BINGOBOX USAGE OF CUSTOMER DURING COVID-19 AT MALAYSIA

NUR HANEES BINTI MOHD RAMLEE

Faculty of Technology Management and Technopreneurship

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

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NUR HANEES BINTI MOHD RAMLEE

Report submitted in fulfilment of the requirement for the degree of Bachelor of Technology Management (Hons) in Innovation Technology

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APPROVAL

I hereby declare that every work in this paper, with the exception of those indicated in the references, is the result of my own research. The thesis has not been approved for any degree and is not being submitted concurrently with another degree's candidature. This thesis meets the requirements for the Bachelor of Technology Management degree in terms of scope and quality.

(Innovation Technology)

Signature   : ………………………………

Name of supervisor   : Dr. Nurulizwa Binti Abdul Rashid

Date   : 2 FEB 2023

Signature   : ………………………………….

Name of Panel   : PUAN NOR RATNA BINTI MASROM
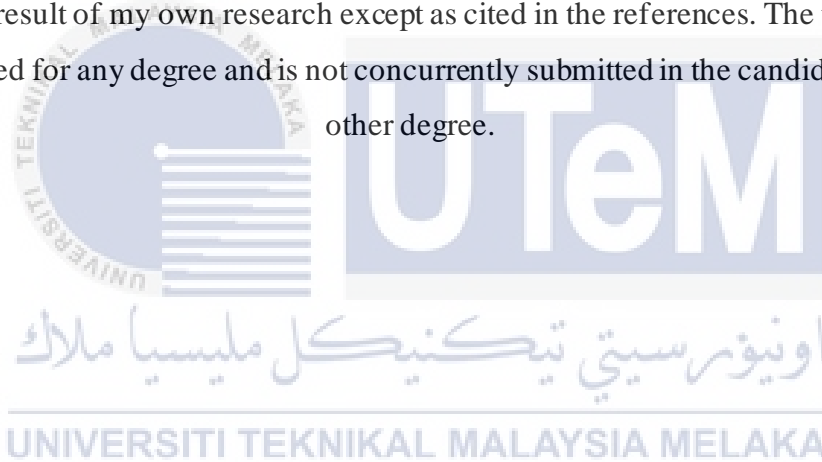
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DECLARATION

I hereby declared that this thesis entitled

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is the result of my own research except as cited in the references. The thesis has not been accepted for any degree and is not concurrently submitted in the candidature of any other degree.

Signature : ………… *Hanees* ………………

Name : NUR HANEES BINTI MOHD RAMLEE

Date : 19 JUNE 2022

DEDICATION

I would like to devote my gratitude to my precious family members who have helped and inspired me all the time, beloved supervisor Dr Nurulizwa Binti Abdul Rashid, who are willing to spend a lot of time guiding me and my classmates who share their knowledge during the study. Without their blessing and support, this study is difficult to complete.
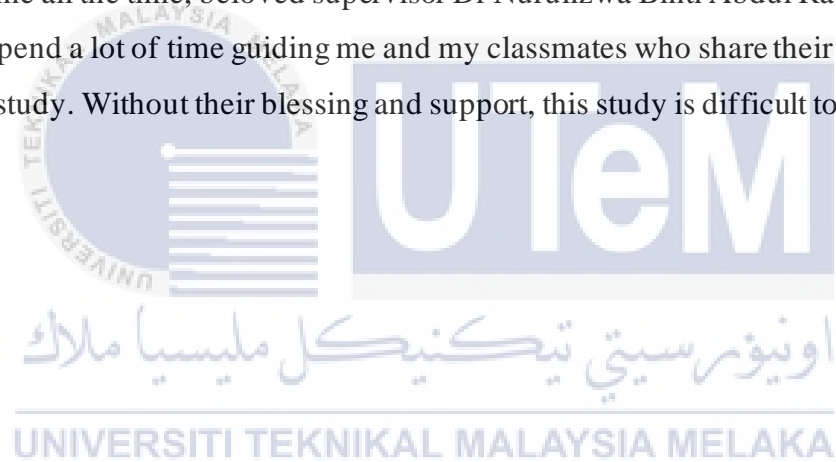
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ABSTRACT

