THE FUTURE OF DINING: ROBOTICS HAND-IN RESTAURANT SERVICE REVOLUTIONIZES USAGES EXPERIENCE IN KUALA LUMPUR

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ABSTRACT

The future of dining in Kuala Lumpur is being revolutionized by robotic hand-in restaurant service. This state-of-the-art technology uses robotic arms to serve customers, resulting in a unique, high-tech dining experience. Robotic hand-in service has increased productivity and efficiency at some Kuala Lumpur eateries. Orders are taken by the robotic arms, which are also used to serve food and beverages and clear tables. The automation ensures accuracy and precision in service while eliminating the need for human workers. A better customer experience is one of the essential advantages of robot hand-in service. Customers may easily place orders via a touchscreen interface, and robotic arms promptly deliver the food and beverages to the tables. Long wait times are no longer necessary and order mistakes or mix-ups are less likely. Additionally, robot hand-in service offers diners a cutting-edge and futuristic dining experience. The restaurant's smoothly gliding robotic arms create a dreamlike and captivating atmosphere. This technology has drawn the attention of locals and visitors, giving it a distinctive selling point for eateries in Kuala Lumpur. Robot hand-in service significantly impacts the restaurant industry regarding labour productivity and cost savings. The SEM-AMOES approach is used in this study to look at the interactions between the hypothesized components, both directly and indirectly. Multistage cluster sampling was used to obtain the sample for this study. Due to incomplete or missing data, it originally had 300 respondents, but after screening and sorting, that number was reduced to 261. The research sample was chosen by considering several factors, including gender, age, and artificial intelligence system, to ensure representativeness and reduce potential biases. The perceived usefulness and perceived ease of use of robotic hands-on user experience were found to be significantly correlated. The results imply that robotic hands driven by AI will substantially impact the future of restaurants.

Keywords: Robotics Hand-in Restaurant, Usages Experience, Perceived Ease of Use and Perceived Usefulness

INTRODUCTION

Due to shifting customer preferences, technology improvements, and the demand for efficiency, the restaurant sector is constantly changing (Thakur, 2022). Customers want not just delectable food but also uncommon involvements to improve their eating experience (Chang & Cheng, 2023). Robotics technology has become more prominent in recent years as a potential answer to these changing needs. The vibrant capital of Malaysia, Kuala Lumpur, is at the forefront of implementing cutting-edge technologies to improve a variety of industries, including the restaurant business. Kuala Lumpur has developed into an ideal site to exhibit the future of dining through the integration of robotics due to its diverse culinary scene and growing tourism economy (Osman, 2022). Robotic hand-in restaurant service has completely changed how people eat out by fusing technology and cuisine to create an unrivalled experience.

Robotic hand-in restaurant service employs automated technologies and robotic arms to help with various tasks in a restaurant setting (Pereira et al., 2022). From the minute clients enter the restaurant until they depart, this technology can change the eating experience completely. Customers are welcomed by cutting-edge automated technology that helps with chores like taking bookings, delivering menu information, and allocating seating configurations as soon as they walk into a restaurant with robotics hand-in service. This improves efficiency by doing away with the requirement for conventional human receptionists.

Customers can observe the seamless integration of robotic arms within the eating area once seated. These robotic arms can do various jobs, including taking orders, bringing food and drinks to tables, and clearing dishes (Grobbelaar et al., 2021). The accuracy and speed of these robotic arms improve dine-in services' overall effectiveness while allowing customers to interact.

Robotic hand-in service integration improves the general customer experience and restaurant operational effectiveness (Wirtz, 2020). The system enables accurate and prompt delivery of goods, reducing wait times and raising customer satisfaction (Grobbelaar et al., 2021). The robotic arms also add entertainment value, capturing patrons' attention and resulting in a unique dining experience that distinguishes the restaurant from its rivals. Kuala Lumpur's eating scene may draw both locals and visitors by showing the possibilities of this technology, fostering the city's economic development and enhancing its standing as a cutting-edge travel destination.

