DRIVERS OF CYBERBULLYING INTENTION:

A STUDY ON MALAYSIAN UNDERGRADUATES' PERSPECTIVES

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A research project submitted in partial fulfillment of the requirement for the degree of

BACHELOR OF COMMERCE (HONS)
ACCOUNTING

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE
DEPARTMENT OF COMMERCE AND
ACCOUNTANCY

MAY 2019

DECLARATION

We hereby declare that:

(1)   This undergraduate research project is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.

(2)   No portion of this research project has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

(3)   Equal contribution has been made by each group member in completing the research project.

(4)   The word count of this research report is 10,056.

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ACKNOWLEDGMENT

DEDICATION

This research project is dedicated to:

Our supervisor,

Encik Mohd Danial Afiq Bin Khamar Tazilah

For giving us the motivation and discipline to tackle every task with determination.

Our project coordinator,

Dr. Shirley Lee Voon Hsien

For leading us to the right path throughout the process towards completion of this research project.

Universiti Tunku Abdul Rahman (UTAR),

For giving us the opportunity to conduct this research project and providing us with necessary facilities and sufficient academic resources to complete this research project.

And,

Families and friends,

For their love, unconditional moral and financial support.

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LIST OF ABBREVIATIONS

A   Attitude

ANOVA   Analysis of Variance

BI   Behavioural Intention

DV   Dependent Variable

E   Empathy

H   Hypothesis

IV   Independent Variable

MLR   Multiple Linear Regression

PBC   Perceived Behavioural Control

SN   Subjective Norms

TPB   Theory of Planned Behaviour

TRA   Theory of Reasoned Action

UM   University of Malaya

UPM   Universiti Putra Malaysia

UTAR   Universiti Tunku Abdul Rahman

UTM   Universiti Teknologi Malaysia

UTP   Universiti Teknologi Petronas

VIF   Variance Inflation Factors

PREFACE

This research methodology project is conducted to fulfill the requirement of Bachelor of Commerce (Hons) Accounting completion. This project is furnished and accomplished by referring to the past studies which were cited as references. Inevitably, the title of this research project is "Drivers of Cyberbullying Intention: A Study on Malaysian Undergraduates' Perspectives".

In Malaysia, cyberbullying is still a hot topic among the public and several cases relating to cyberbullying that have made the news to be published in the newspaper. Despite cyberbullying is already not a new issue in Malaysia, the number of studies regarding the cyberbullying are increasing gradually from year to year. It is also clear that the cyberbullying problems over the past period had not been reduced effectively in Malaysia. Before finding out the best solutions for eliminating cyberbullying issues which have frequently occurred among Malaysian undergraduates, it is crucial for someone who sets and implements the preventive programs to know about the factors which beget such matters. For this reason, this research is conducted to examine any possible influence which may give rise to cyberbullying intention.

ABSTRACT

With the availability of the Internet and social media, cyberbullying cases in Malaysia have increased rapidly in recent years and they subsequently become the serious issues that inhibit the healthy development of Malaysian youth, particularly local undergraduates. Actually, cyberbullying is an act which is committed deliberately at multiple times to harm other individuals through and ICT environment. Thus, cyberbullies' behaviour arises as a result of one's intention which is caused by certain determinants. Apparently, the determinants that significantly influence an individual's behavioural intention towards cyberbullying in this study are referred to the theory of planned behaviour (TPB) constructs and empathy. Hence, this research is aimed to determine whether the TPB and personality trait (i.e. empathy) can be used to explain the behavioural intention towards cyberbullying among Malaysian undergraduates. The self-administered questionnaires are delivered to 258 undergraduates who study in top 5 Malaysian universities. The research results have shown that attitude, subjective norms and perceived behavioural control have a positive relationship with behavioural intention towards cyberbullying. However, empathy is the only one independent variable that is found to have no significant association with dependent variable. Based on the research findings, attitude can be considered as the most significant predictor of behavioural intention towards cyberbullying when comparing to other independent variables which have been investigated in this study.

Keywords: Cyberbullying, Theory of Planned Behaviour (TPB), Attitude, Subjective Norms, Perceived Behavioural Control, Behavioural Intention

CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

This research is aimed to examine the factors that have an influence on behavioural intention towards cyberbullying among Malaysian undergraduates. Essentially, this chapter will explain about the background on cyberbullying issue and research problem as well as the purposes of this study associated with the relative contributions and layout of each upcoming chapter.

1.1 Background of Study

A new form of bullying called cyberbullying exists in this modern era because of continuous advancement of digital technology (Brewer & Kerslake, 2015). Palpably, there are some differences between cyberbullying and traditional bullying. Generally, cyberbullying is defined as "an aggressive behaviour that is repeatedly and intentionally carried out against a defenseless victim using electronic form of contact" (Menesini et al., 2012 p. 455; Sticca & Perren, 2013, p. 740); whereas traditional bullying means that "repeated intentional aggressive behaviour that involves disproportional power between the victim and the bully" (Olweus, 1993; Tarablus, Heiman & Olenik-Shemesh, 2015, p. 708). Besides, individuals who perpetrate traditional bullying can be seen and identified straightforwardly, while the perpetrators of cyberbullying cannot be identified easily (Tarablus et al., 2015).

Moreover, Willard (2007); Na, Dancy and Park (2015) also stated that various types of cyberbullying behaviour can be recognized crucially, like cyberstalking,

exclusion, flaming, outing, online harassment, trickery, denigration, and impersonation. Tragically, cyberbullying among Malaysian students has achieved a warning level as CyberSecurity Malaysia's statistics has indicated that there was an increasing trend in cyberbullying among students since there were 338 cases reported in 2016 as compared to the occurrence of 291 cases in 2014 ("Rise of brutal bullying grips Malaysia", 2017). Hence, it is of utmost importance for Malaysian researchers to do a research regarding cyberbullying issue by targeting local students.

1.2   Problem Statement

According to Figure 1.1, the statistics had revealed that at least more than 200 cases related to cyberbullying among local students would happen in several previous years.

Figure 1.1: Cases of Cyberbullying among Students between year 2012- 2016
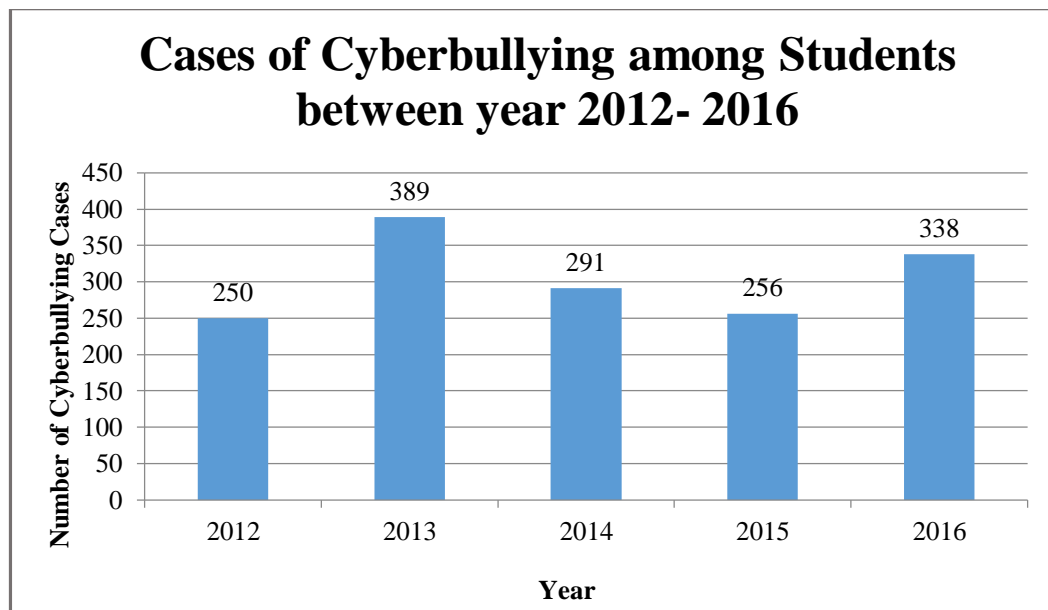
Source: "Rise of brutal bullying grips Malaysia" (2017)

Consequently, cyberbullying becomes a hot topic in Malaysia and this issue will be getting more serious in Malaysia if local undergraduates have suicidal ideation and attempts. Unfortunately, one of the frightening cases has occurred in Malaysia, for instance, an engineering undergraduate who was 20 years old committed suicide in Georgetown, Penang in May 2017 due to he was one of the victims of cyberbullying (Brown, 2017). Additionally, Lai, Salleh, Mohaffyza and Sulaiman (2017) also signalized that prevalence of cyberbullying in Malaysia is typically linked to local undergraduates because their research results have proven that 66% of 712 Malaysian undergraduates as their target respondents were the victims of cyberbullying. Therefore, it is vital to carry out a research which is looking for factors that beget cyberbullying among universities' undergraduates within the Malaysian context.

According to several Malaysian past studies (Balakrishnan, 2015; Ghazali et al., 2016; Jafarkarimi, Saadatdoost, Sim & Jee, 2017a), multiple determinants related to cyberbullying have been examined extensively, for example, age and gender, personality traits and variables which is inherent in Theory of Planned Behaviour (TPB). Actually, for the purpose of determining the behavioural intention towards cyberbullying, TPB shall be applied in this research since TPB is a useful conceptual framework that has greatly concentrated on human behavior, and this theory tends to justify the factors which cause an individual's participation in specific behaviour (Heirman & Walrave, 2012).

Evidently, according to several past studies (Balakrishnan, 2015; Balakrishnan, 2017; Ghazali et al., 2016; Ghazali et al., 2017; Jafarkarimi et al., 2017a), TPB model should be integrated with other possible influences for further investigation on cyberbullying motives and their sample size could be considered too large as Malaysian youth had almost taken as their target respondents. Thus, it is worth to conduct this research for strengthening the understanding of behavioural intention towards cyberbullying in Malaysia through integration of personality traits with

TPB model and narrowing down the sample group into Malaysian undergraduates only.

1.3 Research Questions & Research Objectives

Table 1.1 which represents the general and specific research objectives and research questions, is shown as follows:

Table 1.1: Research Objectives and Research Questions

	Research Objectives	Research Questions
General	To determine whether the theory of planned behaviour (TPB) and personality trait can be used to explain the behavioural intention towards cyberbullying among Malaysian undergraduates.	Is the behavioural intention towards cyberbullying among Malaysian undergraduates can be explained by using the theory of planned behaviour (TPB) and personality trait?
Specific	1. To examine the relationship between attitude and behavioural intention towards cyberbullying among Malaysian undergraduates.	1. Is there any relationship between attitude and behavioural intention towards cyberbullying among Malaysian undergraduates?
	2. To examine the relationship between subjective norms and behavioural intention towards cyberbullying	2. Is there any relationship between subjective norms and behavioural intention towards cyberbullying among Malaysian undergraduates?

	among Malaysian undergraduates.	
	3. To examine the relationship between perceived behavioural control and behavioural intention towards cyberbullying among Malaysian undergraduates.	3. Is there any relationship between perceived behavioural control and behavioural intention towards cyberbullying among Malaysian undergraduates?
	4. To examine the relationship between empathy and behavioural intention towards cyberbullying among Malaysian undergraduates.	4. Is there any relationship between empathy and behavioural intention towards cyberbullying among Malaysian undergraduates?

Source: Created for the research.

1.4   Significance of Study

Theoretically, this research will benefit future researchers and academicians in respect of increasing the understanding about the characteristics regarding perpetrators of cyberbullying by exploring the role of personality trait in begetting cyberbullying behavior apart from investigating the implications arising from the TPB constructs on cyberbullying perpetration among Malaysian undergraduates. Furthermore, the results of this research can propose additional conceptual framework for future researchers and academicians to boost their knowledge base regarding psychological state of individuals, such as empathy value to create awareness among society and allow them in knowing more impacts of cyberbullying or using Internet, thereby helping them in improving their research work regarding cyberbullying issue.

Practically, this research will also benefit counselors who work at university counseling centers in terms of developing more comprehensive and effective strategies for eliminating cyberbullying issue before it occurs as they know the factors that influence the behavioural intention towards cyberbullying, thereby causing them to have high tendency in providing excellent counseling services to undergraduates. Moreover, this study is also significant for the health professionals to conduct cyberbullying prevention and intervention programs at university as they can attempt to disclose information of this study to the students in order to raise their awareness of this issue. Consequently, this study can help to prevent university students from being a bully or victim of cyberbullying, thereby increasing human capital with healthy mindset and good psychological quality for Malaysia.

1.5   Chapter Layout

In summary, Chapter 1 introduces the study's background, problem statements, and overview of the research that state the objectives of the study in order to resolve any questions arising from the study. Subsequently, Chapter 2 will comprise the literature review on theoretical background on TPB, a review of past empirical studies, proposed research model and hypotheses development. Next, Chapter 3 provides further understanding on the design and methodology of the study. This chapter also includes the discussion on sampling method, data collection method, and an outline of variables and measurement in this study in addition to data analysis technique. Chapter 4 will interpret the results obtained from the final test analysis. Lastly, Chapter 5 will present a quick recap of statistical analysis, discussions of major findings and the corresponding research impacts. For addressing any drawback of this study, some appropriate solutions or suggestions are also provided in the final chapter.

