

**Examining the Relationship Between University Students' Personality Traits, Perception of
Academic Stress, and Coping Mechanisms**

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Abstract

Background. Personality traits play an important role in understanding people's coping strategies. Students in particular must learn how to manage a variety of stressors, challenges, and a new environment in a healthy and productive way. Previous research has linked key personality traits like conscientiousness and neuroticism to problem-solving and avoidance-focused coping strategies, as well as stress perception. This study investigates the relationship between these personality traits and their impact on coping strategies and perceptions of academic stress. **Method.** A cross-sectional study was conducted, in which participants (N=70) were asked to complete the Big Five Inventory, which measured the expression of personality traits, the brief cope, which identifies the coping strategies individuals use to manage stressors, and the perceived stress scale, which measures the stress students perceive in the previous month. The study used linear regression and correlation analysis to investigate conscientiousness and neuroticism, as well as their relationship to problem-focused and avoidant coping, as well as perceptions of academic stress. **Results.** The analysis has identified a relationship between the use of avoidant coping strategies and the possession of conscientious or neurotic personality traits. In addition, an association was found between perceived stress and neuroticism among students. **Conclusion.** The study's findings suggest that having neurotic or conscientious personality traits is linked to the use of avoidant coping strategies, whereas having neurotic traits influences university students' perceptions of academic stress. It is suggested that researchers investigate the dynamics of avoidant coping, neuroticism, and increased perceived stress because they may reinforce each other.

Keywords: neuroticism, conscientiousness, coping strategies, cross-sectional study, stress

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1. Introduction

In modern times, stress is an omnipresent factor in many people's lives, whether at home, at work, or in students' daily activities when encountering novel situations or studying for an exam. If unmanaged, high levels of stress have a number of detrimental effects on people, including a decline in performance and adverse effects on mental health (Pascoe, 2019). Numerous researchers have previously made an effort to investigate the various sources and causes of stress experienced by academics and students (Ross et al., 1999). Students' mental health has been found to be most negatively impacted by academic stress in particular (Pascoe, 2019). According to a systematic review study by Storrie et al. (2010), there is a significant increase in students with mental illnesses worldwide. The first onset of mental illness occurs in 49 percent of students during university, and the level of distress among students is very high, with 83 percent of students being moderately or severely stressed (Storrie et al., 2010). The study suggests that students did not receive adequate assistance from university staff, and barriers to seeking help were identified, resulting in an increase in mentally ill or overly stressed students failing to seek help (Storrie et al., 2010). Considering that students are unique individuals with a variety of personality traits and characteristics, there is no universal solution to the aforementioned issue. This emphasizes investigating personality traits relationship with coping strategies, to comprehend how students manage academic stress in accordance with their individual needs and unique personalities. This knowledge is especially useful when creating new interventions to bolster or undermine maladaptive or adaptive coping mechanisms.

The use of coping mechanisms is essential for managing stress and the way one perceives it. (Lazarus & Folkman, 1984). In order to comprehend the increase in stress and mental illness in

students lives and provide university students with the necessary assistance in their daily lives, it is crucial to understand what influences an individual's choice to use specific coping mechanisms. Certain coping strategies, such as problem-focused coping, have been linked to a decrease in stress , whereas other strategies, such as avoidance, eventually increase stress levels and thus negatively impact mental health (Carnicer & Calderon, 2012). Different Big Five personality traits, including conscientiousness, neuroticism and openness, have been shown to be associated with differences in how stress is experienced and how coping mechanisms are chosen (Bartley & Roesch, 2011). According to research by Cohen et al. (1999), characteristics and personality traits such as neuroticism and conscientiousness can affect how people tend to cope.

1.1 Coping Mechanisms

Lazarus and Folkman (1984) suggest that coping mechanisms can be both behavioral and cognitive methods used by people to deal with internal or external circumstances, situations and other potential demands of the environment that the person perceives as stressful. Coping strategies are frequently divided into problem- and emotion-focused coping mechanisms, as well as avoidant coping strategies.

By attempting to directly address the stressors that are causing the stress, people engage in problem-focused coping (Ageing, 2015). This implies that actions are taken to change the situation and reduce the amount of stress caused by either an internal or external source. In practice, measures such as planning, suppression of competing activities, restraint coping, or asking for instrumental support from others can all be viewed as different ways for individuals to express problem-focused coping (Folkman & Moskowitz, 2004). For instance, students who employ more problem-focused coping strategies are linked to a higher positive mood and quality of life (Shermeyer & Morrow, 2018).

However, emotion-focused coping refers to a process by which an individual actively controls their emotional reaction to a stressful circumstance without addressing the underlying causes of the stressors or the problem itself. This can be helpful in circumstances like health problems and other uncontrollable challenges where the person cannot actively manage the stressor, and it is therefore inevitable (Folkman & Lazarus, 1980). This method has been shown in studies to increase positive affect as well as positive thoughts in individuals (Juth & Dickerson, 2015). Emotionally focused coping strategies have been linked to behaviors such as radical acceptance and forgiveness (Worthington & Scherer, 2004). The concept of forgiveness, on the other hand, has been linked to the encouragement of health resilience and the reduction of health risks, according to a study by Worthington & Scherer (2004).

Finally, according to Holohan et al. (2005), avoidant coping strategies are mental and physical attempts to minimize, deny, or engage in other avoidant behavior when dealing with stressors. When coping with a stressor, avoidant coping behaviors include things like drug use, self-distraction, denial, and behavioral disengagement (Carver, 1997). These behaviors have been connected to both an increase in stress and depressive symptoms. In addition, a higher generation of stress is associated with avoidant coping strategies (Holohan et al., 2005). This is because avoidance coping mechanisms enable stressors to continuously fortify themselves over time. This leads to possible actions like emotional outbursts can enrage nearby people, including friends and family (Holohan et al., 2005). Avoidance coping was found to be positively correlated with negative affect and negatively correlated with positive affect in a study involving university students (Hasida, 2009). It is important to note that people frequently combine several types of coping strategies rather than choosing one over the other in different situations, and that their behavior varies depending on the situation. Henceforth, it is even more crucial to find out which personality traits

influence students' choice of coping mechanisms and the variations in how they perceive stress, especially as the literature is still lacking in that regard.

1.2 Personality and Coping Strategies

When examining coping mechanisms more closely, it is evident that personality traits and personality in general greatly affect the decisions and actions that are taken to manage stress (Carver, 2009). According to the *APA Dictionary of Psychology*, personality traits are defined as essentially consistent, stable, and persistent internal characteristics that are a result of an individual's behavior, attitudes, and feelings.

Researchers frequently look into the characteristics of neuroticism and conscientiousness in particular to predict outcomes and how people handle stress. The conscientiousness and neuroticism traits were applied in a recent study by Varo et al. (2023) to examine the relationship between personality types, coping strategies, and coping efficiency among college students. The aforementioned characteristics appear to have an impact on the coping mechanisms selected as well as how successful they are at reducing academic stress (Varo et al., 2023). Academic stress is defined as the psychological state that results from a student's self-imposed and continuous social pressure in a school environment, exhausting the student's psychological reserves (Misra & Castillo, 2004). Academic stress has frequently been positively associated with depression and other negative mental and physical health outcomes (Zhang & Gao, 2022).