Introducing robotic waiters into Kuala Lumpur restaurants substantially changes how diners enjoy their meals (Seyitoglu & Ivanov, 2022). This technology can transform the restaurant business and offer clients in Kuala Lumpur and elsewhere an unmatched eating experience because of its increased efficiency, accuracy, and entertainment value. It has been acknowledged that technology is advantageous in terms of competitive advantage, efficiency, and providing a differentiated hospitality experience (Gu & Huang, 2023). Currently, service robots are increasingly being incorporated by hospitality enterprises to perform various duties, such as housekeeping attendants, hotel porters, guides, hosts, cooking staff, room servers, and waiters (Foskett et al., 2021). The Malaysian restaurant industry needs over 40,000 workers and is highly dependent on foreign labour. Since the introduction of COVID-19, labour shortages have been particularly severe (Mhlanga, 2023), which is one of the primary reasons why robot servers have become commonplace in the F&B industry.

Consequently, there has been an increase in the number of studies conducted on service robotics in the hospitality and tourism industries (McCartney & McCartney (2020); Belanche et al., 2021). Despite the increasing research on service robotics in a restaurant context, there needs to be more research on user attitudes towards robotic restaurants in the current literature. Throughout the restaurant dining experience, employees and consumers interact. However, the front-line personnel (waiters) are not humans in robotic restaurants. In this regard, the context of the robotic restaurant user's attitude is entirely distinct from that of a conventional restaurant supper. Thus, establishments with robotic services offer patrons a variety of experiences. Therefore, it is essential to research customer perceptions of automated dining establishments, as this will improve the quality of customer experiences such restaurants provide. This investigation attempts to fill in a portion of the gap in the existing literature. Given the preceding discussion, this study aims to investigate users' perceptions of automated dining establishments. The present study focuses on restaurant patrons' perceptions regarding the implementation of robotic technology and its effect on their attitudes. This investigation's distinctive feature will fill a gap in the existing corpus of knowledge and produce significant advances in academia and the business world.

LITERATURE REVIEW

Theoretical approach: Technology acceptance model (TAM)
A well-known theoretical framework for examining user behaviour is the Technology Acceptance Model (TAM) (Limna et al., 2023). According to the theory (Davis, 1989; Kurniawan et al., 2022), perceived usefulness and ease of use might impact a person's motivation to act. As with any technical circumstance, perceived usefulness and ease of use significantly impact the success of innovative systems (Adams et al., 1992; Alkhawaja et al., 2022; Masukujjaman et al., 2021). The Technology Acceptance Model (TAM), a popular framework for information systems and technology adoption research, often includes these elements (Vorm & Combs, 2022).

Selection of Constructs
According to Hamzah and Dwivedi et al. (2021), people are more likely to see the system favourably if they think it offers superior artificial intelligence (AI) system resources, engaging content, and chances for skill improvement. The availability of instructional programmes, data, and previously inaccessible resources through the artificial intelligence system will be seen as highly beneficial and advantageous.

"Ease of use" is the term used to describe how people view technology in terms of its adaptability and user-friendliness (Kayode et al., 2020). When users believe a system has an intuitive user interface, effective content retrieval capabilities, and smooth interaction features, they are more likely to use it. The idea of perceived usefulness relates to people's perceptions of how much a particular technology will improve their ability to execute their jobs or make tasks easier to complete (Werner et al., 2023).

Users who run into technical problems can quickly get assistance to view the system as more user-friendly. In this regard, the system must be sufficiently adaptable to consider electronic devices' distinctive features, including the Internet and GPS. Adaptability-related issues may complicate usability (Nguyen, 2022). In the opinion of (Kayode et al., 2020), incorporating training materials and tutorials can improve the user experience of the artificial intelligence system, making it more engaging and user-friendly. According to Kayode et al. (2020), delivering support to customers with poor technological knowledge competency can improve the platform's perceived user-friendliness. Entrepreneurs must prioritise technology adoption factors to ensure a successful system, including artificial intelligence standards, accessibility, user-friendly design, and adherence to regional expectations and conditions (Dutta et al., 2020).

