Technology? I am Studying Psychology!: A Survey Study on the Relationship between Openness, General Affinity, and Technology Acceptance

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Abstract

Technology is increasingly being integrated into the mental health sector to develop innovative methods for psychological interventions. This study investigates the relationship between the personality trait of openness, general affinity for technology, and the acceptance of technology in future professional settings among psychology students at the University of Twente. A combined survey out of the Big Five, the General Affinity scale, and the adjusted Technology Acceptance Model reveal that openness does not predict current general affinity towards technology nor its acceptance in future professional settings. On the contrary, affinity for technology is a crucial factor in predicting future technology acceptance. Although this study could not account for students' prior technological knowledge and the Technology Acceptance Model was designed to measure acceptance towards specific technological devices, it provides valuable insights for both scientific research and societal application. Supporting a positive general affinity towards technology could enhance the readiness of future professionals to integrate technological tools into their future practice. Future research is advised to investigate other variables such as extraversion to gain deeper insights into student’s levels of technology acceptance. Consequently, society would benefit from study programmes tailored to today’s generation and improved education, leading to more productive and experienced employees later on.

Introduction

Technology is increasingly being introduced into the mental health sector to enhance psychological interventions. For example, mobile applications are being developed to increase treatment accessibility for depression (Shen et al., 2015). This technological integration in the mental health field is often referred to as *eHealth*, defined as "the use of technology to support health and well-being" (Kelders et al., 2020). eHealth encompasses various forms of technology, including electronic games, mobile devices, virtual reality, video teleconferencing, and patient communication via email (Maheu et al., 2012; Pagliari et al., 2005). Research suggests that eHealth can be beneficial in the construction of psychological interventions, which highlights the importance of technology acceptance. To illustrate, Mohr et al. (2013) reviewed the work of the Agency for Healthcare Research and Quality and the National Institute of Mental Health on how efficient technological interventions are for the mental health sector, and so far, they have shown promising results. While this study offered meaningful insights and stresses the importance of technology acceptance for future jobs, there is still little literature on psychology students' future acceptance of technology, and the traits that influence their acceptance. This emphasises the gap in research specifically focused on psychology students. However, there is some research among professionals about why they might struggle with the idea of implementing technology in their treatment plan with the example of using virtual reality as an addition to treatment (Lindner et al., 2019). Concerns such as having difficulties operating the software highlight the importance of gaining more insights into whether future professionals accept those technological interventions.

The students of today are the professionals of tomorrow and with this change in treatment plans in the mental health sector, education also starts to adapt. With this in mind, Daggett (2010) who works for the International Centre for Leadership in Education has claimed in his paper that students of the 21st century need education about technology to keep up with the rapid technological changes of this time and to have the required skills the future

workplace demands. For this purpose, Edirippulige et al. (2018) conducted a study to investigate students' perceived knowledge of eHealth, measuring perceived knowledge before and after attending an eHealth course. Results revealed that the students had the impression that the course improved their key understanding of the eHealth concept, and the researchers emphasised the importance of practising eHealth skills before their professional careers (Edirippulige et al., 2018). This shows the importance of preparing students for future technological integration and the relevance of this study.

Technology Acceptance of Future Professionals

Despite the impact of technological education, not much research has been done on students' opinion on eHealth in the mental health sector or if they will accept it in their future career, which is what this study focuses on, but some articles have looked into students' attitude towards present technological programmes in their studies. To measure someone's acceptance towards technology, the Technology Acceptance Model (TAM) is frequently used. Initially introduced by Davis (1985), its purpose was to better understand the processes behind a user's acceptance towards technology and to develop a scale that could aid developers in testing their products' acceptability before publication. In the model, actual system use is predicted by someone's attitude, which consists of two components, namely perceived ease of use and perceived usefulness (Davis, 1985). *Perceived usefulness* is defined by Davis (1985) as "the degree to which an individual believes that using a particular system would enhance his or her job performance" and *perceived ease of use* is defined as "the degree to which an individual believes that using a particular system would be free of physical and mental effort".

