PERSONALITY TRAITS AND CYBER HYGIENE BEHAVIOR AMONG UNIVERSITY STUDENTS

BY

HEW CHI WEI

A REPORT

SUBMITTED TO

Universiti Tunku Abdul Rahman

in partial fulfillment of the requirements

for the degree of

BACHELOR OF INFORMATION SYSTEMS (HONOURS) BUSINESS INFORMATION SYSTEMS

Faculty of Information and Communication Technology

(Kampar Campus)

JUNE 2020

UNIVERSITI TUNKU ABDUL RAHMAN

REPORT STATUS DECLARATION FORM

Title: ____PERSONALITY TRAITS AND CYBER HYGIENE BEHAVIOR AMONG UNIVERSITY STUDENTS

Academic Session: _JUNE 2022_

I _____HEW CHI WEI_____

(CAPITAL LETTER)

declare that I allow this Final Year Project Report to be kept in Universiti Tunku Abdul Rahman Library subject to the regulations as follows:

1. The dissertation is a property of the Library.
2. The Library is allowed to make copies of this dissertation for academic purposes.

Verified by,

_____ (Author's signature)

_____ (Supervisor's signature)

Address:
5, Persiaran Desa Tambun 3,
_Taman Desa Tambun 31400____
_Ipoh, Perak._____

__Ts Soong Hoong Cheng__
Supervisor's name

Date: __09-September-2022____

Date: __09-September-2022__

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY

UNIVERSITI TUNKU ABDUL RAHMAN

Date: 09-September-2022

SUBMISSION OF FINAL YEAR PROJECT /DISSERTATION/THESIS

It is hereby certified that **Hew Chi Wei** (ID No: **18ACB04202**) has completed this final year project/ dissertation/ thesis* entitled "**PERSONALITY TRAITS AND CYBER HYGIENE BEHAVIOR AMONG UNIVERSITY STUDENTS**" under the supervision of Ts Soong Hoong Cheng (Supervisor) from the Department of Digital Economy Technology, Faculty/Institute* of Information and Communication Technology, and Cik Zanariah Binti Zainudin (Co-Supervisor)* from the Department of Digital Economy Technology, Faculty/Institute* of Information and Communication Technology.

I understand that University will upload softcopy of my final year project / dissertation/ thesis* in pdf format into UTAR Institutional Repository, which may be made accessible to UTAR community and public.

Yours truly,

(*Hew Chi Wei*)

*Delete whichever not applicable

DECLARATION OF ORIGINALITY

I declare that this report entitled "**PERSONALITY TRAITS AND CYBER HYGIENE BEHAVIOR AMONG UNIVERSITY STUDENTS**" is my own work except as cited in the references. The report has not been accepted for any degree and is not being submitted concurrently in candidature for any degree or other award.

Signature : 

Name : Hew Chi Wei

Date : 09-September-2022

ACKNOWLEDGEMENTS

I would like to express thanks and appreciation to my supervisor, Ts Soong Hoong Cheng and my moderator, Cik Zanariah Binti Zainudin who have given me a golden opportunity to involve in the research-based project. Besides that, they have given me a lot of guidance in order to complete this project. When I was facing problems in this project, the advice from them always assists me in overcoming the problems. Again, a million thanks to my supervisor and moderator.

Finally, I must say thanks to my parents and my family for their love, support, and continuous encouragement throughout the course.

ABSTRACT

Cyber hygiene often plays an important role in cybersecurity breaches. This project is to explore personality traits and cyber hygiene behaviour among university students. Each person has their own personality type which will affect their cyber hygiene behaviour. So, there are Big Five personality traits such as openness, conscientiousness, extraversion, agreeableness, and also neuroticism of each university student that will be analysed in this study. University students may become a victim if they do not have good cyber hygiene behaviour. A sample of 150 UTAR students will be selected to answer the online questionnaire. After that, data obtained will be analysed by using Statistical Package for the Social Sciences (SPSS) and examine the result of data. Pilot studying for survey should be conducted in this project to assess the reliability of the variables and items in the questionnaire before starting the research formally. 30 students were selected for this pilot study and the tool used for testing reliability which is SPSS to analyse the data which have been collected.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF SYMBOLS

β	beta

LIST OF ABBREVIATIONS

Covid-19	Coronavirus disease
IT	Information Technology
P value	Probability Value
SPSS	Statistical Package for Social Sciences
UTAR	Universiti Tunku Abdul Rahman

CHAPTER 1: INTRODUCTION

1.1 Problem Statement and Motivation

1.1.1 Users do not follow best practices in cyber hygiene behaviour

Nowadays, there is still have an issue where a lot of users do not want to follow best practices in cyber hygiene behaviour. For example, users will share their personal information with others or using their personal information on social media. Not only that, the password they create for all the accounts are the same or the passwords they use are weak which does not meet the minimum requirement for password. Users lack understanding of cybersecurity actions because users do not understand and find security options and use them. Thus, it will link to inappropriate attitudes and behaviours.

1.1.2 Users do not have precautionary behaviour and knowledge on using security software

Many users do not know the difference between antivirus software and firewalls. Most of the users do not update their antivirus software or even installed antivirus. In addition, most of the users did not deploy the firewall correctly or they use antivirus software without training. Many users do not have spam protection on their devices and it will cause them to fall into a phishing attack.

1.1.3 Different characteristics and demographics of users will have different cyber hygiene behaviours

Older users are the main predictor due to their not following best practices for cyber hygiene like sharing their personal information. Besides, females will update software less often than males and also females will create weaker passwords than males.

1.1.4 Motivation

Information technology has improved rapidly in the past decade. People have more chances to use internet since it considered as general things in normal life. People can used internet to do many things like finding the content that people desired, using social media, surfing the web and so. However, cyber threats are still involved in this era of globalization due to people who use the internet still do not have enough sufficient awareness. Some users known as the black hat will engage in cybercrime hacking others computer to get some sensitive data and so on.

Thus, explore the personality traits and cyber hygiene behaviour among university students should be encouraged and performed.

Besides that, explore the personality traits and cyber hygiene behaviour among university students is significant. This is because the people will negligent in some circumstance where it may let the people fall in unsecure digital environment [1]. There are big five personality traits such as extraversion, agreeableness, openness, conscientiousness, and also neuroticism. Different personality traits will have different cyber hygiene behaviour. The key determinants of an individual's attitude and behaviour towards cybersecurity include demographic attributes like gender and age, inherent personality, and also cultural context. By having this project approach, people will understand the highly subjective and complex nature of these human factors is required since it will impact cybersecurity.

Lastly, cyber hygiene will help to prevent cybercriminals from causing installing malware, security breaches, or stealing personal information to ensure a system's health. If there is a successful attack occurs, having proper cyber hygiene behaviour also can ensure a better incident response. They can play an important role in protecting and maintaining their devices and networks if university students understand the basic cyber hygiene practices. University students do need to rely on cybersecurity professionals to help them protect their networks and devices if they can ensure security.

1.2 Objectives

1.2.1 To identify different types of personality traits of a university students on cyber hygiene behavior

End users' personality traits always play an important role in cyber hygiene behavior. Different personality traits might have large differences on either having good or bad cyber hygiene behavior.

1.2.2 To analyze precautionary behavior and knowledge of university students on using security software

There is always plenty of students who do not use any security software on their device. They also do not have precautionary behavior and knowledge of using security software. Having good precautionary behavior and knowledge on using security software is important due to this can prevent end users fall into cybersecurity breaches.

1.2.3 To investigate the relationship between software security, email security, and data management practices with personality traits

There might have some personality traits are significant to some cyber security behavior and they might have some personality traits are not significant and no effect to some cyber security behavior. Therefore, it is important to find out the relationship between them.

1.3 Project Scope and Direction

The purpose of this project is to explore the personality traits and cyber hygiene behavior among university students. The main outcome of this project is to test the different types of personality traits of every student and different types of cyber hygiene behavior and knowledge. By having this project approach, the lecturers or other researchers where who needed the information for current university students can be considered the demographic and different risks involved, in their planning process to improve the current cyber hygiene problems among the university students.

It is very important that to list out and further explain the important features and current problems that need to be included in the project. It can become a solution and the things that need to improve when the problem has happened again. In addition, the user knowledge and

behaviors of cyber hygiene are the important points that needs to be considered due to they will bring a lot of influences to the user by using the IT product or services. Besides, demographics segmentation is one of the important features that are required in this project. The segmentation that needed will be gender, age and education which can ensure the information will be more accurate.

1.4 Impact, Significance, and Contribution

A study for exploring the personality traits and cyber hygiene behavior among university students can let university students have a good understanding of following cybersecurity best practices. Why cyber hygiene behavior is very important to the younger generation? This is due to exploiting oversights in basic cyber hygiene will cause most of the network breaches. The younger generation needs to evaluate their cyber hygiene accurately to prevent network breaches. There are some negative impacts if the younger generation having poor cyber hygiene behavior. For example, they might have illegal downloads which may cause loss of data, downloading viruses, slow internet connections and they do not know their devices are affected by the virus [2]. So, the younger generation with good cyber hygiene can prevent them from downloads from unauthorized websites and setup security with the password to avoid data sharing.

Besides that, this study also will show the linkage between their personality and their cyber hygiene behavior. This is because people are the core of cyber security and people can protect themselves from cyber-attack with the right skills and tools. All people are not the same and they have their personality which it can influence the cyber risk. Big Five model is used by behavioral psychologists to identify and understand personalities. Traits will show whether they are positively or negatively to the cyber risk. For example, cyber risk could enhance for open people if they challenge rules and regulations since they are more likely to challenge authority.

1.5 Report Organization

Chapter 1: Introduction

Chapter 1 shows the introduction of this study. Problem statement and motivation, project objectives, project scope, impact and significant are being discussed in this chapter.

Chapter 2: Literature Review

In this chapter, variables will be discussed and provide comprehensive summary of previous research on the topic.

Chapter 3: System Model

In this chapter, structural model, techniques to collect the data, software used to analyze the data will be discussed. Besides, pilot test also will be done in this chapter in order to enhance the reliability of this study.

Chapter 4: Result

Result tested with SPSS and explanation of the result will shown in this chapter. Cause-effect relationship between the variables of this study also will be discussed in this chapter.

Chapter 5: Conclusion

Discussion of hypothesis test, limitations, recommendation and a conclusion for this research will be discussed in this chapter.

CHAPTER 2: LITERATURE REVIEW

2.1 An exploratory study of cyber hygiene behaviours and knowledge

Cyber hygiene of an end users is often playing an important role in cybersecurity breaches. This chapter focuses mainly on reviewing the articles from authors that stretch out the knowledge concepts of cyber hygiene, threats in knowledge, and the behaviour of end users. There are several topics in this article which are security software, authentication, phishing scams, and also social networking. Behaviours and knowledge on pattern of password usage and phishing are also provided in this article and user characteristics also will be explored in this article. The impact of gender, age, perceived expertise, victim history, and training on cyber hygiene also will be explored in this article.

The result showed that user do not have good cyber hygiene concepts in security software because of users do not always run antivirus software scans and they do not employ firewall. Besides that, user have good cyber hygiene behaviour since they do not share their passwords with others and they will change their password frequently. Furthermore, user do not have good cyber hygiene behaviour on phishing scams since most of the users will click on the embedded links and download attachment from unknown senders. Lastly, user do not have good cyber hygiene behaviour on social networking since privacy settings will not be checked and their social media will share their personal information.

The strengths of this article are to provide different types of data about the cyber hygiene of end users in this cyber threatening world. This is due to the previous studies only focus some of the behaviours that compose good cyber hygiene. However, the weakness of this article is it just showed the training of using security software had no impact on cyber hygiene. It still needs to further investigate the how users receiving different types of training to examine further on training of cyber hygiene [3]. It also needs to show the advantages and costs of training.

2.2 Correlating Human Traits and Cybersecurity Behaviour Intentions

The goal of this article is to focus on predicting good security behavior based on the individual differences. Four forecast variables will be examined in this article that act for individual differences in four main categories. Factors of demographics, five types of personal traits and five types of decision-making styles will be observed in this article [4]. Not only that, but security behavior in the major categories will also be represented by the research outcomes variables.

The result shows that in device securement, individuals with higher security behavior are major in engineering compared to humanity majors. Extraversion personality traits and rational decision making is an important factor to predict device in good securement intentions. Besides that, for password generation, females have weaker password generation behavior than males and users are under the age range 18 to 25 years old and majors in humanities have weaker generation behavior intentions than other demographics. Conscientiousness personality traits and avoidant decision-making style is an important predictor of strong password generation. In addition, for proactive awareness security behavior, females have weaker proactive awareness intentions than males and women and respondents aged 18-25 have weak proactive awareness behavior intentions. Rational, avoidant, and dependent decision-making styles are an important predictor for good proactive awareness behavior intentions whereas there were no important personality traits that will affect users' security behavior of proactive awareness. Lastly, for updating cyber security behavior, result show that females have weaker updating behavior than males. Conscientiousness personality traits and rational decision- making style and spontaneous decision-making style are an important predictor for updating behavior.

The strength of this article is they focus on the wide range of different types of categories on individual differences and security behavior. The limitation of this article is there might have an inaccuracy of the response because they determined the result through the survey. Not only that, but there is also no deviation was found for the demographic factors. This will pose a threat to the outer validity due to there is a difference between university population and outside respondents. Table 2.2 shown that the relationship between human traits and security behaviors.

2.3 Taking Risks with Cybersecurity: Using Knowledge and Personal Characteristics to Predict Self-Reported Cybersecurity Behaviours

This article explored the self-reported cybersecurity knowledge about strong or weak passwords, self-reported risky cybersecurity behavior, and personal characteristics like personality traits and general risk-taking behavior.

The result shows that for self-reported risky cyber security behavior, men will have low conscientiousness than women whereas woman will have high level sensation seeking than men.

The strength of this article is in predicting self-reported cybersecurity behavior by using personality traits in combination with other personal characteristics. The weakness of this research is the gender of participants was majority female and most of the participants were in the younger aged groups. So, the researcher needs to do the survey in a more balanced manner in the future. Another limitation is the research was carried out in an online survey. So, the results might be different compared to the face- to-face survey [5].

2.4 Towards Determining the Effect of Age and Educational Level on Cyber- Hygiene

The main target of this article is to determine the effect of age and educational level on cyber hygiene knowledge and behavior [6]. It also explores for the user uses different types of devices for the internet and uses of the internet.

The result in this research found that most of the user have poor cyber hygiene knowledge and behavior. Age and education level of internet user does not have any important effect on cyber hygiene knowledge and behavior. Besides, mobile phone is the most common device used by the user, followed by laptop. In addition, for the purpose of using internet is the highest uses of internet are internet browsing, followed by learning, social networking, and email whereas the least uses of internet are playing games, followed by business, banking, and downloading music or video.

The limitation of this article is poor responses due to the COVID-19 pandemic since all the institutions have been closed. Thus, the researcher can use an online survey to replace the face-to-face survey since it is more convenient. Besides, the scope of this research is narrow due to they just focus of the age and educational level on the cyber hygiene knowledge and behavior. Hence, they need to explore more factors that might affect cyber hygiene such as gender, level of exposure, and so on.

2.5 Literature Review Summary Table

Author	Objective	Number of studied variables	Methodology	Sample domain
- [3]	- To identify participant's knowledge of concepts, knowledge of threats, and their cyber hygiene behaviors	5 variables: - Software security - Authentication of passwords - Phishing scams - Social Networking - User characteristics	- Self-reporting questionnaire - ANOVA and t-test were used to analyze data	- 268 participants
- [4]	- To determine the individual differences that are predictive of good security behaviors	4 predictor variables of individual differences: - Demographic factors - Personality traits - Risk-taking preferences - Decision-making styles 4 research outcome variables of security behaviors: - Device securement - Password generation - Proactive awareness - Updating	- Using web-based survey - Correlation analysis, factor analysis and reliability testing, multiple regression analysis, and ANOVA analysis were performed	- 369 students, faculty, and staff at a large public university

	- To investigate the relationship between password security beliefs and behaviors with personality and demographic variables	5 variables: - Risky cybersecurity behavior - Secure password knowledge - General risk-taking - Sensation seeking personality - Personality traits	- Online survey was distributed to participants - Descriptive statistics, Pearson's correlation, and multiple regression analysis by using IBM SPSS	- 325 undergraduates' student
- [6]	- To determine the significance effect of certain demographic factors/variables such as age and level of education on cyber-hygiene culture among students and employees of University of Nigeria, Nsukka.	6 variables: - Age - Level of education - Storage and virus attack hygiene - Social network hygiene - Authentication Hygiene - Social Engineering Hygiene	- Online questionnaire was distributed through online approach - Chi-square test and multiple regression analysis by using Statistical Packages for Social Sciences (SPSS) software Version 20	- 145 students and employees of University of Nigeria, Nsukka

Table 2.5: Summary of Literature Review

CHAPTER 3: SYSTEM MODEL

3.0 Chapter Description

This chapter is going to interpret the methodology that used in this study which included data collection and data analysis method. The methodology used to explain and examine the research question and hypothesis. This chapter includes design specification, research design, data collection method, sampling design, questionnaire development, the questionnaire's measuring scale, data analysis software methods, and the questionnaire's validity also have been discussed.

3.1 Design Specification

Figure 3.1 presents the research model of this study. The model was created based on the Five-Factor model, also called as the "Big Five" personality traits and cyber hygiene behavior. The study concluded that personality characteristics could drastically influence cyber hygiene behavior. Drawing reference from past researchers, this study proposes a new model that analyses the relationship between the Big Five personality traits and cyber hygiene behavior. Among three variables, software security, email security, and data management practices are categorized to independent variables.

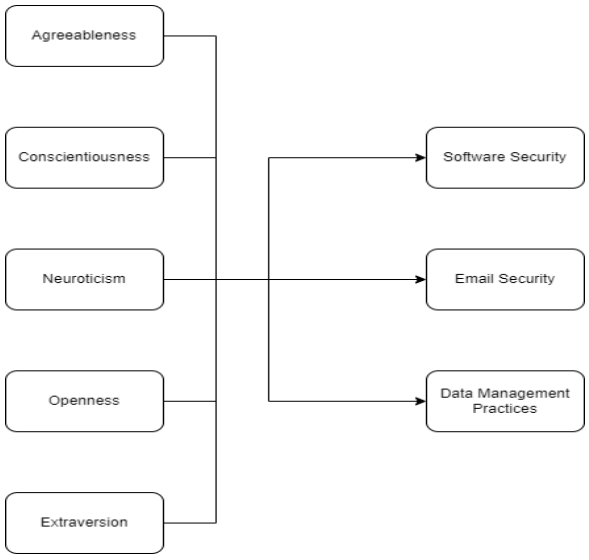


Figure 3.1: The proposed research model

3.1.1 Agreeableness

Individuals with this personality are kind, forgiving, likeable, cooperative, considerate, and tend to build a relationship that is more friendly and trusting with other people [7]. In addition, they will give more consideration to avoid conflict and maintain peace for those people high in agreeableness compared to people scoring low. Agreeableness has been found to be non-significant to software security, email security, and also data management practice [8].

Hypothesis 1a (H1a): Agreeableness is non-significant to software security.

Hypothesis 1b (H1b): Agreeableness is non-significant to email security.

Hypothesis 1c (H1c): Agreeableness is non-significant to data management practice.

3.1.2 Conscientiousness

Conscientiousness is the personality trait of being careful, organized, dependable, responsible, and has a high will to achieve [9]. People with high conscientiousness are actively plan, organize, and perform tasks [7]. Conscientiousness has also been found to be significant to software security [10]. Conscientiousness has been found to be non-significant to email security, and also data management practices [8].

Hypothesis 2a (H2a): Conscientiousness is significant to software security.

Hypothesis 2b (H2b): Conscientiousness is non-significant to email security.

Hypothesis 2c (H2c): Conscientiousness is non-significant to data management practice.

3.1.3 Neuroticism

Anxious, worried, emotional instability, self-consciousness, depression are the features of neuroticism [7]. Anger, anxiety, and depression are the feelings for those who score high on neuroticism [9]. Neuroticism has been found to be significant to data management practice [8]. However, neuroticism has been found to be non-significant to software security and email security [11].

Hypothesis 3a (H3a): Neuroticism is non-significant to software security.

