Investigating the Factors Affecting to the Restaurant Reservations System Using by Intention of the Northern Taiwan Students

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Abstract

During the COVID-19 pandemic, several eateries around the globe ceased operations. The eateries must use every possible measure to survive in this predicament. In order to augment the quantity of online reservations for each restaurant, the firms must use several techniques. Restaurants may now efficiently handle their reservations and table seating during service by using online reservation tools to create a customized table arrangement specific to their location. This study aims to identify the elements that influence the reservation systems of restaurants by using the Technology Acceptance Model (TAM). The ultimate result of the decision-making process is the creation of a reservation. Understanding the thought process of visitors prior to making a purchase is crucial for fully grasping the effectiveness of an online reservation system in reaching that desired outcome. This study evaluates the system's effectiveness for all consumers by analyzing buying decisions in other industries and their application to the restaurant sector.

Keyword: Technology Acceptance Model, Online Table Reservation Systems, Restaurants Reservation Systems, Marketing Service

Introduction

The COVID-19 pandemic has significantly impacted society, including health, education, humanitarian efforts, social interactions, and the economy. Authorities have enforced proactive, restricted, consecutive, and extended actions to address the epidemic and its consequences. Other strategies that adversely impacted neighborhoods and eating establishments were lockdowns, confinement measures, remote work arrangements, restrictions on meetings and

activities, and corporate shutdowns (Messabia, 2022). Customers had access to hundreds of restaurants within a few miles of their residence. A growing number of restaurants are using online reservation systems to gain market share more quickly (Gregorash, 2016). Both independent restaurants and upscale franchises have adopted online reservation systems. You are provided with marketing tools and table administration software catering to both restaurant categories. Restaurant franchises possess a well-established brand image and employ branding strategies tailored to each location (Lin Yi-Ling, 2010). Guests are well-informed on what to expect before approaching the establishment or conducting an online search about the business—the emergence of novel restaurant chains with established brand awareness (Chua, 2020). The restaurant's offerings are already well-known among most of their target market's potential consumers. Chain restaurants have already earmarked budgets for marketing, public relations, and advertising, all strategies aimed at reaching potential consumers. Preliminary decisions consider enhanced data, client inclinations, and consumer independence. Consumers no longer depend on a solitary source to make judgments (André, 2018). This prompts the question of whether Internet reservation systems are lucrative for chain restaurants, considering the many approaches available to reach potential customers.

Research Objective

The objectives of this research were as follows:

1. To examine the system's efficacy, then a significant effect, ease of use, and usefulness.

2. Significant effect usefulness is required to examine the system's ease of use.

3. The factors of ease of use and usefulness then have a significant effect on attitude toward using the system

4. The attitude toward using the system has a significant effect on Behavioral Intention to use

Literature Review

Technology Acceptance Model (TAM)

TAM was the most popular theory for analyzing how people accept and utilize technology and offers a theoretical framework for the examination of emerging technologies and systems such as online technology and e-commerce (Davis, 1989). According to this approach, perceived usefulness and perceived ease of use are

the most crucial indicators of attitudes since they may affect behavioral intentions and have a big effect on users. External circumstances might have an impact on perceived usefulness and usability. The sense of utility is determined by perceived usability. (Zhao, 2022). Figure 1 shown the original TAM.