A Bingobox store is a retail establishment where consumers can select and pack their own items without the assistance of a store employee. Several payment terminals are replaced by a cashless payment mode with a unified payment system. Grocery stores without cashiers became popular in Malaysia, especially after the country was afflicted by the covid-19 pandemic virus. According to the current literature, research on non-cashier convenience stores stresses technical, organizational, and implementation elements while paying little attention to comprehension. The findings of this study suggest that all relevant constructs have a strong association with Bingobox store user satisfaction. As a result, this research could benefit the community and government to develop a better cashier-free retail store system for consumers.

Keywords *- Internet of Thing (IoT), Technology Adoption*

ABSTRAK

Kedai Bingobox ialah pertubuhan runcit di mana pengguna boleh memilih dan membungkus barang mereka sendiri tanpa bantuan pekerja kedai. Beberapa terminal pembayaran digantikan dengan mod pembayaran tanpa tunai dengan sistem pembayaran bersatu. Kedai runcit tanpa juruwang menjadi popular di Malaysia, terutamanya selepas negara dilanda virus pandemik covid-19. Menurut kesusasteraan semasa, penyelidikan tentang kedai serbaneka bukan juruwang menekankan elemen teknikal, organisasi dan pelaksanaan sambil memberi sedikit perhatian kepada pemahaman. Dapatan kajian ini mencadangkan bahawa semua konstruk yang berkaitan mempunyai perkaitan yang kuat dengan kepuasan pengguna kedai Bingobox. Hasilnya, penyelidikan ini boleh memberi manfaat kepada masyarakat dan kerajaan untuk membangunkan sistem kedai runcit bebas juruwang yang lebih baik untuk pengguna.

Kata kunci- Internet Pelbagai Benda (IPB), Penerimaan Teknologi

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LIST OF ABBREVIATION

ABBREVIATION	MEANING
GDP	Gross Domestic Product
IoT	Internet of Things
AI	Artificial Intelligence
SST	Self-Service Technology
4IR	Fourth Industrial Revolution
ATMs	Automated Teller Machines
TAM	Technology Acceptance Model
AV	Autonomous Vehicles
KL	Kuala Lumpur
ICT	Information and Communications Technology
EPC	Electronic Product Code
ITU	International Telecommunication Union
IP	Internet Protocol
SRT	Smart Retail Technology
IPS	Indoor Positioning System
GPS	Global Positioning System
MCO	Movement Control Order
RFID	Radio Frequency Identification
NFC	Near Field Communication

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CHAPTER 1

INTRODUCTION

1.0   INTRODUCTION

The research objective of this chapter is primarily to introduce about the studied of technology transfer in Internet of Things (IoT). In this chapter will discuss about the background of IoT where it will give its definition and to explore the implementation IoT technology in agriculture sector. Agriculture was the backbone of the Malaysian economy in Gross Domestic Product (GDP). University and agriculture sector have linkage in technology transfer process to ensure IoT successful. Besides, the researcher confers the problem statement, the research question, research objective, the scope of the study, and the significance of the study will be addressed from this chapter.

1.1   Background of Study

New technologies and modes of labour have significantly altered the nature of labour, with important implications for the global economy. Users are increasingly drawn to online shopping because e-commerce sites frequently offer a wide selection of services and items tailored to their unique requirements. Convenience, round-the-clock availability, variable pricing discounts, and free door-to-door delivery are some of the most major benefits of purchasing online. Currently, an increasing number of internet firms claim increased demand for their goods and services (Singh and Rana, 2018).

Recent developments in technology and working practises have brought about fundamental shifts in the character of work, which in turn have had a major impact on economies all over the world. Users are becoming more and more compelled to make their purchases online since e-stores frequently give a diverse selection of services and items that are geared specifically toward meeting the users' individual requirements. Convenience, around-the-clock availability, cost savings due to changeable pricing, and free delivery door-to-door are some of the most major benefits associated with making purchases online. At this very moment, an ever-increasing number of internet firms are reporting an increase in the amount of demand for their goods and services (Singh and Rana, 2018).