Hypothesis 3b (H3b): Neuroticism is non-significant to email security.

Hypothesis 3c (H3c): Neuroticism is significant to data management practice.

3.1.4 Openness

Openness describes individuals with broad-minded, imaginative, seek for different experiences, independent, curious, and willing to try new things [7]. Individuals with high level of openness are sensitive to are and beauty, enjoy thinking and learning, and generate original ideas. Individuals with close-minded will have a narrow range of intellectual and creative interests [12]. Openness has been found to be significant to software security [13]. From the other researcher, openness has been found to be significant to email security [4]. Openness also has been found to be significant to data management practices [10].

Hypothesis 4a (H4a): Openness is significant to software security.

Hypothesis 4b (H4b): Openness significant to email security.

Hypothesis 4c (H4c): Openness is significant to data management practice.

3.1.5 Extraversion

Extraversion describes individuals are active, sociable, peaceful, expressive, outgoing, assertive, and flexible. Extraverts are expected to meet others and more engage in social interactions [9]. Extraversion has been found to be significant to email security [4]. However, extraversion has been found to be non-significant to software security, and data management practice [8].

Hypothesis 5a (H5a): Extraversion is non-significant to software security.

Hypothesis 5b (H5b): Extraversion is significant to email security.

Hypothesis 5c (H5c): Extraversion is non-significant to data management practice.

3.2 Research Design

The research design is described by how the data is collected and analyzed and aims to combine the relevance of the research purpose so that useful information can be obtained. Quantitative research method was used in this study to quantify the data and provide conclusive evidence, which is based on a representative and typically some form of statistical analysis. It is used to obtain information from the interviewee to determine the causal interaction between variables. Hence, it is appropriate for this research and can generalize the results from the sample to the overall interest. Therefore, proper research has been used to avoid errors in data collection.

3.3 Data Collection Method

There are two types of data will be used in this research paper which are primary data and secondary data. These data were collected for this study presented to the researcher from the research environment. Each study is based on the analysis and interpretation of data to collect the information.

3.3.1 Primary Data

Primary data is originated from first-hand sources. Primary data is collected with an aim to solve specific problems and perform their own analysis on the data that collected. The data can derive from the respondents in survey or interview data, or it also can be historical first-hand sources. For this research, Google Form will be used to develop a survey questionnaire form to easier summarize the data analysis, the respondents may answer the questionnaire via online. Moreover, I will share the Google Form link to the undergraduate students after the questionnaire has been created successfully. Lastly, I will send out the survey link through Microsoft Team, WeChat, WhatsApp, Messenger and so on because it is effective to target my audience.

3.3.2 Secondary Data

Secondary data usually easy to obtain which describe as the information collected of the purpose for research project completion. Secondary data is gathered from outside sources such as online database, books, journals, and articles. The journals and articles used in this research are obtained from internet database such as Google Scholar. Information obtained from secondary sources is often free of charge which can be analyzed in short period. I will extract the useful information and cite the data source once the secondary data is found out to be useful for this research paper.

3.4 Sampling Design

The target population of this study will be aimed on the university students and the target samples are the male and female students who are over 18 years of age. The reason why needs to target this group of people for this study is because this segment of students indicates the teenagers who are frequently use smartphone in their daily life, and they may become a victim if they do not have good cyber hygiene behaviour since nowadays information

technology has improved rapidly. Therefore, this sample can help to get more accurately analysis. A sample size of 150 respondents was selected from University Tunku Abdul Rahman in Kampar Campus. Moreover, they have completed the survey which being distributed via Google Form link for the pilot study. Questionnaire play as a significant tool to achieve responses from the respondents due to it helps in reducing resources such as time and money to collect data from huge amount respondents. Furthermore, it also brings benefit and safety to the respondents and me during this Covid-19 pandemic.

3.5 Questionnaire Design

The questionnaire is designed in the international language which is English to convenient for the respondent while reading and answering the questions. In the beginning of survey, the purpose of this questionnaire will be briefly introduced to the respondents. The questionnaire is separated into seven parts which are Part A to Part E. The question set in Part A is accessing the demographic information of respondents, Part B is collecting their cyber hygiene behavior of software security, Part C is collecting their cyber hygiene behavior of email security, Part D is collecting their cyber hygiene behavior of data management practices which mentioned above are the dependent variable and Part E is collecting their personality traits as the independent variable.

3.5.1 Adaptation of Questionnaire from Published Research

Variable	Adopted from
Software Security	- [3]
Email Security	- [8]
Data Management Practices	- [8]
Personality Traits	- [14]

Table 3.5.1.1: Summary of Questionnaire Adaptation

3.6 Measuring Scale

The method of calculating a variable is called a measurement scale. The measurement scales are divided into four different scale groups, namely nominal scale, interval scale, ordinal scale and ratio [15]. The measurement scales used in this research paper are nominal, ordinal, and Likert scale. The questionnaire is divided into 5 parts with a total of 33 questionnaire

questions, including 6 demographic questions in part A. The part B, C and D will come with the same number of independent variable questions which are total of 4 questions in each part. For part E personality traits, there are total 15 dependent variable questions in this questionnaire.

3.6.1 Nominal Scale

Nominal scales are a simple type of scale due to numbers and labels assigned to items are used as labels for identification or classification. A compilation of variable information included in nominal data can be allocated to two or more mutually exclusive and comprehensive groups [15]. The nominal data categories used in this research paper are as follow:

1. What is your gender?
2. Are you pursuing a degree in IT related field?
3. Which devices you used the most in your life?
4. How many hours you spend on using the device which selected in question 5?

3.6.2 Ordinal Scale

Ordinal scales organize and categorize objects as stated by their degree's level in a structured relationship. Standard ordinal scales used in market research ask respondents to immediately rate a particular brand as excellent, good, fair, and bad. Use of an ordinal scale to indicate above or below comments with no defined high or low range [15]. The ordinal data categories used in this research paper are as follow:

1. What is your age (years)?
2. What is the current level of education in which you study?

3.6.3 Likert Scale

The Likert scale is one of the most used itemized scales. The data set for Likert scale is usually a five-point scale. Respondents were asked to choose one out of five answers in the categories. There are two Likert-type response anchors will be used in this research paper. One of the Likert-type response anchors will be used for independent variables are frequency which is (1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always). For dependent variable,

level of agreement in Likert-type response anchors will be used which is (1 = Strongly Disagree, 2 = Disagree, 3 = Neither agree or disagree, 4 = Agree, 5 = Strongly Agree) [17].

3.7 Sample Item of Questionnaire

Factor	Sample Item
Software Security	1. I will use firewalls on desktop or laptop. 2. I will change my firewall settings to the strictest level when needed. 3. I try to make sure that the programs I use are up to date. 4. I verify that my anti-virus software has been regularly updating itself.
Email Security	1. I believe that checking the filename of the email attachment can help me avoid viruses that may infect my computer. 2. I believe that I will delete suspicious email. 3. I believe that it is convenient to check the security of an email with attachments. 4. I believe that I never notify IT support about suspicious emails although such warning could benefit me from being victim.
Data Management Security	1. I will always encrypt sensitive information that is stored on my desktop/laptop. 2. I will try to make sure that I will destroy all data before disposing of hardware.

	3. I believe that backing up a computer regularly is convenient. 4. I believe that backing up important files on my computer will reduce my concern for security.
Personality Traits	**Agreeableness** 1. I am friendly to others. 2. I have a forgiving personality. 3. I like to cooperate with others. **Conscientiousness** 1. I make plans and commit to them. 2. I pay attention to details. 3. I am careful with fulfilling tasks during the whole process. **Neuroticism** 1. I am easily anxious. 2. I have frequent mode swings. 3. I am somewhat worried about things. **Openness** 1. I am curious with novelty. 2. I am quick to understand things. 3. I like to present some new ideas. **Extraversion**

	1. I feel comfortable around people. 2. I am energetic. 3. I am passionate to others.

Table 3.7.1: Sample Item for Reliability Test

3.8 Data Analysis

I used Google Form Analytics, Microsoft Excel, and SPSS software to perform data analysis in this research. For more accurate figures and details will be stated in Chapter 4 and 5.

3.8.1 Scale Measurement (survey reliability)

Reliability is related to the accuracy of the test. Respondent who completed the tool designs to assess inspiration got approximately the same outcomes every time they took the test. Reliability results can be estimated via various tests although it is not possible to define the accuracy of the reliability [18].

To investigate the validity and reliability of the questionnaire, this paper carried out 30 sets of pilot tests. Questionnaire is developed by Google Form and distributed through Microsoft Teams and social media. To test the validity and reliability of the questionnaire, Cronbach's Alpha reliability test had been conducted in this pilot test. Moreover, there will have total 150 sets of questionnaires in this research paper, and it will test with variety tests. This study will use SPSS software to analyze the available data gathered from the questionnaire.

Reliability Statistics: Agreeableness

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.786	.788	3

Table 3.8.1.1: Reliability test for agreeableness

Reliability Statistics: Conscientiousness

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.744	.754	3

Table 3.8.1.2: Reliability test for conscientiousness

Reliability Statistics: Neuroticism

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.862	.878	3

Table 3.8.1.3: Reliability test for neuroticism

Reliability Statistics: Openness

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.651	.662	3

Table 3.8.1.4: Reliability test for openness

Reliability Statistics: Extraversion

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.823	.824	3

Table 3.8.1.5: Reliability test for extraversion

Reliability Statistics: Software Security

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.711	.707	4

Table 3.8.1.6: Reliability test for software security

Reliability Statistics: Email Security

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.814	.824	4

Table 3.8.1.7: Reliability test for email security

Reliability Statistics: Data Management Practices

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.679	.678	4

Table 3.8.1.8: Reliability test for data management practices

Cronbach's Alpha is used to measure the consistency of internal between a set of questionnaire items. Besides that, alpha value's range normally is between 0 and 1. The largest internal consistency of the items in the scaled value is when the Cronbach's Alpha coefficient is nearest to 1.0. If the alpha value is 0.8 or greater considered a very good level, alpha value is 0.6 to 0.7 considered an acceptable level, and lower than 0.6 is unacceptable [19].

In conclusion, pilot test's result shown most of the variables are greater than 0.6 of Cronbach's alpha which represent these variables are good and acceptable that proved the responses in the questionnaires are inter consistent and reliable.

3.9 Conclusion

In conclusion, Chapter 3 interpreted the methodology which applied to perform the design specification, research design and the method of data collection which divided into primary and secondary data, sampling design, questionnaire design which include adaption from published research, measuring scale which applied three types of scale namely nominal, ordinal, and Likert scale. In addition, sample items of questionnaire before pilot studying provided, data analysis which include scale measurement. The responses from questionnaire known as data collected is export into Microsoft Excel and apply into SPSS for pilot test. Therefore, the next chapter is going to explain in detail the results obtained from the responses of questionnaire that had been distributed.

CHAPTER 4: RESULTS

4.1 Result and Analyzes for Total 100 Respondents

This chapter is going to perform the analysis and explain the results of the questionnaire survey from the respondents. A total of 100 respondents were invited to conduct a questionnaire survey in this study and SPSS software will be used for data analyzing in this paper. Descriptive test, reliability test by using scale measurement, correlation coefficient and multiple regression analysis are all tested by SPSS in the result.

4.1.1 Descriptive Analysis

Almost all of the research project will have descriptive analysis [20]. Descriptive analysis can be used for comparison sample from research with another research. It will help the research to recognize the possible sample characteristics that might influence the conclusion. For instance, percentage, frequency, and graph are used to explain the data measurement in Section A of the questionnaire survey.

A total of 6 questions are tested with a descriptive test in this research paper. The result shows that from total 100 respondents participated in this study, there are 41 female and 59 males. Table 4.1.1.1 and Figure 4.1.1.1 shows the result.

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	41	41.0	41.0	41.0
	Male	59	59.0	59.0	100.0
	Total	100	100.0	100.0	

Table 4.1.1.1: Frequency table for gender

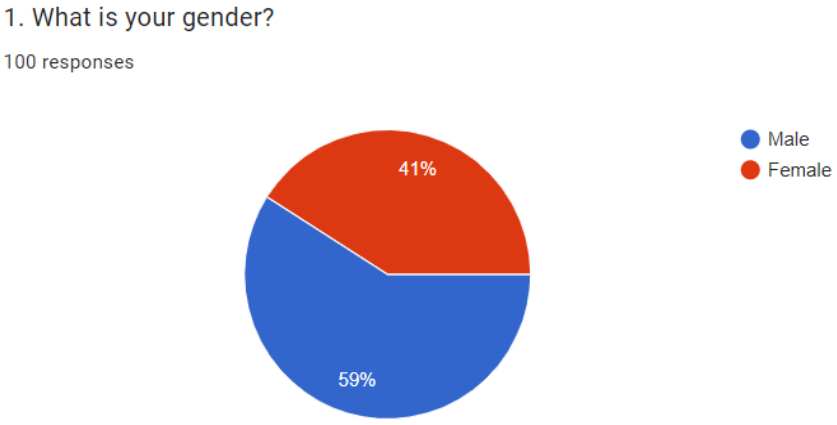


Figure 4.1.1.1: Gender

According to Table 4.1.1.2and Figure 4.1.1.2, the results shows that 21 to 23 years old student hold the most percentage which is 65% out of 100% in these 100 respondents, and then followed by 18 to 20 years old which occupied 25% whereas 24 to 26 years old occupied 10%. Hence, in this research paper, students between the ages of 21 and 23 calculated most of the questionnaires.

Age

		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	18-20 years old	25	25.0	25.0	25.0
	21-23	65	65.0	65.0	91.0
	24-26	10	10.0	10.0	100.0
	Total	100	100.0	100.0	

Table 4.1.1.2: Frequency table for age

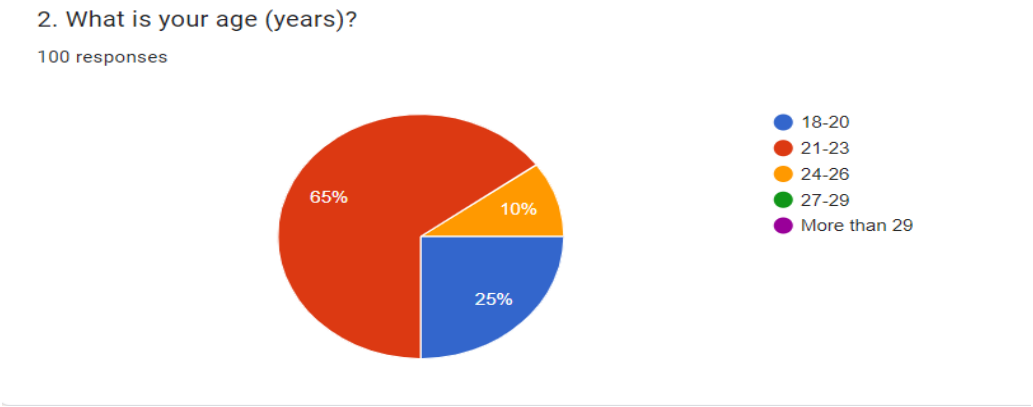


Figure 4.1.1.2: Age

From Table 4.1.1.3 and Figure 4.1.1.3, third demographic question to be analyse by descriptive test is education level. Result shows that all the respondents are under degree for education level which contribute 100% in the study.

Education level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Degree	100	100.0	100.0	100.0

Table 4.1.1.3: Frequency table for education level

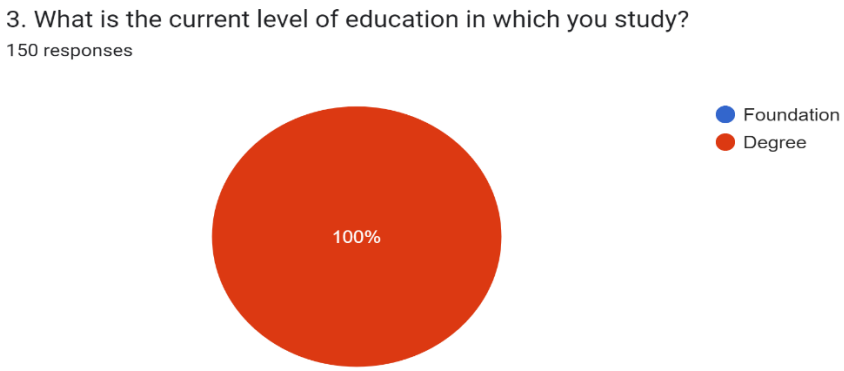


Figure 4.1.1.3: Education level

Moreover, it is the question “Are you pursuing a degree in IT related field?” to be analyse with descriptive test. In the result, who are pursuing a degree in IT related field is 80% out of 100% whereas there is 20% of students are not pursuing a degree in IT related field. Table and figure below show the result for question “Are you pursuing a degree in IT related field?”.

Are you pursuing a degree in IT related field?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	20	20.0	20.0	20.0
	Yes	80	80.0	80.0	100.0
	Total	100	100.0	100.0	

Table 4.1.1.4: Frequency table for are respondents pursuing a degree in IT related field

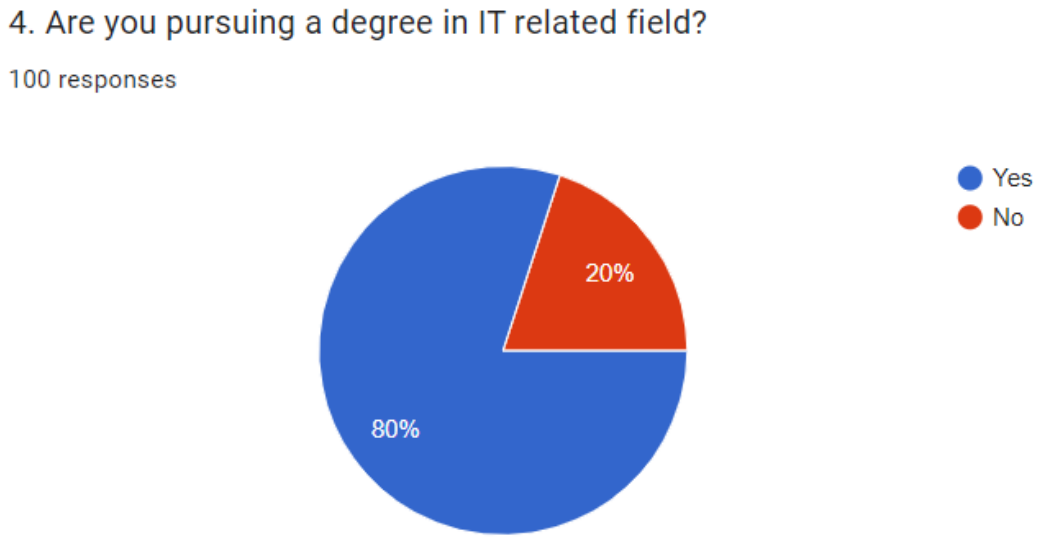


Figure 4.1.1.4: Are respondents pursuing a degree in IT related field

Apart from this, the fifth question “Which devices you used the most in your life?” to be analyse with descriptive test. In this 100 respondents, windows desktop or windows laptop contain the most percentage which is 48%, and then followed by android tablet or android smartphone occupied 33%. Then, iPad or iPhone occupied the least percentage which is 19% out of 100%. Below is the table and figure show the result for question “Which devices you used the most in your life?”.