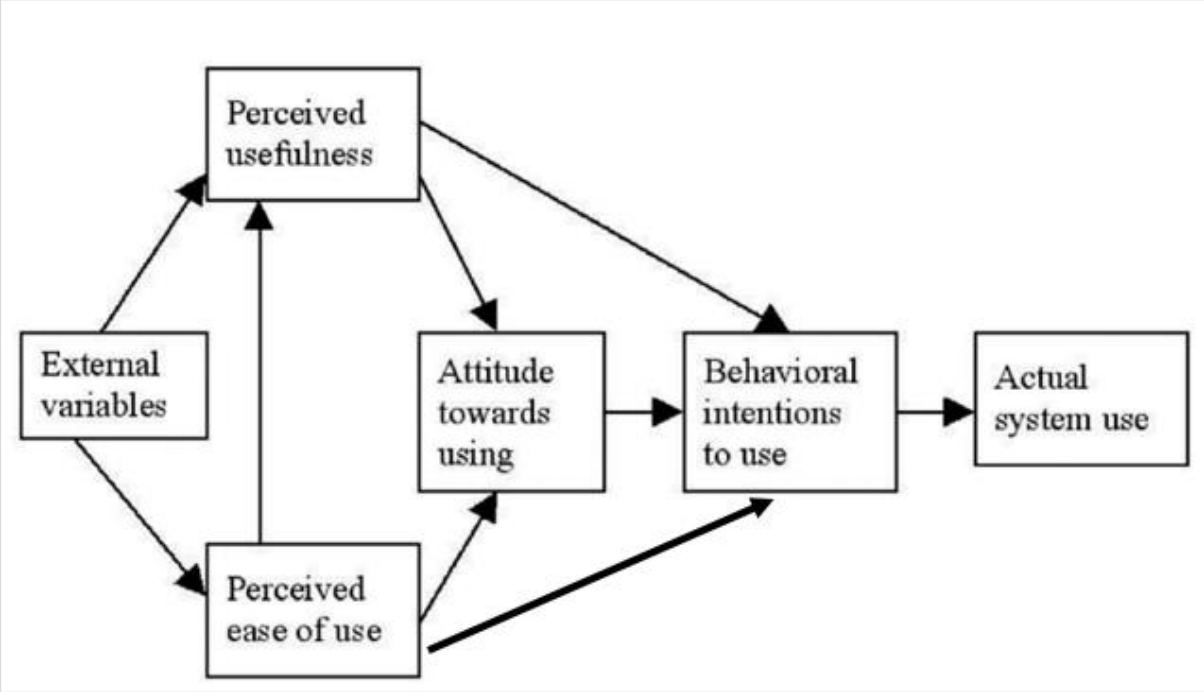

Figure 1 Original Technology Acceptance Model (TAM)

The TAM has been used as a theoretical framework in this study to examine consumers' adoption of restaurant reservation online platforms since these sites and the business models accompanying them provide more effective technological tools for various clients. The TAM was developed as an application to a Technologically Advanced environment based on the theory of reasoned action (TRA) (Pavlou, 2003). However, in the TAM, perceived usefulness (PU) and perceived ease of use (PEOU) are two essential characteristics that are thought to predict users' attitudes (ATT) and intentions to use (INT). External Variable (EV) refers to external factors that cause diverse perceptions for each individual, such as beliefs, experiences, knowledge of social behavior, etc. According to the framework, people prefer to use new technology to the extent that they believe it will eventually help them do the task more effectively, which applies to PU. However, some modern systems could be more user-friendly, and their difficulties outweigh their advantages (Davis & Bagozzi, 1989; Davis, 1989). Davis reasoned that a system seen

as being easier to use than others would be more likely to be accepted by users because he assumed that effort is a finite resource that a person may spend on different activities. In the context of the restaurant business, utility and convenience were listed as variables influencing customers' acceptance of electronic commerce (Bae, 2020; Morosan, 2008; Phongphaeo, 2021).

Table Reservation Systems for Restaurants

Online table reservation systems (ORS) may increase restaurant seat demand. Consequently, they should contemplate employing these systems. According to (Kimes, 2011), Online table reservation systems (ORS) may increase restaurant seat demand. Consequently, they should contemplate employing these systems. Implementing an unsuitable instrument can lead to a loss of time and money. There are numerous distinct ORS suppliers on the market. As a result, there is a need for guidelines that aid establishments in selecting the most suitable system. This research aims to discover the needs of restaurants, the top online platforms for making reservations at the most popular restaurants, and how this can impact the customer's decision to use this system.

A literature review on the criteria for selecting an ORS was conducted to accomplish this objective. In the first round of interviews, restaurants were also questioned about their selection criteria when choosing a provider. Thus, 24 characteristics were discovered in the literature review and the interview with restaurant managers. The topics are extensive and include pricing, the time the system has been on the market, marketing options, support, panorama images, and the ability to modify the page's content without contacting the provider.

