



The Interrelationships among Quick Service Restaurants Customers' Perceived Epidemic Prevention Service Quality, Satisfaction, and Behavioral Intentions

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Abstract

This paper investigates the relationship between epidemic prevention service quality and customer satisfaction as drivers of behavioral intentions in quick-service restaurants. A quantitative methodology was used to collect data from a convenience sample of 400 customers of quick-service restaurants in Egypt through a web-based survey. Out of the 450 responses received, 50 were excluded due to incompleteness or invalidity, resulting in 400 valid responses, with a response rate of approximately 88.9%. The study examined how epidemic prevention service quality influenced customer satisfaction and behavioral intentions, based on the stimulus-organism-response (S-O-R) theory. Hypotheses were tested using partial least squares structural equation modeling (PLS-SEM) with WarpPLS 8. The findings indicate that epidemic prevention service quality positively affects both revisit and recommendation intentions, and that customer satisfaction also positively influences these intentions. Furthermore, customer satisfaction partially mediates the relationship between epidemic prevention service quality and revisit and recommendation intentions. This research contributes to the literature by integrating epidemic prevention service quality, customer satisfaction, and behavioral intentions within a single model. It offers insights into the interaction between these factors, enhancing understanding of their role in the quick-service restaurant industry, particularly during public health crises such as the COVID-19 pandemic. The findings have practical implications for industry decision-makers, highlighting how improving epidemic prevention measures can enhance customer satisfaction and influence revisit and recommendation intentions.

Keywords: Epidemic Prevention Service Quality, Customer Satisfaction, Behavioral Intentions, Quick Service Restaurant, Revisit Intention, Recommendation Intention

1. Introduction

The restaurant sector constitutes a significant segment of the service industry (Cavusoglu, 2019). It plays a significant role in both developed and developing countries, contributing considerably to their economic value. Moreover, the restaurant sector is crucial for overall economic

performance, serving as a key indicator of the growth of high-value, experience, and leisure-based service industries that define 21st-century economies (Truong et al., 2017).

The restaurant industry has faced significant challenges due to the COVID-19 pandemic (Kim & Lee, 2020; Wang et al., 2021; Xu et al., 2022). A sharp decline in restaurant sales has been observed as a result of the pandemic's impact (Brewer & Sebby, 2021). Many establishments were forced to shut down due to strict restrictions and increased public concern over infection risks (Dedeoğlu & Boğan, 2021). Consequently, restaurants have experienced lower customer turnout, financial difficulties, and the need to adapt to social distancing protocols and pandemic-related prevention measures (Lefrid, 2021; Ryu et al., 2023; Song et al., 2021).

Since the start of the pandemic, there has been a significant change in consumer attitudes and behaviors due to COVID-19 concerns, the necessity of social separation, and growing health and safety concerns (Prentice et al., 2021). As a result, at the start of the pandemic, customers' frequency of dining out decreased dramatically, with restaurant visits dropping by almost 90% (Wen & Liu-Lastres, 2022).

Wei et al. (2021a, 2021b) suggested that COVID-19 preventive measures rebuild customer trust and, ultimately, their intention to revisit restaurants during the reopening period. In the context of examining customer satisfaction and behavioral intentions in restaurants, According to Ababneh et al. (2022), safety concerns and the altered service dynamics brought about by the pandemic may make traditional factors like perceived value, food quality, and service quality that were once thought to be important indicators of customer satisfaction and behavioral intentions less significant. In a related context, Villanueva et al. (2023) observed that, while there have been numerous studies on service quality, customer happiness, and loyalty, there has been a significant absence of research undertaken during the remarkable transformation of the service landscape induced by the COVID-19 pandemic. Furthermore, no research has been carried out to expand the dimensions of service quality within the SERVQUAL framework. Finally, according to Chang and Cheng's (2022) study, conventional service quality assessment systems, such as DINESERV and its modifications, fail to account for consumer expectations and perceptions in the context of the COVID-19 epidemic. These factors could include requirements related to pandemic prevention, safety, and cleanliness.

This study investigated the interrelationships among epidemic prevention service quality, customer satisfaction, and behavioral intentions in quick-service restaurants (QSRs).

2. Literature Review

2.1. Epidemic Prevention Service Quality

Initially, preventive measures refer to action's organizations take to maintain safety during the spread of an epidemic, such as implementing social distancing, mask usage, and sterilization protocols (Kim et al., 2023). COVID-19 mitigation strategies include a wide range of methods and processes targeted at controlling virus transmission and defending the community's health.

Chang and Cheng (2022) describe the quality of epidemic prevention service as the discrepancy between what customers expect and what they perceive to be the services during an outbreak.