Which devices you used the most in your life?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Android Tablet/ Smartphone	33	33.0	33.0	33.0
	iPad/ iPhone	19	19.0	19.0	51.0
	Windows Desktop/ Laptop	48	48.0	48.0	100.0
	Total	100	100.0	100.0	

Table 4.1.1.5: Frequency table for which devices respondents used the most in their life

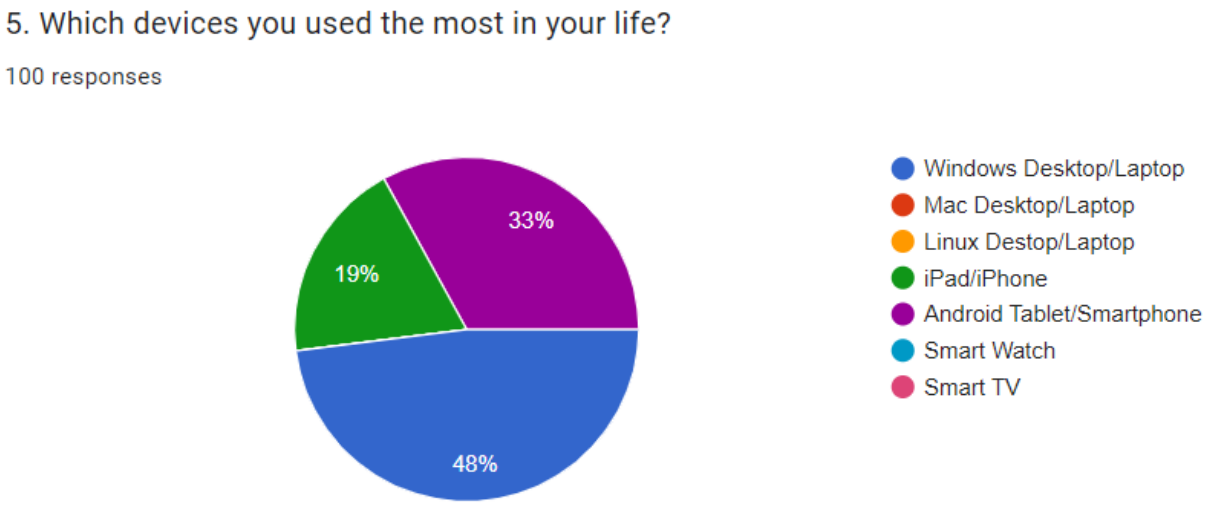


Figure 4.1.1.5: Which devices respondents used the most in their life

Other than that, the last question in part A is “How many hours you spend on using the devices which selected in question?”. This answer divided into four group which are 4 to 6 hours got the highest percentage with 47% followed by 7 to 9 hours is 29%. Then, there are 22% respondents spend more than 9 hours using the devices and the least percentage is 2% for 1 to 3 hours. The table and figure below show the result for question “How many hours you spend on using the devices which selected in question?”.

How many hours you spend on using the device which selected in question 5?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-3 hours	2	2.0	2.0	2.0
	4-6	47	47.0	47.0	47.0
	7-9	29	29.0	29.0	77.0
	More than 9	22	22.0	22.0	100.0
	Total	100	100.0	100.0	

Table 4.1.1.6: Frequency table for how many hours respondents spend on using the devices

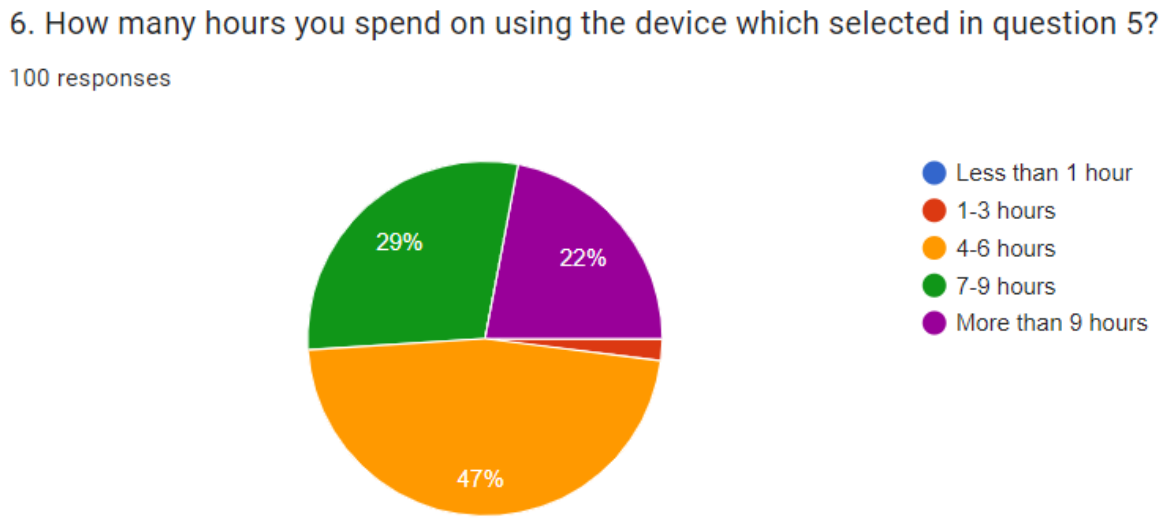


Figure 4.1.1.6: How many hours respondents spend on using the devices

4.1.2 Reliability Test

In social sciences, Cronbach's alpha is one of the most commonly used coefficients for reliability testing. Cronbach's alpha explains the reliability of a study's measurement population, which can be questionnaire, testing object or alternative types. Internal consistency and reliability of the items will be tested by Cronbach's alpha. They would have the same variance and same co-variance when the tests are "parallel" [21]. A general accepted rule for alpha value is 0.6 to 0.7 is an acceptable level of reliability, and 0.8 or higher is a very good level [22].

The independent variables and dependent variables which are agreeableness, conscientiousness, neuroticism, openness, extraversion, software security, email security, and data management practices were analyse with Cronbach's alpha reliability test separately. This is due to ensuring that each variable is closely related to each other.

For personality traits, the alpha value for agreeableness, conscientiousness, neuroticism, openness, and extraversion are 0.813, 0.782, 0.813, 0.696, and 0.822 which are acceptable and consider as good. The alpha value for software security, email security, and data management practices are 0.659, 0.719, and 0.718 which are also acceptable for this research paper. So, the questionnaire answers are reliable and the questionnaire can be further analyzed.

Reliability Statistics: Agreeableness

Cronbach's Alpha	**Cronbach's Alpha Based on Standardized Items**	**N of Items**
.813	.814	3

Table 4.1.2.1: Reliability test for agreeableness

Reliability Statistics: Conscientiousness

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.782	.788	3

Table 4.1.2.2: Reliability test for conscientiousness

Reliability Statistics: Neuroticism

Cronbach's Alpha	**Cronbach's Alpha Based on Standardized Items**	**N of Items**
.813	.824	3

Table 4.1.2.3: Reliability test for neuroticism

Reliability Statistics: Openness

Cronbach's Alpha	**Cronbach's Alpha Based on Standardized Items**	**N of Items**
.696	.697	3

Table 4.1.2.4: Reliability test for openness

Reliability Statistics: Extraversion

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.822	.823	3

Table 4.1.2.5: Reliability test for extraversion

Reliability Statistics: Software Security

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.659	.663	4

Table 4.1.2.6: Reliability test for software security

Reliability Statistics: Email Security

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.719	.729	4

Table 4.1.2.7: Reliability test for email security

Reliability Statistics: Data Management Practices

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.718	.715	4

Table 4.1.2.8: Reliability test for data management practices

4.1.3 Pearson Correlation

Pearson correlation analysis calculate the strength of relationship between independent variables and dependent variable. Correlation coefficient's values range is between -1 to +1. If the value is in a range of 0 to 1.0 which means it is positive value and linear relationship whereas if the value is in a range of -1.0 to 0 which represent it is negative value and linear relationship. On the other hand, a correlation coefficient of zero shows that there is no causal relationship between the two variables being analysed [23]. The correlation value between 0 -

0.19 is consider as very weak, 0.20 - 0.39 is weak, 0.40 - 0.59 is moderate correlation, 0.60 - 0.79 is strong, and 0.80 - 1.0 is very strong correlation [24]. P value that is <0.05 considered as statistically significant and p value that is <0.001 considered as statistically highly significant.

This research paper is to study examines the correlation between personality traits and cyber hygiene behaviour, the results showed that amongst the personality factors, agreeableness is statistically highly significant with email security and data management practices. The R-value between agreeableness and email security is 0.438 and the p value is <0.001 whereas the R-value between agreeableness and data management practices is 0.378 and the p value is <0.001. Agreeableness is statistically significant with software security which R-value is 0.331 and p-value is 0.001 since the p value is <0.05. The strength of correlation between agreeableness and email security considered as moderate correlation whereas the strength of correlation between agreeableness with software security and data management practices are weak correlation.

Besides, conscientiousness is statistically highly significant with all the cyber hygiene behaviours which are software security, email security, and data management practices due to all the p value are <0.001. The R-value between conscientiousness with software security is 0.444 whereas the R- value between conscientiousness with email security is 0.447. Not only that, the R-value between conscientiousness with data management practices is 0.411. The strength of correlation between conscientiousness with all the 3 dependent variables which are software security, email security, and data management practices are moderate correlation.

Furthermore, results showed that neuroticism is statistically significant with all the cyber hygiene behaviours. From the result, the R-value between neuroticism and software security is 0.254 and the p value is 0.011. On the other hand, the p value for neuroticism with email security and data management practices are 0.001. The R-value between neuroticism with email security is 0.329 whereas the R-value between neuroticism with data management practices is 0.342. The strength of correlation between neuroticism with all the 3 independent variables are weak correlation.

Moreover, openness is statistically highly significant with all the cyber hygiene behaviours. This is because all the p values between openness and cyber hygiene behaviours are <0.001. From the results, the R-value between openness and software security is 0.525, the R-value between openness and email security is 0.570, and the R-value between openness and data management practices is 0.455. The strength of correlation between openness with all the 3 dependent variables which are software security, email security, and data management practices are moderate correlation.

Apart from that, extraversion is statistically highly significant with software security and email security. This is because the p values between extraversion with software security and email security are <0.001. The R-value between extraversion and software security is 0.400 and the R-value between extraversion and email security is 0.494. However, extraversion is statistically significant with data management practices. The R-value of extraversion and data management practices is 0.338 and the p-value is 0.001. The strength of correlation between extraversion with software security and email security are moderate correlation whereas the strength of correlation between extraversion with data management practices is weak correlation.

In a nutshell, the table below shows that all the Pearson correlation coefficient in this study are positive relationship between independent variables and dependent variable.

Correlations

		Software Security	Email Security	Data Management Practices	Agreeableness	Conscientiousness	Neuroticism	Openness	Extraversion
Software Security	Pearson Correlation	1	.610**	.404**	.331*	.444**	.254*	.525**	.400**
	Sig. (2-tailed)		.000	.000	.001	.000	.011	.000	.000
	N	100	100	100	100	100	100	100	100
Email Security	Pearson Correlation	.610**	1	.324**	.438**	.447**	.329**	.570**	.494**
	Sig. (2-tailed)	.000		.001	.000	.000	.001	.000	.000
	N	100	100	100	100	100	100	100	100
Data Management Practices	Pearson Correlation	.404**	.324**	1	.378**	.411**	.342*	.455**	.338**
	Sig. (2-tailed)	.000	.001		.000	.000	.001	.000	.001
	N	100	100	100	100	100	100	100	100
Agreeableness	Pearson Correlation	.331*	.438**	.378**	1	.702**	.335*	.603**	.507**
	Sig. (2-tailed)	.001	.000	.000		.000	.001	.000	.000
	N	100	100	100	100	100	100	100	100

Conscientiousness	Pearson Correlation	.444**	.447**	.411**	.702**	1	.334**	.572**	.688**
	Sig. (2-tailed)	.000	.000	.000	.000		.001	.000	.000
	N	100	100	100	100	100	100	100	100
Neuroticism	Pearson Correlation	.254*	.329**	.342*	.335*	.334**	1	.451**	.261**
	Sig. (2-tailed)	.011	.001	.001	.001	.001		.000	.009
	N	100	100	100	100	100	100	100	100
Openness	Pearson Correlation	.525**	.570**	.455**	.603**	.572**	.451**	1	.613**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000
	N	100	100	100	100	100	100	100	100
Extraversion	Pearson Correlation	.400**	.494**	.338**	.507**	.688**	.261**	.613**	1
	Sig. (2-tailed)	.000	.000	.001	.000	.000	.009	.000	
	N	100	100	100	100	100	100	100	100

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

*. Correlation is significant at the 0.05 level (2-tailed).

Table 4.1.3.1: Pearson Correlation Coefficient Result

4.1.4 Multiple Linear Regression

This analysis is to measure and examine the relationship between independent variables and dependent variable. There are three multiple regressions will be tested in this study. The first multiple regression which evaluate the relationship between agreeableness, conscientiousness, neuroticism, openness, and extraversion as independent variables and software security as dependent variable. In addition, the second multiple regressions are to test agreeableness, conscientiousness, neuroticism, openness, and extraversion as independent variables and email security as dependent variable. Lastly, the last multiple regression is to examine agreeableness, conscientiousness, neuroticism, openness, and extraversion as independent variables and data management practices as dependent variable. All the multiple regression analysis able to successfully be conducted because all the variable and items are measured by the Likert scale.

4.1.4.1 Multiple Regression (Agreeableness, conscientiousness, neuroticism, openness, extraversion, and software security)

The first regression is to examine the relationship of five variables which are agreeableness, conscientiousness, neuroticism, openness, extraversion as independent variables and software security as dependent variable.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	$.562^a$	.316	.279	.61093

a. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

Table 4.1.4.1.1: Model Summary of Multiple Regression Analysis

In social science, R square that is between 0 to 0.09 is too low whereas 0.10 to 0.99 is acceptable when some or most of the variables are statistically significant [25]. The strength of a relationship is based on R value. R value that is less than 0.3 considered as none or very weak relationship between two variables, R value that is between 0.3 to 0.5 considered as weak relationship between two variables. For R value that is between 0.5 to 0.7 considered as

moderate relationship and lastly for R value that is larger than 0.7, the strength of relationship is considered as strong [26].

Based on table 4.1.4.1.1, R square is 0.316 which means the independent variables which are agreeableness, conscientiousness, neuroticism, openness, extraversion could explain 31.6% of the variations on dependent variable which is software security. In other words, there is 31.6% has been significantly explained by these five independent variables whereby 68.4% have explained by other variables which indicates there are other variables that not included in this study are important to interpret software security. Other than that, R value shown in the table is 0.562 which means that their correlation is moderate and positive.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.173	5	3.235	8.667	$.000^{b}$
	Residual	35.084	94	.373		
	Total	51.257	99			

a. Dependent Variable: Software Security

b. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

Table 4.1.4.1.2: ANOVA of Multiple Regression Analysis

Based on Table 4.1.4.1.2, F value is 8.667 and the significant value is 0.000 which is lesser than the alpha value 0.05. Thus, the overall regression model with these five predictors as agreeableness, conscientiousness, neuroticism, openness, extraversion are well explained the variation in software security.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.702	.405		4.201	.000
	Agreeableness	-.144	.132	-.139	-1.087	.280
	Conscientiousness	.291	.145	.287	2.006	.048
	Neuroticism	.004	.081	.005	.055	.956
	Openness	.439	.125	.443	3.514	.001
	Extraversion	.000	.102	.000	.001	.999

a. Dependent Variable: Software Security

Table 4.1.4.1.3: Coefficient of Multiple Regression Analysis

A regression equation for dependent variable which is software security can be computed for this study as:

Software Security = 1.702 - 0.144 (Agreeableness) + 0.291 (Conscientiousness) + 0.004 (Neuroticism) + 0.439 (Openness) + 0.000 (Extraversion)

The unstandardized coefficients value of agreeableness, conscientiousness, neuroticism, openness, and extraversion are β = -0.144, β = 0.291, β = 0.004, β = 0.439, β = 0.000 respectively. Firstly, the highest coefficient value is openness which obtained the highest β value as 0.439 compared to other variables. In other words, it able to explain that a frequency increase in openness affect to an increase of 0.439 in software security. Moreover, the significant value of openness obtained p is 0.001 which represents it is lesser than the significant level of 0.05. Thus, openness is significant to software security.

Besides that, conscientiousness is the second highest value of coefficients which obtained the second highest of β = 0.291. Thus, a number increase in conscientiousness causes an increase of 0.291 in software security. Furthermore, the significant value of conscientiousness obtained p is 0.048 which represents it is lesser than the significant level of 0.05. Hence, conscientiousness is significant to software security.

In addition, neuroticism obtained the third important factors in affecting software security. The table above shows that the β value of neuroticism is 0.004. A number increase in

neuroticism causes an increase of 0.004 in software security. However, the significant value of neuroticism obtained 0.956 which is greater than the significant level of 0.05. Therefore, it can conclude that neuroticism is not significant to software security.

Moreover, extraversion ranked as the following significant factor to influence software security which obtained the fourth highest of β value = 0.000. Nevertheless, the significant value of extraversion obtained 0.999 which is greater than the significant level of 0.05. Thus, it can conclude that extraversion is not significant to software security.

Lastly, agreeableness obtained the lowest important factor in affecting software security. This is because the result shows that the β value of agreeableness is -0.144 which is the smallest value. A number increase in agreeableness will causes a decrease of 0.144 in software security. However, the significant level of agreeableness obtained 0.280 which is greater than the significant level of 0.05. Therefore, it can conclude that agreeableness is not significant to software security.

4.1.4.2 Multiple Regression (Agreeableness, conscientiousness, neuroticism, openness, extraversion, and email security)

The second regression is to evaluate the relationship of five variables which are agreeableness, conscientiousness, neuroticism, openness, and extraversion as independent variables and email security as dependent variable.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.609[a]	.371	.337	.61293

a. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

Table 4.1.4.2.1: Model Summary of Multiple Regression Analysis

According to Table 4.1.4.2.1, R square value obtained 0.371 in this relationship which represents there is 37.1% of the dependent variable which is email security able to be explained

by the five independent variables which are agreeableness, conscientiousness, neuroticism, openness, and extraversion. Hence, there is 37.1% has been significantly explained by the independent variables. On the other hand, other 62.9% have interpreted by other variables that never cover in this research. In addition, the table shows that the R value is 0.609 which represents that the correlation is moderate and positive.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.818	5	4.164	11.083	$.000^b$
	Residual	35.314	94	.376		
	Total	53.132	99			

a. Dependent Variable: Email Security

b. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

Table 4.1.4.2.2: ANOVA of Multiple Regression Analysis

According to Table 4.1.4.2.2, it shows the F value is 11.083 and the significant value is 0.000 which value is lesser than the alpha value 0.05. Therefore, the overall regression model with these five predictors as agreeableness, conscientiousness, neuroticism, openness, and extraversion are well explained the variation in email security.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.243	.407		3.057	.003
	Agreeableness	.089	.133	.082	.668	.506
	Conscientiousness	.026	.145	.025	.180	.858
	Neuroticism	.075	.081	.085	.920	.360
	Openness	.356	.125	.343	2.842	.005
	Extraversion	.170	.103	.203	1.658	.101

a. Dependent Variable: Email Security

Table 4.1.4.2.3: Coefficient of Multiple Regression Analysis

A regression equation for dependent variable which is email security can be computed for this study as:

Email Security = 1.243 + 0.089 (Agreeableness) + 0.026 (Conscientiousness) + 0.075 (Neuroticism) + 0.356 (Openness) + 0.170 (Extraversion)

The unstandardized coefficients value of agreeableness, conscientiousness, neuroticism, openness, and extraversion are $\beta = 0.089$, $\beta = 0.026$, $\beta = 0.075$, $\beta = 0.356$, and $\beta = 0.170$, respectively. Firstly, the most significant predictor is openness which obtained the highest β value as 0.356 compared to other four variables. In other words, it able to explain that a frequency increase in openness affect to an increase of 0.356 in email security. Moreover, the significant value of openness obtained $p = 0.005$ which means that it is lesser than the significant value of 0.05. Consequently, openness is significant to email security.

In addition, extraversion is the second highest factor to influence email security which obtained the second highest of β value = 0.170. Hence, a number increase in extraversion causes an increase of 0.170 in email security. However, the significant value of extraversion is 0.101 which represents it is greater than the significant level of 0.05. For this reason, extraversion is not significant to email security.

Besides that, agreeableness is the third highest factor in affecting email security. Based on the table above, the β value of agreeableness is 0.089 and the significant value of agreeableness is 0.506 which is greater than the significant level of 0.05. Therefore, agreeableness is not significant to email security.

Furthermore, neuroticism ranked as the following factor to influence email security. This is because the β value of neuroticism is 0.075 which is the fourth highest in the result. Nevertheless, the significant value of conscientiousness obtained 0.360 which is greater than the significant level of 0.05. Hence, neuroticism is not significant to email security.

Finally, conscientiousness obtained the lowest important factor in affecting email security. This is due to the table above shows that the β value of conscientiousness is 0.026

which is the smallest value. However, the significant value of conscientiousness obtained 0.858 which is greater than the significant level of 0.05. Thus, conscientiousness is not significant to email security.

