A STUDY ON E-WASTE DISPOSAL PRACTICES AMONG RETAILERS IN TAMAN BENDAHARA, PENGKALAN CHEPA.

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by

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NO.	CRITERIA	PERFORMANCE LEVELS				Weight	TOTAL
		POOR (1 MARK)	FAIR (2 MARKS)	GOOD (3 MARKS)	EXCELLENT (4 MARKS)		
	Determination (CLO1; C1, A3: CS/CT/TS)	Is not determined and does not put in any effort in completing the research report in group	Is determined but puts in little effort in completing the research report in group	Is determined and puts in reasonable effort in completing the research report in group	Is very determined and puts in maximum effort in completing the research report in group	____ x 1 (Max: 4)	
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ABSTRACT

Ekonomi pekeliling bertujuan untuk mencapai pengurangan sisa, perlindungan alam sekitar, kecekapan tenaga dan pertumbuhan ekonomi. Menggunakan strategi pengurusan sisa kos efektif, sisa industri boleh diperbaiki, digunakan semula dan kitar semula. Peralihan daripada ekonomi linear kepada ekonomi bulat memerlukan usaha bersama oleh pihak berkepentingan daripada semua sektor. Malaysia telah membuat komitmen kepada Agenda 2030 pada September 2015 demi masa depan. Pemahaman mengenai potensi sinergi kemapanan di kalangan negara membangun masih lembab. Malaysia merupakan antara negara yang menghadapi isu pengurusan sisa di Asia. Perbincangan terperinci termasuk penerimaan dan inisiatif Malaysia dalam mencapai ekonomi pekeliling. Sisa elektronik (e-sisa) adalah masalah alam sekitar global, dan Malaysia tidak terkecuali. E-waste merujuk kepada proses yang merangkumi pelbagai bentuk peralatan elektrik dan elektronik yang tidak lagi mempunyai sebarang nilai kepada pemiliknya (Widmer et al., 2005). Penyelidikan terdiri daripada 250 responden dari kawasan Taman Bendahara, Pengkalan Chepa. Bagi kajian ini, pendekatan kuantitatif digunakan sebagai instrumen untuk mendapatkan input daripada responden. Data telah diperiksa menggunakan sistem perisian SPSS untuk interpretasi maklumat melalui analisis deskriptif dan korelasi. Pengetahuan, sikap, dan amalan pengurusan pelupusan e-sisa adalah faktor yang dipertimbangkan dalam kajian ini. Penemuan ini mungkin menawarkan maklumat rujukan mengenai pengurusan e-sisa di Malaysia dan pembangunan program pengurusan e-sisa yang berkesan oleh penyelidik dan pihak berkepentingan lain.

The circular economy aims to achieve waste reduction, environmental protection, energy efficiency and economic growth. Using cost-effective waste management strategies, industrial waste can be remedied, reused, and recycled. The transition from a linear economy to a circular economy requires joint efforts by stakeholders from all sectors. Malaysia has made a commitment to Agenda 2030 in September 2015 for the future. Understanding of the potential synergy of sustainability among developing countries is still sluggish. Malaysia is one of the countries facing waste management issues in Asia. Detailed discussions include Malaysia's adoption and initiatives in achieving a circular economy. Electronic waste (e-waste) is a global environmental problem, and Malaysia is no exception. E-waste refers to a process that includes various forms of electrical and electronic equipment that no longer has any value to its owner (Widmer et al., 2005). The research consisted of 137 respondents from the area of Taman Bendahara, Pengkalan Chepa. For this study, a quantitative approach was used as an instrument to obtain input from respondents. The data was examined using the SPSS software system for the interpretation of information through descriptive analysis and correlation. Knowledge, attitude, and e-waste disposal management practices are factors considered in this study. These findings may offer reference information on e-waste management in Malaysia and the development of effective e-waste management programs by researchers and other stakeholders.

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CHAPTER 1:

INTRODUCTION

1.1 Background of the Study

A competitive environmental strategy called the circular economy (CE) seeks to achieve waste reduction, environmental protection, energy efficiency and economic growth (Bastein et al.., 2013; MacArthur, 2013). The CE method encourages ongoing economic growth while offering minimal risks to the environment and limited resource use (Granek, 2011; Crowther & Gilman, 2014). Using cost-effective waste management strategies, industrial waste can be mended, reused, and upcycled in the circular economy to create eco-friendly and value-added products and processes (Granek, 2011; Crowther & Gilman, 2014). With a stronger supply chain, less price fluctuation of commodities, greater customer relationships, and new employment prospects, the circular economy is advantageous to businesses and society at large (Koket et.al., 2013). Additionally, it has been noted that inadequate institutional support, a destitution of economic incentives, a loss of technical proficiency, and a repudiation of environmental consciousness all contributed to small businesses' lack of CE readiness (Rizos et al., 2015; Agnello et al, 2015; Möllemann, 2016).

Furthermore, the transition from a linear economy to a circular economy requires joint efforts by stakeholders from all sectors. Companies can contribute to the transition by developing competencies in circular design to implement product reuse, and recycling, and serve as trendsetters for innovative circular economy business model (Vasileios Rizos (2016). Stakeholders also play an important role in promoting the transition to a circular economy by mobilizing broad powers to implement practical actions and putting pressure on businesses and governments to accelerate implementation. According to Normalisa. (2021), since the 1970s,

Malaysia has made a commitment to Agenda 2030 in September 2015 for the future of mother earth. Despite the growing attention to and the CE around the world, understanding of the potential synergy of sustainability among developing countries remains sluggish. Malaysia is also among the countries facing waste management issues in Asia. A detailed discussion includes Malaysia's adoption and initiatives in achieving a CE in the past, present, and future years. This initiative aims to make Malaysia one of the best countries in the world with sustainable economic growth, innovation, and prosperous people by 2050. Since, the CE should be an economic model to follow, it should also be seen as a tool to achieve SDGs, which has been described as economic development compatible with a sustainable future. The framework to achieve this goal is included in the 2030 Agenda, using the Sustainable Development Goals (Juan-Manuel Valverde & Carmen Avilés-Palacios 2021). Many organizations have reported the relationship between the two concepts of SDG and CE. It also confirms that the implementation of CE has importance in achieving the SDGs including protecting the environment (Juan-Manuel Valverde & Carmen Avilés-Palacios 2021). For instance, in a developing country, through the collection of discarded electrical appliances and energy-saving lamps, a large amount of electronic waste (e-waste) has been recycled in the Netherlands. From 2009 to 2012, the amount of e-waste collection increased every year. In recent years the amount has been stable around 110,000 tons Laura Golsteijn and Elsa Valencia Martinez (2017).

E-waste is a global environmental problem, and Malaysia is no exception. E-waste refers to the process that embraces various forms of electric and electronic equipment that have ceased to be of any value to their owners (Widmer et al., 2005). The generation of e-waste in Malaysia reached 706,295 metric tons in 2010, and it is expected to increase to 1,119,155 metric tons by 2020 (Nair, 2018). E-waste is defined as electronic and electrical goods that have been used and discarded from households, industries, and commercial entities (Afroz et al. 2013; Tiep et al. 2015). Consumer demand for electrical and electronic equipment has fueled

the explosive expansion of the electronics industry into the fastest growing manufacturing sector in the world (Afroz et al. 2013; Babington et al. 2010; Sivathanu, 2016). The rapid development of the electrical industry and the advancement of new technology will lead to equipment that is more affordable and easier to use (Akhtar et al. 2014; Soo & Doolan, 2014). As a result of this factor, the product life will be reduced, which will lead to an increase in the number of products produced and used worldwide, which in turn will lead to an increase in the generation of e-waste (Jang, 2010; Kiddee et al. 2013; Umair et al. 2015; Zeng et al. 2013; Zhong & Huang, 2016). Based on Berita Harian issued on date 28 September 2015, it was reported that in the records of the Department of Environment (Malaysia), a total of 4.9 million kilograms (kg) of hazardous waste, including electronic waste in this country was exported to foreign for recycling in 2000 and 3.7 million kg in 2013. Based on Malaysia Department Environment in 2021, e-waste collected in Malaysia mostly generated from personal devices such as 37% laptop, 31% smartphone, 26% television and 2% of washing machines, air conditioner and refrigerator.