Therefore, providers of online table reservation systems should prioritize luxury restaurants and offer more cost-conscious options for other dining establishments. Targeting upscale establishments is possible with systems that prioritize marketing opportunities and services. Simple, cost-effective "light."

Conceptual Framework

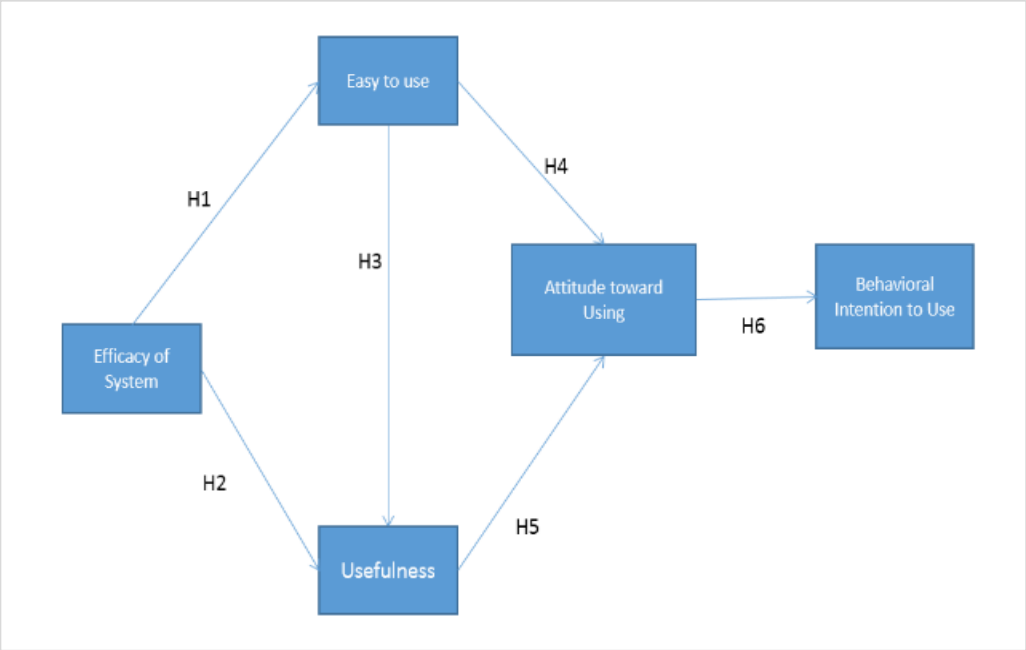

Figure 2 The Conceptual Framework

The research is quantitative and collects data through an online survey. Online surveys provide researchers with various advantages (Wright, 2005), sparing them time and money by eliminating geographical barriers. The online survey was the optimal method for recruiting male and female participants. A web-based questionnaire was developed to explore the suggested association between variables in the study model.

Hypothesis

In this study, perceived usefulness is defined as a customer's perception of how much a restaurant reservation system would increase their level of comfort in a restaurant. In contrast, perceived ease of use is defined as a customer's perception of how much effort it takes to use a restaurant reservation system. The association between the different factors has been shown in several studies on reservation systems and restaurant reservation system use. The following are the hypothesized correlations between a restaurant reservation system's effectiveness, usability, usefulness, attitude toward utilizing it, and intention to use it:

H1- The efficacy of the System has a positive influence. Easy to use

H2- Efficacy of the System has a positive on influence Usefulness

H3- Easy to use has a positive on influence Usefulness

H4- Easy to use has a positive on influence Attitude toward Using

H5- Usefulness has a positive on influence Attitude toward Using

H6- Attitude Toward Using has a positive on influence Behavioral Intention to Use

Research Methodology

Procedures

The investigation to verify the hypotheses is in progress. This research, however, will employ a quantitative approach, using a questionnaire sent to a random selection of Taiwanese students. Taiwanese college students familiar with online reservation systems will make up the sample. Inquiries will be made directly in the questionnaire to determine what considerations go into making reservations when outside sources of information are necessary and why a particular technique was selected to complete the reservation. The online survey aimed to examine the suggested association between the variables in the study model.

