PSMU among college students by expanding knowledge. Figure 1 depicts the proposed relationships between the variables.

Figure 1

The Hypothesised Relationships Between Fear of Rejection, Perceived Social Support, and Problematic Social Media Use



Method

Design

The study used an online quantitative cross-sectional design, utilising an online distributed survey. This design choice was based on the relatively high cost-effectiveness and the possibility of identifying hypotheses for further research (Wang & Cheng, 2020). This study aims to advance the understanding of the factors that contribute to PSMU. Utilising an online quantitative cross-sectional design allows future research to delve deeper into the relationships between fear of rejection, perceived social support and PSMU. The possibility of identifying hypotheses could guide future studies, contributing to a more comprehensive understanding of the factors that influence PSMU, thereby fulfilling the goal of this study.

Participants & Sampling

The study was conducted with prior ethics approval from the BMS ethical commission of the University of Twente (ethics approval request 230368). Participants were recruited using non-random sampling methods. Specifically, the method involved snowball and convenience sampling utilised in two ways. Firstly, surveys were posted on the website surveycircle.com and the SONA system of the University of Twente. Participants who completed the questionnaire via SurveyCircle and SONA received credit points for completing the survey. The number of credit points depended on how many times other participants had completed the survey. The SONA system offered rewards of 0.25 credit points. Secondly, the survey was posted on Instagram, WhatsApp, and Facebook within the researcher's existing network. The survey's post description encouraged social media users to complete the survey.

The study required a sample size 111, calculated using G-Power software based on the point biserial correlation model and t-test (Faul et al., 2009). The inclusion criteria for the study required participants to be university students with accounts on at least one social medium. Participants had to be between 18 and 25 years old and able to read English. The final sample did satisfy these requirements.

The sample included 120 participants (female = 88, male = 30, non-binary = 2). The mean age of the participants was 22.37 years old (*SD* = 1.54). 113 participants indicated their nationality lies in Europe, with four in Asia, two in the Middle East, and one in North America. Regarding education, 34 participants followed a research university's bachelor's programme. Thirty-four participants followed an applied university's bachelor's programme, and 52 were master's students.

Materials

Using standardised questionnaires with established psychometric properties ensured reliable measurement of the constructs. Three questionnaires were used in this study. These questionnaires were selected based on their established psychometric properties, wide use in previous research, and ability to comprehensively capture the specific constructs of interest.

The survey was created and administered using the Qualtrics online tool accessed via the University of Twente's website (https://utwentebs.eu.qualtrics.com/), ensuring a standardised and convenient data collection process. The survey is visible in Appendix A. The first section of the questionnaire consists of four demographic questions. The latter three sections include the Bergen Social Media Addiction Scale, the Multidimensional Scale of Perceived Social Support, and the Rejection Sensitivity Questionnaire, respectively (Appendix A).

The Bergen Social Media Addiction Scale

The initial questionnaire presented to the participants was the Bergen Social Media Addiction Scale, developed to assess problematic Facebook use but later generalised for assessing problematic use of all social media platforms (Andreassen et al., 2012; Andreassen et al., 2016). It is a 5-point Likert scale with six items ranging from 1 (*Very Rarely)* to 5 (*Very Often*). An example question was: 'You spend much time thinking about social media or planning how to use it'. Higher test scores suggest a higher PSMU level (Andreassen et al., 2016). The psychometric properties of the Bergen Social Media Addiction Scale (BSMAS) were validated in a sample of 18 to 54 years old participants by Pontes et al. (2016). The combined psychometric evaluation in the study of Leung et al. (2020) pointed towards satisfactory internal consistency with a Cronbach's alpha of .97 and intra-class correlation was .86, showing good reliability of cluster ratings (Koo & Li, 2016; Tavakol & Dennick, 2011). This study reported a Cronbach's alpha of .84 for the BSMAS.

The Multidimensional Scale of Perceived Social Support

The second questionnaire used in the integrated survey comprises the 12-item Multidimensional Scale of Perceived Social Support (MSPSS) to measure the perceived social support of individuals on three levels: support from family, friends, and a significant other. The items of the MSPSS scale were rated on a 7-point Likert-type scale, ranging from 1 (*Very Strongly Disagree)* to 7 (*Very Strongly Agree)*, with higher scores indicating higher levels of perceived social support (Zimet et al., 1988). An example statement that required answering in

the questionnaire was: ‘There is a special person who is around when I am in need’. The MSPSS scale has been extensively used in more than 8,000 prior studies measuring social support (Tindle et al., 2022). The MSPSS scale demonstrated good internal reliability with a Cronbach’s alpha of .96, showed excellent construct validity, and confirmed the three-factor structure employing factor analysis (Brugnoli et al., 2022). This study reported a Cronbach’s alpha of .89 for the MSPSS, indicating good reliability (Tavakol & Dennick, 2011).