E-waste can be disposed of both formally and informally. The formal e-waste management industry consists of government-approved businesses or organisations that oversee gathering, recycling, and safely disposing of e-waste (Dayana Sobri, 2021). Formal e-waste disposal usually requires disassembling, separating, and categorizing electronic content by material before cleaning it. Next, the e-waste items are mechanically shredded so that further separation can be done using advanced separation technology. According to Job Alam Sekitar Malaysia,the retailers are urged to send their e-waste to any recovery facilities or registered collection centres that are authorised by Job Alam Sekitar Malaysia that do things like to comply with this rule to reduce health and environmental hazards while handling e-waste. Afterwards, based on a study by the monitoring group Basel Action Network (2016), they found that 40% of e-waste that is supposedly recycled in the United States (US) has been

exported. What is worse is that most of it ends up in developing countries, usually in Asia and including Malaysia, where informal is typically unlicensed and unregulated.

On top of that, e-waste can be disposed of in landfills through the incineration process, but the practice is considered a conviction (Krishnaswamy (2019). Soil leachate leaches toxic substances into the groundwater. This results in the release of toxic gases into the atmosphere (Kiddee et al., 2013). Severe effects on the atmosphere were also caused by the disposal of heavy metals in landfills (Pan & Li, 2016). Electrical electronic devices such as laptops, calculators, and personal computer components were assembled with plastic materials. The informal and open burning disposal process of electronic waste releases harmful dioxins, brominated flame retardants and furans. Information on the negative implications of this informal disposal practice on the environment develops individual awareness of the ethical disposal practices of consumer electronic products. E-waste recycling is a profitable industry in both developed and developing nations due to its unique characteristics, which are characterized by their fear (D. Sinha-Khetihwal ei aL, 2005). Similarly, some countries such as China, Bangalore, Chennai, India, Nigeria, and Pakistan practice informal ways to dispose of e-waste. Among them is by burning the e-waste in the open air that is usually done by children (The World Counts, 2022), which can harm their health as well as the environment. In India, most of the recycling happens in the informal sector where poor people tear apart the different components with their bare hands and without wearing any safety gear.

There are also cases in Malaysia of illegally operating e-waste factories, electrical and electronic waste disposal activities (e-waste) which are categorized as scheduled waste under the Environmental Quality (Scheduled Waste) Regulations 2005, the Environmental Quality Act (AKAS) 1974 (Sinar Harian, 2023). The inspection found that the premises did not have a license from the Environmental Bridge in accordance with Section 18, Environmental Quality Act 1974 and without permission. The Department of Environment also issued an immediate

stop operation order to the factory until the investigation of the case is completed. The premises were also charged with a compound of RM30,000 for failing to comply with the provisions of the law in accordance with the Environmental Quality (Scheduled Waste) Regulations 2005 (Syajaratulhuda Mohd Rosli, Sinar Harian 2021). Therefore, it is important to understand formal e-waste knowledge and attitude among the business entities to ensure the laws regarding e-waste disposal activities are complied. For example, the lack of awareness about hazardous e-waste and safe disposal techniques of e-waste is an obstacle in conducting proper e-waste recycling. According to Chibunna et al., (2012), the reason for poor practices on e-waste management is because of the lack of knowledge and attitude on how to dispose of e-waste (Azlan et al., 2021). To have knowledge, one must have a thorough familiarity with the subject under study, as well as a grasp of the larger societal context, as well as a grasp of universal truths and scientific facts (Ahmad et al. 2015; Babaei et al. 2015; Launiala, 2009). Hence, this study will focus on investigating the relationship between knowledge and attitude of e-waste towards practices among retailers in Taman Bendahara, Pengkalan Chepa.

1.2 Problem Statement

Although retailers in Malaysia are becoming more aware of the importance of waste disposal management, there are still retailer practices to discard electrical and electronic products (e-waste) indiscriminately, ignoring the negative impact on health and the environment (The Star, 2021). In Malaysia, e-waste management is still in its early stages (Ahmad Faisal et al., 2014). This is because of Malaysia;s economic development, electronic appliances were considered as luxury items and were unaffordable to the retailer and common people. The Malaysian government made efforts to tackle the problem caused by the recycling and disposal of e-waste (Rulia Akhtar.,2014). The main problem relating to e-waste among Malaysian retailers is the poor attitude of retailers in Malaysia toward proper e-waste disposal

practices (Ho et al.,2015). According to Gatke (2003), most people in Petaling Jaya, Selangor were aware of the hazardous materials present in electronic products but only a few of them practiced proper disposal of e-waste. Some challenges in managing e-waste, such as a lack of knowledge about the proper e-waste disposal methods (Nduneseokwu et al., 2017). According to Mahat et al., (2019) the community in Malaysia including retailers is significantly unaware of e-waste proper disposal.

1.3 Research Questions

a) What is the relationship between knowledge and e-waste disposal practices among retailers in Taman Bendahara, Pengkalan Chepa?

b) What is the relationship between attitude of e-waste disposal practices among retailers' management in Taman Bendahara, Pengkalan Chepa?

1.4 Research Objectives

The main objectives for this study are:

a) To investigate the relationship between knowledge and e-waste disposal practices among retailers in Taman Bendahara, Pengkalan Chepa.

b) To investigate the relationship attitude e-waste disposal practices among retailers' management in Taman Bendahara, Pengkalan Chepa.

1.5 Scope of the Study

This study focuses on the level of e-waste disposal practice among retailers based on knowledge and attitude (KA) knowledge and attitude in Taman Bendahara, Pengkalan Chepa. In this study, firstly, the study related to e-waste management and awareness based on

(knowledge, attitude, and practice) or (KA), and the expected respondents will be the retailers in Taman Bendahara, Pengkalan Chepa. In this research, the influence of e-waste disposal practices among retailers based on knowledge and attitude is the main thing that is being found. The result is mainly the target of retailers in the population of Taman Bendahara, Pengkalan Chepa.

1.6 Significance of the Study

The damaged, non-functioning, obsolete and unnecessary electrical and electronic equipment with improper disposal of e-waste will have a negative impact on the environment. This will enable the concerned parties to be able to initiate the first step so that the welfare of the people can be upheld. Therefore, this research is expected to give significance to all parties, especially those who have specific things they want to achieve such as e-waste disposal management awareness.

The findings will spare the body of knowledge where it can be useful to the future researcher to conduct on e-waste in retailers' perspective. Also, it will lead to understanding the behaviour of retailers in Taman Bendahara towards e-waste management. This will be a provision to the authorities to plan on how to increase more awareness on proper ways to manage e-waste among the retailers.