The malfunction to account for COVID-19 attributes in all the beforehand indicated service quality structures unveils a theoretical gap in examining restaurant service quality during the infectious disease even (Ha & Sorokina, 2023). Chang and Cheng (2022) constructed the REP-SERV scale, which is composed of 28 components in six dimensions, namely empathy, flexibility, hygiene,

body temperature, seating arrangement, support service, and personnel management. This research deployed IBDA to Recognize 16 key service aspects for restaurant outbreak control, encompassing aspects such as business hours, meals, epidemic prevention measures, service personnel, and cleanliness. These factors were incorporated into qualitative and quantitative approaches to build the REP-SERV scale, comprising 28 items Throughout six criteria. The dimensions were defined based on literature on restaurant epidemic prevention measures and service quality.

- (1) Hygiene: The restaurant's capability to maintain proper cleaning and disinfection procedures, ensuring safety and protection during an epidemic.
- (2) Empathy: The restaurant's ability to provide care and comfort to customers, offering reassurance during an epidemic.
- (3) Flexible service: The capacity of the eatery to modify its operations in response to the development of an epidemic.
- (4) Support service: the extra functions connected to infestation avoidance given by an eatery for its patrons throughout an infection.
- (5) Personnel management: the eatery's command of staff movement and distribution in the event of an epidemic.
- (6) Body temperature and seat arrangement: the capacity of a dining spot to oversee staff the degrees and seating configurations throughout a health crisis.

2.2. Customer Satisfaction

The concept of customer satisfaction is intricate (Vo-Thanh et al., 2024). According to Shinde et al. (2018), customer satisfaction is the measure by which consumers determine whether the products or services they have received have fulfilled their needs and expectations. Shahzadi et al. (2018) defined customer satisfaction as a later assessment of the purchasing choice. Customer satisfaction stands as a crucial goal in marketing efforts (Han et al., 2009; Silaban et al., 2023), with its significant positive effects on company performance noted (Kübler & Seggie, 2024). Across various industries, it plays a central role in driving business success and increasing market worth. Contented customers profoundly impact profitability and serve as vital benchmarks for performance and enduring customer allegiance (Cankül et al., 2024). Assessing customer satisfaction reveals whether a company's offerings align with customer needs, providing business owners with valuable insights to enhance profitability and streamline marketing expenditures (Zaghloul et al., 2024). Thus, customer satisfaction is essential for achieving key business objectives (Hamzah & Shamsudin, 2020).

2.3. Behavioral Intentions

Behavioral intentions encompass various perspectives in literature. Ghosh et al. (2023) elaborate, describing it as the propensity of an individual to buy a service or product from a particular seller and tell friends and family about their experience. Similarly, Lianopoulos et al. (2024) characterize it as the behavioral responses of customers to the company and/or its goods after consumption. According to Ko et al. (2023), behavioral intents include favorable word of mouth, suggestions to others, affection promotion, revisits with others, and willingness to pay a premium. As a result, in this study, behavioral intentions are discussed in the context of returning to a restaurant and giving recommendations in the future.

2.3.1. Revisit intention

Revisit intention is frequently viewed as an accumulation of satisfaction rather than a separate choice (Bellamkonda et al., 2024). Moreover, revisit intention indicates the tendency or planning to visit the same places (Sirimongkol, 2022). Similarly, Talukder et al. (2023) describe revisit intention as the readiness or desire of an individual to return to the same place. Revisit intention is

defined as the choice of a customer to buy a specific good or service from the same company again (Chaturvedi et al., 2024). In general, revisit intention refers to a person's desire to return to a location and express memorable moments with others, resulting in long-lasting recollections of their stay (Yuliantoro et al., 2023).

2.3.2. Recommendation Intention

Han and Ryu (2007) clarify recommendation as verbal person-to-person communication pertaining to a brand, product, or service. Similarly, Solunoğlu (2020) defines recommendation as the level of satisfaction that leads the new client to propose the goods or services to people. Furthermore, Furner et al. (2022) describe recommendation intention as the extent to which a consumer is likely to suggest that someone else use a product or service. Additionally, Richardson et al. (2019) define recommendation intention as the willingness to promote positive word of mouth and share experiences with potential consumers. Recommendation intention, put simply, is recommending products or services to others (Jalilvand et al., 2017).

2.4. Theory and Hypotheses Development

This section presents the theoretical foundation and hypotheses based on the stimulus-organism-response (SOR) theory. It explores how EPSQ (stimuli) affects CS (organism) and BI (response) in QSRs, focusing on both direct effects (epidemic prevention service quality on satisfaction, revisit, and recommendation intentions) and the mediating role of customer satisfaction. These hypotheses aim to clarify the impact of service quality on customer behavior during epidemics, as shown in Figure 1.