Measurements

The research framework serves as the foundation for the questionnaire's elements. Respondents using an online restaurant reservation system are the target audience for the quiz. The ease of use, usefulness, attitude toward usage, and behavioral intention to utilize the online restaurant reservation system that influences customer perception must be carefully analyzed. All constructs were measured on seven-point Likert-type scales, from 1 = strongly disagree to 7 = strongly agree.

After being written in English, the questionnaire was translated into Chinese. To ensure that the translations preserved their original meaning following translation, they were again back-translated into English. The effectiveness of the method implemented in the present research was measured using (Park, 2009); which include 5 items. Further, ease of use was measured by the measurements developed by (Alharbi, 2014). Usefulness was measured by 6 items which were adapted from (Alharbi, 2014). Attitude toward using was measured by 6 items which were adapted from (Alharbi, 2014) and (Park, 2009). Finally, behavioral intention was measured by 4 items which were adapted from (Alharbi, 2014) and (Park, 2009). The measurement is shown in Table 1.

Table 1 The original and research factors

Original factor	Research factor	Reference
E-learning self-efficacy	Efficacy of System (ES)	(Park, 2009)
Perceived ease of use	Easy to use (EU)	(Alharbi & Drew, 2014)
Perceived usefulness	Usefulness (UF)	(Alharbi & Drew, 2014)
Attitude towards usage	Attitude toward Using (ATU)	(Alharbi & Drew, 2014; Park, 2009)
Behavioral intention to use	Behavioral Intention to Use (BIU)	(Alharbi & Drew, 2014; Park, 2009)

Research population

The population in this research is Taiwanese students living in North Taiwan who have used a restaurant reservation system.

Sample size

The sample size of the research sample is representative of the population that lives in Taiwan and has used a restaurant reservation system. Because the population size is large and the number is unknown. Therefore, the sample size was calculated from W.G. Cochran's unknown sample size formula, with a confidence level of 95% and an error level of 5%. The specific calculation formula is shown in Figure 3.

$$n = \left(\frac{Z}{2E}\right)^2$$

Figure 3 W.G. Cochran's sample size unknown formula

Reliability

The quality of the questionnaire was analyzed using the alpha coefficient. (Cronbach's alpha coefficient), which has a value between 0 and 1, which can be explained as follows. An alpha coefficient close to 1 indicates high or relatively high reliability. An alpha coefficient approaching 0.5 indicates moderate reliability. An alpha coefficient close to 0 indicates that there is relatively little reliability. This research has set the criteria for the highest coefficient. However, not less than 0.7, after improving the questionnaire until it passed the criteria and was accurate and appropriate, the questionnaire was used to collect data from the sample group.

Data Collection

These research questionnaires are intended for Taiwanese respondents who have used a restaurant reservation system.

The author used online questionnaires to acquire data from participants. Northern Taiwanese college students and university faculty members participated in this investigation. The duration of the data collection procedure is seven weeks.

Data analysis

Descriptive analysis

Primary data analysis to describe the sample's demographic characteristics, including gender, occupation, education level, and age, are presented using basic statistics. In the form of a frequency distribution table, mean, percentage and standard deviation.

Research hypothesis testing (Regression Analysis)

Testing the assumptions of this research. A hierarchical regression analysis was performed. (Hierarchical Regression) to analyze and predict the dependent variable (Dependent Variable), which is influenced by the independent variable (Independent Variable) both directly (Direct Effect) and indirectly (Indirect Effect) using a p-value that is less than or equal to 0.05 (p-value ≤ 0.05) determines the statistical significance level (Significant level).

Multiple Regression Analysis

For the analysis of the relationship between the independent variables efficacy of system (ES), easy to use (EU), usefulness (UF) and attitude toward using (ATU) of the system. Restaurant reservation and the relationship between independent variables efficacy of system (ES), easy to use (EU), usefulness (UF), attitude toward using (ATU) and behavioral intention to use the system (BIU) to find the direct influence (Direct Effect) of variables in the research framework.