The Rejection Sensitivity Questionnaire

Lastly, the Rejection Sensitivity Questionnaire was used to measure participants’ fear of rejection (Downey & Feldman, 2013). The RSQ consisted of 18 questions that were grouped into pairs and used to measure rejection sensitivity in general samples of college students (Downey et al., 1996). The RSQ items were scored on a 6-point Likert-like scale, ranging from 1 (*Very Unconcerned*) to 6 (*Very Concerned*) for the first statement that belongs to the question and from 1 (*Very Likely*) to 2 (*Very Unlikely*) for the second item. The total score is calculated by adding the scores on each question. A higher score on the RSQ scale indicates a greater rejection sensitivity, conceptualised as tending to fear rejection (Leary, 2015). A satisfactory concurrent validity of .83 depicted a good correlation between two test measurements conducted at different times (Downey & Feldman, 1996). This study reported a Cronbach’s alpha of .93 for the RSQ, indicating good internal consistency (Tavakol & Dennick, 2011). An example statement is, ‘You ask your parents to come to an occasion important to you’. The first part of the question is: ‘How concerned or anxious would you be over whether or not your parents want to come?’ The second item is ‘I would expect that they would want to come’.

Procedure

Participants were recruited for the online survey using either the social media post or survey description posted on the UT SONA software or SurveyCircle webpage. Social media participants could access the survey via a link in the post, which directed them to Qualtrics. Those recruited through the SONA system and SurveyCircle had to enrol in the survey before accessing it on Qualtrics. All participants received the same survey, which began with an informed consent form (Appendix B) followed by demographic questions regarding age, education level, nationality, and gender. The first block of the questionnaire comprised the six Bergen Social Media Addiction Scale questions. The following 12 questions encompassed the Multidimensional Scale of Perceived Social Support. The last 18 questions included the Rejection Sensitivity Questionnaire. The questionnaire encompassed 40 questions and took 15

to 20 minutes to finish. The answers were automatically saved in Qualtrics when the participants completed the survey. The SONA participants were automatically rewarded their credit points after completing the questionnaire, and the SurveyCircle participants could insert the code provided at the end of the survey in the SurveyCircle tool to obtain credit points.

Data Analysis

The study analysed the relationship between fear of rejection as a dependent variable and PSMU as an independent variable, PSMU as a dependent variable, and fear of rejection as an independent variable to assess hypothesis 1. For hypothesis 2, perceived social support was the independent variable, and fear of rejection was the dependent variable. Hypothesis 3 included testing perceived social support as an independent variable on PSMU. The analyses were conducted using the statistical software programme R. The reliabilities of the BSMAS, MSPSS, and RSQ questionnaires were tested and evaluated by reporting Cronbach's alpha per questionnaire. An alpha of $\alpha > 0.70$ was set as the minimum acceptable value (Tavakol & Dennick, 2011). Pearson's product-moment correlation coefficients were calculated to address the correlations between the variables. Linear regression analyses were conducted to test the first, second, and third hypotheses. A multiple linear regression analysis tested the fourth hypothesis, in which perceived social support is supposed to moderate the relationship between fear of rejection and PSMU negatively. The cut-off point for statistical significance of the linear models was set at $p = .05$ (Andrade, 2019).

Results

Data Preparation

Initially, a total of 175 participants filled out the survey. Forty-three (24.57 %) incomplete responses were excluded from the data due to not answering numerous questions. Three outliers were identified in the MSPSS via boxplots and were excluded from the data (Appendix C). Seven participants were excluded from the data for not answering the complete RSQ questionnaire. These final exclusions resulted in a total sample of 120 participants and a total exclusion of 55 participants (31.42 %). The total score of the MSPSS was converted to a rank-based score after applying the Shapiro-Wilk test, which pointed toward violating the normality assumption, $W = .06$, $p < .001$ (Ghasemi & Zahediasl, 2012). The VIF test and Pearson correlation coefficients showed possible multicollinearity in the MSPSS and RSQ

scores ($r(118) = -.48$, $p < .001$, *VIF* = 12,). Therefore, these scores were standardised to meet the assumption of the absence of multicollinearity (Peck, 2018; Pek, 2008).

Descriptive Statistics

The total scores of the BSMSA, RSQ and MSPSS were described, summarised, and depicted in Table 1. The standard deviations indicate the variability around the means, highlighting the dispersion of scores. The mean scores for the three questionnaires are also described across education level and gender.

Table 2 shows the overview of the mean scores on the questionnaires per education level and gender. There are minimal differences among the questionnaire scores per education level, where the MSPSS score in the master students had the highest discrepancy compared to bachelor students. A non-planned t-test on the total score on the BSMAS, RSQ and MSPSS by gender depicts a significant difference between the female and male scores on the BSMAS, $t(67) = -3.16$, $p = .003$, and the RSQ, $t(48) = -2.16$, $p = .004$. Comparison with the non-binary sample could not yield significant differences due to the limited sample size of 2.

