



Faculty of Technology Management & Technopreneurship

**A STUDY ON AUTOMATED SELF-
ORDERING MENU ADOPTION USING THE LENS
OF TECHNOLOGY ACCEPTANCE MODEL: A
FOCUS ON KLANG VALLEY RESTAURANT**

**MUHAMMAD HASBI BIN
BAHARUDDIN**

MBA. in Advance Operation Management

2012

**A STUDY ON AUTOMATED SELF-ORDERING MENU ADOPTION USING THE
LENS OF TECHNOLOGY ACCEPTANCE MODEL: A FOCUS ON KLANG VALLEY
RESTAURANT**

MUHAMMAD HASBI BIN BAHARUDDIN

**A thesis submitted in fulfillment of the requirements for the degree of
Master of Business Administration in Advance Operation Management**

Faculty Of Technology Management and Technopreneurship

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

2012

**Abstract of project paper presented to the Senate of Universiti Teknikal Malaysia Melaka
in partial fulfillment of the requirements for the degree of Master of Business
Administration**

A STUDY ON AUTOMATED SELF-ORDERING MENU ADOPTION USING THE LENS OF
TECHNOLOGY ACCEPTANCE MODEL: A FOCUS ON KLANG VALLEY RESTAURANT.

BY

MUHAMMAD HASBI BIN BAHARUDDIN
MARCH 2012

Supervisor : Dr. Juhaini binti Jabar

Faculty : Institute of Technology Management and Entrepreneurship

The basic problem in the food service industry is that restaurants are not realizing efficiencies that would result from better applications of technology in their daily operations. Labor rates are rapidly increasing every now and then and it is difficult to find employees in the middle of the busy restaurant. Thus the introductions of Automated Self-ordering menu technologies to the restaurant help to overcome the problem. Automated Self-ordering Menu are “technological interfaces that enable customers to produce a service independent of direct service-employee involvement. Consumers’ adoption of new information technology has been a central concern to many researchers and practitioners owing to its importance in technology diffusion. Based on the underlying knowledge-based view perspective, this paper aims to empirically examine the contribution of the dimensions of Automated Self-ordering Menu using the lens of Technology Acceptance Model, focusing on Klang Valley restaurant.

Approach: The theoretical model and hypotheses in this study were tested using empirical data gathered from local restaurant that utilizing Automated Self-ordering Menu, through survey questionnaires were analyzed using the correlation coefficients and linear regression analyses.

Results: The results revealed that perceived usefulness and perceived ease of use as two critical elements of knowledge characteristics have significant affects on the customer readiness and customer adoption of utilizing Automated Self-ordering Menu.

Conclusion: The study has bridged the literature gaps in such that it provides empirical evidence of a positive significant correlation between the technology acceptance model and its two dimensions: readiness and adoption of customer toward utilizing Automated Self-ordering Menu.

**Abstract of project paper presented to the Senate of Universiti Teknikal Malaysia Melaka
in partial fulfillment of the requirements for the degree of Master of Business
Administration**

KAJIAN MENGENAI PESANAN SENDIRI MENU AUTOMATIK MENERIMA PAKAI TEORI MODEL
PENERIMAAN TEKNOLOGI FOKUS: KEATAS RESTORAN DI LEMBAH KLANG.

BY

MUHAMMAD HASBIN BIN BAHARUDDIN
MARCH 2012

Supervisor : Dr. Juhaini binti Jabar

Fakulti : Pengurusan Teknologi dan Teknousahawanan

Masalah asas dalam industri perkhidmatan makanan adalah bahawa restoran tidak menyedari kecekapan yang akan terhasil daripada aplikasi teknologi yang lebih baik dalam operasi harian mereka. Kadar buruh yang semakin ramai setiap sekarang dan kemudian dan ia adalah sukar untuk mencari pekerja di tengah-tengah restoran yang sibuk. Oleh itu, pengenalan teknologi menu Automatik Self-pesanan untuk bantuan restoran untuk mengatasi masalah ini. Menu pesanan sendiri automatic "antara teknologi yang yang membolehkan pelanggan untuk menghasilkan perkhidmatan yang bebas daripada terlibat secara langsung-pekerja perkhidmatan. Pelanggan yang mengambil kesempatan daripada teknologi ini menikmati perkhidmatan dalam jangkamasa yang lebih fleksibel dan lebih banyak saluran. Diterima pakai pengguna teknologi maklumat baru telah kebimbangan pusat kepada penyelidik dan pengamal banyak terhutang kepada kepentingannya dalam penyebaran teknologi. Berdasarkan perspektif pandangan berasaskan pengetahuan asas, kertas ini bertujuan untuk memeriksa empirik sumbangan dimensi pesanan sendiri menu automatik menggunakan skop Model Penerimaan Teknologi, memberi tumpuan kepada restoran Lembah Klang.