Perceived Ease of Use
The term "ease of use" refers to the subjective assessments made by customers regarding the level of simplicity involved in using a particular technology (Oyuga et al., 2023; Davis, 1989). Alnagrat et al. (2023) propose that the concept of perceived ease of use can be broken down into four components: ease of control, simplicity of comprehension, user-friendliness, and access. Multiple studies conducted by Oyuga et al. (2023) and Ji et al. (2019) have demonstrated the importance of perceived ease of use in online applications. The effectiveness of technology adoption depends on the perceived ease of use, as (An, Eck & Yim, 2023) demonstrated. The research conducted by Nikou and Maslov (2021) unveiled a significant correlation between the perceived ease of utilising an artificial intelligence system and its perceived usefulness. Lin et al. (2023) discovered a notable correlation between the value of artificial intelligence systems and how easily users perceive it. According to Choung et al. (2023), perceived ease of use refers to an individual's perception of a specific technology as effortless and inspiring confidence in its operation.
Therefore, the link can be postulated as follows:
H1: Perceived ease of use has a positive impact on the behaviour of robotics hand users in restaurant.

Perceived Usefulness
Perceived usefulness pertains to the degree to which an individual believes using an information system will improve their performance in accomplishing activities (Davis, 1989).

As indicated by prior research, Won, Chiu, and Byun (2023) found a significant and statistically meaningful correlation between perceived usefulness and perceived ease of use. This indicates that the perceived usefulness of these applications plays a pivotal role in customers' decision-making process, impacting their decision to either utilise or abstain from utilising transportation services based on apps.
According to existing literature on perceived usefulness, it has been demonstrated that consumers are inclined to use sophisticated applications due to the perceived convenience they provide in their everyday activities (Faqih, 2022). Lyu, Guo, and Chen (2023) did a study that showed a direct relationship between the perceived usefulness of online applications and individuals' inclination to use information systems. Lyu, Guo, and Chen (2023) found that the persistent adoption of artificial intelligence systems is impacted by individuals' perceptions of their utility and simplicity. The perceived usefulness of a technical breakthrough is a crucial

factor in humans' decision-making process about its adoption (Khudzari et al., 2023). Based on the above explanation, it may be postulated that:

H2: Perceived ease of use positively impacts the perceived usefulness of using robotic waiters in restaurants.

Usage Behaviour

Artificial intelligence systems support tasks in almost every sector and in any location. It enhances cost and time effectiveness, allowing for allocating resources to other significant endeavours (Kunduru, 2023). Artificial intelligence improves productivity and competency, increases temporal adaptability, and promotes user inclusivity (Chowdhury et al., 2023). According to the study conducted by Facts and Factors, the worldwide market for online artificial intelligence systems grew significantly, reaching a value of USD 17 billion in 2022. Projections show that this market is likely to increase further, reaching a value of USD 475 billion by 2030 (Nyhan et al., 2023).

The COVID-19 pandemic has disrupted the labour supply of expertise, prompting businesses to embrace a more proactive approach in favour of automation (Agarwal et al., 2022). As a result, artificial intelligence systems have witnessed a significant increase in their level of popularity. The expressed worry is influenced by several elements, including the perceived degree of knowledge, perceived usefulness, perceived ease of use of the robotics waiters, and perceived hurdles (Cheon et al., 2022). The COVID-19 epidemic substantially impacts restaurant owners' decisions to engage in artificial intelligence-backed labour forces due to the various difficulties and concerns. The epidemic has resulted in a significant surge in the popularity of artificial intelligence systems, pushing restaurant businesses to vehemently advocate for their position on engaging in this mode of robotics hand. Ajibade et al. (2022) found that several factors influence this issue, including perceived utility, perceived ease of use of handling robotics waiters, and regarded barriers (Chuah et al., 2022).

The study conducted by Song & Kim (2022). has shown evidence to support the idea that perceived utility plays a vital role in mediating the relationship between compatibility, comfort, and effectiveness of using robotics users in restaurants.

H3: Perceived usefulness has a positive impact on worth of online artificial intelligence system.

H4: Perceived usefulness mediates the relationship between perceived ease of use and worth of online artificial intelligence system.