According to Gicnac et al. (2016), Pearson's moment correlation analyses revealed a significant moderate positive relationship between the BSMAS score and RSQ score, $r(118) = .38$, $p < .001$. A significant moderate negative relationship exists between the MSPSS score and the RSQ score, $r(118) = -.48$, $p < .001$.

Additionally, a weak, non-significant negative correlation exists between the BSMAS and MSPSS scores (Schober et al., 2018).

Table 1

Descriptive Statistics

	n	Mean	*SD*	Min	Max	*SE*
BSMAS	120	15.97	4.87	6	30	0.44
RSQ	120	97.23	28.56	38	167	2.61
MSPSS	120	68.91	9.83	44	84	0.90

Note: BSMAS is the Bergen Social Media Addiction Scale, RSQ is the Rejection Sensitivity Questionnaire, and MSPSS is the Multidimensional Scale of Perceived Social Support.

Table 2

Mean Scores on the Questionnaires and Standard Deviations per Gender and Education Level

	Mean			*SD*		
	BSMAS	RSQ	MSPSS	BSMAS	RSQ	MSPSS
Research University bachelor's programme	15.52	96.62	67.85	5.00	28.34	8.56
Applied University bachelor's programme	15.56	95.88	67.18	4.59	29.83	11.40
Master's programme	16.51	98.52	70.73	4.99	28.37	9.37
Male	13.73	87.17	70.70	4.00	29.07	9.05
Female	16.66	100.26	68.47	4.95	27.27	9.99

Note: BSMAS is the Bergen Social Media Addiction Scale, RSQ is the Rejection Sensitivity Questionnaire, and MSPSS is the Multidimensional Scale of Perceived Social Support.

Hypothesis Testing

Hypothesis 1, 2 and 3 were tested using linear regression analyses. A multiple linear regression analysis was utilised to test hypothesis 4. The first test evaluated the strength and direction of the relationships between the variables in the model. The last test examined the relationship between the total scores of the BSMAS, MSPSS, and RSQ and the interaction effect between the MSPSS and BSMAS scores to test hypothesis 4.

The linear regression analysis examined the main effects to determine the predictive relationship between the dependent and independent variables. This analysis showed a significant positive relationship between the BSMAS score and the RSQ score, $R^2 = .15$, $F(1,118) = 20.93$, $p < .001$. Moreover, the MSPSS score significantly negatively affected the RSQ score $R^2 = .23$, $F(1,118) = 35.92$, $p < .001$. The MSPSS score did not significantly affect the BSMAS score $R^2 = .03$, $F(1,118) = 3.35$, $p = .07$.

These findings indicate a significant positive relationship between the BSMAS score and the RSQ score, indicating that an increase in fear of rejection also leads to an increase in PSMU. The MSPSS score had a significant impact on the RSQ score. This implies that higher levels of perceived social support are associated with lower fear of rejection. However, the MSPSS does not significantly affect the BSMAS score. In other words, higher levels of perceived social support do not necessarily lead to lower levels of problematic social media use.

Lastly, a multiple linear regression analysis was used to establish the interaction effects between the variables in the model. The interaction term between MSPSS and RSQ was not significant, $t(116) = -1.13$, $p = .26$. The outcomes of this analysis show that the overall model was significant, $R^2 = .16$, $F(3, 116) = 7.55$, $p < .001$.

The confidence intervals and directions of the relationships among the regression analysis outcomes are depicted in Table 3. The correlation analyses and multiple linear regression analysis results are applied to the research model in Figure 2.

