

INFLUENTIAL FACTORS OF ONLINE SCAM
AWARENESS AMONG GENERATION X IN MALAYSIA

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BY

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A final year project submitted in partial fulfilment of the
requirement for the degree of

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- (2) No portion of this FYP 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) Sole contribution has been made by me in completing the FYP.
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DEDICATION

This research project is dedicated to:

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Table of Contents

Copyright Page.....	i
Declaration.....	ii
Acknowledgement	iii
Dedication.....	iv
List of Tables.....	ix
List of Figures.....	x
List of Abbreviations.....	xi
List of Appendices	xii
Preface.....	xiii
Abstract.....	xiv
CHAPTER 1: RESEARCH OVERVIEW.....	1
1.0 Introduction.....	1
1.1 Research Background.....	1
1.2 Research Problem.....	3
1.3 Research Objectives	4
1.3.1 General Objective	4
1.3.2 Specific Objectives	4
1.4 Research Questions	5
1.5 Research Significance	5
1.6 Summary	6
CHAPTER 2: LITERATURE REVIEW.....	7
2.0 Introduction.....	7
2.1 Underlying Theory	7
2.1.1 Motivation-Opportunity-Ability (MOA) Model.....	7
2.2 Review of Variables	9
2.2.1 Online Scam Awareness.....	9
2.2.2 Risk Perception	10
2.2.3 Skepticism.....	10
2.2.4 Media Exposure	11
2.2.5 Security Concern.....	12
2.2.6 Social Support.....	13
2.3 Research Framework.....	13
2.4 Hypotheses Development.....	14

2.4.1	Risk Perception and Online Scam Awareness.....	14
2.4.2	Skepticism and Online Scam Awareness	15
2.4.3	Media Exposure and Online Scam Awareness.....	15
2.4.4	Security Concerns and Online Scam Awareness.....	16
2.4.5	Social Support and Online Scam Awareness	16
2.5	Summary	17
CHAPTER 3: METHODOLOGY		18
3.0	Introduction	18
3.1	Research Design.....	18
3.1.1	Quantitative Research	18
3.1.2	Descriptive Research	19
3.2	Sampling Design	19
3.2.1	Target Population	19
3.2.2	Sampling Frame	20
3.2.3	Sampling Technique.....	20
3.2.4	Sample Size.....	21
3.3	Data Collection Method	21
3.3.1	Primary Data	21
3.3.2	Secondary Data	22
3.4	Research Instruments	23
3.4.1	Questionnaire Design.....	23
3.4.2	Conceptual Definition.....	24
3.4.3	Origin of Constructs.....	24
3.5	Construct Measurement.....	27
3.5.1	Nominal Scale.....	28
3.5.2	Ordinal Scale.....	29
3.5.3	Likert Scale	30
3.6	Pilot Test.....	30
3.7	Data Analysis Tool	31
3.7.1	Statistical Package for the Social Sciences Version 27 (SPSS)	31
3.7.2	Descriptive Analysis	32
3.7.3	Scale Measurement	32
3.7.4	Inferential Analysis	33
3.8	Summary	35
Chapter 4: Data Analysis.....		36

4.0	Introduction	36
4.1	Respond Rates and Screening	36
4.2	Descriptive Analysis.....	36
4.2.1	Demographic Profile of the Respondents	36
4.3	Descriptive Statistics for Variables	44
4.3.1	Mean and Standard Deviation of Online Scam Awareness.....	44
4.3.2	Mean and Standard Deviation of Risk Perception.....	45
4.3.3	Mean and Standard Deviation of Skepticism.....	46
4.3.4	Mean and Standard Deviation of Media Exposure	47
4.3.5	Mean and Standard Deviation of Security Concern	48
4.3.6	Mean and Standard Deviation of Social Support.....	49
4.4	Reliability Analysis	50
4.5	Inferential Analysis	51
4.5.1	Pearson Correlation Coefficient Analysis	51
4.5.2	Multiple Linear Regression Analysis.....	53
4.6	Summary	55
Chapter 5: Discussion, Conclusion and Implication.....		56
5.0	Introduction	56
5.1	Discussion of Major Findings	56
5.1.1	Relationship between Risk Perception and Online Scam Awareness	57
5.1.2	Relationship between Skepticism and Online Scam Awareness.....	57
5.1.3	Relationship between Media Exposure and Online Scam Awareness	58
5.1.4	Relationship between Security Concern and Online Scam Awareness	58
5.1.5	Relationship between Social Support and Online Scam Awareness	59
5.2	Implications of the Study	59
5.2.1	Practical Implications.....	59
5.2.2	Theoretical Implications	60
5.3	Limitations of the Study.....	62
5.3.1	Confinement to Specific Demographic.....	62
5.3.2	Self-Reported Measures.....	62
5.3.3	Limited Scope of Independent Variables	62
5.3.4	Cross-Sectional Nature of the Study.....	63

5.3.5	Cultural Context.....	63
5.4	Recommendations for Future Research	63
5.4.1	In-Depth Qualitative Investigations.....	63
5.4.2	Exploring Generational Variances	64
5.4.3	Cross-Disciplinary Research.....	64
5.4.4	Exploration of Additional Variables.....	64
5.5	Conclusion.....	65
	References.....	66
	Appendices.....	79

LIST OF TABLES

	Page
Table 3.1: Conceptual Definition	24
Table 3.2: Operational Definition	25
Table 3.3: Measurement Scale	28
Table 3.4: Cronbach's Alpha of Each Construct	31
Table 3.5: Cronbach's Alpha Rules of Thumb	33
Table 3.6: Interpretation of Pearson Correlation Coefficient.....	34
Table 4.1: Age	37
Table 4.2: Gender.....	38
Table 4.3: Education Level	39
Table 4.4: Employment Status	40
Table 4.5: Monthly Income Level.....	41
Table 4.6: Media Preference	42
Table 4.7: Aware of Government Initiatives	43
Table 4.8: Mean and Standard Deviation of Variables.....	44
Table 4.9: Mean and Standard Deviation of Online Scam Awareness.....	45
Table 4.10: Mean and Standard Deviation of Risk Perception	46
Table 4.11: Mean and Standard Deviation of Skepticism.....	47
Table 4.12: Mean and Standard Deviation of Media Exposure	48
Table 4.13: Mean and Standard Deviation of Security Concern.....	49
Table 4.14: Mean and Standard Deviation of Social Support.....	50
Table 4.15: Result of Reliability Test.....	51
Table 4.16: Result of Pearson Correlation Coefficient Analysis	52
Table 4.17: Model Summary.....	53
Table 4.18: ANOVA Table	53
Table 4.19: Coefficient Table	54
Table 5.1: Summary of Result for Hypotheses Testing	56

LIST OF FIGURES

	Page
Figure 2.1: Conceptual Framework	14
Figure 3.1: Example of Nominal Scale.....	29
Figure 3.2: Example of Ordinal Scale.....	29
Figure 3.3: Example of 5-point Likert scale	30
Figure 4.1: Age.....	37
Figure 4.2: Gender	38
Figure 4.3: Education Level.....	39
Figure 4.4: Employment Status	40
Figure 4.5: Monthly Income Level	41
Figure 4.6: Media Preference.....	42
Figure 4.7: Aware of Government Initiatives.....	43

LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
B	Beta
df	Degree of Freedom
DV	Dependent Variable
F	F ratio
Gen X	Generation X
H1	Hypothesis 1
H2	Hypothesis 2
H3	Hypothesis 3
H4	Hypothesis 4
H5	Hypothesis 5
IV	Independent Variable
ME	Media Exposure
OSA	Online Scam Awareness
p	P-value
RP	Risk Perception
SC	Security Concern
Sig.	Significance
Std. Error	Standard Error
SK	Skepticism
SPSS	Statistical Package for Social Sciences
SS	Social Support

LIST OF APPENDICES

	Page
Appendix 3.1: Result of Determine Sample Size	79
Appendix 3.2: Result of Pilot Test	79
Appendix 3.3: Survey Questionnaire	81
Appendix 4.1: Approval Letter of Ethical Clearance.....	89
Appendix 4.2: Frequencies Statistics	93
Appendix 4.3: Descriptive Statistics.....	94
Appendix 4.4: Cronbach's Alpha	96
Appendix 4.5: Pearson Correlation Coefficient Analysis	98
Appendix 4.6: Multiple Linear Regression.....	98

Preface

This research project is born out of a profound curiosity and a sense of responsibility toward understanding and addressing the challenges posed by online scams in the digital age, particularly among Generation X in Malaysia. As the author, the journey into this subject was spurred by a recognition of the escalating threats in the cyber landscape and a desire to contribute meaningful insights.

This brief preface offers a glimpse into the genesis of the research, outlining the motivations, questions, and aspirations that guided my exploration. My engagement was driven by both academic curiosity and a commitment to societal welfare, with the aim of contributing practical insights to the discourse on scam awareness. This study reflects my efforts to bridge the knowledge gap and provide valuable perspectives for policymakers, academia, and the wider community.

Abstract

This research investigates the influential factors shaping online scam awareness among Generation X in Malaysia. Through a comprehensive analysis of key variables – risk perception, skepticism, media exposure, security concerns, and social support, the study explores their relationships and implications for scam awareness in the digital landscape.

The research findings indicate a significant positive correlation between skepticism and media exposure with online scam awareness, highlighting their crucial roles. However, inconclusive results emerge regarding the impact of risk perception, security concerns, and social support. This prompts a nuanced reassessment of the assumed roles of these factors in influencing scam awareness within Generation X.

The practical implications of the study offer recommendations for policymakers, emphasizing tailored educational programs, collaborative initiatives with media outlets, and cybersecurity training to enhance the scam awareness of Generation X. Theoretical implications call for refinements in the conceptualization of risk perception, the integration of personality traits into awareness models, and a deeper understanding of the cognitive processes involved in translating security concerns into actionable awareness.

The research suggests various avenues for future exploration, including an examination of generational differences, the adoption of longitudinal studies, in-depth qualitative investigations, cross-disciplinary studies and exploration of additional variables. By combining academic inquiry with a dedication to societal well-being, this study contributes valuable insights to the ongoing discourse on online scam awareness for Generation X in Malaysia.

CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

A summary of the background, problem, questions, objectives, and significance of the research is provided in Chapter 1.

1.1 Research Background

Over the past two decades, the Internet has brought about significant changes in our daily lives. A growing number of our daily activities, such as payment, banking, and social interactions, now occur online thanks to the development of smart devices, e-commerce, and social media (Lin et al., 2023). While the Internet and related technologies have offered substantial benefits and convenience to society, they have also introduced risks and harms. The rapid expansion of our online routines has opened up new opportunities for cybercriminals to engage in various forms of scams, allowing them to carry out traditional scams on an industrial scale at minimal cost even devising entirely new scam schemes. Thus, numerous individuals who previously would have been seldom openly targeted by such crimes now face daily risks of victimization. Additionally, scammers can now target victims in distant countries, which was previously challenging. Worldwide, millions of people are targeted by online scams every day, orchestrated by thousands of scammers operating both within and outside their home countries. Online scam against an individual is now an issue on a global scale (Button et al., 2014).

An online scam can be defined as the experience of an individual who responds to a deceptive invitation, request, notification, or offer via the Internet, and suffers a

loss or impact that is either financial or non-financial (Cross & Blackshaw, 2014). According to the Ministry of Communications and Digital (2022), from 2017 to 2021, Malaysia documented a cumulative count of 98,607 online scam cases resulting in losses of RM3.3 billion. The Securities Commission Malaysia (SC) blocked 61 websites and 80 social media accounts in the first quarter of 2023 in addition to adding 84 entities to the SC Investor Alert List (The Star, 2023). Furthermore, Zolkepli (2023) revealed that there were 7,548 reported cases of love scams from 2018 until June 2023, resulting in losses of RM382 million, with approximately 82.8% involving female victims. Phishing attacks in Malaysia numbered 749,915 cases in the first half of 2020, with social media platforms, particularly WhatsApp and Facebook, being prime targets (Lee et al., 2023). Nevertheless, these statistics are based on whistleblower reports and may not fully reflect the actual extent of online scams in Malaysia. Among the various types of scams, the most prominent categories of online fraud in Malaysia include advance fee fraud (AFF) and romance fraud (David, 2022).

Advance fee fraud (AFF) involves individuals being asked to send a modest amount of money with the promise of receiving a larger sum in the future, often in the context of investment opportunities or job offers (Ross & Smith, 2011). Romance fraud, as described by Rege (2009), operates similarly to AFF but masquerades as a genuine romantic relationship between the scammer and the victim. In these cases, the scammer builds an emotional connection with the victim, leading them to believe they are in a real relationship. Initially, the scammer may request small gifts such as perfume or a mobile phone to test the waters. Following the receipt of such gifts, the scammer gradually escalates requests for larger sums of money, citing reasons like illness, travel expenses, or investment failures. If the victim complies, the requests continue, often resulting in significant financial losses. This type of fraud is particularly devastating as victims not only suffer financial losses but also have to deal with the emotional pain of ending a fictitious relationship (Whitty & Buchanan, 2015).

Online fraud poses a serious threat to an individual's financial well-being and overall quality of life. Previous research (Whitty & Buchanan, 2015; Whitty, 2018; Alam et al., 2021) has underscored the financial and non-financial repercussions faced by victims of online scams. Some have endured substantial financial losses, including depleting their savings, repaying loans over time, and selling assets such as cars, homes, and property. Victims of online fraud also suffer severe emotional and psychological repercussions, including shame, embarrassment, anxiety, despair, anger, worry, shock, as well as loneliness. Moreover, Button et al. (2009) note that online scams can have lasting effects on victims, causing them to change their behavior. According to the research, 74.5% of online scam victims become more cautious, wary, and distrustful of others. Additionally, online scam victims may experience a range of physical ailments and adverse health effects, such as insomnia, nausea, and weight loss, stemming from their traumatic experiences.