Pendekatan: Model teori dan hipotesis dalam kajian ini diuji menggunakan data yang dikumpul dari restoran tempatan yang menggunakan pesanan sendiri menu automatik, melalui kaji selidik yang telah dianalisis dengan menggunakan pekali korelasi dan linear regresi analisis.

Keputusan: Keputusan menunjukkan bahawa tanggapan kegunaan dan memudahkan penggunaan yang menganggapnya sebagai sebagai dua elemen-elemen penting ciri-ciri pengetahuan memberi kesan ketara kepada kesediaan pelanggan dan penerimaan pelanggan yang menggunakan pesanan sendiri menu automatik.

Kesimpulan: Kajian ini mempunyai kaitan di antara ruang- ruang penulisan di mana ia menyediakan bukti empirik korelasi positif yang signifikan di antara model penerimaan teknologi dan kesediaan dua dimensi dan penerimaan pelanggan terhadap penggunaan pesanan sendiri menu automatik.

ACKNOWLEDGEMENT

Alhamdulillah Praise to ALLAH S.W.T for his uncountable compassions. Without his will, I accomplish nothing. Let Peace and Mercy be up on my prophet Mohammed and his family and friends.

Firstly, I am highly indebted to my Supervisor, Dr. Juhaini binti Jabar who has helped and guided me with her knowledge during finishing my research.

Secondly I also would like to express my gratitude to Prof. Dr. Salleh Yahya who has taught me the subject of research methodology and enriched my understanding about this subject, and all lecturers and staffs from the faculty of Technology Management and Entrepreneurship who had taught and guided me during studying in UTEM.

Thirdly I would like to thank all the friends of MBA course mates from the deepest part of my heart for their continuous support and knowledge exchange.

Last but not least I am highly grateful to my father and mother, my Father Baharuddin bin Burhan and my mother Rosiapah binti Dolah, for nursing me with affection and love and for their dedicated, also my brother and sister Muhammad Hatta and Nur Athirah for their generous morals and kind support directly and indirectly during my studying.

APPROVAL

I hereby confirm that I have examined this project paper entitled:-

**“A STUDY ON AUTOMATED SELF-ORDERING MENU ADOPTION
USING THE LENS OF TECHNOLOGY ACCEPTANCE MODEL: A FOCUS
ON KLANG VALLEY RESTAURANT”**

By

MUHAMMAD HASBI BIN BAHARUDDIN

I hereby acknowledge that this project paper has been accepted as part

Fulfillment for the degree of Master of Business Administration



DR. JUHAINI BINTI JABAR

SUPERVISOR

DEDICATION

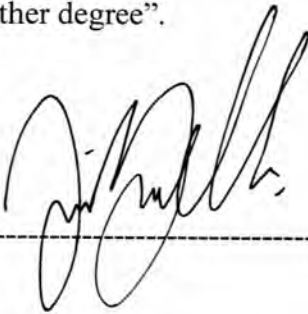
- My parents: Thank you for your unconditional support with my studies. I am honored to have you as my parents. Thank you for giving me chance to prove and improve myself through all my walk s of life. Please don't ever change. I love you.
- My brothers and sisters: Muhammad Hatta and Nur Athirah. Hoping that with this research I have proven to you that there is no mountain higher as long as Allah is on our side. Hoping that you will fulfill your dreams.

DECLARATION

"I hereby declare that:

"I have sincerely endeavored to produce a paper project of "A study on Automated Self-ordering Menu Adoption using the Lens of Technology Acceptance Model: A Focus on Klang Valley Restaurant" by myself without any outside assistance except as cited in the references. I have not copied this paper from other papers or documents available, except where I have explicitly stated so. The project paper has not been accepted for any degree and is not concurrently submitted in candidature of any other degree".

