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RESEARCH ARTICLE

The Role of AI-Powered E-Menus in Enhancing Customer Satisfaction and Promoting Restaurants in Jordan's Tourism Sector

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ABSTRACT

Jordanian restaurants are known for having dishes that appeal to both Jordanians and Arab and foreign tourists, which explains their popularity. As AI continues to drive technological integration across multiple sectors, AI-enabled electronic menus become a novel solution with a variety of lucrative properties such as visual appearance, uncomplicated operational steps, simplification of food-related information, and interactive possibilities with customers. Hospitality or restaurant industry needs to adapt quickly to the changing demand, as these interactive menus improve the customer experience over traditional paper menus, which results in better customer satisfaction, hence creating competitiveness in the industry. Nonetheless, this still brings Jordan's tourism restaurant sector low paper menus are inevitable. The research problem is that AI-supported electronic menus should be questioned, with attention to its opportunities as well as its effectiveness in improving customer satisfaction and promoting this vital sector. It seeks to study how these menus help improve the services provided by tourist restaurants by seeking the level of expectation of the target audience, which increased in order to increase customer satisfaction. Inductive, descriptive and analytical methods were used to reach this goal. Surveys and interviews were used to collect data targeting 35 restaurant managers and 395 customers. The study took place between January and August 2024. Results showed that both customers and managers were largely supportive of AI-enhanced electronic menus. Customers identified their contributions to improving interaction, speeding up service, and meeting expectations, while managers identified their role in cutting costs, raising service quality, and increasing competitiveness. Accordingly, the study recommends that AI-supported electronic menus should be widely adopted by decision-makers in Jordan's tourism and hospitality sector; as they play a critical role in improving customer experience and contribute to revitalizing the sector.

1. INTRODUCTION

"In recent years, the study of restaurant menus has gained significant importance as a scientific, artistic, and marketing tool in the hospitality industry. Menus play a central role in presenting and selecting food items in an attractive and well-thought-out manner, contributing to the success of restaurants and the broader hospitality sector. Historically, the first documented menu appeared during a banquet hosted by Duke Henry of Brunswick, where guests were informed in advance about the dishes to be served, sparking enthusiasm for trying these foods. By the early 20th century, restaurants began displaying food options on boards at their entrances, written in elegant and clear handwriting—a tradition that evolved with time. As customer preferences and financial capabilities diversified, restaurants adopted various strategies to meet these needs, such as tailoring menus to different nationalities, occasions, and tastes. Consequently, studying menus has become essential for professionals in this field, encompassing administrative, economic, accounting, and nutritional

aspects to enhance customer satisfaction, improve restaurant performance, and boost competitiveness. Today, menus have transformed into an independent art form with established principles and techniques that consider factors such as menu type, timing, pricing, and the variety of food offered. These principles also account for the restaurant's type, level, and star rating, driving competition among establishments to create innovative and appealing menus. With advancements in technology, restaurants have embraced modern tools such as online ordering, mobile applications for payment and ordering, and AI-powered electronic menus (e-menus) (Hasanein et al, 2024). These e-menus serve as a dynamic platform for displaying food items interactively, ensuring clarity and accessibility. In Jordan, particularly in oriental restaurants within the tourism sector, AI-powered e-menus play a pivotal role in enhancing customer satisfaction. By improving service efficiency, personalizing recommendations, and fostering customer engagement, these e-menus contribute significantly to promoting Jordanian restaurants and boosting the tourism sector.

LITERATURE REVIEW

Electronic Menu Studies

Liou, Hsu, and Penning (2013), in their study titled "The Role of iPad-Based Electronic Menus and Full-Service in Restaurants on Customer Satisfaction – A Structural Equation Modeling Approach," explored the impact of using tablet-based electronic menus on improving customer satisfaction. The study focused on examining the relationship between the information provided by electronic menus and the interaction of restaurant staff with customers. It aimed to answer several research questions regarding how this technology affects customer experience and the quality of service provided. The study's primary questions included:

What are customers' perceptions of tablet-based electronic menus?

What is the relationship between the information presented in the electronic menu and the service provided by restaurant staff, and how do these factors impact customer satisfaction?

The study targeted a sample of 219 customers, collecting data through survey questionnaires distributed in a New Zealand restaurant that utilizes iPads to display menus. A seven-point Likert scale (1 - Strongly Agree, 7 - Strongly Disagree) was used to evaluate customer responses. Statistical analysis was conducted using SPSS software (version 18) and structural equation modeling (SEM) analysis with AMOS software (version 20). The findings indicated that the SEM model used in the study effectively described the causal relationships between variables. Results showed that the information provided through the electronic menu and the innovative technologies employed in the restaurant positively influenced customer satisfaction. However, the service provided by the restaurant staff did not significantly impact customer satisfaction.Michener (2012), in their study titled *"Evaluating the Interactivity of Digital Menus to Improve Customer Service in Restaurants,"* conducted a comparative analysis between tablet-based digital menus and traditional paper menus used in fine-dining restaurants, focusing on the types and quantities of dishes offered. The study highlighted that previous research had not adequately examined the impact of digital menus on customer satisfaction, making this a significant area of interest.