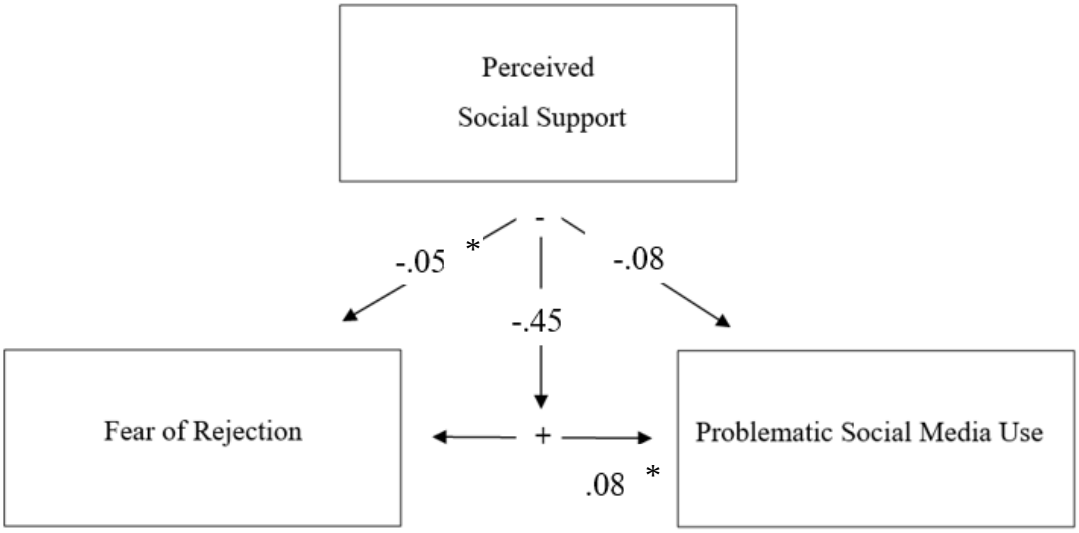
Table 3

Multiple Regression Analysis Outcomes

	b	*SE*	*CI* 2.5%	*CI* 97.5%
BSMAS	15.74	0.46	14.85	16.65
MSPSS	0.36	0.47	-0.57	1.31
RSQ	2.11	0.48	1.17	3.06
RSQ:MSPSS	-0.45	0.40	-1.25	0.34

Figure 2

LR and MLR Results in the Research Model



Note: The depicted values are the b – coefficients of the LR and the MLR outcomes.

* Indicates a significant effect of p <.05.

Discussion

This study investigated the relationship between fear of rejection, perceived social support and PSMU among college students aged 18 to 25.

A positive relationship between fear of rejection and PSMU was identified, suggesting that higher fear of rejection is associated with higher levels of PSMU. These findings led to the acceptance of the first hypothesis that fear of rejection and PSMU are positively related in students. The article by Suler (2005) proposes a concept behind the social compensation hypothesis, which can help explain the positive relationship between fear of rejection and PSMU. Suler discusses the online disinhibition effect, which suggests that people compartmentalise themselves on the internet, leading to a reduced sense of responsibility for their online behaviour and a diminished sense of online authority compared to the real world. When people are less responsible for their behaviour and have a reduced sense of self, they can show or hide certain parts of themselves online. These factors may account for the perceived relative safety of online interaction compared to social interaction in the real world. Although Suler did not explicitly refer to fear of rejection, his theory offers insights into why specific individuals, especially those prone to fear rejection, may find it easier to communicate and engage in online environments. The relative safety and anonymity afforded by online interaction can create a perception of reduced social risk and fear of rejection. This perceived safety may lead individuals to seek social compensation through social media use to fulfil their social needs, ultimately increasing their risk of developing PSMU.

The significant negative effect of perceived social support on fear of rejection led to the acceptance of hypothesis 2. This relationship may be partially explained by Elliot et al.'s (2006) finding that fear of rejection can increase the motivation for social avoidance. Fear of rejection can also be predicted by experienced rejection, which causes one to wonder whether others genuinely care or understand their needs. This cognitive bias causes lower levels of perceived social support, which could start a vicious circle of lower levels of social support leading to higher levels of fear of rejection (Butler et al., 2007; Sarason, 2013). This interaction between the two variables could also explain the probable multicollinearity. Based on these findings, it is likely that the relationship also works the other way around, as found in this study; more social support leads to less fear of rejection. Unfortunately, the negative influence of high perceived social support on fear of rejection has not been widely researched. Therefore, the

theoretical framework behind the found relationship needs to be investigated more elaborately to provide a solid explanation of the findings.

The absence of a significant influence of perceived social support on PSMU led to the rejection of hypothesis 3. These findings contrast the results of Prievara et al. (2019), which show that higher levels of perceived social support lead to lower PSMU levels. It should be noted here that the current study assessed PSMU with the BSMAS, while Prievara et al. (2019) assessed general problematic internet use using the Problematic Internet Use Questionnaire (Demetrovics et al., 2006). Thus, the two studies capture different dimensions of related but distinct phenomena. Prievara et al. (2019) also use a broader age range for their study, including participants aged 14 to 24, while this study only includes participants aged 18 to 24. A younger sample group faces different life experiences and social and cultural influences (Wohlwill, 1970). Prievara et al.'s inclusion of a broader age range and use of a slightly different construct and measurement compared to the current study's range might have caused the discrepancy.