Understanding how personality and thus personality traits are associated with or shape how people deal with stress has become increasingly important, in particular in view of the traits of conscientiousness and neuroticism that have been frequently discussed in research (Bartley & Roesch, 2011). It has been established that individuals that score high on conscientiousness often show the tendency to be reliable, diligent, self-determined, and able to delay gratification and

impulse control (Bartley & Roesch, 2011). Conscientiousness can also be described as being consistent in thinking, feeling, and behaving across a time span in which these characteristics are needed (Roberts et al., 2009). In contrast, neuroticism has been defined as being prone to negative emotional states when faced with frustration, threat, and stress, which means that an individual reacts more strongly towards setbacks, stress, and frustration (Lahey, 2009). Besides that, it can also lead to various maladaptive outcomes, such as negative mental and physical health outcomes, as well as a reduction in quality of life outcomes (Lahey, 2009). Neuroticism has been associated with negative coping strategies like wishful thinking and withdrawal, which can be considered maladaptive ways of dealing with stress (Connor-Smith & Flachbart, 2007). In contrast, problem-focused coping characteristics like resilience and self-efficacy have been repeatedly associated with conscientiousness (Connor-Smith & Flachbart, 2007). As mentioned before, these personality traits are valuable predictors in understanding the choice of coping mechanism when individuals encounter stress. Having an understanding of how personality traits shape the coping strategies of students and their perception of stress is crucial in bringing further insight into how students handle academic stress and problems that arise during their careers.

This is new in this field of research because it highlights the significance of personality traits like neuroticism and conscientiousness for better understanding the variations in university students' perceptions of academic stress and coping mechanisms.

1.3 The Present Study

Prior studies have highlighted a range of academic stressors that university students face, as well as the detrimental impacts of stress on their academic performance and mental health. Additionally, personality factors have been found to be significant in relation to coping techniques and how stress is perceived. Investigating these factors in the context of university students may

therefore present novel opportunities for developing a setting where students and academics thrive and have coping mechanisms that are flexible and long-lasting when dealing with academic stress. As a result, the research question, and thus the topic of this study, is: "How are personality characteristics associated with students' perceptions of academic stress and choice of coping strategies?" The purpose of this study is to investigate how conscientiousness and neuroticism affect coping strategies and students' perceptions of stress. This leads to the following hypotheses:

H1a: Higher scores on conscientiousness are associated with more problem-focused coping strategies.

H1b: Higher scores on neuroticism are associated with less problem-focused coping strategies.

H1c: The effect of conscientiousness on problem-focused coping strategies is moderated by the level of neuroticism.

H2a: Higher scores on neuroticism are associated with more avoidant coping strategies.

H2b: Higher scores on conscientiousness are associated with less avoidant coping strategies.

H3a: Students that score higher on neuroticism perceive more stress than students who score lower on neuroticism.

H3b: Students that score lower on conscientiousness perceive more stress compared to people with higher scores on conscientiousness.

2. Methods

2.1 Design

The study is designed as a cross-sectional research. Because of the cross-sectional nature of this study, survey data were only collected once. A quantitative online survey was carried out to investigate the research question, hypothesis, and variables.

2.2 Participants

In this study, the strategy of convenience sampling was made use of. Most of the study's participants were recruited through the University of Twente's SONA system. The SONA Platform enables researchers to publish their studies and students, as well as other individuals, to participate in those studies for credit, which is needed in order to successfully complete their bachelor's degree. Students were also recruited via other platforms, such as WhatsApp and Instagram, where they could participate in the study by clicking on a link to the study that included a brief description of the study. Being a university student, speaking English fluently, and being of legal age were inclusion criteria for participation in this study. This study was approved by the BMS ethics committee of the University of Twente and conducted in November 2023.

2.3 Procedure

To collect data for this study, a survey was distributed that was created using Qualtrics, a tool that assists in the creation of virtual surveys. The survey consisted of several scales that examined variables based on previously established hypotheses. Participants were given a link to the study via the SONA website or by sharing the information and link on social media platforms like WhatsApp and Instagram in order to participate in the study. The purpose and subject matter of the

study were explained to the participants once they had accessed the page. After that, participants were asked whether they understood all of the previously mentioned information and whether they gave their informed consent for the use of their data (see Appendix A). Furthermore, they had to affirmatively state that their participation in this study was entirely voluntary. Once an agreement was established, the participants were asked regarding their nationality, age, gender, and educational background. Participants were then required to begin completing the content-related questionnaires. After completing the questionnaire and the study, the students were thanked for their participation and reminded that they could contact the researchers at any time if they had any questions or concerns.

2.4 Measures

2.4.1 Neuroticism and Conscientiousness

The 44-item Big Five Inventory Scale (BFI), which evaluates personality traits along five dimensions, was the first scale to be used. The participant had the option of strongly agreeing or strongly disagreeing and answer choices in between, such as slightly agreeing or disagreeing, on a 5-point Likert scale, with each of the 44 statements based on how well they match their personality. Only the neuroticism and conscientiousness dimensions, or personality traits were used in this study based on the hypotheses that were set. It has been demonstrated that the BFI has strong convergent and discriminant validity (John & Srivastava, 1999). With a Cronbach's alpha of 0.83, the neuroticism subscale, which consists of eight distinct statements, has a high level of internal consistency (Arteberry et al., 2014). This also applies to the conscientiousness variable, which has a Cronbach's alpha of 0.81 (Arteberry et al., 2014). According to John & Srivastava (1999), examples of items for the neuroticism variable and the conscientiousness trait are the following: "I see myself as someone who can be tense" and "I see myself as someone who is a reliable worker". Participants

were then asked to rate their agreement with such statements on a 5-point Likert scale that runs from "disagree strongly" to "agree strongly" for each of the two subscales.

2.4.2 Coping

The Brief Coping is designed to measure different ways of measuring effective and ineffective ways of responding to a stressor. The scale can help determine one's coping strategies such as problem-focused, emotion-focused, or avoidance-focused coping strategies (Carver, 1997). The Brief Coping consists of 28 items in which facets of the three different coping styles are presented. The participant is presented with statements that are supposed to refer to a recent hardship in their life, such as "I've been turning to work or other activities to take my mind off things", and has the opportunity to answer on a 4-point Likert Scale ranging between possible answers from "I haven't been doing this at all" to "I've been doing this a lot" (Carver, 1997). Studies have shown that the Brief Coping has good psychometric value, and was able to assess the coping strategies of medical students (Yusoff, 2010). The study has also reported that the total Cronbach's alpha of the Brief Coping was 0.85, and all the items have been shown to have acceptable internal consistencies by having Cronbach's alphas higher than 0.70 (Yusoff, 2010).

2.4.3 Perceived Stress

The Perceived Stress Scale 10 (PSS 10), was the last scale to be employed. The PSS 10 comprises ten items that gauge an individual's perception of how stressful their life or current circumstances have been in the last month. The PSS 10 has demonstrated internal consistency reliability, factorial validity, and hypothesis validity in a review study by Lee (2012). Other researchers have recently discovered a Cronbach's alpha coefficient of 0.72, indicating that the PSS is internally consistent and a reliable tool for measuring students' perceived stress (Robabe & Masoud, 2017). The ten items ask participants questions about their feelings and thoughts over the

previous month. "In the last month, how often have you felt that you were unable to control the important things in your life?" is one example of an item included (Cohen & Kamarack, 1983). Again, a 5-point Likert scale was employed, with 0 representing "never" and 4 representing "very often."