The study tested three main hypotheses: the effect of interactive digital menus on the perceived quality of dishes, the comparison of time required to select dishes between digital and paper menus when providing the same amount of information, and the capacity of digital menus to include longer textual information without inconveniencing customers. Data were collected through questionnaires distributed via personal interviews with a sample of 40 customers, excluding one incomplete questionnaire(Alqudah et al, 2023). The study employed descriptive and analytical methods for data analysis, utilizing a five-point Likert scale. Advanced statistical tools such as the Mann-Whitney test, Wilks' Lambda multivariate analysis of variance, and Tukey's post-hoc test were applied using SPSS software (version 19). Additionally, web-based technologies were used to design and implement software models for digital menus.The findings revealed that customers perceived dishes presented through digital menus as of higher quality compared to those presented via paper menus. The study also indicated that digital menus contributed to quicker dish selection and did not require significantly more time than paper menus, despite containing more textual information. Customers also regarded the digital menus as offering dishes of greater value compared to paper menus. The

study concluded that digital menus serve as an innovative tool for enhancing service quality in restaurants. Based on customer feedback and interviews with experts, recommendations were provided regarding the types of content that can be included in digital menus to enhance the customer experience and satisfaction.

Studies On Customer Satisfaction

Al-Muhaimeed (2017) focused on the relationship between restaurant quality and customer satisfaction, aiming to measure the impact of various dimensions of restaurant quality on customer satisfaction. The study involved a sample of 350 customers randomly selected from 100 restaurants in Saudi Arabia (70 small restaurants and 30 full-service restaurants). Data were collected using a questionnaire consisting of 33 items distributed across 11 dimensions to measure restaurant quality. The study employed an analytical approach and used a multiple linear regression model for data analysis.

Independent variables included menu, external environment, accuracy, food quality, responsiveness, cleanliness, interior design, halal compliance, and price, while customer satisfaction was the dependent variable.The findings revealed that all dimensions of restaurant quality significantly and positively impacted customer satisfaction, particularly food quality, taste, fresh meals, cleanliness, quick service, and menu variety. Additionally, the "halal" element was identified as an influential factor. Another study by Shrestha (2015) examined customer satisfaction levels at Sherpa Mountain Restaurant to measure overall satisfaction and improve customer experiences(Alqudah et al, 2023) . The study employed a descriptive and quantitative approach and relied on a questionnaire designed using a five-point Likert scale. Customer responses were analyzed using Webropol software. The results showed that customers were highly satisfied with the quality of service and food, though they suggested improvements to the menu, price adjustments, and adding new services like home delivery. Similarly, Ghimire (2012) assessed service quality and customer satisfaction at Sagarmatha Nepali Restaurant in Fanta. The study aimed to evaluate customer satisfaction with the restaurant's service quality. Data were collected through questionnaires administered during personal interviews with a sample of 30 customers. The findings indicated that both service quality and customer satisfaction at the restaurant were very high. The study recommended enhancing existing services and increasing promotional efforts through social media platforms like Facebook.

Research Gaps and Implications

A review of prior studies on the impact of digital menus on customer satisfaction in Egyptian tourist restaurants, particularly Eastern ones, highlights the importance of this area of research. Insights from studies like Garg (2022) and Liou, Hsu, and Penning (2013) emphasize that digital menu information and innovative technologies in restaurants positively influence customer satisfaction.

From the review of prior studies, the researcher concluded the following points:

There is a scarcity of studies, especially in Arabic, that evaluate the effectiveness of digital menus on restaurant customer satisfaction.

Limited research in Arabic addresses the implementation of electronic menu systems in restaurants.

This study is unique in proposing the application of digital menu systems in Egyptian restaurants, particularly Eastern ones, a topic not addressed in previous studies according to the researcher’s knowledge.

Marketing and Technological Shifts

The researcher also noted that recent market research has shifted from focusing on traditional marketing tools and market force analysis to emphasizing new marketing platforms that integrate marketing with information technology and e-commerce. This transition is evident in modern literature, as highlighted by Kotler in his works on e-marketing (1999 and 2016) and by Appleton (2024) in *Content Inc.*, which emphasizes that institutions not leveraging social media face challenges in attracting customer attention.

Customer Satisfaction and Competitive Advantage

The researcher linked customer satisfaction with restaurant preference and competition within the sector, stating that customer satisfaction is one of the key indicators for achieving national competitiveness. Higher customer satisfaction enhances the establishment's market advantage, positively reflecting its competitive ability.

Concepts of the Research

Electronic Menu: Refers to menus that rely on touchscreens to place orders electronically. The customer can browse the menu on the screen, select the dishes they wish to order, review the bill, and make the payment directly.

Satisfaction: According to Kotler et al. (1999), satisfaction is defined as an individual's sense of pleasure or frustration resulting from the product's performance or the value derived from it in comparison to previous expectations. Satisfaction is associated with feelings of acceptance, happiness, excitement, and joy, and it serves as a personal judgment based on perception, making it primarily a psychological process.

Customer: A customer is defined as a person who consumes or uses a product (whether a good or service) to meet their needs and desires. Customers can be individual consumers (C2B) or businesses (B2B).

Expectation: Customer expectations are a set of principles and beliefs regarding the quality of service they anticipate receiving. These expectations are used as standards or benchmarks to compare the actual performance of the service provided.