Not only that, but it also gives significance to policy makers to learn to improve the country's weaknesses to be able to bring the best results to save and conserve natural resources. Finally, the enforcement authorities can understand the causes of awareness among producers or sellers and increase their knowledge to dispose of e-waste properly.

1.7 Definition of the Terms

Terms	Definition
E-waste	Refers to e-waste as electronic devices destined to be discarded after exhausting their primary utility values (Widmer et al. & Forti et al. 2022)
Practices	E-waste disposal is the practice of e-waste disposal according to methods or techniques to properly dispose of e-waste. It is important for businesses and individuals to understand. E-waste disposal methods such as landfilling, acid bathing, incineration, recycling, and reuse (TechRseset, 2022)
Attitude	Attitude can be broadly defined as "the degree of a person's favourable or unfavourable evaluation or appraisal of the behaviour in question (Ajzen, I., & Fishbein, M. 1975).
Knowledge	Defining knowledge and explaining its nature proved to be elusive and without a convincing and universally accepted result (Neta and Pritchard 2009; Russell 1972).

1.8 Organization of the Proposal

The report is divided into five chapters. The first chapter offers the fundamental idea of the content of a research paper known as an introduction, which includes the context study discussion, the problem statement, the research issue, the research aims, the nature of the study, the meaning of the term, and the arrangement of the proposal. The second chapter is discussed using the results of a literature review study from another journal. This chapter includes an introduction, a description of the independent and dependent variables, a conceptual framework, and an analysis review. The third chapter examines pert research methodology, which contains introduction, research design, data collecting methods, demographics of studies, sample size, sampling procedures research instrument developments variable calculation, data analysis procedure, and chapter review: The fourth chapter is concerned with the interpretation of the data and conclusions, which includes an explanation of the statistical analysis of the study topic, hypotheses. and the display of associated tables and graphs. The fifth chapter concludes with a summary of the important observations, disputes, and recommendations for further research.

CHAPTER 2:

LITERATURE REVIEW

2.1 Introduction

In this chapter, it will review a study on e-waste disposal practices among retailers in Taman Bendahara, Pengkalan Chepa done by previous literature of researchers through the articles or journals and the summary of the literature review. Besides that, the hypothesis for this study has been developed and will be discussed in this chapter then followed by the chapter summary in the final section.Generally explain about Chapter 2 organization.

2.2 Theoretical Background

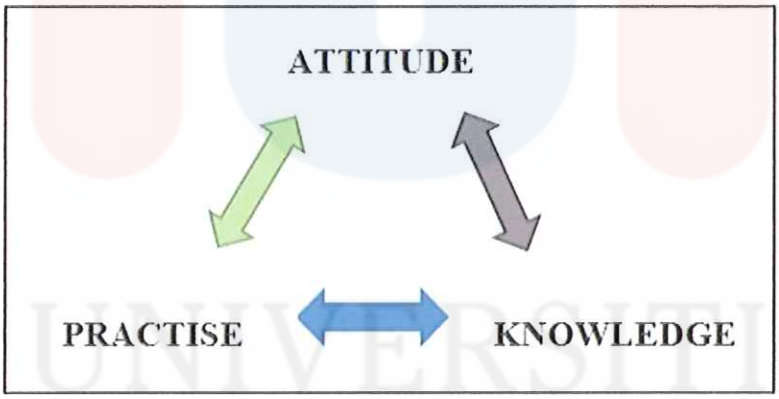

Figure 2.2: Knowledge, attitudes, practices (KAP) model, adapted from Schwartz (1976)

A knowledge, attitude, and practices (KAP) theory are the process of changing human behaviour into three stages: acquiring knowledge, developing attitudes, and designing practices (Wang, 2020). Schawatz (1976) established the model based on three elements: knowledge, attitudes, and practices (Figure 1). The model is a structured, standardized questionnaire completed by a target population that can quantify and analyse what is known (knowledge), believed (attitudes), and done (practices) about a topic of interest (Nguyen et al., 2019; Andrade

et al., 2020). KAP is the most used analysis framework in social research (Vandamme, 2009). The KAP survey data are used to identify knowledge differences, attitude barriers, and individual practices (WHO, 2008).

Additionally, knowledge, attitudes, and practice survey were first used in the 1950s to evaluate the concept of family planning and how it is understood and practiced by Attitude Practices Knowledge 9 people all over the world (Launiala, 2009 in Ahmad et al., 2015). The three components can be defined as follow; Knowledge can be defined as facts,description, information, and skills about an acceptable topics through education and experience; Attitudes can be defined like a person's feelings and thoughts something, because it works as a psychology emotions whether positive or negative on the practice of an individual (Jekria & Daud, 2016); Practice is action based on knowledge and attitude (Babaei et al., 2015). Based on these three components, knowledge will form an attitude; while knowledge and attitude will shape practice (Ahmad et al., 2015).

In a recent article related to health Covid-19, according to journal (Lee, Kang&You, 2021) several findings on the associations among KAPs provided valuable insights into how public health initiatives can better protect the population's health during public health emergencies, such as emerging infectious disease pandemics, by establishing strategic behavioural interventions. According to the findings of the study, knowledge can play an important role in improving the practice of public preventive behaviour, as knowledge related to attitudes and preventive behaviours. Many public health areas have validated the impact of knowledge on health attitude and practice on the premise that the public can make "informed decisions' ' about health behaviours by leveraging their knowledge about relevant health issues. Thus, this theory can provide evidence that knowledge is an essential predictor of attitudes and

practice, contributing to our study on e-waste disposal practices among retailers in Taman Bendahara, Pengkalan Chepa.

In addition, a research from China used the KAP analysis framework to analyze how farmers' knowledge, attitude, and practice of rural industrial land changes and their influencing factors (Zhang&Xu, 2021) The researchers on how much farmers are willing to participate in rural industrial land changes, and whether farmers have participated in rural industrial land changes activities.The results of this study show that the understanding of rural industrial land changes is only a degree of the farmers' basic understanding of rural industrial land changes, which cannot strongly determine the farmers' attitudes, when the farmers understand rural industrial land changes 's effects clearly, their attitudes toward rural industrial land changes become positive. The stronger the intention of attitude, the greater the possibility of practice (Ajzen, 1991).

2.3 E-waste Disposal Practice

Kanweru (2019) defines the practice of e-waste disposal can be described as the response to survey questions revealed that most respondents claimed to have regular e-waste collection services, with the majority stating that the waste was collected once a week. The concept of practice refers to the application of routine e-waste disposal management among retailers in the targeted area of study. Babaei (2015) defines practice as action based on knowledge and attitude. Meanwhile Kaliyaperumal (2004) refers to the ways in which they demonstrate their knowledge and attitude through their actions. Based on KAP, knowledge will form attitude; while knowledge and attitude will form practices (Ahmad et al., 2015).

Knowledge and attitude are the two most important factors in determining practices (Babaei et al., 2015), as a lack of knowledge could affect practices (Mathur et al., 2011; Madhukumar & Ramesh, 2012 in El-Gilany et al., 2017). The idea of practice relates to the

application of regular e-waste disposal management in retailerMany countries emphasised on sustainable e-waste management strategies that are taking on a variety of forms, including the creation of strict government policies, the expansion of capacity, and the use of effective technology for e-waste dismantling and recycling. For example, the Extended Producer Responsibility policy ensures that the administrative, financial, and physical duties for managing e-waste are transferred from the government to businesses that make and sell electronic items from e-waste materials (Esenduran et al., 2019). Producers and importers of Electrical or Electronic Equipments (EEE) in Switzerland are responsible for managing e-waste products under the Extended Producer Responsibility (EPR) and Advance Recycling Fee (AFR) policies (EU–WEEE Directive, 2003; Sinha-Khetriwal et al., 2005). The Consumer Pays approach, which is used in Japan, oblige that shops return EEE purchased by customers when the equipment becomes obsolete by paying retail outlets a fee as they collect the e-waste (Widmer et al., 2005). Nevertheless, in the United States, Individual state laws and the National Electronic Action

Plans established by the US Environmental Protection Agency coexist in the USA to ensure effective e-waste management (Gaidajis et al., 2010). All the practices taken by different countries are creative, but there is doubt that these practices are effective. There is no significant empirical data and results to support these practices.