4.1.4.3 Multiple Regression (Agreeableness, conscientiousness, neuroticism, openness, extraversion, and data management practices)

The third regression is to evaluate the relationship of five variables which are agreeableness, conscientiousness, neuroticism, openness, and extraversion as independent variables and data management practices as dependent variable.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	$.510^{a}$	.260	.221	.63961

a. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

Table 4.1.4.3.1: Model Summary of Multiple Regression Analysis

According to Table 4.1.4.3.1, R square value obtained 0.260 in this relationship which represents there is 26.0% of the dependent variable which is data management practices able to be explained by the five independent variables which are agreeableness, conscientiousness, neuroticism, openness, and extraversion. Thus, there is 26.0% has been significantly interpreted by the independent variable which means that there is other 74.0% interpreted by other variable that not included in this study. Besides that, R value in this relationship is 0.510 which represents the correlation is moderate and positive.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.506	5	2.701	6.603	$.000^{b}$
	Residual	38.456	94	.409		
	Total	51.962	99			

a. Dependent Variable: Data Management Practices

b. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

Table 4.1.4.3.2: ANOVA of Multiple Regression Analysis

Based on Table 4.1.4.3.2, F value is 6.603 and the significant value is 0.000 which is lesser than the alpha value which is 0.05. Therefore, the overall regression model with these five predictors as agreeableness, conscientiousness, neuroticism, openness, and extraversion are well explained the variation in data management practices.

$$\boldsymbol{Coefficients^{a}}$$

Model		**Unstandardized Coefficients**		**Standardized Coefficients**		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.629	.424		3.839	.000
	Agreeableness	.046	.138	.044	.332	.740
	Conscientiousness	.195	.152	.192	1.288	.201
	Neuroticism	.126	.085	.149	1.486	.141
	Openness	.260	.131	.260	1.987	.050
	Extraversion	-.012	.107	-.015	-.114	.910

a. Dependent Variable: Data Management Practices

Table 4.1.4.3.3: Coefficient of Multiple Regression Analysis

A regression equation for dependent variable which is data management practices can be computed for this study as:
Data Management Practices = 1.878 + 0.046 (Agreeableness) + 0.195 (Conscientiousness) + 0.126 (Neuroticism) + 0.260 (Openness) – 0.012 (Extraversion)

The unstandardized coefficients value of agreeableness, conscientiousness, neuroticism, openness, and extraversion are β = 0.046, β = 0.195, β = 0.126, β = 0.260, and β = -0.012. Firstly, the most significant predictor is openness which obtained the highest β value as 0.260 compared to other four variables. In other words, it able to explain that a frequency increase in openness affect to an increase of 0.260 in data management practices. The

significant value of openness obtained p value which is 0.050 which means that it is equal to the significant level of 0.05. Therefore, openness is significant to data management practices.

Moreover, conscientiousness is the second highest factor to influence data management practices which obtained the second highest of β value = 0.195. So, a number increase in conscientiousness causes an increase of 0.195 in data management practices. Unfortunately, the significant value of conscientiousness is 0.201 which represents it is greater than the significant level of 0.05. Hence, conscientiousness is not significant to data management practices.

In addition, neuroticism is the third highest factor in affecting data management practices. Based on the table above, the β value of neuroticism is 0.126 and the significant value of neuroticism is 0.141 which is greater than the significant level of 0.05. Thus, neuroticism is not significant to data management practices.

Furthermore, agreeableness ranked as the following factor to influence data management practices. This is because the β value of agreeableness is 0.046 which is the fourth highest in the result. Nevertheless, the significant level of agreeableness obtained 0.740 which is greater than the significant level of 0.05. For this reason, agreeableness is not significant to data management practices.

Lastly, extraversion obtained the lowest important factor in affecting data management practices. This is due to the table above shows that the β value of extraversion is -0.012. It able to be interpreted as a frequency increase in extraversion affect to decrease of 0.012 in data management practices. In addition, the significant value of extraversion is 0.910 which represents that it is greater than the significant level of 0.05. As a consequent, extraversion is not significant to data management practices.

4.2 Result and Analyzes for Total 150 Respondents

Since most of the p values in data analysis and results of 100 respondents are above 0.05 which means there is no significant in the hypothesis. So, this study getting more questionnaire results in order to re-analyzed the result. The method used for this study will be the same and SPSS will carry out the data analysis.

4.2.1 Descriptive Analysis

From 150 respondents participated in this study, the result shows there are 59 female and 91 males. Table 4.2.1.1 and Figure 4.2.1.1 shows the result.

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	59	39.3	39.3	39.3
	Male	91	60.7	60.7	100.0
	Total	150	100.0	100.0	

Table 4.2.1.1: Frequency table for gender

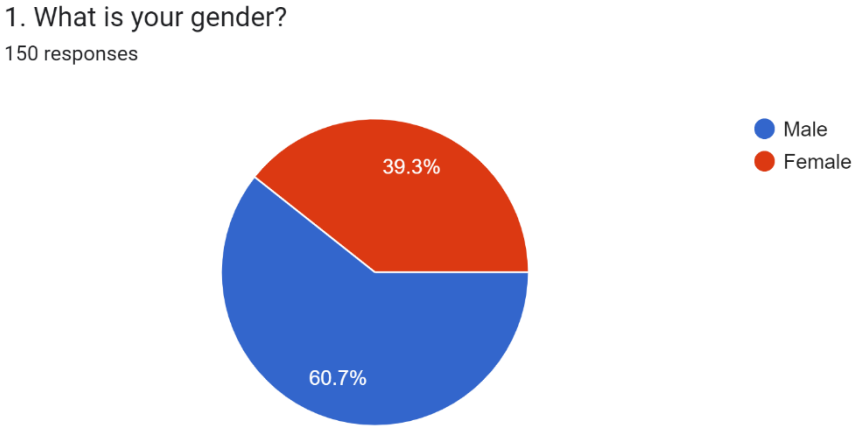


Figure 4.2.1.1: Gender

According to Table 4.2.1.2 and Figure 4.2.1.2, results shows that 21 to 23 years old student occupied the most percentage which is 62% out of these 150 respondents, and 24 to 26 years old occupied 22.7% while 18 to 20 years old that occupied 15.3%. Thus, in this research paper, students between the ages of 21 and 23 calculated most of the questionnaires.

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-20 years old	23	15.3	15.3	15.3
	21-23	93	62.0	62.0	78.0
	24-26	34	22.7	22.7	100.0
	Total	150	100.0	100.0	

Table 4.2.1.2: Frequency table for age

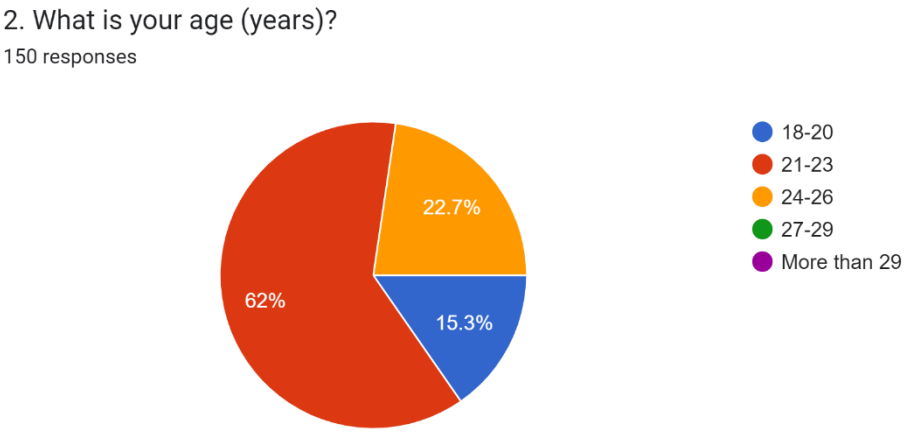


Figure 4.2.1.2: Age

From the Table 4.2.1.3 and Figure 4.2.1.3, third demographic question to be analyse by descriptive test is education level. Result shows that all the respondents are under degree for education level which contribute 100% in the study.

Education level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Degree	150	100.0	100.0	100.0

Table 4.2.1.3: Frequency table for education level

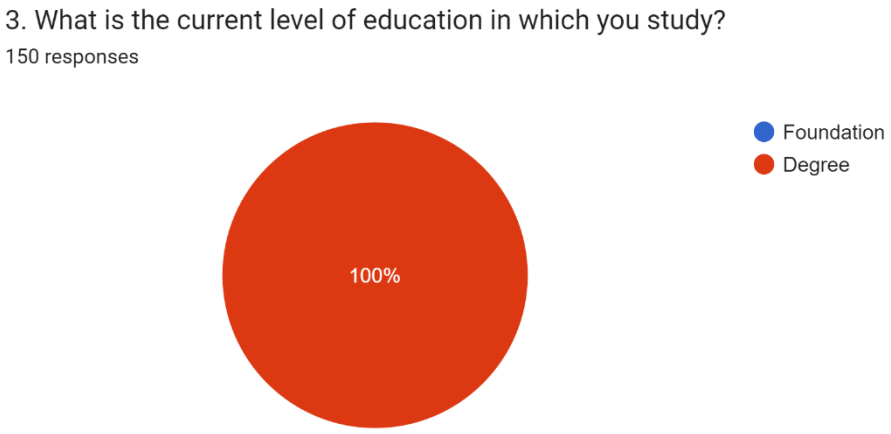


Figure 4.2.1.3: Education level

Besides that, it is the question "Are you pursuing a degree in IT related field?" to be analyse with descriptive test. In the result, who are pursuing a degree in IT related field is 74% out of 100% whereas there is 26% of students are not pursuing a degree in IT related field. Table and figure below show the result for question "Are you pursuing a degree in IT related field?".

Are you pursuing a degree in IT related field?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	38	25.3	25.3	25.3
	Yes	112	74.7	74.7	100.0
	Total	150	100.0	100.0	

Table 4.2.1.4: Frequency table for are respondents pursuing a degree in IT related field

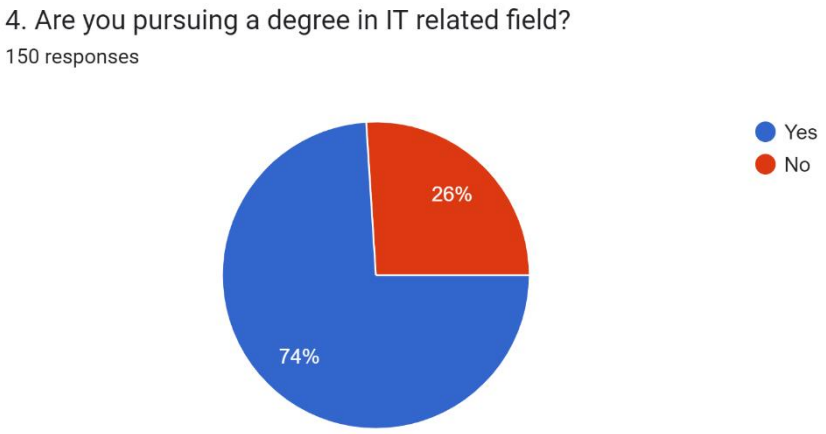


Figure 4.2.1.4: Are respondents pursuing a degree in IT related field

Furthermore, the fifth question "Which devices you used the most in your life?" to be analyse with descriptive test. In this 100 respondents, windows desktop or windows laptop occupied the most percentage which is 49.3% and second highest is android tablet or android smartphone occupied 28%. Then, iPad or iPhone occupied the least percentage which is 22.7% out of 100%. Below is the table and figure show the result for question "Which devices you used the most in your life?".

Which devices you used the most in your life?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Android Tablet/ Smartphone	43	28.0	28.0	28.0
	iPad/ iPhone	34	22.7	22.7	51.3
	Windows Desktop/ Laptop	73	49.3	49.3	100.0
	Total	150	100.0	100.0	

Table 4.2.1.5: Frequency table for which devices respondents used the most in their life

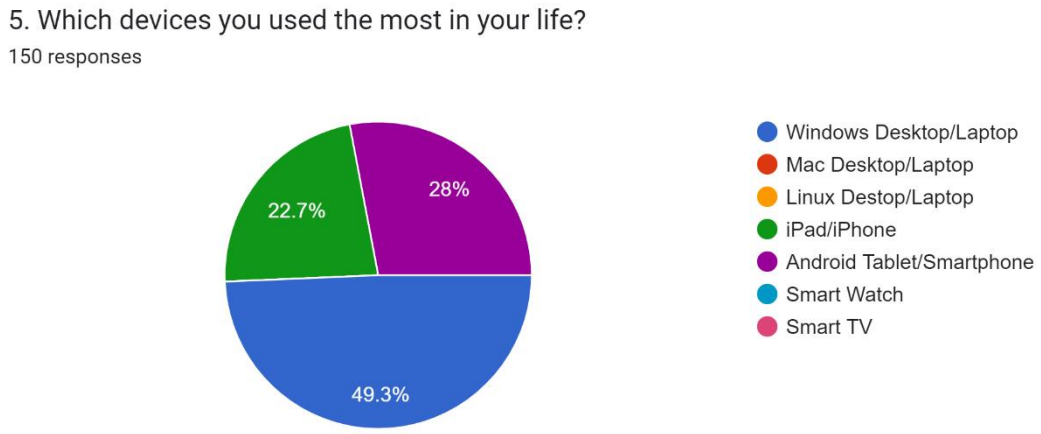


Figure 4.2.1.5: Which devices respondents used the most in their life

Lastly, the last question in part A is "How many hours you spend on using the devices which selected in question?" This answer will be distributed into four group which are 4 to 6 hours got the highest percentage with 38% followed by 7 to 9 hours is 28%. Then, there are 23.3% respondents spend more than 9 hours using the devices and the least percentage is 10.7% for 1 to 3 hours. The table and figure below show the result for question "How many hours you spend on using the devices which selected in question?".

How many hours you spend on using the device which selected in question 5?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-3 hours	15	10.7	10.7	10.7
	4-6	59	38.0	38.0	49.3
	7-9	41	28.0	28.0	77.0
	More than 9	35	23.3	23.3	100.0
	Total	150	100.0	100.0	

Table 4.2.1.6: Frequency table for how many hours respondents spend on using the devices

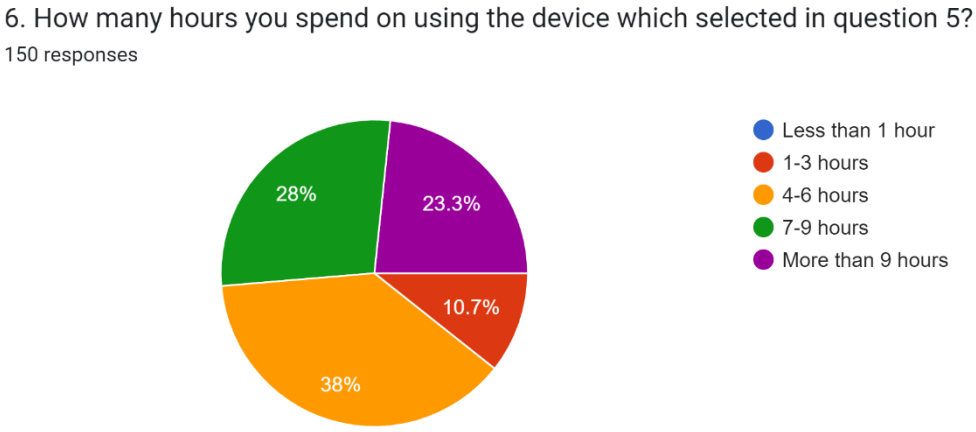


Figure 4.2.1.6: How many hours respondents spend on using the devices

4.2.2 Reliability Test

For personality traits, the alpha value for agreeableness, conscientiousness, neuroticism, openness, and extraversion are 0.815, 0.818, 0.846, 0.765, and 0.872 which are considered as good for this research paper. The alpha value for software security, email security, and data management practices are 0.717, 0.731, and 0.736 which are also considered good. This shows that the questionnaire answers are reliable and the questionnaire can be further analysed. Table below shows all the result for agreeableness, conscientiousness, neuroticism, openness, and extraversion as independent variables and software security, email security, and data management practices as dependent variables.

Reliability Statistics: Agreeableness

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.815	.817	3

Table 4.2.2.1: Reliability test for agreeableness

Reliability Statistics: Conscientiousness

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.818	.822	3

Table 4.2.2.2: Reliability test for conscientiousness

Reliability Statistics: Neuroticism

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.846	.855	3

Table 4.2.2.3: Reliability test for neuroticism

Reliability Statistics: Openness

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.765	.765	3

Table 4.2.2.4: Reliability test for openness

Reliability Statistics: Extraversion

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.872	.873	3

Table 4.2.2.5: Reliability test for extraversion

Reliability Statistics: Software Security

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.717	.720	4

Table 4.2.2.6: Reliability test for software security

Reliability Statistics: Email Security

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.731	.739	4

Table 4.2.2.7: Reliability test for email security

Reliability Statistics: Data Management Practices

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.736	.732	4

Table 4.2.2.8: Reliability test for data management practices

4.2.3 Pearson Correlation

This research paper is to examines the correlation between personality traits and cyber hygiene behaviour, so the Pearson correlation coefficient will be conducted for this research paper. Amongst the personality factors, agreeableness is statistically highly significant with all the cyber hygiene behaviours. This is because all the p values between agreeableness with software security, email security, and data management practices are <0.001. The R-value between agreeableness with software security is 0.437. The R-value between agreeableness and email security is 0.493 whereas the R-value between agreeableness and data management practices is 0.397. The strength of correlation between agreeableness with software security and email security considered as moderate correlation whereas the strength of correlation between agreeableness with data management practices considered as weak correlation.

Besides, conscientiousness is statistically highly significant with all the cyber hygiene behaviours which are software security, email security, and data management practices due to all the p value are <0.001. The R-value between conscientiousness with software security is 0.547 whereas the R- value between conscientiousness with email security is 0.519. Not only that, the R-value between conscientiousness with data management practices is 0.428. The strength of correlation between conscientiousness with all the 3 dependent variables which are software security, email security, and data management practices are moderate correlation.

Other than that, results showed that neuroticism is statistically highly significant with all the cyber hygiene behaviours which are software security, email security, and data management practices. This is because all the p value are <0.001. The R-value between neuroticism with software security is 0.420 whereas the R- value between neuroticism with email security is 0.441, and the R-value between neuroticism with data management practices is 0.438. The strength of correlation between neuroticism with all the 3 dependent variables considered as moderate correlation.

Moreover, openness is statistically highly significant with all the cyber hygiene behaviours. This is because all the p values between openness and cyber hygiene behaviours are <0.001. From the results, the R-value between openness and software security is 0.620, the R-value between openness and email security is 0.607, and the R-value between openness and data management practices is 0.498. The strength of correlation between openness with

software security and email security considered as strong correlation whereas the strength of correlation between openness with data management practices considered as moderate correlation.

Apart from that, extraversion is statistically highly significant with all the cyber hygiene behaviours. The R-value between extraversion and software security is 0.536 and the R-value between extraversion and email security is 0.573. The R-value of extraversion and data management practices is 0.443. All the p values between extraversion with software security, email security and email security are <0.001. The strength of correlation between extraversion with all the 3 dependent variables which are software security, email security, and data management practices are moderate correlation.

In a nutshell, the result of all the Pearson correlation coefficient shows is positive and statistically highly significant relationship between independent variables and dependent variable. The table below shows the result.