1.6   Conclusion

Chapter 1 attempts to talk about the background of topic in addition to the problem statement that supports the rationale of investigating cyberbullying issue. Besides, the aims of this study and research contributions are also covered in this chapter as well.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

Chapter 2 will portray the theoretical foundation for this study and a review of each relevant variable being examined in the past empirical studies. Moreover, this chapter also includes the proposed conceptual framework and hypotheses development.

2.1 Review of the Literature

2.1.1 Behavioural Intention towards Cyberbullying

According to Swan (1981); Lam and Hsu (2006), behavioural intention is defined as a person's anticipated or intentional behaviour that will be performed in the future. Hence, behavioural intention (BI) towards cyberbullying means a measure of cyberbullying behaviour that will be performed intentionally by an individual in future. Manifestly, BI towards cyberbullying is being used as dependent variable (DV) for this research paper as this research is completely concentrating on what will influence an individual to have cyberbullying intention. Moreover, Ajzen (1991) also suggests that a person's intention to do a certain behaviour is useful for predicting the actual behaviour that will be performed in the future and this

assumption is being underlined in this study. For these reasons, BI towards cyberbullying is appropriate to be used as dependent variable (DV) for testing the validity of all independent variables (IVs) in this research.

2.1.2 Attitude

Typically, attitude is referred to as a person's "positive or negative feeling toward an object" (Fishbein & Ajzen, 1975; Mcbride, Lanier & Mcdonald, 2013, p. 28). Heirman and Walrave (2012) also pointed out that individuals will have positive attitude towards behaviour if they have perceived as obtaining more desirable outcomes; and vice versa. Thus, every individual's attitude towards something plays a crucial role in shaping their behaviour which is relevant to it (Shim & Shin, 2016). According to Shim and Shin (2016), they have achieved one of their research purposes which is to investigate whether a positive attitude towards Mobile Instant Messengers (MIMs) bullying would greatly help in moulding MIMs bullying behaviour in MIMs group chats. In other words, a positive attitude towards cyberbullying would significantly influence cyberbullying behaviour and this positive correlation is also illustrated in the study of Ho, Chen and Ng (2017) as individuals would be more likely to have cyberbullying behavior if they have favourable attitude towards cyberbullying. Likewise, Rashid, Mohamed and Azman (2017) also concluded that attitudes toward cyberbullying would have direct influence over behavioural intention towards cyberbullying. Hence, it appropriately hypothesized that there is a positive association between attitude and behavioural intention towards cyberbullying among Malaysian undergraduates, in this study.

2.1.3 Subjective Norms (SN)

Generally, subjective norms (SN) are defined as "perceived social pressure to perform or not to perform the behavior" (Ajzen, 1991, p. 188). Besides, subjective norms are also referred to an individual's normative beliefs which denote social pressures from vital reference groups like friends or parents who can influence the performance of an action in addition to having tendency to motivate following these reference groups (Kim, Ham, Yang & Choi, 2013). Apparently, individuals with higher subjective norms are expected to engage in cyberbullying (Jafarkarimi et al., 2017b). Firstly, the variables like injunctive norms and descriptive norms which are included in subjective norms have been investigated in the study conducted by Doane, Pearson and Kelly (2014) and their research findings have exhibited that subjective norms are positively associated with the cyberbullying perpetration. Furthermore, Rashid et al. (2017) presented their research results that there is a positive relationship between subjective norms and the intention to cyberbully others and the same results have also been shown in the study of Jakadarimi et al. (2017b) whose purpose is to examine any effect of influential factors on behavioural intention towards cyberbullying. Due to several researchers have also revealed positive results in their studies, a hypothesis which proposes that there is a positive correlation between subjective norms and behavioural intention towards cyberbullying among Malaysian undergraduates, is rationally framed in this study.

2.1.4 Perceived Behavioural Control (PBC)

Commonly, perceived behavioural control (PBC) is referred to as the extent to which individuals have confidence to achieve certain performance of actual behaviour and the level of such confidence is in accordance with the perceived easiness or difficulty of an act to be completed (Smith, 2015).

Apparently, the availability of chances and resources perform an action can also affect the level of confidence emphasized by PBC (Anggraini & Siswanto, 2016). Besides, Barua (2013) also insisted that an individual with high level of PBC would be more likely to perform certain behaviour. Truly, Sasson and Mesch (2016) portrayed their research results that perceived behavioral control (PBC) has a positive association with risky online behaviour (i.e. cyberbullying behaviour) as online users would feel easy to delivering insulting messages, disclose personal information and meet with others. Additionally, Festl (2016) also shown that there is a positive association between PBC and cyberbullying perpetration and this research results specified that individuals would not intentionally carry out cyberbullying unless they would perceive their behaviour under their control. Therefore, people with high PBC will only cyberbully others once they have perceived that they have the control ability (confidence) to perpetrate cyberbullying. However, the research findings conducted by Adekoya (2016) presented that PBC does not significantly affect cyberbullying behaviour. Undoubtedly, Adekoya (2016) did not provide any valid reason for supporting the research findings. Hence, it is recommended to develop a hypothesis for proposing that there is a positive association between PBC and behavioural intention towards cyberbullying among Malaysian undergraduates in this study.

2.1.5 Empathy

Predominantly, Eisenberg et al. (2002) defined empathy as an emotional reaction stimulated by and corresponding with other individual's emotional state or condition. Thus, empathy is connected to three valued outcomes, namely caring for others, understanding others, and validating others' emotions (Wondra & Ellsworth, 2015) and it seems to have some associations with cyberbullying (Doane et al., 2014). According to

Cleemput, Vandebosch and Pabian (2014), empathy was found to be a specific predictor of cyberbullying perpetration where the lower level of emphatic concern would beget more participation in cyberbullying. On the other hand, the research results like empathy is negatively linked to cyberbullying perpetration, is reported in the study of Brewer and Kerslake (2015), and Garaigordobil (2015). This is because online interpersonal interaction is "emotionally colder", thereby causing some difficulties in empathizing emotionally with a victim besides the feeling of empathy varies according to the situations, for instance, a victim who might be crying alone in front of a screen is different from a victim who is crying in front of the cyberbully (Garaigordobil, 2015). Moreover, Zych, Farrington and Ttofi (2018) also stated that there is a significant relationship between empathy and cyberbullying perpetration in their research which is aimed to find out how the empathy is related to the different cyberbullying roles. Hence, it is appropriately hypothesized that there is a negative relationship between empathy and behavioural intention towards cyberbullying among Malaysian undergraduates.

2.2 Review of Relevant Theoretical Model

2.2.1 Identify and Describe the Theory

Initially, Theory of Planned Behaviour (TPB) was proposed by Icek Ajzen in 1985 (Ajzen, 1991). According to Dos Santos and De Almeida (2017), TPB which evolved from the Theory of Reasoned Action (TRA) presented that an individual's intention to engage in certain behaviour is ordinarily driven by three belief-based concepts like attitudes, subjective norms and perceived

behavioural control (PBC) (Pan & Truong, 2018). Indeed, both of the theories have almost similar belief-based concepts except for perceived behavioural control as Dos Santos and De Almeida (2017) found that TRA was considered as being inadequate in respect of acknowledging individual's willingness without considering the resources required for performing a behaviour. Therefore, Ajzen (1991) had altered TRA model to a conceptual framework called TPB by adding PBC as one additional variable in order to capture the extent to which an individual believes he or she has the ability to control his or her own behaviour and the belief may be affected by some externalities (Dos Santos & De Almeida, 2017). Clearly, this theory is beneficial for predicting intention and behaviour since they can capture a noteworthy proportion of the variance in intention and behaviour (Pan & Truong, 2018). Hence, TPB is a theory being used in this study and its related model is presented in following Figure 2.1.

Figure 2.1: Conceptual Model of TPB
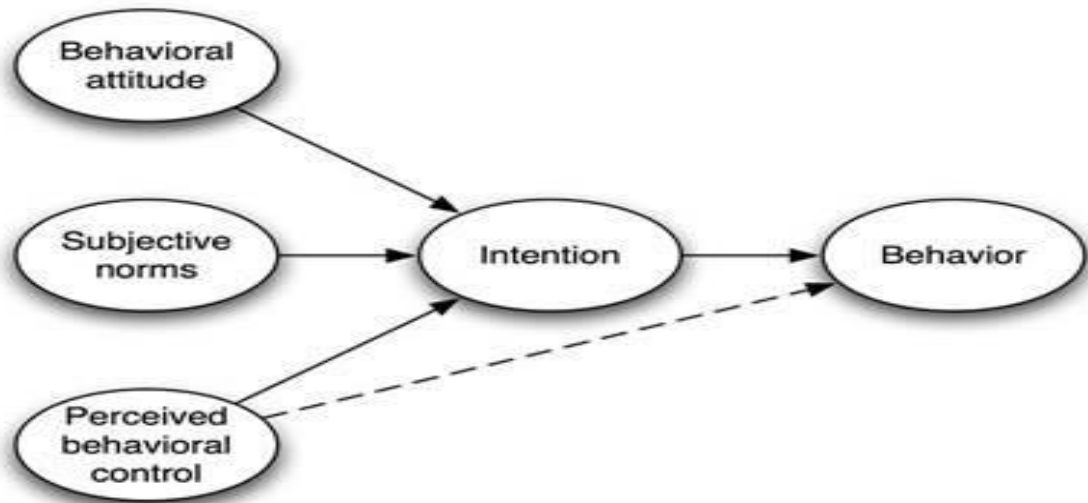
Source: Adopted from Ajzen (1991). The Theory of Planned Behaviour

2.2.2 Use of Theory in Other Research Areas

Undeniably, TPB is widely used as a generalised theory in various areas. First and foremost, Shih and Fang (2004) compared TRA framework with two versions of the TPB model in their study for the purpose of obtaining useful and interesting results that will help e-banking enterprises in refining their strategic planning and improving competitive advantages. Next, according to Yakasai and Wan Jusoh (2015), their research has adopted the TPB in marketing area for explaining intention to use digital coupon among IIUM students in Malaysia. Lastly, Chen, Lai and Lin (2014) also apply TPB in their study to increase the understanding of China's rural digital divide.

2.2.3 Explain Concepts and Relationship in the Theory

Table 2.1 which provides the definition of all the concepts in TPB is illustrated as follows:

Table 2.1: Concepts in Theory of Planned Behaviour (TPB)

Constituents of TPB/ Concepts in TPB	Definition	Sources
Behaviour	"A function of salient information, or beliefs". It can simply be known as an individual's act in certain case.	(Ajzen, 1991, p. 189)
Intention	"To capture the motivational factors that influence a behavior; they are indications of how hard people are willing to try, of how	(Ajzen, 1991, p. 181)

	much of an effort they are planning to exert, in order to perform the behavior".	
Attitude	"The degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question".	(Ajzen, 1991, p. 188)
Subjective Norms (SN)	"Perceived social pressure to perform or not to perform the behavior".	(Ajzen, 1991, p. 188)
Perceived Behavioural Control (PBC)	"Perceived ease or difficulty of performing the behavior and it is assumed to reflect past experience as well as anticipated impediments and obstacles".	(Ajzen, 1991, p. 188)

According to Pabian and Vandebosch (2014), there is a significant relationship among every constituent of TPB since the general rule of TPB has outlined that the more favourable attitude and subject norms in relation to a behaviour, together with the high level of perceived behavioural control, the more likelihood that individual has intention to engage in that behaviour.

2.2.4 Application of Theory to the Study

According to Jafarkarimi et al. (2017a), cyberbullying really implies an action which is carried out intentionally at multiple times for bringing negative impacts towards victims via a digital medium. For this reason, cyberbullying is inappropriate to be deemed as an occasional act and cyberbullying shall thus be referred to as a behaviour (Jafarkarimi et al., 2017a). Plainly, TPB can be viewed as a proper theory to predict an individual's intention and such intention to perform a particular behaviour has high tendency to predict actual behaviour (Ajzen, 1991), so behavioural intention towards cyberbullying is taken as the dependent variable (DV). Undoubtedly, TPB is pertinent and relevant to this study which concerns

behavioural intention towards cyberbullying because such behavioural intention is ordinarily driven by the TPB constructs, like a person's attitudes, subjective norms (SN) representing the perceived social influence as well as a perceived behavioral control (PBC) representing a psychological proxy for actual control (Ajzen, 1991; Festl, 2016). Hence, TPB constructs are employed as the independent variables (IVs) in this study.

In addition, Jafarkarimi et al. (2017a) have also recommended that TPB model should have to comprise more variables. Apparently, the personality trait that seems to closely relate to TPB being used to predict behavioural intention towards cyberbullying. This is because Conner and Abraham; Picazo-Vela, Chou, Melcher and Pearson (as cited in Kim, Lee, Sung, & Choi, 2016) stated that personality trait be incorporated as a possible influence in the TPB model. Therefore, this study has planned to take personality trait as one additional independent variable and personality trait here is simply a general term which means the people's characteristic patterns of thoughts, feelings, and behaviours (Diener & Lucas, 2018). Initially, the potential personality traits like loneliness, self-esteem and empathy are going to be taken as independent variables (IVs) in this study as these personality traits have been investigated in a Malaysian study that they can influence cyberbullying among youth (Ghazali et al., 2016). Truly, loneliness, self-esteem and empathy are the most popular personality traits being investigated in predicting the cyberbullying behaviour despite personality trait consists of many examples (Brewer and Kerslake, 2015; Tanrikulu, 2015) and such research findings are illustrated in Table 2.2.