According to D. Schuette, the revolution of the Internet has changed the way that business is done, and its development in the field of information technology has empowered many retailers to expand their business from limited geographical borders to vast markets. Additionally, it has enabled consumers to shop from anywhere and at any time. The internet is being used for all sorts of things these days, including educational and recreational pursuits. In addition to these activities, it has provided the company with a helpful tool that it can use to carry out transactions and activities that are linked to the business. Additionally, it has provided the tool for access and interaction with one another through websites owned by the business, which has not only lowered the costs associated with running the business but also enabled the firm to run more smoothly and effectively (J. A. Senn 2000)

Therefore, the Internet affords both the supplier and the buyer two forms of marketing ease that they may take advantage of. The buyer utilises the service due to

the variety of services available, such as the availability of various products before making a buying decision, and delivery of product at doorstep, which makes it suitable for many reasons (for example, avoids travelling, saves time and resources); on the other hand, industries make use of the Internet to communicate with consumers and offer a wide range of products. As a result, it has developed into an essential instrument for use in marketing, with the aim of maximising the potential of trade and commerce. Consumers are able to gain access to the products, place orders for those things, and make payments in the form of cash or pay online for the products at the time of delivery thanks to e-commerce, which enables businesses to function nonstop and uninterrupted around the clock. Additionally, the Internet has added value for customers by providing them with the ability to compare products, collect data, search for pertinent information, compare that information related with other products or services, and select the option that will provide them with the best results before using it.

1.1.1   Definition of Unmanned Store

An unmanned store is a retail enterprise where consumers are free to select and pack their own goods without the assistance of a sales assistant. The proliferation of payment terminals is being phased out in favour of cashless payment methods that employ a single payment system. The term "unmanned stores" refers to retail outlets that have replaced human personnel with cutting-edge technology, most notably artificial intelligence (AI), in order to increase efficiency and reduce long-term costs. Unmanned shops that serve as an aid to smart grocery shopping are becoming popular in a number of countries. It will allow people to interact with the product via their mobile phones. As seen by the debut of Amazon Go in the United States, 7-Eleven Signatures in South Korea, and Regi-robo in Japan, the proliferation of stores where humans are no longer required to conduct work has become a common trend. This conversation will centre on rebranding traditional grocery shopping practises in Malaysia as part of an endeavour to bring new ways for businesses to transact there.

Since 2016, a business has been operating yet neglected to customers. The expansion of the store began in January 2016, when a Naraffar branch launched for business in Sweden. Since then, a large number of unmanned stores have sprouted up all over the world. These stores can be classified into two main groups based on the various technologies in use at the time, which are as follows:

a. Performing a "self-scanning" transaction at the register or plate that is specifically dedicated for that purpose before leaving the store.

b. A "Just Walking Experience," in which customers do not need to pay for the product they purchase in the store and do not need to wait in line before leaving the store; instead, their debts will be cleared after they have left the business;

A comparison study was carried out on a few distinct unmanned stores that had already begun to implement the aforementioned technologies. The unmanned stores chosen are from Sweden's Naraffar, China's Bingobox, and the United States' Amazon Go.

1.1.2   Self-Service Technology

The term "self-service technology," more commonly abbreviated as "SST," refers to a digital infrastructure that gives consumers the ability to use a service on their own without the assistance of direct support professionals. A few examples of SST are automated teller machines, sometimes known as ATMs, voice processing and mail systems, telephone and internet services, and so forth. SST is employed by a number of companies to provide customers with the ability to check out and pay for their purchases without having to interact with a cashier. Amazon is also a proponent of this idea, and the company's Amazon Go technology may be accessed on a customer's smartphone. This system detects computer vision, sensor fusion, and deep learning technologies when objects are removed from or returned to the shelves. Additionally, it tracks items in a virtual cart without having a customer to scan the products themselves. The Amazon Go technology also keeps track of the items that are placed in a customer's digital shopping cart. The customer's credit card will be charged for the amount of their purchase and an electronic receipt will be sent to their email address as soon as they leave the business. People's expectations regarding the kinds of products that will be available in the not-too-distant future are being reframed as a result of the ways in which new technologies are affecting the purchasing process. The shopping experience at Amazon Go Supermarket is carried over to Alibaba online stores, where it is possible to tap into the potential of artificial intelligence (AI) in business with simply a click of the mouse.