2.4.1 Stimulus-Organism-Response (SOR) Theory

Mehrabian and Russell (1974) proposed the SOR model, which pointed out that all individuals' behavioral responses or psychological changes are stimulated by the external environment, and the individual will inductively process the stimulus and adjust the psychological interaction to produce an appropriate response (Zhang et al., 2021). The S-O-R model posits that environmental stimuli impact individuals' emotional and cognitive reactions, which subsequently influence their behavior (Lin et al., 2022). The S-O-R perspective describes how individuals develop behavioral responses to stimuli from the external environment (Song et al., 2022). The S-O-R paradigm has been widely used to explain human behaviors, particularly consumer behaviors, and was employed amid the COVID-19 outbreak to study changes caused by environmental conditions (Soroya et al., 2021). The SOR theory is highly relevant to current research for several reasons. In particular, in the hospitality sector, the SOR model is valuable for examining the connection between service delivery and guest behavior, emphasizing customer reactions to service quality, context, and method (Khashan et al., 2024). Additionally, it has been used before in studies about behavioral intentions in restaurants (Abdullah et al., 2018; Asghar Ali et al., 2021; Konuk, 2019; Rajput & Gahfoor, 2020; Taştan & Soyulu, 2023). Therefore, this study utilizes the SOR framework to explain how the quality of epidemic prevention services influences behavioral intentions through customer satisfaction. The following are the specific concepts from the SOR paradigm that we included in this study's conceptual framework. Firstly, stimuli (S) are identified as epidemic prevention service quality. Secondly, organism (O) is identified as customer satisfaction. Finally, responses (R) are identified as recommendation intention and revisit intention.

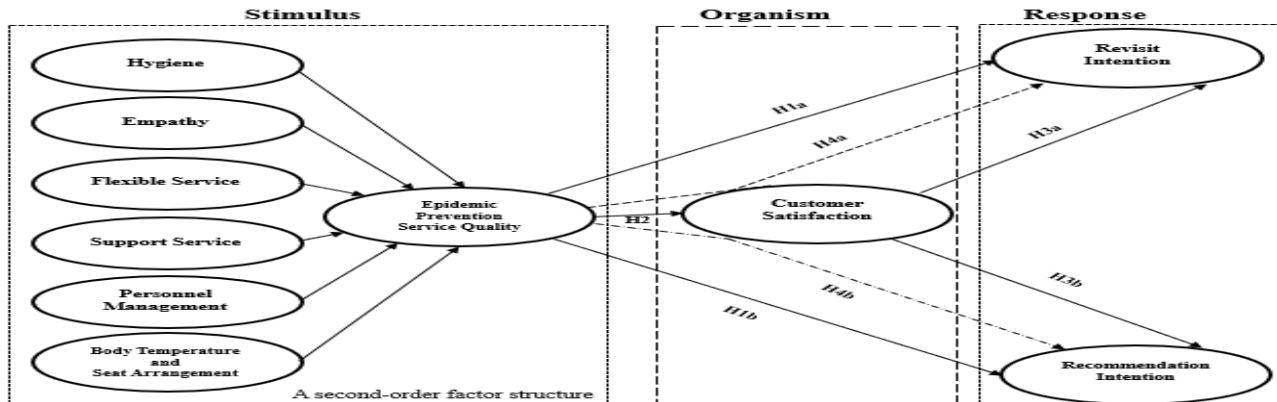


Figure (1) Conceptual Frame Work of the Study

2.4.2. The Influence of Epidemic Prevention Service Quality on Revisit Intention

Consumers prefer restaurants that follow stringent health protocols and offer reassurance that comply with COVID-19 during their initial visit (Fernandhytia et al., 2022). Moreover, consumer behavior and preferences regarding dining out during a pandemic differ from those in normal circumstances (Benaglia et al., 2023). Additionally, Guyo-Eusebio and Olazo. (2022) explored how various factors affect restaurant visit intentions, including perceived COVID-19 risk, trust in government pandemic management, and the preventive measures implemented by restaurants. However, their findings revealed that these preventive measures did not significantly influence restaurant visit intentions. Further supporting this, Zhong et al. (2021) found that consumers' intentions to dine out were not significantly affected by restaurants' precautionary measures. Conversely, Fernandhytia et al. (2022) found that health precautions positively impact customers' intentions to repurchase from fast-food establishments. Moreover, Abdou et al. (2022) discovered that perceived service quality significantly and favorably influenced travelers' intents to behave. As a result, the following hypothesis is proposed:

H1a: Epidemic prevention service quality has a significant direct impact on revisit intention.

2.4.3. The Impact of Epidemic Prevention Service Quality on Recommendation Intention

Positive recommendations occur when a highly satisfied consumer shares his/her positive experience with others. This is considered one of the most crucial post-purchase consumer actions (Bujisic et al., 2014). Evidence indicates a consistent relationship between service quality and behavioral intentions, such as revisit and recommendation intentions, within the restaurant industry (Abdullah et al., 2018; Bujisic et al., 2014; Chun & Nyam-Ochir, 2020; Clemes et al., 2018; Jain, 2013; Olorunniwo et al., 2006; Qin & Prybutok, 2008; Richardson et al., 2019; Shahzadi et al., 2018). Moreover, evidence suggests a relationship between service quality and word of mouth in the restaurant context (Chowdhury, 2021; Laksana & Ekawati, 2020).