Correlation

		Software Security	Email Security	Data Management Practices	Agreeableness	Conscientiousness	Neuroticism	Openness	Extraversion
Software Security	Pearson Correlation	1	.630**	.457**	.437**	.547**	.420**	.620**	.536**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000
	N		150	150	150	150	150	150	150
Email Security	Pearson Correlation	.630**	1	.371**	.493**	.519**	.441**	.607**	.573**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000
	N	150	150	150	150	150	150	150	150
Data Management Practices	Pearson Correlation	.457**	.371**	1	.397**	.428**	.438**	.498**	.443**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000
	N	150	150	150	150	150	150	150	150
Agreeableness	Pearson Correlation	.437**	.493**	.397**	1	.683**	.468**	.647**	.586**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.000
	N	150	150	150	150	150	150	150	150

Conscientiousness	Pearson Correlation	.547**	.519**	.428**	.683**	1	.465**	.639**	.717**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000
	N	150	150	150	150	150	150	150	150
Neuroticism	Pearson Correlation	.420**	.441**	.438**	.468**	.465**	1	.555**	.506**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.000
	N	150	150	150	150	150	150	150	150
Openness	Pearson Correlation	.620**	.607**	.498**	.647**	.639**	.555**	1	.676**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000
	N	150	150	150	150	150	150	150	150
Extraversion	Pearson Correlation	.536**	.573**	.443**	.586**	.717**	.506**	.676**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	
	N	150	150	150	150	150	150	150	150

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

Table 4.2.3.1: Pearson Correlation Coefficient Result

4.2.4 Multiple Linear Regression

4.2.4.1 Multiple Regression (Agreeableness, conscientiousness, neuroticism, openness, extraversion, and software security)

The first regression is to examine the relationship of five variables which are agreeableness, conscientiousness, neuroticism, openness, extraversion as independent variables and software security as dependent variable.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	$.658^{a}$	.433	.413	.53945

a. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

Table 4.2.4.1.1: Model Summary of Multiple Regression Analysis

Based on table above, R square value is 0.433 which represents the independent variables which are agreeableness, conscientiousness, neuroticism, openness, extraversion could explain 43.3% of the variations on dependent variable which is software security. In other words, there is 43.3% has been significantly explained by these five independent variables whereby 56.7% have explained by other variables which indicates there are other variables that not included in this study are important to interpret software security. Other than that, R value shown in the table is 0.658 which means that their correlation is moderate and positive.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	31.957	5	6.391	21.964	$.000^{b}$
	Residual	41.905	144	.291		
	Total	73.862	149			

a. Dependent Variable: Software Security

b. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

Table 4.2.4.1.2: ANOVA of Multiple Regression Analysis

Results above shows that F value is 21.964 and the significant value is 0.000 which is lesser than the alpha value 0.05. Thus, the overall regression model with these five predictors as agreeableness, conscientiousness, neuroticism, openness, extraversion are well explained the variation in software security.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.442	.311		4.632	.000
	Agreeableness	-.088	.099	-.083	-.888	.376
	Conscientiousness	.232	.103	.231	2.252	.026
	Neuroticism	.055	.064	.067	.855	.394
	Openness	.400	.093	.420	4.285	.000
	Extraversion	.074	.073	.101	1.013	.313

a. Dependent Variable: Software Security

Table 4.2.4.1.3: Coefficient of Multiple Regression Analysis

A regression equation for dependent variable which is software security can be computed for this study as:

Software Security = 1.442 - 0.088 (Agreeableness) + 0.232 (Conscientiousness) + 0.055 (Neuroticism) + 0.400 (Openness) + 0.074 (Extraversion)

The unstandardized coefficients value of agreeableness, conscientiousness, neuroticism, openness, and extraversion are $\beta = -0.088$, $\beta = 0.232$, $\beta = 0.055$, $\beta = 0.400$, $\beta = 0.074$ respectively. Firstly, the highest coefficient value is openness which obtained the highest β value as 0.400 compared to other variables. In other words, it able to explain that a frequency increase in openness affect to an increase of 0.400 in software security. Moreover, the significant value of openness obtained p is 0.000 which represents it is lesser than the significant level of 0.05. Thus, openness is significant to software security.

Besides that, conscientiousness is the second highest value of coefficients which obtained the second highest of β = 0.232. Thus, a number increase in conscientiousness causes an increase of 0.232 in software security. Furthermore, the significant value of conscientiousness obtained p is 0.026 which represents it is lesser than the significant level of 0.05. Hence, conscientiousness is significant to software security.

In addition, extraversion obtained the third important factors in affecting software security. The table above shows that the β value of extraversion is 0.074. A number increase in extraversion causes an increase of 0.074 in software security. However, the significant value of extraversion obtained 0.394 which is greater than the significant level of 0.05. Therefore, it can conclude that extraversion is not significant to software security.

Moreover, neuroticism ranked as the following significant factor to influence software security which obtained the fourth highest of β value = 0.055. Nevertheless, the significant value of neuroticism obtained 0.394 which is greater than the significant level of 0.05. Thus, it can conclude that neuroticism is not significant to software security.

Lastly, agreeableness obtained the lowest important factor in affecting software security. This is because the result shows that the β value of agreeableness is -0.088 which is the smallest value. A number increase in agreeableness will causes a decrease of 0.088 in software security. However, the significant level of agreeableness obtained 0.376 which is greater than the significant level of 0.05. Therefore, it can conclude that agreeableness is not significant to software security.

4.2.4.2 Multiple Regression (Agreeableness, conscientiousness, neuroticism, openness, extraversion, and email security)

The second regression is to examine the relationship of five variables which are agreeableness, conscientiousness, neuroticism, openness, extraversion as independent variables and email security as dependent variable.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	$.655^{a}$	.430	.410	.53220

a. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

Table 4.2.4.2.1: Model Summary of Multiple Regression Analysis

Based on table above, R square value is 0.430 which represents the independent variables which are agreeableness, conscientiousness, neuroticism, openness, extraversion could explain 43.0% of the variations on dependent variable which is email security. In other words, there is 43.0% has been significantly explained by these five independent variables whereby 57.0% have explained by other variables which indicates there are other variables that not included in this study are important to interpret email security. Other than that, R value shown in the table is 0.655 which means that their correlation is moderate and positive.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30.726	5	6.145	21.697	$.000^{b}$
	Residual	40.786	144	.283		
	Total	71.512	149			

a. Dependent Variable: Email Security

b. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

Table 4.2.4.2.2: ANOVA of Multiple Regression Analysis

Results above shows that F value is 21.697 and the significant value is 0.000 which is lesser than the alpha value 0.05. Thus, the overall regression model with these five predictors as agreeableness, conscientiousness, neuroticism, openness, extraversion are well explained the variation in email security.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.390	.307		4.525	.000
	Agreeableness	.071	.097	.068	.730	.466
	Conscientiousness	.064	.101	.064	.627	.532
	Neuroticism	.070	.063	.087	1.112	.268
	Openness	.300	.092	.320	3.259	.001
	Extraversion	.164	.072	.226	2.263	.025

a. Dependent Variable: Email Security

Table 4.2.4.2.3: Coefficient of Multiple Regression Analysis

A regression equation for dependent variable which is email security can be computed for this study as:

Email Security = 1.390 + 0.071 (Agreeableness) + 0.064 (Conscientiousness) + 0.070 (Neuroticism) + 0.300 (Openness) + 0.164 (Extraversion)

The unstandardized coefficients value of agreeableness, conscientiousness, neuroticism, openness, and extraversion are β = 0.071, β = 0.064, β = 0.070, β = 0.300, and β = 0.164, respectively. Firstly, the most significant predictor is openness which obtained the highest β value as 0.300 compared to other four variables. It able to explain that a frequency increase in openness affect to an increase of 0.300 in email security. Moreover, the significant value of openness obtained p = 0.001 which means that it is lesser than the significant value of 0.05. Consequently, openness is significant to email security.

In addition, extraversion is the second highest factor to influence email security which obtained the second highest of β value = 0.164. Hence, a number increase in extraversion

causes an increase of 0.164 in email security. Furthermore, the significant value of extraversion obtained p = 0.025 which means that it is lesser than the significant value of 0.05. Consequently, extraversion is significant to email security.

Besides that, agreeableness is the third highest factor in affecting email security. Based on the table above, the β value of agreeableness is 0.071 and the significant value of agreeableness is 0.466 which is greater than the significant level of 0.05. Therefore, agreeableness is not significant to email security.

Furthermore, neuroticism ranked as the following factor to influence email security. This is because the β value of neuroticism is 0.070 which is the fourth highest in the result. Nevertheless, the significant value of conscientiousness obtained 0.268 which is greater than 0.05 of the significant level. Hence, neuroticism is not significant to email security.

Finally, conscientiousness obtained the lowest important factor in affecting email security. This is due to the table above shows that the β value of conscientiousness is 0.064 which is the smallest value. However, the significant value of conscientiousness obtained 0.532 which is greater than the significant level of 0.05. Thus, conscientiousness is not significant to email security.

4.2.4.3 Multiple Regression (Agreeableness, conscientiousness, neuroticism, openness, extraversion, and data management practices)

The third regression is to examine the relationship of five variables which are agreeableness, conscientiousness, neuroticism, openness, extraversion as independent variables and data management practices as dependent variable.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	$.549^{a}$	.302	.278	.56779

a. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

Table 4.2.4.3.1: Model Summary of Multiple Regression Analysis

Based on table above, R square value is 0.302 which means the independent variables which are agreeableness, conscientiousness, neuroticism, openness, extraversion could explain 30.2% of the variations on dependent variable which is data management practices. In other words, there is 30.2% has been significantly explained by these five independent variables whereby 69.8% have explained by other variables which indicates there are other variables that not included in this study are important to interpret data management practices. Other than that, R value shown in the table is 0.549 which means that their correlation is moderate and positive.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.075	5	4.015	12.454	$.000^b$
	Residual	46.423	144	.322		
	Total	66.498	149			

a. Dependent Variable: Data Management Practices

b. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

Table 4.2.4.3.2: ANOVA of Multiple Regression Analysis

Apart from that, table above shows that F value is 12.454 and the significant value is 0.000 which is lesser than the alpha value 0.05. Thus, the overall regression model with these five predictors as agreeableness, conscientiousness, neuroticism, openness, extraversion are well explained the variation in data management practices.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.873	.328		5.717	.000
	Agreeableness	.025	.104	.025	.239	.811
	Conscientiousness	.088	.108	.093	.817	.415
	Neuroticism	.155	.067	.198	2.296	.023

	Openness	.226	.098	.251	2.305	.023
	Extraversion	.064	.077	.091	.827	.410

a. Dependent Variable: Data Management Practices

Table 4.2.4.3.3: Coefficient of Multiple Regression Analysis

A regression equation for dependent variable which is data management practices can be computed for this study as:
Data Management Practices = 1.873 + 0.025 (Agreeableness) + 0.088 (Conscientiousness) + 0.155 (Neuroticism) + 0.226 (Openness) + 0.064 (Extraversion)

The unstandardized coefficients value of agreeableness, conscientiousness, neuroticism, openness, and extraversion are β = 0.025, β = 0.088, β = 0.155, β = 0.226, and β = 0.064. Firstly, the most significant predictor is openness which obtained the highest β value as 0.226 compared to other four variables. It able to explain that a frequency increase in openness affect to an increase of 0.226 in data management practices. The significant value of openness obtained p value which is 0.023 which means that it is lesser than the significant level of 0.05. Therefore, openness is significant to data management practices.

Moreover, neuroticism is the second highest factor to influence data management practices which obtained the second highest of β value = 0.155. So, a number increase in neuroticism causes an increase of 0.155 in data management practices. The significant value of neuroticism obtained p value which is 0.023 which means that it is lesser than the significant level of 0.05. Therefore, neuroticism is significant to data management practices.

In addition, conscientiousness is the third highest factor in affecting data management practices. Based on the table above, the β value of conscientiousness is 0.088 and the significant value of conscientiousness is 0.415 which is greater than the significant level of 0.05. Thus, conscientiousness is not significant to data management practices.

Furthermore, extraversion ranked as the following factor to influence data management practices. This is because the β value of extraversion is 0.064 which is the fourth highest compared to the other variables. Nevertheless, the significant level of extraversion obtained

0.410 which is greater than the significant level of 0.05. For this reason, extraversion is not significant to data management practices.

Lastly, agreeableness obtained the lowest important factor in affecting data management practices. This is due to the table above shows that the β value of agreeableness is 0.025. So, a number increase in agreeableness causes an increase of 0.025 in data management practices. In addition, the significant value of agreeableness is 0.811 which represents that it is greater than the significant level of 0.05. As a consequent, agreeableness is not significant to data management practices.

CHAPTER 5: CONCLUSION

5.1 Introduction

This chapter discusses about the final result of this research paper, discussion of hypothesis test, limitations, and recommendations. Moreover, Chapter 5 will focus on the limitations of this study and recommendations for the future research. The main purpose of this research paper is to identify different types of personality traits of a university students on cyber hygiene behavior.

5.2 Discussion of Hypothesis Test

No	Hypothesis	P values	Result
H1a	Agreeableness is non-significant to software security.	0.376	ACCEPTED
H1b	Agreeableness is non-significant to email security.	0.466	ACCEPTED
H1c	Agreeableness is non-significant to data management practice.	0.811	ACCEPTED
H2a	Conscientiousness is significant to software security.	0.026	ACCEPTED
H2b	Conscientiousness is non-significant to email security.	0.532	ACCEPTED
H2c	Conscientiousness is non-significant to data management practice.	0.415	ACCEPTED
H3a	Neuroticism is non-significant to software security.	0.394	ACCEPTED
H3b	Neuroticism is non-significant to email security.	0.268	ACCEPTED
H3c	Neuroticism is significant to data management practice.	0.023	ACCEPTED
H4a	Openness is significant to software security.	0.000	ACCEPTED
H4b	Openness significant to email security.	0.001	ACCEPTED
H4c	Openness is significant to data management practice.	0.023	ACCEPTED
H5a	Extraversion is non-significant to software security.	0.313	ACCEPTED
H5b	Extraversion is significant to email security.	0.025	ACCEPTED
H5c	Extraversion is non-significant to data management practice.	0.410	ACCEPTED

Table 5.2: Summary of hypothesis

5.2.1 Hypothesis for agreeableness as independent variable, software security, email security, and data management practices as dependent variables

Hypothesis 1a (H1a): Agreeableness is non-significant to software security.

Hypothesis 1b (H1b): Agreeableness is non-significant to email security.

Hypothesis 1c (H1c): Agreeableness is non-significant to data management practice.

According to the Pearson correlation coefficient analysis, agreeableness has a significant relationship with software security, email security, and data management practices. This is because all the p values between agreeableness with software security, email security, and data management practices are <0.001 which is lower than the significant level of 0.01 or 0.05. Besides that, the correlation value between agreeableness and software security is 0.437 and the correlation value between agreeableness and software security is 0.493 which mean that it is moderate correlation and positive significant between them. Other than that, the correlation value between agreeableness and data management practices is 0.397 which mean it is weak correlation and positive significant relationship. However, the result of multiple regression analysis shows the significant value between agreeableness with software security, email security and data management practices are 0.376, 0.466, and 0.811 which is greater than the significant level of 0.05. Therefore, agreeableness is not significant to software security, email security, and data management practices even though the significant value is <0.001 in Pearson correlation analysis. The result is same to the journal mentioned in Chapter 3. A study from [8] related to the result of this study which mentioned that agreeableness is not significant to software security, email security, and data management practices.

5.2.2 Hypothesis for conscientiousness as independent variable, software security, email security, and data management practices as dependent variables

Hypothesis 2a (H2a): Conscientiousness is significant to software security.

Hypothesis 2b (H2b): Conscientiousness is non-significant to email security.

Hypothesis 2c (H2c): Conscientiousness is non-significant to data management practice.

Apart from that, conscientiousness has a significant relationship with software security, email security, and data management practices in the Pearson correlation coefficient analysis. This is because all the p values between conscientiousness with software security, email security, and data management practices are <0.001 which is lower than the significant level of 0.01 or 0.05. The correlation value between conscientiousness with software security, email

security, and data management practices are 0.547, 0.519, and 0.428 which mean that all are moderate correlation and positive significant. However, the result of multiple regression analysis shows the significant value between conscientiousness with email security and data management practices are 0.532 and 0.415 which is greater than the significant level of 0.05 but result of multiple regression analysis shows the significant value between conscientiousness with software security is 0.026 which is lower than the significant level of 0.05. Therefore, it can conclude that conscientiousness is not significant to email security and data management practices even though the significant value is <0.001 in Pearson correlation analysis but conscientiousness is significant to software security since the significant value is lower than the significant level of 0.05. This result is same to the journal mentioned in Chapter 3, the study from [10] stated that conscientiousness has also been found to be significant to software security and another study from [8] stated that conscientiousness has been found to be non-significant to email security, and also data management practices.

5.2.3 Hypothesis for neuroticism as independent variable, software security, email security, and data management practices as dependent variables

Hypothesis 3a (H3a): Neuroticism is non-significant to software security.

Hypothesis 3b (H3b): Neuroticism is non-significant to email security.

Hypothesis 3c (H3c): Neuroticism is significant to data management practice.

In addition, according to the Pearson correlation coefficient analysis, neuroticism has a significant relationship with software security, email security, and data management practices. This is because all the p values between neuroticism with software security, email security, and data management practices are <0.001 which is lower than the significant level of 0.01 or 0.05. The correlation value between neuroticism with software security, email security, and data management practices are 0.420, 0.441, 0.438 which mean that all are moderate correlation and positive significant. However, the result of multiple regression analysis shows the significant value between neuroticism with software security and email security are 0.394 and 0.268 which is greater than the significant level of 0.05 but result of multiple regression analysis shows the significant value between neuroticism with data management practices is 0.023 which is lower than the significant level of 0.05. Hence, it can conclude that neuroticism is not significant to software security and email security even though the significant value is <0.001 in Pearson correlation analysis but neuroticism is significant to data management

practices since the significant value is lower than the significant level of 0.05. The researcher from previous study [8] stated that neuroticism is significant to data management practices whereas another study from [11] stated that neuroticism is not significant to software security and email security which is the same result obtained from this study.

5.2.4 Hypothesis for openness as independent variable, software security, email security, and data management practices as dependent variables

Hypothesis 4a (H4a): Openness is significant to software security.

Hypothesis 4b (H4b): Openness significant to email security.

Hypothesis 4c (H4c): Openness is significant to data management practice.

Besides that, openness has a significant relationship with software security, email security, and data management practices. This is because all the p values between openness with software security, email security, and data management practices are <0.001 which is lower than the significant level of 0.01 or 0.05. The correlation value between openness with software security and email security are 0.620 and 0.607 are strong correlation and positive significant whereas the correlation value between openness with data management practices is 0.498 which mean that it is moderate correlation and positive significant. According to the result of multiple regression analysis shows the significant value between openness with software security, email security and data management practices are 0.001, 0.005, and 0.050 which is lower than and equal to the significant level of 0.05. Thus, it can conclude that openness is significant to software security, email security and data management practices since the significant value is lower than the significant level of 0.05.

This result is same to many journals mentioned in Chapter 3, the study from [27] stated that openness has also been found to be significant to software security and another study [4] stated that openness has also been found to be significant to email security. Not only that, previous researcher [10] also stated that openness has also been found to be significant to data management practices.

5.2.5 Hypothesis for extraversion as independent variable, software security, email security, and data management practices as dependent variables

Hypothesis 5a (H5a): Extraversion is non-significant to software security.

Hypothesis 5b (H5b): Extraversion is significant to email security.

Hypothesis 5c (H5c): Extraversion is non-significant to data management practice.

Furthermore, extraversion has a significant relationship with software security, email security, and data management practices. This is because all the p values between extraversion with software security, email security are <0.001 and p values between extraversion with data management practices is 0.001 which is lower than the significant level of 0.01 or 0.05. The correlation value between extraversion with software security, email security, and data management practices are 0.536, 0.573, 0.443 which mean that all are moderate correlation and positive significant. However, the result of multiple regression analysis shows the significant value between extraversion with software security and data management practices are 0.313 and 0.410 which is greater than the significant level of 0.05 but the result of multiple regression analysis shows the significant value between extraversion with email security is 0.025 which is lower than the significant level of 0.05. Therefore, it can conclude that extraversion is not significant to software security and data management practices even though the significant value is <0.001 in Pearson correlation analysis but extraversion is significant to email security since the significant value is lower than the significant level of 0.05. The result is same to the journal mentioned in Chapter 3. A study from [4] related to the result of this study which mentioned that extraversion has been found to be significant to email security. Another study from previous researcher [8] stated that extraversion has been found to be non-significant to software security and data management practice.

5.3 Limitation

From the result of this study, there are some limitations found which can be improved to influence the result of the study. The results shows that 21 to 23 years old respondents contain the most percentage which is 62%. The majority of respondents are in same age group may influence the outcome of each variable. In addition, there are 112 of the respondents are pursuing a degree in IT related field. Consequently, the outcome of this research minimizes the response from other faculties and only proves the students from faculty of information and communication technology.