Furthermore, the current study did not find the hypothesised negative moderating effect of perceived social support on the relationship between fear of rejection and PSMU. The moderating effect of perceived social support on the relationship between fear of rejection and PSMU has not been studied before, leading to this novel result. The absence of moderation might be explained by the measurement and operationalisation of perceived social support, which may not have covered all essential aspects of social support that could moderate the relationship between PSMU and fear of rejection. The MSPSS measured perceived social support, including three subscales: friends, family and significant other. However, there is growing evidence that online social support provides effects associated with real-life social support when lower social support is related to higher fear of rejection (Cole et al., 2017; Indian & Grieve, 2014; Langens & Schüler, 2005). Social media platforms might serve as separate supportive groups, often perceived similarly to a group of friends (Aichner et al., 2021). Therefore, it might be that participants who perceive online social support answered the MSPSS based on online perceived support. However, Casale et al. (2022) found that online social support *negatively* moderates the relationship between PSMU and interpersonal fear, in which fear of rejection was a subcategory and PSMU. This study points towards an opposite moderating effect between the variables studied in this model when online social support is investigated instead of perceived social support. It could be possible that perceived online

social support unintentionally affected the outcomes of this research by having the opposite effect on the relationship between fear of rejection and PSMU compared to the hypothesised effect of perceived social support in this study but being measured within the same questionnaire. These studies indicate that online social support might be a distinct form of social support with different effects on the studied relationship. However, this research did not measure online social support distinctively.

Furthermore, higher levels of social support may not *decrease* the connection between fear of rejection and PSMU, but worrying about becoming isolated from one's social support network does *increase* the connection. This can be concluded since it is shown that worrying about having no access to one's social support network positively moderates the relationship between fear of rejection and PSMU (Lo et al., 2009; Ali et al., 2021).

Strengths, Limitations and Future Research

The strengths of this study lie in the online quantitative cross-sectional design and data analysis methods. This study design allows for efficient data collection from a large sample and provides insight into the factors associated with PSMU without high costs and data collection time. The online survey also tackles limitations associated with in-person interviews and allows for a more diverse sample population compared to an offline study design while identifying hypotheses for future studies (Wang & Cheng, 2020). Utilising (multiple) linear regression analyses allows for quantitative exploration of the hypotheses and, thus, relatively high validity of evidence of the associations between the tested variables (Lederer, 2021). The psychometrically validated scales used in this study also add to the reliability and validity of the collected data, ensuring accurate measurement of perceived social support, fear of rejection and PSMU (Yasir, 2016).

In this research, online social support was not measured as distinct from perceived social support, but online support was shown to have a positive moderating effect on the relationship between fear of rejection and PSMU (Casale et al., 2022). This information suggests that future research should measure online social support and perceived social support as separate variables, especially since online social support can be perceived as similar to real-life social support (Aichner et al., 2017). By doing so, the role of social support in the current research could be investigated more objectively while investigating the interplay between online social support and perceived social support.

Additionally, the study could be improved using a random sampling method instead of a non-random one. The latter sampling method was chosen because it enables direct targeting of participants without relying on random selection for their inclusion. This sampling procedure made it easier to target English-speaking, social-media-using participants between 18 and 25 years old. Nevertheless, the results obtained from the convenience or snowball sample could be biased since the people who chose to participate in the study may systematically differ from the general population. Therefore, the convenience and snowball sampling methods used in this study are likely not representative of the studied population. Increasing representativeness using random sampling techniques might have helped overcome this limitation (Howitt & Cramer, 2007). This sampling technique ensures that the sample includes individuals from different demographic groups with different attitudes toward social media, fear of rejection, or perceived social support. Thus, stratified sampling techniques might enhance the generalisability of the results.

Furthermore, this study indicates that gender potentially influences the variables fear of rejection and PSMU. An explanation for the gender difference in fear of rejection can be explained by Giovazolias and Paschalidi (2022), who found that women show higher levels of fear of rejection than men. The finding that women tend to experience significantly higher average levels of PSMU is supported by Baloğlu et al. (2020), who state that women are more likely than men to exhibit specific PUIP symptoms under which PSMU. It should be noted that the sample of this study only included two people who identify as non-binary. This minimal sample size is not a representative sample of the general population of people who identify as non-binary. More research is needed to confirm the findings of Rood et al. (2016) in this context, who state that gender-nonconforming individuals, such as non-binary people, are often the target of discrimination and societal rejection, causing expected rejection that leads to a higher fear of rejection. Therefore, further research is needed to objectively investigate the influence of gender on fear of rejection and PSMU.

A limitation of this study is that only a low percentage of the variance in the level of PSMU was explained by fear of rejection and perceived social support. Thus, it is likely that several other variables account for the degree of PSMU. The study by Steinfield et al. (2008) argues that individual characteristics of social media users play an essential role in the effects of social media on social connectedness and feelings of being socially supported. Additionally, neuroticism and extraversion are shown to be risk factors for developing social media addiction

(Blackwell et al., 2017). Multiple studies have pointed out that more internet use is connected to demographic factors, such as higher levels of air pollution and life dissatisfaction (Chern & Huang, 2018; Cruz et al., 2018). This study also shows how gender could influence the current research model. Including these personality and demographic factors in the analysis could have resulted in a more significant level of explained variance. This higher level of explained variance could lead to better predictions and more accurate models of the factors that influence PSMU (Van Den Berg, 2022). Future research could aim at investigating the effects of these factors on PSMU.