A recent study was interested in figuring out relevant factors that influence technology acceptance in the future. Gado et al. (2022) investigated what makes psychology students accept artificial intelligence (AI), with the end goal of including AI in psychological education. They used an adjusted questionnaire based on the TAM and the conclusion was

that perceived ease of use and perceived usefulness were important predictors of the students' attitude towards AI. Furthermore, perceived knowledge, perceived usefulness, social norms, and attitude itself predict if a student has the intention to use AI (Gado et al., 2022). Although their study had the goal to predict students' future behaviour, they were limited to measuring students' current attitudes and intentions. In conclusion, students' attitude towards technology seems one of the possible predictors of technology acceptance in the future (Gado et al., 2022).

Besides the study of Gado et al. (2022), who focuses on psychology students' acceptance towards technology, Lazuras and Dokou (2016) looked into mental health professionals' acceptance of online counselling. They used an adjusted version of the TAM and results show that perceived usefulness was crucial in predicting the intention to use technology, as psychologists value effective methods (Lazuras & Dokou, 2016). Unexpectedly, the second core component of the TAM, perceived ease of use, had no significant effect on intention. Lazuras and Dokou (2016) justify this by explaining that the professionals in their study were already familiar with PC work or even online counselling, and therefore, working with technology was already too familiar to affect intention, and perceived relevance seemed more influential. Although this study did not investigate psychology students' future technology acceptance in their jobs, it gave valuable insights into what makes professionals accept technology usage.

General Affinity with Technology

One important component of the TAM is the attitude towards technology (Davis, 1985). Besides being used in the TAM, attitude has been a common predictor of behaviour in multiple contexts, such as in the Theory of Planned Behaviour. In the TAM, an attitude rather predicts the future acceptance towards a specific technology (Davis, 1985). On the contrary, *affinity* as defined by Edison and Geissler (2003), is a "positive affect towards technology (in general)". Therefore, general affinity can measure the student's current technology

acceptance, while attitude in the TAM rather predicts future usage. This research will have a look at the general current general affinity towards technology, and if this can predict future technology acceptance in the career. When testing their constructed general affinity with technology scale, Edison and Geissler (2003) revealed that the scale is a valid tool to measure a general affinity towards technology, but also that some participants have a more positive disposition toward technology than others. They suspect that those dispositions are influenced by different personal factors and that those antecedents need to be investigated, to figure out what influences this tendency for a positive or negative affinity towards general technology (Edison & Geissler, 2003).

Openness

Although future technology acceptance seems to be predictable with the TAM, and general affinity towards technology can be measured, there is so far limited research on what other factors might facilitate those two variables, although it is suspected by researchers such as Edison and Geissler (2003) that there are personal antecedents. When reviewing existing literature, it is noticeable that a few articles have looked into personality traits, but the results of their studies are contradicting, and therefore more research needs to be done to draw a valid conclusion. Often, personality factors in those studies are measured by the Big Five Personality Questionnaire, which consists of five personality traits, namely neuroticism, openness, extraversion, agreeableness, and conscientiousness (Satow, 2021).

To predict technology use, Maican et al. (2019) specifically measured the Big Five personality traits and how teachers use online communication such as emailing and how much they accept technology. They revealed that openness was the only trait tied to the use of online technologies, but they did not look further into whether personality traits can predict behavioural intentions. In short, they suspect that openness channels the interest to utilise new technologies within the professional field (Maican et al., 2019). Another positive connection was drawn by Hesse et al. (2020), who investigated if personality influences general affinity

for technology and technology acceptance in connection to voice control. Hence, higher openness seemed to influence the intention to use voice control positively, while also increasing the likelihood to use and accept this technology (Hesse et al., 2020).

While Maican et al. (2019) and Hesse et al. (2020) found a rather positive relationship between openness and technology acceptance, Svendsen et al. (2013) were more sceptical. Participants were provided with a description of a software tool and a questionnaire about the Big Five personality traits and an adjusted version of the TAM, to measure technology acceptance. Their results show that personality does indeed influence someone's technology acceptance, but the most significant in this research was extraversion. While openness does influence perceived ease of use, it is not related to behavioural intention (Svendsen et al., 2013). Similarly, Barnett et al. (2015) were not able to find a positive relationship between openness and general affinity. They asked university students to use a web-based classroom system, allowing students to manage functions such as assignments or course materials. They then measured actual and perceived use within the students and while Barnett et al. (2015) verified that openness is not related to behavioural intention, they could not find any connection between openness and technology acceptance, although they hypothesised this. These different papers show that openness might be a possible predictor for either general affinity for technology or future technology acceptance, but results are split and there is no consensus yet among researchers.