Signature:



AUTHOR'S NAME: MUHAMMAD HASBI BIN BAHARUDDIN

DATE 1 MARCH 2012

TABLE OF CONTENTS

ABSTRACT	iii
ABSTRAK	iv
ACKNOWLEDGEMENT	v
APPROVAL	vi
DEDICATION	vii
DECLARATION	vii
TABLE OF CONTENTS	ix
LIST OF FIGURES	xiv
LIST OF TABLES	xv
LIST OF ABBREVIATION	xvi

TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
CHAPTER 1	INTRODUCTION	
1.0	Introduction	1
1.1	A Study on Technology Acceptance Model	2
1.2	A Study on Technology Readiness	3
1.3	Problem Statement	3
1.4	Research Objective	4
1.5	Research Question	5
1.6	Flow of Research	6
CHAPTER 2	LITERATURE REVIEW	
2.1	Diffusion of Innovation	8
2.2	Technology Acceptance Model	11
2.3	Technology Readiness	14
2.4	Overview Automated Self-Ordering Menu	18
2.5	Automated Self-Ordering Menu Adoption in Restaurant	19

CHAPTER	TITLE	PAGE
CHAPTER 3	THEORETICAL FRAMEWORK AND HYPOTHESIS	
3.1	Theoretical Framework	21
3.2	Hypothesis Developing	23
3.3	Research Question	24
3.4	Research Hypothesis	25
3.4.1	The Role Of Technology Acceptance Model in The Technology Readiness	25
CHAPTER 4	METHODOLOGY	
4.0	Methodology	28
4.1	Operationalization of Variable	28
4.1.1	Perceived Usefulness	29
4.1.2	Perceived Ease of Use	30
4.1.3	Technology Readiness	31
4.1.4	Adoption	32
4.2	Questionnaire Research Instrument	33
4.2.1	Pilot Study of Questionnaire	34
4.2.2	Sample	35
4.2.3	Data Analysis	35

CHAPTER	TITLE	PAGE
5.9.1	Relationship Between Perceived Usefulness and Readiness	62
5.9.2	Relationship Between Perceived Usefulness and Adoption	65
5.9.3	Relationship Between Perceived Ease of Use and Readiness	67
5.9.4	Relationship Between Perceived Usefulness and Adoption	70
5.9	Conclusion	72
CHAPTER 6	CONCLUSION	
6.1	Conclusion	73
6.1.1	Implication of The Study	74
6.2	Limitations of This Research	74
	REFERENCES	76
	APPENDIX	80

LIST OF FIGURES

NO	FIGURE	ITEMS	PAGE
1	Figure 1.1	Theoretical Framework of Technology Acceptance Model and Outcome of Technology Readiness and Adoption of Technology	23
2	Figure 5.1	Respondent's Gender Size	38
3	Figure 5.2	Respondent's Age	39
4	Figure 5.3	Respondent's Salary	42
5	Figure 5.4	Scree Plot	60

LIST OF TABLES

NO	TABLE	ITEMS	PAC
1	Table 4.1	Perceived Usefulness	29
2	Table 4.2	Perceived Ease of Use	30
3	Table 4.3	Customer Readiness	31
4	Table 4.4	Adoption	32
5	Table 5.1	Respondent Education Level	40
6	Table 5.2	Respondent Working Sector	41
7	Table 5.3	Reliability Statistics	47
8	Table 5.4	Readiness	50
9	Table 5.5	Adoption	51
10	Table 5.6	Perceived Usefulness	52
11	Table 5.7	Perceived Ease of Use	53
12	Table 5.8	Factor Loading	55
13	Table 5.9.1	Model Summary of Perceived Usefulness to Technology Readiness	62
14	Table 5.9.2	ANOVA of Perceived Usefulness to Technology Readiness	62
15	Table 5.9.3	Coefficient of Perceived Usefulness to Technology Readiness	62
16	Table 5.9.4	Model Summary of Perceived Usefulness to Adoption	65
17	Table 5.9.5	ANOVA of Perceived Usefulness to Adoption	65
18	Table 5.9.6	Coefficient of Perceived Usefulness to Adoption	65
19	Table 5.9.7	Model Summary of Perceived Ease of Use to Technology Readiness	68
20	Table 5.9.8	ANOVA of Perceived Ease of Use to Technology Readiness	68
21	Table 5.9.9	Coefficient of Perceived Ease of Use to Technology Readiness	69
22	Table 5.9.10	Model Summary of Perceived Ease of Use to Adoption	70
23	Table 5.9.11	ANOVA of Perceived Ease of Use to Adoption	70
24	Table 5.9.12	Coefficient of Perceived Ease of Use to Adoption	70