Table 2.2: Research Findings of Loneliness, Self-Esteem and Empathy

Personality Traits	Sources	Research Findings
Loneliness	Brewer and Kerslake (2015)	No significant relationship with cyberbullying perpetration.
	Olenik-Shemesh, Heiman and Eden (2012); Tanrikulu (2015)	Negative relationship with cyber victimization. This has also represented that no significant relationship with cyberbullying perpetration.
Self-esteem	Bayraktar, Machackova, Dedkova and Cerna (2014); Brewer and Kerslake (2015); Tanrikulu (2015)	Negative relationship with cyber victimization. This has also represented that no significant relationship with cyberbullying perpetration.
Empathy	Brewer and Kerslake (2015); Tanrikulu (2015)	Significant relationship with cyberbullying perpetration.

Based on the past research findings as presented in Table 2.2, loneliness and self-esteem should be excluded from investigating in this study because these two personality traits which significantly influence cyber victimization are in contrast to the meaning of dependent variable that is going to investigate cyberbullying from the perpetrator's perspective. Therefore, empathy is the only one personality trait being taken as independent variable because it seems to have significant association with cyberbullying perpetration.

2.3 Proposed Conceptual Framework

Figure 2.2: Proposed conceptual framework
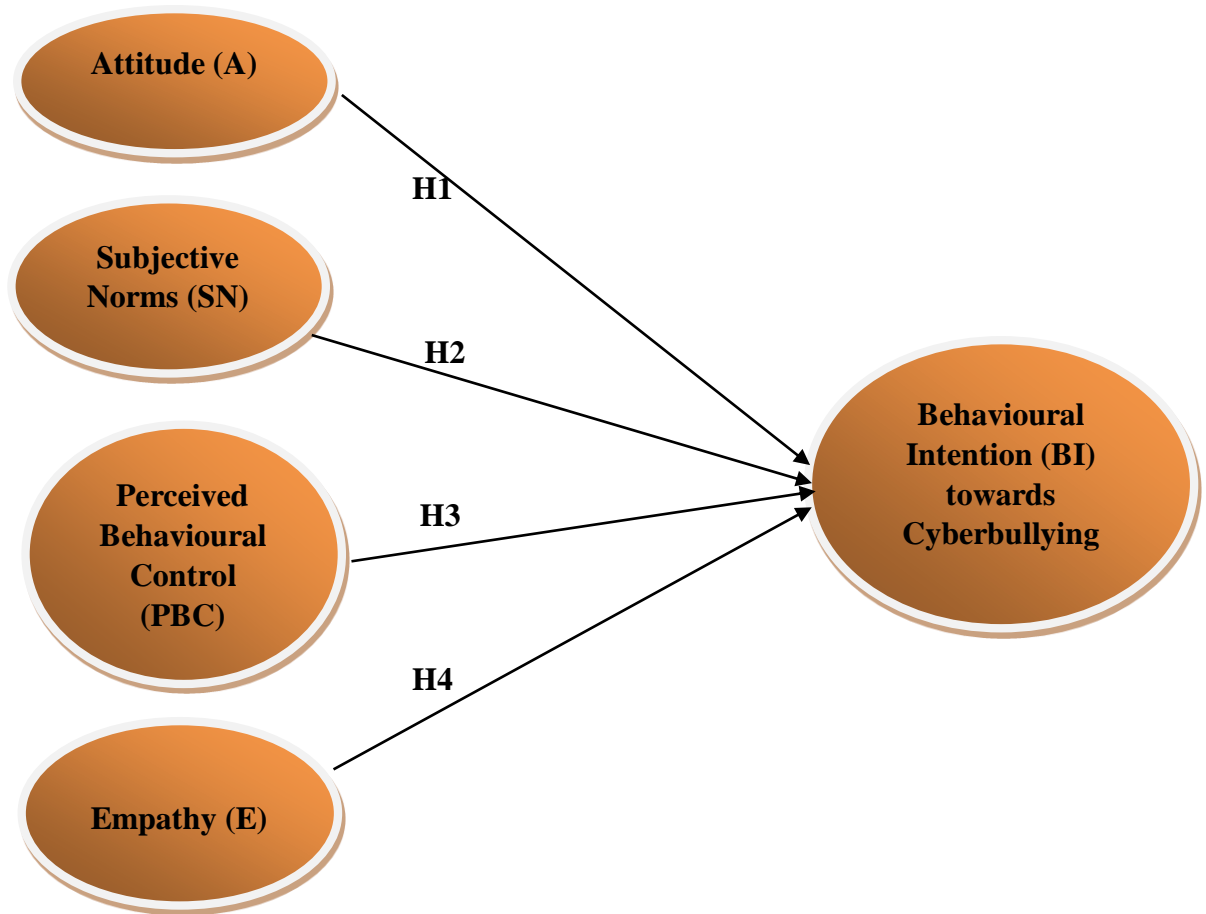

Source: Self-developed

Figure 2.2 displays the conceptual framework for this study, in which the TPB construct like attitude, subjective norms, perceived behavioural control and one personality trait namely empathy are the independent variables (IVs) for this study; while behavioural intention towards cyberbullying is the dependent variable (DV) to be tested for this particular study.

2.4   Hypotheses Development

4 hypotheses are developed for this study and are shown as follows:

H_1: There is a positive relationship between attitude and behavioural intention towards cyberbullying among Malaysian undergraduates.

H_2: There is a positive relationship between subjective norms and behavioural intention towards cyberbullying among Malaysian undergraduates.

H_3: There is a positive relationship between perceived behavioural control and behavioural intention towards cyberbullying among Malaysian undergraduates.

H_4: There is a negative relationship between empathy and behavioural intention towards cyberbullying among Malaysian undergraduates.

2.5   Conclusion

Chapter 2 not only includes a general review on the past studies, but also explains the relevant theoretical model related to the cyberbullying issue. Definitely, hypotheses development and theoretical framework has also been encompassed in this chapter. The subsequent chapter will describe how the research is carried out for testing the hypotheses developed.

CHAPTER 3: METHODOLOGY

3.0   Introduction

This chapter will provide an insight into the research methodology of this study, it will discuss the matter pertaining to research design, data collection method, sampling design, method of data collection, constructs measurement, data processing and data analysis.

3.1   Research design

This study is a quantitative research which applies primary data collection by using questionnaire survey as the research methodology in order to test the applicability of theory of planned behaviour (TPB) and personality trait in explaining behavioural intention towards cyberbullying behaviour among Malaysian undergraduates. This is because quantitative research can help to generate an arithmetical result reliably from large sample size (Hyde, 2000) and questionnaire is also effective and efficient in collecting data from large target respondents (Saunders, Lewis & Thornhill, 2016). Furthermore, this research also adopts cross-sectional approach whose purpose is to study a phenomenon for which the data is collected for only once, at a given point of time (Saunders, Lewis & Thornhill, 2012) as the questionnaire will be distributed only once to the target respondents and will subsequently be collected immediately for data analysis. Thus, this method provides efficiency to researchers because no follow up and fewer resources are required to carry out the research (Sedgwick, 2014). Eventually, unit of analysis of this research is Malaysian undergraduates.

3.2 Data Collection Method

3.2.1 Primary Data

This research applied primary data collection and the primary data was collected through questionnaire survey since questionnaire survey is considered as a useful and economical way in collecting large amount of data within a short period of time (Saunders et al., 2016).

3.3 Sampling Design

3.3.1 Target Population

Preponderantly, the target population for this study is Malaysian undergraduates because they are primary contributors to the overall number of cyber users in Malaysia (Lai et al., 2017). There are multiple factors making Malaysian undergraduates to occupy high portion of being the cyber users, for instance, computers and Internet have become the formidably assisting tools among Malaysian undergraduates; ICT facilities that are supplied fully by all Malaysian colleges and universities for their existing students will directly help them to approach the cyber environment apart from the web-based learning and mobile learning strategies are tremendously encouraged in Malaysian higher learning institutions (Lai et al., 2017). Truthfully, all of these factors have constituted a strong basis for

Malaysian undergraduates to account for higher percentage of cyber users, thereby allowing them to perpetrate cyberbullying in Malaysia.

3.3.2 Sampling Frame and Sampling Location

Sampling is preferred in this research instead of doing a census because it is impracticable for any researcher to collect data from entire population in addition to the budget and time constraints (Saunders et al., 2016). Hence, there is a need for choosing a sample from the target population. Since cyberbullying can occur anytime and anywhere (Roberts, Axas, Nesdole & Repetti, 2016), all Malaysian undergraduates are potentially exposed to cyberbullying. Indubitably, sample in this study cannot be merely limited to either local public or private universities' students. Thus, both local public and private universities shall be targeted, particularly those have high rankings because they can normally provide good ICT facilities and there is high possibility that all universities' undergraduates will be the cyber users as discussed earlier.

Indeed, undergraduates who study in top 5 Malaysian universities, namely University of Malaya (UM), Universiti Tunku Abdul Rahman (UTAR), Universiti Teknologi Petronas (UTP), Universiti Teknologi Malaysia (UTM) and Universiti Putra Malaysia (UPM) will be the exact sample in this study (Times Higher Education (THE) Asia University Rankings 2018 Released, 2018). Moreover, it is also reasonable for assuming that getting the high response rate from undergraduates who study in these top 5 Malaysian universities because most of them will typically have good English language level and they tend to understand well the contents in the questionnaire. Therefore, the effectiveness of the data collection in this study will be improved through distribution of questionnaire survey to the undergraduates in these top 5 Malaysian universities.

3.3.3 Sampling Elements

The sampling elements are undergraduates who study in UM, UTAR, UTP, UTM and UPM.

3.3.4 Sampling Technique

Non-probability sampling technique is employed in this study due to the absence of sampling frame that lists all the names of Malaysian undergraduates among these top 5 universities (Saunders et al., 2016). Obviously, purposive or judgmental sampling will be only choice of sampling technique. This is because merely Malaysian undergraduates who pursue their studies in UM, UTAR, UTP, UTM and UPM can meet the characteristics of target respondents in this study and thus those in these top 5 universities will be qualified and selected as the participants for answering the questionnaire.

3.3.5 Sampling Size

In this research, a self-administered questionnaire included 26 questions for all variables and the sample size of 104-260 (26x4 - 26x10) is acceptable range for this study as the ratio of 1:4 -1:10 is strongly suggested (Hinkin, 1995). Therefore, it is reasonable to collect data from 260 target respondents. By considering fairness issue, 52 sets of questionnaires shall be distributed to each targeted university. In other words, 52 target respondents were selected from each targeted university to answer the questionnaire. Out of

260 sets of questionnaires, 260 sets of questionnaires were collected and only 2 sets of questionnaires were not usable for the analysis of this study. In short, the sample size of 258 respondents can still be considered as good representative for the population in this study because it is still within the acceptable range as depicted above.

3.4   Research Instrument

During first two weeks of January 2019 trimester, all sets of questionnaire survey were distributed to 260 Malaysian undergraduates who study in UM, UTAR, UTP, UTM and UPM. Generally, each respondent took an average of 5 minutes to complete the entire set of questionnaire.

Nonetheless, before the final distribution of the self-administrative questionnaires, it is critical to determine the accuracy and reliability of measuring instrument on a smaller study. Therefore, 2 lecturers who possess the relevant knowledge of cyberbullying or digital world were asked to comment on the suitability of the questions. After pre-test stage, a pilot test was carried out to refine the questionnaire in term of its validity and reliability to avoid misunderstanding of the questions and subsequently giving answers inaccurately (Saunders, Lewis & Thornhill, 2009).

Moreover, Saunders et al. (2009) also claimed that the minimum number for conducting a pilot test is 10 persons. For increasing the reliability of data, 30 UTAR students at Kampar campus were selected to participate in the pilot test. During the pilot test, any feedback and opinion given from the participants would be greatly appreciated and taken into consideration. For this reason, a few modifications have been imposed on the questions regarding SN prior to the final set of self-administrative questionnaires will be disseminated to the target respondents.

Unassailably, 30 target respondents who came from UTAR Kampar campus were randomly selected to participate in the pilot test. Due to small sample size, a total of 30 copies of questionnaires were distributed and all of them had been properly completed. According to Gay, Mills and Airasian (2006), a pilot test is quite similar to a dress rehearsal because a small-scale trial of the research is carried out before finalizing the questionnaire. In this study, the pilot test is aimed for testing the validity and reliability of the instrument being used. Irrefutably, a measure is likely to be considered as reliable in a study if an instrument is free of errors and consistent over time, and Cronbach's alpha coefficient is verified as the most famous test of inter-item consistency reliability (Sekaran & Bougie, 2010). Thus, Cronbach's alpha test is conducted in the pilot test to measure internal consistency of the instrument. Typically, every inferential statistical method must involve the accomplishment of normality hypothesis (Pallant, 2001). Hence, the normality test like skewness and kurtosis test is the last test for pilot test. Undeniably, the results generated from the Cronbach's alpha test and normality test are revealed in following Table 3.1 and 3.2 respectively.