The Current Study

The research question of this paper is how openness is related to general affinity towards technology and how these two variables are related to acceptance of technology in the future work field among psychology students at the University of Twente. Moreover, I hypothesize that 1) psychology students who score higher on the personality trait openness score higher on the general affinity towards technology scale, 2) psychology students who score higher on the personality trait openness are more likely to accept technology in their

future career, and 3) psychology students who have a more positive general affinity towards technology are more likely to accept technology in their future career. To test those three hypotheses, a questionnaire will be conducted with psychology students at the University of Twente.

Methods

Participants

A total of 71 participants took part in the study, of which 14 participants were deleted due to incomplete data and four participants were removed as they were not studying for a health-related degree. As only two participants reported to be health science students, but not psychology students, it was decided to exclude those participants as well, as their group was too small to be represented properly. The final dataset included therefore 51 participants. The participants were aged between 17 and 28 ($M = 21.28$, $SD = 1.86$) and 82.35% ($N = 42$) of the participants were female, 11.76% ($N = 6$) male, and 5.88% ($N = 3$) in the other category. In total, 33.33% ($N = 17$) were Dutch, 47.06% ($N = 24$) German, and 19.61% ($N = 10$) were from other countries including Indonesia, Greece, and Vietnam. In addition, 94.12% ($N = 48$) study at the University of Twente, and 5.55% ($N = 3$) do not. Furthermore, 88.24% ($N = 45$) of the participants have technology included in their curriculum, while 11.76% ($N = 6$) do not. Lastly, 41.18% ($N = 21$) of the participants are currently in their first or second year of their Bachelor's, and 58.82% ($N = 30$) are in either their third year of the Bachelor's programme or in their Master's. Besides the variable of the study year, all other variables are too small to consider as separate variables.

Materials

Openness

Openness is measured with the Big Five Personality Assessment which was developed by Satow (2021) and measures all Big Five personality traits and some additional questions to measure basic needs for achievement through 68 questions. For this study, only the trait

openness, consisting of 10 questions, was used (Appendix B). Some examples of those questions are “I always enjoy learning new things” or “I have many ideas and a vast imagination”. The items were measured on a 4-point Likert scale ranging from one (*does not apply at all*) to four (*applies exactly*). This subscale has been shown to have good reliability and validity (Satow, 2021). In the current study, the alpha was 0.7, providing therefore an acceptable internal consistency. To analyse the scores the mean values of all items were calculated. The lowest value of an item reached 2.4 and the highest item reached 3.9, whereas a higher score on the scale indicates being more open.

General Affinity for Technology

The general affinity for technology questionnaire was developed by Edison and Geissler (2003) and measures someone’s general affinity towards technology. It contains ten questions including questions such as “I find most technology easy to learn” or “I relate well to technology and machines” (Appendix C). The items are measured on a five-point Likert scale, ranging from one (*strongly disagree*) to five (*strongly agree*). This subscale has been shown to have good reliability and validity (Edison & Geissler, 2003). In the current study, the alpha was 0.91, providing therefore excellent internal consistency. To analyse the scores the mean values of all items were calculated. The lowest value of an item reached 1.2 and the highest item reached 4.8, whereas a higher score on the scale indicates a higher general affinity for general technology.

Technology Acceptance

The technology acceptance scale was developed by Cheah et al. (2023) and adjusted to fit this study to measure technology acceptance in future occupations. It contains 12 questions including questions such as “Using technology will improve my job performance in the future” or “I will find technology in my future job to be easy to use” (Appendix D). The items are measured on a five-point Likert scale, ranging from one (*strongly disagree*) to five (*strongly agree*). This subscale has been shown to have good reliability and validity (Cheah et

al., 2023). In the current study, the alpha was 0.94, providing therefore excellent internal consistency. To analyse the scores the mean values of all items were calculated. The lowest value of an item reached 1.0 and the highest item reached 5.0, whereas a higher score on the scale indicates more technology acceptance in the future job.