2.4 Knowledge

Knowledge is usually assessed to see how far retailer's knowledge corresponds to practicing e-waste disposal. Knowledge is described as a comprehension of other people's actions in the context of one's own (Dourish & Bellotti, 1992). Knowledge also is derived from information, but it is more meaningful than information (Servin & De Brun, 2005). Although

100% of people are involved in e-waste generation, they (73.5%) have no attention about the management of electronic wastes (GSC Advanced Research and Reviews, 2021). In past few years, research shows that the respondents with a high educational background agreed that e-waste recycling worked as a possible solution to reduce the disastrous impact of e-waste on the environment and human health, that shows that they know knowledge e-waste disposal management (Tengku Hamzah, Amirah Sariyati Mohd Yahya, Aziz Shafie (2020). A study by Tarawneh and Saidan (2013) in Jordan showed that retailers' level of knowledge of e-waste 11 was low, indeed almost none of respondents knew about e-waste. However, the lower educational background would tend to ignore the benefit of e-waste disposal management since their knowledge is limited. However, not all countries demonstrated a lack of e-waste awareness among their public. For example, in Ningbo, China, most of the respondents possessed knowledge of e-waste management in terms of recycling and 64% of respondents were aware of environmental labelling. This could be seen when the retailers disposed of electronic waste, as retailers separated the materials according to the labelled waste container (Huang, Zhang, & Deng, 2006). A study by Kalana (2010), on the level of knowledge among the public in Shah Alam showed that respondents had high knowledge about e-waste. However, the researchers found that most respondents did not know the correct ways of disposing of e-waste.The KAP survey will enhance retailer's knowledge regarding these issues and its complications, which will directly help to reduce e-waste management issues as well as the complications associated with it, which are responsible for creating a burden on the general population as well as the government. Therefore, this study suggest, early exposure to information regarding e-waste by the government and private agencies is the factor that helped in and also examine the constraints imposed by the community on the implementation of more practical and sustainable e-waste management and future studies covering the entire population

of Malaysian are necessary to compare the awareness of the e-waste disposal of communities in every fourteen Malaysia's state to build an action plan.

H1: There is a significant relationship between knowledge and e-waste disposal practices among retailers in Taman Bendahara, Pengkalan Chepa.

2.5 Attitude

Attitude has been defined as 'a learned predisposition to think, feel and act in a particular way towards a given object or class of objects' (Ribeaux, 1978). As such, attitude is a product of a complex interaction of beliefs, feelings, and values. Attitude also can be defined as how a person feels and thinks about something, as it works as a psychological emotion either positive or negative on the practices of an individual (Jekria & Daud, 2016). According to Kaliyaperumal (2004), attitude refers to their feelings towards this subject, as well as any preconceived ideas that they may have towards it. According to Othman et al. (2015), an individual's attitude is essential since it demonstrates how they respond to the knowledge they acquire and how they may put it into effect. Kamweru (2019) noted in prior research that the community's unfavourable views included a lack of individual responsibility and the ability to volunteer to clean up e-waste that was already badly disposed of in open areas. In recent research, 95.2% respondent think it is the proper time for concern about proper management of e-waste disposal practice (Romana Afrose, 2021). The KAP survey will increase retailer's attitude regarding e-waste issues, which will directly help to reduce e-waste management issues as well as the complications associated with it. Therefore, this study suggests retailers must have a good attitude and can decrease e-waste management issues in the future.

H2: There is a significant relationship between attitude and e-waste disposal practices among retailers' management in Taman Bendahara, Pengkalan Chepa.

2.4 Research Framework

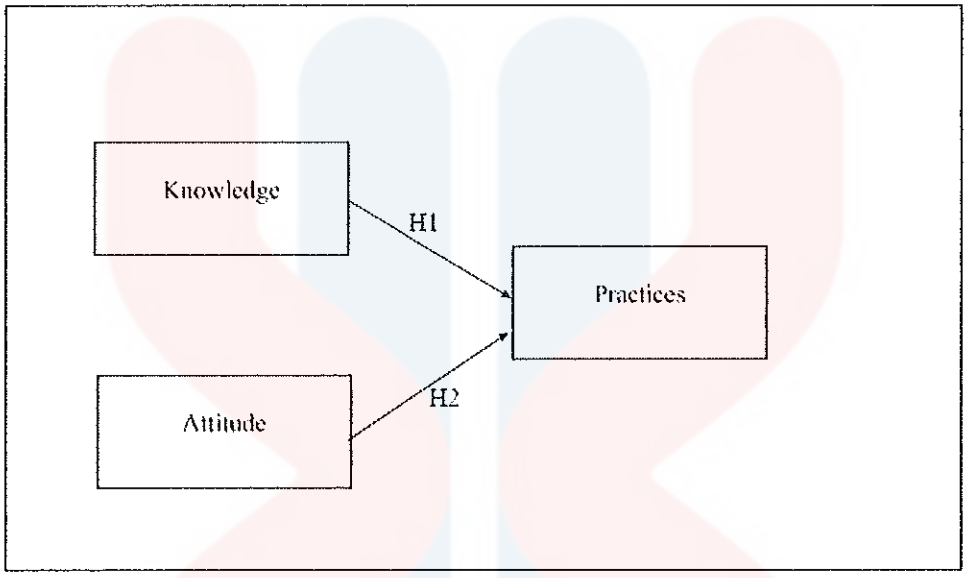

Figure 2.4 Research Framework

The independent variable (IV) and dependent variable (DV) that will use in this study can be seen in the figure above. There are two IV namely, knowledge and attitude, while DV is the practices among retailers in Taman Bendahara, Pengkalan Chepa. The theory we created is based on a sample and needs to be tested first.

2.5 Summary

This chapter reviewed past literature reviews about the relationship between knowledge and attitude towards e-waste disposal practices related to the context of this study. Besides that, the research framework for this study was formed by using the KAP theory and adapted from Schwartz (1976) to examine the relationship between attitude, knowledge towards e-waste disposal practices among retailers in Taman Bendahara, Pengkalan Chepa.

CHAPTER 3:

METHODOLOGY

3.1 Introduction

This chapter discusses on the introduction, which includes six main sections: research design, population, sampling procedure, data collection procedure, research instrument development and data analysis procedure. Furthermore, the hypothesis allows the researcher to identify the relationship between an independent variable and the dependent variable. The researcher will then determine which type of sampling design by employing non-probability method.