2.5 Data Analysis

2.5.1 Data Preparation

R Studio (R version 4.3.2) was used to analyze the data. Please refer to Appendix I for the R script used in this study. To begin with, all the incomplete responses were removed from the data. Moreover, participants with missing data were removed from the data set. Then, demographic variables had to be coded and labeled such as "age" and "gender" of the participants. After that, items on the Big Five Scale and the PSS 10 had to be reverse-coded. In total, 6 items of Big Five were reverse coded, and 4 items of the PSS 10. Following, all items from the scales were summed and named to create 3 variables the researcher can work with.

2.5.2 Descriptive Statistics and Psychometric Properties

In order to explore the data, the researcher looked at the demographics of the participants and the scale descriptions that have been calculated. Following that, parametric assumptions were tested. The statistical assumptions of normality, equal variance, linearity, and independence were tested and further analyzed. To test the assumption of normality, a Shapiro Wilk test was employed.

For the assumption of equal variance, the Levene's test was used. For testing the assumption of linearity scatter plots were created for the different variables. Furthermore, the assumption of independence was analyzed by creating scatterplots for the different descriptive variables that are used in the study.

2.5.3 Hypothesis Testing

A linear regression analysis was used to examine the first (H1a) and second (H1b) hypotheses, which discuss the relationship between greater scores of the independent variables of neuroticism or conscientiousness and more or less problem-focused coping strategies, being the dependent variables (DV). A moderated linear regression analysis was performed for hypothesis 1C, wherein the neuroticism variable moderates the effect of conscientiousness on problem-focused strategies.

Additionally, a linear regression analysis was done for the second hypothesis (H2a), which states that more avoidant coping strategies are linked to higher neuroticism scores. This also applies to hypothesis 2b: “Higher scores on conscientiousness are associated with less avoidant coping strategies.”

After checking for normality between neuroticism and stress, the assumption was violated so the researcher had to use the Spearman's rank correlation. Thus, the Spearman's rank correlation coefficient was respectively used for hypotheses 3a and 3b, to investigate the effect of neuroticism or conscientiousness scores on the stress perception of students.

3. Results

3.1 Descriptive Statistics

Out of the 94 individuals who initially participated in the study, 24 had to be excluded as they fell below the required response rate. Henceforth, there were 70 participants in the final sample, of whom 15.7% identified as male, 78.5% as female, 2.9% as non-binary/third gender, and 2.9% preferred to not disclose their gender identity. Further details about the sample's demographics and descriptives are provided in Table 1.

Table 1*Characteristics of Participants (N=70)*

	N	Percentage (%)
Gender		
Male	11	15.7%
Female	55	78.5%
Non-Binary/ third gender	2	2.9%
Prefer not to say	2	2.9%
Age		
Mean	21.29	
SD	2.098	
Nationality		
Dutch	14	20%
German	39	55.71%
Other	17	24.28%
Study Level		
Bachelor student	54	77.14%
Master student	16	22.86%
PhD student	0	0

On the conscientiousness scale, the sample mean is 28.88 with a standard deviation of 10.14. The distribution of the sample was between a minimum of 15 and a maximum of 39. The mean for the neuroticism scale was 24.72, with a standard deviation of 9.72, meaning that it was deemed average. In addition, the sample appears to be under more stress than the average, as indicated by the stress scale's mean value of 32.52 and SD of 5.08 as in Table 2.

Table 2

Descriptive Statistics for Conscientiousness, Neuroticism, and Stress

	Mean	SD
Conscientiousness	28.88	10.14
Neuroticism	24.72	9.72
Stress	32.52	5.08

3.2 Hypothesis Testing

3.2.1 Linear Regression Analysis

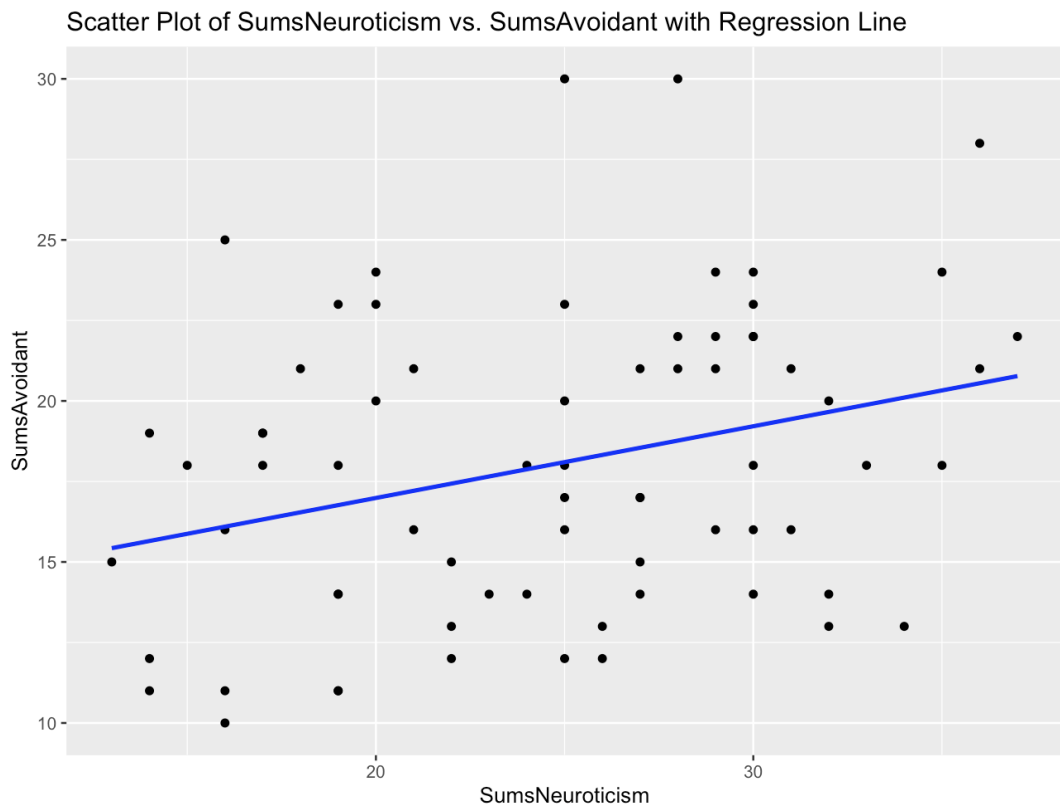
3.2.1.1 Conscientiousness and Neuroticism on Problem-focused Coping Strategies

Neither conscientiousness ($B = 0.19$, $SE = 0.12$, $t(65) = 1.66$, $F(1, 65) = 2.75$, $p = 0.10$), nor neuroticism ($B = -0.20$, $SE = 0.10$, $t(66) = -1.95$, $p = 0.06$) was significantly positively associated with pfc. If anything, neuroticism was marginally negatively associated with pfc. Further, there was also no significant interaction effect ($B = -0.01$, $SE = 0.02$, $t(63) = -0.75$, $p = 0.46$), suggesting that neuroticism does not moderate the relationship between conscientiousness and pfc. The overall F-statistic is marginally significant. In this sample, the residual standard error was 5.35, and the developed model only partially explained the variance in the dependent variable ($R^2 = 0.04$, Adjusted $R^2 = 0.03$)