Other than that, this study was to collect data from respondents using Google Form due to the cost limitations and Covid-19 pandemic. It cannot make sure every respondent would follow the instruction when answering the questionnaire although providing a clear guidance and directions. Thus, the set of data should be removed when there is a missing value or unlogic response.

Moreover, there is a correlation value shown in Pearson Correlation analysis which is lesser than 0.4, that value is from the variables of agreeableness and data management practices. In other words, the strength of this correlation relationship is weak which mean that there is minimal impact of independent variable that influence the dependent variable. Therefore, this independent variable has not enough influence to predict the dependent variable.

5.4 Recommendation for Future Study

Firstly, the recommendation for the age group of respondents should be balanced in the questionnaire, which majority of them is aged 21 to 23 that unable to represent the personality traits and cyber hygiene behavior among UTAR students. Besides that, the respondents should involve different fields in the survey since most of the respondents are pursuing a degree in IT related field which cannot prove the result of this study among UTAR students. This is because different age group and different field of respondents might have different personality traits and cyber hygiene behavior.

Besides that, the data collection method of this study is using Google Form due to cost limitation and Covid-19 pandemic that prevent the physical questionnaire. Consequently, the most suitable way for data collection of this study is use Google Form which means that all responses are collected via online. However, it cannot make sure that every respondent would follow the instruction of the questionnaire or answered correctly to it. Hence, physical questionnaire should be used to collect more accuracy responses as I can give the participants clearer guidance.

In addition, there is a weak correlation is founded out from the data analysis. The recommendation to solve this limitation is trying to search other more accurate variable as the factor for better prediction in future study.

5.5 Conclusion

In conclusion, the content in Chapter 1 shown the introduction of this study that includes the background and outline of the research. Besides that, literature review of this study is contained in Chapter 2 to discussed about the variables for this research. In chapter 3, the methodology of this study which lists out all the software and techniques. In addition, Pearson Correlation Coefficient and Multiple Regression are the analysis technique used in this research which calculate the relationship between the variables in this study. Furthermore, the result is to prove the hypotheses test which examine whether there is significant relationship between the independent variables and dependent variable. This study has investigated all of the "Big Five" personality traits in relation to cyber hygiene behavior. In this study, there is only one variable which is openness is significant to all the cyber hygiene behaviors which are software security, email security, and data management practices whereas there is only one variable which is agreeableness is non-significant to all the cyber hygiene behaviors. Furthermore, conscientiousness is significant to software security, neuroticism is significant to data management practices, and extraversion is significant to email security. Lastly, all the hypothesis are accepted in this study.

REFERENCES

[1] R. Roohparvar, "Cyber Security Solutions, Compliance, and Consulting Services - IT Security," 23 5 2021. [Online]. Available: https://www.infoguardsecurity.com/people-the-weakest-link-in-cybersecurity/. [Accessed 1 7 2022].

[2] C. Emmanuel, "HackerNoon," 29 11 2019. [Online]. Available: https://hackernoon.com/cyber-security-i02g35t1. [Accessed 2 7 2022].

[3] A. Cain, M. Edwards and J. Still, "An exploratory study of cyber hygiene behaviors and knowledge," *Journal of Information Security and Applications,* vol. 42, pp. 36-45, 2018.

[4] M. Gratian, S. Bandi, M. Cukier, J. Dykstra and A. Ginther, "Correlating human traits and cyber security behavior intentions," *Computers and Security,* vol. 73, pp. 345-358, 2018.

[5] S. Kennison and E. Chan-Tin, "Taking Risks With Cybersecurity: Using Knowledge and Personal Characteristics to Predict Self-Reported Cybersecurity Behaviors," *Frontiers in Psychology,* vol. 11, 2020.

[6] C. Ugwu, C. Ani, M. Ezema, C. Asogwa, U. Ome, A. Obayi and etc, "Towards Determining the Effect of Age and Educational Level on Cyber-Hygiene," *2022 IEEE Nigeria 4th International Conference on Disruptive Technologies for Sustainable Development (NIGERCON),* 2022.

[7] A. James, S. Shaorong, A. Eugene, . K. P. Emmanuel and O.-B. Richmond, "Mobile Banking Adoption: Examining the Role of Personality Traits," *SAGE Open,* vol. 10, no. 2, 2020.

[8] N. Clarke, "Identifying and Predicting the Factors Affecting End-Users' Risk-Taking Behavior," *Information and Computer Security,* vol. 26, no. 3, pp. 306-326, 2018.

[9] J. Surej, "An Empirical Study about the Role of Personality Traits in Information Technology Adoption," *Social Sciences, Humanities, and Arts,* vol. 14(2), pp. 7-90, 2014.

[10] W. Carl F, R. I. Golden G. and A. Irfan, "Self-reported secure and insecure cyber behaviour: factor structure and associations with personality factors," *Cyber Security Technology,* vol. 1, no. 3-4, pp. 163-174, 2017.

[11] K. van der Schyff and S. Flowerday, "Mediating effects of information security awareness," *Computers and Security,* vol. 106, 2021.

[12] . J. S. Christopher, "Big Five personality traits," *The SAGE encyclopedia of lifespan human development,* pp. 240-241, 2018.

[13] A. Shappie, C. Dawson and S. Debb, "Personality as a Predictor of Cybersecurity Behavior," *Psychology of Popular Media,* vol. 9, no. 4, pp. 475-480, 2020.

[14] A. James, S. Shaorong, A. Eugene, K. P. Emmanuel and O.-B. Richmond, "Mobile Banking Adoption: Examining the Role of Personality Traits," *SAGE Open,* vol. 10, no. 2, pp. 1-15, 2020.

[15] D. Serene, "Measurement and Measurement Scales," pp. 79-96, 2018.

[16] M. Naresh, "Questionnaire design and scale development," *The Handbook of Marketing Research,* 2006.

[17] A. Olaoluwa, "Analyses and methods for Likert scale data," 2016.

[18] H. Roberta and T. Alison, "Validity and reliability in quantitative research," *Evidence Based Nursing,* vol. 18, no. 3, pp. 66-67, 2015.

[19] U. George, A. H. Ioana and Z. Adriana, "How reliable are measurement scales? External factors with indirect influence on reliability estimators," *Procedia Economics and Finance,* vol. 20, pp. 679-686, 2015.

[20] L. Susanna, D. Susan, M. Daniel, M. Pamela, R. Sean and R. Sarah, "Descriptive analysis in education: A guide for researchers," *National Center for Education Evaluation and Regional Assistance,* 2017.

[21] T. A. W. DOUGLAS G. BONETT, "Cronbach's alpha reliability: Interval estimation,hypothesis testing, and sample size planning," *Organizational Behavior,* 2014.

[22] I. A. H. A. Z. George Ursachi, "How reliable are measurement scales? External factors with indirect influence on reliability estimators," *Procedia Economics and Finance,* p. 679 – 686, 2015.

[23] N. G. Gogtay and U. T. Thatte, "Principles of Correlation Analysis," *The Association of Physicians of India,* vol. 65, pp. 78-81, 2017.

[24] "Digital Education Resources," 17 2 2020. [Online]. Available: https://ctil.dundee.ac.uk/kb/stats-bites-correlation/. [Accessed 12 7 2022].

[25] K. O. Peterson, "The Acceptable R-Square in Empirical Modelling for Social Science Research," *SSRN Electronic Journal,* 2022.

[26] M. Diana and B. Phoebe, "Scatterplots and Correlation".

[27] A. Shappie, C. Dawson and S. Debb, "Personality as a Predictor of Cybersecurity Behavior," *Psychology of Popular Media,* vol. 9, no. 4, pp. 475-480, 2020.

APPENDIX

A.1 Survey Questions and Responses

Dear respondent,

I am a final year undergraduate student pursuing Bachelor of Information Systems (HONS) Business Information Systems from Universiti Tunku Abdul Rahman (UTAR) Kampar, Perak. The purpose of this survey is to conduct research on the personality traits and cyber hygiene behavior among university students. All university students are eligible to participate in this survey. Participation in this research is entirely voluntary. All information collected is treated as strictly confidential and will be used for the purpose of this study only.

Should you have any inquiries about the content of the questionnaire, please contact Hew Chi Wei at (chiwei0616@1utar.my). Thank you for your participation.

Part A: Demographic Profile

1. What is your gender? *

- Male
- Female

2. What is your age (years)? *

- 18-20
- 21-23
- 24-26
- 27-29
- More than 29

3. What is the current level of education in which you study? *

- Foundation
- Degree

4. Are you pursuing a degree in IT related field? *

- Yes
- No

5. Which devices you used the most in your life? *

- ○ Windows Desktop/Laptop
- ○ Mac Desktop/Laptop
- ○ Linux Destop/Laptop
- ○ iPad/iPhone
- ○ Android Tablet/Smartphone
- ○ Smart Watch
- ○ Smart TV
- ○ Other...

6. How many hours you spend on using the device which selected in question 5? *

- ○ Less than 1 hour
- ○ 1-3 hours
- ○ 4-6 hours
- ○ 7-9 hours
- ○ More than 9 hours

Part B: Software Security

Please use this scale to answer the following questions, where, 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always

7. I will use firewalls on desktop or laptop. *

	1	2	3	4	5	
Never	○	○	○	○	○	Always

8. I will change my firewall settings to the strictest level when needed. *

	1	2	3	4	5	
Never	○	○	○	○	○	Always

9. I try to make sure that the programs I use are up-to-date. *

	1	2	3	4	5	
Never	○	○	○	○	○	Always

10. I verify that my anti-virus software has been regularly updating itself. *

	1	2	3	4	5	
Never	○	○	○	○	○	Always

Part C: Email Security

Please use this scale to answer the following questions, where, 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always

11. I believe that checking the filename of the email attachment can help me avoid viruses that may infect my computer. *

	1	2	3	4	5	
Never	○	○	○	○	○	Always

12. I believe that I will delete suspicious email. *

	1	2	3	4	5	
Never	○	○	○	○	○	Always

13. I believe that it is convenient to check the security of an email with attachments. *

	1	2	3	4	5	
Never	○	○	○	○	○	Always

14. I believe that I never notify IT support about suspicious emails although such warning could benefit me from being victim. *

	1	2	3	4	5	
Never	○	○	○	○	○	Always

Part D: Data Management Practices

Please use this scale to answer the following questions, where, 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always

15. I will always encrypt sensitive information that is stored on my desktop/laptop. *

	1	2	3	4	5	
Never	○	○	○	○	○	Always

16. I will try to make sure that I will destroy all data before disposing of hardware. *

	1	2	3	4	5	
Never	○	○	○	○	○	Always

17. I believe that backing up a computer regularly is convenient. *

	1	2	3	4	5	
Never	○	○	○	○	○	Always

18. I believe that backing up important files on my computer will reduce my concern for security. *

	1	2	3	4	5	
Never	○	○	○	○	○	Always

Part E: Personality Traits

To what extent do you agree or disagree with each of the following statements. To answer, use the scale, where, 1 = Strongly Disagree, 2 = Disagree, 3 = Neither agree or disagree, 4 = Agree, 5 = Strongly Agree

19. I am friendly to others. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

20. I have a forgiving personality. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

21. I like to cooperate with others. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

22. I make plans and commit to them. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

23. I pay attention to details. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

24. I am careful with fulfilling tasks during the whole process. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

25. I am easily anxious. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

26. I have frequent mode swings. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

27. I am somewhat worried about things. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

28. I am curious with novelty. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

29. I am quick to understand things. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

30. I like to present some new ideas. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

31. I feel comfortable around people. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

32. I am energetic. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

33. I am passionate to others. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

A.2 SmartPLS Result

Result and Analysis for 100 Respondents

Reliability

Scale: Software Security

Case Processing Summary

		N	%
Cases	Valid	100	100.0
	Excluded[a]	0	.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.659	.663	4

Item Statistics

	Mean	Std. Deviation	N
7. I will use firewalls on desktop or laptop.	4.11	1.053	100
8. I will change my firewall settings to the strictest level when needed.	3.55	1.192	100
9. I try to make sure that the programs I use are up-to-date.	3.91	.830	100
10. I verify that my anti-virus software has been regularly updating itself.	3.76	.986	100

Inter-Item Correlation Matrix

	7. I will use firewalls on desktop or laptop.	8. I will change my firewall settings to the strictest level when needed.	9. I try to make sure that the programs I use are up-to-date.	10. I verify that my anti-virus software has been regularly updating itself.
7. I will use firewalls on desktop or laptop.	1.000	.434	.173	.240
8. I will change my firewall settings to the strictest level when needed.	.434	1.000	.296	.354
9. I try to make sure that the programs I use are up-to-date.	.173	.296	1.000	.479
10. I verify that my anti-virus software has been regularly updating itself.	.240	.354	.479	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.833	3.550	4.110	.560	1.158	.056	4
Item Variances	1.048	.689	1.422	.733	2.064	.093	4

Reliability

Scale: Email Security

Case Processing Summary

		N	%
Cases	Valid	100	100.0
	Excluded[a]	0	.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.719	.729	4

Item Statistics

	Mean	Std. Deviation	N
11. I believe that checking the filename of the email attachment can help me avoid viruses that may infect my computer.	3.99	.927	100
12. I believe that I will delete suspicious email.	3.76	1.138	100
13. I believe that it is convenient to check the security of an email with attachments.	4.04	.852	100
14. I believe that I never notify IT support about suspicious emails although such warning could benefit me from being victim.	3.54	1.141	100

Inter-Item Correlation Matrix

	11. I believe that checking the filename of the email attachment can help me avoid viruses that may infect my computer.	12. I believe that I will delete suspicious email.	13. I believe that it is convenient to check the security of an email with attachments.	14. I believe that I never notify IT support about suspicious emails although such warning could benefit me from being victim.
11. I believe that checking the filename of the email attachment can help me avoid viruses that may infect my computer.	1.000	.304	.436	.321
12. I believe that I will delete suspicious email.	.304	1.000	.489	.389
13. I believe that it is convenient to check the security of an email with attachments.	.436	.489	1.000	.476
14. I believe that I never notify IT support about suspicious emails although such warning could benefit me from being victim.	.321	.389	.476	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.832	3.540	4.040	.500	1.141	.053	4
Item Variances	1.045	.726	1.301	.576	1.793	.088	4

Reliability

Scale: Data Management Practices

Case Processing Summary

		N	%
Cases	Valid	100	100.0
	Excluded[a]	0	.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.718	.715	4

Item Statistics

	Mean	Std. Deviation	N
15. I will always encrypt sensitive information that is stored on my desktop/laptop.	3.76	1.036	100
16. I will try to make sure that I will destroy all data before disposing of hardware.	3.91	1.016	100
17. I believe that backing up a computer regularly is convenient.	3.89	1.053	100
18. I believe that backing up important files on my computer will reduce my concern for security.	4.13	.812	100

Inter-Item Correlation Matrix

	15. I will always encrypt sensitive information that is stored on my desktop/laptop.	16. I will try to make sure that I will destroy all data before disposing of hardware.	17. I believe that backing up a computer regularly is convenient.	18. I believe that backing up important files on my computer will reduce my concern for security.
15. I will always encrypt sensitive information that is stored on my desktop/laptop.	1.000	.632	.327	.170
16. I will try to make sure that I will destroy all data before disposing of hardware.	.632	1.000	.425	.247
17. I believe that backing up a computer regularly is convenient.	.327	.425	1.000	.513
18. I believe that backing up important files on my computer will reduce my concern for security.	.170	.247	.513	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.923	3.760	4.130	.370	1.098	.024	4
Item Variances	.969	.660	1.109	.449	1.681	.043	4

Reliability

Scale: Agreeableness

Case Processing Summary

		N	%
Cases	Valid	100	100.0
	Excluded[a]	0	.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.813	.814	3

Item Statistics

	Mean	Std. Deviation	N
19. I am friendly to others.	4.09	.767	100
20. I have a forgiving personality.	3.95	.821	100
21. I like to cooperate with others.	3.91	.866	100

Inter-Item Correlation Matrix

	19. I am friendly to others.	20. I have a forgiving personality.	21. I like to cooperate with others.
19. I am friendly to others.	1.000	.585	.575
20. I have a forgiving personality.	.585	1.000	.619
21. I like to cooperate with others.	.575	.619	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.983	3.910	4.090	.180	1.046	.009	3
Item Variances	.670	.588	.749	.162	1.275	.007	3

Reliability

Scale: Conscientiousness

Case Processing Summary

		N	%
Cases	Valid	100	100.0
	Excluded[a]	0	.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.782	.788	3

Item Statistics

	Mean	Std. Deviation	N
22. I make plans and commit to them.	3.77	.941	100
23. I pay attention to details.	3.86	.817	100
24. I am careful with fulfilling tasks during the whole process.	3.91	.793	100

Inter-Item Correlation Matrix

	22. I make plans and commit to them.	23. I pay attention to details.	24. I am careful with fulfilling tasks during the whole process.
22. I make plans and commit to them.	1.000	.536	.486
23. I pay attention to details.	.536	1.000	.636
24. I am careful with fulfilling tasks during the whole process.	.486	.636	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.847	3.770	3.910	.140	1.037	.005	3
Item Variances	.727	.628	.886	.258	1.410	.019	3

Reliability

Scale: Neuroticism

Case Processing Summary

		N	%
Cases	Valid	100	100.0
	Excluded[a]	0	.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.813	.824	3

Item Statistics

	Mean	Std. Deviation	N
25. I am easily anxious.	3.82	1.067	100
26. I have frequent mode swings.	3.50	1.115	100
27. I am somewhat worried about things.	3.96	.816	100

Inter-Item Correlation Matrix

	25. I am easily anxious.	26. I have frequent mode swings.	27. I am somewhat worried about things.
25. I am easily anxious.	1.000	.577	.642
26. I have frequent mode swings.	.577	1.000	.611
27. I am somewhat worried about things.	.642	.611	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.760	3.500	3.960	.460	1.131	.056	3
Item Variances	1.015	.665	1.242	.577	1.868	.095	3

Reliability

Scale: Openness

Case Processing Summary

		N	%
Cases	Valid	100	100.0
	Excluded[a]	0	.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.696	.697	3

Item Statistics

	Mean	Std. Deviation	N
28. I am curious with novelty.	3.67	.943	100
29. I am quick to understand things.	3.50	.937	100
30. I like to present some new ideas.	3.55	.880	100

Inter-Item Correlation Matrix

	28. I am curious with novelty.	29. I am quick to understand things.	30. I like to present some new ideas.
28. I am curious with novelty.	1.000	.428	.379
29. I am quick to understand things.	.428	1.000	.496
30. I like to present some new ideas.	.379	.496	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.573	3.500	3.670	.170	1.049	.008	3
Item Variances	.848	.775	.890	.115	1.148	.004	3

Reliability

Scale: Extraversion

Case Processing Summary

		N	%
Cases	Valid	100	100.0
	Excluded[a]	0	.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.822	.823	3

Item Statistics

	Mean	Std. Deviation	N
31. I feel comfortable around people.	3.39	1.053	100
32. I am energetic.	3.35	1.132	100
33. I am passionate to others.	3.56	.946	100

Inter-Item Correlation Matrix

	31. I feel comfortable around people.	32. I am energetic.	33. I am passionate to others.
31. I feel comfortable around people.	1.000	.622	.549
32. I am energetic.	.622	1.000	.655
33. I am passionate to others.	.549	.655	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.433	3.350	3.560	.210	1.063	.012	3
Item Variances	1.095	.895	1.280	.385	1.430	.037	3

Correlations

Correlations

		SoftwareSecurity	EmailSecurity	DataManagementPractices	Agreeableness	Conscientiousness	Neuroticism	Openness	Extraversion
SoftwareSecurity	Pearson Correlation	1	.610**	.404**	.331**	.444**	.254*	.525**	.400**
	Sig. (2-tailed)		.000	.000	.001	.000	.011	.000	.000
	N	100	100	100	100	100	100	100	100
EmailSecurity	Pearson Correlation	.610**	1	.324**	.438**	.447**	.329**	.570**	.494**
	Sig. (2-tailed)	.000		.001	.000	.000	.001	.000	.000
	N	100	100	100	100	100	100	100	100
DataManagementPractices	Pearson Correlation	.404**	.324**	1	.378**	.411**	.342**	.455**	.338**
	Sig. (2-tailed)	.000	.001		.000	.000	.001	.000	.001
	N	100	100	100	100	100	100	100	100
Agreeableness	Pearson Correlation	.331**	.438**	.378**	1	.702**	.335**	.603**	.507**
	Sig. (2-tailed)	.001	.000	.000		.000	.001	.000	.000
	N	100	100	100	100	100	100	100	100
Conscientiousness	Pearson Correlation	.444**	.447**	.411**	.702**	1	.334**	.572**	.688**
	Sig. (2-tailed)	.000	.000	.000	.000		.001	.000	.000
	N	100	100	100	100	100	100	100	100
Neuroticism	Pearson Correlation	.254*	.329**	.342**	.335**	.334**	1	.451**	.261**
	Sig. (2-tailed)	.011	.001	.001	.001	.001		.000	.009
	N	100	100	100	100	100	100	100	100
Openness	Pearson Correlation	.525**	.570**	.455**	.603**	.572**	.451**	1	.613**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000
	N	100	100	100	100	100	100	100	100
Extraversion	Pearson Correlation	.400**	.494**	.338**	.507**	.688**	.261**	.613**	1
	Sig. (2-tailed)	.000	.000	.001	.000	.000	.009	.000	
	N	100	100	100	100	100	100	100	100

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

*. Correlation is significant at the 0.05 level (2-tailed).