LIST OF ABBREVIATION

PU	Perceived Usefulness
PEU	Perceived Ease of Use
TAM	Technology Acceptance Model
TRA	Theory of Reasoned Action

CHAPTER 1

1.0 INTRODUCTION

Malaysia's passion for food is well-known; food is not just a necessity here, it's an obsession. The whole country - especially its capital city, Kuala Lumpur in the area of Klang Valley- is filled with places to eat. From roadside stalls to fine-dining restaurants, and from local fare to international offerings, the choice is endless. But with so many choices around, how do you decide on which to settle on? How do you decide that the food served there is well worth the money you spend on it? Do you have time to enjoy all this luxury of food? Time also play the important part in this event. With ample time, people can dine in variety of food that serves in the restaurants around Klang Valley. Technology help to choose good food to be eat and help people make it everything goes easy.

In the current technological environment, customers are usually lack in time due to work constraints. Customers prefer to dine in, in less time compared to before. They more likely preferred fast food industries to eat due to time constraints. With the introduction of Automated Self-Ordering Menu in restaurants, it help to reduce customers time constraints that they are facing where customers just place the order on their own without waiting for the waiter of the restaurant to come and serve them and also making payment by using credit/debit card if using Automated Self-Ordering Menu and cash at the counter. With this automated self-ordering technology, customers may now enjoy variety food with leisure time and comfort

with worrying the time constraints, plus customers can eat healthy food rather than eating unhealthy food.

This study examines the customers' readiness to use Automated Self-ordering menu technologies using Technology Acceptance Model (TAM) construct namely; perceive usefulness and perceive ease of use. The study has been conducted and focuses on the adoption of Automated Self-ordering Menu at Restaurants in Klang Valley.

1.1 A STUDY ON TECHNOLOGY ACCEPTANCE MODEL

The Technology Acceptance Model (TAM) is an information systems (System consisting of the network of all communication channels used within an organization) theory that models how users come to accept and use a technology. The model suggests that when users are presented with a new software package, a number of factors influence their decision about how and when they will use it, are as follow:

- Perceived usefulness (PU)
- Perceived ease-of-use (PEU)

1.2 A STUDY ON TECHNOLOGY READINESS

Davis (1989) develop the Technology Acceptance Model (TAM) that reflects general facets of budding drivers and inhibitors of technology acceptance. Technology tends to generate both positive and negative feeling, which result in apprehension. Types of apprehension may include computer anxiety – the fear, apprehension, and outlook people feel when taking into consideration possible or actual use of computer technology, and technology apprehension – a user’s negative state of mind about technology tools (Meuter, Ostrom, M.J., & Roundtree, 2003).

1.3 PROBLEM STATEMENT

Based on the discussions in preceding sections, the following is the problem statement that will be addressed in this study:

The intention of this research is to establish the relationship between customer adoptions with technology for which use in restaurant in Klang Valley based on Technology Acceptance Model, with particular reference to whether or how the factors affecting TAM affects the readiness of customer to adopt Automated Self-ordering Menu technology in restaurant industry.

1.4 RESEARCH OBJECTIVES

Findings from this study enable practitioners in the industry to be aware of the contributing factors of Technology Acceptance Model's success. Moreover, this research analysed the relationship between perceived usefulness and perceived ease of use towards customer readiness and adoption. The findings and recommendations of this research can also assist other restaurant industry that have not implement or adopt Automated Self-ordering Menu in their restaurant through TAM. This study applies existing theories from the literature to establish the factors affecting TAM, applicable to restaurant industry. Findings of this research provide academics and researchers with a better understanding of the theories and drivers involved in process of adoption Automated Self-ordering Menu. Through the empirical findings of this exploratory research, new theories and further research could be conducted.