Table 3.1: Summary of Reliability Test (Pilot Test)

Variables	Constructs	Number of Items	Cronbach's Alpha Value
IV1	Attitude	9	0.7384
IV2	Subjective Norms	6	0.9002
IV3	Perceived Behavioral Control	3	0.7641
IV4	Empathy	5	0.7194
DV	Behavioural Intention towards Cyberbullying	3	0.9352

Source: Created for the research.

Table 3.1 describes the reliability of constructs, which is expressed in terms of Cronbach's alpha value. For IVs and DV to be regarded as having high reliability

standard, the Cronbach's alpha value needs to achieve the range of at least 0.7 (Sekaran & Bougie, 2013). Indisputably, the results have shown that all variables are reliable as they fall within that range and meet the benchmark of greater than 0.7. For this reason, the minimum requirement for reliability of data collected for running pilot test is attained.

Table 3.2: Summary of Normality Test (Pilot Test)

Variables	Items	Skewness	Kurtosis
Attitude	A1	-0.6214	0.1442
	A2	-0.3172	-0.2052
	A3	0.2035	-1.0604
	A4	-0.4605	0.1937
	A5	-0.0380	-1.3769
	A6	-0.1831	-1.0848
	A7	-0.4974	-0.0465
	A8	0.1403	-0.9150
	A9	-0.0668	-0.0863
Subjective Norms	SN1	0.1628	-1.0397
	SN2	-0.5793	-0.2627
	SN3	-0.3895	-0.2237
	SN4	-0.3065	-0.7727
	SN5	-0.5818	-0.5444
	SN6	-0.6282	-0.2237
Perceived Behavioral Control	PBC1	0.5827	1.0507
	PBC2	-0.6657	0.7873
	PBC3	-0.0275	0.3681
Empathy	E1	-1.4668	1.1847
	E2	-1.0489	0.3472
	E3	-0.6787	0.1682
	E4	-0.3132	-0.7166
	E5	-0.8692	0.1835

Behavioural Intention towards Cyberbullying	BI1	0.2861	-0.1322
	BI2	-0.2421	-1.1522
	BI3	0	-1.4653

Source: Created for the research.

For ensuring the data is normally distributed, the skewness and kurtosis values must fall within ±3 and ±10 correspondingly (Hair, Black, Babin & Anderson, 2010; Kline, 2005). Undoubtedly, all the data presented in Table 3.2 are demonstrated as having normal distribution because their skewness and kurtosis values have reached the acceptable range. As illustrated in table above, the skewness of all the items ranges from -1.4668 to 0.5827 and thus falls within the required ±3. Moreover, kurtosis values among the items are also in the range of between -1.4653 and 1.1847, meaning that they meet the threshold of ±10.

As a result of the pilot test, all the items are reliable with Cronbach's alpha value of above 0.7 and are normally distributed. Hence, there is no need of deleting any item or doing any major amendment in the questionnaire. Indeed, only a few modifications have been imposed on the questions regarding SN after considering the feedback from respondents. In brief, this set of self-administrative questionnaires is basically valid and suitable for actual large-scale data collection.

3.5 Constructs Measurement

Table 3.3: Definition of Independent Variables (IVs) and Dependent Variable (DV) for the study

Variables	Definition	Sources
Attitude	"Attitudes are general evaluations people hold about themselves, other people, objects, and issues".	Petty and Cacioppo (1986, p. 4) as cited in Barlett and Gentike (2012)
Subjective Norms	"Subjective norm is perceived social pressure to perform or not to perform the behavior".	Ajzen (1988, p. 188) as cited in Ho et al. (2017)
Perceived Behavioural Control	"Perceived behavioral control is informed by beliefs about the individual's possession of the opportunities and resources needed to engage in the behavior".	George (2004, p.2)
Empathy	"Empathy is defined as ability of identifying with others and sharing their feelings".	Álvarez-Garcá, Barreiro-Collazo, Nú˜nez and Dobarro (2016, p. 72)
Behavioural Intention towards Cyberbullying	Behavioural intention normally means "a person who intends to take a certain action is likely to carry out that behaviour" and the behaviour here is referred to cyberbullying behaviour.	Kim and Malhotra (2005, p. 3) as cited in Venkatesh, Thong and Xu (2012)

Table 3.4: Measurement of Variables

Variables	Items for Construct	Sources of Items	Measurement
Attitude (Independent variable 1)	Items: 9 Sample Question: "It is acceptable to send mean e-mails to others when they deserve it."	Barlett and Gentike (2012)	Five-point Likert scale (Interval) 1=Strongly disagree 2= Disagree 3= Neural 4= Agree 5= Strongly agree
Subjective norms (Independent variable 2)	Items: 6 Sample Question: "Most of my friends would expect me to make rude or mean comments to someone on social media."	Ho et al. (2017)	Five-point Likert scale (Interval) 1=Strongly disagree 2= Disagree 3= Neural 4= Agree 5= Strongly agree
Perceived Behavioral Control (Independent variable 3)	Items: 3 Sample Question: "I am capable of bullying others over the Internet."	George (2004)	Five-point Likert scale (Interval) 1=Strongly disagree 2= Disagree 3= Neural 4= Agree 5= Strongly agree

Empathy (Independent variable 4)	Items: 5 Sample Question: "I feel the misfortunes of others."	Álvarez-Garc á et al. (2016)	Five-point Likert scale (Interval) 1=Strongly disagree 2= Disagree 3= Neural 4= Agree 5= Strongly agree
Behavioural intention towards cyberbullying (Dependent variable)	Items: 3 Sample Question: "I intend to continue using Internet to bully others in the future."	Venkatesh et al. (2012)	Five-point Likert scale (Interval) 1=Strongly disagree 2= Disagree 3= Neural 4= Agree 5= Strongly agree

Table 3.3 displays the definitions of IVs and DV for the study. Before answering the questions regarding the variables in this study, target respondents are required to answer 5 questions about demographic profile, like gender, age, education level, frequency and purpose of using Internet. The questionnaire designed in this study consists of 26 items and the items of each variable are adopted from different past studies as exhibited in Table 3.4. All the items are measured using 5-point Likert scale, ranging from 1=strongly disagree to 5=strongly agree as it is considered as the most effective scale among all the Likert scales (Evens, Schuurman, Marez & Verleye, 2010) and interval scale is thus used to evaluate these variables to obtain the information about the respondents' level of agreement.

3.6   Data Processing

After data collection, each set of questionnaire survey was checked carefully and then coded into usable data for facilitating result generation and data analysis. Prior to the whole raw data was exported to SAS Enterprise Guide 7.1, the raw data was firstly keyed in to the Microsoft Excel software for the backup plan. Truly, the data collected for both pilot and final tests was analyzed through using software so-called SAS Enterprise Guide 7.1.

3.7   Data Analysis

3.7.1 Descriptive Analysis

Descriptive analysis is conducted for examining demographic characteristics of target respondents in this research since descriptive statistics can allow every researcher to compare all the variables used numerically (Saunder et al., 2016). Undoubtedly, all demographic data will be described by using frequency and percentage for showing their specific amount (Saunder et al., 2016). Thus, pie chart will be used to reveal the proportion or percentage of occurrences of categories or values for one variable (Saunder et al., 2016). For describing the central tendency and dispersion for the data collected, mean and standard deviation of each variable in questionnaire will be highlighted to strengthen the descriptive analysis (Saunder et al., 2016).

3.7.2 Scale Measurement

3.7.2.1 Reliability Test

Cronbach's alpha test had been undertaken in this study as it is essential to ensure the consistency and reliability of all data collected (Sekaran & Bougie, 2013). Sekaran and Bougie (2013) also mentioned that a variable can be treated as reliable when its Cronbach's alpha value is equal to and greater than 0.7. Table 3.5 which provides the degree of reliability of each variable, is shown as follows:

Table 3.5: Rule of Thumb for Cronbach's alpha test

Alpha Coefficient Range	Degree of Reliability
< 0.6	Poor
0.6 to < 0.7	Moderate
0.7 to < 0.8	Good
0.8 to < 0.9	Very good
0.9 or more	Excellent

Source: Sekaran and Bougie (2013)

3.7.2.2 Normality Test

In this study, skewness and kurtosis test was embraced to investigate whether the data values for each variable are normally distributed, which will also indicate that the variable's mean shall be formed in a symmetrical pattern (Saunders et al., 2016). Clearly, the data collected is normally

distributed if the skewness and kurtosis values fall within ±3 and ±10 correspondingly (Hair et al., 2010; Kline, 2005). According to Norman (2010), normality test is vital in fulfilling the assumption of parametric test to allow the conduct of MLR analysis.

3.7.3 Inferential Analysis

3.7.3.1 Pearson Correlation Coefficient

For assessing the strength of relationship between IVs and DV, correlation test in this study was carried out through using Pearson's correlation coefficient test (Saunder et al., 2016). However, the assumptions like normality and non-existence of multicollinearity problem are required to be satisfied before using Pearson's correlation coefficient test. Commonly, multicollinearity problem will only arise when an IV is highly correlated with another IV. For avoiding such problem, correlation value scored by each IV should be less than 0.9 (Hair, Black, Babin & Anderson, 2009). The meaning for each range value in this test is displayed as follows:

Table 3.6: Rule of Thumb for Pearson's Correlation Coefficient Test

Coefficient Range	Strength of Association
0 to 0.1 (0 to - 0.1)	No or Very weak positive (negative) linear relationship
0.1 to 0.3 (-0.3 to -0.1)	Weak positive (negative) linear relationship
0.3 to 0.5 (-0.5 to − 0.3)	Moderate positive (negative) linear Relationship
0.5 to 1.0 (-1.0 to -0.5)	Strong positive (negative) linear Relationship

Source: Wilson (2009)

3.7.3.2 Multiple Linear Regression (MLR) Analysis

For assessing the strength of a cause-and-effect relationship between IVs and DV, multiple linear regression (MLR) analysis was conducted in this study (Saunders et al., 2016). However, there are some assumptions required to be met, like normality, linearity and the absence of collinearity or multicollinearity problems (Saunders et al., 2016). Evidently, it is possible to detect collinearity through measuring tolerance value and variance inflation factors (VIF) as high level of collinearity will arise as a result of low tolerance value (0.1 or below) and large VIF value (10 or above) (Saunders et al., 2016). Besides, coefficient of multiple determination (R^2) can also be used for assessing how good the multiple regression equation is likely to be a predictor (Saunders et al., 2016). Finally, MLR equation should be developed in this study in order to predict any change in DV when one IV changes (Saunders et al., 2016). Consequently, MLR equation was formulated as follows:

BI= β_0+ β_1A+ β_2SN+ β_3PBC- β_4E+ ε,

Where:

BI= Behavioural Intention towards Cyberbullying

A=Attitude

SN= Subjective Norms

PBC= Perceived Behavioural Control

E=Empathy

β_0: Constant

ε: Error term

3.8 Conclusion

In summary, the research methodology and design of this study was covered in Chapter 3. The patterns of the results as well as the analyses of the results which are used as the evidences for supporting the developed hypotheses will be presented in the subsequent chapter.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

This chapter will try to present and explain the results in a simpler and comprehensive manner. Certainly, descriptive analysis, scale measurement and inferential analysis are important in providing the results for supporting hypotheses which are developed in earlier chapter.

4.1 Descriptive Analysis

4.1.1 Demographic Profile of Respondents

260 sets of questionnaire survey were distributed and 260 sets managed to be collected, achieving a response rate of 100%. Fortunately, 258 sets are usable for final test analysis after checking procedures. The demographic profile of 258 respondents (including gender, age, education level as well as frequency and purpose of using internet) are described in the following figures and tables.

(a) Gender

Figure 4.1: Gender of Respondents
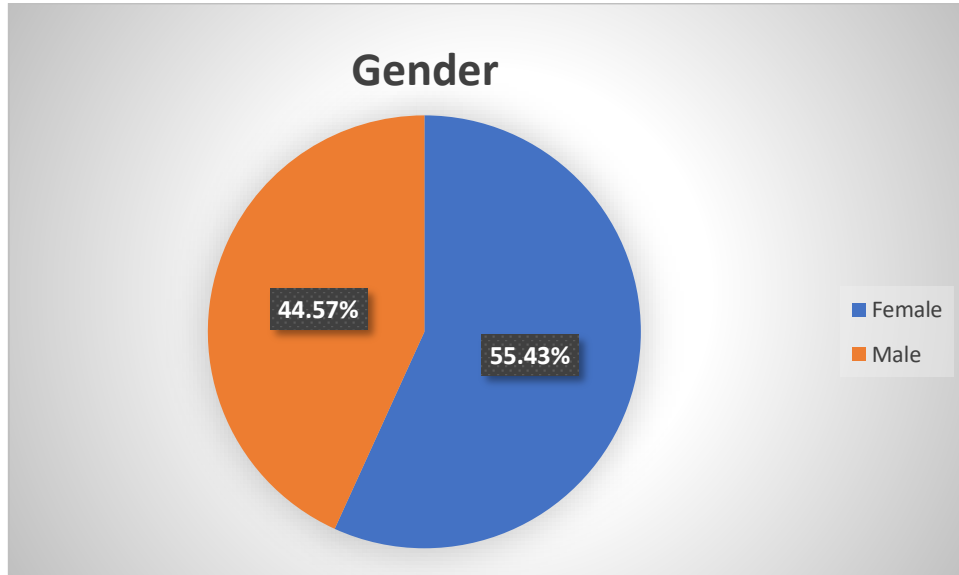
Source: Created for the research.