1.2 Research Problem

Numerous empirical studies have been conducted to investigate the factors influencing individuals' scams compliance with the emergence of more and more online scams (Fischer et al., 2013; Whitty, 2020; Buchanan & Whitty, 2013; Kirwan et al., 2018; Modic & Lea, 2013). The incidents of victimization are on the rise despite the abundance of government and organization websites that offer scam-prevention information. Approaches that solely focus on understanding the characteristics of scam victims have proven inadequate in mitigating online scams. Therefore, there is a pressing need for a shift in perspective to explore the factors that contribute to individuals avoiding online scams.

Prior research (Whitty 2018; Ullah et al., 2019; Coluccia et al., 2020; Hanoch & Wood, 2021) has indicated that scam victims are more likely to be in the middle-aged bracket, typically defined as individuals aged between 40 and 60 (Britannica, 2023). The reason behind this is that middle-aged have relatively higher disposable

income (Whitty, 2018; Yu et al., 2022). However, the online scam awareness study focus on Generation X is limited in the Malaysian context. Thus, this becomes the research gap. The existing research (Mohd Padil et al., 2022; Mohd Zaharon et al., 2021; Jusoh & Nizar, 2022) mostly focuses on the younger generation. Consequently, this study aims to address this gap by investigating the influential factors affecting online scam awareness among Generation X in Malaysia, especially in the face of the increasing number of online scams.

1.3 Research Objectives

1.3.1 General Objective

To determine the influential factors of online scam awareness among Generation X in Malaysia.

1.3.2 Specific Objectives

1. To examine the association between risk perception and online scam awareness among Generation X.
2. To assess the association between skepticism and online scam awareness among Generation X.
3. To investigate the association between media exposure and online scam awareness among Generation X.
4. To explore the association between security concerns and online scam awareness among Generation X.
5. To determine the association between social support and online scam awareness among Generation X.

1.4 Research Questions

1. Is there a relationship between risk perception and online scam awareness among Generation X?
2. Is there a relationship between skepticism and online scam awareness among Generation X?
3. Is there a relationship between media exposure and online scam awareness among Generation X?
4. Is there a relationship between security concerns and online scam awareness among Generation X?
5. Is there a relationship between social support and online scam awareness among Generation X?

1.5 Research Significance

The significance of this research has multiple dimensions and has implications for both academic understanding and practical application. Firstly, in the academic context, prior studies in Malaysia have predominantly concentrated on online scam awareness among the younger population (Mohd Padil et al., 2022; Mohd Zaharon et al., 2021; Jusoh & Nizar, 2022). However, there is a noticeable gap in research when it comes to examining online scam awareness among middle-aged individuals. Our study seeks to fill this research gap and provide valuable insights into the factors influencing online scam awareness among Gen X.

From a practical standpoint, the implications are substantial. By identifying the determinants that contribute to Generation X individuals successfully avoiding online scams, our research can help create targeted educational programs and awareness campaigns. These initiatives have the potential to equip individuals with

the knowledge and skills needed to safeguard themselves against scams, ultimately reducing the risk of falling into online fraud.

Furthermore, this research carries societal significance as well. It plays a vital role in protecting the financial and emotional well-being of individuals. Online scam poses significant threats and the insights derived from this study contribute to safeguarding them from the severe consequences of falling victim to online scams. In summary, this research holds academic, practical, and societal significance, providing a comprehensive understanding of the factors influencing online scam awareness among Generation X in Malaysia and serving as a foundation for proactive measures against online scams.

1.6 Summary

An outline of the research background and problem was given in this chapter. It covered the significance of the study and presented the research questions along with the objectives.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

Chapter 2 presents the findings from different scholars. The foundational theory of this study is the MOA model. Furthermore, this paper will incorporate various variables, with OSA as the DV and RP, SK, ME, SC, and SS as IV, drawing on previous research.

2.1 Underlying Theory

2.1.1 Motivation-Opportunity-Ability (MOA) Model

The Motivation-Opportunity-Ability (MOA) framework, first introduced by MacInnis and Jaworski in 1989, offers an insightful perspective on how individuals process information and engage in various behaviors based on their motivations, opportunities, and abilities. This framework has found application in diverse fields, including but not limited to explaining phenomena like knowledge sharing, social media use, fraudulent activities, consumer decision making, and organizational choices (Barnor et al., 2020). In this study, the MOA model is employed to investigate why certain individuals are less susceptible to falling victim to online scams.

Motivation is the first element of MOA framework, which encompasses an individual's internal or external drive, inclination, or willingness to participate in a specific behavior (Ojo & Raman, 2016). It encompasses the perception of risks associated with the behavior in question. When an individual perceives

a high level of risk, they are more inclined to take protective measures, and avoid risky behavior (Sulaiman et al., 2022). Extending the theory to the context of this research, motivation could be related to concerns about potential financial losses, fear of online scams, or the desire to safeguard personal information online. If one perceives a certain behavior or action will impose significant damages and cause severe consequences, they are more likely to engage in security measures. Individuals' perception of risk in the face of online scams serves as a positive motivator for them to seek out anti-scam information and take precautions to avoid becoming victims (Humaidi & Abdallah Alghazo, 2022).

According to Wang and Zhan (2022), opportunity refers to external factors that either facilitate or impede the occurrence of a behavior, encompassing conditions that affect a person's awareness, whether favourably or unfavourably. Extending the theory to the context of this research, online scam awareness is influenced by the opportunities individuals have to encounter and recognize scams. The knowledge about the various types of scams in existence can also impact their ability to identify such scams when they encounter them. Media exposure can create opportunities for individuals to encounter information about scams (Tang et al., 2021). This exposure can come from news reports, articles, or online content that highlights the risks and consequences of scams. Increased exposure to such media sources enhances the opportunities for individuals to become aware of online scams.

Ability refers to the cognitive, emotional, physical, financial, or social resources that an individual can employ to execute a particular behavior (Wang and Zhan, 2022). Extending the theory to the context of this research, it refers to individuals' capacity, knowledge, skills, and resources that influence their ability to identify and respond to online scams. Research has shown that social support can provide one with valuable information that helps protect them from scams (Alves & Wilson, 2008). Individuals who lack social support and experience loneliness may seek emotional connections.

Scammers exploit this vulnerability by pretending to care, which ultimately results in the individuals trusting the scammer and becoming victims. Conversely, individuals with strong emotional bonds and support networks are less likely to experience intense loneliness and emotional vulnerability, making them less susceptible to scammers' tactics. Social support is their ability to resist advances from such scams (Xing et al., 2020). Additionally, when individuals are uncertain about the authenticity of certain websites, or invest agencies and suspect potential scamming behavior, they can turn to their support networks for advice and guidance. This consultation enhances their ability to make informed decisions.

2.2 Review of Variables

2.2.1 Online Scam Awareness

Online scam awareness is the dependent variable for this study. According to Ramadhan (2022), online scam awareness is defined as the extent of an individual's knowledge, comprehension, and recognition of the various deceptive practices and fraudulent schemes that occur in the digital domain. It encompasses the ability to grasp the tactics employed by scammers for deception, assess the telltale signs and warning signals typically associated with such scams, and effectively respond to potential online scams. Scam awareness is a critical component of scam control, as it seeks to comprehend the nature and origins of scams. This understanding is vital as it aids individuals in reducing their vulnerability to scams by fostering an awareness of the importance of scam prevention (Astriaana & Adhariani, 2019). In this research, five distinct variables have been selected to investigate the factors influencing online scam awareness among Gen X in Malaysia. The dependent variable (DV) is online scam awareness, whereas the independent variables (IV) being analysed encompass risk perception, skepticism, media exposure, security concerns, and social support.

2.2.2 Risk Perception

Risk perception is defined as an individual's evaluation of the potential negative outcomes associated with using an online service (Kim et al., 2008). In the study conducted by Saridakis et al. (2016), RP pertains to an individual's estimation of the likelihood of encountering financial physical, or social harm because of online scams. These risks can encompass financial losses resulting from the theft of personal information on social networking sites or even physical and psychological harm due to emotional attachment.

It's essential that different individuals may perceive risk differently when confronted with the same situation and presented with the same choices for response. Those with higher levels of RP are more inclined to engage in risk-averse behaviors. They are motivated to learn the way to recognize indicators of scams and implement preventive measures to safeguard their assets (Wright & Marett, 2010). Previous research has demonstrated how RP can significantly influence individuals' awareness of scams. According to Jarvenpaa et al. (1999), individuals with high RP tend to closely scrutinize websites before proceeding with transactions and seeking explicit information from dependable sources to allay any concerns. Following the risk deterrence principle, individuals often lean towards less risky behaviors, as risks discourage engagement in activities that could be trapped in detrimental situations, such as falling victim to scams (Chen et al., 2021).

2.2.3 Skepticism

Previously, researchers have often employed the concept of trust as a predictor of an individual's likelihood to spot scams (McCornack & Levine, 1990).

However, this approach has presented several challenges, primarily due to the multifaceted nature of trust, each dimension potentially having a different relationship with the scam. Determining which dimension best explains an individual's susceptibility to scams has remained unclear (Vishwanath et al., 2016). Furthermore, trust has proven to be a rather weak predictor of scam detection, as placing trust in someone tends to desensitize individuals to cues of scams. As an example, in studies of interpersonal deception, it has been found that when individuals trust someone, they are more likely to overlook lies or questionable actions (McCornack & Parks, 1986).

Given these challenges, this research employs skepticism, often referred to as the "darker cousin" of trust, as a predictor of scam awareness. Skepticism involves the validation of information through probing inquiries, critical evaluation of evidence, and meticulous scrutiny for inconsistencies (Dimitrova & Sorova, 2016). When suspicion is aroused, even a moderate level of suspicion will lead to an improvement in deception detection accuracy (Vishwanath et al., 2016). Individuals with a high degree of skepticism adopt a self-protective and cautious approach, maintaining a defensive stance when their suspicions are aroused. They are more likely to rigorously examine online services to determine their legitimacy and dependability and are less likely to accept claims at face value (Wright & Marett, 2010). Skeptical individuals are less likely to be swayed by a scammer's deceptive narratives, remaining vigilant to the scam and thereby fending off victimization (Langenderfer & Shimp, 2001).

2.2.4 Media Exposure

De Vreese and Neijens (2016) defined media exposure as the degree to which members of the audience have come across specific messages related to online scams through various media outlets, including news reports, articles, online

content, and social media. Recently, social media services have emerged as the predominant channel for both disseminating and seeking information about preventive measures. The dominance of social media has revolutionized the way individuals' access and engage with information. Within this transformed media landscape, not only government agencies and organizations but also individuals who have personally experienced scams have become proactive contributors to the dissemination of vital knowledge, allowing people to have a raw and unfiltered understanding of the devastating consequences of scam. The exposure to real-life scam narratives and cautionary tales through the media can enhance awareness of scams, their prevalence, and the strategies employed by scammers (Tang et al., 2021).

2.2.5 Security Concern

According to Denaputri and Usman (2019), security concern is characterized as a threat that gives rise to circumstances, conditions, or events capable of causing economic harm to data or network resources. This harm can manifest in various forms, including the destruction, disclosure, alteration of data, denial of service, and instances of scam, waste, and abuse. In simpler terms, security concerns revolve around the unauthorized acquisition of someone's data by a third party, such as hackers or identity thieves. It signifies the extent of worry and apprehension individuals experience concerning the safety of their personal information, financial assets, and online activities (Topaloğlu, 2012).

Individuals who are security-conscious tend to make responsible use of network and system resources. This entails not only a review of existing security policies but also an understanding of potential threats and the consequences of non-compliance (Wright & Marett, 2010). Those with heightened security concerns are more inclined to take proactive measures to

shield themselves from scams. These measures may include changing passwords frequently, activating two factor authentication, thinking before clicking a link from unknown sources, updating software to patch vulnerabilities as well as using antivirus software (Tang et al., 2021).

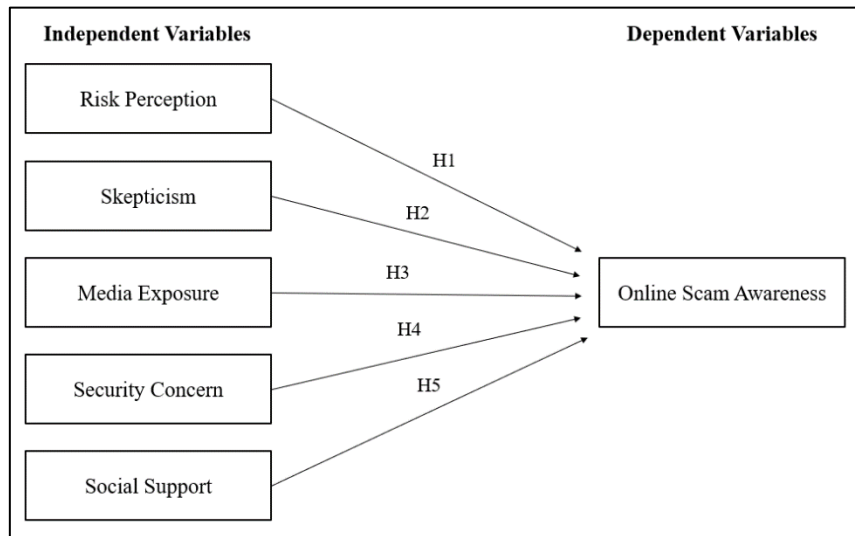
2.2.6 Social Support

Ozbay et al. (2007) defined social support as the assistance available to an individual through their social connections with other individuals, groups, and the broader community. To put it simply, social support pertains to a network comprising family, friends, neighbours, and community members who can offer psychological, physical, and financial aid during times of need. Sustained connections with others are especially vital for individuals, particularly as they age, as these connections contribute to a sense of value and significance within a social network. When an individual has people in their life who care about them or take an interest in their well-being, it is akin to having a monitoring system in place to safeguard them from potential scams. Social support offers validation and reassurance, thereby diminishing the inclination to seek emotional connections from unknown websites and, consequently, reducing vulnerability to scams (Coombs, 2014). Conversely, individuals are more likely to actively engage in online social activities and connect with strangers if they receive less support from real society. Accordingly, the likelihood of being exposed to a scam situation rises (Zhang & Ye, 2022).