Procedure

After the questionnaire was constructed, ethical approval was given by the ethics department of the University of Twente. To reach a sufficient number of participants, several promotional methods were used. For this, flyers were designed, presenting the name of the study, eye-catching images, and two QR codes leading to either the SONA link (for psychology students who wanted to participate in exchange for course credits) or the direct link to the survey in Qualtrics. Those flyers were hung up at one of the main buildings for psychology students on campus, as well as in the room of the Study Association for Psychology. In addition, flyers were also handed out at a lecture for first-year bachelor psychology students, as well as during a study evening. To reach participants in person, the study was also promoted during meetings and to friends. In addition, participation with other researchers was exchanged to support each other. Social media was used to promote the study on Instagram and WhatsApp.

Participants were able to use either a mobile phone or a computer to participate. When opening the questionnaire, participants were welcomed with a short introduction text and a definition of eHealth which they were instructed to keep in mind while filling in the questionnaire. Next, the participants were led to the informed consent (Appendix A), and some demographic data was collected from the students, such as age, gender, and nationality. The participants were also asked if they were studying psychology or another health-related study and if they were studying at the University of Twente. In addition, they had to indicate whether education on technology is part of their curriculum, and, if they study psychology. Lastly, participants were asked in what year of study they are currently in. After all basic

information was collected, the participant was asked to fill in the different subscales, namely openness, another personality measure (BFI-2-XS), general affinity towards technology, and the technology acceptance model. Although most questionnaires are relevant for this study, the BFI-2-XS was not included. This is because the data collection was in collaboration with another researcher who needed similar data. After the participant answered all questions necessary to gain insight into the variables, they were thanked for their participation and the survey was done. Students from the BMS faculty of the University of Twente were then granted their SONA credits by the researchers.

Data Analysis

The study is a cross-sectional survey design which was analysed via the program R Studio, the R-code can be found in Appendix E. After the data was imported and cleaned following the inclusion criteria, the demographic data such as age, gender, and nationality was evaluated by analysing the frequency, mean and standard deviation. Then, the reliability of the survey was checked by calculating Cronbach's alpha. To answer the first hypothesis, a correlation table was created to check if there is a significant positive relationship between general affinity and openness to experience. After that, a regression analysis was performed to answer the second and third hypotheses where technology acceptance is the dependent variable and general affinity towards technology and openness are the independent variable.

Results

A summary of the descriptive statistics can be found below in Table 1. One additional variable was measured to account for the educational variable when measuring general affinity and technology acceptance. The variable Senior Level describes students within their first or second Bachelor's year (Senior = 1) or within their third year of Bachelor's or the Master's programme (Senior = 2), therefore, indicating a slightly larger number of participants in their senior year of university. Noticeable from Table One is that the mean for openness is closer to the end of the scale in comparison to the mean of technology acceptance.

With a negligible correlation of 0.09 between openness and general affinity towards technology, H1 cannot be supported.

Table 1

Descriptive Statistics and Correlations (N = 51)

Variable	*M*	*SD*	1	2	3	4
1. Openness	3.01	0.37	-	0.09	-0.03	0.08
2. General Affinity	3.22	0.85	0.09	-	0.48	-0.00
3. Technology Acceptance	3.65	0.75	-0.03	0.48	-	0.28
4. Senior	1.59	0.50	0.08	-0.00	0.28	-

Note. Openness was measured on a four-point Likert scale and general Affinity and Acceptance on a five-point scale.

The regression model (Table 2) was statistically significant (R^2 = 0.233, F (2, 48) = 7.29, p = 0.002). Openness was not related to technology acceptance. However, general affinity towards technology was strongly related to technology acceptance.

Table 2

Multiple Regression Analysis

	Estimate	*SE*	95% *CI*		*p*
			LL	*UL*	
Intercept	2.69	0.83	1.02	4.35	0.00
Openness	-0.14	0.26	-0.66	0.37	0.58
General Affinity	0.43	0.11	0.20	0.66	0.001

Note. SE = Standard Error; *CI* = confidence interval; *LL* = lower limit; *UL* = upper limit

Discussion

This research aimed to answer the research question of how openness is related to general affinity towards technology and how these two variables are related to acceptance of

technology in the future work field among psychology students at the University of Twente. The results show a negligible relationship between openness and general affinity towards technology. In addition, openness does not predict technology acceptance, but general affinity strongly predicts technology acceptance.