Table 4.1: Gender of Respondents

Gender	Frequency	Percentage (%)
Female	143	55.43
Male	115	44.57

Source: Created for the research.

The figure and table above display the composition of the respondents' gender. Out of 258 selected respondents, there are 143 (55.43%) female respondents and 115 (44.57%) male respondents.

(b) Age

Figure 4.2: Age of Respondents
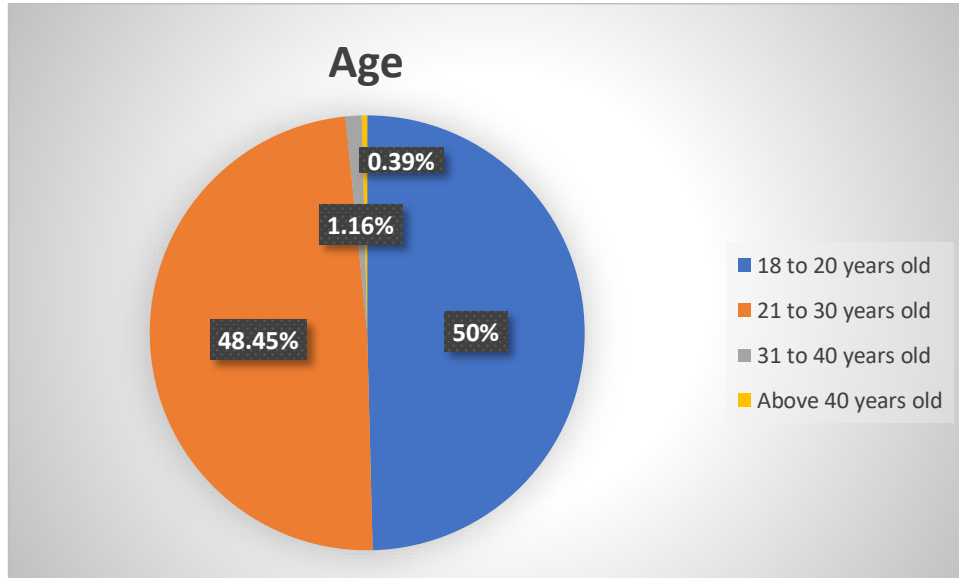
Source: Created for the research.

Table 4.2: Age of Respondents

Age	Frequency	Percentage (%)
18 to 20 years old	129	50
21 to 30 years old	125	48.45
31 to 40 years old	3	1.16
Above 40 years old	1	0.39

Source: Created for the research.

The classifications of the age of each respondent are presented in the Figure 4.2 and Table 4.2. Clearly, most of the respondents (129 of them) fall into age group of between 18 and 20 years old, thereby accounting for 50% in total. Besides, 125 (48.45%) respondents with the age of 21 to 30 years old also participate in this survey. From the figure and table above, only three of the respondents are between 31 and 40 years old and one of them is greater than 40 years old.

(c) Education Level

Figure 4.3: Current Highest Education Level
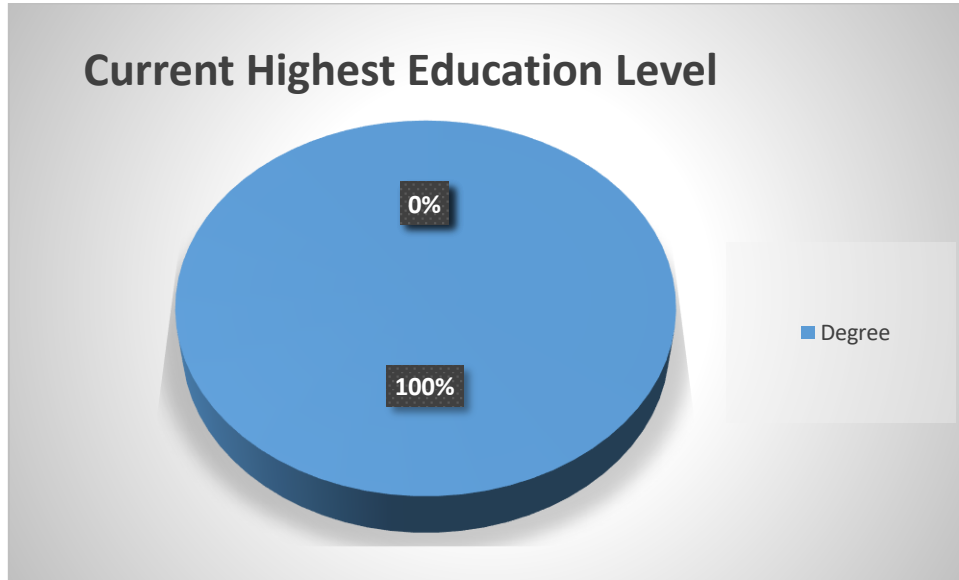
Source: Created for the research.

Table 4.3: Current Highest Education Level

Current highest education level	Frequency	Percentage (%)
High School	0	0
Diploma	0	0
Degree	258	100
Master	0	0

Source: Created for the research.

Figure and table above signify the frequency and percentage of respondents' current highest education level. As illustrated above, all respondents are pursuing degree. Therefore, 258 respondents are qualified as the Malaysian undergraduates.

(d) Frequency of Using Internet

Figure 4.4: Frequency of Using Internet
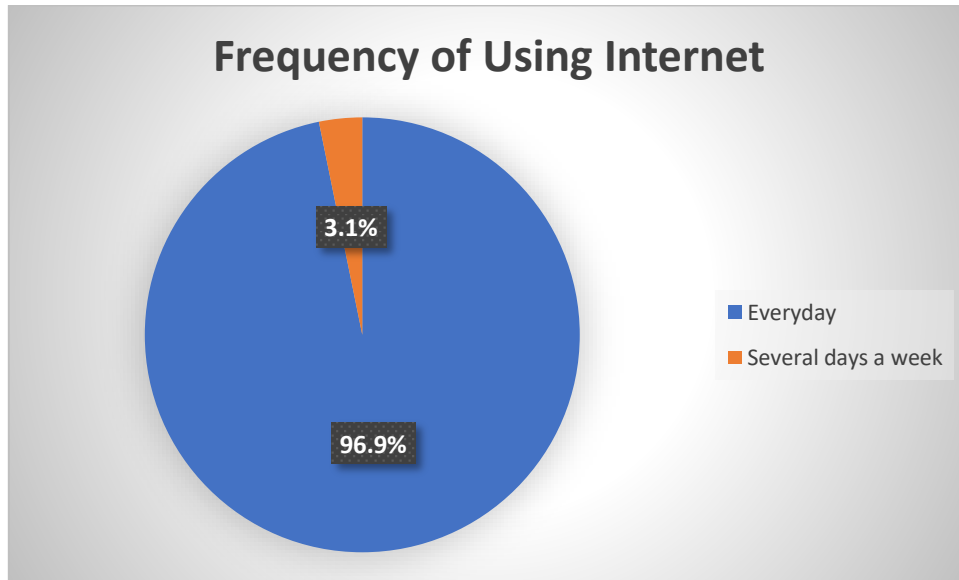
Source: Created for the research.

Table 4.4: Frequency of Using Internet

Frequency of Using Internet	Frequency	Percentage (%)
Everyday	250	96.9
Several days a week	8	3.1
Once a week	0	0

Source: Created for the research.

The figure and table above depict respondents' frequency of using Internet. Obviously, 250 (96.9%) respondents stated that they will use Internet daily, whereas only 8 (3.1%) of respondents would prefer to use internet for several days a week.

(e) Purpose of Using Internet

Table 4.5: Purpose of Using Internet

Purpose of Using Internet	Frequency	Percentage (%)
O1	2	0.78
O2	3	1.16
O3	5	1.94
O4	4	1.55
O5	2	0.78
O1, O2	5	1.94
O1, O3	2	0.78
O1, O4	1	0.39
O2, O3	5	1.94
O2, O5	1	0.39
O1, O2, O3	21	8.14
O1, O2, O4	6	2.33
O1, O2, O5	15	5.81
O1, O3, O5	1	0.39
O1, O4, O5	2	0.78
O2, O3, O4	11	4.26
O2, O3, O5	10	3.88
O2, O4, O5	2	0.78
O1, O2, O3, O4	13	5.04
O1, O2, O3, O5	43	16.67
O1, O2, O4, O5	9	3.49
O1, O3, O4, O5	2	0.78
O2, O3, O4, O5	9	3.49
O1, O2, O3, O4, O5	84	32.56

(***Respondents can choose more than one option and O stands for option.)

Source: Created for the research.

Table 4.5 shows the respondents' purpose of using Internet. Given that opportunities are offered to all the respondents for selecting more than one option in the questionnaire, most of the options are chosen by the respondents in the combination manner. Based on the figure and table above, majority of the respondents who occupy 32.56% have mentioned that they use Internet for doing research work, communication, spending leisure time, playing game and knowing the latest news. Furthermore, 43 (16.67%) of the respondents would prefer to use Internet for doing research, communication, spending leisure time and increasing their knowledge of the latest news. Merely 16 respondents denoted that they have only one purpose to use Internet. Clearly, one (0.39%) of the respondents would prefer to use Internet for doing research work and playing game. Also, one of the respondents chose to use Internet for communication and following the latest news.

4.1.2 Central Tendencies Measurement of Constructs

Table 4.6: Central Tendencies Measurement for Each Variable

Items	Statement/ Question	Mean	Standard Deviation
A1	It is acceptable using internet to send mean messages (i.e. e-mails) to others when they deserve it.	2.7713	1.2867
A2	People who join groups on internet (i.e. Facebook) that make fun of others are justified in doing so.	2.3411	1.1736
A3	It makes me feel good to use internet to send texts that make fun of others.	2.3062	1.1750
A4	Sometimes using passive aggressive methods of using internet to send mean message (i.e. e-mails) to others is the only way to get even.	2.2752	1.0973
A5	I do not find it appropriate to use internet to send messages to others.	2.3023	1.1373
A6	I feel bad using internet to send messages to others.	2.0155	1.0249
A7	I have used internet to send messages to others after they have text messaged me hurtful comments.	2.5078	1.1027
A8	Teasing others on internet (i.e. Facebook, e-mails) if fun.	2.1434	1.0942
A9	Those that using internet to create groups (i.e. Facebook group) that are socially exclusive are fun to join.	2.9380	1.0039
SN1	Most of my friends would expect me to make rude or mean comments to someone on internet (i.e. social media).	1.5271	0.8422
SN2	Most of my friends would expect me to spread rumours about someone on internet (i.e. social media), whether they are true or not.	1.4767	0.8094
SN3	Most of my friends would expect me to make aggressive or threatening comments to someone on social media.	1.4419	0.8407

SN4	My family members would expect me to make rude or mean comments to someone on internet (i.e. social media).	1.4612	0.8372
SN5	My family members would expect me to spread rumours about someone on internet (i.e. social media), whether they are true or not.	1.4690	0.8513
SN6	My family members would expect me to make aggressive or threatening comments to someone on internet (i.e. social media).	1.4457	0.8501
PBC1	I am capable of bullying others over the Internet.	2.0698	1.2549
PBC2	Bullying others over the Internet is entirely within my control.	2.5504	1.3434
PBC3	I have the resources and the knowledge and the ability to bullying other over the Internet.	2.2171	1.2842
E1	I feel the misfortunes of others on internet.	3.6705	0.9961
E2	If a classmate is teased on internet, I feel bad thinking about what is happening to him/her.	3.9496	0.9343
E3	I am patient with people who do things worse over internet than I do.	3.9922	0.9542
E4	When I see that a friend is sad on internet, I also become sad.	4.0465	0.9612
E5	I am happy when something good happens to someone I know on internet.	4.1589	0.8832
BI1	I intend to continue using Internet to bully others in the future.	1.5504	0.9079
BI2	I will always try to use internet (i.e. social media) as platform to cyberbullying others in my daily life.	1.4884	0.9429
BI3	I plan to continue to use internet (i.e. social media) as platform to cyberbullying others frequently.	1.4380	0.9409

Source: Created for the research.

Table 4.6 explains the measurement of central tendencies for each item of the constructs. Perceptibly, mean and standard deviation of all variables are accentuated here. Firstly, the mean for A ranges from 2.0155 to 2.9380. Secondly, the mean for SN ranges from 1.4419 to 1.5271. Next, the mean for PBC ranges from 2.0698 to 2.5504, whereas E ranges from 3.6705 to 4.1589. Generally, respondents somewhat agree with the questions asked in all the items above. Eventually, the mean for BI ranges from 1.4380 to 1.5504. Based on the table 4.6, the standard deviation for A ranges from 1.0039 to 1.2867; SN ranges from 0.8094 to 0.8513; PBC ranges from 1.2549 to 1.3434; E ranges from 0.8832 to 0.9961; BI ranges from 0.9079 to 0.9429.

4.2 Scale Measurement

4.2.1 Reliability Test

Table 4.7: Summary of Reliability Test

Variables	Constructs	Number of Items	Cronbach's Alpha Value
IV1	Attitude	9	0.7336
IV2	Subjective Norms	6	0.9705
IV3	Perceived Behavioural Control	3	0.8659
IV4	Empathy	5	0.8790
DV	Behavioural Intention towards Cyberbullying	3	0.9392

Source: Created for the research.

