APPLYING THE THEORY OF ACCEPTANCE MODEL (TAM) TO UNDERSTAND THE ADOPTION OF ELECTRONIC PRICE TAGS AT HYPERMARKET IN MALACCA

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# DECLARATION

"I hereby declare this thesis is the result of my own work except citation and excerpts of each of which I have mentioned in the references"

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# DEDICATION

To my beloved parents, supervisor and friends.

Thank you all for the support, guidance and encouragement. Without this valuable assistance from all of you, I would never have accomplished this research.

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# ABSTRACT

Technology plays an important role in many industries including retail industry. The retail industry had faced changes with the introduction of future technologies that changes the retail environment. These new technology acts as the solutions for this industry. Apart from electronic price tags, there are some other technological innovations introduced in the retail industry include quick response (qr) codes, electronic price tags, digital advertising displays, self-checkout systems, personal selling assistants and smart kiosks. This research is conducted to examine the factors that influence the intention to use electronic price tags at hypermarket in Malacca. The objectives are to analyse the factors that influence the intention to use electronic price tags and also the factor that has the stronger impact that influence the intention to use electronic price tags at hypermarket in Malacca. The sample in this research consists of 217 questionnaires from management and employees in the hypermarket. By this research, the hypermarket can implement this new technology to solve the problems faced thus helped them to familiarize and accustomed with this technology.

# ABSTRAK

Teknologi memainkan peranan penting dalam pelbagai industri termasuk industri runcit. Industri runcit telah menghadapi perubahan dengan pengenalan teknologi masa depan yang mengubah persekitaran industri ini. Teknologi baru ini bertindak sebagai penyelesaian untuk industri ini. Selain daripada tanda harga elektronik, terdapat beberapa inovasi teknologi lain yang diperkenalkan dalam industri runcit termasuk maklum balas yang cepat (qr) Kod, tanda harga elektronik, paparan pengiklanan digital, sistem checkout diri, jualan pembantu peribadi dan kiosk pintar. Kajian ini bertujuan untuk mengkaji faktor-faktor yang mempengaruhi niat untuk menggunakan tanda harga elektronik di pasar raya besar di Melaka. Matlamatnya adalah untuk menganalisis faktor-faktor yang mempengaruhi niat untuk menggunakan tanda harga elektronik dan juga faktor yang mempunyai kesan yang lebih kuat yang mempengaruhi niat untuk menggunakan tanda harga elektronik di pasar raya besar di Melaka. Sampel dalam kajian ini terdiri daripada 217 soal selidik daripada pihak pengurusan dan pekerja di pasar raya besar. Dengan kajian ini, pasar raya besar boleh melaksanakan teknologi baru ini untuk menyelesaikan masalah yang dihadapi oleh itu membantu mereka untuk membiasakan dan membiasakan diri dengan teknologi ini.

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# CHAPTER 1

# INTRODUCTION

## 1.1    Background of the Study

Retailing is an activity that involved transaction between retailer and a buyer. This activity provides grocery to the buyer as well give opportunity to the retailer to sell products or services. Both retailer and buyer get benefit from this activity. Hypermarket retailing is one of the modern retailing concepts that are widely accepted by most consumers, especially in urban and suburban areas. The wide variety of product choices and brands has become the main attraction for consumers to purchase basic necessities and household products from hypermarkets (Hassan & Rahman, 2012). According to Hasliza et al., (2013), stated that the uniqueness of this modern retailing concept is that the consumer is being forced to do all the shopping activities themselves by taking the trolley or basket, choosing the product from the shelves and bringing the products to the counter for payment.

Nowadays, more new technology innovation is developing to fulfill the user needs in the retail industry. Moreover according to Hitt et al., (2001) stated that firms or organizations need to actively participate in the global market, use the latest technology, continue to develop new technology, and structure themselves to be ahead in these markets. The purpose of these new technologies is to provide solution

to the problems that exist. Electronic price tags are discussed as a possible technology to ease this problem that applies, on average, to $2 - 3$ percent of products in a retail store. (Kalyanam et al., 2010). The main feature characterizing these technologies is their capability to provide detailed and constantly updated information on products and services available in the stores (i.e. price, promotions, special discounts, etc.), which users can access through entertaining and user-friendly interfaces (Breugelmans and Campo, 2011).

Currently, if employees in the hypermarket want to update their price tags they have to update it manually, meaning there is no more efficient ways that can be used during the process. The process of changing prices manually required many employees and very costly. Hypermarket needs to bear higher cost for this process thus causing loss to them. By using the electronic price tags, hypermarkets will benefit from this technology and can help in replacement of price tags. This electronic price tags can help solve all the problems therefore it is the suitable solution to the hypermarket.

## 1.2    Problem Statement

Retailing industry had faced a transformation along with the time. Over the past few decades, this industry undergoes transformation into a new concept of modern retailing. However, this industry still faced a few problems in many aspects. One of the problems is the problems with their price tags. Most of the hypermarket in this industry used the traditional paper price tags. The following list present the problem faces by hypermarket when using the current paper price tags.