Perception: Refers to the process of organizing, identifying, and interpreting sensory information to represent and understand the surrounding environment, contributing to the formation of a mental image of the experience or product.

Competition: Represents a state of rivalry between two or more companies, or even economies, to achieve the largest possible market share, whether locally or globally. Competition is described as a zero-sum game, where one party gains at the expense of another. The intensity of competition is one of the indicators of competitiveness, reflecting the overall market condition.

Problem statement

Jordanian restaurants are renowned for their exceptional cuisine, which enjoys significant popularity among locals and tourists alike, particularly Arab and foreign visitors. This popularity encourages many to frequent these establishments. The researcher identifies opportunities for improvement, particularly in enhancing customer satisfaction, which is a critical factor in the success of these restaurants. Improved satisfaction can elevate their perceived value, contribute to their competitiveness, and generate numerous direct and indirect employment opportunities within this vital and distinctive sector in Jordan. While AI-powered e-menus offer numerous advantages—such as visual appeal, ease of use, clarity of information, and the ability to provide interactive and detailed insights about menu items—they remain underutilized in Jordan's restaurants. Instead, traditional paper menus continue to dominate, particularly in restaurants rooted in cultural heritage. This reliance on conventional methods may limit customer satisfaction and impede promotional efforts, especially among Arab and foreign tourists seeking a modern dining experience (Garbin Praničević et al, 2019). This study addresses whether adopting AI-powered e-menus in Jordanian restaurants could enhance customer satisfaction and promote these establishments within the competitive tourism sector. The research aims to explore how this innovative approach might improve customers' perceived value of these restaurants, strengthening their reputation and contributing to the sector's growth

Research Questions

The research questions focus on the following:

To what extent are customers and Jordanian restaurants willing to adopt the concept of AI-powered e-menus?

How effective are AI-powered e-menus in enhancing customer satisfaction from the customers' perspective?

How effective are AI-powered e-menus in both enhancing customer satisfaction and promoting the restaurant sector in Jordan, according to restaurant managers?

Research Objectives

The research aims to achieve one primary objective and several sub-objectives, summarized as follows:

Primary Objective

The primary objective of this research is to enhance service quality in Jordanian restaurants by adopting AI-powered e-menus, aligning with modern trends to meet customer needs and expectations, and ultimately improving their satisfaction.

Sub-Objectives

To determine the extent to which customers are willing to embrace the adoption of AI-powered e-menus in Jordanian restaurants.

To assess the acceptance level of restaurant managers toward implementing AI-powered e-menus.

To evaluate the effectiveness of AI-powered e-menus in enhancing customer satisfaction from the customers' perspective.

To explore the effectiveness of AI-powered e-menus in improving customer satisfaction and promoting the restaurant sector from the perspective of restaurant managers.

Research Significance

The significance of this research stems from the following:

It represents one of the few studies in Arabic focusing on the promotion of Jordanian restaurants and their role in the tourism sector.

The research highlights customer acceptance of AI-powered e-menus in the restaurant industry and examines their effectiveness in enhancing customer satisfaction.

It provides valuable insights for decision-makers and stakeholders in the tourism and hospitality sectors, encouraging the adoption and implementation of AI-powered e-menus to promote this vital industry and improve its competitive edge.

Research Population, Sampling Method, and Sample Size

The research population consists of Jordanian restaurants, their customers, and their managers. The researcher primarily relied on data from the Jordanian Ministry of Tourism to identify and define the characteristics of the study population.

SAMPLING METHODOLOGY

The purposive sampling method was employed to select restaurant managers and their respective restaurants as part of the study sample.

The haphazard sampling method was used to select customers from these restaurants to ensure a diverse representation of their opinions and experiences.

Sample Size Estimation

1. The main branches of Jordanian restaurants were categorized based on their tourism rating (from one to five stars). A systematic random sampling method was used to select 36 restaurants representing all tourism grades within Amman, ensuring proportional representation across categories. The sampling process also accounted for geographic distribution and distance considerations.

2. Each selected restaurant's manager was included in the sample, resulting in a total of 36 managers representing the sampled restaurants across Amman.

3. The sample size for restaurant customers was estimated using the following statistical formula:

$$Z = n^2 / 2d^4 / Z^2\alpha/2$$

Where:

- d: the acceptable margin of error (0.05)

- Zα/2: the standard score at a 95% confidence level (1.96).

Based on this formula, the sample size for customers was determined to be 395. Customers were selected using a systematic random sampling method due to the absence of a comprehensive customer database. This approach involved selecting customers at regular intervals to ensure fair and representative coverage of the target population.

Survey Design

Based on a thorough review of relevant Arabic and international studies, as well as consultations with experts in the fields of hospitality and marketing, two survey forms were designed: one tailored for customers and the other for restaurant managers. These surveys were developed to address the research questions and test the hypotheses, with data collected through personal interviews with the targeted samples of customers and managers. The survey forms utilized a five-point Likert scale to measure responses, assigning weights to each statement as follows: 5 for "Strongly Agree," 4 for "Agree," 3 for "Neutral," 2 for "Disagree," and 1 for "Strongly Disagree." The scale's range was calculated by determining the difference between the highest value (5) and the lowest value (1), resulting in a range of 4. This range was then divided by the five levels of the scale to establish the following intervals: 1.00 to <1.80 indicated "Very Weak Agreement," 1.80 to <2.60 indicated "Weak Agreement," 2.60 to <3.40 indicated "Moderate Agreement," 3.40 to <4.20 indicated "Strong Agreement," and 4.20 to 5.00 indicated "Very Strong Agreement. “To ensure the accuracy and reliability of the survey, the forms were presented to a panel of five experts, including four specialists in marketing and one in hospitality, all based in Jordan. The experts provided feedback, leading to necessary modifications such as rephrasing statements for clarity, and adding or removing certain items to improve the survey’s effectiveness. This meticulous process ensured that the survey forms were well-structured and aligned with the study’s objectives, focusing on evaluating the impact of AI-powered e-menus on customer satisfaction and the promotion of Jordanian restaurants within the tourism sector.