Regarding the EPSQ, Quan et al. (2022) explored the relationships between precautions efforts against viruses implemented by hotels and various factors such as financial risk perception, customer attitude, satisfaction, and behavioral intention. They found that these precautions efforts strongly affected behavioral intentions, such as intentions to return and promote the hotel. Thus, the following hypothesis is put forth:

H1b: Epidemic prevention service quality has a significant direct impact on recommendation intention.

2.4.4. The Relation between Epidemic Prevention Service Quality and Customer Satisfaction

Service quality and customer satisfaction have long been prominent themes in service marketing literature, as they are critical for establishing and maintaining long-term, value-laden client relationships (Heung & Ngai, 2008). Pan and Ha (2021) expounded that, although previous research on service quality, the COVID-19 pandemic has demanded a fresh comprehension of how customers evaluate crucial elements of service quality in the midst of physical segregation and lockdowns. Building on this foundation, Ong et al. (2022) highlighted that consumer tastes and viewpoints have shifted due to the pandemic's impact on people's everyday activities. As a result, in the contemporary context, it is important to understand these changing expectations to maintain high standards of service quality and customer satisfaction. In line with this, Kayumov et al. (2024) explained that by streamlining the service process and reducing the gap between the actual service provided and customers' perceptions of service quality, a restaurant can enhance customer satisfaction by understanding how its patrons rate the quality of the service they receive.

Furthermore, Rukuni and Maziriri (2020) investigated how COVID-19 protection influenced customer satisfaction and discovered that it is a strong predictor of consumer satisfaction. Adding to this perspective, Huete-Alcocer and Hernandez-Rojas (2022) also demonstrated that measures adopted to prevent the transmission of the coronavirus increase customer satisfaction with the dining establishment. In a similar vein, Villanueva et al. (2023) evaluated the level of service, client fulfillment, and loyalty in fast-food restaurants during the COVID-19 virus and discovered a positive link between these factors. Similarly, Ong et al. (2022) revealed that COVID-19 guidelines had a major effect on customer satisfaction in QSRs establishments in the Philippines. Nonetheless, Kayumov et al. (2024) showed that COVID-19 precaution was inversely correlated with consumer satisfaction in halal ethnic eateries. In this regard, the following hypothesis is posited:

H2: Epidemic prevention service quality has a significant positive effect on customer satisfaction.

2.4.5. The Relation between Customer Satisfaction and Revisit Intention

Anderson et al. (2004) noted that customer satisfaction is a key research focus because it shapes the long-term relationship between customers and businesses, which is essential for sustainable growth. Building on this, Ahmed et al. (2023) stressed that customer satisfaction is vital for business growth, as satisfied customers tend to spread positive WOM, which further strengthens their intention to revisit. In this context, Rajput and Gahfoor (2020) underscored the significance of revisit intention as an essential behavioral response in fast-food restaurants. Furthermore, Chun and Nyam-Ochir (2020) reported that many models of the elements influencing the desire to revisit have been built using logistic regression or structural equation modeling. These models take a lot of aspects into account, such as client value, cost, frequency of prior visits, and satisfaction. Notably, consumer satisfaction is one of the elements affecting revisits. Furthermore, Han et al. (2009) found a significant association between customer satisfaction and revisit intention in full-service restaurants. Similarly, Kim et al. (2009) and Kim et al. (2013) highlighted a positive relationship between satisfaction and revisit intention. Marinkovic et al. (2014) and Zuratulraha et al. (2016) further confirmed this link. Mannan et al. (2019) and Richardson et al. (2019) also reported that satisfaction influences revisit intention in dining and QSRs. Cakici et al. (2019) and Rajput and Gahfoor (2020) supported this, with the latter focusing on fast food restaurants. Chun and Nyam-Ochir (2020) and Khamis et al. (2022) found similar results in QSRs and student dining contexts. Lastly, Khalil and Ali (2023) also affirmed the positive effect of CS on RI. Based on this, the following hypothesis is presented:

H3a: Customer satisfaction has a significant positive effect on revisit intention.