It should be pointed out that the questionnaire belonging to this study did not measure nationality. Instead, it measured continentality. Nevertheless, there could be variability within countries on a continent caused by cultural differences (Hanel et al., 2018). These cultural differences could alter the influence of social support networks (Kim et al., 2012), affecting the research outcomes. The failure to account for this variability by not considering nationality may have resulted in the loss of valuable information in the study.

In conclusion, future research should explore additional variables, such as personality traits and demographic factors, to better explain the variance in PSMU. Considering cultural differences within countries and including attention-test questions in the questionnaire would improve the validity and eliminate biases. Utilising probability sampling methods or stratified sampling techniques can enhance the sample's representativeness and increase the generalizability of the findings. These advancements and additions in research methodology will contribute to a more comprehensive understanding of the variables influencing PSMU.

Practical Implications

This research indicates that fear of rejection positively relates to PSMU in college students aged 18 to 25. Recognition of this relationship illuminates the mechanisms behind the development of PSMU. Knowing these mechanisms could help advance the development of targeted interventions by reducing fear of rejection and addressing adverse PSMU effects. The goal of these interventions would be for students to become more proactive in managing their social media use by learning how to cope with rejection sensitivity in ways other than using social media.

Furthermore, recognition of the link between fear of rejection and PSMU and the absence of the influence of perceived social support on this link could help mental health professionals provide appropriate support to students struggling with PSMU symptoms or fear

of rejection. Lastly, the findings of this study contribute to the field of study on PSMU, fear of rejection, and perceived social support.

In conclusion, this study contributes to understanding the relationships between fear of rejection, PSMU, and perceived social support in students aged 18 to 25. The findings support the positive relationship between fear of rejection and PSMU while highlighting the lack of significant influence of perceived social support on this relationship. The current study also supports the hypothesis that higher perceived social support leads to lower fear of rejection, while a higher level of perceived social support did not lower PSMU levels. The results have practical implications by allowing more targeted interventions and tailored mental health support, aiming to reduce fear of rejection and mitigate adverse effects of PSMU.

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Appendix

Appendix A: the Research Questionnaire

Start of Block: Demographic factors

Q2.1 What is your age

<18
18
19
20
21
22
23
24
25
> 25

Skip To: End of Survey If What is your age = <18

Skip To: End of Survey If What is your age = 20

Skip To: End of Survey If What is your age = > 25

Q2.2 In which continent lies your nationality?
Europe (1)

North America (2)

Asia (3)

Africa (4)

Middle East (4)

Oceania (5)

Q2.3 What level of education are you currently following?

Primary education (1)

Secondary education (2)

Applied University Bachelor's programme (3)

(Research) university Bachelor's programme (4)

Master's programme (5)

PhD (6)

Other (7)

Skip to: End of Survey: What is your highest level of education? = Primary education

Skip to: End of Survey: What is your highest level of education? = Secondary education

Skip to: End of Survey: What is your highest level of education? = Other

Q2.4 What gender do you identify as?

Male (1)

Female (2)

Prefer not to say (3)

Non-binary (4)

Other (5)

Bergen Social Media Addiction Scale

Q3.1 Here are six statements to consider. For each, answer: (1) very rarely, (2) rarely, (3) sometimes, (4) often, or (5) very often.

Q3.2 You spend a lot of time thinking about social media or planning how to use it.

Very Rarely (1)

Rarely (2)

Sometimes (3)

Often (4)

Very Often (5)

Q3.3 You feel an urge to use social media more and more.

Very Rarely (1)

Rarely (2)

Sometimes (3)

Often (4)

Very Often (5)

Q3.4 You use social media in order to forget about personal problems.

Very Rarely (1)

Rarely (2)

Sometimes (3)

Often (4)

Very Often (5)

Q3.5 You have tried to cut down on the use of social media without success.

Very Rarely (1)

Rarely (2)

Sometimes (3)

Often (4)

Very Often (5)

Q3.6 You become restless or troubled if you are prohibited from using social media.
Very Rarely (1)

Rarely (2)

Sometimes (3)

Often (4)

Very Often (5)

Q3.7 You use social media so much that it has had a negative impact on your job/studies
Very Rarely (1)

Rarely (2)

Sometimes (3)

Often (4)

Very Often (5)

Multidimensional Scale of Perceived Social Support

Q4.1 We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement

Q4.2 There is a special person who is around when I am in need.

Very Strongly Disagree (1)

Strongly Disagree (2)

Mildly Disagree (3)

Neutral (4)

Mildly Agree (5)

Strongly Agree (6)

Very Strongly Agree (7)

Q4.3 There is a special person with whom I can share my joys and sorrows.

Very Strongly Disagree (1)

Strongly Disagree (2)

Mildly Disagree (3)

Neutral (4)

Mildly Agree (5)

Strongly Agree (6)

Very Strongly Agree (7)

Q4.4 My family really tries to help me.