Research Result

This study has 429 participants in all. After reviewing all questionnaires, 400 responses (a completion rate of 93.24%) were determined to be legitimate after examining all the questionnaires and were used in the subsequent study. Students from universities in northern Taiwan comprised most of the study's participants. They were all chosen at random to respond to the survey. 345 participants, or around 86 %, were students; 203 were male, and 197 (49.3%) were female. The average age of participants was 18 to 50, and 66.3% were enrolled in bachelor's degree programs. The Demographic is shown in Table 2.

Table 2 Demographic

Characteristics	Participants	Percentage
Gender		
Male	203	50.7 %
Female	197	49.3 %
Occupation		
Student	345	86.3 %
Professor	15	3.8 %
Personal	25	6.3 %
General public	15	3.8 %
Education		
High school	55	13.8 %
Bachelor's degree	265	66.3 %
Master's degree or above	80	20 %
Age		
Under 18	40	10 %
18 - 50	335	83.8 %
Over 50	25	6.3 %

Reliability and Validity

Factor analysis for the items in each construct was done to test the validity of the constructs employed in this study, as shown in Table 3. Every construct used in this analysis was found to be valid. Factor analysis was used to evaluate the constructs' validity with coefficients of less than 0.7 and were removed from the study for the items that made up each construct. All constructs were also checked for internal consistency using Cronbach's alpha, and the findings revealed that all measures were quite reliable. With values ranging from 0.893 to 0.929 and a reasonable value of 0.877 for behavioral intention to use, all measures in this research demonstrate a high degree of dependability. Since all scales were higher than 0.70, the question is regarded as trustworthy.

Table 3 Instruments reliability Cronbach's alpha

Instruments reliability Cornbach Alpha				
Factor	Number of Items	Mean	S.D.	Cronbach's alpha
Efficacy of System (ES)	5	5.0915	1.08511	0.899
Easy to use (EU)	7	5.0721	0.92576	0.893
Usefulness (UF)	6	5.0937	1.02823	0.895
Attitude toward Using (ATU)	6	5.1279	1.21055	0.929
Behavioral Intention to Use (BIU)	4	5.0469	1.13506	0.877

Result of hypothesis testing

From Tables 4 and 5, correlation analysis and regression analysis results show that the H1 efficacy of the system has a positive influence on ease of use. There is a significant positive relationship between the efficacy of the system and the ease of use of a reservation system. Therefore, H1 is supported. For H2, the system's efficacy has a positive influence on usefulness; the result shows a significant positive relationship between the efficacies of the system and the influence usefulness of a reservation system. Therefore, H2 is supported. H3, which is easy to use, positively influences usefulness. The result shows a significant positive relationship between the ease of use and the influence of the usefulness of a reservation system. Therefore, H3 is supported.

Table 4 Instruments reliability Correlations Analysis

VARIABLES	ES	EU	UF	ATU	BIU
ES	1				
EU	0.4175***	1			
UF	0.5141***	0.5236***	1		
ATU	0.2900***	0.3581***	0.5241***	1	
BIU	0.6216***	0.2547***	0.2081***	0.3980***	1

*** p<0.01, ** p<0.05, * p<0.1

As shown in Table 5, there is a positive correlation between TAM variables, which is statistically significant in most cases. Interestingly, there is a stronger

correlation between TAM variables. A more significant influence between TAM variables is interesting. For instance, the table revealed a substantially more significant and favorable link when evaluating the impact of ease of use and attitude towards utilizing a reservation system. Considering this, H4 is supported.

Furthermore, it can also be shown that there is a strong positive correlation between usefulness and attitudes towards usage. As a result of the influence between ease of use and attitude towards usage, the relationship between usefulness and attitude towards usage appears to be more significant. In general, H5 is supported. Finally, the result shows a positive influence between the behavioral intention to use a reservation system and the attitude towards utilizing one. H6 is accepted.