2.4.6. The Relation between Customer Satisfaction and Recommendation Intention

Solunoğlu (2020) stated that the level of satisfaction significantly influences new customers' decisions to either repurchase the service or recommend it to others. Moreover, Kaewmahaphinyo et al. (2020) indicated that the outcomes of satisfaction may strengthen relationships with customers, influencing their decisions to use products for various occasions. Additionally, Kim et al. (2009) noticed that increased customer satisfaction increases the likelihood of returning and generates reputation recommendations. Furthermore, in the restaurant industry, a number of studies have demonstrated a favorable correlation between customer satisfaction and intentions to suggest. For instance, Kim et al. (2009), Jalilvand et al. (2017), and Chun and Nyam-Ochir (2020) found that satisfaction boosts recommendation and word-of-mouth intentions. Al-Ansi et al. (2019) and Solunoğlu (2020) also confirmed this effect. Additionally, Bayram et al. (2023) and Konuk (2019) found environmental factors influence satisfaction, which enhances recommendation intentions. Overall, research in hospitality supports that satisfaction impacts behavioral intentions, including revisit and recommend intentions (Ababneh et al., 2022; Bufquin et al., 2017; Clemes et al., 2018; Namin, 2017; Qin et al., 2010; Ryu & Han, 2010a; Ryu et al., 2008; Shahzadi et al., 2018; Slack et al., 2021; Truong et al., 2017). In this context, the following hypothesis is suggested:

H3b: Customer satisfaction has a significant positive effect on recommendation intention.

2.4.7. The Mediating Role of Customer Satisfaction between Epidemic Prevention Service Quality, Revisit Intention and Recommendation Intention

Initially, previous research explored the role that customer satisfaction plays in the relationship between service quality and behavioral intentions, including recommendation intention and revisit intention. Specifically, findings generally supported the notion that service quality and customer satisfaction are positively correlated. This relationship has been demonstrated by numerous studies (Abdullah et al., 2018; Ahmed et al., 2023; Ali et al., 2021; Chun & Nyam-Ochir, 2020; Clemes et al., 2018; Hidayat et al., 2020; Kencana, 2020; Kristiawan et al., 2021; Maisya et al., 2019; Mannan et al., 2019; Mensah & Mensah, 2018; Namin, 2017; Qin & Prybutok, 2009; Rajput & Gahfoor, 2020; Richardson et al., 2019; Ryu & Han, 2010b; Saneva & Chortoseva, 2022; Shahzadi et al., 2018; Surahman et al., 2020; Truong et al., 2017; Tuncer et al., 2021; Uslu, 2020). In a similar vein, studies on epidemic prevention service quality have confirmed a positive relationship between service quality and customer satisfaction, as evidenced by the work of (Ababneh et al., 2022; Benaglia et al., 2023; Ong et al., 2022). Building on these findings, results have also confirmed that customer satisfaction significantly influences revisit intention. This aligns with the conclusions of previous studies (Cakici et al., 2019; Chun & Nyam-Ochir, 2020; Han et al., 2009; Khalil & Ali, 2023; Khamis et al., 2022; Kim et al., 2013; Kim et al., 2009; Mannan et al., 2019; Marinkovic et al., 2014; Rajput & Gahfoor, 2020; Richardson et al., 2019; Zuratulraha et al., 2016). Moreover, previous research has demonstrated that customer satisfaction has a significant impact on recommendation intention. This conclusion is supported by studies from (Ababneh et al., 2022; Al-Ansi et al., 2019; Bayram et al., 2023; Bufquin et al., 2017; Chun and Nyam-Ochir 2020; Clemes et al., 2018; Jalilvand et al., 2017; Kim et al., 2009; Konuk 2019; Namin 2017; Qin et al., 2010, Richardson et al., 2019; Ryu and Han 2010a; Ryu et al., 2008; Shahzadi et al., 2018; Slack et al., 2021; Solunoğlu 2020; Truong et al., 2017). Furthermore, the findings indicate that epidemic prevention service quality significantly impacts revisit intention. This is supported by research conducted by previous studies (e.g., Ababneh et al., 2022; Abdou et al., 2022;

Fernandhytia et al., 2022; Wei et al., 2021a; Zhong et al., 2021). As a result, the following hypotheses are proposed:

H4a: Customer satisfaction mediates the relationship between epidemic prevention service quality and revisit intention.

H4b: Customer satisfaction mediates the relationship between epidemic prevention service quality and recommendation intention.

3. Research Methodology

3.1. Measurement Items and Questionnaire Development

Using validated scores from earlier studies, an online questionnaire was created for this investigation. With a total of 54 questions, the survey was divided into categories that addressed demographics, customer satisfaction, revisit intention, recommendation intention, and epidemic prevention service quality. The first section gathered demographic information, including gender, age, marital status, dining frequency, educational level, and occupation. The second section focused on customer perceptions of six REEPSERV dimensions: H, EM, FS, SS, PM, B&S, with 30 items adapted from Chang and Cheng (2022). The third section included five items on overall satisfaction with epidemic prevention service, adapted from Ryu et al. (2012), Ryu et al. (2008), and To and Leung (2023). The fourth section, measuring revisit intention, contained five items adapted from Kim et al. (2013), Khamis et al. (2022), and Chaturvedi et al. (2024). The fifth section, with three items, measured recommendation intention, adapted from Babin et al. (2005). All statements used a five-point Likert scale. Reflective constructs' high VIF values were observed for certain indicators of customer satisfaction, revisit intention, and recommendation intention, indicating multicollinearity issues. To resolve this, problematic indicators (CS2, CS4, CS5, RI2, RI3, RI4, and ReI2) were removed, ensuring model validity.