### 1.2.1   Problem in updating price tags

Another issue is the price tag display on the rack is not updated. The price tag display and the price in the system are different. According to Evolis,Com (2012), in today world of retailing, change is a constant: price fluctuates, products are sourced from various areas while merchandising varies according to received goods. These changes add complexities in updating products labels and tags. This happen because the current paper price tags in the hypermarket is updated manually usually by replacing them. The update process is taking a lot of time and prone to errors.

The employees of the hypermarket also might forgot to change the price tag after sales end or sales promotion and customer pick the product to buy based on the price tag. When customer goes to cashier to make the payment they find out the price appears on cashier is different from the price tag. This make customers will feels tricked. By using these electronic price tags, employees just need to change it at the hypermarket database in order to change the prices because these electronic price tags connected to the hypermarket database via wireless communication technology.

### 1.2.2   High Labor Cost

According to Kalyanam et al., (2010) stated that changing prices manually is very costly. This is because in the updating process of price tags, more employees are needed to update the price tags. Hypermarket need to hire more employees in order to update the price tags. This is due to the size of the hypermarket that provides a lot of items to be sold. There are many departments in the hypermarket so many employees needed to update price tags in each of that department.

According to Prepletany (2013) found that greater labor cost savings are achievable by rolling out price changes from a centralized computer system across the whole store instead of replacing paper price tags manually by the store staff. By using the electronic price tags, the updating process is done automatically so less

number of employees is needed in this process. This can helped hypermarket to save their cost in term of operation activities thus also improved their management process.

## 1.3    Research Questions

The research questions for this research are:

1. What are factors that influence the intention to use electronic price tags at hypermarket in Malacca?
2. Which factor has the stronger impact on the intention to use electronic price tags at hypermarket in Malacca?

## 1.4    Research Objectives

1. To examine the factors that influences the intention to use electronic price tags at hypermarket in Malacca
2. To identify the factor that has the stronger impact on the intention to use electronic price tags at hypermarket in Malacca.

## 1.5    Scope

The research is focused on the influencing factors and the intention to use electronic price tags at hypermarket located in Malacca where the hypermarket still

use the current paper price tags and still did not expose to the electronic price tags. The researcher chooses Aeon and Tesco Bandaraya Melaka situated in Malacca city. These two hypermarkets are the non local hypermarkets that operate in many countries around the world. Aeon and Tesco are been chosen because both are one of the largest players of the retail industry in Malaysia. Aeon and Tesco are always been committed to providing the best shopping experience. Hence, these hypermarket continue to focus on doing the right thing for their customers, colleagues and the communities they serve including improving their services in term of their price tags of the goods at the shelf. So, these two hypermarkets are the suitable hypermarkets for this research.

In this research, variables that will be covered are the factors that influence the intention to use electronic price tags and the factor that has the stronger impact on the intention to use electronic price tags in hypermarket. The researcher distributed questionnaire among the management and employees in the hypermarket to get enough information regarding this research.

The respondent for this research are the management and the employees at the hypermarket in Malacca. This is because management that being responsible in implement or adoption of new technology in every organization meanwhile employees is responsible for the process of using the new technology. Both play an important role as the respondent for this research that will help provide information needed by answering the questionnaire.

## 1.6    Limitation

The research is limited in the several ways. First is in knowledge. The respondents in the research will probably did not have the knowledge in these electronic price tags. So the data could be not reliable. Besides that, it also limited in

term of honesty of the respondents. This is because they did not know about the technology. The respondents will be probably not honest when they are answering question during the survey. The researcher also faced limitation in term of resources. There is limitation of the information in term of the journal, article and academic research that relate to this research.

## 1.7 Keys Assumption of the Study

The researcher assumes that these electronic price tags will help hypermarket enhance their management. This will remove the difficulty faced by them in updating price tags when the prices change. This happen because the retail prices always change according to the market condition. Besides that, it also helps hypermarket to save their cost in term of the labor and thus enhance their profit. Therefore, these electronic price tags lead to price accuracy that ensure the correct price, cost savings and also benefit customers by eliminate problems at the counters when the customers want to pay for the item.

## 1.8 Importance of the Study

This study is extremely timely and important as it has provided a new path for the retail industry. This new price tag will help local stores owners and employees updating price tags. They need to update the price tags often due to the change in price of products displayed on their stores. This is because they always need to update the price tags when the prices in market for certain products change due to the

market condition. This will lead to a loss in revenue as the products are being sold at the previous price instead of the new price.

With this innovation in the price tags, it will help them because the update process is performed easily. With this new price tags, it more responsiveness, time savings and enhanced brand image. The new price tags are more easy to use and responsiveness when the local stores owner's employees wants to update the price tags. Besides that, it more time savings when using this new price tags because the it more to electronic so the employees can just update it online instead of using the traditional ways that need a lot of time. It also provides a wealth of information like price, product description, special offer and many more. By using with this price tags, it will help the updating process of price tags are easier and convenient for the local stores owners and employees. So that, this research is extremely and important as the information derived is useful to the local hypermarket owners and employees in the local stores in Malacca to improve the updating process of price tags through this type of innovation.