Very Strongly Disagree (1)

Strongly Disagree (2)

Mildly Disagree (3)

Neutral (4)

Mildly Agree (5)

Strongly Agree (6)

Very Strongly Agree (7)

Q4.5 I get the emotional help and support I need from my family.

Very Strongly Disagree (1)

Strongly Disagree (2)

Mildly Disagree (3)

Neutral (4)

Mildly Agree (5)

Strongly Agree (6)

Very Strongly Agree (7)

Q4.6 I have a special person who is a real source of comfort to me

Very Strongly Disagree (1)

Strongly Disagree (2)

Mildly Disagree (3)

Neutral (4)

Mildly Agree (5)

Strongly Agree (6)

Very Strongly Agree (7)

Q4.7 My friends really try to help me.

Very Strongly Disagree (1)

Strongly Disagree (2)

Mildly Disagree (3)

Neutral (4)

Mildly Agree (5)

Strongly Agree (6)

Very Strongly Agree (7)

Q4.8 I can count on my friends when things go wrong

Very Strongly Disagree (1)

Strongly Disagree (2)

Mildly Disagree (3)

Neutral (4)

Mildly Agree (5)

Strongly Agree (6)

Very Strongly Agree (7)

Q4.9 I can talk about my problems with my family.

Very Strongly Disagree (1)

Strongly Disagree (2)

Mildly Disagree (3)

Neutral (4)

Mildly Agree (5)

Strongly Agree (6)

Very Strongly Agree (7)

Q4.10 I have friends with whom I can share my joys and sorrows.

Very Strongly Disagree (1)

Strongly Disagree (2)

Mildly Disagree (3)

Neutral (4)

Mildly Agree (5)

Strongly Agree (6)

Very Strongly Agree (7)

Q4.11 There is a special person in my life who cares about my feelings.

Very Strongly Disagree (1)

Strongly Disagree (2)

Mildly Disagree (3)

Neutral (4)

Mildly Agree (5)

Strongly Agree (6)

Very Strongly Agree (7)

Q4.12 My family is willing to help me make decisions.

Very Strongly Disagree (1)

Strongly Disagree (2)

Mildly Disagree (3)

Neutral (4)

Mildly Agree (5)

Strongly Agree (6)

Very Strongly Agree (7)

Q4.13 I can talk about my problems with my friends.

Very Strongly Disagree (1)

Strongly Disagree (2)

Mildly Disagree (3)

Neutral (4)

Mildly Agree (5)

Strongly Agree (6)

Very Strongly Agree (7)

Start of Block: Fear of Rejection Questionnaire

Q5.1 On the next page, You have to indicate how concerned you would be in a situation, and if you would expect the situation to be true

Q5.2 You ask someone in class if you can borrow his/her notes.

	1- Very unconcerned/ Very likely (1)	2 (2)	3 (3)	4 (4)	5 (5)	6- Very Concerned/ Very Unlikely (6)
How concerned or anxious would you be over whether or not the person would want to lend you his/her notes? (1)						
I would expect that the person would willingly give me his/her notes (2)						

Q5.3 You ask your boyfriend/girlfriend to move in with you.

	1 - Very Unconcerned/ Very Likely (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 - Very Concerned/ Very Unlikely (6)
How concerned or anxious would you be over whether or not the person would want to move in with you? (1) I would expect that he/she would want to move in with me (2)						

Q5.4 You ask your parents for help in deciding what programmes to apply to.

	1 - Very Unconcerned/ Very Likely (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 - Very Concerned/ Very Unlikely (6)
How concerned or anxious would you be over whether or not your parents would want to help you? (1) I would expect that they would want to help me. (2)						

Q5.5 You ask someone you don't know well out on a date

	1 - Very Unconcerned/ Very Likely (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 - Very Concerned/ Very Unlikely (6)
How concerned or anxious would you be over whether or not the person would						

want to go out with you? (1) I would expect that the person would want to go out with me (2)	

Q5.6 You ask your parents for extra money to cover living expenses.

	1 - Very Unconcerned/ Very Likely (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 - Very Concerned/ Very Unlikely (6)
How concerned or anxious would you be over whether or not your parents would help you out? (1) I would expect that my parents would not mind helping me out. (2)						

Q5.7 After class, you tell your professor that you have been having some trouble with a section of the course and ask if he/she can give you some extra help.

	1 - Very Unconcerned/ Very Likely (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 - Very Concerned/ Vert Unlikely (6)
How concerned or anxious would you be over whether or not your professor would want to help you out? (1) I would expect that my professor would want to help me out (2)						

	1 - Very Unconcerned/ Very Likely (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 - Very Concerned/ Very Unlikely (6)
How concerned or anxious would you be over whether or not your friend would want to talk with you? (1) I would expect that he/she would want to talk with me to try to work things out (2)						

Q5.9 You ask someone in one of your classes to coffee.