According to Wu (2013), employing a formative method to assess service quality can be advantageous since dimensions impact perceptions. Unlike the reflective approach, this method posits that changes in indicators induce differences in the construct. Furthermore, a multi-level hierarchical model helps highlight the dimensions' impact on the construct. In accordance with this, epidemic prevention service quality was viewed as a second-order formative construct. Additionally, customer satisfaction, revisit intention, and recommendation intention are reflective constructs.

3.2. Research population and Data Analysis

The research population comprised QSRs in Egypt. Due to the absence of publicly available data, a convenience sampling approach was employed. Web-based surveys were chosen for their cost-effectiveness and efficiency, offering both methodological and economic advantages. The present research collected data through a web-based survey. This questionnaire was distributed online across various social media channels, including WhatsApp, Facebook, and Instagram. Respondents were initially screened with the question, "Have you ever been to a quick-service restaurant?", to ensure the relevance of their responses. Out of 450 responses received, 50 were excluded, resulting in 400 valid responses. The data was analyzed using WarpPLS 8 software, which assessed both the measurement and structural models.

4. Results

4.1. Respondents' Demographic Profile Analysis and Interpretation

The demographic profile of the respondents (see Table 1) shows a higher proportion of males (63.5%) compared to females (36.5%). The majority of respondents are young adults aged 18-29 (59%), with a predominance of singles (56%), and most dine out moderately, with 57.5% visiting restaurants 1-2 times per week. In terms of education, the sample is well qualified, with 45.3%

holding a graduate degree and 33.2% being undergraduates. Professionally, private sector employees constitute the largest group (47%), followed by students (34%) and government staff (19%). This varied demographic provides a well-rounded view of service quality experiences within the sample.

Table (1) Profile of the Responders' Demographic.

Variables	Category	Frequency	Percentage
Gender	Male	254	63.5
	Female	146	36.5
Age	18 – 29 years old	236	59
	30 – 39 years old	95	23.7
	40 – 49 years old	47	11.8
	50 years old or above	22	5.5
Marital Status	Single	224	56
	Married	174	43.5
	Divorced	2	.5
Dining Frequency	1–2 times	230	57.5
	3–6 times	128	32
	7–10 times	8	2
	11 or more times	34	8.5
Educational Level	Undergraduate	133	33.2
	Graduate	181	45.3
	Postgraduate	86	21.5
Occupation	Student	136	34
	Private organization employees	188	47
	Government staff	76	19

4.2. Assessing Measurement Model

This section focuses on evaluating the measurement model. Epidemic prevention service quality is considered a second-order formative construct, so a disjoint two-stage approach will be applied. This involves first assessing the first-order formative construct, followed by evaluating the second-order formative construct. Meanwhile, customer satisfaction, revisit intention, and recommendation intention are treated as reflective models and will be evaluated accordingly.

4.2.1. Evaluation of the First-Order Formative Model (H, EM, FS, SS, PM and B&S)

Formative measurement models are assessed using several criteria; convergent validity, indicator collinearity, statistical significance, and the relevance of indicator weights. These criteria help ensure that the model accurately represents the construct and that the indicators meaningfully contribute to the formation of the construct (Ringle et al., 2020; Ringle et al., 2023; Rosli et al., 2012; Sarstedt et al., 2019; Sharma & Sharma, 2023). During this step, the LOC_s of HOC were directly linked to other conceptual constructs in the model. The concept of utilization was specifically tied to the LOCs hygiene (H), empathy (EM), flexible service (FS), support service (SS), personnel management (PM), and body temperature & seat arrangement (B&S).

4.2.1.1. Convergent Validity (Redundancy Analysis) Assessment for First-Order Construct (H, EM, FS, SS, PM and B&S)

The degree to which a measure corresponds with other measures that evaluate the same construct or phenomenon is known as convergent validity (Cheah et al., 2018). Hair et al. (2017) suggested that the relation among a formatively measured construct and a global single-item construct assessing the same concept should be 0.70 or higher. Table (2) demonstrates strong convergent validity for the formative constructs, as indicated by high path coefficients (β values) ranging from 0.75 to 0.90, exceeding the proposed criterion of 0.70 (Hair et al., 2017). The high significance levels ($p < 0.01$) confirm these correlations are statistically significant. Moreover, the R^2 values, which measure the variance explained in the global single-item reflective constructs by their corresponding formative constructs, range from 0.56 to 0.80, further reinforcing the strong

relationships. These results collectively provide robust evidence that the formative constructs are well-represented by their reflective global single-item, confirming convergent validity.