CONCEPTUAL FRAMEWORKS

The conceptual framework of this study was developed using prior research focused on identifying the factors that influence individuals' perspectives on artificial intelligence systems. A model is created by building links and elucidating each aspect. Figure 1 clearly illustrates the framework.
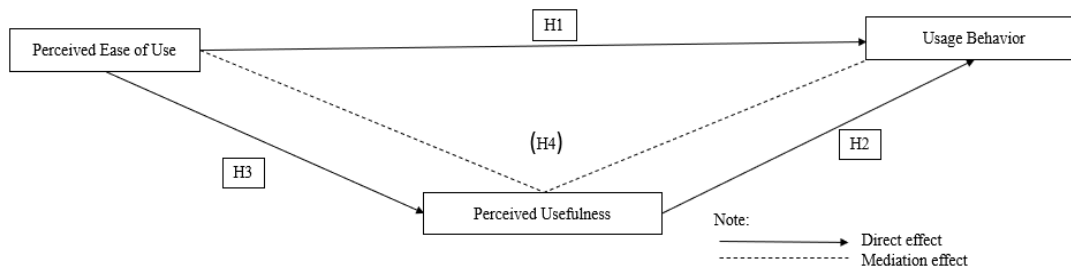

Figure 1: Conceptual framework (Source: Davis, 1989)

METHODOLOGY

The present study utilised a quantitative methodology to investigate several aspects that influence the development of perceived ease of use (PEU) and perceived usefulness (PU) regarding the experiences of robotic waiters in Malaysia. Hence, the target demographic of the study consists of users of robotic waiters in restaurant service who are in Kuala Lumpur city. The study concentrated on Kuala Lumpur, Malaysia, because of its dense population and varied cultural traits. The study employed a multistage clustered sampling technique, allowing researchers to select respondents without bias. The researcher collected the list of restaurants from online sources, divided them according to their geographic location and randomly distributed the questionnaire items to the restaurant employees. According to Zheng & Valente (2023), the recommended range for selecting the sample size in processing structural equation modelling (SEM) data is between 200 and 400 (Bader et al., 2022). The current study entailed the distribution of 300 sets of questionnaires among several restaurants in Kuala Lumpur. A total of 271 responses were gathered. After eliminating the eleven incomplete elements, two hundred sixty-one responses were retained for analysis.

The research approach comprises three dimensions: perceived ease of use, perceived usefulness, and usage experiences of robotics waiters at restaurant services. The survey employed in this study was internally developed and consisted of twelve items. These elements were modified and customised as required to correspond with the specific requirements and goals of the present research. The study utilised a 5-point Likert scale, as recommended by Hair et al. (2017), with response choices ranging from 1, representing "strongly disagree," to 5, representing "strongly agree."

The questionnaire items were designed in the English language. In order to determine the accuracy of the items, a total of 25 sets of questionnaires were distributed to university students during an initial research phase to collect their viewpoints and suggestions. The questionnaire was modified based on the feedback and recommendations provided by participants to improve its clarity and comprehensibility. The statistical data analysis in this study was performed using SPSS-23. Furthermore, the AMOS-SEM methodology validated the measurement model and provided evidence for the research hypothesis.

RESULT AND ANALYSIS

Demographic Profile
Among the 265 participants, 137 were male, making up 52.49% of the sample size. The remaining 124 participants were female, accounting for 47.50%. Of the participants, 61 persons (23.37%) were in the age range of 24-29, while the age group of 54 and above represented nineteen responses (6.51%). Twenty-three persons, constituting 8.81% of the population, fell within the age range of 48 to 53 years old.   The age groups of 36 to 41 and 30 to 35 had the second and third highest response rates, with 53 (20.30%) and 45 (17.24%) participants, respectively.   A total of 25 participants were within the age range of 42 to 47 years old, while the age group of 18 to 23 years old had a higher number of replies, totalling 37. The occupation status of the survey respondents was categorised as either employed individuals or students.   The survey included the highest number of 83 unemployed and 33 homemakers. Students, service holders and self-employed are 53,43 and 49, respectively. Sixty-nine participants, or 26.43% of the sample, achieved scores between RM 8,000 and RM 9,000.

Nevertheless, a small fraction of the sample, precisely nine individuals, representing only 3.3% of the total, disclosed incomes above RM 10,000.   Of the sample, 54 individuals, which accounts for 20.22% of the total, had an income ranging from RM 4,000 to RM 5,000.   Fifty individuals indicated that their monthly income ranged from RM 6,000 to RM 7,000. The study on RM 2-3 K and R ma less than 2k had 36 and 39 respondents, respectively.   Table 1 displays the demographic attributes of the participants.