## 1.9    Summary

The electronic price tags was invented to overcome the problems the hypermarket owners and employees faced when they often need to update the price tags displayed in their glass cabinets or on their shelves. It is believed that this price tags will improved the function of price tags especially on responsiveness and attractiveness aspects of the price tags. The researcher also provides the benefit about the electronic price tags compared with the existing price tags. The researcher also wanted the local hypermarket owners and employees felt comfortable and do not worried when they used these new price tags. The researcher hopes that this new price tags can overcome the all the problems faced by the hypermarket in this retail industry.

**CHAPTER 2**

**LITERATURE REVIEW**

**2.1     Introduction**

This chapter is mainly discussed about literature review in this research which is the adoption of technology in the retail industry. The literature review is based on the secondary data that relate with this research. During this research, the researcher uses various materials such as journals, articles, thesis, books and other resources as references. Only the relevant data is choose to make sure it relate to the research objective. For this chapter, the researcher discussed more about factors that influence adoption of electronic price tags at hypermarket in Malacca. The researcher used theoretical framework that suitable to this research that is based on existing theory based on the previous research.

The discussion of the literature reviews also discuss about the definition of technology and technology adoption. Besides that, Technology Acceptance Model (TAM) Theory that related to the technology adoption also been discussed in this chapter. This chapter also will provide a theoretical framework of adoption of technology that related to the research questions. This will help the researcher to understand the theory of technology adoption for hypermarket.

**2.2    Technology Adoption**

**2.2.1    Technology**

Technology has always been an important element in the development of economic and competitive success of firms. Technology plays an important role in a variety of industries including retail industry. According to Prepletany (2013) stated nowadays along with the development of technology and innovation, technology plays an important role for businesses, including for retailers. This means that the retail industry must be constantly aware and familiarized with the rapid technological changes that have been made to put in a lot of these industries, particularly retail industry.

In addition to mobile digital technology, some other technological innovations introduced in the retail industry including Quick Response (QR) Code, the price tag electronics, display digital advertising, checkout system itself, selling personal assistant, kiosk smart, and overall connection of all these innovations social media platforms and retailers' customized platforms and applications (Krafft and Mantrala 2010) .This technology is important to find a solution to the existing problems faced by the retail industry.

**2.2.2    Technology Adoption**

The use of technology is an option to acquire and use new inventions or innovations (Bronwyn and Beethika, 2002). According to (E. Spanos, 2009) explain that the use of the innovation is a very complex process. In addition, the technology acceptance decisions are further complicated by a variety of other forces such as

compatibility with the business strategy, integration with existing systems and heritage infrastructure, global competition, the impact of suppliers, partners, and customers, etc. (Bhattacharya, 2015). However, the use of emerging technologies as an important factor for the effectiveness of any business even though it has a range of forces that become the challenge of its implementation.

There is an integrative model for the adoption of technology. According to (E.Spanos, 2015) explains that the model that describes the use of innovation as a two-stage process consisting of an initial innovation and the implementation of innovation for each of these stages, several factors identified as important background. The initial stage is the stage where decisions are made regarding acceptance or rejection of a given innovation while innovation is the implementation stage is the implementation of innovation by target user. The implementation stage is an important stage because it requires the full commitment of the management to ensure that groups of workers in firms involved in innovation can easily accept it.

### 2.2.3 Electronic Price Tags

The growing trend of electronic price tags in the retail industry has become a hot issue discussed at this time among retailers in the world. According to Yingzhi et al., 2015), stated that the electronic price tag is an electronic display device which is placed on the shelf to replace the traditional paper price tags. The electronic price tag is a replacement for the traditional paper price tag that can help in updating the prices tags. It saves more time for the process to be done quickly because the price can be change direct from a computer system centered on hypermarket for the price tag through wireless communication technology.

This new technology is to improve the process of updating the price tags to help retailers and employees in the local shops. The concept of the electronic price tag is much easier and can improve the efficiency in the management of local shops.

Electronic price tags are the price tag that uses digital applications and it is different from the way it works. Each electronic price tag connected to the database hypermarkets via wireless communication technology and the latest information commodity prices show through Electronic Paper Display (EPD), complete product update information. (Yingzhi et al., 2015).



**Figure 2.1: An Electronic Price Tag**

## 2.3    Technology Acceptance Model (TAM) Theory

The Technology Acceptance Model (TAM) is a theory introduced by Davis (1989) to explain the computer-usage behavior. This theory is based on the Theory of Reasoned Action (Fishbein and Ajzen, 1975). TAM is the model most cited in research to study consumer acceptance and use of technology. The Technology Acceptance Model (TAM) is a theory that explains how the information system users come to accept and use the technology. This model shows that when consumers are presented with a new software package, several factors influence their decision about how and when they will use it. This model is important in the measuring factors that influence the decision to accept the new technology that has been introduced through the attitude that led to any real intention to use the system.