Table (2) Constructs convergent validity (redundancy analysis) for LOCs)

Formative Constructs	Global single-item	β	R ²	P
Hygiene (H)	(H) Global Single-Item	0.75	0.56	< .01
Empathy (EM)	(EM) Global Single-Item	0.83	0.68	< .01
Flexible Service (FS)	(FS) Global Single-Item	0.88	0.77	< .01
Support Service (SS)	(SS) Global Single-Item	0.90	0.80	< .01
Personnel Management (PM)	(PM) Global Single-Item	0.89	0.79	< .01
Body temperature and seat arrangement (B&S)	(B&S) Global Single-Item	0.85	0.72	< .01

4.2.1.2. Items Multicollinearity Assessment: Variance Inflation Factors (VIFs) for First-Order Construct (H, EM, FS, SS, PM and B&S)

Multicollinearity refers to an approximately linear relationship between two or more independent variables (Chan et al., 2022). The presence of multicollinearity among indicators can create issues (Freeze & Raschke, 2007). In a formative measurement, collinearity occurs when two or more indicators are highly connected. This high correlation can distort the standard error of the indicator weights, potentially leading to Type II errors (false negatives). In more severe circumstances, collinearity can create shifts in the direction of the indicator weights, resulting in interpretational difficulties (Hair et al., 2021). Formative indicator collinearity is evaluated using the variance inflation factor (VIF). According to a generally accepted generalization, VIF values greater than 5 signify significant multicollinearity (Hair et al., 2019; Hair et al., 2021; Sarstedt et al., 2022). But according to Hanafiah (2020), multicollinearity needs to be treated seriously when the VIF number increases above 10. We examined the VIF values for each item within its corresponding construct to ensure that there were no significant multicollinearity problems, in accordance with accepted practices for evaluating multicollinearity in formative assessment models. The VIF values for the formative items ranged from a minimum of 1.247 (B&S4) to a maximum of 7.393 (B&S3), as illustrated in Table 3. Although the VIF values for several items, especially those in the body temperature & seat arrangement (B&S) construct, exceed 5, they still fall below the standard cut-off point of 10. Overall, most item VIF values remain within acceptable bounds, indicating that multicollinearity issues do not significantly impair the measurement model results.

Table (3) Items multicollinearity assessment: Variance Inflation Factors (VIFs) for LOCs and HOC

Formative Constructs	Formative Items	Outer weights	p-values	VIFs
Hygiene (H)	H 1	0.179	0.001***	1.330
	H 2	0.219	0.001***	1.604
	H 3	0.259	0.001***	2.793
	H 4	0.255	0.001***	2.808
	H 5	0.191	0.001***	1.399
	H 6	0.222	0.001***	1.722
Empathy (EM)	EM1	0.208	0.001***	2.145
	EM2	0.207	0.001***	2.387
	EM3	0.228	0.001***	3.457
	EM4	0.178	0.001***	1.678
	EM5	0.214	0.001***	2.407

	EM6	0.199	0.001***	2.066
Flexible Service (FS)	FS 1	0.257	0.001***	2.299
	FS 2	0.283	0.001***	4.431
	FS 3	0.277	0.001***	3.938
	FS 4	0.283	0.001***	4.446
Support Service (SS)	SS1	0.339	0.001***	3.626
	SS2	0.333	0.001***	3.324
	SS3	0.267	0.001***	1.460
	SS4	0.271	0.001***	1.494
Personnel Management (PM)	PM1	0.285	0.001***	2.625
	PM2	0.285	0.001***	2.744
	PM3	0.277	0.001***	2.283
	PM4	0.291	0.001***	3.070
Body temperature and seat arrangement (B&S)	B&S1	0.288	0.001***	1.607
	B&S2	0.342	0.001***	6.974
	B&S3	0.347	0.001***	7.393
	B&S4	0.266	0.001***	1.247

Note(s): *p < 0.05, **p < 0.01, ***p < 0.001, NS= non-Significant

4.2.1.3. Significance and Relevance of Items Weights (p Value and β) for First-Order Construct (H, EM, FS, SS, PM and B&S)

In the third and final phase, researchers must evaluate the statistical significance and relevance (i.e., size) of the indicator weights (Hair et al., 2019). This stage is essential for figuring out how much the formative indicators add to the construct score (Hair et al., 2020). This step is crucial for determining the extent to which the formative indicators contribute to the construct score (Hair et al., 2020). To achieve this, PLS-SEM employs the bootstrapping technique, which involves repeatedly resampling data to estimate model parameters without assuming a normal distribution for indicators or error terms (Sarstedt et al., 2014). Sarstedt et al. (2021) suggest that if the weight is statistically significant, the indicator should be retained. If the weight is not significant but the indicator's loading is 0.50 or higher, it can still be kept, provided there is strong theoretical backing and expert judgment. However, if the weight is not important and the loading is small (i.e., less than 0.50), the indicator should be removed from the measurement model.