The results of actual reliability test for each variable are depicted in Table 4.7. According to Sekaran and Bougie (2013), Cronbach's alpha rule specified that the minimum value for reliability of data must be 0.7 or above. Evidently, all the items from each variable have passed the reliability test as shown in Table 4.7 because they score Cronbach's alpha value ranging from 0.7336 to 0.9705. Theoretically, the items from each construct will be more reliable if they score higher Cronbach's alpha value. Thus, all the items from IV2 and DV can be viewed as having higher reliability in this study as they obtain Cronbach's alpha value of 0.9705 and 0.9392 respectively.

4.2.2 Normality Test

Table 4.8: Summary of Normality Test

Variables	Items	Skewness	Kurtosis
Attitude	A1	0.0368	-1.2059
	A2	0.2997	-1.1440
	A3	0.5020	-0.8145
	A4	0.4693	-0.6267
	A5	0.7128	-0.1685
	A6	1.1054	0.9894
	A7	0.2961	-0.6837
	A8	0.6821	-0.3006
	A9	-0.1076	-0.1839
Subjective Norms	SN1	1.7846	3.1764
	SN2	2.0283	4.4367
	SN3	2.1054	4.2185
	SN4	2.2088	5.2989
	SN5	2.2522	5.5492
	SN6	2.3346	5.8500

Perceived Behavioral Control	PBC1	0.9746	-0.1751
	PBC2	0.4158	-1.0139
	PBC3	0.7543	-0.5782
Empathy	E1	-0.4910	-0.2242
	E2	-0.7070	0.2259
	E3	-0.7700	0.0813
	E4	-0.9413	0.4856
	E5	-0.8629	0.1641
Behavioural Intention towards Cyberbullying	BI1	1.9555	3.8329
	BI2	2.2795	4.9108
	BI3	2.4689	5.7419

Source: Created for the research.

Table 4.8 reveals the results of normality test for every item of each variable, in terms of skewness and kurtosis value. Clearly, BI3 has the greatest skewness value of 2.4689 among all the variables, while E4 achieves the lowest skewness value at -0.9413. Moreover, BI3 also has the highest kurtosis value of 5.7419 as compared to other variables. In contrast, the smallest kurtosis value in Table 4.8 is -1.2059 and this value is gained by A1. Owing to the fact that all the skewness and kurtosis values fall within the range of ±3 and ±10 correspondingly, all the items for every variable as presented in Table 4.8 are normally distributed (Hair et al., 2010; Kline, 2005). According to Norman (2010), the assumption of parametric test has been fulfilled as the normality of data is validated. Consequently, MLR analysis can be conducted in this study.

4.3   Inferential Analysis

4.3.1 Pearson Correlation Coefficient

Table 4.9: Pearson Correlation Coefficient Matrix

Variables	BI Average	A Average	SN Average	PBC Average	E Average
BI Average	1.0000				
A Average	0.4339 *Sig.*<.0001	1.0000			
SN Average	0.3019 *Sig.*<.0001	0.1658 *Sig.* 0.0076	1.0000		
PBC Average	0.3172 *Sig.*<.0001	0.2224 *Sig.*0.0003	0.2269 *Sig.*0.0002	1.0000	
E Average	-0.1474 *Sig.*0.0178	-0.2421 *Sig.*<.0001	-0.0368 *Sig.* 0.5562	-0.0174 *Sig.*0.7815	1.0000

Source: Created for the research.

Table 4.9 demonstrates the results of correlation test in this study. In overall, all the IVs have significant relationship with DV since each p-value as displayed in the table above is less than 0.05. Irrefutably, the results of Pearson Correlation Analysis imply that A (r=0.4339), SN (r=0.3019) and PBC (r=0.3172) have moderate positive relationship with BI towards cyberbullying. However, empathy (r= -0.1474) is the only one exception which has weak negative correlation with the DV. Hence, the strongest correlation exists between attitude and behavioural intention towards cyberbullying. Furthermore, there is no multicollinearity problem detected

among all the IVs as none of the correlation value is more than 0.9 (Hair et al., 2009).

4.3.2 Multiple Linear Regression (MLR) Analysis

Table 4.10: Model Summary

Root MSE	Dependent Mean	Coefficient Variance	R-Square	Adjusted R-Square
0.7520	1.4923	50.3956	0.2791	0.2677

Source: Created for the research.

According to Table 4.10, R-square value is equal to 0.2791 and this indicates that 27.91% of the variation in DV (behavioural intention towards cyberbullying) can be explained by the 4 IVs in this study, including attitude, subjective norms, perceived behavioural control and empathy. In other words, 72.09% of changes in DV is explained by other determinants (IVs) that are not considered in this study.

Table 4.11: Analysis of Variance (ANOVA)

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	55.4013	13.8503	24.49	<.0001
Error	253	143.0832	0.5656		
Corrected Total	257	198.4845			

Source: Created for the research.

From the Table 4.11, the F-value is valued at 24.49 with a p-value < 0.0001 which is less than 0.05. This means that at least one of the four IVs can be used to model behavioural intention towards cyberbullying (DV). Hence, the model fit is achieved.

Table 4.12: Multiple Linear Regression Analysis

Parameter Estimates								
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Standardized Estimate	Tolerance	Variance Inflation (VIF)
Intercept	1	-0.0658	0.3491	-0.19	0.8507	0	-	0
A Average	1	0.4710	0.0777	6.06	<.0001	0.3448	0.8816	1.1344
SN Average	1	0.2231	0.0620	3.6	0.0004	0.1987	0.9345	1.0701
PBC Average	1	0.1487	0.0427	3.48	0.0006	0.1945	0.9120	1.0965
E Average	1	-0.0604	0.0624	-0.97	0.3341	-0.0533	0.9400	1.0639

Source: Created for the research.

According to Table 4.12, the tolerance value of each IV falls within the range of 0.8816 to 0.9345 and VIF value for all IVs ranges from 1.0639 to 1.1344. This indicates that all the tolerance values are more than 0.1 while the VIF values are less than 10, thereby causing no multicollinearity problem in this analysis (Saunders et al., 2016).

Moreover, the relationship between IV and DV can be considered as significant and alternative hypothesis for a research will be supported under the condition that the p-value of IV is less than 0.05 (Hair, Babin, Money, and Samouel, 2003). For this reason, hypotheses for three TPB variables

which are H_1 (A), H_2 (SN) and H_3 (PBC) are supported in this study as their p-values are less than 0.05. In contrast, it can be concluded that empathy has no significant influence over the BI of Malaysian undergraduates towards cyberbullying since its p-value (0.3341) is more than 0.05.

Apart from that, the parameter estimate as illustrated in Table 4.12 has proven that every increase in A, SN and PBC, BI towards cyberbullying will go up by 0.4710, 0.2231 and 0.1487 respectively, given other three variables remain unchanged. For every increase in empathy, BI will decrease by - 0.0604, provided that other three variables remain constant. In short, A has the most significant influence on BI towards cyberbullying.

Therefore, the regression equation is formulated as follows:

BI = -0.0658+ 0.4710 (A) + 0.2231 (SN) + 0.1487 (PBC) – 0.0604 (E)

4.4 Conclusion

In summary, Chapter 4 mainly provides the interpretation for the data collected from 260 Malaysian universities' undergraduates. Apparently, sample characteristics, scale measurement and inferential analysis are highly emphasized in this chapter. Predominantly, the research results exhibited that H_1, H_2 and H_3 are the supported hypotheses except for H_4. The next chapter will explicate the findings and examine any possible influence in-depth.

CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATIONS

5.0 Introduction

Chapter 5 not only summarizes the data analyzed in previous chapter, but also draws an appropriate conclusion based the results of this research. Generally, implications, limitations and recommendations of this research will also be highlighted in this chapter.

5.1 Summary of Statistical Analysis

5.1.1 Summary of Descriptive Analysis

5.1.1.1 Demographic Profile

In overall, there are 258 Malaysian universities' undergraduates involving as the target respondents in this study. Female respondents and male respondents account for 55.43% and 44.57% respectively. Out of the 258 respondents, most of them fall into age group of between 18 and 20 years old as well as between 21 and 30 years old. Currently, all the respondents

are pursuing the degree in their relative universities and majority of them like to use Internet daily. In addition, 84 respondents also stated that they would prefer to use Internet for doing research work, communication, spending leisure time, playing game and following the news. Essentially, the rest of the respondents also have their own aims of using Internet. Implicitly, the research results in Table 4.7 denote that different individuals will have different purposes of using Internet. This means that Malaysian undergraduates may use Internet in an inappropriate manner for achieving their goals. For instance, Malaysian undergraduates may feel happy at teasing others on Internet and they may initially aim to use Internet for making fun or playing game with others. Yet, they do not think that their behaviour will bring harm to others.

5.1.1.2 Central Tendencies Measurement

Table 5.1 is developed for showing the minimum and maximum of mean and standard deviation for each item of the constructs in this study.

Table 5.1: Summary of the Mean and Standard Deviation for Each Variable

		Constructs	Mean		Standard Deviation	
			Lowest	**Highest**	**Lowest**	**Highest**
IV1	Attitude		A6 (2.0155)	A9 (2.9380)	A9 (1.0039)	A1 (1.2867)
IV2	Subjective Norms		SN3 (1.4419)	SN1 (1.5271)	SN2 (0.8094)	SN5 (0.8513)
IV3	Perceived Behavioural Control		PBC1 (2.0698)	PBC2 (2.5504)	PBC1 (1.2549)	PBC2 (1.3434)
IV4	Empathy		E1 (3.6705)	E5 (4.1589)	E5 (0.8832)	E1 (0.9961)

DV	Behavioural Intention towards Cyberbullying	BI3 (1.4380)	BI1 (1.5504)	BI1 (0.9079)	BI2 (0.9429)

Source: Created for the research.

5.1.2 Summary of Scale Measurement

According to Table 4.9, the data collected through questionnaire can be regarded as reliable in this research because all the items of each variable score Cronbach's alpha value of greater than 0.7, implying that they meet the threshold of at least 0.7. Furthermore, the normal distribution of data has also been achieved in this study because all the items for each variable as illustrated in Table 4.10 score the value of skewness within range of ±3 and the value of kurtosis within range of ±10 (Hair et al., 2010; Kline, 2005). Indeed, the fulfillment of normality assumption has made the MLR analysis to proceed without any obstacle.

5.1.3 Summary of Inferential Analysis

By referring to Table 4.11, multicollinearity problem did not arise in this research since the all IVs score Pearson coefficient value of less than 0.9. In addition, the absence of multicollinearity problem was proved again in Table 4.14 because the table revealed that the tolerance values and VIF values of each IV are more than 0.10 and lower than 10 correspondingly (Saunders et al., 2016).

Table 5.2: Summarized Information of Inferential Analysis

Hypothesis	MLR Analysis		Results
	P-Value	Standardized Estimate	
H_1	<.0001	0.3448	Supported
H_2	0.0004	0.1987	Supported
H_3	0.0006	0.1945	Supported
H_4	0.3341	-0.0533	Not supported

Source: Created for the research.

Table 5.2 is created to demonstrate whether all hypotheses developed in this study are supported. By referring to Table 5.2, H_1, H_2 and H_3 are proven that they are supported hypotheses since their p-values are less than 0.05. On the contrary, H_4 is the only one alternative hypothesis which is rejected in this study as the p-value is higher than 0.05. For exploring any possible reason which will lead to the results as revealed in table above, it is crucial to refer to the next following section in this chapter.

5.2 Discussions of Major Findings

Table 5.2.1 is developed to describe the strength of relationship between each IV and DV, while Table 5.2.2 is created to prove that whether the hypotheses formulated in the earlier chapter are supported. As the general rule applies, each hypothesis will be accepted if the p-value is less than 0.05.

Table 5.3: Description of the Relationship between each IV and DV

	Developed Hypothesis	Significance Level	Correlation Coefficient	Results
H_1	There is a positive relationship between attitude (A) and behavioural intention (BI) towards cyberbullying among Malaysian undergraduates.	<.0001	0.4339	Since the significance level of H_1 is less than 0.05, there is a significant relationship between A and BI. The correlation between them is positive and moderate.
H_2	There is a positive relationship between subjective norms (SN) and behavioural intention (BI) towards cyberbullying among Malaysian undergraduates.	<.0001	0.3019	Since the significance level of H_2 is less than 0.05, there is a significant relationship between SN and BI. The correlation between them is positive and moderate.
H_3	There is positive relationship between perceived behavioural control (PBC) and behavioural intention (BI) towards cyberbullying	<.0001	0.3172	Since the significance level of H_3 is less than 0.05, there is a significant relationship between PBC and BI. The correlation between them is positive and moderate.

	among Malaysian undergraduates.		
H$_4$	There is a negative relationship between empathy (E) and behavioural intention (BI) towards cyberbullying among Malaysian undergraduates.	0.0178	-0.1474	Since the significance level of H$_4$ is less than 0.05, there is a significant relationship between E and BI. The correlation between them is negative and weak.

Source: Created for the research.