Table 1 Demographic profile of respondents

Attributes	Category	Frequency	Percentage
Gender	Male	137	52.49
	Female	124	47.50
Age	18-23	37	14.17
	24-29	61	23.37
	30-35	45	17.24
	36-41	53	20.30
	42-47	25	9.57
	48-53	23	8.81
	54 and above	17	6.51
Occupation	Service	43	16.47
	Housewife	33	12.64
	Student	53	20.30
	Self-employed	49	18.77
	Unemployed	83	31.80
Family Income	Less than 2 k	39	14.94
	2k-3k	36	13.79
	4k-5k	58	22.22
	6k-7k	50	19.15
	8k-9k	69	26.43
	10 k and above	9	3.44

EXPLORATORY FACTOR ANALYSIS

An exploratory factor analysis (EFA) was conducted to investigate and establish the correlation among a group of interconnected factors.   In this inquiry, the exploratory factor analysis (EFA) was initiated using the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity.   The KMO test yielded a result of 0.689, as shown in Table 2, demonstrating statistical significance as it exceeded the threshold of 0.50 (Akça & Kurudirek, 2023).   Bartlett's Test of Sphericity produced a statistically significant outcome of 0 ($p < 0.001$), suggesting a strong association among the variables under investigation.   The outcomes of the KMO test and Bartlett's test of sphericity indicate that the dataset was appropriate for exploratory factor analysis.

Table 2 KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.689
Bartlett's Test of Sphericity	Approx. Chi-Square	1088.715
	df	36
	Sig.	.000

Akça & Kurudirek (2023) conducted a study that utilized exploratory factor analysis, explicitly employing principal component analysis and the varimax rotation technique. In addition, constructs were represented by elements with eigenvalues more than 1.0 and factor loadings higher than 0.50.

It is crucial to note that exploratory factor analysis (EFA) discovered three components. However, several distinctive attributes should have been included in the research since they tend to dominate other factors. The recurrent removal of PU4, PEOU3, and UB3 from the principal component analysis has led to identifying components in Table 3 that can load independently without any negative consequences.

Table 3 Total Variance Explained

Rotated Component Matrixª			
	Component		
	1	2	3
PU3	.941		
PU2	.930		
PU1	.831		
PEOU1		.893	
PEOU2		.870	
PEOU4		.845	
UB4			.790
UB2			.787
UB1			.607

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 4 iterations.

MEASUREMENT MODEL

A measurement model was developed to evaluate the accuracy of exogenous and endogenous variables in the fitness-tested model. The focal variable of this investigation is user behaviour. The exogenous variable relates to the perceived ease of usage. Nevertheless, it is essential to acknowledge that perceived usefulness was an intermediary or mediating variable in this situation. Specific components have yet to be considered based on the exploratory factor analysis (EFA).
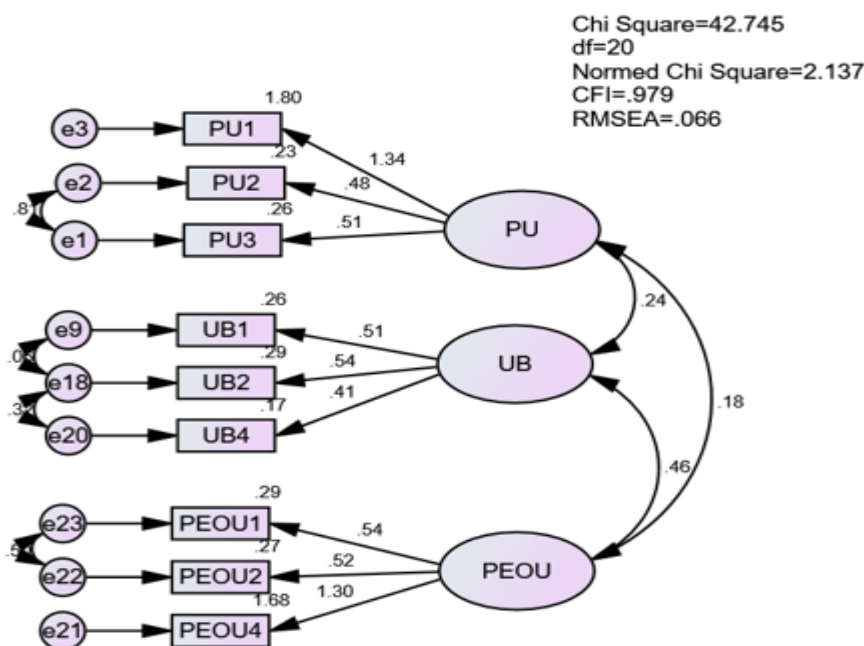
Figure 2 Measurement Model