2.3 Research Framework

Figure 2.1 illustrates the research framework, online scam awareness serves as the DV, and the IV consist of RP, SK, ME, SC, and SS.

Figure 2.1: Conceptual Framework



Source: Developed for the research.

2.4 Hypotheses Development

2.4.1 Risk Perception and Online Scam Awareness

Preliminary research has shown RP is related to online scam awareness across various scam types. Mueller et al. (2020) found a significant correlation between OSA and RP. Similarly, Tiwari (2020) indicated that scam awareness is influenced by RP. Klapatch et al. (2022) discovered a significant connection between the RP and advance fee scam awareness. Furthermore, Wood et al. (2018) reported that RP positively and significantly contributes to scam awareness. Drawing upon these prior research findings and in alignment with the outcomes expected in this study, the following hypothesis is formulated:

H1: There is a significant relationship between risk perception and online scam awareness among Generation X in Malaysia.

2.4.2 Skepticism and Online Scam Awareness

Research conducted by Wright and Marett (2010) revealed a significant impact of SK on scam awareness. Likewise, Vishwanath et al. (2016) demonstrated a significant association between SK and OSA, with individuals who were more suspicious being less susceptible to phishing. Weisman (2008) underscored SK as a critical defence against scammers, enabling individuals to recognize and avoid scams. Drawing on insights from previous research, a hypothesis can be formulated:

H2: There is a significant relationship between skepticism and online scam awareness among Generation X in Malaysia.

2.4.3 Media Exposure and Online Scam Awareness

Tang et al. (2021) discovered a substantial influence of ME on OSA. When media broadcast messages related to scams, it serves as a signal to individuals that the potential threat. Those who come across such messages tend to perceive the threat posed by scams and recognize the severity of the consequences. Considering the preceding research findings, posit the following hypothesis:

H3: There is a significant relationship between media exposure and online scam awareness among Generation X in Malaysia

2.4.4 Security Concerns and Online Scam Awareness

Research conducted by Wright and Marett (2010) has demonstrated a significant influence of SC on scam awareness. Individuals tend to be cautious and decline requests from strangers or unknown sources in the interest of safety awareness. Moreover, Mohd Zaharon et al. (2021) proved a significant positive correlation between SC and scam awareness. In essence, as SC increase, so does the awareness of scams. Therefore, the following hypothesis is formulated in this research:

H4: There is a significant relationship between security concerns and online scam awareness among Generation X in Malaysia.

2.4.5 Social Support and Online Scam Awareness

Zhang and Ye (2022) found that there was a significant correlation between SS and scam awareness, indicating that individuals with higher levels of SS exhibit greater scam awareness. In addition, the findings from Sur et al. (2021) also suggested a positive association between SS and scam awareness, as social support enhances the likelihood of remembering and reporting scams. James et al. (2014) and Yu et al. (2021) reported associations between scam awareness and perceived social support. Based on the prior studies, this research puts forth the following hypothesis:

H5: There is a significant relationship between social support and online scam awareness among Generation X in Malaysia.

2.5 Summary

This chapter presents the conceptual framework and the theoretical underpinnings of the literature. Also, put forward hypotheses suggest that the five IV are significantly associated with online scam awareness.

CHAPTER 3: METHODOLOGY

3.0 Introduction

A description of the quantitative research, sampling design, data collection technique, construct measurement, research instrument, and proposed data analysis tools are given in Chapter 3.

3.1 Research Design

According to Zikmund et al. (2013), research design serves as a comprehensive blueprint outlining the method and techniques for gathering and analyzing the requisite data. Essentially, it offers a structured framework or strategy for conducting the research.

3.1.1 Quantitative Research

Quantitative research encompasses various approaches focused on the systematic examination of social phenomena through the utilization of statistical or numerical data. It assumes that the subject of investigation can be quantified and involves the collection of data through measurement, followed by an analysis of this data to identify trends and correlations while verifying the accuracy of measurements. One distinct aspect of quantitative research is its capacity to rigorously test hypotheses by formulating them and applying statistical methods (Watson, 2015). Thus, this study adopts a quantitative approach.

3.1.2 Descriptive Research

According to Sirisilla (2023), descriptive research design entails the observation and data collection concerning a specific subject, without attempting to establish causal relationships. Unlike experimental research, where variables are controlled and manipulated, descriptive research solely involves the identification, observation, and measurement of variables. Its primary objective is to offer a comprehensive and accurate portrayal of the studied population or phenomenon, while also elucidating any existing trends, patterns, and relationships within the data. Descriptive research is most suitable when the goal is to identify trends, characteristics, frequencies, and categories (McCombes, 2019). Therefore, this study has opted for a descriptive research design, as it aims to explore and make conclusions about the connection between DV and IV through data collection.

3.2 Sampling Design

3.2.1 Target Population

According to Barnsbee (2018), target population represents the cohort of individuals that the investigator aims to investigate and derive conclusions from. The objective of this study is to explore the factors affecting online scam awareness. Thus, Generation X in Malaysia is the target population for this study, typically defined as those born between 1965 and 1980 (Abelson, 2021). They know online scams but did not fall victim to them, which can provide accurate information regarding online scam awareness.

Furthermore, the target population will be drawn from all regions of Malaysia, encompassing 13 states along with its three federal territories (Ministry of

Foreign Affairs, n.d.). Hence, the Generation X demographic is targeted regardless of where they live in Malaysia.

3.2.2 Sampling Frame

The sampling frame is intimately linked to the population and represents the roster of elements from which the sample is derived. Ideally, it should be a comprehensive and accurate inventory of all members of the population (Schindler, 2022). In this research, Generation X individuals in Malaysia who have never fallen victim to online scams will be the sampling frame. However, the application of this sampling frame is impractical in this study as is the unavailability of a complete list of Generation X citizens in Malaysia. Consequently, due to limited resources and time constraints, collecting data on the target population poses significant challenges for the researcher.

3.2.3 Sampling Technique

Sampling is the procedure of making inferences about the whole population by selecting a subgroup of people from a larger group (Singh & Masuku, 2014). The two main categories of sampling techniques are probability sampling and non-probability sampling. Given the absence of an available database, this research will employ quota sampling, a non-probability sampling method. Respondents who were born between 1965 and 1980 will be divided into four age groups: 43 to 46, 47 to 50, 51 to 54, and 55 to 58. Each of these groups will make up 25% of the sample, ensuring that responses are collected from every age stage within the Gen X population born between 1965 and 1980, thus providing a more accurate representation of the entire Gen X population.

3.2.4 Sample Size

Research studies are conducted on samples because it is impractical to study an entire population. The findings derived from these samples are intended to be applied to the broader population and, at times, to future situations as well. It is crucial for the sample to accurately represent the population, and this is best achieved through appropriate sampling methods. Additionally, the sample size should be neither excessive nor inadequate. Determining the appropriate sample size is a critical step in the research process and should be done when the study is proposed. A sample that corresponds to the required size offers a more accurate depiction of the population, thereby producing more precise results(Andrade, 2020).

To estimate the sample size of respondents for this research, Raosoft, a sample size calculator website, was utilized. The estimation considered population size (1,000,000), confidence level (95%), and response distribution (50%). Using these parameters, the research determined that a minimum of 384 respondents from Generation X in Malaysia should be included in the study. Consequently, a questionnaire was administered to and collected from 392 respondents to serve as the research sample.

3.3 Data Collection Method

3.3.1 Primary Data

According to Wagh (2023), primary data refers to information generated directly by the researcher through methods such as surveys, interviews, and experiments, specifically tailored to comprehend and address the research problem under investigation. Primary data remains in its 'raw' form, having

not undergone any statistical manipulations, and it is original, thereby enhancing its reliability, authenticity, and objectivity.

In the context of this research, primary data was collected through an online survey to streamline the data collection process and allow for remote interviews with respondents, thereby minimizing the time and effort required by researchers. The survey questionnaire was disseminated to 392 individuals in Malaysia born between 1965 and 1980 using Google Forms.

3.3.2 Secondary Data

Secondary data refers to information obtained from a source that originally gathered it. This type of data has been previously collected by other researchers or investigators and is accessible in either published or unpublished formats. These data may not be in their original, 'pure' state, as statistical analyses may have been applied to them (Wagh, 2023). In essence, secondary data is data sourced from information that has already been disseminated in any form. The literature review in research often relies on secondary data, primarily from sources like books, journals, and periodicals (Labaree, 2023). In this study, secondary data was collected using Google Scholar as the search engine, supplemented by other official websites that publish academic journals such as Emerald, and Elsevier.

3.4 Research Instruments

3.4.1 Questionnaire Design

Survey nonresponse has emerged as a significant challenge for researchers in higher education (Porter, 2004). As highlighted by Kalton and Schuman (1982), various aspects of survey design, including question length, question order, and question structure, can influence the likelihood of obtaining responses. This ensures that respondents can easily comprehend and answer the questions, ultimately leading to higher response rates.

A questionnaire was developed for this study. Multiple-choice were provided for every question, facilitating a quick and straightforward selection of the most appropriate response. In terms of the questionnaire's format, it commenced with a cover page, which explicitly outlined the research objectives, topic, and assured respondents of privacy and confidentiality. It also included a statement acknowledging the respondent's participation in the research. After the cover page, there was a screening question designed to filter out individuals who did not belong to Generation X and the victims. This step aimed to enhance precision and reduce the likelihood of irrelevant responses and errors. In section B, demographic questions were included to establish the fundamental characteristics of the respondents.

Following section C, a set of general questions related to the research was presented. Subsequently, the main body of the questionnaire was introduced in Section D, consisting of 30 questions that elaborated on the variables to be examined in the survey. A 5-point Likert scale, with "Strongly Disagree" (1) to "Strongly Agree" (5), was used for all questions. Respondents used the 5-point Likert scale to indicate how much they agreed with each statement.

3.4.2 Conceptual Definition

Table 3.1 presented these conceptual definitions.

Table 3.1: Conceptual Definition

Construct	Definition
Risk Perception	The probability that an individual will engage in behaviors with potential risks when dealing with unfamiliar individuals, products, or services.
Skepticism	A person is less likely to believe deceptive narratives presented by scammers, and not likely to fall into victimization.
Media Exposure	The degree to which members of an audience have come across particular messages or content through various media channels.
Security Concern	The extent of an individual's belief in the safety and reliability of conditions or practices.
Social Support	The support a person has access to as a result of their social connections with others, including people, groups, and the larger community.

Source: Developed for the research

3.4.3 Origin of Constructs

Table 3.2 provides the sources of the constructs used in the questionnaire items, which were extracted from relevant journals and articles.

Table 3.2: Origin of Constructs

Variables	Item	Statement (Revised)	Sources
Online Scam Awareness	OSA1	I can potentially fall victim to scams when investing in cryptocurrencies on unreliable exchanges.	(Arpaci & Ateş, 2022),
	OSA2	I understand that any investment scheme promising abnormally high returns is not trustworthy.	(Ramadhan, 2022),
	OSA3	I am aware that investments guaranteeing consistent positive returns regardless of overall market conditions are not to be trusted.	(Padil, 2020) & (Zaharon, 2021)
	OSA4	I am conscious of phishing threats, which can come through SMS, phone calls, online websites, and emails.	
	OSA5	I can spot fraud when there is an unusual condition.	
Risk Perception	RP1	I perceive a high potential for loss if I provide information to online firms.	(Chen et al., 2021),
	RP2	I feel uncertain about giving information to online firms due to the risks involved.	(Hansen et al., 2018) & (Sundar & Kim, 2019)
	RP3	I worry that my personal financial information may be stolen while being transferred over the Internet.	
	RP4	I have concerns that my personal information may be shared with unknown parties without my knowledge when using online services.	
	RP5	I worry that my personal information in my profile might be misused by others when using online services.	

Skepticism	SK1	I suspect that online services are likely to engage in a harmful behavior toward me.	(Chen et al., 2021), (Hurtt, 2010) & (Sarno, 2023)
	SK2	I believe that online services might perform their services in a fraudulent manner.	
	SK3	I frequently question whether emails I receive are phishing attempts.	
	SK4	I frequently question what I see or hear.	
	SK5	I enjoy determining the authenticity of what I read or hear.	
Media Exposure	ME1	I regularly read newspapers or watch TV news to stay informed.	(Mansoor, 2021), (Dinev & Hart, 2014) & (Van de Vord, 2021)
	ME2	I feel that the social media offer sufficient news and information for me to comprehend and get necessary facts.	
	ME3	I received timely news and information from the social media.	
	ME4	I feel that my behavior will be influenced by what I see or hear in the media.	
	ME5	I watch news and other television programs that address current issues.	
Security Concern	SC1	I do not use the “Remember my password” option on my phone for security reasons.	(Mai & Tick, 2021), (Verkijika, 2019),
	SC2	I always verify the authorization or identity of someone before discussing any issues.	

	SC3	I'm not willing to respond to calls, SMS, or email messages from friendly/non-threatening strangers.	(Milne et al., 2004)
	SC4	I opt out of third-party information sharing whenever possible.	
	SC5	I refrain from opening links from SMSs or messaging apps.	
Social Support	SS1	I know that if I need money, my close friends and family would be willing to lend me a hand.	(Nazari, 2020), (De Jong-Gierveld & Kamphuls, 1985), (Procidano & Heller, 1983) & (Canty-Mitchell & Zimet, 2000).
	SS2	I receive the emotional help and support I need from my family.	
	SS3	I have someone I can talk to about my day-to-day problems whenever I need to.	
	SS4	I have plenty of people I can depend on if I find myself in trouble.	
	SS5	My family provides the moral support I need in various situations.	