3.2 Research Design

In this study, the research design used is quantitative research to determine the influence of e-waste disposal practices among retailers in Taman Bendahara, Pengkalan Chepa. The reason why this type is used is because it is suitable based on the population sample that was targeted for conducting this study, due to the time constraint and limitation (Battacherjee, 2012). More data, numbers, and graphs that research obtains for quantitative research. Secondary sources can inform researchers about theories and hypotheses that are widely accepted. It is used to comprehend community concepts and experiences. It focuses on generating ideas and developing a theory or hypothesis. The deductive research we use for this research is because deductive research can be understood as a category of research that includes a hypothesis testing process to verify theories such as knowledge, attitude, and practices theory. The deductive process can also provide statistical analysis related to the research we are conducting. Descriptive research is a type of research that we conduct because we can study the retailers who participated in the research or a specific situation. Therefore, the descriptive research we used through three main ways to collect and analyse data namely observation, case

study and survey. Descriptive research aims to find out "what", so observation and survey methods are often used to gather descriptive data (Borg & Gall, 1989).

3.3 Data Collection Procedure

The source of data carried out in this research is using primary and secondary data. Data primary is data sources that provide the original data on which other research is based and enable students and other researchers to get to know what happened during a particular event or time. Secondary data using existing data that has been collected by other researchers such as government institutions and healthcare facilities. This study approaches the respondent in the actual situation of data collection collected from retailers to answer the researcher's questions without any internal or external interference because self-administered questionnaires are used. The researchers used Google Forms to conduct the study and a sample questionnaire. Total set of 107 questionnaires were distributed which is consistent with the sample size mentioned earlier.

3.4 Study Population

The population for this study is the retailers in Taman Bendahara, Pengkalan Chepa. It has been identified that most common business among the retailers are the food and beverage industry. Also, there are health & beauty, clothing, beauty care and computer & accessories. It is believed that these types of retailers will lead to various forms of electrical and electronic equipment usage, which explained the relevancy of choosing this population for this study.

Pengkalan Chepa is famous for being the eight busiest aviation hubs in Malaysia as well as the main education and industrial area in the state of Kelantan (New Straits Time, 2017). The Sultan Ismail Petra Airport (LTSIP) in Pengkalan Chepa, Kota Bharu has been warmly received by the people, it started when in 2012, this airport accommodated 1,259,250 passengers with 59 991 aircraft movements (Flightmalaysia,2018).

3.5 Sample Size

To determine the sample in this study G*Power will be employed. It is a tool to compute statistical power analyses for many different tests, F tests, $\chi 2$ tests, z tests and some exact tests. G*Power can also be used to compute effect sizes and to display graphically the results of power analyses.

Researchers used to calculate sample size with f2 =.15, the statistical significance of 0.05 and statistical power to reject null hypotheses of 0.95 (Cohen, 1992). The sample size calculation (power=0.951) is fixed at a minimum of 107.

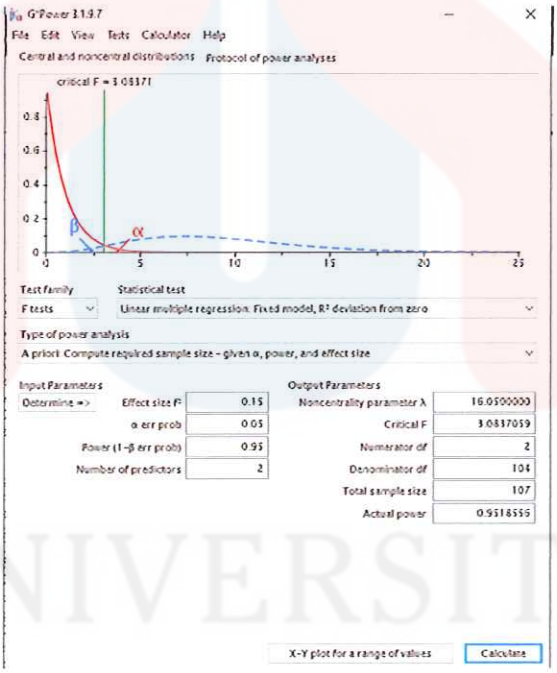

Figure 3.5: Sample size identified by power analysis performed by G*power.

Primary data are information that has been gathered directly from a source by a researcher using methods like surveys, interviews, or experiments. It is directly taken from primary sources with a study objective in mind. (Sekaran et. al., 2016).

Through an online questionnaire survey, the research's primary data was gathered. The online survey method was chosen since it covers a greater geographic area, academic contexts,

and particular occupations. Low transmission and processing costs are also present, in addition to greater secrecy (Creswell, 2009). The survey was delivered using Google form as medium of online questionnaire in this study.

Depending on their time available, the respondents were requested to complete the questionnaire online and then return the form by clicking the submit button on Google form provided. To help the respondents comprehend the survey being done, guidelines and the research's objectives were included in the questionnaire. Data were gathered for additional study after the questionnaire was placed online for two weeks.

3.6 Sampling Techniques

Non-probability sample will use in this study, the process will create from retailers from Taman Bendahara and 137 respondents were collected including pilot test. A convenience sample is a type of non-probability sampling method in which the sample is drawn from a group of individuals who are easy to contact or reach, such as asking people to answer questions. Also, data is collected from potential retailers in Pengkalan Chepa to understand specific opinions regarding the e-waste disposal management. Therefore, convenience sampling is suitable for researchers for this study because the sampling unit is accessible, easy to measure and cooperative.

3.6.1 Sampling Frame

The sampling frame of this study will be on the retailers in Taman Bendahara, Pengkalan Chepa. A wide range from which sample participants will be taken in a specific order. In a certain way, the list will be organised. This makes it possible for study to categorise and code known classification features extracted. Such as, samples for this study will be retailers that constantly use electrical and electronic equipment in their shop.

3.7 Research Instrument Development

The questionnaire is divided into four parts: parts A, B, and C. In this study, the researcher used two designs which are closed end and scaled response questions to design the question. This research only uses two types of measurement, namely the nominal scale and the interval scale as a measure of objects or events that are set as number values.

Part A is demographic profile. In this part, it consists of respondent demographics which consists of gender, age, married status, education level, race, and years of work experience. Part A uses the descriptive statistics used to analyses the data and summarizes the data in a meaningful form. The respondent for this research was required to provide their gender, age, married status, education level, race, and years of work experience.

Part D is e-waste disposal practice. This part consists of respondents who separate their e-waste from other solid waste before disposal to the waste bin., they usually call the registered e-waste collector to dispose of e-waste, they sell their e-waste to old stuff collector., and they go to the recycling centre nearby our premises to dispose of our e-waste.

Part B and C is knowledge and attitude. This part was adopted and modified from Mahat el al. (2019) which consisted of items for these parts and variables. This section used different five scale likert types to ask the perception from respondents. Part B and Part C uses scale 1-strongly disagree, 2-disgaree, 3-neutral, 4-agree, lastly 5-strongly agree.

Part C uses reliability analysis used to investigate the consistency and stability of responses. Cronbach's alpha indicates to what extent the items are positively correlated to one another. The degree to which the items are positively connected to one another is shown by Cronbach's alpha. Hair (2015) stated that any result greater than 0.7 for the questionnaire's items indicates reliability.

3.8 Pilot Test

Before conducting the actual survey, the researcher conducted a pilot test which is a small-scale trial of the survey. The sample size for this study is 30 selected respondents as a pilot test. Thus, the researcher also conducted a pilot test by selecting 30 respondents.

3.9 Data Analysis Procedure

A tool for managing and analysing data that is helpful for statistical data analysis is called the Statistical Package for the Social Sciences (SPSS). Correlation, reliability analysis, and descriptive statistics were all used to analyse the data. The data will be analysed using descriptive statistics, to analyse demographic background of respondent.