	1 - Very Unconcerned/ Very Likely (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 - Very Concerned/ Very Unlikely (6)
How concerned or anxious would you be over whether or not the person would want to go? (1) I would expect that the person would want to go with me. (2)						

Q5.10 After graduation, you can't find a job, so ask your parents if you can live at home for a while.

	1 - Very Unconcerned/ Very Likely (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 - Very Concerned/ Very Unlikely (6)

How concerned or anxious would you be over whether or not your parents would want you to come home? (1) I would expect I would be welcome at home (2)	

Uk Q5.11 You ask your friend to go on a vacation with you over spring break.

	1 - Very Unconcerned/ Very Likely (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 - Very Concerned/ Very Unlikely (6)
How concerned or anxious would you be over whether or not your friend would want to go with you? (1) I would expect that he/she would want to go with me. (2)						

Q5.12 You call your boyfriend/girlfriend after a bitter argument and tell him/her you want to see him/her.

	1 - Very Unconcerned/ Very Likely (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 - Very Concerned/ Very Unlikely (6)
How concerned or anxious would you be over whether or not your boyfriend/girlfriend would want to see you? (1) I would expect that he/she would want to see me. (2)						

Q5.13 You ask a friend if you can borrow something of his/hers.

	1 - Very Unconcerned/ Very Likely (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 - Very Concerned/ Very Unlikely (6)
How concerned or anxious would you be over whether or not your friend would want to loan it to you? (1)						
I would expect that he/she would willingly loan me it. (2)						

Q5.14 You ask your parents to come to an occasion important to you.

	1 - Very Unconcerned/ Very Likely (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 - Very Concerned/ Very Unlikely (6)
How concerned or anxious would you be over whether or not your parents would want to come? (1)						
I would expect that my parents would want to come. (2)						

Q5.15 You ask a friend to do you a big favor.

	1 - Very Unconcerned/ Very Likely (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 - Very Concerned/ Very Unlikely (6)
How concerned or anxious would you be over whether or not						

your friend would do this favor? (1) I would expect that he/she would willingly do this favor for me (2)	

Q5.16 You ask your boyfriend/girlfriend if he/she really loves you.

	1 - Very Unconcerned/ Very Likely (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 - Very Concerned/ Very Unlikely (6)
How concerned or anxious would you be over whether or not your boyfriend/girlfriend would say yes? (1) I would expect that he/she would answer yes sincerely. (2)						

Q5.17 You go to a party and notice someone on the other side of the room and then you ask them to dance.

	1 - Very Unconcerned/ Very Likely (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 - Very Concerned/ Very Unlikely (6)
How concerned or anxious would you be over whether or not the person would want to dance with you? (1) I would expect that he/she would want to dance with me. (2)						

Q5.18 You ask your boyfriend/girlfriend to come home to meet your parents.

	1 - Very Unconcerned/ Very Likely (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 - Very Concerned/ Very Unlikely (6)
How concerned or anxious would you be over whether or not your boyfriend/girlfriend would want to meet your parents? (1)						
I would expect that he/she would want to meet my parents (2)						

We thank you for your time spent taking this survey.

Your response has been recorded.

Appendix B: Informed Consent

Dear participant,

Thank you for your interest in participating in my study. This questionnaire aims to explore the relationship between perceived social support, problematic social media use, and fear of rejection. The questionnaire consists of several multiple-choice questions related to your use of social media, your perceived level of social support, and your feelings of fear or anxiety related to rejection.

Your responses will be kept confidential and anonymous and will only be used for research purposes. The questionnaire should take approximately 15-20 minutes to complete. Your participation is entirely voluntary, and you may withdraw from the study at any time without penalty. The study has been approved by the BMS Ethics Committee. Your response will be anonymous. Personal information cannot be traced back to you by anyone and will not be shared with anyone beyond the researcher.

By completing this questionnaire, you will be contributing to our understanding of the complex relationships between perceived levels of social support, problematic social media use, and fear of rejection. Your participation may help us develop new strategies for promoting healthy social connections and reducing the negative effects of problematic social media use.

Thank you for your time and participation. If you have any questions or concerns, please do not hesitate to contact me.

Sincerely,

Marlin Klarenbeek

m.j.klarenbeek@student.utwente.nl

Please indicate whether the following statements are true to continue the survey

- I have read and understood the study information mentioned above
- I consent voluntarily to be a participant in this study and understand that I can withdraw from the study at any time
- I understand that taking part in this study involves completing the survey - I understand that taking part in this study involves answering multiple choice questions about my demographical situation, experiences regarding social media use, fear of rejection and perceived social support
- I understand that information will be used to contribute to understanding the relationship between problematic social media use, fear of rejection and perceived social support

⬭ Yes

⬭ No

Appendix C

Boxplot for Identifying Outliers in the MSPSS