Pre-Test

A pre-test was conducted on a sample consisting of 40 customers and 3 managers from the main branches of the selected restaurants, representing approximately 10% of the total sample. This pre-test utilized well-designed survey forms to assess the internal consistency of the statements in both surveys.

Cronbach's Alpha for Internal Consistency

The internal consistency of the survey statements was evaluated using Cronbach's Alpha. The results showed a high level of reliability, with an internal consistency coefficient of 86% for the customer survey and 82.2% for the manager survey. These values indicate a strong and dependable level of consistency, supporting the reliability of the surveys for broader application and the generalization of the findings.

Research Hypotheses

The research hypotheses are as follows:

There is a statistically significant relationship between customer agreement on the adoption of AI-powered e-menus to enhance customer satisfaction and the customer’s gender (male or female).

There is a statistically significant relationship between customer agreement on the adoption of AI-powered e-menus to enhance customer satisfaction and the customer's educational level (illiterate, primary, middle school, high school, university, or postgraduate).

There is a statistically significant relationship between customer agreement on the adoption of AI-powered e-menus to enhance customer satisfaction and the customer's age group (less than 20 years, 20 to less than 40 years, 40 to less than 60 years, and 60 years or above).

There is a statistically significant relationship between restaurant managers' years of experience and their willingness to adopt AI-powered e-menus to enhance customer satisfaction (less than 10 years, 10 to less than 20 years, 20 to less than 30 years, and more than 30 years).

RESEARCH METHODOLOGY

To achieve the objectives of the study, the researcher employed the following methodologies:

The Inductive Approach: This involved reviewing relevant Arabic and international scientific studies related to the research topic. The approach focused on collecting data and information from books, references, specialized journals, and previous studies closely related to the topic.

The Descriptive and Analytical Approach: This was applied through the use of frequency tables, the analysis of Likert scale data, and statistical methods such as the Gamma coefficient and Freeman's non-parametric tests to analyze data and test the research hypotheses.

DATA SOURCES AND COLLECTION METHODS

Primary Sources:

The researcher relied on a sample survey conducted using specially designed questionnaires. These questionnaires were administered through personal interviews with customers and managers of Jordanian restaurants included in the study sample. The aim was to collect data regarding their opinions to address the research questions and test the hypotheses.

Secondary Sources:

The study utilized various secondary sources, including relevant Arabic and international academic studies, scientific references, and previous research related to the topic. Additionally, online resources were used to gather theoretical material and clarify key concepts associated with the research topic.

Statistical Methods Used

The research employed descriptive statistical analysis (frequencies and percentages) to process and interpret the data, as detailed below:

Cronbach's Alpha Test: Used to measure the internal consistency and reliability of the statements in the two survey forms.

Descriptive Analysis: Applied to evaluate frequencies and percentages for all statements in the survey forms.

Likert Scale Analysis: Included calculating weighted arithmetic means, standard deviations, relative importance, and the general tendencies of the sample responses for the survey statements.

Non-Parametric Tests: Given the nature of the data, the study utilized the Gamma coefficient and Freeman's test as non-parametric methods to test the research hypotheses.

Research Scope

Geographical Scope: The research was conducted within the boundaries of the capital city, Amman. This focus was due to the difficulty of generalizing results across the entirety of the Hashemite Kingdom of Jordan and the researcher's geographic location in Amman.

Temporal Scope: The research was carried out during the period from January to August 2024.

Subject Scope: The study was limited to tourist-oriented restaurants, including those operating under the franchising system, due to differences in food offerings, interior design, and customer characteristics.

Research Challenges

Difficulty in Collecting Data from Customers: Many customers were reluctant to participate in the survey, as they often left the restaurant immediately after finishing their meals. This required the researcher to wait until customers had completed their dining experience to approach them for data collection.

Difficulty in Collecting Data from Managers: Restaurant managers were frequently occupied before, during, and after meal preparation times, making it challenging to schedule interviews. The researcher often had to meet with managers late at night after dinner service or early in the morning before breakfast, as these were the only periods when the workload was relatively light.

RESEARCH FINDINGS

Descriptive Analysis Results

1. Customer Survey Analysis:

Using SPSS software (version 24), descriptive analysis was conducted to evaluate the frequency and percentage distributions of the responses provided by the customer sample. These results provide insights into the qualitative data collected.

a. Distribution of the Customer Sample by Gender:

Table 1 presents the frequency and percentage distribution of the customer sample based on gender. This analysis helps to understand the demographic composition of the respondents and their perspectives on the adoption of AI-powered e-menus in Jordanian restaurants.