Although Edison and Geissler (2003) suspected personal factors to influence general affinity, this study was able to exclude openness as one of the possible factors. This is not in line with the research of Svendsen et al. (2013), who reported that openness partially influences general affinity towards technology, however, it does confirm the research from, Barnett et al. (2015), who could not find any connection between openness and general affinity. One reason for the insignificant relationship is presented by Park and Woo (2022) who also did not find a connection between general affinity and openness. They suspect that openness channels a generally higher interest in technology, leading to more technology usage and therefore more prior experience before a study. This prior experience then can lead to higher positive scores on general affinity, but it also means that openness might influence another variable, which then in turn influences general affinity (Park & Woo, 2022). Future research could investigate more possible predictors of general affinity for technology, as literature currently focuses more on someone's affinity towards a specific technological object, rather than general affinity.

Of equal importance, focussing on openness and its relationship to technology acceptance, the regression analysis shows that openness does not explain the variability of technology acceptance. On one hand, research done by Hesse et al. (2020), resulted in higher intention and acceptance to use a technology when scoring high on openness, and research by Maican et al. (2019), concluded that openness is tied to the use of online technologies. On the other hand, other researchers were not able to tie openness with technology acceptance, such as Svendsen et al. (2013), who reported that openness does not predict behavioural intentions. This research therefore is in line with the findings of Barnett et al. (2015), as in this study, no

relationship was confirmed between openness and general affinity for technology or technology acceptance at the future job.

A reason for this non-significant relationship between openness and technology acceptance could be that the TAM was developed to investigate someone's technology acceptance towards a specific system, while this study used it to measure someone's general technology acceptance in their future job (Marangunić & Granić, 2015). In addition, this study focussed on students who sometimes are not certain what occupational field they later want to work in, while perceived usefulness in their job influences technology acceptance and this measurement was so far only taken with professionals. (Marangunić & Granić, 2015). Hence, as perceived usefulness is one of the components in the TAM model, it might be interesting to investigate future technology acceptance with a different method, for example for a scale measuring general technology, like the one used in this study, which seems to predict future technology acceptance. Moreover, when performing a longitudinal study, it can further be investigated if the predicted technology acceptance results actually in a higher utilisation of technology in the future occupation. This would give many important insights into students' acceptance of technology and can be utilised to design education efficiently. In addition, another suggestion would be to focus on master students only, as they typically have a better idea of what field they want to work in later. In addition, future research could also follow up the results of Svendsen et al. (2013) and Behrenbruch et al. (2013), and look deeper into extraversion as a facilitator, as they confirmed a connection between personality and technology acceptance, but more with extraversion.

The results of this study showed a positive relationship between general affinity towards technology and technology acceptance. One explanation for this could be that attitude is a very close concept to general affinity, and in the TAM model attitude is a predictor of technology acceptance which then in turn predicts actual system use (Davis, 1985). In line with the research and multiple models such as the TAM or the TPB, general affinity indeed

seems to predict technology acceptance or at least plays an important role in determining if someone accepts technology or not (Ajzen, 1991; Davis, 1985). These results are also in accordance with Gado et al. (2022) and Lazuras and Dokou (2016), who confirmed that general affinity predicts the intention to actually use a technological system. For future research, this knowledge can be used to conduct several other studies, such as how general affinity towards technology can be increased within psychology students, to ensure that they are well prepared for their future careers.

The results of this study are relevant on multiple levels. First, it emphasised how little is known about student's technology acceptance in their future job, as most studies focus on current employees. Meaning, that there is no measurement tool out there to investigate if students accept learning about technology in their studies or not, and what the predictors are. A future study could look into designing a better-suited measurement, specially designed to focus on healthcare students, their technology acceptance, and what personal factors influence their general affinity towards technology. With more insight, society would benefit from study programmes tailored to today's generation and improved education, leading to more productive and experienced employees later on. In addition, from the research done before this study, it can be learned that the predictors of general affinity in connection to technology are not explored enough and that there is not much information on what makes people more accepting towards technology, and if there are more inherent traits or environmental influence that predict this variable.

Nevertheless, besides the newly gained insights, this study has also some limitations. While the general affinity towards technology questionnaire is a good scale, it is part of a larger scale that measures general technology. This larger scale would have been interesting to investigate in this context, as it measures specifically general technology acceptance, but this was not feasible in the scope of this study. In addition, this sample was mostly focused on students at the University of Twente, which can give new insights for this specific university,

but it is rather difficult to apply the findings to other universities. Lastly, students had a different level of technological knowledge before this study, which was not accounted for and might have influenced the results.