1.5 RESEARCH QUESTION

This research aims to identify, evaluate, and compare and contrast the factors affecting the success of TAM's in restaurant industries in Klang Valley. Therefore the central research question for this study is:

Does TAM constructs namely perceived usefulness and ease of use will determine customer's readiness to use and adopt of Automated Self-Ordering Menu?

The main research question can be divided into four sub-questions that together will answer the central research question:

1. Does perceived usefulness of Automated Self-ordering menu lead to positive consumer's readiness to use new technologies?
2. Does ease of use of Automated Self-ordering menu lead to positive consumer's readiness to use new technologies?
3. Does perceived usefulness lead to adoption of Automated Self-ordering Menu?
4. Does perceived ease of use lead to adoption of Automated Self-ordering Menu?

1.6 FLOW OF RESEARCH

This research is organised into six chapters explicitly relevant to the research directions summarised in this chapter. This introductory chapter has provided an overview of this research, including the research problems, gaps, objectives and questions. It also explained the rationale behind conducting this study in Klang Valley. Finally, a brief outline of the research methodology and delimitations were also presented.

Chapter 2 provides a review of the literature and identifies the research gaps in the field. The first section defines and introduces Diffusion of Innovation that drives Technology Acceptance Model. The define and introduce Technology Acceptance Model and Customer Technology Readiness. Finally, this chapter concludes by describing how this research addresses the current research gaps.

Chapter 3 explains the focus of this research and key issues that relate to the research questions. This chapter presents the specific domain of this research, which is the relationship between Technology Acceptance Model construct and outcomes namely readiness and adoption. Concepts and constructs utilised in this research are examined; testable hypotheses are developed and presented in a theoretical model.

Chapter 4 presents the research methodology utilised in this study. The first section explains the procedures undertaken to operationalize the constructs in the theoretical model of this study. This chapter then provides a detailed explanation on how the respondents of this study were chosen and contacted. Finally, the data analysis

procedures are clarified, together with the assessment of statistical fit utilised in this study.

Chapter 5 presents the assessment, refinement and validation of the measurement scales based on the 70 questionnaires completed and returned for this study. This chapter explains the key characteristics of the sample and ways this study deals with missing data, multivariate normality and outliers. Based on the result of the factor analyses, the initial theoretical model and hypotheses in Chapter 3 are reassessed and modified. Regression analysis is then employed to analyse the hypothesised relationships proposed in this study. Finally, the results of this study are discussed.

Chapter 6 summarises the research findings, where conclusions of this study are also presented. In addition, this chapter portrays the contributions and implications of this research. Finally, the limitations of this study and suggestions for future research are explained.

CHAPTER 2

LITERATURE REVIEW

2.1 DIFFUSION OF INNOVATION

Diffusion research goes one step further than two-step flow theory. The original diffusion research was done as early as 1903 by the French sociologist Gabriel Tarde who plotted the original S-shaped diffusion curve. Tarde's 1903 S-shaped curve is of current importance because "most innovations have an S-shaped rate of adoption" (Rogers, 1995). Diffusion research centers on the conditions which increase or decrease the likelihood that a new idea, product, or practice will be adopted by members of a given culture. Diffusion of innovation theory predicts that media as well as interpersonal contacts provide information and influence opinion and judgment. Studying how innovation occurs (Rogers, 1995) argued that it consists of four stages: invention, diffusion (or communication) through the social system, time and consequences.

The information flows through networks. The nature of networks and the roles opinion leaders play in them determine the likelihood that the innovation will be adopted. Innovation diffusion research has attempted to explain the variables that influence how and why users adopt a new information medium, such as the Internet. Opinion leaders exert influence on audience behavior via their personal contact, but additional intermediaries called change agents and gatekeepers are also included in the process of diffusion. Five adopter categories are: (1) innovators, (2) early adopters, (3) early majority, (4) late majority, and (5) laggards. These categories

follow a standard deviation-curve, very little innovators adopt the innovation in the beginning (2,5%), early adopters making up for 13,5% a short time later, the early majority 34%, the late majority 34%and after some time finally the laggards make up for 16%.

Diffusion is the “process by which an innovation is communicated through certain channels over a period of time among the members of a social system”. An innovation is “an idea, practice, or object that is perceived to be new by an individual or other unit of adoption”. “Communication is a process in which participants create and share information with one another to reach a mutual understanding” (Rogers, 1995).