Table 1: Distribution of Responses by Customer Type in the Research Sample

Gender	Frequency	Percentage (%)
Male	238	61.03
Female	116	29.74
Total	390	100

It is evident from the results of Table 1 that the number of male customers reached 237, accounting for 70% of the total customer sample, while the number of female customers was 117, representing 30% of the same sample.

B. Distribution of the Research Sample by Customer Education Level: Table 2 illustrates the frequency and percentage distribution of the research sample based on the customers' educational level. The data is analyzed to determine the distribution percentages of customers according to their various educational levels, which contributes to a precise understanding of the educational composition of the sample.

Table 2: Distribution of Responses by Customer Education Level in the Research Sample

Educational Level	Frequency	Percentage (%)
Illiterate	-	-
Primary	-	-
Preparatory	-	-
Secondary	37	9.5
University	351	90
Postgraduate	2	0.5
Total	390	100

It is evident from the results of Table 2 that the number of customers with a secondary education level was 37, accounting for approximately 10% of the total customer sample. The number of

customers with a university degree was 351, representing 90%, while the number of customers with a master's or doctoral degree was only 2.

A. Distribution of the Research Sample by Customer Age Groups: Table 3 illustrates the frequency and percentage distribution of the research sample based on the customers' age groups. This helps in analyzing the data to understand the age disparity within the sample and the extent to which age influences the results.

Table (3): Distribution of Research Sample Responses According to Customers' Age Groups

Educational Level	Frequency	Percentage (%)
Illiterate	-	-
Primary	-	-
Preparatory	-	-
Secondary	37	9.5
University	351	90
Postgraduate	2	0.5
Total	390	100

It is observed from the results of Table 3 that the highest percentage of customers falls within the age group of 40 to under 60 years, accounting for approximately 46% of the total customer sample. The second highest percentage is found in the age group of 20 to under 40 years, which stands at approximately 45%. Meanwhile, the age group under 20 years ranks third, representing about 10% of the total sample.

According to questions:

A. Distribution of the Research Sample Based on the Statement "Do You Have Knowledge of Electronic Menus": Table 4 illustrates the frequency and percentage distribution of customer responses regarding the statement: "Do you have knowledge of electronic menus." This table analyzes the extent to which customers are familiar with this concept, helping to understand the level of awareness of the target sample regarding the modern technology used in the field of menus.

This translation retains the academic tone and appropriate terminology for the field of hospitality management.

Table 4: Distribution of Customer Responses Based on the Statement "Do You Have Knowledge of Electronic Menus"

Educational Level	Frequency	Percentage (%)
Illiterate	-	-
Primary	-	-
Preparatory	-	-
Secondary	37	9.5
University	351	90
Postgraduate	2	0.5
Total	390	100

The results of Table 4 indicate that the number of customers who responded "Yes" was 377, accounting for approximately 98%, while the number of customers who answered "No" was 13, representing about 3% of the total research sample.

B. Distribution of Customer Opinions Based on the Statement "Do You Agree with the Implementation of Electronic Menus in Tourist Restaurants in Jordan": Table 5 illustrates the frequency and percentage distribution of customer responses regarding the statement: "Do you agree with the implementation of electronic menus in tourist restaurants in Jordan." This table analyzes customer attitudes and their acceptance of using this technology in tourist restaurants, reflecting the level of support for implementing this idea in the local context.

Table 5: Distribution of Customer Opinions Based on the Statement: "Do You Agree with the Implementation of Electronic Menus in Tourist Restaurants in Jordan"

Level of Agreement	Frequency	Percentage (%)
Strongly Agree	192	49.2
Agree	197	50.5
Neutral	1	0.0
Disagree	-	-
Strongly Disagree	-	-

A. It is observed from the results of Table 5 that the number of customers who responded with "Strongly Agree" was 192, accounting for approximately 49% of the total sample. The number of customers who responded with "Agree" was 197, representing about 51%. Meanwhile, the number of customers who responded with "Neutral" was only one.

B. Distribution of Customer Opinions on the Effectiveness of Electronic Menus on Customer Satisfaction: Table 6 illustrates the frequency and percentage distribution of customer responses regarding their opinions on the effectiveness of electronic menus on customer satisfaction. The table aims to analyze customer satisfaction levels based on the use of electronic menus, providing a comprehensive view of the impact of this technology on the customer experience.

Table (6): Distribution of Customer Sample Opinions on the Effectiveness of Electronic Menus on Customer Satisfaction

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
4. The electronic menu reduces the time required to process orders compared to paper menus (Fast Service).	26.4	42.1	21.3	10.3	0.0
1. "Electronic menus" enable me to visualize my order easily and effectively compared to paper menus (Customer Perception).	24.1	51.0	16.9	5.1	2.8
3. It is possible to control the components of the order via the electronic menu compared to the paper menu (Customer Engagement).	23.8	50.0	17.9	7.4	0.8
2. The electronic menu provides a clear and visual concept of food ingredients, especially for Eastern cuisine, compared to paper menus.	22.6	53.1	18.5	5.1	0.8

Summary of the Results of Table 6

First Statement: The number of customers who responded with "Strongly Agree" was 94, accounting for approximately 24%. The number of customers who responded with "Agree" was 199, representing 51%. Those who responded with "Neutral" were 66, accounting for 17%, while the number of customers who answered "Disagree" was 20, representing 5%, and 11 customers, or 3%, responded with "Strongly Disagree."