Conclusion

To sum up, general affinity seems to be one of the major predictors of future technology acceptance, but it is still rather unclear what influences this general affinity towards technology. More insights need to be gained on what facilitates affinity towards technology, and if they are rather environmental or inherited. In addition, although some studies suspect personality to have an influence on general affinity or technology acceptance in the future occupation, there was no indication in this study that openness would be a factor. Overall, the student's perspective on technological integration in healthcare is investigated too little and more resources would allow for tailored education for the professionals of tomorrow.

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Appendices

Appendix A

Informed Consent

Dear Participant,

You are being invited to participate in a research study titled “The attitude of psychology students towards technology use in their future job” This study is being done by Nefise Aydin and Phyllis Kohlbecher from the Faculty of Behavioural, Management and Social Sciences at the University of Twente.

The purpose of this research study is to look into to what extent psychology students embrace technology in their future careers, and will take you approximately 10-15 minutes to complete. The data will be used for the bachelor theses of the researchers.

Your participation in this study is entirely voluntary and you can withdraw at any time. You are free to omit any question. We believe there are no known risks associated with this research study. To the best of our ability, your answers in this study will remain confidential. We will minimize any risks by not collecting any personally identifiable information to ensure anonymity and confidentiality. (carefully storing and handling the data)

Study contact details for further information:
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I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and that I can withdraw from the study at any time, without having to give a reason.

Yes
No

Appendix B

Big Five Openness Questionnaire

1. I always want to try new things.
2. I am a curious person.
3. I travel a lot to get to know new cultures.
4. I would prefer everything to stay as it is.
5. I like to discuss things.
6. I always enjoy learning new things.
7. In my free time, I love to spend time with art, music, and literature.
8. I am very interested in philosophical questions.
9. I read a lot about scientific topics, new discoveries, or historical events.
10. I have many ideas and a vast imagination.

Appendix C

Affinity towards Technology

1. Technology is my friend ...
2. I enjoy learning new computer programs and hearing about new technologies.
3. People expect me to know about technology and I don't want to let them down.
4. If I am given an assignment that requires that I learn to use a new program or how to use a machine, I usually succeed.
5. I relate well to technology and machines.
6. I am comfortable learning new technology.
7. I know how to deal with technological malfunctions or problems.
8. Solving a technological problem seems like a fun challenge.
9. I find most technology easy to learn.
10. I feel as up-to-date on technology as my peers.

Appendix D

Technology Acceptance Scale

1. Using technology in my future job will enable me to accomplish tasks more quickly.
2. Using technology will improve my job performance in the future.
3. Using technology in my future job will increase my productivity.
4. Using technology will enhance my effectiveness on the future job.
5. Using technology will make it easier to do my future job.
6. I find technology useful in my future job.
7. Learning to use technology in my future job will be easy for me.
8. I will find it easy to get technology to do what I want it to do in my future job.
9. My interaction with technology in my future job will be clear and understandable.
10. I will find technology in my future job to be flexible to interact with.
11. It will be easy for me to become skilful in using technology at my future job.
12. I will find technology in my future job to be easy to use.