Furthermore, the crucial role that technology innovation plays in predicting the quality of client service, as well as the risk that is assumed to be linked with the utilisation of SST, are also taken into consideration. One type of attitude that pertains to the quality of the service is the judgement that customers have of other customers regarding how well the quality of the service fits with their service standards. This can be thought of as a judgement of how well the quality of the service fits with their service standards. The quality of the service can be utilised to make predictions on user behaviour. Service quality has been the subject of a substantial amount of study in the form of SST for a good number of years now. This research has had a considerable impact on the interactions that take place between customers and businesses, with the intention of achieving favourable results in terms of customer service, customer happiness, customer loyalty, and customer behaviour. A significant amount of research

demonstrates that the level of service quality, employee loyalty, and the activities of SST all have a direct and indirect impact on the level of happiness experienced by customers. These data were also incorporated into the Technology Acceptance Model (TAM), which was developed in order to provide a clearer explanation of the degree to which the client is prepared to make use of SST.

Malaysian supermarkets and convenience stores have been testing a new type of self-service checkout counter called BingoBox by SCG Experience. Customers no longer need to interact with a cashier because of this counter. According to Wu et al., Bingo Box is China's first unmanned convenience store, and it is positioned in significant cities around the country. Before entering the unattended convenience store, customers must just scan QR codes using their smartphones. If it is their first visit through the micro-app Bingo Box, they will be given a four-digit code to enter to identify themselves. They will not obtain a code if this is their first visit by any other means. All of the products at the convenience shop contain RFID tags, which compel consumers to scan their purchases before exiting the store. For example, when it comes time to pay for their purchases, they have more than five self-service goods that can identify each product and compute the total number of products they own.

1.1.3 Fourth Industrial Revolution Policy

The term "Fourth Industrial Revolution" refers to the profound change brought about in several fields as a result of the widespread adoption of newly developed technologies. It is characterised by newly developed technology that is integrating the physical, digital, and biological worlds, which is having an impact on all fields of study, industry, and the economy. In the case of bioprinting, for example, a digital file is used to print an object, such as an organ, with cells and biomaterials. This process is considered physical (biological). Both the digital economy and the 4IR are depending on one another and help to strengthen one another. In every industry, digitization paves the way for the development of more advanced technological applications, new inventions, and fresh approaches to conducting business. The widespread implementation of 4IR technologies is anticipated to hasten the expansion of the digital economy.

The National 4IR Policy is a comprehensive and comprehensive national policy that promotes coherence in altering the socioeconomic development of the nation via the ethical use of 4IR technologies. This is accomplished through the use of 4IR technologies. It provides support for national development strategies such as the Twelfth Malaysia Plan (RMKe-12) and the Wawasan Kemakmuran Bersama 2030 plan (WKB 2030). In addition to this, it acts as a supplement to the Malaysia Digital Economy Blueprint in the process of propelling the expansion of the digital economy. The strategy lays out the primary areas of concentration that have an effect on the rahat, business, and the government, with the goal of capitalising on possibilities for growth and mitigating hazards that may be caused by 4IR.

Policies are developed in the nation with the purpose of determining goals and directing organisations through the steps necessary to accomplish those goals. By utilising technologies such as artificial intelligence (AI), autonomous vehicles (AV), and the internet of things (IoT), the Fourth Industrial Revolution (also known as 4IR) is revolutionising how we live, work, and connect with one another (IoT). An extraordinary amount of change is taking place at such a rapid pace. Conventional industries, which are dependent on centralised manufacturing, enormous work forces, and massive organisations, are being upended by the Fourth Industrial Revolution (4IR). The innovations that have come out of Malaysia in the realm of online payments