Second Statement: 88 customers, accounting for approximately 23%, responded with "Strongly Agree," while 207 customers, representing 53%, responded with "Agree." Customers who answered "Neutral" numbered 72, accounting for 19%. Those who answered "Disagree" were 20, representing 5%, and 3 customers, or 1%, responded with "Strongly Disagree."

Third Statement: The number of customers who responded with "Strongly Agree" was 93, representing approximately 24%, and 195 customers, accounting for 50%, answered with "Agree."

Those who answered "Neutral" were 70, representing 18%, while the number of customers who answered "Disagree" was 29, accounting for 7%, and 3 customers, or 1%, responded with "Strongly Disagree."

Fourth Statement: The fourth statement recorded the highest approval rate, with 103 customers, accounting for approximately 26%, responding with "Strongly Agree," and 164 customers, representing 42%, answering with "Agree." Those who answered "Neutral" numbered 83, accounting for 21%, while the number of customers who answered "Disagree" was 40, representing 10%.

2. Managers' Survey Form:

A. Distribution of the Research Sample Based on Qualitative Data: Managers' Experience Duration: Table 7 illustrates the frequency and percentage distribution of the research sample based on the managers' years of experience. This table shows the classification of managers according to their years of experience, helping to understand the sample distribution by professional experience and its potential impact on the responses and results.

Table (7): Distribution of the Research Sample According to Managers' Years of Experience

Years of Experience	Frequency	Percentage (%)
Less than 10 years	-	-
10 – Less than 20 years	9	29.0
20 – Less than 30 years	19	61.3
30 years or more	3	9.7
Total	31	100

Source: Compiled and calculated from the managers' survey questionnaire data.

Table 7 illustrates the distribution of the research sample based on the managers' years of experience, showing variation in experience periods. The number of managers with service durations between 10 to under 20 years was approximately 9, accounting for 29% of the total sample. The results show that the largest group of managers, representing 61% of the sample, has between 20 to under 30 years of experience, with 19 managers in this category. The group with more than 30 years of experience was the least represented in the sample, with only 3 managers, accounting for 10% of the total research sample.

B. Distribution of the Research Sample Based on the Questions:

Statement: "Do You Agree with the Implementation of Electronic Menus in Your Restaurant": Table 8 illustrates the frequency and percentage distribution of the research sample based on the statement: "Do you agree with the implementation of electronic menus in your restaurant."

Table (8):,Distribution of Managers' Opinions on the Statement: "Do you agree to implement electronic menus in your restaurant?"

Statement	Level of Agreement	Frequency	Percentage (%)
Do you agree to implement electronic menus in your restaurant?	Strongly Agree	7	32.4
	Agree	19	58.2
	Neutral	4	9.6
	Disagree	-	-
	Strongly Disagree	-	-

Source: Compiled and calculated from the managers' survey questionnaire data.

The results of Table 8 indicate that the majority of managers expressed a positive agreement with the statement under study. The number of managers who responded with "Strongly Agree" was 10, accounting for approximately 32% of the total sample. The number of managers who responded with "Agree" was 18, representing about 58%, reflecting a strong consensus in support of the statement.

C. Distribution of the Managers' Sample Based on Their Opinions on the Statement: The Effectiveness of Electronic Menus on Customer Satisfaction: Table 9 illustrates the frequency and percentage distribution of the managers' sample based on their opinions on the effectiveness of electronic menus on customer satisfaction.

Table (9): Distribution of Managers' Opinions on the Effectiveness of Electronic Menus on Customer Satisfaction

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
Implementing an electronic menu system in your restaurant will reduce prices compared to other restaurants.	22.6	58.1	16.1	-	3.2
Implementing an electronic menu system in your restaurant will lead to faster customer service.	22.6	58.1	19.4	-	-
Implementing an electronic menu system in your restaurant will improve price competitiveness with similar restaurants.	29.0	38.7	19.4	12.9	-
Implementing an electronic menu system in your restaurant will improve the quality of customer service.	38.7	41.9	16.1	3.2	-

Analysis of the Results of Table 9:

First Statement: The results showed that the number of managers who responded with "Strongly Agree" was 7, accounting for 23%, while the largest percentage of responses was for the "Agree" category, with 18 managers, representing 58%. Those who answered "Neutral" were 5 managers, accounting for 16%, while only one manager (3%) responded with "Strongly Disagree."

Second Statement: The results were almost identical to the first statement; 7 managers answered "Strongly Agree" (23%), and 18 managers responded with "Agree" (58%). Meanwhile, the percentage of "Neutral" responses slightly increased to 19% (6 managers).

Third Statement: The third statement showed a slightly different distribution. The number of managers who responded with "Strongly Agree" was 9, accounting for 29%, and the number of managers who responded with "Agree" was 12, representing 39%. The "Neutral" response rate was 19% (6 managers), while 4 managers (13%) responded with "Disagree," showing some variation in managers' opinions on this statement.

Fourth Statement: The fourth statement recorded the highest approval rate, with 12 managers (39%) responding with "Strongly Agree" and 13 managers (42%) responding with "Agree." In contrast, the "Neutral" response rate was 16% (5 managers), and only one manager (3%) responded with "Disagree."