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness[b]	.	Enter

a. Dependent Variable: SoftwareSecurity

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.562[a]	.316	.279	.61093

a. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.173	5	3.235	8.667	.000[b]
	Residual	35.084	94	.373		
	Total	51.257	99			

a. Dependent Variable: SoftwareSecurity

b. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.702	.405		4.201	.000
	Agreeableness	-.144	.132	-.139	-1.087	.280
	Conscientiousness	.291	.145	.287	2.006	.048
	Neuroticism	.004	.081	.005	.055	.956
	Openness	.439	.125	.443	3.514	.001
	Extraversion	.000	.102	.000	.001	.999

a. Dependent Variable: SoftwareSecurity

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness[b]	.	Enter

a. Dependent Variable: EmailSecurity

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.609[a]	.371	.337	.61293

a. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.818	5	4.164	11.083	.000[b]
	Residual	35.314	94	.376		
	Total	56.132	99			

a. Dependent Variable: EmailSecurity

b. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.243	.407		3.057	.003
	Agreeableness	.089	.133	.082	.668	.506
	Conscientiousness	.026	.145	.025	.180	.858
	Neuroticism	.075	.081	.085	.920	.360
	Openness	.356	.125	.343	2.842	.005
	Extraversion	.170	.103	.203	1.658	.101

a. Dependent Variable: EmailSecurity

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness[b]	.	Enter

a. Dependent Variable: DataManagementPractices

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.510[a]	.260	.221	.63961

a. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.506	5	2.701	6.603	.000[b]
	Residual	38.456	94	.409		
	Total	51.962	99			

a. Dependent Variable: DataManagementPractices

b. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.629	.424		3.839	.000
	Agreeableness	.046	.138	.044	.332	.740
	Conscientiousness	.195	.152	.192	1.288	.201
	Neuroticism	.126	.085	.149	1.486	.141
	Openness	.260	.131	.260	1.987	.050
	Extraversion	-.012	.107	-.015	-.114	.910

a. Dependent Variable: DataManagementPractices

Result and Analysis for 150 Respondents

Reliability

Scale: Software Security

Case Processing Summary

		N	%
Cases	Valid	150	100.0
	Excluded[a]	0	.0
	Total	150	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.717	.720	4

Item Statistics

	Mean	Std. Deviation	N
7. I will use firewalls on desktop or laptop.	4.25	.943	150
8. I will change my firewall settings to the strictest level when needed.	3.87	1.115	150
9. I try to make sure that the programs I use are up-to-date.	4.13	.805	150
10. I verify that my anti-virus software has been regularly updating itself.	4.03	.941	150

Inter-Item Correlation Matrix

	7. I will use firewalls on desktop or laptop.	8. I will change my firewall settings to the strictest level when needed.	9. I try to make sure that the programs I use are up-to-date.	10. I verify that my anti-virus software has been regularly updating itself.
7. I will use firewalls on desktop or laptop.	1.000	.479	.223	.257
8. I will change my firewall settings to the strictest level when needed.	.479	1.000	.408	.426
9. I try to make sure that the programs I use are up-to-date.	.223	.408	1.000	.554
10. I verify that my anti-virus software has been regularly updating itself.	.257	.426	.554	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.068	3.867	4.253	.387	1.100	.027	4
Item Variances	.916	.648	1.244	.596	1.919	.060	4

Reliability

Scale: Email Security

Case Processing Summary

		N	%
Cases	Valid	150	100.0
	Excluded[a]	0	.0
	Total	150	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.731	.739	4

Item Statistics

	Mean	Std. Deviation	N
11. I believe that checking the filename of the email attachment can help me avoid viruses that may infect my computer.	4.08	.832	150
12. I believe that I will delete suspicious email.	3.97	1.016	150
13. I believe that it is convenient to check the security of an email with attachments.	4.17	.772	150
14. I believe that I never notify IT support about suspicious emails although such warning could benefit me from being victim.	3.85	1.071	150

Inter-Item Correlation Matrix

	11. I believe that checking the filename of the email attachment can help me avoid viruses that may infect my computer.	12. I believe that I will delete suspicious email.	13. I believe that it is convenient to check the security of an email with attachments.	14. I believe that I never notify IT support about suspicious emails although such warning could benefit me from being victim.
11. I believe that checking the filename of the email attachment can help me avoid viruses that may infect my computer.	1.000	.328	.397	.307
12. I believe that I will delete suspicious email.	.328	1.000	.502	.447
13. I believe that it is convenient to check the security of an email with attachments.	.397	.502	1.000	.509
14. I believe that I never notify IT support about suspicious emails although such warning could benefit me from being victim.	.307	.447	.509	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.018	3.853	4.167	.313	1.081	.018	4
Item Variances	.867	.596	1.146	.550	1.922	.070	4

Reliability

Scale: Data Management Practices

Case Processing Summary

		N	%
Cases	Valid	150	100.0
	Excluded[a]	0	.0
	Total	150	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.736	.732	4

Item Statistics

	Mean	Std. Deviation	N
15. I will always encrypt sensitive information that is stored on my desktop/laptop.	3.98	.945	150
16. I will try to make sure that I will destroy all data before disposing of hardware.	4.10	.932	150
17. I believe that backing up a computer regularly is convenient.	4.05	.951	150
18. I believe that backing up important files on my computer will reduce my concern for security.	4.22	.732	150

Inter-Item Correlation Matrix

	15. I will always encrypt sensitive information that is stored on my desktop/laptop.	16. I will try to make sure that I will destroy all data before disposing of hardware.	17. I believe that backing up a computer regularly is convenient.	18. I believe that backing up important files on my computer will reduce my concern for security.
15. I will always encrypt sensitive information that is stored on my desktop/laptop.	1.000	.635	.367	.230
16. I will try to make sure that I will destroy all data before disposing of hardware.	.635	1.000	.457	.253
17. I believe that backing up a computer regularly is convenient.	.367	.457	1.000	.497
18. I believe that backing up important files on my computer will reduce my concern for security.	.230	.253	.497	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.087	3.980	4.220	.240	1.060	.010	4
Item Variances	.800	.535	.904	.369	1.689	.031	4

Reliability

Scale: Agreeableness

Case Processing Summary

		N	%
Cases	Valid	150	100.0
	Excluded[a]	0	.0
	Total	150	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.815	.817	3

Item Statistics

	Mean	Std. Deviation	N
19. I am friendly to others.	4.23	.718	150
20. I have a forgiving personality.	4.17	.789	150
21. I like to cooperate with others.	4.13	.825	150

Inter-Item Correlation Matrix

	19. I am friendly to others.	20. I have a forgiving personality.	21. I like to cooperate with others.
19. I am friendly to others.	1.000	.618	.559
20. I have a forgiving personality.	.618	1.000	.615
21. I like to cooperate with others.	.559	.615	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.178	4.133	4.233	.100	1.024	.003	3
Item Variances	.606	.516	.680	.164	1.319	.007	3

Reliability

Scale: Conscientiousness

Case Processing Summary

		N	%
Cases	Valid	150	100.0
	Excluded[a]	0	.0
	Total	150	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.818	.822	3

Item Statistics

	Mean	Std. Deviation	N
22. I make plans and commit to them.	4.03	.901	150
23. I pay attention to details.	4.09	.794	150
24. I am careful with fulfilling tasks during the whole process.	4.11	.761	150

Inter-Item Correlation Matrix

	22. I make plans and commit to them.	23. I pay attention to details.	24. I am careful with fulfilling tasks during the whole process.
22. I make plans and commit to them.	1.000	.625	.533
23. I pay attention to details.	.625	1.000	.662
24. I am careful with fulfilling tasks during the whole process.	.533	.662	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.076	4.033	4.107	.073	1.018	.001	3
Item Variances	.673	.579	.811	.232	1.400	.015	3

Reliability

Scale: Neuroticism

Case Processing Summary

		N	%
Cases	Valid	150	100.0
	Excluded[a]	0	.0
	Total	150	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.846	.855	3

Item Statistics

	Mean	Std. Deviation	N
25. I am easily anxious.	4.12	1.003	150
26. I have frequent mode swings.	3.89	1.100	150
27. I am somewhat worried about things.	4.24	.808	150

Inter-Item Correlation Matrix

	25. I am easily anxious.	26. I have frequent mode swings.	27. I am somewhat worried about things.
25. I am easily anxious.	1.000	.657	.660
26. I have frequent mode swings.	.657	1.000	.671
27. I am somewhat worried about things.	.660	.671	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.084	3.893	4.240	.347	1.089	.031	3
Item Variances	.956	.653	1.210	.557	1.852	.079	3

Reliability

Scale: Openness

Case Processing Summary

		N	%
Cases	Valid	150	100.0
	Excluded[a]	0	.0
	Total	150	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.765	.765	3

Item Statistics

	Mean	Std. Deviation	N
28. I am curious with novelty.	3.91	.889	150
29. I am quick to understand things.	3.79	.922	150
30. I like to present some new ideas.	3.83	.878	150

Inter-Item Correlation Matrix

	28. I am curious with novelty.	29. I am quick to understand things.	30. I like to present some new ideas.
28. I am curious with novelty.	1.000	.510	.471
29. I am quick to understand things.	.510	1.000	.579
30. I like to present some new ideas.	.471	.579	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.847	3.793	3.913	.120	1.032	.004	3
Item Variances	.804	.771	.850	.079	1.102	.002	3

Reliability

Scale: Extraversion

Case Processing Summary

		N	%
Cases	Valid	150	100.0
	Excluded[a]	0	.0
	Total	150	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.872	.873	3

Item Statistics

	Mean	Std. Deviation	N
31. I feel comfortable around people.	3.80	1.074	150
32. I am energetic.	3.81	1.157	150
33. I am passionate to others.	3.95	.982	150

Inter-Item Correlation Matrix

	31. I feel comfortable around people.	32. I am energetic.	33. I am passionate to others.
31. I feel comfortable around people.	1.000	.730	.639
32. I am energetic.	.730	1.000	.718
33. I am passionate to others.	.639	.718	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.851	3.800	3.947	.147	1.039	.007	3
Item Variances	1.152	.964	1.338	.375	1.389	.035	3

Correlations

Correlations

		SoftwareSecurity	EmailSecurity	DataManagementPractices	Agreeableness	Conscientiousness	Neuroticism	Openness	Extraversion
SoftwareSecurity	Pearson Correlation	1	.630**	.457**	.437**	.547**	.420**	.620**	.536**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000
	N	150	150	150	150	150	150	150	150
EmailSecurity	Pearson Correlation	.630**	1	.371**	.493**	.519**	.441**	.607**	.573**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000
	N	150	150	150	150	150	150	150	150
DataManagementPractices	Pearson Correlation	.457**	.371**	1	.397**	.428**	.438**	.498**	.443**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000
	N	150	150	150	150	150	150	150	150
Agreeableness	Pearson Correlation	.437**	.493**	.397**	1	.683**	.468**	.647**	.586**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.000
	N	150	150	150	150	150	150	150	150
Conscientiousness	Pearson Correlation	.547**	.519**	.428**	.683**	1	.465**	.639**	.717**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000
	N	150	150	150	150	150	150	150	150
Neuroticism	Pearson Correlation	.420**	.441**	.438**	.468**	.465**	1	.555**	.506**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.000
	N	150	150	150	150	150	150	150	150
Openness	Pearson Correlation	.620**	.607**	.498**	.647**	.639**	.555**	1	.676**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000
	N	150	150	150	150	150	150	150	150
Extraversion	Pearson Correlation	.536**	.573**	.443**	.586**	.717**	.506**	.676**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	
	N	150	150	150	150	150	150	150	150

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

Multiple Regression (Agreeableness, conscientiousness, neuroticism, openness, extraversion, and software security)

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness[b]	.	Enter

a. Dependent Variable: SoftwareSecurity

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.658[a]	.433	.413	.53945

a. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	31.957	5	6.391	21.964	.000[b]
	Residual	41.905	144	.291		
	Total	73.862	149			

a. Dependent Variable: SoftwareSecurity

b. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.442	.311		4.632	.000
	Agreeableness	-.088	.099	-.083	-.888	.376
	Conscientiousness	.232	.103	.231	2.252	.026
	Neuroticism	.055	.064	.067	.855	.394
	Openness	.400	.093	.420	4.285	.000
	Extraversion	.074	.073	.101	1.013	.313

a. Dependent Variable: SoftwareSecurity

Multiple Regression (Agreeableness, conscientiousness, neuroticism, openness, extraversion, and email security)

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness[b]	.	Enter

a. Dependent Variable: EmailSecurity

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.655[a]	.430	.410	.53220

a. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30.726	5	6.145	21.697	.000[b]
	Residual	40.786	144	.283		
	Total	71.512	149			

a. Dependent Variable: EmailSecurity

b. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.390	.307		4.525	.000
	Agreeableness	.071	.097	.068	.730	.466
	Conscientiousness	.064	.101	.064	.627	.532
	Neuroticism	.070	.063	.087	1.112	.268
	Openness	.300	.092	.320	3.259	.001
	Extraversion	.164	.072	.226	2.263	.025

a. Dependent Variable: EmailSecurity

Multiple Regression (Agreeableness, conscientiousness, neuroticism, openness, extraversion, and data management practices)

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness[b]	.	Enter

a. Dependent Variable: DataManagementPractices

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.549[a]	.302	.278	.56779

a. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.075	5	4.015	12.454	.000[b]
	Residual	46.423	144	.322		
	Total	66.498	149			

a. Dependent Variable: DataManagementPractices

b. Predictors: (Constant), Extraversion, Neuroticism, Agreeableness, Openness, Conscientiousness

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1.873	.328		5.717	.000
	Agreeableness	.025	.104	.025	.239	.811
	Conscientiousness	.088	.108	.093	.817	.415
	Neuroticism	.155	.067	.198	2.296	.023
	Openness	.226	.098	.251	2.305	.023
	Extraversion	.064	.077	.091	.827	.410

a. Dependent Variable: DataManagementPractices

FINAL YEAR PROJECT WEEKLY REPORT

(Project II)

Trimester, Year: Trimester 1, Year 4	**Study week no.: 1**
Student Name & ID: Hew Chi Wei 18ACB04202	
Supervisor: Ts Soong Hoong Cheng	
Project Title: Personality Traits and Cyber Hygiene Behavior among University Students	

1. WORK DONE

[Please write the details of the work done in the last fortnight.]

Plan on the topic that proposed for the Final Year Project 1 to refresh what still left for the Final Year Project 2.

2. WORK TO BE DONE

Finalized survey questions and plan the methods to distribute the questionnaire.

3. PROBLEMS ENCOUNTERED

Some questions are removed to get a simple and quality question for questionnaire where the respondents can understand easily.

4. SELF EVALUATION OF THE PROGRESS

I done the planning on Week 1 because of the coming week is Chinese New Year holiday. So, I would not delay my work.

Online Signature during COVID-19
SOONG HOONG CHENG (Lecturer)
FACULTY OF ICT
UNIVERSITI TUNKU ABDUL RAHMAN (UTAR)
PERAK CAMPUS, JLN UNIVERSITI, BANDAR BARAT,
31900 KAMPAR.

Supervisor's signature

Student's signature

FINAL YEAR PROJECT WEEKLY REPORT

(Project II)

Trimester, Year: Trimester 1, Year 4	**Study week no.: 3**
Student Name & ID: Hew Chi Wei 18ACB04202	
Supervisor: Ts Soong Hoong Cheng	
Project Title: Personality Traits and Cyber Hygiene Behavior among University Students	

1. WORK DONE

[Please write the details of the work done in the last fortnight.]

Questionnaire had been finalized and successfully developed via Google Form and started to distribute the questionnaire to get 150 set of response.

2. WORK TO BE DONE

Download SPSS and create an account in SPSS which prepare to do data analysis after the data collection done.

3. PROBLEMS ENCOUNTERED

It is a bit of challenging for data collection due to the target sample size is 150 and I need to collect 150 respondents by myself.

4. SELF EVALUATION OF THE PROGRESS

My progression is going smooth in this current situation, but I need to start share survey to collect 150 respondents as my target sample size.

Supervisor's signature

Student's signature

FINAL YEAR PROJECT WEEKLY REPORT

(Project II)

Trimester, Year: Trimester 1, Year 4	**Study week no.: 5**
Student Name & ID: Hew Chi Wei 18ACB04202	
Supervisor: Ts Soong Hoong Cheng	
Project Title: Personality Traits and Cyber Hygiene Behavior among University Students	

1. WORK DONE

[Please write the details of the work done in the last fortnight.]

I have created a free trial account in SPSS and distribute the questionnaire through Microsoft Teams and WhatsApp.

2. WORK TO BE DONE

Starting to collect 150 respondents and complete this task as soon as possible.

3. PROBLEMS ENCOUNTERED

The SPSS account is free trial for one month and I might need to find another way to get free trail after one month.

4. SELF EVALUATION OF THE PROGRESS

The progress is going a bit slow as I wanted to collect more of the questionnaire done.

Online Signature during COVID-19
SOONG HOONG CHENG (Lecturer)
FACULTY OF ICT
UNIVERSITI TUNKU ABDUL RAHMAN (UTAR)
PERAK CAMPUS, JLN UNIVERSITI, BANDAR BARAT,
31900 KAMPAR.

Supervisor's signature

Student's signature

FINAL YEAR PROJECT WEEKLY REPORT

(Project II)

Trimester, Year: Trimester 1, Year 4	**Study week no.: 6**
Student Name & ID: Hew Chi Wei 18ACB04202	
Supervisor: Ts Soong Hoong Cheng	
Project Title: Personality Traits and Cyber Hygiene Behavior among University Students	

1. WORK DONE

[Please write the details of the work done in the last fortnight.]

Report writing of Chapter 1 to Chapter 2 is completed before week 7.

2. WORK TO BE DONE

Continue to work on process of collecting questionnaire from respondents and learn the data analysis technique from YouTube.

3. PROBLEMS ENCOUNTERED

I need to learn how to do data analysis by using SPSS software by myself through YouTube and Google since it is my first time to use SPSS software.

4. SELF EVALUATION OF THE PROGRESS

The process is going smooth for this moment, it is just need to wait the questionnaire to be done by the respondents so that I can proceed to run the data.

Online Signature during COVID-19
SOONG HOONG CHENG (Lecturer)
FACULTY OF ICT
UNIVERSITI TUNKU ABDUL RAHMAN (UTAR)
PERAK CAMPUS, JLN UNIVERSITI, BANDAR BARAT,
31900 KAMPAR.

Supervisor's signature

Student's signature

FINAL YEAR PROJECT WEEKLY REPORT

(Project II)

Trimester, Year: Trimester 1, Year 4	**Study week no.: 7**
Student Name & ID: Hew Chi Wei 18ACB04202	
Supervisor: Ts Soong Hoong Cheng	
Project Title: Personality Traits and Cyber Hygiene Behavior among University Students	

1. WORK DONE

[Please write the details of the work done in the last fortnight.]