Appendix E
R Script

```
#Phyllis Kohlbecher#
#Thesis#
#Technology in the future workplace#

#installing packages
install.packages("tidyverse")
install.packages("psych")

#loading packages
library(tidyverse)
library(psych)

#setting working directory
setwd("C:/Users/phyll/OneDrive/Dokumente/AA University of Twente/Year 3/Thesis/Thesis-R-Work/Thesis-R-Work-Final Data Set")

#import data set
data <- read.csv("Thesis_FinalData.csv")

#look at data set
View(data)

#deleting irrelevant columns
##not relevant data such as time finished and questions Nefise
data <- data[, -
c(1,2,3,4,6,7,8,9,10,11,12,13,14,15,16,17,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52)]
#deleting rows for incomplete data
rows_to_delete <- c(1, 2, 56, 57, 58, 68, 72)
data <- data[-rows_to_delete, ]
#deleting participants who did not finish the questionnaire
data <- data[data$Progress == 100, ]
##removing people who have no health related study
data <- data[data$Study != 3, ]
#checking how many health but not psychology students
health_frequency <- table(data$Study)
#excluding non-psychology students
data <- data[data$Study != 2, ]

#summary
summary(data)

#make numbers into real ages
#Define a mapping between numerical values and real age numbers
age_mapping <- c("1" = 16, "2" = 17, "3" = 18, "4" = 19, "5" = 20,
                 "6" = 21, "7" = 22, "8" = 23, "9" = 24, "10" = 25,
```

```
                "11" = 26, "12" = 27, "13" = 28, "14" = 29,
                "15" = 30, "16" = 31, "17" = 32, "18" = 33,
                "19" = 34, "20" = 35, "21" = 36, "22" = 37,
                "23" = 38, "24" = 39, "25" = 40,
                "26" = 41, "27" = 42, "28" = 43,
                "29" = 44, "30" = 45, "31" = 46,
                "32" = 47, "33" = 48, "34" = 49,
                "35" = 50, "36" = 51, "37" = 52,
                "38" = 53, "39" = 54, "40" = 55,
                "41" = 56, "42" = 57, "43" = 58,
                "44" = 59, "45" = 60, "46" = 61,
                "47" = 62, "48" = 63, "49" = 64,
                "50" = 65, "51" = 66, "52" = 67, "53" = 68,
                "54" = 69, "55" = 70, "56" = 71,
                "57" = 72, "58" = 73, "59" = 74,
                "60" = 75, "61" = 76, "62" = 77, "63" = 78,
                "64" = 79, "65" = 80, "66" = 81,
                "67" = 82, "68" = 83, "69" = 84,
                "70" = 85, "71" = 86, "72" = 87,
                "73" = 88, "74" = 89, "75" = 90,
                "76" = 91, "77" = 92, "78" = 93,
                "79" = 94, "80" = 95, "81" = 96,
                "82" = 97, "83" = 98, "84" = 99,
                "85" = 100)

##Create a new column in DemographicData with the real age numbers
data$real_age <- age_mapping[data$age]

#Create a subset with only demographic information
DemographicData <- subset(data, select = c(real_age, gender, nationality))

#making the sub-data set numeric
DemographicData[] <- lapply(DemographicData, as.numeric)

# Access the frequency count for the first unique age
age_frequency <- table(DemographicData$real_age)
gender_frequency <- table(DemographicData$gender)
nationality_frequency <- table(DemographicData$nationality)
uni_frequency <- table(data$uni)

#summarize age
summary(DemographicData)
#SD of age
sd(DemographicData$real_age, na.rm = TRUE)

data %>% na.omit()

#make main set numeric
```

```
data[] <- lapply(data, as.numeric)

summary(data)

#frequency other variables
Uni_frequency <- table(data$Uni)
techinstudy_frequency <- table(data$Tech.in.study.)

# Reverse coding for negatively framed item
print(data$X4.Opennes)
data <- data %>%
  mutate(X4.Opennes = 5 - X4.Opennes)
print(data$X4.Opennes)

#reverse whole acceptance scale
print(data$PU1)
data <- data %>%
  mutate(PU1 = 6 - PU1)
print(data$PU1)

print(data$PU2)
data <- data %>%
  mutate(PU2 = 6 - PU2)
print(data$PU2)

print(data$PU3)
data <- data %>%
  mutate(PU3 = 6 - PU3)
print(data$PU3)

print(data$PU4)
data <- data %>%
  mutate(PU4 = 6 - PU4)