Normality tests used in statistics to examine whether a set of data is well modelled by a standard deviation and to calculate the likelihood that a random variable undergirding the data set will be normally distributed. Specifically, the tests are a type of model selection, but depending on how one views probability, they can be understood in a variety of ways are without passing judgement on any underlying variables, descriptive statistics examines the goodness of fitting of a normal model to the data. If the fit is low, the data are not properly described by a normal distribution in that aspect. Meanwhile, data are checked against null hypothesis that they are regularly distributed in frequentist statistics testing statistical hypotheses. To ascertain if sample data were taken from a regularly distributed population, a normality test is utilised (within some tolerance). A regularly distributed sample population is needed for a few statistical tests, including the student's t-test and the one-way and two-way ANOVA.

Table 3.9: Rule of thumb on correlation coefficient

Alpha Coefficient Range	Strength of Association
<0.2	Very weak
0.2 to 0.4	Weak
0.4 to 0.6	Moderate
0.6 to 0.8	Strong
>0.8	Very

A statistic that assesses the linear relationship between two variables X and Y is the Pearson correlation coefficient, often known as Pearson's r or the bivariate correlation. Its value ranges from +1 to -1. Perfect positive correlation linear correlation is represented by a value of 1, total zero by a value of no linear correlation, meanwhile a nonparametric measure of rank correlation, the Spearman's rank correlation coefficient, is named after Charles Spearman (statistical dependence between the rankings of two variables). It evaluates how well a monotonic function can capture the connection between two variables. In this study, the direction, intensity, and significance of the association between the variables were indicated by the Pearson correlation matrix. The Pearson Product Moment Correlation is the more common name for Pearson's correlation. Table 1 indicates that when the correlation coefficient is more than 0.8, there is a very strong positive correlation between the two variables. If the correlation coefficient is less than 0.2, there is very little link between the two variables. It demonstrated the linear relationship between two variables that are dependent and independent by using examples.

The ability of independent factors to predict the dependent variable was estimated using the multiple regression analysis. To determine e-waste disposal practices among retailers in Taman Bendahara, Pengkalan Chepa. Regression analysis specifically demonstrates how, when any one of the independent variables is changed while the other independent variables are kept constant, the typical value of the dependent variable varies.

3.10 Summary

In conclusion, this chapter examines the quantitative data and explains the relationship between dependent variables and independent variables. This chapter discussed research design, population, sampling procedure, data collection procedure, research instrument development and data analysis procedure.

CHAPTER 4:

DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter will discuss on the data analysis which includes analysis from pilot test and actual survey. As for the pilot test, it used reliability and vitality test. Normality test will determine whether the sample are normality distributed or otherwise. While for the actual survey, descriptive analysis and spearman's correlation were used to answer the research questions. Descriptive analysis will describe the respondent's demographics profile while the spearman's correlation test to further analysis the relationship between the variable (knowledge and attitude) and proper e-waste disposal practices in the content of this study. All the analysis were run by SPSS latest version.

4.2 Reliability Test

A pilot test is the first step on entire research procedure, as for this study pilot test had been done on 5th January 2023. Where 30 questionnaires were distributed among Taman Bendahara, Pengkalan Chepa retailer. Then, reliability test was conducted use SPSS to determine the consistency and stability of the response.

Table 4.2: Reliability Test (Pilot Test)

Dimensions	No. Of items	Cronbach's Alpha
Knowledge	5	0.873
Attitudes	5	0.907
Practice	4	0.705

Table 4.2 concluded that, all the dimensions exhibit consistency in the responses, Knowledge as measured 5 item produced 0.873, while attitudes measured 5 items produced 0.907. As for practice 4 item produced are considered reliable because item value exceeding 0.7. This show

the item in the questionnaire from all dimensions are stable and consistent. Thus, the actual survey can be conducted.

4.3 Normality Test

Table 4.3: Normality Test

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Knowledge	.097	137	.003	.950	137	.000
Attitude	.142	137	.000	.896	137	.000
Practice	.135	137	.000	.966	137	.002
a. Lilliefors Significance Correction						

Table 4.3 summaries the data of knowledge (0.00), attitudes (0.000) and practices (0.002) have significant value less than p-value 0.05. It concluded that, the data is not normal distribution.

4.4 Descriptive Analysis

In this descriptive analysis, it measures mean of response. The scale 1 to 5 point are used to measure the response. The scale with 1-strongly disagree, 2-disgaree, 3-neutral, 4-agree, lastly 5-strongly agree.

Table 4.4: Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Knowledge	137	1.00	5.00	3.4715	1.07969
Attitude	137	1.00	5.00	3.8307	1.09353
Practice	137	1.00	5.00	3.1393	.94574
Valid N (listwise)	137				

Based on the table 4.3, The mean value of KAP are respectively. Knowledge means value 3.47 are almost agree. Attitude means value 3.83 are almost agree. As for practice means value 3.14 are almost disagree.

4.5 Demographic Profile of Respondents

Table 4.5: Demographic Profile of Respondents

Demographic Profile	Frequency	Percent (%)
Gender	**137**	**100**
- Male	55	40.1
- Female	82	59.9
Age	**137**	**100**
- Less than 20 years old	9	6.6
- 20 - 30 years old	58	42.3
- 31 - 40 years old	59	43.1
- More than 40 years old	11	8.0
Race	**137**	**100**
- Malay	119	86.9
- Chinese	15	10.9
- Indian	3	2.2
Type of shop	**137**	**100**
- Variety store	34	24.8
- Bookstore	7	5.1
- Eateries	68	49.6
- Dobby laundry	7	5.1
- Telephone shop	10	7.3
- Other shop	11	8.0
Duration of business operation	**137**	**100**
- Less than 5 years	44	32.1
- 5 – 10 years	83	60.6
- More than 10 years	10	7.3

Based on Table 4.4, show the demographic background data from the survey. The respondents are mostly female (59.9%) and malay (86.9%). Their age range are between 20 to 40 years old which means the respondents consist of young generation. The retailer in Taman Beendahara were mostly from food industry where they provide food service facilities (49.6) and conveniences store (24.8) that had been operated between 5 years to 10-year.

4.6 Spearman's Correlation Analysis

The monotonic relationship between two continuous or ordinal variables is assessed using the Spearman correlation. This is reasoning this study use spearman's correlation.

Table 4.6 Spearman's Correlation Analysis

Correlations					
			Knowledge	Attitude	e-waste disposal practices among retailers
Spearman's rho	Knowledge	Correlation Coefficient	1.000	.663**	.346**
		Sig. (2-tailed)	.	.000	.000
		N	137	137	137
	Attitude	Correlation Coefficient	.663**	1.000	.241**
		Sig. (2-tailed)	.000	.	.005
		N	137	137	137
	E-waste disposal practices among retailers	Correlation Coefficient	.346**	.241**	1.000
		Sig. (2-tailed)	.000	.005	.
		N	137	137	137
**. Correlation is significant at the 0.01 level (2-tailed).					

Spearman's correlation coefficient is a non-parametric measure of strength and direction between variable measure. The result for spearman's correlation despite in table 4.5.

Knowledge toward E-waste disposal practices among retailers

P=0.346, (P0.000 < 0.01)

There is a significant weak positive relationship between knowledge and proper e-waste disposal practices among retailers in Taman Bendahara. Thus, H1 is acceptted.

Attitudes toward E-waste disposal practices among retailers

P=0.241, (P0.005 < 0.01)

There is a significant weak positive relationship between attitudes and proper e-waste disposal practices among retailers in Taman Bendahara. Thus, H2 is acceptted.