via various apps, such as online banking and mobile payments, have helped to simplify and expedite the processes that are involved in organisations.
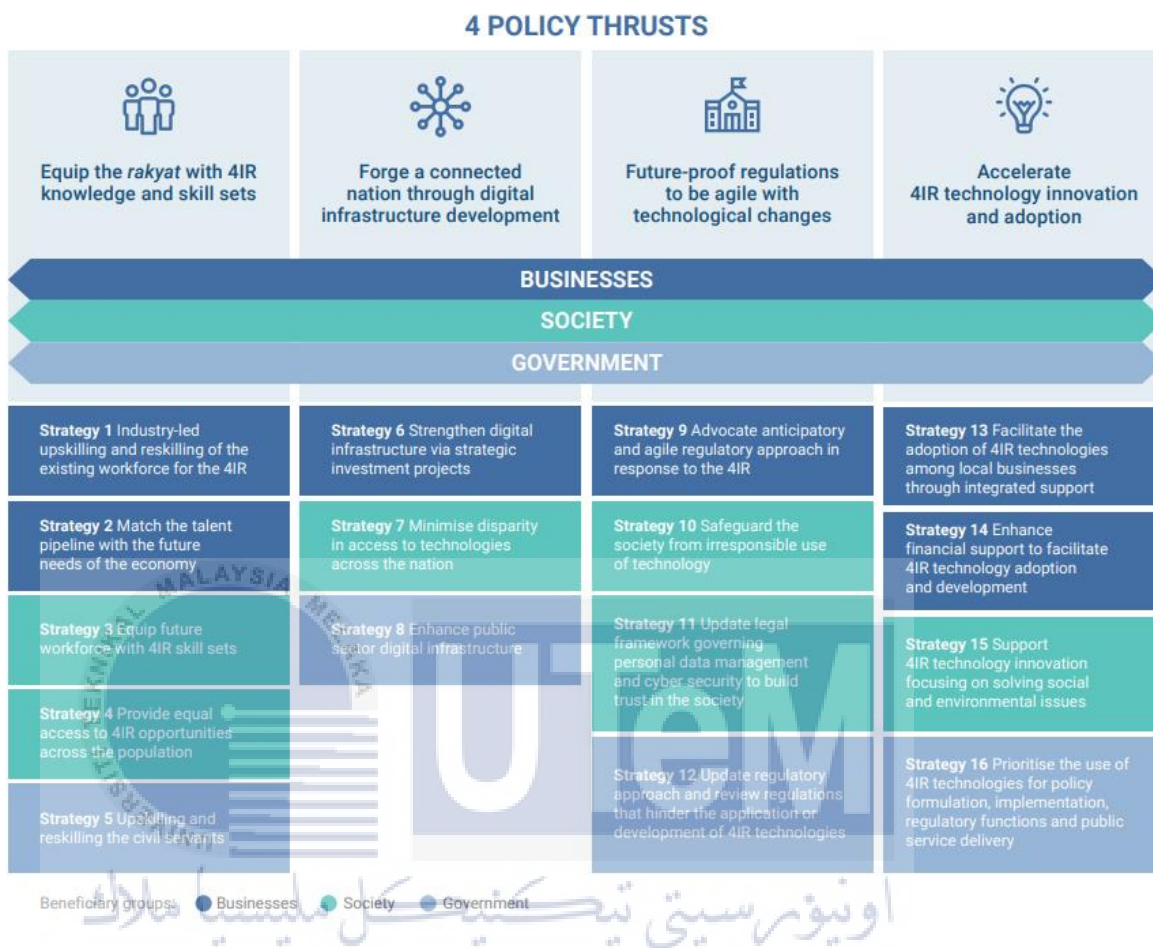
FIGURE 1.1: 4 Policy Thrusts

1.2   Problem Statement

The unmanned store, also known as a smart store, is the initial phase of the digital transformation that is taking place in the retail industry. This change is taking place in the retail industry. This movement is taking place as a reaction to the increase in popularity of buying online. Unmanned retail makes use of so-called "black technologies," such as the Internet of Things, artificial intelligence, big data, and cloud computing, to address the key pain points that exist within the local business industry, such as prices, reliability, and customer satisfaction, as well as to reform the retail concept and the entire retail outlet. These pain points include: prices, reliability, and customer satisfaction. Unmanned retail also seeks to reform the retail concept and the entire retail outlet. Prices, dependability, and overall client happiness are some of these problematic areas. The notion of unmanned retail also strives to reform the retail outlet as a whole in addition to the retail concept.