3.2.1.2 Neuroticism and Conscientiousness on Avoidant Coping Strategies

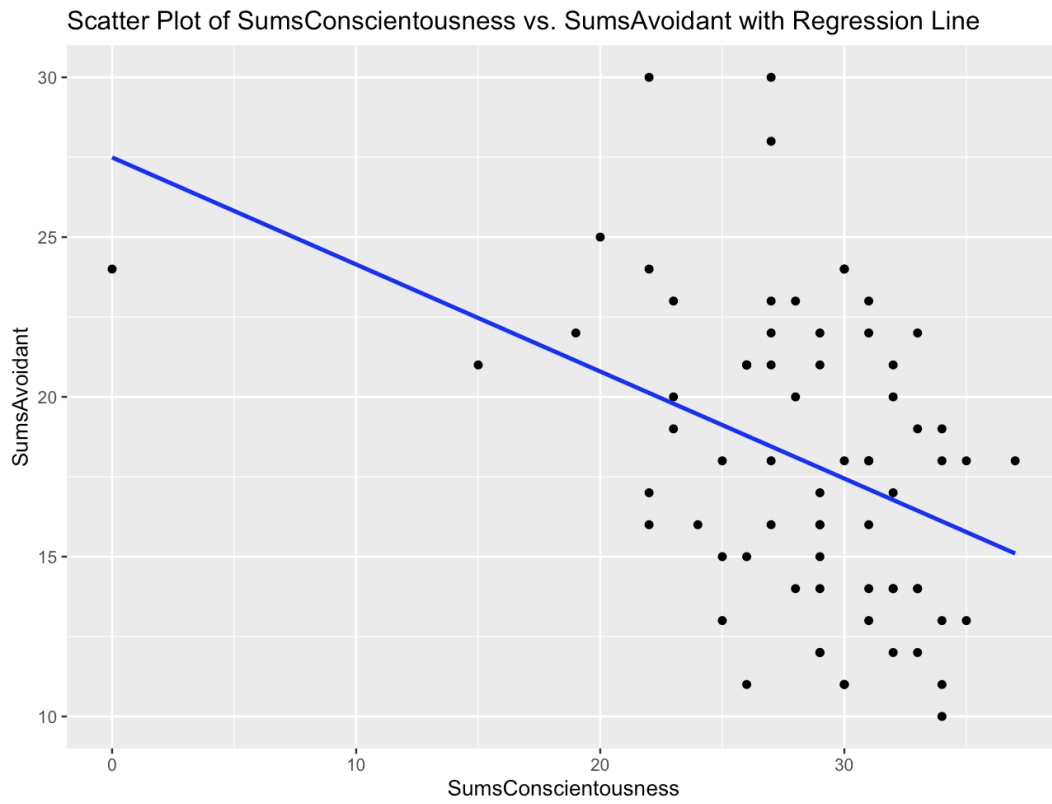
The outcome of the analysis yielded significant results. Importantly, the coefficients of neuroticism on avoidant coping strategies were statistically significant ($B = 0.22$, $SE = 0.09$, $t(68) = 2.61$, $p = 0.01$). These findings provide support for H2a. According to the results, each unit increase in neuroticism leads to a 0.22 increase in the use of avoidant coping strategies. However, it has to be acknowledged that the multiple R-squared of 0.09 and adjusted R-squared of 0.08 suggest that only a small proportion of the variability in avoidant coping strategies is accounted for by neuroticism. Additionally, a scatter plot was created to further visually demonstrate the outcome of the analysis (see Table 3).

Table 3



In line with H2b, the analysis resulted in a negative effect of conscientiousness on avoidant coping strategies ($b = -.33$, $t(68) = 10.01$, $p < .001$). This indicates that people with higher levels of conscientiousness engage less in avoidant coping behavior (see figure 4).