After the alteration shown in Figure 2, the variables were put through a confirmatory factor analysis (CFA), which produced a Root Mean Square Error of Approximation (RMSEA) value of 0.066 and a Comparative Fit Index (CFI) value of 0.979. These numbers show that the model's fit meets predetermined standards for satisfaction. The analysis yielded a chi-square value of 42.745, with a matching degree of freedom of 20. Lower than the predefined threshold value of 5.0, the estimated chi-square value is 2.137. A brief description of the measuring model is provided in Table 4.

Table 4 Summary of Measurement Model Results

Name of Category	Recommended Value	Obtained Value	Comments
Absolute fit	RMSEA≤ 0.08	0.066	The recommended level is achieved
Incremental fit	CFI ≥ 0.90	0.979	The recommended level is achieved
Parsimonious fit	ChiSq/df ≤ 5	2.137	The recommended level is achieved

Both exogenous and endogenous latent variables' correlation values are under the cutoff of 0.85, demonstrating the presence of discriminant validity between these variables.

TESTING RELIABILITY AND VALIDITY

For the reliability assessment used in the current study, Cronbach's alpha was calculated for each construct using SPSS software. Construct Reliability (CR) was also measured using AMOS software. According to the findings of (Tahir, 2023), it is advised that Cronbach's alpha exceeds a cutoff point of 0.60. For all constructs that are over the stipulated minimal threshold, the Cronbach's alpha and composite reliability (CR) values are shown in Table 5. It is also interesting that all three components' standardized loadings exceed the threshold of 0.50. This indicates no doubts about any of the constructions' trustworthiness.

Table 5 Factor Loading, AVE and CR computation for the Constructs

Constructs	Items	Factor loading	Cronbach α	AVE	CR
PEU	PEU1	.798	0.77	0.73	0.87
	PEU2	.773			
	PEU4	.824			
PU	PU1	.745	0.90	0.52	0.69
	PU2	.872			
	PU3	.888			
UB	UB1	.523	0.71	0.71	0.83
	UB2	.666			
	UB4	.624			
Overall (12 items)			0.770		

Furthermore, the Composite Reliability (CR) and Average Variance Extracted (AVE) estimations were used to judge the validity of the three constructs used in this investigation. According to the results presented in Table 5, the average variance extracted (AVE) values for the constructs of perceived ease of use (PEOU), perceived usefulness (PU), and usage behaviour (UB) are, respectively, 0.71, 0.53, and 0.77. All components had convergent validity proven satisfactorily, as shown by the composite reliability (CR) values above 0.60 (ranging from 0.69 to 0.87). The construct's convergent validity can still be deemed suitable when the average variance extracted (AVE) is below the cutoff of 0.50, but the composite reliability is above 0.60. However, the current analysis shows that the average extracted variance (AVE) and composite reliability (CR) values exceed the set threshold level. Therefore, it may be argued that the goal of achieving the legitimacy for further study has been accomplished.

STRUCTURAL EQUATION MODELLING

A statistical method used to examine intricate interactions between observable and latent variables is structural equation modelling (SEM). Researchers can evaluate and test the direct and indirect impacts using SEM.