Table 5.4: Summary of Hypothesis Testing

	Developed Hypothesis	Standardized Estimate	Significance Level (Pr > |t|)	Results
H$_1$	There is a positive relationship between attitude (A) and behavioural intention (BI) towards cyberbullying among Malaysian undergraduates.	0.3448	<.0001	Reject H$_0$, since the p-value is less than 0.05. This hypothesis is supported.
H$_2$	There is a positive relationship between subjective norms (SN) and behavioural	0.1987	0.0004	Reject H$_0$, since the p-value is less than 0.05. This hypothesis is supported.

	intention (BI) towards cyberbullying among Malaysian undergraduates.			
H_3	There is positive relationship between perceived behavioural control (PBC) and behavioural intention (BI) towards cyberbullying among Malaysian undergraduates.	0.1945	0.0006	Reject H_0, since the p-value is less than 0.05. This hypothesis is supported.
H_4	There is a negative relationship between empathy (E) and behavioural intention (BI) towards cyberbullying among Malaysian undergraduates.	-0.0533	0.3341	Do not reject H0, since the p-value is more than 0.05. This hypothesis is not supported.

Source: Created for the research.

5.2.1 Relationship between Attitude and Behavioural Intention towards Cyberbullying

Incontestably, the results in both tables above have affirmed that there is a positive relationship between attitude and behavioural intention towards cyberbullying among Malaysian undergraduates. According to several past studies (Shim & Shin, 2016; Ho et al., 2017; Rashid et al., 2017), the hypothesis which is identical to this study is also verified in their findings. It may be true that a Malaysian undergraduate who perceives cyberbullying positively will have high intention to cyberbully others because most of the cyberbullying perpetrators would feel good and happy at their bullying actions towards victims via online platform (Vandebosch & Cleemput, 2009). Moreover, Rashid et al. (2017) also discovered some similar factors that cause cyberbullies in preferring to victimise individuals with negative attitude towards cyberbullying regardless of considering the consequences of their actions and their positive attitude towards cyberbullying would normally be formed by several reasons only, like 'revenge', 'he/she deserves it', and 'for fun'. Therefore, Malaysian undergraduates will be more likely to engage in cyberbullying behaviour if they have more favorable attitude towards cyberbullying.

5.2.2 Relationship between Subjective Norms and Behavioural Intention towards Cyberbullying

In this study, subjective norms (SN) are found to have significant and positive relationship with cyberbullying perpetration. This similar outcome is consistent with the past studies as stated in Chapter 2 (Doane, Pearson & Kelly, 2014; Rashid et al., 2017; Jakadarimi et al., 2017b). Since SN mean "perceived social pressure to perform or not to perform the behavior", the

expectations from important reference groups like friends or parents can tremendously influence someone's intention to engage in aggressive behaviour (Ajzen, 1991, p. 188). Hence, Malaysian undergraduates will be more likely to engage in cyberbullying behaviour in the presence of social pressure, if they perceive the expectations from their friends and family members to carry out bullying actions on Internet in order to obtain higher levels of social approval and respect from the important reference groups (Parris, Varjas, Talley, Meyers, & Cutts, 2012).

5.2.3 Relationship between Perceived Behavioural Control and Behavioural Intention towards Cyberbullying

Based on Table 5.2.1 and 5.2.2, the research results have depicted that perceived behavioural control is significantly and positively related to the behavioural intention of a Malaysian undergraduate towards cyberbullying. This same finding is in correspondence with the past studies conducted by Sasson and Mesch (2016); and Festl (2016). Evidently, the research results have indicated that Malaysian undergraduates will choose to perpetrate cyberbullying under the condition that they perceived it is easy to bully others through Internet. According to Pabian and Vandebosch (2014), with regard to cyberbullying, the chances which are available in ICT environment, have increased an individual's confidence level to perform certain negative behaviour through online means and these chances are referred to the (perceived) anonymity in social network which may cause lower risks of being identified as perpetrators apart from the circumstances offered by ICT environment without the direct and face-to-face contact may make individuals feel easy to do some harmful actions. Thus, technological control may make the Malaysian undergraduates to engage in cyberbullying actions more easily (Rashid et al., 2017).

5.2.4 Relationship between Empathy and Behavioural Intention towards Cyberbullying

Irrefutably, the research results in Table 5.2.2 have presented that there is no significant association between empathy and behavioural intention towards cyberbullying among Malaysian undergraduates and thus null hypothesis is not rejected. The results are contradicted with the past studies conducted by Cleemput et al. (2014); Brewer and Kerslake (2015); Garaigordobil (2015); and Zych et al. (2018), but they fit with the finding of prior researches concluded by Whelan (2016). The main reason that begets conflict with the alternative hypothesis may be that target respondents in this study are different from the participants selected in those past studies. Owing to the fact that most of those past studies (Cleemput et al., 2014; Brewer and Kerslake, 2015; Garaigordobil, 2015; Zych et al., 2018) targeted the students at schools with the age of below 18 years old as their respondents, their research findings would surely be different from this study which selected universities' undergraduates as the target population. In comparison to the students at schools, universities' undergraduates will generally have higher level of emotional maturity as a human mindset will gradually become more mature over the life cycle process. This implies that immature students at schools will be difficult in controlling their emotion and thus they are likely to have lower level of empathy than universities' undergraduates with the age of above 18 years old. Despite that, Table 5.2.1 still exhibits the result that there is a very weak negative relationship between E and BI towards cyberbullying. Hence, it is still suggested in this study that it is possible, no matter how weak it may seem, for Malaysian undergraduates to perpetrate cyberbullying when they display low level of empathy as individuals with low levels of empathy will be more likely to perpetrate bullying actions or aggressive behaviour (Ciucci & Baroncelli, 2013).

5.3 Implications of the Study

5.3.1 Theoretical Implications

The technological advancement brings positive effects to everyone in this world, for example, saving time and money in searching information for research purpose. Yet, technology still has its own adverse impacts as it can allow more traditional unethical behaviour or unhealthy activities to arise in high frequency associated with minimal restriction. Prior to finding all available solutions for resolving a problem, it is necessary for a person to identify the factors that contribute to the problem. Truthfully, researchers really need to rely on currently established knowledge (i.e. theories and principles) for determining the important influences which give rise to cyberbullying intention. This study has helped the researchers to find out some determinants like A, SN and PBC which have direct and significant influence over behavioural intention towards cyberbullying among Malaysian undergraduates. Obviously, these determinants are the constructs which are inherent under the TPB Model and they have been empirically demonstrated that they are significant predictor of BI towards cyberbullying. In other words, a sound theory is proven in this study to increase the understanding of BI towards cyberbullying.

Furthermore, this research can be considered as a useful reference to enrich the foresaid literatures for future Malaysian researchers to do any relevant empirical study. For instance, future Malaysian researchers can refer to this research if they choose undergraduates in Malaysian universities as their target respondents. This is because the selected respondents in this research have excellently represented the entire population of Internet users who may have high intention towards cyberbullying since 260 undergraduates in Top

5 Malaysian universities are taken as the sample size. In other words, this study has improved the reliability of results as compared to the past studies. In reality, in comparison to the past studies which use TPB variables in investigating cyberbullying issue, it is highly impossible for their selected participants to represent the whole population since the target respondents in those past studies are merely restricted to Muslim undergraduates in International Islamic University Malaysia (IIUM) and undergraduates in Universiti Teknologi Malaysia (Rashid et al., 2017; Jafarkarimi et al., 2017a). Moreover, this research has proven that empathy is a weak predictor against cyberbullying behaviour and the relative contributor may be that different individuals have different mindset. Generally, universities' undergraduates will be better in controlling their emotion since they are more mature than students at schools. Hence, universities' undergraduates will typically have higher level of empathy and thus insignificant result between E and BI towards cyberbullying is discovered in this study. Therefore, future researchers who intend to investigate cyberbullying behaviour can take this study as additional reference by considering any other factor which may remarkably influence the level of empathy of the target respondents.

5.3.2 Managerial Implications

A is one variable which has the strongest influence over BI towards cyberbullying among the 3 IVs studied since it has a correlation coefficient of 0.4317. For this reason, it is recommended that counselors must consider A as one of the main factors before developing any comprehensive and effective strategy for eliminating cyberbullying issue. Indisputably, an individual's attitude towards something can significantly affect his or her behaviour related to it. Likewise, an undergraduate's attitude towards cyberbullying is positively related to his or her behavioural intention

towards cyberbullying because individuals are more likely to behave aggressively when they think their bullying actions as justified (Heirman & Walrave, 2012). Hence, all the counselors should get this idea.

In addition, PBC is the second most substantial predictor of BI towards cyberbullying in this study due to fact that most of perpetrators will perceive ICT environment as an opportunity or resource to perform certain negative behaviour (Pabian & Vandebosch, 2014). Similarly, Malaysian undergraduates may have high intention towards cyberbullying if they feel easy to cyberbully others over Internet because of the availability of technological control. Considering PBC as a significant determinant which has positive influence over the intention towards cyberbullying, health professionals can organize a better educational awareness event to raise awareness of Malaysian universities' undergraduates on cyberbullying issues or they can conduct prevention and intervention program for imparting knowledge of appropriate way of using Internet besides helping to instill healthy mindset among every undergraduate.

Finally, SN can also be employed as a predictor for behavioural intention of Malaysian undergraduates towards cyberbullying owing to the truth that social pressure or expectation from the friends or family members can greatly increase someone's intention to perpetrate cyberbullying (Ho et al., 2017). For this reason, education institutions may play an indirect role in influencing BI towards cyberbullying. Accordingly, active mediation and intervention strategies should be implemented by the education institutions for inculcating the parents on how to teach their younger children in order to minimize their exposure to online risks. Such strategies include spreading the idea about imposition of website and time restrictions. However, it is critical to remember that implementing such strategies excessively might be counterproductive, thereby resulting in an increment in cyberbullying intention.

5.4　Limitations of the Study

Preponderantly, time and budget constraints attributed to the adoption of the cross-sectional approach. However, the validity of the data derived from such approach will diminish gradually as the data was being collected at a given point of time (Saunders et al., 2012). Thus, the data in this study may not be relevant in the future.

Besides, due to the constraints as mentioned earlier, questionnaire survey is selected for data collection in this study. Nevertheless, lack of cooperation and the willingness of the respondents to participate has slacken the pace of data collection. Some respondents might also fill up the questionnaire casually which may not reflect their actual perception towards the cyberbullying issue. Hence, some of the data collected might be immaterial under such circumstances which could impair the reliability of the research result.

Lastly, the pilot test of this study does not cover all the target locations. Certainly, the target respondents in this study refer to the undergraduates who study in UM, UTAR, UTP, UTM and UPM, but the pilot test is only restricted to the 30 undergraduates in UTAR Kampar Campus. This represents that the location coverage problem for pilot test may influence the accuracy of pilot test results. In other words, the purpose for running pilot test in this study may be contradicted. Consequently, the actual results generated from the final test may be slightly different from the past studies' results.

5.5   Recommendations for Future Research

Firstly, future researchers are encouraged to use longitudinal approach for data collection within the same context of this study because such approach can explore a phenomenon for multiple times. In other words, the data can be collected more than once, meaning that the changes of perception towards cyberbullying matter can be determined more easily as longitudinal approach will help to compare before and after effects after data collection (Saunders et al., 2012). Accordingly, the validity of the data derived from such approach will greatly improve as compared to cross-sectional approach.

Secondly, future researchers are advised to apply interview for collecting data from the undergraduates in Malaysian universities. This is because interview method can assist the researchers to interpret thoroughly the responses provided by the selected participants. Moreover, this type of data collection method can also permit the participants to express more their own opinions and feelings, which will reflect more their actual perception towards a research (Berg, 2007). For this reason, the participants will not answer the questions casually. Unquestionably, interview can enhance the reliability of the research result.

Thirdly, future researchers are suggested to conduct pilot test in all target locations whereby the questionnaire should be distributed to every undergraduate who studies in UM, UTAR, UTP, UTM and UPM. For enhancing the accuracy of the pilot test results, the number of selected participants should be increased until 50 persons. In addition, Saunders et al., (2009) also recommended that the minimum number for conducting a pilot test is 10 persons. Therefore, 10 undergraduates should be selected equally from UM, UTAR, UTP, UTM and UPM respectively for participating in the pilot test in order to improve the validity and reliability of questionnaire in this study. Eventually, the pilot test results with increased accuracy will possibly cause all the hypotheses developed in this study are being supported.

Finally, future researchers are also recommended that more variables with regard to personality traits should be integrated with TPB model owing to the fact that this study has failed to show empathy as an important factor affecting BI towards cyberbullying. For providing a more complement study of influences to predict BI towards cyberbullying, future researchers can try to examine the personality traits which are mostly investigated in the past studies, for instance, narcissism, moral disengagement, aggression, and online disinhibition (Tanrikulu, 2015).

5.6   Conclusion

In a nutshell, TPB variables played the significant roles in positively affecting behavioural intention towards cyberbullying among Malaysian undergraduates. In other words, attitude, subjective norms and perceived behavioural control can be taken as the influential variables to predict behavioural intention towards cyberbullying among Malaysian undergraduates. Unfortunately, this study failed to attain one research objective because empathy was found to have no significant relationship with behavioural intention towards cyberbullying.