Source: Developed for the research

3.5 Construct Measurement

Table 3.3 provides a better understanding of the measurement scales applied to each item in the survey.

Table 3.3: Measurement Scale

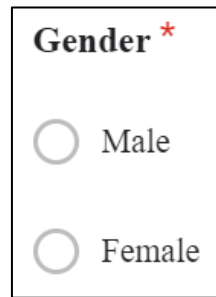
Section	Item	Measurement Scale
Section A – Screening	Victim of scam	Nominal
	Generation X	Nominal
Section B – Demographic Profile	Age	Ordinal
	Gender	Nominal
	Education Level	Ordinal
	Employment Status	Nominal
	Monthly Income Level	Ordinal
Section C – General Question	Media Preference	Nominal
	Aware of governmental initiative regarding scam awareness	Nominal
Section D – Dependent Variable and Independent Variables	Online Scam Awareness	Likert
	Risk Perception	Likert
	Skepticism	Likert
	Media Exposure	Likert
	Security Concern	Likert
	Social Support	Likert

Source: Developed for the research

3.5.1 Nominal Scale

The nominal scale categorizes variables without assigning them numerical values or a specific order (Potdar et al., 2017). This scale has been applied in sections A, B, and C of the questionnaire. In section A, it was used to determine whether respondents had been victims of scams and whether they belonged to Generation X, with responses as "yes" or "no." In section B, the nominal scale was employed for gender and employment status questions. Figure 3.1 provides an example of a nominal scale.

Figure 3.1: Example of Nominal Scale



Gender *

Male

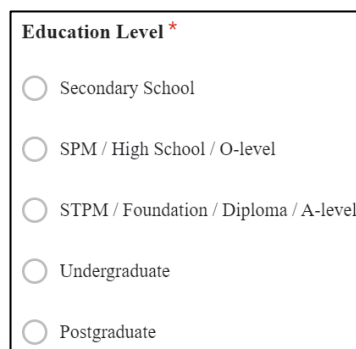
Female

Source: Developed for the research

3.5.2 Ordinal Scale

The ordinal scale, which denotes the order in measurement and indicates direction, has been utilized in section B of the questionnaire. This scale provides nominal information but does not allow for the quantification of distances between categories (Potdar et al., 2017). In the study, the ordinal scale was applied to questions concerning age, education level, and monthly income level. Figure 3.2 provides an example of an ordinal scale.

Figure 3.2: Example of Ordinal Scale



Education Level *

Secondary School

SPM / High School / O-level

STPM / Foundation / Diploma / A-level

Undergraduate

Postgraduate

Source: Developed for the research

3.5.3 Likert Scale

The Likert Scale is a measurement scale commonly employed to gauge the extent of disagreement or agreement with specific statements by respondents (Cornell, 2021). Section D of the survey used a 5-point Likert scale. A 5-point Likert scale example is displayed in Figure 3.3.

Figure 3.3: Example of 5-point Likert scale

Social Support						
No.	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	If I need money, my close friends and family would be willing to lend me a hand.	5	4	3	2	1
2.	I receive the emotional help and support I need from my family.	5	4	3	2	1
3.	I have someone I can talk to about my day-to-day problems whenever I need to.	5	4	3	2	1
4.	I have plenty of people I can depend on if I find myself in trouble.	5	4	3	2	1
5.	My family provides the moral support I need in various situations.	5	4	3	2	1

Source: Developed for the research

3.6 Pilot Test

It has a common practice in research to run a pilot test before distributing the final survey to the public or target respondents. The pilot test serves the purpose of evaluating the reliability of each variable and its attributes, identifying and rectifying any potential errors or issues that could impact data accuracy (In, 2017). Pilot studies play a crucial role in refining survey questions and mitigating the risk of significant flaws in the full study (Zikmund et al., 2013). Therefore, a pilot test has been incorporated into this research. After collecting 30 effective responses, a reliability test will be carried out to assess the trustworthiness of each item and make

any modifications before administering the questionnaire to the wider audience. Table 3.4 provides Cronbach's alpha values for each variable.

Table 3.4: Result of Pilot Test

Variables	Cronbach's Alpha
Online Scam Awareness (OSA)	0.826
Risk Perception (RP)	0.784
Skepticism (SK)	0.730
Media Exposure (ME)	0.845
Security Concern (SC)	0.910
Social Support (SS)	0.806

Source: Developed for the research

According to Pallant (2020), a Cronbach's Alpha value exceeding 0.7 is deemed to indicate high reliability and being a valid index. All of the variables in this study (OSA, RP, SK, ME, SC, and SS) have Cronbach's alpha values that surpass the recommended threshold of 0.7. This suggests that all scales fall within the range of high reliability and credibility.

3.7 Data Analysis Tool

3.7.1 IBM Statistical Package for the Social Sciences Version 27 (SPSS)

In this research, SPSS was used to analyse the data. Once the data from the survey questionnaire had been collected, this software was utilized for the analysis process.

3.7.2 Descriptive Analysis

Descriptive analysis is a method of examining data that involves the summarization, organization, and presentation of data in a clear and concise manner. The main goal of descriptive statistics is to provide a clear and concise summary of the data, enabling investigators can identify trends, patterns, and distributions in the dataset. In this research, descriptive analysis was utilized to streamline the data collected from 392 participants (e.g., gender) and transform it into visual representations such as charts and tables for ease of comprehension.

3.7.3 Scale Measurement

3.7.3.1 Internal Reliability Test

Reliability pertains to the extent to which a research method consistently produces dependable and stable results (Schindler, 2022). In social science research, Cronbach's alpha is a valuable tool for gauging the internal consistency of items within a scale or test. It quantifies reliability within a range of 0.00 to 1.00 (Wadkar et al., 2016). If all items in the scale are entirely unrelated to each other and exhibit no correlation or covariance, the alpha value equals 0. Conversely, if all items display strong covariances, the alpha value approaches 1. Table 3.5 presents the rules of thumb for interpreting alpha values.

Table 3.5: Cronbach’s Alpha Rules of Thumb

Cronbach’s Alpha	Internal Consistency
$\alpha \geq 0.95$	Too High
$0.95 > \alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Very Good
$0.8 > \alpha \geq 0.7$	Good
$0.7 > \alpha \geq 0.6$	Moderate
$\alpha < 0.6$	Poor

Source: Hair Jr (2015)

3.7.4 Inferential Analysis

The process of making inferences about a population from data gathered from a sample of that population is known as inferential analysis (Kalish & Thevenow-Harrison, 2014). Inferential statistics often entails activities such as estimation, which involves making educated guesses about the characteristics of a population using information from a sample, and hypothesis testing, which involves seeking evidence in favor of or against a particular explanation or theory (Kuhar, 2010).

3.7.4.1 Pearson Correlation Coefficient Analysis

According to Senthilnathan (2019), correlation analysis is a frequently used method in many studies to examine the level of association between variables under investigation. Particularly in social science research, it proves valuable in exploring the interrelationships between IV and DV. The linear correlation coefficient (represented as "R") serves as a measure that quantifies the extent to which two variables exhibit a closely linked association.

The degree of correlation between variables can be categorized as positive, zero, or negative, contingent upon the direction of their relationship. When one variable's trend is positive and closely resembles that of another variable, there is the possibility of a positive association between them. Essentially, the correlation coefficient "R" falls within a range of -1 to +1. The interpretation of the correlation coefficient depends on its numerical value, as illustrated in Table 3.6.

Table 3.6: Interpretation of Pearson Correlation Coefficient

Correlation Coefficient	Interpretation
0.00 – 0.10	Negligible Correlation
0.10 – 0.39	Weak Correlation
0.40 – 0.69	Moderate Correlation
0.70 – 0.89	Strong Correlation
0.90 – 1.00	Very Strong Correlation

Source: Schober et al. (2018)

In this research, the Pearson correlation coefficient will be employed to investigate the relationship between the IV and the DV.

3.7.4.2 Multiple Linear Regression Analysis

Zikmund et al. (2013) stated that multiple linear regression represents an expansion of simple regression analysis, permitting the prediction of a metric DV through the incorporation of multiple IV. The primary objective of this analytical approach is to explore the connection between a dependent variable and various independent variables. In the context of this research, it is employed to examine how OSA changes as a result of the influence exerted by RP, SK, ME, SC and SS.

3.8 Summary

In sum, this study is quantitative research. The sampling design, data collection techniques, research instrument, construct measurements, data analysis tools are all covered in detail in this chapter.

Chapter 4: Data Analysis

4.0 Introduction

Chapter 4 provides a detailed explanation of the research outcomes and discoveries, commencing with an examination of the demographic profile of the participants. Additionally, the second section includes a thorough analysis, employing a reliability test and inferential methods to evaluate the research variables.

4.1 Respond Rates and Screening

A Google form was generated to gather data on Generation X in Malaysia who have never fallen victim to online scams. The questionnaire was disseminated through diverse channels, including physical interactions, WhatsApp, Xiao Hong Shu, and Telegram. A total of 393 questionnaires were distributed, and after excluding one response where the respondent did not meet the specified birth range of 1965 to 1980, 392 responses were considered suitable for further analysis. Consequently, the response rate was calculated at 99.7%.

4.2 Descriptive Analysis

4.2.1 Demographic Profile of the Respondents

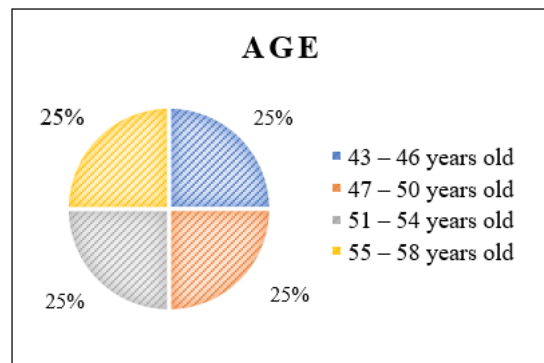
4.2.1.1 Age

Table 4.1: Age

Age	Frequency	Percent (%)
43 – 46 years old	98	25
47 – 50 years old	98	25
51 – 54 years old	98	25
55 – 58 years old	98	25
Total	392	100

Source: Developed for the research

Figure 4.1: Age



Source: Developed for the research

Table 4.1 and Figure 4.1 illustrate the distribution of respondents' ages in the research. The participants are categorized into distinct age groups, namely 43 – 46 years old, 47 – 50 years old, 51 – 54 years old, and 55 – 58 years old. Since utilizing the quota sampling technique, each age group contributes an equal percentage of 25% to the overall sample size. This approach is implemented to guarantee a balanced representation of responses from every age stage within the Generation X population, thereby enhancing the accuracy of the study's portrayal of the entire Generation X demographic.

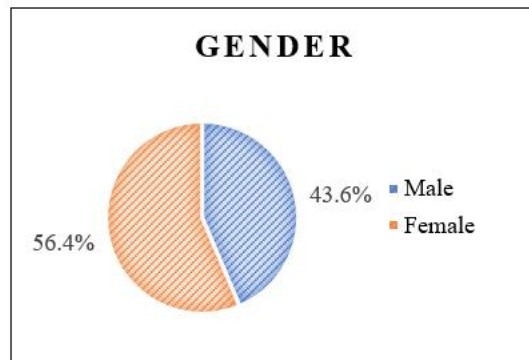
4.2.1.2 Gender

Table 4.2: Gender

Gender	Frequency	Percent (%)
Male	171	43.6
Female	221	56.4
Total	392	100

Source: Developed for the research

Figure 4.2: Gender



Source: Developed for the research

Table 4.2 and Figure 4.2 depict the frequency and percentages corresponding to the gender distribution of the respondents. The data indicates that out of the 392 participants, 171 were men and 221 were women. In terms of percentages, this translates to 43.6% for men and 56.4% for women. Consequently, the findings imply that female made up the majority of study participants.

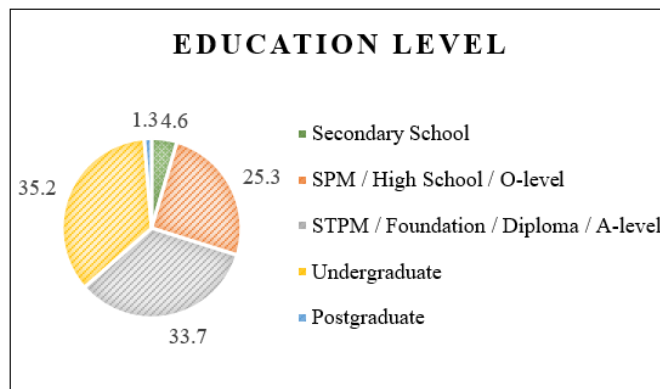
4.2.1.3 Education Level

Table 4.3: Education Level

Education Level	Frequency	Percent (%)
Secondary School	18	4.6
SPM / High School / O-level	99	25.3
STPM / Foundation / Diploma / A-level	132	33.7
Undergraduate	138	35.2
Postgraduate	5	1.3
Total	392	100

Source: Developed for the research

Figure 4.3: Education Level



Source: Developed for the research

Table 4.3 and Figure 4.3 display the diverse educational qualification levels of the participants. 35.2% of the respondents (138 individuals) reported holding a bachelor’s degree and 33.7% (132 respondents) had qualifications such as STPM, Foundation, Diploma, or A-levels. Meanwhile, 25.3% (99 respondents) for SPM, High School, or O-level, 4.6% (18 respondents) for secondary school, and 1.3% (5 respondents) for postgraduate qualifications.