With a Comparative Fit Index (CFI) value of 0.973, the modified structural model, shown in Figure 3, exhibits a satisfactory fit, exceeding the advised threshold of 0.90. The Root Mean Square Error of Approximation (RMSEA) value of 0.073 also complies with the benchmarks. The normalized Chi-square value of 2.386 is determined to be less than five. This shows that the structural model fits the data well. This value of the Chi-square has 21 degrees of freedom. Additionally, it is determined that

the unnormalized Chi-square value is 50.102. Consequently, the structural model is still appropriate.
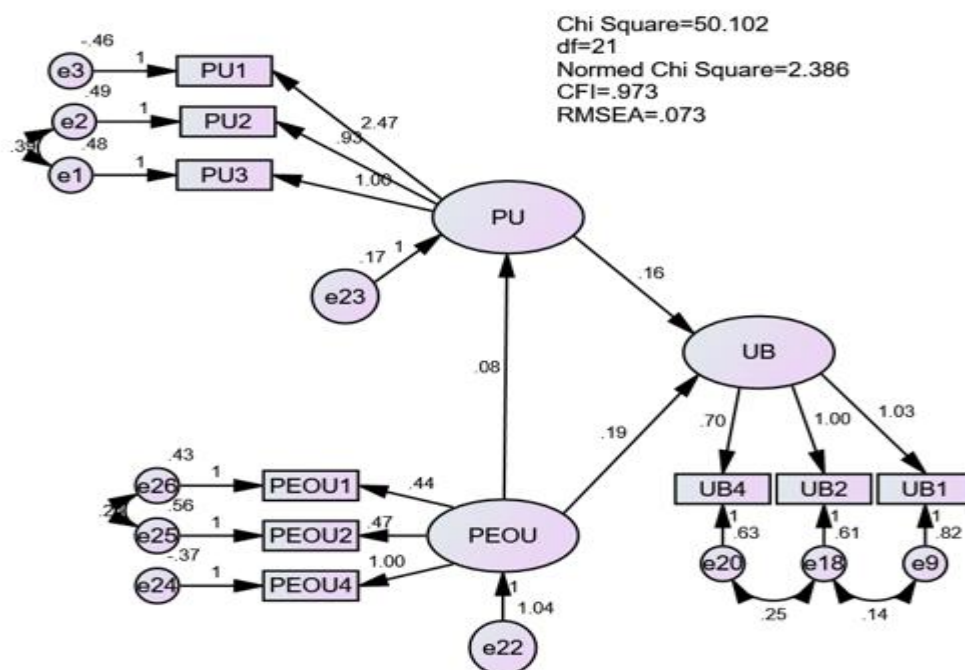

Figure 3: Structural Model

Table 6 shows the anticipated pathways between the buildings based on the SEM model (Figure 3).

Table 6 Path Estimation

Variables			Estimate	SE	CR	P	Decision
PU	<---	PEOU	0.197	0.039	2.102	.036	Supported
UB	<---	PU	0.315	0.069	2.374	.018	Supported
UB	<---	PEOU	0.889	0.054	3.567	***	Supported

HYPOTHESIS TESTING

Perceived Perceived ease of use (PEOU) has a statistically significant influence on perceived usefulness (PU), according to the structural path analysis carried out inside the model. The hypothesis testing produced a standardised regression weight of 0.197, a standard error of 0.039, and a critical ratio of 2.102 based on the information in Table 6. Notably, the crucial ratio is higher than the predetermined threshold of 1.96. Consequently, it is proved that perceived ease of use positively impacts perceived usefulness. According to earlier research, perceived ease of use (PEOU) and perceived usefulness (PU) are positively correlated (Amin et al., 2014; Mensah, 2016; Rawashdeh et al., 2021). As a result, the null hypothesis has been invalidated, and it is now clear that in the context of online artificial intelligence systems, there is a positive association between perceived ease of use (PEOU) and perceived usefulness (PU).

Perceived ease of use (PEOU) and usage behaviour (UB) have a statistically significant link, according to the analysis of the hypotheses (see Table 6). A critical ratio of 3.567, a standard regression weight of 0.889, and standard errors of 0.054 all confirm the existence of this relationship. As a result, hypothesis testing shows that perceived ease of use (PEOU) greatly impacts the usage behaviour of robotics waiters in restaurants. Given the rejection of the null hypothesis, there is strong empirical evidence—as shown by earlier studies by (Gupta & Pande, 2023; Labus & Jelovac, 2022, and Dhingra & Mudgal, 2019)—that there is a positive correlation between perceived ease of use (PEOU) and usage behaviour (UB).