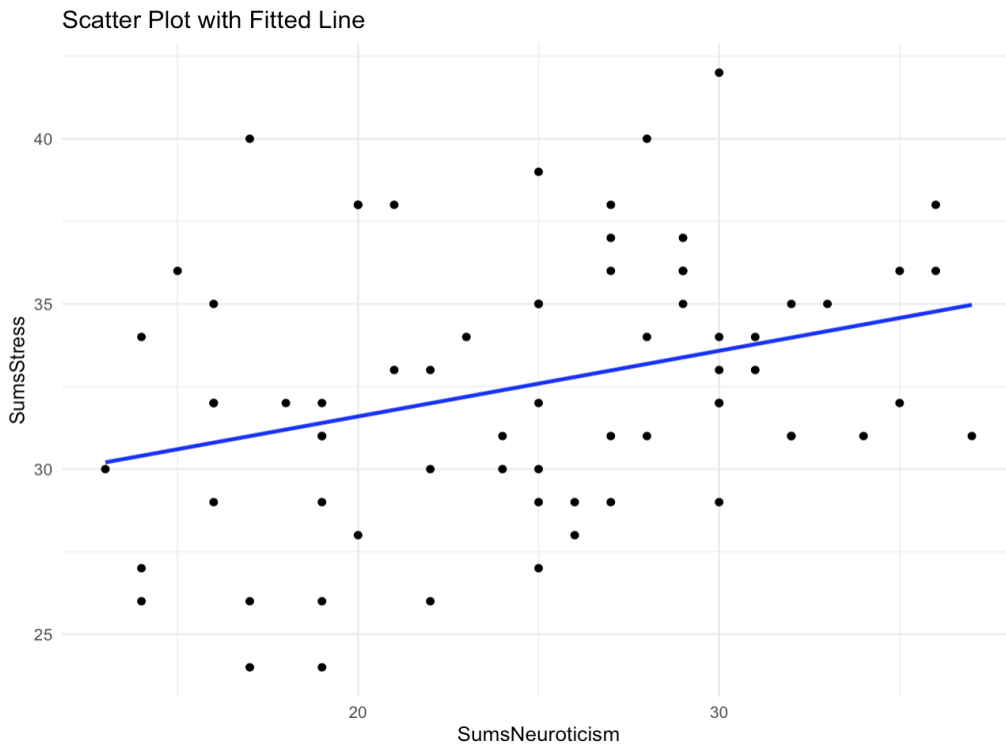
Figure 4



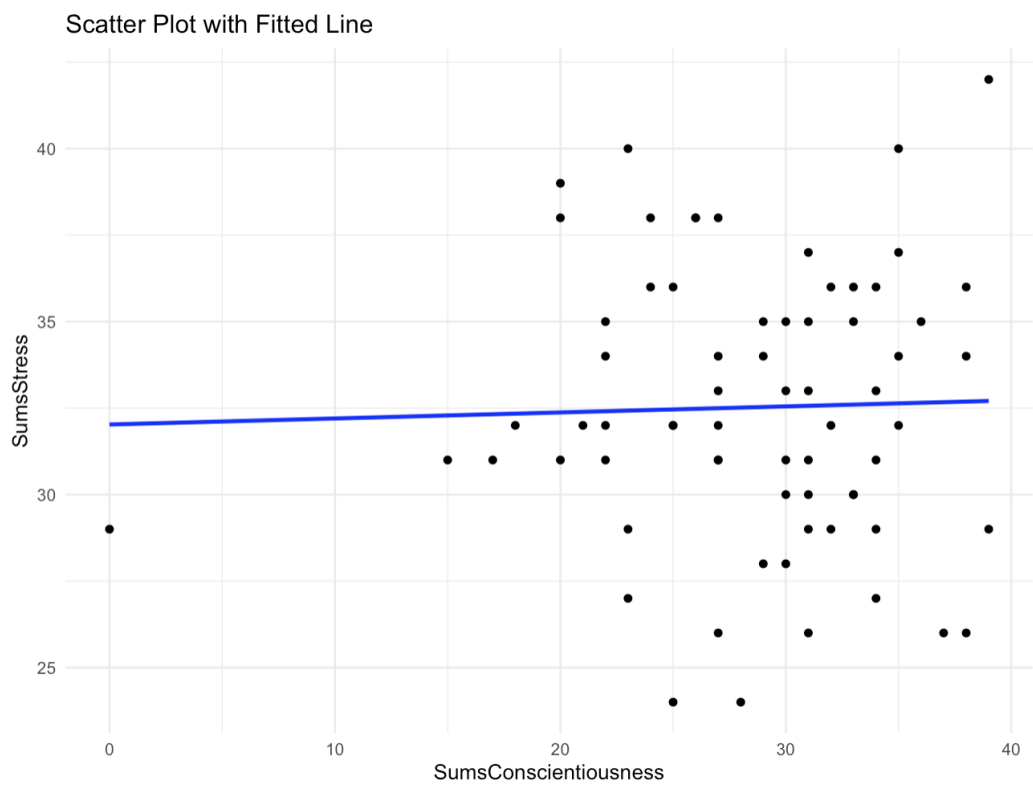
3.2.2 Spearman's Rank Correlation

3.2.2.1 Neuroticism and Conscientiousness relationship on Perceived Stress

In accordance with the hypothesis, the Spearman's rank Correlation analysis yielded a significant positive correlation between neuroticism scores and perceived stress ($\rho = 0.31$, $p = 0.01$). The results indicate that individuals with higher scores on neuroticism tend to report more perceived stress than others. The relationship between these variables is further visually demonstrated in the scatterplot below (Figure 5).

Figure 5

In contrast to H3b, the results indicated no significant results between perceived stress and conscientiousness scores amongst university students ($\rho = -0.02$, $p = 0.87$). The findings of this analysis suggest that the variables of conscientiousness and perceived stress are not associated in this sample (see Figure 6).

Figure 6

4. Discussion

The purpose of this research paper was to look into the relationship between personality traits such as neuroticism and conscientiousness with regards to coping strategies among university students, as well as their impact on stress perception. The findings suggest that conscientiousness and neuroticism are associated with the use of avoidant coping strategies, but not problem-solving coping strategies. Furthermore, it has been demonstrated that neuroticism, but not conscientiousness, plays a role in how stress levels are generally perceived among university students.

4.1.1 Personality Traits influence on Problem Focused Coping

The lack of associations between personality traits and problem focused coping in our study's findings contradict previous research, such as the study of Bartley & Roesch (2011), which found a link between the expression of the trait of conscientiousness and the use of problem focused coping strategies. Bartley & Roesch (2011) came to the conclusion that individuals higher in conscientiousness used more problem focused coping strategies, while our study has not been able to replicate these results.,

Connor-Smith & Flachbart's (2007) meta-analysis also produced contrasting findings, suggesting that people with higher neuroticism scores use fewer problem focused coping mechanisms. It is also noteworthy that Connor-Smith & Flachbart (2007) mention several possible moderator variables that influence the effect of personality on coping, such as sample age, stress level, and whether dispositional or context-specific coping was studied. This possibly brings more insight into the contrasting of the results of this study, since the relationship between conscientiousness and problem focused coping may not be as linear as previously believed.

Nonetheless, prior research endeavors similarly attempted to explore this phenomenon by examining combinations of personality traits and their particular manifestation, yielding noteworthy outcomes. Research conducted by Vollrath and Torgerson (2000) has examined the ways in which certain trait combinations – such as high conscientiousness and low neuroticism or low conscientiousness and high neuroticism – affect the way coping mechanisms are selected and how well they work when faced with stress. Rather than looking into the moderation effect of one trait on other variables, this could point to ways in which researchers can further analyze these traits and their effect by identifying and discovering different combinations of trait expressions. This study, however, specifically attempted to investigate neuroticism as a moderator variable, which possibly

explains the contradicting results with current research. Using this approach may provide fresh perspectives for investigating the relationship between personality traits and coping strategies, by considering trait combinations and their effects, as well as new, nuanced approaches to the efficient and thorough investigation of this phenomenon.

4.1.2 Personality Traits influence on Avoidant Coping Strategies

In line with prior literature, it has been found that the use of avoidant coping strategies is associated with higher perceived stress, lower conscientiousness, and more neuroticism.

First, it was discovered that among college students, neuroticism is associated with the use of coping mechanisms that are essentially avoidant. This is consistent with the findings of earlier researchers. According to a study by Afshar et al. (2015), neuroticism was found to be positively correlated with avoidant coping techniques and negatively correlated with active coping styles. Previous research on the relationship between neuroticism and coping (Gunthert et al., 1999) reached a similar conclusion. Namely people with high levels of neuroticism appear to use fewer adaptive coping strategies and are less effective at managing everyday stress. This emphasizes the fact that personality traits, particularly neuroticism and conscientiousness, play a significant role in the selection of avoidant coping strategies, which may influence the effective reduction of stress. Similar findings were reached in studies by Bartley & Roesch (2011) and Afshar et al. (2015), indicating that the expression of avoidant coping strategies is contingent upon an individual's possession of somewhat conscientious traits.

The present study underlines the importance of conscientiousness and neuroticism in the selection of avoidant coping mechanisms and provides additional evidence in favor of earlier studies. Therefore, by utilizing the knowledge gathered from this study, more interventions and programs that support students in their academic careers can be developed. It is possible to prevent

maladaptive coping and reduce potential stress by identifying personality trait expressions that result in avoidant coping behavior, which is typically maladaptive. Therefore, it can be concluded that the selection of avoidant coping strategies is influenced by the expression of neurotic or conscientious personality traits.

4.1.3 Stress Perception of Students

This study has found significant results for the effect of neuroticism on the use of avoidant coping strategies and the perception of more stress than other students. A similar conclusion was reached by a study by Nechita et al. (2015) that looked into how neuroticism affected university students' perceptions of stress.