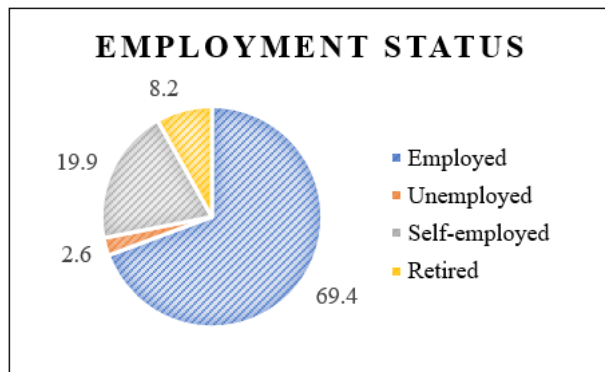
4.2.1.4 Employment Status

Table 4.4: Employment Status

Employment Status	Frequency	Percent (%)
Employed	272	69.4
Unemployed	10	2.6
Self-employed	78	19.9
Retired	32	8.2
Total	392	100

Source: Developed for the research

Figure 4.4: Employment Status



Source: Developed for the research

Table 4.4 and Figure 4.4 provide an overview of the employment status of the participants. The majority, comprising 69.4% of the participants, identified themselves as employed. Additionally, 19.9% reported being self-employed, while 8.2% stated they were retired. Unemployed individuals constituted 2.6% of the participants.

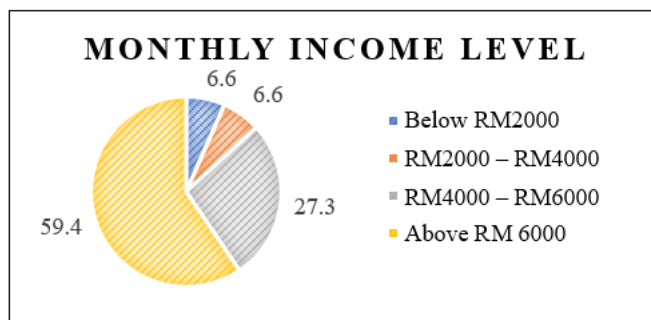
4.2.1.5 Monthly Income Level

Table 4.5: Monthly Income Level

Monthly Income Level	Frequency	Percent (%)
Below RM2000	26	6.6
RM2000 – RM4000	26	6.6
RM4000 – RM6000	107	27.3
Above RM 6000	233	59.4
Total	392	100

Source: Developed for the research

Figure 4.5: Monthly Income Level



Source: Developed for the research

Table 4.5 and Figure 4.5 present the distribution of individual monthly income levels among the respondents. The largest proportion, accounting for 59.4% of the participants, reported an income level above RM 6,000. Additionally, 27.3% of respondents stated their income was between RM 4,000 to RM 6,000, while 6.6% indicated an income among RM 2,000 and RM 4,000. Another 6.6% of respondents mentioned that their monthly income was below RM 2,000.

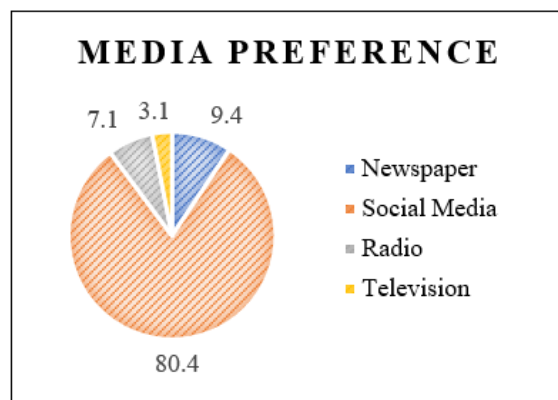
4.2.1.6 Media Preference

Table 4.6: Media Preference

Media Preference	Frequency	Percent (%)
Newspaper	37	9.4
Social Media	315	80.4
Radio	28	7.1
Television	12	3.1
Total	392	100

Source: Developed for the research

Figure 4.6: Media Preference



Source: Developed for the research

Table 4.6 and Figure 4.6 depict the media preferences of the respondents. The majority, comprising 80.4% of the participants, indicated social media as their preferred platform for accessing news. Following this, other media preferences included newspapers at 9.4%, radio at 7.1%, and television at 3.1%.

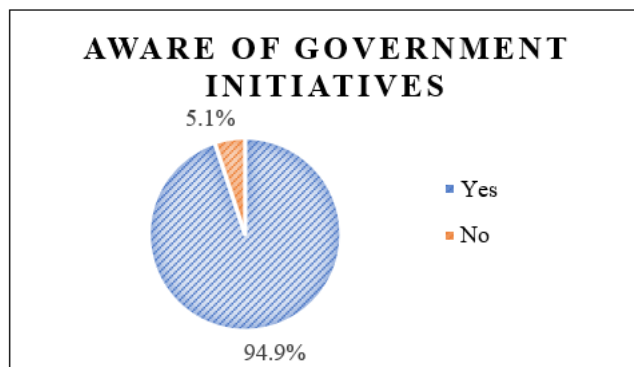
4.2.1.7 Aware of Government Initiatives

Table 4.7: Aware of Government Initiatives

Aware of Government Initiatives	Frequency	Percent (%)
Yes	372	94.9
No	20	5.1
Total	392	100

Source: Developed for the research

Figure 4.7: Aware of Government Initiatives



Source: Developed for the research

Table 4.7 and Figure 4.7 outline the effectiveness of government initiatives or educational programs regarding online scam awareness. The data indicates that a significant majority, with 94.9% represented by 372 respondents, were aware of government initiatives related to online scam awareness. Conversely, 5.1% of respondents (20 individuals) reported not being aware of these government initiatives.

4.3 Descriptive Statistics for Variables

Table 4.8: Mean and Standard Deviation for Each Variables

Variable	Mean	Standard Deviation
Online Scam Awareness	4.2327	.58903
Risk Perception	4.2541	.50037
Skepticism	4.0597	.53883
Media Exposure	4.3714	.51890
Security Concern	4.2372	.59318
Social Support	4.3526	.49519

Source: Developed for the research

Table 4.8 provides the mean and standard deviation values for both DV and IV. Each variable exhibits mean values falling between 4 and 5. ME has the highest average at 4.3714, followed by SS (4.3526), RP (4.2541), SC (4.2372), OSA (4.2327), and SK (4.0597). This implies that most respondents think each variable to be in the range of "agree" to "strongly agree." Notably, SC exhibits the highest standard deviation, indicating that data points are dispersed across a broader spectrum of values.

4.3.1 Mean and Standard Deviation of Online Scam Awareness

Table 4.9 presents the mean and standard deviation for each scale item related to OSA. According to the results, OSA5 has the lowest mean of 4.09 and OSA3 has the highest mean of 4.46. With a standard deviation of 0.952, OSA1 has the highest value among all the items, indicating greater variability. Conversely, OSA2 has the lowest standard deviation at 0.699, suggesting a more consistent response pattern for this item.

Table 4.9: Mean and Standard Deviation of Online Scam Awareness

Items	Statement	Mean	Standard Deviation
OSA1	I can potentially fall victim to scams when investing in cryptocurrencies on unreliable exchanges.	4.10	0.952
OSA2	I understand that any investment scheme promising abnormally high returns is not trustworthy.	4.27	0.699
OSA3	I am aware that investments guaranteeing consistent positive returns regardless of overall market conditions are not to be trusted.	4.46	0.721
OSA4	I am conscious of phishing threats, which can come through SMS, phone calls, online websites, and emails.	4.24	0.733
OSA5	I can spot fraud when there is an unusual condition.	4.09	0.880

Source: Developed for the research

4.3.2 Mean and Standard Deviation of Risk Perception

Table 4.10 outlines the mean and standard deviation for each scale item related to RP. Based on the data, RP1 has the lowest mean (4.04), while RP3 has the highest mean (4.41). With a standard deviation of 0.749, RP4 has the highest value in terms of variability among responses to this item. Conversely, RP3 has the lowest standard deviation at 0.551, suggesting a more consistent response pattern for this item.

Table 4.10: Mean and Standard Deviation of Risk Perception

Items	Statement	Mean	Standard Deviation
RP1	I perceive a high potential for loss if I provide information to online firms.	4.04	0.664
RP2	I feel uncertain about giving information to online firms due to the risks involved.	4.25	0.681
RP3	I worry that my personal financial information may be stolen while being transferred over the Internet.	4.41	0.551
RP4	I have concerns that my personal information may be shared with unknown parties without my knowledge when using online services.	4.22	0.749
RP5	I worry that my personal information in my profile might be misused by others when using online services.	4.35	0.670

Source: Developed for the research

4.3.3 Mean and Standard Deviation of Skepticism

Table 4.11 illustrate the mean and standard deviation for each scale item related to SK. The findings indicate that SK4 has both the highest standard deviation (0.904) and mean (4.19). In contrast, with a mean of 3.86, SK1 has the lowest value. Regarding standard deviation, SK2 has the lowest value at 0.611, indicating a more consistent response pattern for this item.

Table 4.11: Mean and Standard Deviation of Skepticism

Items	Statement	Mean	Standard Deviation
SK1	I suspect that online services are likely to engage in a harmful behavior toward me.	3.86	0.850
SK2	I believe that online services might perform their services in a fraudulent manner.	4.01	0.611
SK3	I frequently question whether emails I receive are phishing attempts.	4.14	0.759
SK4	I frequently question what I see or hear.	4.19	0.904
SK5	I enjoy determining the authenticity of what I read or hear.	4.10	0.777

Source: Developed for the research

4.3.4 Mean and Standard Deviation of Media Exposure

Table 4.12 outlines the mean and standard deviation for each scale item related to ME. Given the data, ME2 has the lowest mean (4.28) and ME3 has the highest mean (4.46). With a standard deviation of 0.809, ME1 has the highest value. Conversely, ME3 has the lowest standard deviation at 0.592.

Table 4.12: Mean and Standard Deviation of Media Exposure

Items	Statement	Mean	Standard Deviation
ME1	I regularly read newspapers or watch TVnews to stay informed.	4.29	0.809
ME2	I feel that the social media offer sufficient news and information for me to comprehend and get necessary facts.	4.28	0.706
ME3	I received timely news and information from the social media.	4.46	0.592
ME4	I feel that my behavior will be influenced by what I see or hear in the media	4.41	0.734
ME5	I watch news and other television programs thataddress current issues.	4.42	0.659

Source: Developed for the research

4.3.5 Mean and Standard Deviation of Security Concern

Table 4.13 provides the mean and standard deviation for each scale item related to SC. The findings indicate that SC1 has the lowest mean of 4.08 and SC3 has the highest mean of 4.34. With a standard deviation of 1.084, SC1 has the highest value and SC2 has the lowest, at 0.709.

Table 4.13: Mean and Standard Deviation of Security Concern

Items	Statement	Mean	Standard Deviation
SC1	I do not use the “Remember my password” option on my phone for security reasons.	4.08	1.084
SC2	I always verify the authorization or identity of someone before discussing any issues.	4.36	0.709
SC3	I’m not willing to respond to calls, SMS, or email messages from friendly/non-threatening strangers.	4.34	0.844
SC4	I opt out of third-party information sharing whenever possible.	4.22	0.777
SC5	I refrain from opening links from SMSs or messaging apps.	4.18	0.732

Source: Developed for the research

4.3.6 Mean and Standard Deviation of Social Support

Table 4.14 displays the mean and standard deviation for each scale item related to SS. The results indicate that SS2 has the lowest mean (4.28), whereas SS3 and SS5 have the highest mean (4.43). SS1 has the greatest standard deviation, measuring 0.777, while SS3 has the lowest, measuring 0.598.

Table 4.14: Mean and Standard Deviation of Social Support

Items	Statement	Mean	Standard Deviation
SS1	I know that if I need money, my close friends and family could be willing to lend me a hand.	4.30	0.777
SS2	I receive the emotional help and support I need from my family.	4.28	0.677
SS3	I have someone I can talk to about my day-to-day problems whenever I need to.	4.43	0.598
SS4	I have plenty of people I can depend on if I find myself in trouble.	4.32	0.721
SS5	My family provides the moral support I need in various situations.	4.43	0.652

Source: Developed for the research

4.4 Reliability Analysis

Table 4.15 provides a summary of the reliability test results for the IV and DV. The risk perception Cronbach's alpha ranged from 0.80 to 0.89, indicating a very good level of reliability. Similarly, the Cronbach's alpha for variables of OSA, SK, ME, SC, and SS ranged from 0.70 to 0.79, suggesting good reliability. Overall, every variable demonstrated reliability, affirming the trustworthiness of the measurements.

Table 4.15: Result of Reliability Test

Variable	Items	Cronbach's Alpha	Internal Consistency
Online Scam Awareness	5	0.785	Good Reliability
Risk Perception	5	0.807	Very Good Reliability
Skepticism	5	0.717	Good Reliability
Media Exposure	5	0.790	Good Reliability
Security Concern	5	0.749	Good Reliability
Social Support	5	0.768	Good Reliability

Source: Developed for the research

4.5 Inferential Analysis

4.5.1 Pearson Correlation Coefficient Analysis

Table 4.16 displays the findings of the Pearson's correlation coefficient analysis. According to the findings, all independent variables exhibit positive correlation coefficients. This implies that each independent variable is positively associated with the dependent variable, indicating a positive relationship between them.

Table 4.16: Outcome of Pearson Correlation Coefficient Analysis

Online Scam Awareness		
Risk Perception (RP)	Pearson Correlation	.332**
	Sig. (2-tailed)	<.001
	N	392
Skepticism (SK)	Pearson Correlation	.340**
	Sig. (2-tailed)	<.001
	N	392
Media Exposure (ME)	Pearson Correlation	.388**
	Sig. (2-tailed)	<.001
	N	392
Security Concern (SC)	Pearson Correlation	.224**
	Sig. (2-tailed)	<.001
	N	392
Social Support (SS)	Pearson Correlation	.070
	Sig. (2-tailed)	.167
	N	392

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

Source: Developed for the research.