A standardised regression weight of 0.315 and a standard error of 0.069 were obtained from the statistical analysis of hypothesis three. The P value was found to be significant, and the critical ratio was found to be 2.374. Table 6 displays these outcomes. (Lin, Chi & Gursoy, 2020), De Kervenoael et al., 2020) did a study that shows the positive influence of the perceived usefulness and usage behaviour of robotics services. This study emphasises how important it is to consider how perceived usefulness affects the usage behaviour of robotics waiters. The idea that perceived usefulness positively influences the value of online artificial intelligence systems is supported by the rejected null hypothesis.

MEDIATION EFFECT ANALYSIS

Hair et al. (2017) state that mediation is thought to take place when the sum of the indirect route loads rises above a cutoff of 0.08. The purpose of the current study is to investigate the mediated link between perceived ease of use (PEOU) and usage behaviour (UB) and the mediating function of perceived usefulness (PU). The research showed a mediating influence because the coefficients

of the indirect pathways were 0.31 and 0.19. Therefore, it is demonstrated that the result of 0.31 and 0.19, calculated as 0.0589, is less than 0.08.

Table 7 Mediating Path Estimation

Variables			Estimate	SE	CR	P	Decision
PU	<---	PEOU	0.197	0.039	2.102	.036	Supported
UB	<---	PU	0.315	0.069	2.374	.018	Supported

Therefore, this research has found conclusive evidence in robotics services systems that perceived usefulness affects usage behaviour. On the other hand, the current investigation found a significant direct correlation between these two characteristics. Therefore, perceived usefulness cannot mediate between perceived ease of use and the usage behaviour of robotics waiter's service.

CONCLUSION AND RECOMMENDATIONS

By illuminating the connection between the quality of AI-enabled services, perceived usefulness, perceived ease of use, and usage behaviour in a single model, this study adds to the body of knowledge. The study's conclusions have implications for the technology acceptance model, which was used to examine the use of robotic waiters with AI capabilities for restaurant service. A particular focus of the study was on the effects of AI-enabled service quality, perceived usefulness, perceived ease of use, and behaviour of users. According to the results, the variables, mainly the perceived ease of use, significantly impacted perceived usefulness and usage behaviour. This study also showed that the relationship between the perceived usefulness of AI-enabled services and usage behaviour. Given the growing use of AI technology in restaurants and other service businesses, this model is more current and relevant.

Additionally, the results of this study have applications for restaurant and business owners, professionals, authorities, and the general public. From a managerial perspective, the study's findings imply a wide range of significant consequences for restaurant service providers for growth and innovation of this industry. This study provided insight into how AI impacts consumer perceptions of service quality. Perceived usefulness also has a significant impact on the customer's usage behaviour. Suppose managers have a solid understanding of the effects of AI-enabled service quality, perceived usefulness, and perceived ease of use on users' perceptions of robotic waiters. In that case, they may employ AI-enabled robots as restaurant waiters to keep up with the times. The food and beverage industry are greatly impacted by technology, which significantly impacts many facets of human life. This study shows that the user experience significantly influences perceptions of the usefulness and usability of AI. This study also indicates how the perceived usefulness of AI-enabled products influences views regarding robotic waiters. In order to improve their total customers' or guests' experience, practitioners, CEOs, and senior management of firms could align more robot technology in the service industry. In conclusion, the overall model created in this study may offer managers crucial support and direction about the practical usage of robotic waiters in restaurant service.

It is crucial to understand the study's limitations, which include the small sample size. Therefore, future researchers should consider these restrictions when determining sample size and how to conduct a longitudinal study. The study's conclusions were also constrained because it was only done in eateries in Kuala Lumpur. Therefore, to increase the variety of the results, we advise including cross-country and cross-industry data. Future studies may also investigate different topics, like the functionality of robot attendants and pleasure-seeking motivation. One of the industry's breakthroughs, the autonomous waiter product, was used in the study. Research may examine how people use other products, such as robot cooks. The study examined user's opinions on robot servers in the food and beverage industry. Further investigation may be needed into how robot technology affects other industries, like the aviation industry.

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