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Appendix A

Summary of Past Empirical Studies

Study	Country	Data	Major Findings
Ho, Chen & Ng, 2017	Singapore	Questionnaire survey of 635 upper primary school children and 789 secondary school adolescents.	Attitude towards cyberbullying was found to be positively associated with cyberbullying perpetration.
Shim & Shin, 2016	South Korea	Questionnaire survey of 1496 students in 7th to 11th grades, aged 12-16, in 14 schools in South Korea.	A positive association existed between attitude towards MIMs bullying and actual MIMs bullying behaviour.
Rashid, Mohamed & Azman, 2017	Malaysia	Questionnaire survey of 397 undergraduate students enrolled in International Islamic University Malaysia (IIUM).	Attitude was proven that it would have positive influence over cyberbullying behaviour. Besides, there is also a positive relationship between subjective norms and the intention to cyberbully.
Jafarkarimi, Saadatdoost, Sim & Mei, 2017	Malaysia	A scenario-based questionnaire of 96 students in Universiti Teknologi Malaysia.	Subjective norms are significant factors that affect behavioural intention of cyberbullying in a positive way.
Doane, Pearson & Kelly, 2014	USA	Online survey of 375 college students from a large university in southeastern Virginia between the age of 18 and 23.	Subjective norms are claimed to have positive relationship with cyberbullying perpetration.
Sasson & Mesch, 2016	Israel	Questionnaire survey of 495 students in Israel city, including 229 females and 266 males, aged between 10 and 18.	Perceived behavioral control was demonstrated to have a positive association with risky online behaviour.
Festl, 2016	Germany	Two-wave panel questionnaire survey of 1428 German high school students.	Perceived behavioral control is positively related to cyberbullying perpetration.

Adekoya, 2016	USA	Online questionnaire of 90 high school students from Massachusettes whose grades were between 9th to 12th.	The intention to engage in cyberspace bullying behavioral dispositions was lower when the respondents had higher perceived behavioural control towards performing cyberspace bullying behaviors or acts.
Cleemput, Vandebosch, & Pabian, 2014	Flanders	Survey questionnaire of 2,333 Flemish with the age between 9 and 16 that consisted of 519 primary school children and 1,814 secondary school students.	Lower level of empathy that an individual has would beget more participation in cyberbullying.
Brewer & Kerslake, 2015	England	Online questionnaire of 90 students with the age between 16 and 18 studying in Further Education colleges in the North West of England.	Negative correlation existed between empathy and cyberbullying perpetration.
Garaigordobil, 2015	Basque	Questionnaire survey of 3,026 students who aged 12 to 18 from secondary education and high school from public as well as private school.	Empathy was found to be negatively associated with cyberbullying perpetration.
Zych, Baldryb, Farringtonc & Llorenta, 2018	Not clear as this is a meta-analysis	Data collection was done through carrying out the systematic searches in different databases and the total target respondents in this study were 25,268.	Empathy was proven that it is significantly related to cyberbullying perpetration.

Appendix B

Operationalization of model variables

Variables	No. of items	Description of items	Measurement	Sources
Attitude (Independent variable 1)	9	It is acceptable using internet to send mean messages (i.e. e-mails) to others when they deserve it.	Five-point Likert scale (Interval)	Barlett and Gentike (2012)
		People who join groups on internet (i.e. Facebook) that make fun of others are justified in doing so.	1=Strongly disagree 2= Disagree	
		It makes me feel good to use internet to send texts that make fun of others.	3= Neural 4= Agree	
		Sometimes using passive aggressive methods of using internet to send mean message (i.e. e-mails) to others is the only way to get even.	5= Strongly agree	
		I do not find it appropriate to use internet to send messages to others.		
		I feel bad using internet to send messages to others.		

		I have used internet to send messages to others after they have text messaged me hurtful comments.		
		Teasing others on internet (i.e. Facebook, e-mails) if fun.		
		Those that using internet to create groups (i.e. Facebook group) that are socially exclusive are fun to join.		
Subjective norms (Independent variable 2)	6	Most of my friends would expect me to make rude or mean comments to someone on internet (i.e. social media).	Five-point Likert scale (Interval)	Ho et al. (2017)
		Most of my friends would expect me to spread rumours about someone on internet (i.e. social media), whether they are true or not.	1=Strongly disagree 2= Disagree	
		Most of my friends would expect me to make aggressive or threatening comments to someone on social media.	3= Neural 4= Agree 5= Strongly agree	
		My family members would expect me to make rude or mean comments to someone on internet (i.e. social media).		

		My family members would expect me to spread rumours about someone on internet (i.e. social media), whether they are true or not.		
		My family members would expect me to make aggressive or threatening comments to someone on internet (i.e. social media).		
Perceived Behavioral Control (Independent variable 3)	3	I am capable of bullying others over the Internet	Five-point Likert scale (Interval)	George (2004)
		Bullying others over the Internet is entirely within my control.		
		I have the resources and the knowledge and the ability to bullying other over the Internet.	1=Strongly disagree 2= Disagree 3= Neural 4= Agree 5= Strongly agree	

Empathy (Independent variable 4)	5	I feel the misfortunes of others on internet.	Five-point Likert scale (Interval)	Álvarez-Garc á, Barreiro-Collazo, Nú˜nez and Dobarro (2016)
		If a classmate is teased on internet, I feel bad thinking about what is happening to him/her.		
		I am patient with people who do things worse over internet than I do.	1=Strongly disagree 2= Disagree	
		When I see that a friend is sad on internet, I also become sad.	3= Neural	
		I am happy when something good happens to someone I know on internet.	4= Agree 5= Strongly agree	
Behavioural intention towards cyberbullying (Dependent variable)	3	I intend to continue using Internet to bully others in the future.	Five-point Likert scale (Interval)	Venkatesh, Thong and Xu (2012)
		I will always try to use internet (i.e social media) as platform to cyberbullying others in my daily life.	1=Strongly disagree 2= Disagree	
		I plan to continue to use internet (i.e social media) as platform to cyberbullying others frequently.	3= Neural 4= Agree 5= Strongly agree	

Appendix C

Survey Permission Letter

UNIVERSITI TUNKU ABDUL RAHMAN

Wholly Owned by UTAR Education Foundation (Company No. 578227-M)

29th August 2018

To Whom It May Concern

Dear Sir/Madam,

Permission to Conduct Survey

This is to confirm that the following students are currently pursuing their *Bachelor of Commerce (Hons) Accounting* program at the Faculty of Business and Finance, Universiti Tunku Abdul Rahman (UTAR) Perak Campus.

I would be most grateful if you could assist them by allowing them to conduct their research at your institution. All information collected will be kept confidential and used only for academic purposes.

The students are as follows:
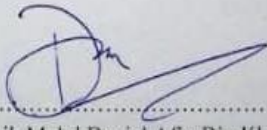
Name of Student	Student ID
Wong Zhen Quan	15ABB04310
Aw Siew Ching	15ABB05280
Beh Si Ying	15ABB03218
Tang Su Wei	15ABB03220
Yan Chean Chai	15ABB05910

If you need further verification, please do not hesitate to contact me.

Thank you.

Yours sincerely,

Dr Zam Zuriyati Binti Mohamad
Head of Department,
Faculty of Business and Finance
Email: zuriyati@utar.edu.my

Encik Mohd Danial Afiq Bin Khamar Tazilah
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Kampar Campus : Jalan Universiti, Bandar Barat, 31900 Kampar, Perak Darul Ridzuan, Malaysia
Tel: (605) 468 8888 Fax: (605) 466 1313
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Tel: (603) 9086 0288   Fax: (603) 9019 8868
Postal Address: PO Box 11348, 50744 Kuala Lumpur, Malaysia
Website: www.utar.edu.my

Appendix D

Survey Questionnaire

UTAR **Universiti Tunku Abdul Rahman**

Drivers of Cyberbullying Intention:

A study on Malaysian Undergraduates' Perspectives

Survey Questionnaire

Dear Respondent,

Warmest greeting from Universiti Tunku Abdul Rahman (UTAR)

We are final year undergraduate students of Bachelor of Commerce Accounting, Universiti Tunku Abdul Rahman (UTAR). The purpose of this survey is to conduct a research to investigate the factors that significantly influence behavioural intention towards cyberbullying. Please answer all questions to the best of your knowledge. There are no wrong responses to any of these statements. All responses are collected for academic research purpose and will be kept strictly confidential.

Thank you for your participation.

Instructions:

1) There are THREE (3) sections in this questionnaire. Please answer ALL questions in ALL sections.
2) Completion of this form will take you less than 5 minutes.
3) The contents of this questionnaire will be kept strictly confidential.

Voluntary Nature of the Study

Participation in this research is entirely voluntary. Even if you decide to participate now, you may change your mind and stop at any time. There is no foreseeable risk of harm or discomfort in answering this questionnaire. This is an anonymous questionnaire; as such, it is not able to trace response back to any individual participant. All information collected is treated as strictly confidential and will be used for the purpose of this study only.

I have been informed about the purpose of the study and I give my consent to participate in this survey.

YES ( )   NO ( )

Note: *If yes, you may proceed to next page or if no, you may return the questionnaire to researchers and thanks for your time and cooperation.*

Section A: Demographic Profile

In this section, we would like you to fill in some of your personal details. Please tick your answer and your answers will be kept strictly confidential.

QA 1: Gender: □$_1$ Female   □$_2$ Male

QA 2: Age:
    □$_1$ 18 to 20 years old

    □$_2$ 21 to 30 years old

    □$_3$ 31 to 40 years old

    □$_4$ Above 40 years

QA 3: Current highest education level:
    □$_1$ High School

    □$_2$ Diploma

    □$_3$ Degree

    □$_4$ Master

QA 4: Frequency of using Internet:

　　□1 Every day

　　□2 Several days a week

　　□3 Once a week

QA 5: The purpose of using Internet:*

　　□1 to do research

　　□2 to communicate

　　□3 to spend time

　　□4 to play game

　　□5 to follow the news

　　* you can choose more than one option.

Section B: Independent Variables

This section is seeking your opinion regarding the factors of attitude, subjective norms, perceived behavioural control and empathy. Respondents are asked to indicate the extent to which they agreed or disagreed with each statement using 5 Likert scale [(1) = strongly disagree; (2) = disagree; (3) = neutral; (4) = agree and (5) = strongly agree] response framework. Please circle one number per line to indicate the extent to which you agree or disagree with the following statements.

No	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
A	Attitude					
A1	It is acceptable using internet to send mean messages (i.e. e-mails) to others when they deserve it.	1	2	3	4	5
A2	People who join groups on internet (i.e. Facebook) that make fun of others are justified in doing so.	1	2	3	4	5
A3	It makes me feel good to use internet to send texts that make fun of others.	1	2	3	4	5
A4	Sometimes using passive aggressive methods of using internet to send mean message (i.e. e-mails) to others is the only way to get even.	1	2	3	4	5
A5	I do not find it appropriate to use internet to send messages to others.	1	2	3	4	5
A6	I feel bad using internet to send messages to others.	1	2	3	4	5

A7	I have used internet to send messages to others after they have text messaged me hurtful comments.	1	2	3	4	5
A8	Teasing others on internet (i.e. Facebook, e-mails) if fun.	1	2	3	4	5
A9	Those that using internet to create groups (i.e. Facebook group) that are socially exclusive are fun to join.	1	2	3	4	5
SN	**Subjective norms**					
SN 1	Most of my friends would expect me to make rude or mean comments to someone on internet (i.e. social media).	1	2	3	4	5
SN 2	Most of my friends would expect me to spread rumours about someone on internet (i.e. social media), whether they are true or not.	1	2	3	4	5
SN 3	Most of my friends would expect me to make aggressive or threatening comments to someone on social media.	1	2	3	4	5
SN 4	My family members would expect me to make rude or mean comments to someone on internet (i.e. social media).	1	2	3	4	5
SN 5	My family members would expect me to spread rumours about someone on internet (i.e. social media), whether they are true or not.	1	2	3	4	5
SN 6	My family members would expect me to make aggressive or threatening comments to someone on internet (i.e. social media).	1	2	3	4	5

PBC	Perceived Behavioural Control					
PBC 1	I am capable of bullying others over the Internet.	1	2	3	4	5
PBC 2	Bullying others over the Internet is entirely within my control.	1	2	3	4	5
PBC 3	I have the resources and the knowledge and the ability to bullying other over the Internet.	1	2	3	4	5
E	Empathy					
E1	I feel the misfortunes of others on internet.	1	2	3	4	5
E2	If a classmate is teased on internet, I feel bad thinking about what is happening to him/her.	1	2	3	4	5
E3	I am patient with people who do things worse over internet than I do.	1	2	3	4	5
E4	When I see that a friend is sad on internet, I also become sad.	1	2	3	4	5
E5	I am happy when something good happens to someone I know on internet.	1	2	3	4	5

Section C: Dependent variable

This section is seeking your opinion regarding the behavioural intention towards cyberbullying. Respondents are asked to indicate the extent to which they agreed or disagreed with each statement using 5 Likert scale [(1) = strongly disagree; (2) = disagree; (3) = neutral; (4) = agree and (5) = strongly agree] response framework. Please circle one number per line to indicate the extent to which you agree or disagree with the following statements.

No	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
BI	**Behavioural Intention towards Cyberbullying**					
BI 1	I intend to continue using Internet to bully others in the future.	1	2	3	4	5
BI 2	I will always try to use internet (i.e. social media) as platform to cyberbullying others in my daily life.	1	2	3	4	5
BI 3	I plan to continue to use internet (i.e. social media) as platform to cyberbullying others frequently.	1	2	3	4	5

Thank you for your participation