Analysis of the Likert Scale: The statistical program SPSS was used to determine the relative importance of each axis, where the following was calculated:

The arithmetic mean, standard deviation, relative importance, and sample direction for each statement on the axis level.

The arithmetic mean, standard deviation, relative importance, and sample direction for each axis. Analysis of the Likert Scale for the Customer Survey Form.

Table 10: Results of the Likert Scale Analysis of Customer Response Trends

Statement	Sample Size (n)	Weighted Mean	Standard Deviation	Relative Importance (%)	Sample Direction	Rank
Do you agree with implementing "electronic menus" in tourist restaurants, especially Eastern ones in Egypt? (Opinion)	390	4.49	0.50	89.8	Strongly Agree	1
"Electronic menus" enable me to visualize my order easily and clearly compared to paper menus. (Customer Perception)	390	3.88	0.93	77.6	Agree	4
The electronic menu provides a clear and illustrated concept of the food ingredients, especially Eastern food, compared to paper menus. (Customer Expectation)	390	3.92	0.82	78.4	Agree	2
The electronic menu allows controlling the components of the requested order compared to paper menus. (Customer Interaction with Goods and Services)	390	3.89	0.88	77.8	Agree	3
The electronic menu reduces the time required to process the order compared to paper menus. (Speed of Service)	390	3.85	0.93	77.0	Agree	5
Overall Axis Average		4.00	0.86	80.0	Agree	

It is observed from the results of Table 10 as follows: The results of Table 10 show that the first statement, "Agreement on the Implementation of Electronic Menus," ranked first with a relative importance of 98.8%, reflecting strong support among customers for the implementation of this technology. The overall trend of responses was "Strongly Agree," with a weighted average of 4.49 and a standard deviation of 0.50, indicating strong consensus among customers. The third statement ranked second with a relative importance of 78.7%, with the trend being "Agree," and a weighted average of 3.92 and a standard deviation of 0.82, suggesting positive acceptance with some variation in opinions. The fourth statement ranked third with a relative importance of 77.8%, where the general trend of responses was "Agree," with a weighted average of 3.89 and a standard deviation of 0.88, reflecting a positive stance among customers but with less enthusiasm compared to the first and third statements. The second statement ranked fourth with a relative importance of 77.6%, with the trend being "Agree," a weighted average of 3.88, and a standard deviation of 0.93, showing a high degree of similarity in relative importance to the fourth statement. The fifth statement ranked last with a relative importance of 77%, with the trend being "Agree," a weighted average of 3.85, and a

standard deviation of 0.93, indicating an overall positive stance, but it was the least supported among the statements. Overall, the trend of customer responses was towards agreement, with a weighted average of 4.00 and a standard deviation of 0.86, reflecting a generally positive stance towards the content of the statements. These results show broad acceptance of the implementation of electronic menus, particularly in the first statement, which garnered the highest levels of support. Although the differences between the statements were limited, the fifth statement showed the lowest relative importance, suggesting the need for a review of its content or further clarification to improve overall acceptance.

Analysis of the Likert Scale for the Managers' Survey Form:

Table 11: Results of the Likert Scale Analysis of the Effectiveness of Electronic Menus from the Managers' Perspective

Statement	Sample Size (n)	Weighted Mean	Standard Deviation	Relative Importance (%)	Sample Direction	Rank
Do you agree with implementing electronic menus in your restaurant?	31	4.23	0.61	84.6	Strongly Agree	1
Implementing an electronic menu system will reduce prices compared to other restaurants.	31	4.00	0.72	80.0	Agree	4
Implementing an electronic menu system in your restaurant will lead to faster customer service.	31	4.03	0.65	80.6	Agree	3
Implementing an electronic menu system in your restaurant will enhance price competitiveness with other restaurants.	31	3.84	0.99	76.8	Agree	5
Implementing an electronic menu system in your restaurant will improve the quality of customer service.	31	4.16	0.81	83.2	Agree	2
Overall Axis Average		4.05	0.78	81.0	Agree	

It is observed from the results of Table 11 as follows:

The first statement, "Agreement on the Implementation of Electronic Menus," ranked first with a relative importance of 84.6% and the trend "Strongly Agree," with a weighted average of 4.23 and a standard deviation of 0.61. The fifth statement ranked second with a relative importance of 83.2% and the trend "Agree," with a weighted average of 4.16 and a standard deviation of 0.81. The third statement ranked third with a relative importance of 81.3% and the trend "Agree," with a weighted average of 4.05 and a standard deviation of 0.78. The second statement ranked fourth with a relative importance of 80% and the trend "Agree," with a weighted average of 4.0 and a standard deviation of 0.72. The fourth statement ranked last with a relative importance of 67.8% and the trend "Agree," with a weighted average of 3.84 and a standard deviation of 0.99. Overall, the trend of the managers'

responses was "Agree," with a relative importance of 81%, a weighted average of 4.05, and a standard deviation of 0.78.

Results of the Hypothesis Test:

First Hypothesis: "There is a relationship between the agreement on the implementation of electronic menus to enhance customer satisfaction from the customers' perspective and the customer's gender."

Table 12 illustrates the calculation of the "Freeman" coefficient for the relationship between the agreement on the implementation of electronic menus from the customers' perspective and the customer's gender.