Convenience stores that have some or all of their business activities intelligently and automatically processed by using technology in order to reduce or eliminate the amount of human interaction that is required are referred to as "unmanned convenience shops," and this is the meaning of the term "unmanned convenience shops." Unmanned convenience stores are classic convenience stores that have been retrofitted with cutting-edge technology to enable consumers to shop on their own and pay for their purchases without assistance. Artificial intelligence, cloud computing, biometrics, mobile payment, electronic tags, 360-degree non-dead-angle monitoring, and big data gathering and analysis of customer behaviour are some of the technologies that fall under this category.

In the midst of a pandemic, mobile technology proved indispensable in the fight against the spread of disease, and despite the end of the Covid-19 pandemic, its efficacy and utility have not diminished (Sharifi et al 2021). This can be witnessed during the season of the Covid-19 pandemic, when people are required to engage in social confinement and avoid contact with one another. As the pandemic situation continues to deteriorate, individuals are strongly encouraged to spend as much time as they can inside their homes. Some municipalities have even instituted lockdowns of varying degrees, under which residents are only permitted to leave their homes to perform essential activities such as grocery shopping (WHO, 2020).

In order to stop the virus from spreading across the population in Malaysia, it is important to avoid any activities that include cash transactions. This can be supported by a study that was made by (Zhao & Bacao 2021), who indicated that the use of this payment medium witnessed the greatest record due to factors that inhibit the propagation of viruses. This can be substantiated by the fact that this study was made. Customers, for instance, have the option of making a purchase either online or in-person, requesting home delivery or self-collection, and then returning or exchanging the product at either a collection point or an actual store (Wang et al. 20196).

The most prominent trends that have emerged along the process of retail sector modernization in developing countries. It begins with a discussion of the factors that are pushing the modernization and globalisation of retail, and then it carries on to the presentation of fundamental differences. The debate begins with the causes that are pushing the modernization and globalisation of retail. The modernization of the retail industry includes the formation of chains in a range of product categories, such as food, pharmaceuticals, and fashion. It also encompasses retail chains that sell only one brand as well as retail chains that sell multiple brands. The growth of internet shopping is an important component of the modernization of retail. This article will cover a variety of subjects, some of which are the distribution strategies utilised by hypermarkets, supermarkets, retail cooperatives, and discounters, respectively. Even within the confines of just one category, there is a wide range of possible distribution schemes to choose from.

In order to address this issue, the corporation behind the BingoBox stores began accepting payments digitally using a technology known as mobile payment systems. Therefore, the purpose of this study is to investigate the factors that have an impact on the level of satisfaction experienced by BingoBox customers. The recommended goals were accomplished by conducting an empirical study of user satisfaction utilising an online surveying platform. This allowed the goals to be fulfilled.

1.3 Research Question

i. What is the Bingobox technology characteristic and service provider in Malaysia?

ii. Why customer use bingobox technology in Malaysia?

1.4 Research Objective

i. To find the user experience of BingoBox technology.

ii. To identify the highest level of the factor that influence the customer use in BingoBox

1.5 Scope of Study

Within the scope of this research project, the Bingo Box store's Information System Success Model served as the instrument for determining the level of user contentment. This study covers dimensions in the theoretical model, specifically perceived ease of use, perceived usefulness, and reported enjoyment as independent variables, and consumer intention of shopping at Bingo Box store as a dependent variable. The location of this study will centre on Bukit Ceylon in Kuala Lumpur as its primary emphasis. The interview will be given in the form of a face-to-face survey to users who had the intention of using or utilising the BingoBox store in order to accomplish the goals that have been set.

The Information System Success Model and secondary sources like e-journals, books, and articles that are relevant to the level of user satisfaction with the BingoBox shop were used as a basis for this research. In particular, the outcomes of this study will highlight the most important factors that have an influence on the level of pleasure that users have with the BingoBox Store.