Table 5 Instruments reliability Regression Analysis

	(1)	(2)	(3)	(4)	(5)
VARIABLES	EU	UF	UF	ATU	BIU
ES	0.499***	0.585***			
	(0.0544)	(0.0489)			
EU			0.498***	0.129**	
			(0.0407)	(0.0559)	
UF				0.546***	
				(0.0587)	
ATU					0.249***
					(0.0287)
Constant	22.81***	16.68***	12.86***	9.493***	12.53***
	()	()	()	()	()
Observations	400	400	400	400	400
R-squared	0.174	0.264	0.274	0.284	0.158

*** p<0.01, ** p<0.05, * p<0.1

Discussion and Conclusion

Main Finding

Overall, reservation systems have become very well-liked and are currently used by most restaurants. Following the COVID-19 epidemic, the restaurant reservation system has seen a significant increase in usage, encompassing a substantial number of reservations. Additionally, telephone bookings and e-mail reservations are also widely utilized. Additionally, third-party internet booking services are included.

To summarize, this study revised the original Technology Acceptance Model (TAM) to measure the behavioral intention of academics to use a reservation system. The current study alters the primary concepts utilized in the Technology Acceptance Model (TAM). More precisely, it validates the connection between the efficiency of the system, ease of use, practicality, attitude towards use, and the intention to utilize it. No significant breakthroughs were documented regarding the previous structures. Thus, this research corroborates prior empirical data and findings derived from the Technology Acceptance Model (TAM). Moreover, the research successfully validates TAM's efficacy in the context of the restaurant reservation system.

Implications

The implications of this research can be inferred as follows: Initially, this study constructed a theatrical framework utilizing a resilient acceptance model (TAM). This approach can predict the consumer's intention to use a reservation system. Furthermore, this research contributes to the efforts to validate the Technology Acceptance Model (TAM) empirically. Significantly, this research could greatly assist restaurant owners in their next endeavors to use e-business technology and enhance client accessibility to the system.

Previous research indicates that the study participants exhibited positive attitudes towards reservation systems and intend to incorporate a reservation system into their work. Additionally, the research indicates that when users' perception of the system's simplicity of use improves, their perception of its utility also increases. As anticipated, people who perceived reservation systems as easy to navigate developed a positive perception of their utility. Likewise, while the utility of a product or service may increase the level of positivity towards its use, the simplicity of its usage alone cannot enhance the degree of positivity towards its overall utilization. This is because any flaws in the

questionnaire or the customer's view that it is easy to use do not necessarily encourage a favorable attitude towards utilizing it. Ultimately, the attitude towards utilizing enhancements significantly increased the positive intention to use them.

Recommendation

Given the restaurant reservations system found in this study, the following suggestions are proposed:

1. In terms of the system's efficacy on the restaurant reservations system, it will be related to customers' ease of use and customer perception of the usefulness of the restaurant reservations system. It can increase customer satisfaction and a positive attitude toward the restaurant reservations system.

2. Improve the process of the system to be convenient to the customer and provide helpful information for the customer to create a good experience for the customer. This will help to stimulate customers' attitudes and encourage intention to continue using the restaurant reservations system.

Limitations and Future Research

The limitations of this research were that time restrictions were the primary and most significant constraint on this research. Moreover, the findings of this study may not be easily extrapolated for various reasons. Initially, the researchers conducted a size-power test, which indicated that increasing the sample size would enhance the generalizability of the conclusion. Furthermore, the study framework was specifically designed for integration with the restaurant reservation system. Furthermore, the focal point of this research was the concentration on individuals. Subsequent investigations could focus on the broad adoption of information and communications technology (ICT) specifically for restaurant reservation purposes.

Additionally, users' increasing prevalence and familiarity may impact data collection from various demographic groups (Venkatesh et al., 2003). Hence, conducting an extensive study over an extended period may be more suitable for accurately forecasting attitudes and behavior, thereby facilitating a comprehensive understanding of the interplay between many aspects. A future study should incorporate a broader range of participant groups, such as workers in Taiwan or individuals from various occupations. Moreover, the website or application should provide supplementary

classifications of booking systems. Furthermore, it is recommended that future research include a comparative analysis with another country, such as Thailand. The objective is to analyze customer feedback regarding the usage of the restaurant reservation system and assess the variations in consumer acceptance of applications and services across different countries. Future studies should incorporate other findings regarding the restaurant reservation system that may be generalized to many countries.

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