Therefore, is sufficient evident to prove that knowledge and attitudes are the determinants which affect e-waste disposal practices among retailers in Taman Bendahara, Pengkalan Chepa.

4.7 Conclusion

Conclusion, in this chapter the research achieves to know that the questionnaires item all reliable and the data not normal distributed. Lastly, all variable measured are significant though it has positive weak relationship with proper e-waste disposal practices among retailers in Taman Bendahara.

CHAPTER 5:

DISCUSSION AND CONCLUSION

5.1 Introduction

This chapter discusses key findings based on the research analysis that has been ran. The Spearman Correlation Analysis will be presented in detail in chapter four to demonstrate the survivability of this research topic. As for the problems and limitations encountered in this research project, a few recommendations for future research will be discussed at the end to conclude this research.

5.2 Key Findings

Futher discussion of the results will be mentioned in this chapter based on research objectives. Moreover, limitation will also be identified and highlighted in this chapter for future researcher's recommendations.

5.3 Discussion

5.3.1 Research Objectives 1

A) To investigate the relationship between knowledge and e-waste disposal practices among retailers in Taman Bendahara, Pengkalan Chepa.

Based on first research objectives for this study, it can be concluded that there is a significant relationship between knowledge and e-waste disposal practices among retailers in Taman Bendahara, Pengkalan Chepa. The finding shows that (0.346, P=0.000) this is significance positive value to accept relationship between knowledge and e-waste disposal practices among retailers. However, the strength of the relationship is weak. This reveals that an increased knowledge by individuals results in more positive attitudes towards e-waste and

more practices with e-waste management. Some respondents are familiar with e-waste and its generation, but they are not much confident; hence, e-waste awareness programs should be launched. It is found that the respondents are aware of the presence of hazardous materials in e-waste, but they are not too familiar with its variety and effects on human health & the environment. Also, most of them know that electronic waste can pollute the environment, know the types of items that need to be disposed of properly, know the correct way to dispose of electronic waste, know where to take our electronic waste to be disposed of properly. However, half of them also have very little knowledge about the rules/policies related to the proper disposal of electronic waste in Malaysia.

This is the outcome of support. Despite widespread recognition of the negative effects of e-waste activities on both the environment and human health, e-waste workers demonstrated overall poorer knowledge (88%), a more poor attitude (74%), and more unsafe practises that shows a positive relationship between knowledge and practices of e-waste. This is different from the results presented by Islam et al. (2016) whose study obtained information showing that the total number of respondents had no knowledge about e-waste. Overall, it has been found that the knowledge of e-waste management among the community in Taman Bendahara, Pengkalan Chepa is still in the process of improvement. Likewise with the findings by Chibunna et al. (2012), showed that awareness of e-waste varies according to the location where the respondents live: those who live in urban areas have a higher level of awareness than respondents who live in rural areas due to limitations in terms of information. However, Awareness of e-waste disposal in the community is closely related to the three main elements that have been set in the KAP Model, namely knowledge, attitude, and practice, as described in the introduction of the article. In conclusion, it was found that knowledge and attitude have an impact on the practice of e-waste disposal even though it is still at a weak level.

5.3.2 Research Objective 2

B) To investigate the relationship attitude e-waste disposal practices among retailers' management in Taman Bendahara, Pengkalan Chepa.

The findings show that P=0.005 this is significance value to accept the relationship attitude e-waste disposal practices among retailers' management in Taman Bendahara, Pengkalan Chepa. The significant value between knowledge and e-waste disposal practices among retailers is 0.241 which means there is a positive relationship between knowledge and e-waste disposal practices among retailers and the strength of the relationship is weak. E-waste practice, some retailers agree that to dispose of e-waste properly has become their responsibility such as separate our electronic waste from other solid waste before throwing it in the trash, contact the collector electronic waste registered to dispose of electronic waste and go to a recycling centre near our premises to dispose of electronic waste.

Mahat (2019) shows that the overall amount of variables and sub variables of e-waste disposal practises is moderate. When it comes to e-waste disposal practises, the findings of the knowledge level and attitudes differ. It demonstrates that now the community in Selangor remains in the center of the pack when it comes to practising sustainable e-waste disposal. This is due to the fact that the majority of respondents were unaware of the proper practises for treating and disposing of e waste. (Kalana, 2010; Nur Sumaiyyah et al., 2015). This is like the previous studies by Ho et al. (2015) and Kalana (2010) which stated that the attitude of Malaysians towards e-waste recycling was still poor. Thus, they did not practice managing e-waste properly.

Therefore, to develop more practical e-waste disposal practises and therefore protect the environment, public awareness of e-waste issues must be increased via education

campaigns in addition to the placement of educational agents at a young age, i.e., in primary schools as well as secondary (Kalana, 2010; Hanifah et al., 2016). Government support has also been proven for e-waste practices and knowledge. As a government initiative to ensure the environment is clean and safe from e-waste by collecting e-waste and sending it to a registered e-waste collection program or e-waste collection center. For example, from January to June 2022, a total of 70 e-waste collection programs have been carried out throughout Malaysia. Various types of electrical and electronic waste are successfully collected for recycling. The involvement and commitment of the public proves that the awareness of the importance of sustainable and environmentally friendly e-waste management among Malaysians has increased (Majlis Keselamatan Negara, 2022).

In conclusion, according to Mahat et al. (2019), the results of the study show that there is a relationship between the KAP model. Knowledge about e-waste has a significant influence on community e-waste management practices among the people (Miner et al., 2020). Coordination of better knowledge and attitudes will result in an effective e-waste management approach (Hamzah et al., 2020). Individual understanding of e-waste management should be continually expanded through mass media, social media, and other sources and any other responsible entity is responsible for informing the public about e-waste and its proper handling, especially in the Taman bendahara district, Pengkalan Chepa. Individuals will develop a positive attitude toward e-waste because of this well-understood information, resulting in increased e-waste management practices in their lives.

5.4 Implications of The Study

This section will discuss on the implication that has been identified throughout the research process. The implication divided into theoretical and practices implications.

5.4.1 Theoretical Implications

Throughout this research, e-waste disposal practices among retailers in Taman Bendahara, Pengkalan Chepa had been proven by theoretical contribution. Contributed to the body of knowledge especially in knowledge, attitude and practices (KAP) theory with different content. The findings will be helpful for study related to sub-urban areas among small medium retailers. The findings of this research proved to be in line with a theory from the previous research and these might be one of the sources of reference for future research as well.

5.4.2 Practical Implications

The findings of this study would help e-waste disposal practices among retailers in Taman Bendahara, Pengkalan Chepa in a better way since this research might give a method and improvement for them to manage e-waste disposal. In this research also gained knowledge by practices in survey. Practices also can create awareness indirectly on how to manage e-waste property of their premises. Knowledge can help retailers manage the e-waste disposal and not damage the environment. Attitude is also a behavior to deal with electronic waste. If you have a good attitude and good thinking, you will not choose to destroy the environment but to protect the environment. Practice can enhance more understanding on e-waste impact to the environment. Practice depends on your knowledge and attitude whether there is a right way and a good attitude.

5.5 Limitations of Study & Suggestion for Future Research

The findings of this study must be seen considering some limitations. First, this research is focusing on retailers in a specific place which is in Taman Bendahara,Pengkalan Chepa. Taman Bendahara is only a small part of Kelantan; this research cannot accurately represent the whole Kelantan. The second limitation concerns the small sample size for this study. There is no variety in this study. This limits the respondents, that lead to the same ethnic which is Malays and only focused on retailers. The sample size is too small, statistical tests will fail to detect significant relationships within the data set. Lastly, in this study measured examined only two independent variables which were knowledge and attitude. Because there are only two variables, it may not accurately represent the e-waste disposal practices among retailers.