The analysis reveals a weak positive correlation, ranging from 0.10 to 0.39, between RP, SK, ME, SC, and OSA. Additionally, there is a negligible correlation between SS and OSA. Importantly, all correlations, except for SS, are statistically significant at the 0.01 level.

4.5.2 Multiple Linear Regression Analysis

Table 4.17: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.501 ^a	.251	.241	.51324

Source: Developed for the research

Table 4.17 provides a summary of the model. According to Ozili (2023), R-square indicates the extent to which the DV is affected by the regression of IV. For social science research, where an R-square between 0.1 and 0.5 is considered acceptable. The adjusted R-square value for this study is 0.241, which falls within the acceptable range. This result suggests that RP, SK, ME, SC, and SS collectively influence 24% of the variation in OSA. The remaining 76% of the variation is influenced by other variables not included in this research.

Table 4.18: ANOVA Table

	Sum of Squares	df	Mean Square	F	Sig.
Regression	33.986	5	6.797	25.804	<.001 ^b
Residual	101.676	386	.263		
Total	135.662	391			

Source: Developed for the research

The variance analysis results are displayed in Table 4.18, where the p-value is less than the traditional significance level of 0.05 at 0.001. This implies that the model is both well-fitting and statistically significant. The significant ability of the IV to predict the DV is indicated by the low p-value.

Table 4.19: Coefficient Table

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	β	Std. Error	Beta		
(Constant)	.726	.368		1.973	.049
RP	.116	.062	.099	1.872	.062
SK	.262	.054	.240	4.811	<.001
ME	.340	.054	.299	6.239	<.001
SC	.083	.046	.084	1.808	.071
SS	.026	.053	.021	.484	.629

Source: Developed for the research

The p-values for the IV and DV are shown in Table 4.19. When a p-value is less than 0.05, the hypothesis is considered significant. The hypotheses are supported by the table, which shows that ME ($p < 0.001$) and SK ($p < 0.001$) both have p-values below 0.05. On the other hand, the p-values for RP ($p = 0.062$), SC ($p = 0.071$), and SS ($p = 0.629$) are greater than 0.05, leading to the rejection of the hypotheses related to these variables.

Furthermore, the beta coefficients are provided. Notably, ME has the most substantial impact on OSA, with a beta value of 0.340. This implies that the OSA increases by 0.340 units for every unit increase in ME. SK follows with a beta value of 0.262, while RP ($\beta = 0.116$), SC ($\beta = 0.083$), and SS ($\beta = 0.026$) have comparatively smaller impacts on OSA, with SS having the least influence.

4.6 Summary

In this chapter, a sample of 392 respondents, those who do not meet the specified qualifications excluded, are subjected to statistical and inferential analysis.

Chapter 5: Discussion, Conclusion and Implication

5.0 Introduction

The analysis results, study implications, limitations, and recommendations are all included in this chapter.

5.1 Discussion of Major Findings

Table 5.1: Summary of Result for Hypotheses Testing

	Hypothesis Statement	Result	Supported / Not Supported
H1	There is a significant relationship between risk perception and online scam awareness among Generation X in Malaysia	p:0.062 β:0.116 Insignificant	Not Supported
H2	There is a significant relationship between skepticism and online scam awareness among Generation X in Malaysia.	p:0.001 β:0.262 Significant	Supported
H3	There is a significant relationship between media exposure and online scam awareness among Generation X in Malaysia.	p:0.001 β:0.340 Significant	Supported
H4	There is a significant relationship between security concerns and online scam awareness among Generation X in Malaysia.	p:0.071 β:0.083 Insignificant	Not Supported
H5	There is a significant relationship between social support and online scam awareness among Generation X in Malaysia.	p:0.629 β:0.026 Insignificant	Not Supported

Source: Developed for the research

5.1.1 Relationship between Risk Perception and Online Scam Awareness

In accordance with hypothesis 1, RP was assumed to have a significant correlation with OSA among Generation X. However, the result of inferential analysis suggests otherwise. The p-value of 0.062 shows that there is a positive but not statistically significant correlation between RP and OSA. The H1 was consequently not supported.

This finding is in line with earlier studies by Drew and Farrell (2018) and Halevi et al. (2013), which found that people who were more likely to become victims of online scams did not acquire higher levels of knowledge about prevention, even though they were aware of their increased risk. Consequently, OSA was not significantly influenced by RP.

5.1.2 Relationship between Skepticism and Online Scam Awareness

With a p-value of 0.001 and a beta value of 0.262, the inferential analysis supports the statistically significant and positive relationship between SK and OSA. This finding aligns with hypothesis 2, suggesting that Generation X tends to approach information with skepticism, making them less susceptible to falling victim to scams. This outcome is consistent with previous study, including studies by Wright and Marett (2010) and Vishwanath et al. (2016), which similarly identified a positive and significant relationship between SK and OSA.

5.1.3 Relationship between Media Exposure and Online Scam Awareness

Hypothesis 3 describes the significant relationship between ME and OSA among Malaysian Generation X and the analysis results support this hypothesis. ME demonstrates a positive and significant impact on OSA, with a p-value of 0.001, which is below the 0.05. This outcome aligns with prior study conducted by Tang et al. (2021), which similarly identified a significant association between ME and OSA.

In this study, ME emerges as the most influential factor among the IV for scam detection. When news agencies extensively cover stories about online scams, particularly those affecting a considerable number of individuals or involving significant financial losses, they contribute to heightened awareness among the Generation X demographic. These news reports act as informative resources, unveiling the tactics used by scammers, highlighting warning signs, and providing insights into preventive measures.

5.1.4 Relationship between Security Concern and Online Scam Awareness

Hypothesis 4 postulated a significant correlation between OSA and SC. However, the findings of inferential analysis points to a different conclusion. Despite the existence of a positive relationship between SC and OSA, the p-value of 0.071 indicates that this relationship lacks statistical significance. Therefore, the analysis disproves H4, suggesting that SC has no significant effect on the OSA.

This outcome aligns with prior research conducted by Orunsolu et al. (2016), which similarly find that SC is not effective in helping individuals recognize online scams and phishing attacks. As a result, the H4 is not supported, and its unstandardized beta value of 0.083 suggests that it has minimal influence on OSA when compared to the other IV.

5.1.5 Relationship between Social Support and Online Scam Awareness

Although Hypothesis 5 proposed a significant correlation between SS and OSA among Generation X, the results of the inferential analysis suggest the contrary. Despite SS and OSA being positively correlated, the p-value of 0.629 suggests that this association is lack significant. Therefore, the analysis contradicts H5, showing that SS has no discernible impact on OSA.

This finding is in line with earlier studies, including those by James et al. (2014) and Villa (2023), which found that although SS exhibited a trend, the relationship did not reach the required level of statistical significance. Consequently, the unstandardized beta value of 0.026 suggests that it has minimal effect among the IV on OSA.

5.2 Implications of the Study

5.2.1 Practical Implications

The findings of this study present several practical implications for policymakers aiming to enhance OSA and protection for Generation X. Firstly, the development of customized educational programs tailored to the specific

needs and characteristics of Generation X can be beneficial. By concentrating on developing skepticism and critical thinking abilities, can enable this group of people to recognize and react to online scams more effectively.

Additionally, policymakers should consider collaborating with media outlets. By partnering with print media, broadcast networks, and digital platforms, policymaker can initiate public awareness initiatives that capitalise on these powerful channels. Disseminating information about prevalent online scams, along with preventive measures and warning signs, can contribute significantly to improving the awareness of Generation X.

Lastly, given that scam threats are worldwide, policymakers ought to look into ways to collaborate internationally. An efficient and well-coordinated response to online scams can result from cross-border sharing of best practices, data, and resources.

5.2.2 Theoretical Implications

The theoretical implications of this study prompt a re-evaluation of certain assumptions and call for further exploration in the field of online scam awareness. The challenge to the assumed significant role of RP in online scam awareness suggests a need for academics to revisit and refine the conceptualization of risk perception in the context of scam awareness. To develop a more accurate model, it is essential to understand its nuances and limitations.

The significant positive relationship between skepticism and online scam awareness aligns with theoretical propositions that emphasize the role of individual traits in shaping cybersecurity behavior. Drawing from

psychological theories, this result underscores the importance of integrating personality traits, such as skepticism, into scam awareness models. Future research could explore the intersection of personality psychology and cybersecurity, providing a more comprehensive understanding of how individual characteristics influence online scam awareness.

Theoretical frameworks often posit media exposure as a contributing factor to knowledge acquisition and behavior change (Wakefield et al., 2020). In the scam awareness context, the study confirms and strengthens this theoretical assertion. Future research may explore the specific mechanisms through which media exposure influences awareness, considering cognitive processes and information retention.

The inconclusive relationship between security concern and online scam awareness prompts a re-evaluation of how theoretical frameworks conceptualize the link between security-related attitudes and actual awareness. The cognitive processes involved in converting security concerns into concrete actions and awareness may be clarified by incorporating insights from information processing theories. This underscores the need for a more nuanced understanding of the psychological mechanisms underpinning security behaviors.

The negligible impact of social support on online scam awareness has challenged the role of interpersonal relationships in shaping scam awareness. Scholars may explore the role of social networks in different cybersecurity contexts and whether the influence of social support varies across demographic groups. This opens avenues for refining social cognitive theories within the scam awareness domain.

5.3 Limitations of the Study

5.3.1 Confinement to Specific Demographic

A noteworthy limitation of this study is the exclusive focus on Generation X in Malaysia. While the findings provide valuable insights into the influential factors of online scam awareness within this demographic, caution should be exercised when generalizing these results to other generations. Each generation may exhibit unique characteristics, experiences, and technological competencies that can significantly impact their susceptibility to online scams.

5.3.2 Self-Reported Measures

The reliance on self-reported measures, such as responses to questionnaires, introduces a potential limitation to the study. Participants may provide responses influenced by social desirability bias, leading to overestimation or underestimation of certain factors. Additionally, the accuracy of responses relies on participants' introspective abilities and memory recall. To strengthen the reliability and validity of the results, incorporating supplementary methods, such as observational or behavioural data.

5.3.3 Limited Scope of Independent Variables

This study focused on specific independent variables, including risk perception, skepticism, media exposure, security concern, and social support. While these variables offer valuable insights, there may be other influential factors not considered in this research.

5.3.4 Cross-Sectional Nature of the Study

The cross-sectional design employed in this research captures a snapshot of online scam awareness and its influential factors at a specific point in time. This design limits the ability to establish causal relationships and explore the dynamics of change over time. Longitudinal studies tracking participants' awareness levels and experiences over an extended period could offer a more nuanced understanding of the evolving nature of online scam awareness among Generation X.

5.3.5 Cultural Context

This study was conducted in the specific cultural context of Malaysia, and cultural factors can play a significant role in shaping individuals' perceptions and behaviors (Kastanakis & Voyer, 2014). The findings may not be universally applicable to Generation X in other cultural settings. To enhance the external validity of the study, future research could consider conducting similar investigations in diverse cultural contexts to identify potential variations in the influential factors of online scam awareness.

5.4 Recommendations for Future Research

5.4.1 In-Depth Qualitative Investigations

Supplementing quantitative approaches with qualitative methodologies, such as in-depth interviews and focus group discussions, could enrich the understanding of the nuances surrounding online scam awareness. Qualitative

insights would provide a deeper exploration of individuals' experiences, perceptions, and the contextual factors shaping their awareness and responses.

5.4.2 Exploring Generational Variances

Future research could examine the variances in online scam awareness across different generations. A thorough grasp of how each generation views and reacts to online scams would be possible through comparative studies involving Millennials, Generation Z, and other age cohorts. Such investigations could uncover generational-specific vulnerabilities and inform targeted awareness initiatives.

5.4.3 Cross-Disciplinary Research

To have a holistic understanding of the multifaceted factors influencing online scam awareness, it was encouraging cross-disciplinary research that combine insights from fields such as psychology, sociology, and cybersecurity. Collaborations across disciplines may uncover novel perspectives and innovative approaches to address the complex nature of online scams.

5.4.4 Exploration of Additional Variables

Future research should look into examining additional variables that may contribute to a more thorough understanding of awareness of online scams among Gen X, given the explanatory power of the current model ($R = 0.24$).

Investigating factors not included in the present study, such as individual cognitive traits, technological literacy, or specific online behaviors, could enhance the predictive accuracy of the model.

5.5 Conclusion

This chapter covered the implications from a theoretical and practical standpoint. It then goes over the limitations and provides suggestions for further investigation.

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Appendices

Appendix 3.1: Result of Determine Sample Size

Sample size calculator

What margin of error can you accept?
5% is a common choice

What confidence level do you need?
Typical choices are 90%, 95%, or 99%

What is the population size?
If you don't know, use 20000

What is the response distribution?
Leave this as 50%

Your recommended sample size is **384**

The margin of error is the amount of error that you can tolerate. If 90% of respondents answer yes, while 10% answer no, you may be able to tolerate a larger amount of error than if the respondents are split 50-50 or 45-55. Lower margin of error requires a larger sample size.

The confidence level is the amount of uncertainty you can tolerate. Suppose that you have 20 yes-no questions in your survey. With a confidence level of 95%, you would expect that for one of the questions (1 in 20), the percentage of people who answer yes would be more than the margin of error away from the true answer. The true answer is the percentage you would get if you exhaustively interviewed everyone. Higher confidence level requires a larger sample size.

How many people are there to choose your random sample from? The sample size doesn't change much for populations larger than 20,000.

For each question, what do you expect the results will be? If the sample is skewed highly one way or the other, the population probably is, too. If you don't know, use 50%, which gives the largest sample size. See below under **More information** if this is confusing.