Table 12: Calculation of the "Freeman" Coefficient for the Relationship Between the Agreement on the Implementation of Electronic Menus from the Customers' Perspective and the Customer's Gender

Sample Size (n)	Freeman's Coefficient Value	Calculated Z Value	Tabular Z Value	Significance Level (α)	Decision	Two-Tailed Test
390	0.03	-8.26	2.58	0.01	Support H0H_0H0	α=0.01
				0.05	Support H0H_0H0	α=0.05

From the results of Table 12, it is clear that there is no statistically significant relationship between the agreement on the implementation of electronic menus from the customers' perspective and the customer's gender, which confirms the invalidity of the first hypothesis of the research.

Second Hypothesis: "There is a relationship between the agreement on the implementation of electronic menus to enhance customer satisfaction from the customers' perspective and the customer's educational level."

Table 13 illustrates the calculation of the "Gamma Coefficient" for the relationship between the agreement on the implementation of electronic menus from the customers' perspective and the customer's educational level.

Table 13: Calculation of the "Gamma Coefficient" for the Relationship Between the Agreement on the Implementation of Electronic Menus from the Customers' Perspective and the Customer's Educational Level

Sample Size (n)	Gamma Coefficient Value	Calculated Z Value	Tabular Z Value	Significance Level (α)	Decision	Two-Tailed Test
390	0.705	4.30	2.57	0.01	Reject H0	α=0.01
				0.05	Reject H0	α=0.05

From the results of Table 13, it is clear that there is a statistically significant relationship between the agreement on the implementation of electronic menus from the customers' perspective and the customer's educational level, which confirms the validity of the second hypothesis of the research.

Third Hypothesis: "There is a relationship between the agreement on the implementation of electronic menus from the customers' perspective and the customer's age group."

Table 14 illustrates the calculation of the "Gamma Coefficient" for the relationship between the agreement on the implementation of electronic menus from the customers' perspective and the customer's age group.

Table 14: Calculation of the "Gamma Coefficient" for the Relationship Between the Agreement on the Implementation of Electronic Menus from the Customers' Perspective and the Customer's Age Group

Sample Size (n)	Gamma Coefficient Value	Calculated Z Value	Tabular Z Value	Significance Level (α)	Decision	Two-Tailed Test
390	0.449	3.84	2.58	0.01	Reject H0	α=0.01
				0.05	Reject H0	α=0.05

From the results of Table 14, it is clear that there is a statistically significant relationship between the agreement on the implementation of electronic menus from the customers' perspective and the customer's age group, which confirms the validity of the third hypothesis of the research.

Fourth Hypothesis: "There is a relationship between the managers' years of experience and their adoption of the idea of implementing electronic menus to enhance customer satisfaction from their perspective."

Table 15 illustrates the calculation of the "Gamma Coefficient" for the relationship between the managers' years of experience and their adoption of the idea of implementing electronic menus to enhance customer satisfaction from their perspective.

Table 15: Calculation of the "Gamma Coefficient" for the Relationship Between the Managers' Years of Experience and Their Adoption of the Idea of Implementing Electronic Menus to Enhance Customer Satisfaction from Their Perspective

Sample Size (n)	Gamma Coefficient Value	Calculated Z Value	Tabular Z Value	Significance Level (α)	Decision	Two-Tailed Test
31	0.84	3.55	2.58	0.01	Reject H0H_0H0	α=0.01\alpha = 0.01α=0.01
				0.05	Reject H0H_0H0	α=0.05\alpha = 0.05α=0.05

The results of Table 15 indicate that there is a statistically significant relationship between the managers' years of experience and their adoption of the idea of implementing electronic menu systems, which confirms the validity of the fourth hypothesis.

From the above, the results of the research are as follows: There is strong agreement among customers and managers regarding the adoption of electronic menus:

Customers agree on the effectiveness of electronic menus in achieving their satisfaction by enhancing perception, expectations, and customer engagement with the product and service, as well as providing faster service.

Managers agree on the effectiveness of electronic menus in achieving customer satisfaction and promoting the restaurant by enhancing price reduction, speed of service, price competitiveness, and improving service quality.

Additionally, the results confirmed the invalidity of the first hypothesis of the research, while confirming the validity of the remaining hypotheses.

Research Recommendations:

The researcher recommends the following:

The Egyptian Ministry of Tourism should adopt an approach that supports those involved in the tourism and hospitality industry in Egypt to embrace the technology of electronic menus and implement it in the tourism restaurant sector in Jordan, particularly in tourist restaurants, due to the benefits highlighted by the research results. This will reflect positively on the promotion and activation of sales in this vital sector.

Tourism colleges in Jordanian public universities and private higher education institutions in the tourism sector should support such trends by incorporating them into their curricula and scientific conferences.

Suggested Future Research:

In light of the findings of this study and the limitations of the research, the researcher suggests the following related research topics that others in the field of marketing research may explore:

Measuring the impact of adopting modern trends in tourist restaurants on the image and perceived status of these restaurants in the minds of the target audience.

The impact of implementing technological screen menus on the assessment of service quality performance in the fast-food restaurant sector.

The impact of nationality differences on customer satisfaction regarding service quality in tourist restaurants at Red Sea resorts.

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