print(data$PU4)

print(data$PU5)
data <- data %>%
  mutate(PU5 = 6 - PU5)
print(data$PU5)

print(data$PU6)
data <- data %>%
  mutate(PU6 = 6 - PU6)
print(data$PU6)

print(data$PEU1)
data <- data %>%
  mutate(PEU1 = 6 - PEU1)
```

```
print(data$PEU1)

print(data$PEU2)
data <- data %>%
  mutate(PEU2 = 6 - PEU2)
print(data$PEU2)

print(data$PEU3)
data <- data %>%
  mutate(PEU3 = 6 - PEU3)
print(data$PEU3)

print(data$PEU4)
data <- data %>%
  mutate(PEU4 = 6 - PEU4)
print(data$PEU4)

print(data$PEU5)
data <- data %>%
  mutate(PEU5 = 6 - PEU5)
print(data$PEU5)

print(data$PEU6)
data <- data %>%
  mutate(PEU6 = 6 - PEU6)
print(data$PEU6)

#summarizing the items
data <- data %>%
  mutate(OpennessMean = (X1.Opennes + X2.Opennes + X3.Opennes + X4.Opennes +
X5.Opennes + X6.Opennes + X7.Opennes + X8.Opennes + X9.Opennes + X10.Opennes) /
10)

data <- data %>%
  mutate(AffinityMean = (X1.Affinity + X2.Affinity + X3.Affinity + X4.Affinity +
X5.Affinity + X6.Affinity + X7.Affinity + X8.Affinity + X9.Affinity + X10.Affinity) / 10)

data <- data %>%
  mutate(AcceptanceMean = (PU1 + PU2 + PU3 + PU4 + PU5 + PU6 + PEU1 + PEU2 +
PEU3 + PEU4 + PEU5 + PEU6) / 12)

#Alpha of scales
##make sub-datasets
OpennessData <- subset(data, select = c(X1.Opennes, X2.Opennes, X3.Opennes,
X4.Opennes, X5.Opennes, X6.Opennes, X7.Opennes, X8.Opennes, X9.Opennes,
X10.Opennes))
AffinityData <- subset(data, select = c(X1.Affinity, X2.Affinity, X3.Affinity, X4.Affinity,
X5.Affinity, X6.Affinity, X7.Affinity, X8.Affinity, X9.Affinity, X10.Affinity))
```

```
AcceptanceData <- subset(data, select = c(PU1, PU2, PU3, PU4, PU5, PU6, PEU1, PEU2, PEU3, PEU4, PEU5, PEU6))

alpha_openness <- alpha(OpennessData)
print(alpha_openness)
alpha_affinity <- alpha(AffinityData)
print(alpha_affinity)
alpha_acceptance <- alpha(AcceptanceData)
print(alpha_acceptance)

#combine study variable
# Recode the 'study_year' variable and create a new variable 'study_category'
data$new_study_category <- ifelse(data$X.Year.of.Study %in% c(1, 2), 1, 2)
##frequency of study variable
studyyear_frequency <- table(data$new_study_category)

#mean and SD for variables
##Openness
data %>% select(OpennessMean) %>% map(mean)
data %>% select(OpennessMean) %>% map(sd)
##Affinity
data %>% select(AffinityMean) %>% map(mean)
data %>% select(AffinityMean) %>% map(sd)
##Acceptance
data %>% select(AcceptanceMean) %>% map(mean)
data %>% select(AcceptanceMean) %>% map(sd)
##student at the UT
data %>% select(Uni) %>% map(mean)
data %>% select(Uni) %>% map(sd)
##technology in study?
data %>% select(Tech.in.study.) %>% map(mean)
data %>% select(Tech.in.study.) %>% map(sd)
##study year
data %>% select(new_study_category) %>% map(mean)
data %>% select(new_study_category) %>% map(sd)

#correlation
correlation <- cor(data$OpennessMean, data$OpennessMean)
print(correlation)

correlation <- cor(data$OpennessMean, data$AffinityMean)
print(correlation)

correlation <- cor(data$OpennessMean, data$AcceptanceMean)
print(correlation)

correlation <- cor(data$AcceptanceMean, data$AffinityMean)
print(correlation)
```

```
correlation <- cor(data$Uni, data$OpennessMean)
print(correlation)

correlation <- cor(data$Uni, data$AffinityMean)
print(correlation)

correlation <- cor(data$Uni, data$AcceptanceMean)
print(correlation)

correlation <- cor(data$Tech.in.study., data$OpennessMean)
print(correlation)

correlation <- cor(data$Tech.in.study., data$AffinityMean)
print(correlation)

correlation <- cor(data$Tech.in.study., data$AcceptanceMean)
print(correlation)

correlation <- cor(data$new_study_category, data$OpennessMean)
print(correlation)

correlation <- cor(data$new_study_category, data$AffinityMean)
print(correlation)

correlation <- cor(data$new_study_category, data$AcceptanceMean)
print(correlation)

#regression analysis
model <- lm(AcceptanceMean ~ OpennessMean + AffinityMean, data = data)
summary(model)

#obtaining the Confidence Interval
confint(model)
```