This is the minimum recommended size of your survey. If you create a sample of this many people and get responses from everyone, you're more likely to get a correct answer than you would from a large sample where only a small percentage of the sample responds to your survey.

Appendix 3.2: Result of Pilot Test

Online Scam Awareness

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.826	.831	5

Item Statistics

	Mean	Std. Deviation	N
OSA1	4.33	.802	30
OSA2	4.53	.629	30
OSA3	4.73	.583	30
OSA4	4.30	.750	30
OSA5	4.37	.765	30

Risk Perception

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.784	.786	5

Item Statistics

	Mean	Std. Deviation	N
RP1	3.97	.669	30
RP2	4.37	.556	30
RP3	4.40	.563	30
RP4	4.47	.571	30
RP5	4.50	.572	30

Skepticism

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.730	.727	5

Item Statistics

	Mean	Std. Deviation	N
SK1	4.10	.662	30
SK2	4.00	.695	30
SK3	4.07	.740	30
SK4	4.37	.669	30
SK5	4.20	.761	30

Media Exposure

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.845	.849	5

Item Statistics

	Mean	Std. Deviation	N
ME1	4.73	.521	30
ME2	4.47	.629	30
ME3	4.57	.568	30
ME4	4.57	.626	30
ME5	4.73	.521	30

Security Concern

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.910	.907	5

Item Statistics

	Mean	Std. Deviation	N
SC1	4.63	.718	30
SC2	4.37	.850	30
SC3	4.53	.776	30
SC4	4.57	.679	30
SC5	4.37	.890	30

Social Support

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.806	.804	5

Item Statistics

	Mean	Std. Deviation	N
SS1	4.37	.669	30
SS2	4.43	.679	30
SS3	4.20	.714	30
SS4	4.10	.759	30
SS5	4.37	.669	30

Appendix 3.3: Survey Questionnaire



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UNIVERSITI TUNKU ABDUL RAHMAN
FACULTY OF ACCOUNTANCY AND MANAGEMENT
BACHELOR OF INTERNATIONAL BUSINESS (HONOURS)

Research Title:

Influential Factors of Online Scam Awareness among Generation X

Dear respondents,

I am Quek Hui Ling, an undergraduate student of Bachelor of International Business (Hons) from Universiti Tunku Abdul Rahman (UTAR). I am currently conducting research to find out the influential factors of online scam awareness among Gen X.

Participation in this questionnaire is **completely voluntary**. Your response will be kept **anonymous** and **confidential**. You can withdraw from the questionnaire at any point without any consequence and your response will be used solely for academic purposes. This survey is estimated to take approximately 5 minutes to complete. If you have any inquiries, please feel free to contact me. I truly appreciate your participation in answering the questions.

Yours sincerely,

Quek Hui Ling

huiling02@1utar.my

PERSONAL DATA PROTECTION NOTICE

Please be informed that in accordance with Personal Data Protection Act 2010 (“PDPA”) which came into force on 15 November 2013, Universiti Tunku Abdul Rahman (“UTAR”) is hereby bound to make notice and require consent in relation to collection, recording, storage, usage and retention of personal information.

1. Personal data refers to any information which may directly or indirectly identify a person which could include sensitive personal data and expression of opinion.

Among others it includes:

- a) Name
 - b) Identity card
 - c) Place of Birth
 - d) Address
 - e) Education History
 - f) Employment History
 - g) Medical History
 - h) Blood type
 - i) Race
 - j) Religion
 - k) Photo
 - l) Personal Information and Associated Research Data
-
2. The purposes for which your personal data may be used are inclusive but not limited to:
 - a) For assessment of any application to UTAR
 - b) For processing any benefits and services
 - c) For communication purposes
 - d) For advertorial and news
 - e) For general administration and record purposes
 - f) For enhancing the value of education
 - g) For educational and related purposes consequential to UTAR
 - h) For replying any responds to complaints and enquiries
 - i) For the purpose of our corporate governance
 - j) For the purposes of conducting research/ collaboration

3. Your personal data may be transferred and/or disclosed to third party and/or UTAR collaborative partners including but not limited to the respective and appointed outsourcing agents for purpose of fulfilling our obligations to you in respect of the purposes and all such other purposes that are related to the purposes and also in providing integrated services, maintaining and storing records. Your data may be shared when required by laws and when disclosure is necessary to comply with applicable laws.
4. Any personal information retained by UTAR shall be destroyed and/or deleted in accordance with our retention policy applicable for us in the event such information is no longer required.
5. UTAR is committed in ensuring the confidentiality, protection, security and accuracy of your personal information made available to us and it has been our ongoing strict policy to ensure that your personal information is accurate, complete, not misleading and updated. UTAR would also ensure that your personal data shall not be used for political and commercial purposes.

Consent:

6. By submitting or providing your personal data to UTAR, you had consented and agreed for your personal data to be used in accordance to the terms and conditions in the Notice and our relevant policy.
7. If you do not consent or subsequently withdraw your consent to the processing and disclosure of your personal data, UTAR will not be able to fulfill our obligations or to contact you or to assist you in respect of the purposes and/or for any other purposes related to the purpose.

Acknowledgment of Notice

- I have been notified and that I hereby understood, consented and agreed per UTAR above notice.
- I disagree, my personal data will not be processed.

Section A: Screening Questions

1. Were you born in 1965-1980?
 - Yes
 - No

2. Have you ever become victim of online scam?
 - Yes
 - No

Section B: Demographic Profile

1. Age
 - 43 – 46
 - 47 – 50
 - 51 – 54
 - 55 – 58

2. Gender
 - Male
 - Female

3. Education Level
 - Secondary School
 - SPM / High School / O – Level
 - STPM / Foundation / Diploma / A – Level
 - Undergraduate
 - Postgraduate

4. Employment Status

- Employed
- Unemployed
- Self-employed
- Retired

5. Monthly Income Level

- Below RM2000
- RM2000 – RM4000
- RM4001 – RM6000
- Above RM6000

Section C: General Questions

1. What is the preferred media for getting news?

- Newspaper
- Social Media
- Radio
- Television

2. Are you aware of any government initiatives or educational programs regarding online scam awareness? (e.g., National Scam Awareness Campaign (NSAC), #TakNakScam)

- Yes
- No

Section D: Influential Factor of Online Scam Awareness among Generation X

Please indicate your level of agreement in the column based on your opinion of each statement.

[Strongly disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, Strongly agree = 5]

Online Scam Awareness

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I can potentially fall victim to scams when investing in cryptocurrencies on unreliable exchanges.	1	2	3	4	5
2.	I understand that any investment scheme promising abnormally high returns is not trustworthy.	1	2	3	4	5
3.	I am aware that investments guaranteeing consistent positive returns regardless of overall market conditions are not to be trusted.	1	2	3	4	5
4.	I am conscious of phishing threats, which can come through SMS, phone calls, online websites, and emails.	1	2	3	4	5
5.	I can spot fraud when there is an unusual condition.	1	2	3	4	5

Risk Perception

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I perceive a high potential for loss if I provide information to online firms.	1	2	3	4	5
2.	I feel uncertain about giving information to online firms due to the risks involved.	1	2	3	4	5
3.	I worry that my personal financial information may be stolen while being transferred over the Internet.	1	2	3	4	5
4.	I have concerns that my personal information may be shared with unknown parties without my knowledge when using online services.	1	2	3	4	5

5.	I worry that my personal information in my profile might be misused by others when using online services.	1	2	3	4	5
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Skepticism

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I suspect that online services are likely to engage in a harmful behavior toward me.	1	2	3	4	5
2.	I believe that online services might perform their services in a fraudulent manner.	1	2	3	4	5
3.	I frequently question whether emails I receive are phishing attempts.	1	2	3	4	5
4.	I frequently question what I see or hear.	1	2	3	4	5
5.	I enjoy determining the authenticity of what I read or hear.	1	2	3	4	5

Media Exposure

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I regularly read newspapers or watch TV news to stay informed.	1	2	3	4	5
2.	I feel that the social media offer sufficient news and information for me to comprehend and get necessary facts.	1	2	3	4	5
3.	I received timely news and information from the social media.	1	2	3	4	5
4.	I feel that my behavior will be influenced by what I see or hear in the media.	1	2	3	4	5
5.	I watch news and other television programs that address current issues.	1	2	3	4	5

Security Concern

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I do not use the “Remember my password” option on my phone for security reasons.	1	2	3	4	5
2.	I always verify the authorization or identity of someone before discussing any issues.	1	2	3	4	5
3.	I’m not willing to respond to calls, SMS, or email messages from friendly/non-threatening strangers.	1	2	3	4	5
4.	I opt out of third-party information sharing whenever possible.	1	2	3	4	5
5.	I refrain from opening links from SMSs or messaging apps	1	2	3	4	5

Social Support

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I know that if I need money, my close friends and family would be willing to lend me a hand.	1	2	3	4	5
2.	I receive the emotional help and support I need from my family.	1	2	3	4	5
3.	I have someone I can talk to about my day-to-day problems whenever I need to.	1	2	3	4	5
4.	I have plenty of people I can depend on if I find myself in trouble.	1	2	3	4	5
5.	My family provides the moral support I need in various situations.	1	2	3	4	5

Thank you for your participation !

Appendix 4.1: Approval Letter of Ethical Clearance



UNIVERSITI TUNKU ABDUL RAHMAN DU012(A)
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Re: U/SERC/224/2023

13 September 2023

Dr Fitriya Binti Abdul Rahim
Head, Department of International Business
Faculty of Accountancy and Management
Universiti Tunku Abdul Rahman
Jalan Sungai Long
Bandar Sungai Long
43000 Kajang, Selangor

Dear Dr Fitriya,

Ethical Approval For Research Project/Protocol

We refer to your application for ethical approval for your student’s research project from Bachelor of International Business (Honours) programme enrolled in course UKMZ3016. We are pleased to inform you that the application has been approved under Expedited Review.

The details of the research projects are as follows:

No.	Research Title	Student’s Name	Supervisor’s Name	Approval Validity
1.	Factors that Influence Organizations to Engage with AI-based Tools	Amretjit Singh Khalsee	Dr Komathi a/p Munusamy	13 September 2023 – 12 September 2024
2.	Determinants of Female Final Year Students Pursing as an Entrepreneur	Chan Hong Yee	Mr Mahendra Kumar a/l Chelliah	
3.	The Impulsiveness of Gen Z Buyers. A Study of Personality and Buy-now-pay-later Services	Chan Khai Yee	Ms Zufara Arneeda Binti Zulfakar	
4.	Consumers’ Willingness to Pay for Vegan Food in Fast Food Restaurants in Malaysia	Chan Lih Wen	Ms Malathi Nair a/p G Narayana Nair	
5.	The Usage of Live Streaming in Affecting Customer Purchase Intention	Chen Bo Nian	Dr Yeong Wai Mun	
6.	Revolutionizing Fashion Retail: Exploring the Impact of Social Commerce on Consumer Purchase Intention Toward Zalora	Chin Min Jun	Ms Tai Lit Cheng	
7.	Factors Influencing Consumer Intention to Adopt Social Media for Planning Food Tour in Klang Valley	Chong Chun Hong	Ms Tai Lit Cheng	
8.	Factors Influencing Purchase Intention Towards Green Cosmetics in Malaysia	Choong Cai Wen	Ms Annie Yong Ing Ing	
9.	The Factors Affecting Employee Retention Among Young Graduates	Chua Wan Ying	Dr Komathi a/p Munusamy	
10.	Factors Contributing to Consumers’ Adoption of Buy Online, Pick-up in Store (BOPIS) for Purchasing Clothes	Chung Zheng Hang	Dr Komathi a/p Munusamy	
11.	Antecedents of Measuring Brand Loyalty in Digital Platforms	Dickson Te Chuan Hui	Dr Yeong Wai Mun	
12.	Youth Awareness on Financial Fraud in Malaysia	Edmund Yong Jung Lin	Dr Choo Siew Ming	