All the questionnaires are successfully collected from the respondents.

2. WORK TO BE DONE

To run the data in SPSS based on the data given by respondents.

3. PROBLEMS ENCOUNTERED

There are few analyses need to be tested with SPSS and there are some outcomes I do not understand the meaning. Therefore, I need to get help from internet so that I can get more understanding on the method of explaining the result analysis.

4. SELF EVALUATION OF THE PROGRESS

The process is going well and Chapter 1 and Chapter 2 is done, while Chapter 3 is in process and Chapter 4 and 5 only can be done when the results of this research are analyzed.

Online Signature during COVID-19
SOONG HOONG CHENG (Lecturer)
FACULTY OF ICT
UNIVERSITI TUNKU ABDUL RAHMAN (UTAR)
PERAK CAMPUS, JLN UNIVERSITI, BANDAR BARAT,
31900 KAMPAR.

Supervisor's signature

Student's signature

FINAL YEAR PROJECT WEEKLY REPORT

(Project II)

Trimester, Year: Trimester 1, Year 4	**Study week no.: 10**
Student Name & ID: Hew Chi Wei 18ACB04202	
Supervisor: Ts Soong Hoong Cheng	
Project Title: Personality Traits and Cyber Hygiene Behavior among University Students	

1. WORK DONE

[Please write the details of the work done in the last fortnight.]

All the analysis and test are done by using SPSS.

2. WORK TO BE DONE

Started to analyzed the research results and work on Chapter 4.

3. PROBLEMS ENCOUNTERED

There are some meaning in the analysis results that I cannot understand, so I need to read more article and online sources about the test to interpret the results correctly.

4. SELF EVALUATION OF THE PROGRESS

Chapter 1, 2 and 3 is done. Chapter 4 still in progressing.

Supervisor's signature

Student's signature

FINAL YEAR PROJECT WEEKLY REPORT

(Project II)

Trimester, Year: Trimester 1, Year 4	**Study week no.: 12**
Student Name & ID: Hew Chi Wei 18ACB04202	
Supervisor: Ts Soong Hoong Cheng	
Project Title: Personality Traits and Cyber Hygiene Behavior among University Students	

1. WORK DONE

[Please write the details of the work done in the last fortnight.]

Chapter 4 data analysis and Chapter 5 conclusion are done.

2. WORK TO BE DONE

Starting to prepare presentation slide and presentation content.

3. PROBLEMS ENCOUNTERED

The presentation content is too large that need to present all the content in 15 minutes, so I need to concise and highlight the important content that I need to share to my supervisor and moderator.

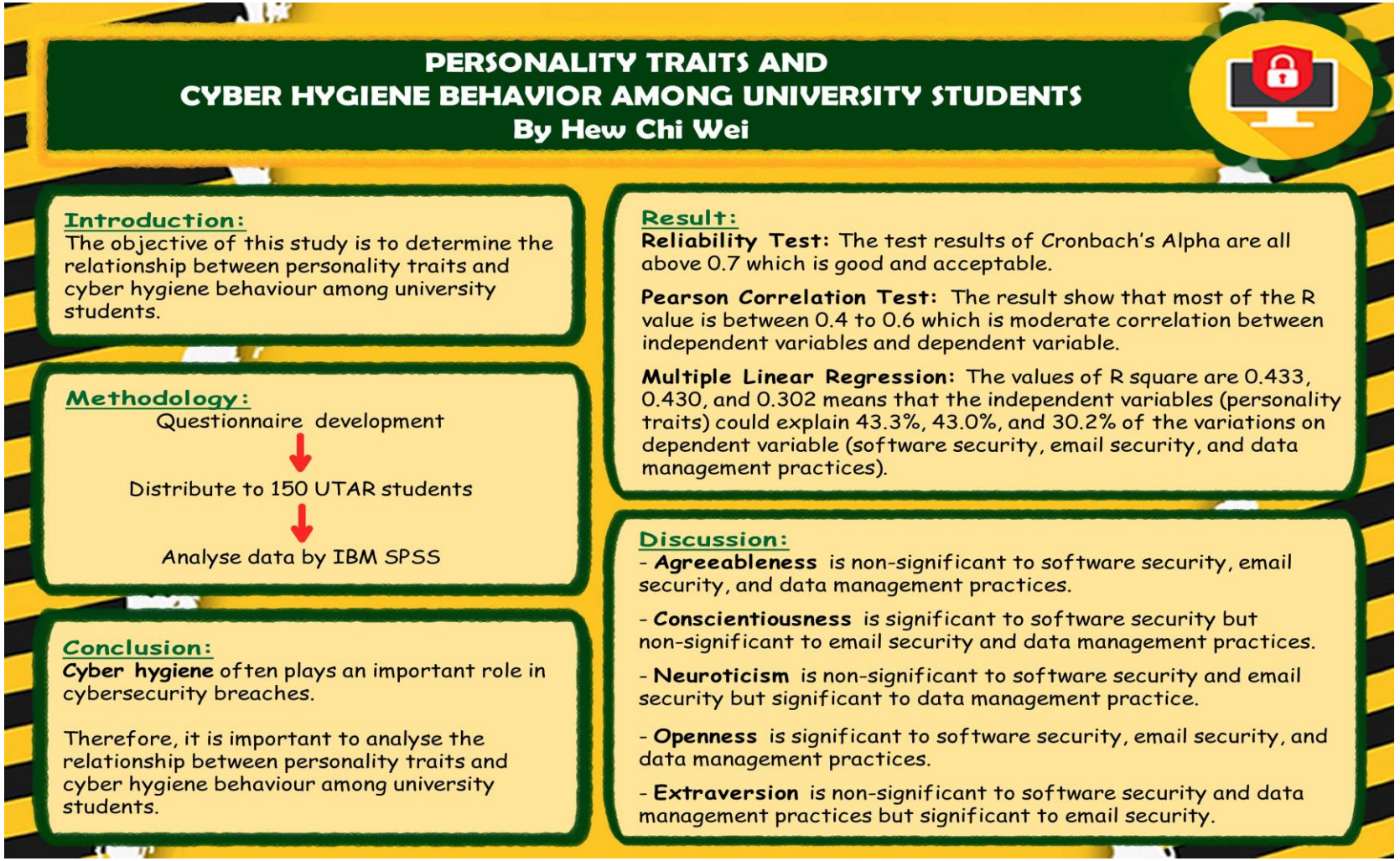
4. SELF EVALUATION OF THE PROGRESS

The whole project is considered as not hard as I started at the beginning of study week, so that I have enough to complete this project on time.

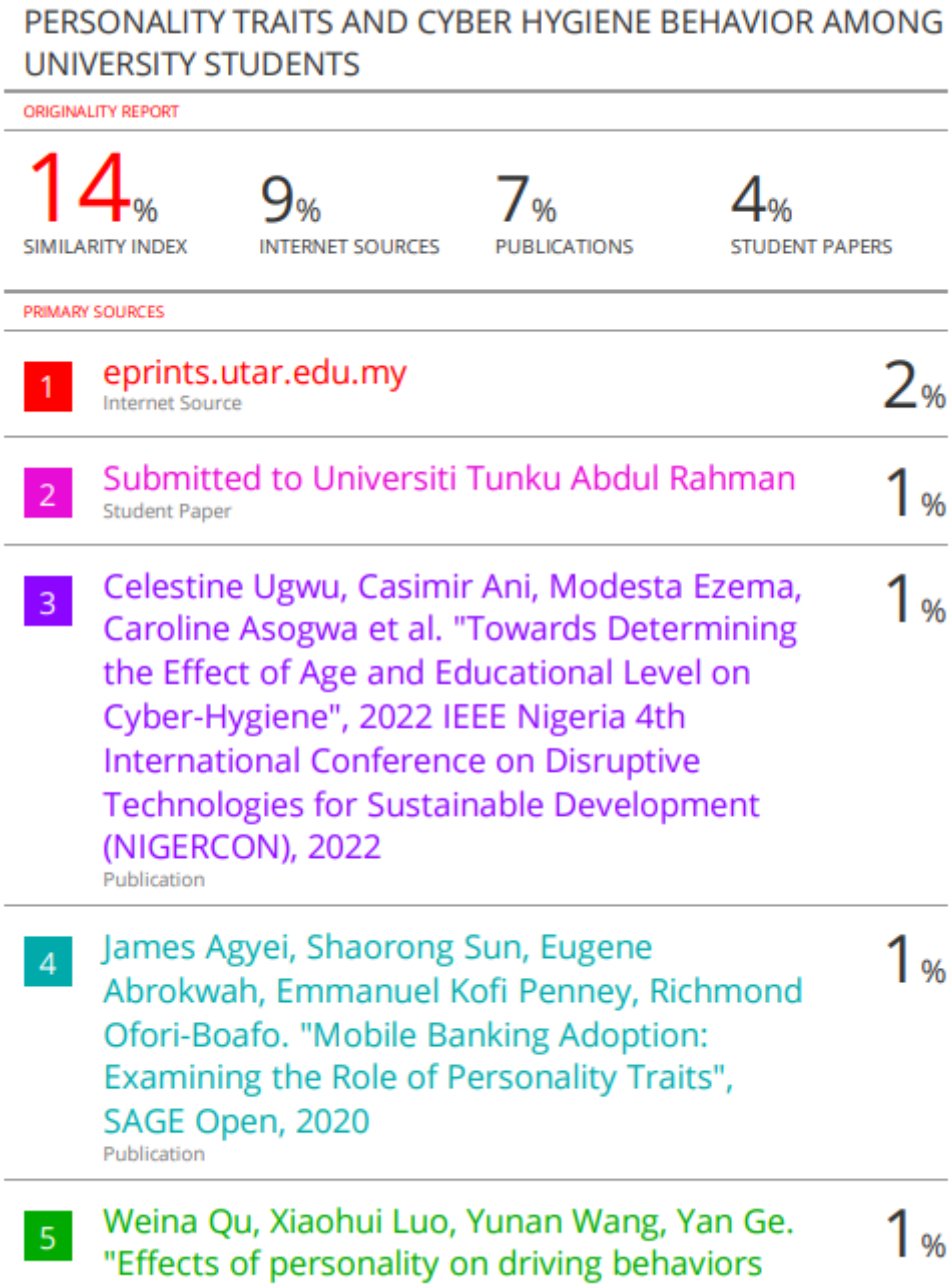
Supervisor's signature

Student's signature

POSTER


PERSONALITY TRAITS AND
CYBER HYGIENE BEHAVIOR AMONG UNIVERSITY STUDENTS
By Hew Chi Wei
Introduction:
The objective of this study is to determine the relationship between personality traits and cyber hygiene behaviour among university students.
Methodology:
Questionnaire development
Distribute to 150 UTAR students
Analyse data by IBM SPSS
Conclusion:
Cyber hygiene often plays an important role in cybersecurity breaches.
Therefore, it is important to analyse the relationship between personality traits and cyber hygiene behaviour among university students.
Result:
Reliability Test: The test results of Cronbach's Alpha are all above 0.7 which is good and acceptable.
Pearson Correlation Test: The result show that most of the R value is between 0.4 to 0.6 which is moderate correlation between independent variables and dependent variable.
Multiple Linear Regression: The values of R square are 0.433, 0.430, and 0.302 means that the independent variables (personality traits) could explain 43.3%, 43.0%, and 30.2% of the variations on dependent variable (software security, email security, and data management practices).
Discussion:
- Agreeableness is non-significant to software security, email security, and data management practices.
- Conscientiousness is significant to software security but non-significant to email security and data management practices.
- Neuroticism is non-significant to software security and email security but significant to data management practice.
- Openness is significant to software security, email security, and data management practices.
- Extraversion is non-significant to software security and data management practices but significant to email security.

PLAGIARISM CHECK RESULT



PERSONALITY TRAITS AND CYBER HYGIENE BEHAVIOR AMONG UNIVERSITY STUDENTS

ORIGINALITY REPORT

14%	9%	7%	4%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	eprints.utar.edu.my Internet Source	2%
2	Submitted to Universiti Tunku Abdul Rahman Student Paper	1%
3	Celestine Ugwu, Casimir Ani, Modesta Ezema, Caroline Asogwa et al. "Towards Determining the Effect of Age and Educational Level on Cyber-Hygiene", 2022 IEEE Nigeria 4th International Conference on Disruptive Technologies for Sustainable Development (NIGERCON), 2022 Publication	1%
4	James Agyei, Shaorong Sun, Eugene Abrokwah, Emmanuel Kofi Penney, Richmond Ofori-Boafo. "Mobile Banking Adoption: Examining the Role of Personality Traits", SAGE Open, 2020 Publication	1%
5	Weina Qu, Xiaohui Luo, Yunan Wang, Yan Ge. "Effects of personality on driving behaviors	1%

	among professional truck drivers: The mediating effect of safety climate", Transportation Research Part F: Traffic Psychology and Behaviour, 2022 Publication	
6	Shilpa Agarwal, Ruchika Gupta, Anish Gupta. "Chapter 33 Role of Big 5 Personality Traits in Increasing Customers' Intention to Adopt Digital Payments in India", Springer Science and Business Media LLC, 2022 Publication	<1 %
7	Submitted to Universiti Teknologi MARA Student Paper	<1 %
8	Submitted to Taylor's Education Group Student Paper	<1 %
9	www.frontiersin.org Internet Source	<1 %
10	ijecm.co.uk Internet Source	<1 %
11	Ashley A. Cain, Morgan E. Edwards, Jeremiah D. Still. "An exploratory study of cyber hygiene behaviors and knowledge", Journal of Information Security and Applications, 2018 Publication	<1 %
12	hdl.handle.net Internet Source	<1 %

13	Allen, Phillip E.. "CMOS Analog Circuit Design", Oxford University Press Publication	<1 %
14	Shelia M. Kennison, Eric Chan-Tin. "Taking Risks With Cybersecurity: Using Knowledge and Personal Characteristics to Predict Self-Reported Cybersecurity Behaviors", Frontiers in Psychology, 2020 Publication	<1 %
15	vau.ac.lk Internet Source	<1 %
16	Submitted to University of Salford Student Paper	<1 %
17	Margaret Gratian, Sruthi Bandi, Michel Cukier, Josiah Dykstra, Amy Ginther. "Correlating human traits and cyber security behavior intentions", Computers & Security, 2018 Publication	<1 %
18	Wenshan Li, Tiancong Li, Xiaoshuang Xi, Rong Zhang, Weishuang Sun, Dan Zhang, Weijun Gong. "Does higher knee hyperextension in patients with hemiplegia affect lateral and medial meniscus volume in the paretic leg? A Cross-sectional study", Research Square Platform LLC, 2022 Publication	<1 %
	coek.info	

19	Internet Source	<1 %
20	e-research.siam.edu Internet Source	<1 %
21	Submitted to Monash University Student Paper	<1 %
22	www.uniassignment.com Internet Source	<1 %
23	dr.ntu.edu.sg Internet Source	<1 %
24	sigma.nursingrepository.org Internet Source	<1 %
25	josiahdykstra.com Internet Source	<1 %
26	static.frontiersin.org Internet Source	<1 %
27	www.researchgate.net Internet Source	<1 %
28	Submitted to Purdue University Student Paper	<1 %
29	bio-protocol.org Internet Source	<1 %
30	par.nsf.gov Internet Source	<1 %

31	Submitted to CSU, San Jose State University Student Paper	<1 %
32	Submitted to Macquarie University Student Paper	<1 %
33	Submitted to University of Wales Swansea Student Paper	<1 %
34	Submitted to University of Wales central institutions Student Paper	<1 %
35	ro.ecu.edu.au Internet Source	<1 %
36	Submitted to Vels University Student Paper	<1 %
37	repository.londonmet.ac.uk Internet Source	<1 %
38	repository.nwu.ac.za Internet Source	<1 %
39	samafind.sama.gov.sa Internet Source	<1 %
40	worldwidescience.org Internet Source	<1 %
41	www.env.go.jp Internet Source	<1 %
42	www.times.co.sz	

	Internet Source	<1 %
43	bmcpediatr.biomedcentral.com Internet Source	<1 %
44	d-nb.info Internet Source	<1 %
45	repository.uwtsd.ac.uk Internet Source	<1 %
46	cdr.lib.unc.edu Internet Source	<1 %
47	cyberleninka.org Internet Source	<1 %
48	dspace.iup.edu Internet Source	<1 %
49	krishikosh.egranth.ac.in Internet Source	<1 %
50	nepjol.info Internet Source	<1 %
51	ro.uow.edu.au Internet Source	<1 %
52	www.diva-portal.org Internet Source	<1 %
53	www.ncbi.nlm.nih.gov Internet Source	<1 %

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY

Universiti Tunku Abdul Rahman			
Form Title : Supervisor's Comments on Originality Report Generated by Turnitin for Submission of Final Year Project Report (for Undergraduate Programmes)			
Form Number: FM-IAD-005	Rev No.: 0	Effective Date: 01/10/2013	Page No.: 1of 1

Full Name(s) of Candidate(s)	Hew Chi Wei
ID Number(s)	18ACB04202
Programme / Course	BACHELOR OF INFORMATION SYSTEMS (HONOURS) BUSINESS INFORMATION SYSTEMS (IB)
Title of Final Year Project	PERSONALITY TRAITS AND CYBER HYGIENE BEHAVIOR AMONG UNIVERSITY STUDENTS

Similarity	**Supervisor's Comments (Compulsory if parameters of originality exceeds the limits approved by UTAR)**
Overall similarity index: 14 % **Similarity by source** Internet Sources: 9 % Publications: 7 % Student Papers: 4 %	
Number of individual sources listed of more than 3% similarity: 0	

Parameters of originality required and limits approved by UTAR are as Follows:

(i) Overall similarity index is 20% and below, and

(ii) Matching of individual sources listed must be less than 3% each, and

(iii) Matching texts in continuous block must not exceed 8 words

Note: Parameters (i) – (ii) shall exclude quotes, bibliography and text matches which are less than 8 words.

Note Supervisor/Candidate(s) is/are required to provide softcopy of full set of the originality report to Faculty/Institute

Based on the above results, I hereby declare that I am satisfied with the originality of the Final Year Project Report submitted by my student(s) as named above.

Online Signature during COVID-19
SOONG HOONG CHENG (Lecturer)
FACULTY OF ICT
UNIVERSITI TUNKU ABDUL RAHMAN (UTAR)
PERAK CAMPUS, JLN UNIVERSITI, BANDAR BARAT,
31900 KAMPAR.

Signature of Supervisor

Name: Ts Soong Hoong Cheng

Date: 09-September-2022

Signature of Co-Supervisor

Name: _____

Date: _____

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF INFORMATION & COMMUNICATION TECHNOLOGY
(KAMPAR CAMPUS)

CHECKLIST FOR FYP2 THESIS SUBMISSION

Student Id	18ACB04202
Student Name	Hew Chi Wei
Supervisor Name	Ts Soong Hoong Cheng

TICK (√)	DOCUMENT ITEMS Your report must include all the items below. Put a tick on the left column after you have checked your report with respect to the corresponding item.
	Front Plastic Cover (for hardcopy)
✓	Title Page
✓	Signed Report Status Declaration Form
✓	Signed FYP Thesis Submission Form
✓	Signed form of the Declaration of Originality
✓	Acknowledgement
✓	Abstract
✓	Table of Contents
✓	List of Figures (if applicable)
✓	List of Tables (if applicable)
✓	List of Symbols (if applicable)
✓	List of Abbreviations (if applicable)
✓	Chapters / Content
✓	Bibliography (or References)
✓	All references in bibliography are cited in the thesis, especially in the chapter of literature review
✓	Appendices (if applicable)
✓	Weekly Log
✓	Poster
✓	Signed Turnitin Report (Plagiarism Check Result - Form Number: FM-IAD-005)
✓	I agree 5 marks will be deducted due to incorrect format, declare wrongly the ticked of these items, and/or any dispute happening for these items in this report.

*Include this form (checklist) in the thesis (Bind together as the last page)

I, the author, have checked and confirmed all the items listed in the table are included in my report.

_____
(Signature of Student)
Date: 09-September-2022