Aside from that, more recent research on this phenomenon has shown that additional factors may contribute to our understanding of the relationship. According to Mohiyedni et al. (2015), displacement behavior, which includes behaviors like touching and scratching one's face, has been connected to detrimental emotional effects in addition to serving as a crucial coping mechanism. According to this study, there is a possibility that displacement behaviors could contribute to the explanation of the relationship between neuroticism and stress. Given that the presence of neurotic traits increases stress perception, decreases problem-solving strategies, and increases the use of avoidant coping strategies, one could argue that avoidant coping and stress perception reinforce and strengthen each other. The cause of this may be due to the nature of avoidant coping, which involves not actively and adaptively dealing with stressors, potentially leading to increased perceived stress. Henceforth, it could be considered as a vicious cycle in which coping and dealing with the stressor is avoided, ultimately leading to increased perceived stress. Future researchers could look into this phenomenon and devise strategies to break the possible cycle and assist people with more neurotic personality traits in actively dealing with stressors.

Unlike neuroticism, conscientiousness had no statistically significant effects on the perception of academic stress in this study. These results contradict the widely held belief that conscientiousness reduces stress and other negative outcomes (Bartley & Roesch, 2011). Nonetheless, other researchers are beginning to look into circumstances in which being conscientious can also lead to being more maladaptive and stressful. According to a study by Dahl and Schmierer (2017), conscientiousness may not be as helpful when a person has less control over their surroundings and the stressors they are dealing with. This further demonstrates how contextual stress and a person's ability to control the stressor influence the perception of stress amongst students.

4.2 Strengths and Limitations of the Research

In order to provide an open and thorough evaluation of the study's findings and conclusions, it is crucial to recognize the study's strengths and limitations. It is important to acknowledge that this study was subject to several limitations. The sample used in this study can be considered relatively homogeneous. The fact that women made up the majority of study participants is the study's first limitation. This suggests that, rather than being representative of all students, the study's findings are mainly representative of female students. This becomes problematic since other studies have shown that gender differences in personality trait expression are significant (Weisberg et al., 2011). Additionally, most participants in this study were either German or Dutch and were around the age of 21, and they were recruited through convenience sampling. This further restricts the findings' applicability to a larger student body, which hinders inference.

In addition, one of the primary limitations is the small sample size of 70 participants for this study. Small sample sizes threaten the internal and external validity of the study (Faber & Fonesca,

2014). Having a larger sample size would possibly enhance the generalizability and reliability of the findings in this study.

In addition, this study used a self-report measure, which enables participants to answer the questions in a way that is socially acceptable according to societal preferences (Van de Mortel, 2008). For instance, people might have dishonestly or biasedly indicated various coping mechanisms or personality traits that do not accurately reflect their actual circumstances. This results in responses that may not be totally truthful and affects the survey's overall findings.

The current study has deflected on having more consistent and representative data on personality traits and stress perception because the data was only administered once. The way one perceives stress, the character traits one possesses, and the strategies one employs to cope with stressors can change over time and vary depending on the context in which one finds themselves. Thus, since all variables were measured at the same moment in time, this study cannot assume directionality.

Individuals in this study were asked to recall some stressful life events from the previous month, which differed for each participant and could skew the results. Instead, a common stressor could have been identified and used for this study so that all participants are referring to the same situational context and stressor. Because of the lack of standardization and variability in stressor intensity and impact, the data obtained is somewhat unreliable for comparison with other studies or for interpreting the results.

A strength of this study is that it helps to bridge a gap in existing literature by focusing on academic stress and students rather than general stress perception among a large population. Therefore, by using the knowledge gathered from this study, more interventions and programs that support students in their academic careers can be developed. Finding personality trait expressions

that lead to avoidant coping behavior – which is usually maladaptive – can help prevent maladaptive coping and lower potential stress.

4.3 Practical Implications

The study's findings highlight the importance of considering how specific personality traits influence students' choice of coping strategies and perception of stress. A deeper understanding of these dynamics can aid university counselors and academics in facilitating adaptive coping skills and guiding students throughout their academic careers. Instead of using a universally applicable approach to address the stress and challenges that students face, this information can be used to develop interventions that are specifically tailored to each student's personality. In practice, strategies or interventions could be developed based on students' expressions of neurotic or conscientious traits. As a result, each student receives assistance in areas where they require additional support based on their personality rather than a one-size-fits-all solution. These strategies must first be investigated, understood, and developed to support and improve students' deficiencies in specific areas of coping and stress perception. The relationship between the personality trait of neuroticism, avoidant coping, and perceived stress, in particular, requires further understanding and study in order to find effective ways to promote adaptive coping mechanisms, which ultimately leads to stress reduction. Students who exhibit high levels of neuroticism and low levels of conscientiousness are particularly vulnerable to selecting unhealthy coping mechanisms like avoidance, which can be specifically addressed. Investigating the mechanisms and their possible reinforcing relationship with one another could be of great value in understanding the results of this study. This knowledge can further help create interventions and aid counselors in supporting students based on their expression of higher or lower conscientious or neurotic traits.

4.4 Conclusion

It has been demonstrated that avoidant coping strategies are linked to both neuroticism and conscientiousness, with neuroticism specifically being associated with higher levels of stress perception in university students. This paper attempted to identify and quantify associations between these variables. Future researchers should look into the possible link between neuroticism, avoidant coping, and an increase in stress perception among students, as these variables may reinforce each other and create a vicious cycle that harms students' health and academic performance.

It is suggested that researchers and university counselors develop programs and strategies that support students based on specific personality traits, resulting in a tailored intervention that leads to more effective coping strategies and a decrease in stress.

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6. Appendix

Appendix A

Informed Consent

Dear participant,

Thank you for your interest in this study. This study aims to investigate the relationship between Personality traits and coping strategies and its effect on the perception of stress amongst students.

This study is being conducted as part of a bachelor thesis by Florjan Beciri from the University of Twente, in the Netherlands. I would like to let you know that taking part in this study is completely voluntary. You can withdraw from the study at any time and by closing your browser the data that has been entered will be entirely deleted. Withdrawing from this study will not affect you in any way. However, after completing the questionnaire, your data will be saved and can not be withdrawn. This is because your participation in this study is fully anonymous, which is impossible to identify your data.

Your data will be anonymously saved via this platform ‘Qualtrics’ for at least 10 years within our data retention policy. Using this platform allows us to download all the data which we then secure by using a password, protected computers as well as the higher quality of protection ensured by the University of Twente.

You may only participate in this study if you are above the age of 18.

There are no known risks associated with this research study. All your answers in this study will remain confidential. For further information or questions about the study, please contact me or the supervisor via the e-mail addresses below. Thank you for your efforts.

Florjan Beciri: f.beciri@student.utwente.nl

Supervisor: t.r.vaessen@utwente.nl

Appendix B
Questionnaire

Scale	Item
Brief Cope (Carver, 1997)	
	I've been turning to work or other activities to take my mind off things.
	I've been concentrating my efforts on doing something about the situation I'm in.
	I've been saying to myself "this isn't real"
	I've been using alcohol or other drugs to make myself feel better
	I've been getting emotional support from others.
	I've been giving up trying to deal with it
	I've been taking action to try to make the situation better.
	I've been refusing to believe that it has happened.
	I've been saying things to let my unpleasant feelings escape.
	I've been getting help and advice from other people.
	I've been using alcohol or other drugs to help me get through it.
	I've been trying to see it in a different light, to make it seem more positive.
	I've been criticizing myself
	I've been trying to come up with a strategy about what to do
	I've been getting comfort and understanding from someone.
	I've been giving up the attempt to cope.
	I've been looking for something good in what is happening

I've been making jokes about it.