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Website: www.utar.edu.my



No.	Research Title	Student's Name	Supervisor's Name	Approval Validity
13.	The Factors that Influence Coffee Purchase Intention Among Generation Z	Emily Chan Kai An	Dr Fitriya Binti Abdul Rahim	13 September 2023 – 12 September 2024
14.	The Impact of Electronic Word-of-Mouth via Short-Form Video on Consumer Visit Intention: A Comparison Between Tiktok and Instagram	Eng Shi Yee	Pn Ezatul Emilia Binti Muhammad Arif	
15.	Factors Influencing Green Purchase Intention Among Consumers in Selangor	Eva Lai May Wah	Pn Nuraiisah Binti Raiimee	
16.	The Factor Influence Brand Loyalty in Malaysia Retail Industry	Goh Qian Feng	Pn Raja Nurul Aini Binti Raja Aziz	
17.	Empirical Links Between Social Media Marketing Activities, Corporate Social Responsibility, Brand Equity and Brand Preference	Grace Lim Wei Qi	Dr Tang Kin Leong	
18.	Comparison in Terms of the Legal Framework of Gender Equality in Education between Malaysian and United States	Han Haw Ze	Dr Angelina Anne Fernandez	
19.	Comparatively Child Labor Legislation in Malaysia and Australia Affecting Education Policy	Hee Yuan Ni	Ms Lee Sim Kuen	
20.	Adoption of AI Technology in Education Among UTAR Students	Heng Wei Ni	Dr Farah Waheeda Binti Jalaludin	
21.	The Influence of Knowledge, Attitude and Trust on Environmental and Eco-label of Pro-environmental Consumers' Behaviour Among Young Adults	Hoo Yian Yian	Mr Mahendra Kumar a/l Chelliah	
22.	The Impulsiveness of Buyers in TikTok Live. A Study of Competitive Arousal Model	Isabel Chu Xin Lyn	Ms Zufara Arneeda Binti Zulfakar	
23.	Relationship Between Work-Life-Balance and Job Performance Among University Student	Kelvin Lai Zhan Peng	Ms Puvaneswari a/p Veloo	
24.	Uncovering the Drivers of Employee Retention in Hospitality Industry	Kok Chien Liang	Ms Cheah Lee Fong	
25.	The Role of Natural Language Processing in Improving Customer Service and Support in E-commerce	Kuek Shu Hui	Dr Farah Waheeda Binti Jalaludin	
26.	Factors Influence University Student to Take Multi-Level Marketing (MLM) as Career Choice	Lai Wei Shen	Dr Komathi a/p Munusamy	
27.	The Impact of Social Media on Interpersonal Relationships of Malaysians	Lee Li Ling	Ms Ung Leng Yean	
28.	Factors Influencing Gen Z Travelling Behavior	Lee Uen Chian	Dr Fitriya Binti Abdul Rahim	
29.	The Influence of Persuasive Design Features on Customer Loyalty	Lew Pei Yi	En Khairul Anuar Bin Rusli	
30.	Critical Factors for Generation Z to Pursuing Their Higher Education	Liew Ying Ying	En Khairul Anuar Bin Rusli	
31.	Factors Affecting Green Purchase Intention Between Malaysian and International Students	Lim Rui Wen	Ms Annie Yong Ing Ing	
32.	Factors Influencing the Intention to Use Buy Now Pay Later (BNPL) in Malaysia	Loh Pui Yee	Ms Hooi Pik Hua @ Rae Hooi	
33.	Exploring the Role of Artificial Intelligence (AI) in Tertiary Education: Students' Perception on Non-Human Lectures	Loh Yi Wen	Dr Low Mei Peng	
34.	Investigating the Influence of Social Media Marketing on CBBE, eWoM Intention and Brand Choice Intention Through the S-O-R Model	Loo Wai Hong	Dr Tang Kin Leong	
35.	The Impact of Live Streaming Commerce for MSMEs: A Comparison Between TikTok and Facebook	Low Pei Yu	Pn Ezatul Emilia Binti Muhammad Arif	
36.	Factors that Affect Employees Motivation Among Young Graduates	Ng Suat Yin	Dr Komathi a/p Munusamy	
37.	Factor Affect Employee Productivity in Malaysia Manufacturing Industry	Nyeow Pei Ni	Ms Low Suet Cheng	

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No.	Research Title	Student's Name	Supervisor's Name	Approval Validity
38.	Factors Affecting Digital Entrepreneurial Intention Among Women	Pan Hui Xin	Pn Ezatul Emilia Binti Muhammad Arif	13 September 2023 – 12 September 2024
39.	The Relationship Between Environmental Social Governance (ESG) and Consumer Buying Behavior	Pang Tang Hui	Ms Salizatul Aizah Binti Ibrahim	
40.	Determinants of University Students' Intention to Become an Entrepreneur	Phoebe Giam Xin Rou	Ms Kalaivani a/p Jayaraman	
41.	The Impact of Gamification on the Continuance Intention of Service Delivery Platform Contractors	Piong Li Jing	Dr Corrinne Lee Mei Jyin	
42.	Influential Factors of Online Scam Awareness Among Generation X in Malaysia	Quek Hui Ling	Dr Choo Siew Ming	
43.	Perspective of Working Employee: An Empirical Study of Training Effectiveness	Shirley Teh Ling Jie	Ms Goh Poh Jin	
44.	Factors of Social Media Influencers and User-Generated Content Influencing the Impact Online Purchase Intention	Soong Vai Ven	Dr Sia Bee Chuan	
45.	Factors Influencing Consumers' Attitude and Intention Towards Eating Green	Tham Shu Wen	Dr Corrinne Lee Mei Jyin	
46.	The Influence of Perceived of Usefulness, Perceived Ease of Use and Perceived Security on Repurchase Intention	Veshallini Ravindran	Puan Raja Nurul Aini Binti Raja Aziz	
47.	Factors Influencing Career Planning Among Generation Z in Malaysia	Wendy Chen Siaw Wen	Dr Fitriya Binti Abdul Rahim	
48.	Influence of Consumer's Knowledge in Skincare Product on Purchase Intention	Wong Chui Yi	Puan Raja Nurul Aini Binti Raja Aziz	
49.	Investigating Impact of A.I. on Consumer Purchase Intention Among Young Consumers	Wong Shen Hung	Ms Tan Suk Shiang	
50.	Artificial Intelligence in Business and Economics Research: Trends and Future	Yap Jee Yan	Ms Lee Sim Kuen	
51.	Do You Want to Buy an Electric Vehicle? Examining the Consumers' Purchase Motivation of Electric Vehicles	Yew Jun Sen	Dr Low Mei Peng	
52.	Factors and Barriers Influencing the Use of Robo-advisor in Stocks and Unit Trusts Investments	Yong Sheng Yew	Dr Low Mei Peng	
53.	Understanding Tourists' Motivation on Wellness Center in Malaysia	Yong Zi Yee	Ms Hooi Pik Hua @ Rae Hooi	

The conduct of this research is subject to the following:

- (1) The participants' informed consent be obtained prior to the commencement of the research;
- (2) Confidentiality of participants' personal data must be maintained; and
- (3) Compliance with procedures set out in related policies of UTAR such as the UTAR Research Ethics and Code of Conduct, Code of Practice for Research Involving Humans and other related policies/guidelines.
- (4) Written consent be obtained from the institution(s)/company(ies) in which the physical or/and online survey will be carried out, prior to the commencement of the research.

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Should the students collect personal data of participants in their studies, please have the participants sign the attached Personal Data Protection Statement for records.

Thank you.

Yours sincerely,



Professor Ts Dr Faidz bin Abd Rahman
Chairman
UTAR Scientific and Ethical Review Committee

c.c Dean, Faculty of Accountancy and Management
 Director, Institute of Postgraduate Studies and Research



Appendix 4.2: Frequencies Statistics

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	43 - 46	98	25.0	25.0	25.0
	47 - 50	98	25.0	25.0	50.0
	51 - 54	98	25.0	25.0	75.0
	55 - 58	98	25.0	25.0	100.0
	Total	392	100.0	100.0	

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	221	56.4	56.4	56.4
	Male	171	43.6	43.6	100.0
	Total	392	100.0	100.0	

Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Postgraduate	5	1.3	1.3	1.3
	Secondary School	18	4.6	4.6	5.9
	SPM / High School / O-level	99	25.3	25.3	31.1
	STPM / Foundation / Diploma / A-level	132	33.7	33.7	64.8
	Undergraduate	138	35.2	35.2	100.0
	Total	392	100.0	100.0	

Employment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed	272	69.4	69.4	69.4
	Retired	32	8.2	8.2	77.6
	Self-employed	78	19.9	19.9	97.4
	Unemployed	10	2.6	2.6	100.0
	Total	392	100.0	100.0	

Income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Above RM6000	233	59.4	59.4	59.4
	Below RM2000	26	6.6	6.6	66.1
	RM2000 - RM4000	26	6.6	6.6	72.7
	RM4001 - RM6000	107	27.3	27.3	100.0
	Total	392	100.0	100.0	

Media

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Newspaper	37	9.4	9.4	9.4
	Radio	28	7.1	7.1	16.6
	Social Media	315	80.4	80.4	96.9
	Television	12	3.1	3.1	100.0
	Total	392	100.0	100.0	

Initiative

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	20	5.1	5.1	5.1
	Yes	372	94.9	94.9	100.0
	Total	392	100.0	100.0	

Appendix 4.3: Descriptive Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
AVE_OSA	392	2.40	5.00	4.2327	.58903
AVE_RP	392	3.00	5.00	4.2541	.50037
AVE_SK	392	2.80	5.00	4.0597	.53883
AVE_ME	392	3.40	5.00	4.3714	.51890
AVE_SC	392	2.60	5.00	4.2372	.59318
AVE_SS	392	3.00	5.00	4.3526	.49519
Valid N (listwise)	392				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
OSA1	392	1	5	4.10	.952
OSA2	392	2	5	4.27	.699
OSA3	392	1	5	4.46	.721
OSA4	392	2	5	4.24	.733
OSA5	392	1	5	4.09	.880
Valid N (listwise)	392				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
RP1	392	2	5	4.04	.664
RP2	392	3	5	4.25	.681
RP3	392	3	5	4.41	.551
RP4	392	2	5	4.22	.749
RP5	392	2	5	4.35	.670
Valid N (listwise)	392				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
SK1	392	2	5	3.86	.850
SK2	392	3	5	4.01	.611
SK3	392	2	5	4.14	.759
SK4	392	2	5	4.19	.904
SK5	392	2	5	4.10	.777
Valid N (listwise)	392				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ME1	392	2	5	4.29	.809
ME2	392	3	5	4.28	.706
ME3	392	3	5	4.46	.592
ME4	392	2	5	4.41	.734
ME5	392	3	5	4.42	.659
Valid N (listwise)	392				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
SC1	392	1	5	4.08	1.084
SC2	392	2	5	4.36	.709
SC3	392	2	5	4.34	.844
SC4	392	2	5	4.22	.777
SC5	392	2	5	4.18	.732
Valid N (listwise)	392				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
SS1	392	2	5	4.30	.777
SS2	392	3	5	4.28	.677
SS3	392	3	5	4.43	.598
SS4	392	2	5	4.32	.721
SS5	392	3	5	4.43	.652
Valid N (listwise)	392				

Appendix 4.4: Cronbach's Alpha

Online Scam Awareness

Reliability Statistics		Item-Total Statistics			
Cronbach's Alpha	N of Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
.785	5	OSA1 17.06	5.339	.552	.754
		OSA2 16.90	6.268	.548	.751
		OSA3 16.70	5.995	.611	.731
		OSA4 16.92	6.037	.583	.739
		OSA5 17.08	5.610	.549	.750

Risk Perception

Reliability Statistics		Item-Total Statistics			
Cronbach's Alpha	N of Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
.807	5	RP1 17.23	4.355	.528	.789
		RP2 17.02	4.020	.650	.752
		RP3 16.86	4.557	.595	.773
		RP4 17.05	3.977	.577	.778
		RP5 16.92	4.085	.637	.756

Skepticism

Reliability Statistics

Cronbach's Alpha	N of Items
.717	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
SK1	16.44	5.188	.348	.724
SK2	16.29	5.635	.431	.690
SK3	16.16	5.080	.468	.673
SK4	16.10	4.554	.489	.667
SK5	16.20	4.412	.687	.581

Media Exposure

Reliability Statistics

Cronbach's Alpha	N of Items
.790	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ME1	17.57	3.801	.721	.694
ME2	17.58	4.736	.487	.776
ME3	17.40	5.289	.400	.797
ME4	17.45	4.319	.614	.735
ME5	17.43	4.528	.631	.731

Security Concern

Reliability Statistics

Cronbach's Alpha	N of Items
.749	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
SC1	17.10	5.613	.391	.774
SC2	16.83	6.282	.567	.691
SC3	16.84	6.081	.482	.716
SC4	16.96	6.380	.462	.722
SC5	17.01	5.563	.781	.616

Social Support

Reliability Statistics

Cronbach's Alpha	N of Items
.768	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
SS1	17.46	3.610	.649	.683
SS2	17.48	4.373	.459	.752
SS3	17.33	4.719	.405	.766
SS4	17.44	3.976	.568	.715
SS5	17.33	4.078	.618	.699

Appendix 4.5: Pearson Correlation Coefficient Analysis

Correlations

		AVE_OSA	AVE_RP	AVE_SK	AVE_ME	AVE_SC	AVE_SS
AVE_OSA	Pearson Correlation	1	.332**	.340**	.388**	.224**	.070
	Sig. (2-tailed)		<.001	<.001	<.001	<.001	.167
	N	392	392	392	392	392	392
AVE_RP	Pearson Correlation	.332**	1	.457**	.346**	.223**	.078
	Sig. (2-tailed)	<.001		<.001	<.001	<.001	.123
	N	392	392	392	392	392	392
AVE_SK	Pearson Correlation	.340**	.457**	1	.131**	.186**	.026
	Sig. (2-tailed)	<.001	<.001		.009	<.001	.608
	N	392	392	392	392	392	392
AVE_ME	Pearson Correlation	.388**	.346**	.131**	1	.244**	.107*
	Sig. (2-tailed)	<.001	<.001	.009		<.001	.035
	N	392	392	392	392	392	392
AVE_SC	Pearson Correlation	.224**	.223**	.186**	.244**	1	.030
	Sig. (2-tailed)	<.001	<.001	<.001	<.001		.548
	N	392	392	392	392	392	392
AVE_SS	Pearson Correlation	.070	.078	.026	.107*	.030	1
	Sig. (2-tailed)	.167	.123	.608	.035	.548	
	N	392	392	392	392	392	392

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

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

Appendix 4.6: Multiple Linear Regression

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.501 ^a	.251	.241	.51324

a. Predictors: (Constant), AVE_SS, AVE_SK, AVE_ME, AVE_SC, AVE_RP

b. Dependent Variable: AVE_OSA

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	33.986	5	6.797	25.804	<.001 ^b
	Residual	101.676	386	.263		
	Total	135.662	391			

a. Dependent Variable: AVE_OSA

b. Predictors: (Constant), AVE_SS, AVE_SK, AVE_ME, AVE_SC, AVE_RP

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.726	.368		1.973	.049
	AVE_RP	.116	.062	.099	1.872	.062
	AVE_SK	.262	.054	.240	4.811	<.001
	AVE_ME	.340	.054	.299	6.239	<.001
	AVE_SC	.083	.046	.084	1.808	.071
	AVE_SS	.026	.053	.021	.484	.629

a. Dependent Variable: AVE_OSA