As the research progressed, there are few suggestions for future research. The recommendations for researchers that have similar study are suggested to not only focus on Taman Bendahara retailers but also go for other areas of Kelantan for gaining more respondents. Future researchers need to increase the sample size to obtain accurate results and have more variety for the study. The larger the sample size of the respondents, the more accurate and reliable the result (Nuijtenetal, 2015). Thus, future researchers should increase the sample size to increase accuracy and reliability of the study. Future researchers also can add more independent variables in the study which can affect the respondent's practices for disposing of e-waste.

5.6 Conclusion

In conclusion, this study focuses on e-waste disposal practices among retailers in Taman Bendahara, Pengkalan Chepa. This study has two objectives which are knowledge and attitude have been included to determine the relationship with dependent variables which is e-waste disposal practices. This involves an overview of the statistical evaluation and a review

of the main location that will be relevant to the quantitative studies and the study issue. In the end, all two hypotheses have been proven to have a positive relationship and none of the hypotheses is rejected. In the meantime, it also included the limitation and recommendation regarding this research is important to provide the wide range of the information about the advantages and disadvantages related to this topic for future research. May the future research that discuss the similar topic with this one could be made up with a better idea according to the recommendations and suggestion.

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APPENDIX A (DRAFT OF QUESTIONNAIRE)

UNIVERSITI MALAYSIA KELANTAN, PENGKALAN CHEPA, 16100 KOTA BHARU, KELANTAN.

TITLE: A STUDY ON E-WASTE DISPOSAL PRACTICES AMONG RETAILERS IN TAMAN BENDAHARA, PENGKALAN CHEPA.

Dear Respondent,

Researchers need your cooperation to complete this questionnaire, we would greatly appreciate and thank you for taking the time to complete this survey. We truly value the information you have provided. The information you provide will be used for academic purposes only and all information provided by respondents is for research use only. Thank you and we appreciate your cooperation.

Responden yang dihormati,

Penyelidik memerlukan kerjasama anda untuk melengkapkan soal selidik ini, kami amat menghargai dan mengucapkan terima kasih kerana meluangkan masa untuk melengkapkan tinjauan ini. Kami sangat menghargai maklumat yang anda berikan. Maklumat yang anda berikan akan digunakan untuk tujuan akademik sahaja dan semua maklumat yang diberikan oleh responden adalah untuk kegunaan penyelidikan sahaja. Terima kasih dan kerjasama anda amat kami hargai.

A. LATAR BELAKANG RESPONDEN

Arahan: Sila tandakan (/) pada jawapan yang berkenaan.

A1. Jantina : Lelaki
- ☐ Perempuan
- ☐

A2. Umur : kurang dari 20 tahun
- ☐ 21 - 30 tahun
- ☐ 31 - 40 tahun
- ☐ 40 tahun dan ke atas
- ☐

A3. Bangsa : Malay
- ☐ Indian
- ☐ Chinese
- ☐ Lain-lain (sila nyatakan, _____)
- ☐

A4. Jenis kedai : Kedai
- ☐ runcit
- ☐ Kedai buku
- ☐ Kedai makan
- ☐ Dobi
- ☐ Kedai Telefon
- ☐ Lain-lain (sila nyatakan, _____)

A5. Tempoh beroperasi :
- ☐ kurang dari 5 tahun 5
- ☐ – 10 tahun
- ☐ 10 tahun dan ke atas

• PENGETAHUAN TERHADAP AMALAN PEMBUANGAN SISA ELEKTRONIK

Arahan: Sila tandakan (/) pada jawapan yang berkenaan.

1.Sangat tidak setuju 2.Tidak setuju 3.Sederhana 4.Setuju 5.Sangat setuju

No.	Criteria / Kriteria	1	2	3	4	5
B1.	Kita tahu bahawa sisa elektronik boleh mencemarkan alam sekitar.					
B2.	Kami tahu jenis barang yang perlu dilupuskan dengan betul.					
B3.	Kami tahu terdapat peraturan/polisi berkaitan dengan pembuangan sisa elektronik yang betul di Malaysia.					

B4.	Kami tahu cara yang betul untuk membuang sisa elektronik.					
B5.	Kami tahu ke mana hendak membawa sisa elektronik kami untuk dilupuskan dengan betul.					

• SIKAP TERHADAP AMALAN PEMBUANGAN SISA ELEKTRONIK

Arahan: Sila tandakan (/) pada jawapan yang berkenaan.

1.Sangat tidak setuju 2.Tidak setuju 3.Sederhana 4.Setuju 5.Sangat setuju

No.	Criteria / Kriteria	1	2	3	4	5
C1.	Kami merasakan adalah baik untuk melupuskan sisa elektrik secara betul					
C2.	Kami berasa gembira apabila kami membuang sisa elektronik dengan betul.					
C3.	Kami berasa puas apabila kami membuang sisa elektronik dengan betul.					
C4.	Kami merasakan bahawa untuk melupuskan sisa elektronik dengan betul telah menjadi tanggungjawab kami.					
C5.	Kami merasakan bahawa kami menyumbang kepada masyarakat apabila kami membuang sisa elektronik dengan betul.					

• AMALAN PEMBUANGAN SISA ELEKTRONIK

Arahan: Sila tandakan (/) pada jawapan yang berkenaan.

1.Sangat tidak setuju 2.Tidak setuju 3.Sederhana 4.Setuju 5.Sangat setuju

No.	Criteria / Kriteria	1	2	3	4	5
D1.	Kami mengasingkan sisa elektronik kami daripada sisa pepejal lain sebelum ini buang ke tong sampah.					
D2.	Kami menghubungi pengumpul sisa elektronik berdaftar untuk membuang sisa elektronik.					
D3.	Kami menjual sisa elektronik kami kepada pengumpul barangan lama.					
D4.	Kami pergi ke pusat kitar semula berhampiran premis kami untuk membuang sisa elektronik.					

* Terima Kasih *

APPENDIX B

Task Description	Start Date	End Date
PPTA briefing	Oct 15, 2022	Oct 15, 2022
Identifying the problem for research topic	Oct 16, 2022	Oct 18, 2022
First meeting with supervisor for topic confirmation	Oct 19, 2022	Oct 19, 2022
Identify the appropriate research variables	Oct 20, 2022	Oct 23, 2022
Second meeting with supervisor for update research with the details	Oct 25, 2022	Oct 25, 2022
Identify research objectives, questions and hypotheses	Oct 26, 2022	Oct 31 2022
Develop the theoretical framework for the study	Oct 26, 2022	Oct 31, 2022
Review literatures related to the problem	Oct 26, 2022	Oct 31, 2022
Research approaches to the problem	Oct 26, 2022	Oct 31, 2022
Third meeting with supervisor	Nov 1, 2022	Nov 1, 2022
Develop an appropriate research design	Nov 2, 2022	Nov 8, 2022
Design questionnaire	Nov 9, 2022	Nov 11, 2022

Task Description	Start Date	End Date
Questionnaire confirmation	Nov 22, 2022	Nov 22, 2022
Fourth meeting with supervisor for checking proposal	Nov 27, 2022	Nov 27, 2022
Compile and submit research proposal	Nov 28, 2022	Nov 29, 2022
Presentation of research proposal	Dec 6, 2022	Dec 6, 2022