I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.

I've been accepting the reality of the fact that it has happened.

I've been expressing my negative feelings.

I've been trying to find comfort in my religion or spiritual beliefs.

I've been trying to get advice or help from other people about what to do.

I've been learning to live with it

I've been thinking hard about what steps to take.

I've been blaming myself for things that happened

I've been praying or meditating

I've been making fun of the situation.

Perceived stress scale (Cohen & Kamarack, 1983)

Have you been upset because of something that happened unexpectedly?

Have you felt that you were unable to control the important things in your life?

Have you felt nervous and "stressed"?

Have you felt confident about your ability to handle your personal problems?

Have you felt that things were going your way?

Have you found that you could not cope with all the things that you had to do?

Have you been able to control irritations in your life?

Have you felt that you were on top of things?

Have you been angered because of things that were outside of your control?

Have you felt difficulties were piling up so high that you could not overcome them?

Big Five Inventory (John & Srivastava, 1999)

Is talkative

Tends to find fault with others

Does a thorough job

Is depressed, blue

Is original, comes up with new ideas

Is reserved

Is helpful and unselfish with others

Can be somewhat careless

Is relaxed, handles stress well

Is curious about many different things

Is full of energy

Starts quarrels with others

Is a reliable worker

Can be tense

Is ingenious, a deep thinker

Generates a lot of enthusiasm

Has a forgiving nature

Tends to be disorganized

Worries a lot

Has an active imagination

Tends to be quiet

Is generally trusting

Tends to be lazy

Is emotionally stable, not easily upset

Is inventive

Has an assertive personality

Can be cold and aloof

Perseveres until the task is finished

Can be moody

Values artistic, aesthetic experiences

Is sometimes shy, inhibited

Is considerate and kind to almost everyone

Does things efficiently

Remains calm in tense situations

Prefers work that is routine

Is outgoing, sociable

Is sometimes rude to others

Makes plans and follows through with them

Gets nervous easily

Likes to reflect, play with ideas

Has few artistic interests

Likes to cooperate with others

Is easily distracted

Is sophisticated in art, music, or literature

Appendix I

##Bachelorthesiscript##

##Bachelorscript

#load and install packages

```
install.packages("Hmisc")
install.packages("haven")
install.packages("tidyverse")
install.packages("broom")
install.packages("foreign")
install.packages("psych")
install.packages("corr")
install.packages("janitor")
install.packages("mirt")
install.packages("dplyr")
install.packages("Lambda4")
install.packages("Hmisc")
install.packages("car")
install.packages("CTT")
install.packages("lavaan")
install.packages("ltm")
install.packages("semPlot")
install.packages("sem")
install.packages("car")
install.packages("ggpubr")
install.packages("moments")
install.packages("emmeans")
install.packages("lubridate")
install.packages("corrplot")
```

```
library(haven)
library(tidyverse)
library(broom)
library(foreign)
library(psych)
library(corr)
library(janitor)
library(mirt)
library(dplyr)
```

```
library(Lambda4)
library(Hmisc)
library(car)
library(CTT)
library(MVN)
library(lavaan)
library(ltm)
library(semPlot)
library(sem)
library(ggplot2)
library(car)
library(ggpubr)
library(moments)
library(emmeans)
library(lubridate)
library(corrplot)
```

#ImplementDataSet

```
data <- read_csv("Personality and Coping_November 21, 2023_06.38.csv")
```

#DeleteNotFinished

```
data <- subset(data, data$Finished == "1")
```

#CleanData

```
clean_data <- subset(data, select = -c(1:18))
```

```
clean_data <- clean_data[-c(1,55), ]
```

#RenameColumns

```
clean_data <- rename(clean_data, Age = Q2, Gender = Q5, Nationality = Q6, StudyLevel = Q7,
StudyField = Q9)
```

#ReverseItems

```
clean_data <- clean_data %>%
  mutate_at(vars(1:4, 6:84), as.numeric)
```

```
clean_data <- clean_data %>%
  mutate(Q12_8 = max(Q12_8) + 1 - Q12_8)
```



```
clean_data <- clean_data %>%
  mutate(Q12_9 = max(Q12_9) + 1 - Q12_9)
```

```
clean_data <- clean_data %>%
  mutate(Q12_18 = max(Q12_18) + 1 - Q12_18)
```

```
clean_data <- clean_data %>%
  mutate(Q12_23 = max(Q12_23) + 1 - Q12_23)
```

```
clean_data <- clean_data %>%
  mutate(Q12_24 = max(Q12_24) + 1 - Q12_24)
```

```
clean_data <- clean_data %>%
  mutate(Q12_34 = max(Q12_34) + 1 - Q12_34)
```

```
clean_data <- clean_data %>%
  mutate(Q12_43 = max(Q12_43) + 1 - Q12_43)
```

#SumScores

```
clean_data$SumsConscientiousness = apply(clean_data[,c("Q12_3", "Q12_8", "Q12_13",
"Q12_18", "Q12_23", "Q12_28", "Q12_33", "Q12_38")], 1, sum)
```

```
clean_data$SumsNeuroticism = apply(clean_data[,c("Q12_4", "Q12_9", "Q12_14", "Q12_19",
"Q12_24", "Q12_29", "Q12_34", "Q12_39")], 1, sum)
```

```
clean_data$SumsProblem = apply (clean_data[,c("Q15_2", "Q15_7", "Q15_10", "Q15_12",
"Q15_14", "Q15_17", "Q15_23", "Q15_25")], 1, sum)
```

```
clean_data$SumsEmotion = apply (clean_data[,c("Q15_5", "Q15_9", "Q15_13", "Q15_15",
"Q15_18", "Q15_20", "Q15_21", "Q15_22", "Q15_24", "Q15_26", "Q15_27", "Q15_28")], 1, sum)
```

```
clean_data$SumsAvoidant = apply (clean_data[,c("Q15_1", "Q15_3", "Q15_4", "Q15_6", "Q15_8",
"Q15_11", "Q15_16", "Q15_19")], 1, sum)
```

```
clean_data$SumsStress = apply (clean_data[,c("Q17_1", "Q17_2", "Q17_3", "Q17_4", "Q17_5",
"Q17_6", "Q17_7", "Q17_8", "Q17_9", "Q17_10")], 1, sum)
```

#Descriptive

```
summary(clean_data)
```

```

clean_dataAge <- clean_data [-c(17,46, 47, 51, 61, 66), ]
mean(clean_dataAge$Age)
sd(clean_dataAge$Age)
table(clean_data$Nationality)
table(clean_data$StudyLevel)
table(clean_data$StudyField)
table(clean_data$Gender)
gender_counts <- table(clean_data$Gender)
percentages <- prop.table(gender_counts) * 100
print(percentages)
summary(clean_dataAge$Age)

summary(clean_data$SumsConscientiousness)
table(clean_data$SumsConscientiousness)

summary(clean_data$SumsNeuroticism)
table(clean_data$SumsNeuroticism)

summary(clean_data$SumsProblem)
table(clean_data$SumsProblem)

summary(clean_data$SumsEmotion)
table(clean_data$SumsEmotion)

summary(clean_data$SumsAvoidant)
table(clean_data$SumsAvoidant)

summary(clean_data$SumsStress)
table(clean_data$SumsStress)

#RegressionH1A/B
regression_model <- lm(SumsProblem ~SumsConscientiousness, data = clean_data)

summary(regression_model)

regression_model1 <- lm(SumsProblem ~SumsNeuroticism, data = clean_data)

summary(regression_model1)

#ModerationEffectH1C

```

```
moderation_model <- lm(SumsProblem ~ SumsConscientiousness * SumsNeuroticism, data =
clean_data)
```

```
summary(moderation_model)
```

#H2Regression

#Conscientiousness

```
clean_data$SumsConscientiousness[is.na(clean_data$SumsConscientiousness)] <- 0
```

```
regression_model1 <- lm(SumsAvoidant ~SumsConscientiousness, data = clean_data)
```

```
summary(regression_model1)
```

```
correlation <- cor(clean_data$SumsConscientiousness, clean_data$SumsAvoidant, method =
"pearson")
```

```
print(correlation)
```

```
cor.test(clean_data$SumsConscientiousness,
clean_data$SumsAvoidant,use="pairwise.complete.obs", method = "pearson")
```

```
ggplot(clean_data, aes(x = SumsConscientiousness, y = SumsAvoidant)) +
  geom_point() +
  geom_smooth(method = "lm", se = FALSE, color = "blue") + # Add a linear regression line
  labs(title = "Scatter Plot of SumsConscientiousness vs. SumsAvoidant with Regression Line",
        x = "SumsConscientiousness",
        y = "SumsAvoidant")
```

#Neuroticism

```
regression_model2 <- lm(SumsAvoidant ~SumsNeuroticism, data = clean_data)
```

```
summary(regression_model2)
```

```
correlation1 <- cor(clean_data$SumsNeuroticism, clean_data$SumsAvoidant, method = "pearson")
```

```
print(correlation1)
```

```
cor.test(clean_data$SumsNeuroticism, clean_data$SumsAvoidant,use="pairwise.complete.obs",
method = "pearson")
```

```
ggplot(clean_data, aes(x = SumsNeuroticism, y = SumsAvoidant)) +
  geom_point() +
  geom_smooth(method = "lm", se = FALSE, color = "blue") + # Add a linear regression line
  labs(title = "Scatter Plot of SumsNeuroticism vs. SumsAvoidant with Regression Line",
        x = "SumsNeuroticism",
        y = "SumsAvoidant")
```

#CorrelationAnalysisH3

```
shapiro.test(clean_data$`SumsNeuroticism`)
shapiro.test(clean_data$`SumsConscientiousness`)
shapiro.test(clean_data$`SumsStress`)
```

#NeuroticismH3A

```
cor_result <- cor.test(clean_data$SumsStress, clean_data$SumsNeuroticism, method = "spearman",
  exact = FALSE, exactMC = 1000)
```

```
print(cor_result)
```

```
ggplot(clean_data, aes(x = SumsNeuroticism, y = SumsStress)) +
  geom_point() +
  geom_smooth(method = "lm", se = FALSE, color = "blue") +
  labs(title = "Scatter Plot with Fitted Line",
        x = "SumsNeuroticism",
        y = "SumsStress") +
  theme_minimal()
```

#ConscientiousnessH3B

```
cor_result1 <- cor.test(clean_data$SumsStress, clean_data$SumsConscientiousness, method =
  "spearman", exact = FALSE, exactMC = 1000)
```

```
print(cor_result1)
```

```
ggplot(clean_data, aes(x = SumsConscientiousness, y = SumsStress)) +
  geom_point() +
  geom_smooth(method = "lm", se = FALSE, color = "blue") +
  labs(title = "Scatter Plot with Fitted Line",
        x = "SumsConscientiousness",
        y = "SumsStress") +
  theme_minimal()
```

#AnovaTestingH3A**#Neuroticism**

```
clean_data$NeuroticismCut <- character(nrow(clean_data))
```

```
for (i in seq_along(clean_data$SumsNeuroticism)) {
  if (clean_data$SumsNeuroticism[i] >= 8 && clean_data$SumsNeuroticism[i] <= 19) {
    clean_data$NeuroticismCut[i] <- "Low"
  } else if (clean_data$SumsNeuroticism[i] >= 20 && clean_data$SumsNeuroticism[i] <= 29) {
    clean_data$NeuroticismCut[i] <- "Moderate"
  } else if (clean_data$SumsNeuroticism[i] >= 30 && clean_data$SumsNeuroticism[i] <= 40) {
    clean_data$NeuroticismCut[i] <- "High"
  }
}
```

```
clean_data$NeuroticismCut <- factor(clean_data$NeuroticismCut, levels = c("Low", "Moderate",
"High"))
```

```
model <- aov(SumsStress ~ NeuroticismCut, data = clean_data)
```

```
summary(model)
```

```
posthoc <- TukeyHSD(model)
```

```
print(summary(model))
```

```
print(posthoc)
```

```
ggplot(clean_data, aes(x = NeuroticismCut, y = SumsStress, fill = NeuroticismCut)) +
  geom_boxplot() +
  labs(title = "Boxplots of SumsStress across Neuroticism Groups",
       x = "Neuroticism Group",
       y = "SumsStress") +
  scale_fill_manual(values = c("low" = "lightblue", "moderate" = "lightgreen", "high" =
"lightcoral"))
```

```
table(clean_data$NeuroticismCut)
```

#Conscientiousness

```
clean_data$ConscientiousnessCut <- character(nrow(clean_data))
```

```

for (i in seq_along(clean_data$SumsConscientiousness)) {
  if (!is.na(clean_data$SumsConscientiousness[i])) {
    if (clean_data$SumsConscientiousness[i] >= 8 && clean_data$SumsConscientiousness[i] <= 19)
    {
      clean_data$ConscientiousnessCut[i] <- "Low"
    } else if (clean_data$SumsConscientiousness[i] >= 20 && clean_data$SumsConscientiousness[i]
<= 29) {
      clean_data$ConscientiousnessCut[i] <- "Moderate"
    } else if (clean_data$SumsConscientiousness[i] >= 30 && clean_data$SumsConscientiousness[i]
<= 40) {
      clean_data$ConscientiousnessCut[i] <- "High"
    }
    } else {
      clean_data$ConscientiousnessCut[i] <- NA
    }
  }
}

```

```

clean_data$ConscientiousnessCut <- factor(clean_data$ConscientiousnessCut, levels = c("Low",
"Moderate", "High"))

```

```

model1 <- aov(SumsStress ~ ConscientiousnessCut, data = clean_data)

```

```

summary(model1)

```

```

posthoc <- TukeyHSD(model1)

```

```

print(summary(model1))

```

```

print(posthoc)

```

```

ggplot(clean_data, aes(x = ConscientiousnessCut, y = SumsStress, fill = ConscientiousnessCut)) +
  geom_boxplot() +
  labs(title = "Boxplots of SumsStress across Conscientiousness Groups",
       x = "Conscientiousness Group",
       y = "SumsStress") +
  scale_fill_manual(values = c("low" = "lightblue", "moderate" = "lightgreen", "high" =
"lightcoral"))

```

```

table(clean_data$ConscientiousnessCut)

```