Table 3 highlights the significance and relevance of outer weights for the latent constructs in the study, with all weights showing statistical significance at $p < 0.001$. The results indicate that all indicators significantly contribute to explaining the latent constructs, with slight variations in their weights. Constructs such as "support service" and "body temperature and seat arrangement" exhibit relatively higher weights, reflecting their stronger influence within the model. Overall, the findings confirm the robustness of the measurement model.

4.2.2. Evaluation of the Second-Order Formative Model (EPSQ)

The higher order construct (HOC) was measured in this part using the latent variable scores (LVS_s) of the lower order constructs (LOC_s) (H, EM, FS, SS, PM, and B&S). Specifically, we will evaluate these relationships in terms of their weights and assess convergent validity, collinearity, and the significance and relevance of the weights.

4.2.2.1. Convergent Validity (Redundancy Analysis) Assessment for Second Order

The redundancy analysis results presented in Table (4) show that the formative construct epidemic prevention service quality (EPSQ) has a high correlation ($\beta = 0.78, p < 0.01$) with its global single-item reflective construct (EPSQG), with an R^2 value of 0.61. This high correlation (greater than 0.70) confirms convergent validity for the EPSQ construct, indicating that the formative and reflective measures are aligned in representing the same concept.

Table (4) Constructs convergent validity (redundancy analysis) for HOC

Formative Construct	Global single-item	β	R^2	P
Epidemic Prevention Service Quality (EPSQ)	(EPSQ) Global Single-Item	0.78	0.61	< .01

4.2.2.2. Items Multicollinearity Assessment: Variance Inflation Factors (VIFs) for Second Order

The findings in table 5 indicate no significant multicollinearity among the formative indicators of the EPSQ construct, with VIF values ranging from 1.948 to 2.561, all within acceptable limits. This validates the inclusion of all six indicators as unique contributors to the EPSQ construct.

Table (5) Items multicollinearity assessment: Variance Inflation Factors (VIFs) for HOC

Constructs	Type	Items	Outer weights	p-values	VIFs
Epidemic Prevention Service Quality (EPSQ)	Formative	H	0.209	0.001***	2.417
	Formative	EM	0.196	0.001***	1.948
	Formative	FS	0.204	0.001***	2.188
	Formative	SS	0.206	0.001***	2.236
	Formative	PM	0.199	0.001***	2.010
	Formative	B&S	0.210	0.001***	2.561

Note(s): * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, NS= non-Significant

4.2.2.3. Significance and Relevance of Items Weights (p Value and β) for Second Order

Table 5 highlights the outer weights and p-values for the six indicators of the epidemic prevention service quality (EPSQ) construct. The outer weights, ranging from 0.196 to 0.210, show that all indicators contribute almost equally to the EPSQ construct. Additionally, the p-values for all indicators are highly significant ($p < 0.001$), confirming their strong and statistically significant relationships with the construct.

4.2.3. Evaluation of Reflective Construct (CS, RI, and Rel)

After evaluating the formative construct and ensuring its validity, we will proceed in this section to assess the reliability and validity of the reflective constructs, which include customer satisfaction, revisit intention, and recommendation intention.

Hair et al. (2021) state that reliability assessment (which covers indicator reliability and internal consistency reliability) and validity assessment (which covers convergent validity and discriminant validity) are the two primary components of the evaluation process for reflective measurement models estimated using PLS-SEM.

4.2.3.1. Reliability Assessment (Indicator Reliability & Internal Consistency)

Reliability is a quality criterion for a construct that requires a high degree of correlation between its metrics (Janadari et al., 2016). To evaluate a reflective measurement model, start by looking at the indicator loadings, which should be more than 0.708. This threshold indicates that the concept accounts for more than 50% of the indicator's variance, implying good item dependability (Hair et al., 2019). Furthermore, both Cronbach's alpha and composite reliability (CR) must be over 0.7 to demonstrate internal consistency reliability (Ali et al., 2018).

Table 6 highlights the strong reliability and internal consistency of the reflective constructs; customer satisfaction (CS), revisit intention (RI), and recommendation intention (ReI). All indicator loadings exceed the threshold of 0.708, ensuring excellent item reliability, with CS ranging from 0.977 to 0.977, RI from 0.977 to 0.977, and ReI at 0.985. Cronbach’s Alpha (CA) values are 0.953 (CS), 0.952 (RI), and 0.970 (ReI), while composite reliability (CR) values are 0.977 (CS), 0.977 (RI), and 0.985 (ReI), all above the 0.7 benchmark. These results validate the constructs' measurement and confirm their high reliability and internal consistency.

Table (6) Indicator loadings and reliability of constructs

Reflective Constructs	Indicators	Loadings	CA	CR	AVE	R ²	Q ²
Customer Satisfaction (CS)	CS 1	0.977	0.953	0.977	0.955	0.63	0.629
	CS 3	0.977					
Revisit Intention (RI)	RI 1	0.977	0.952	0.977	0.954	0.72	0.719
	RI 5	0.977					
Recommendation Intention (ReI)	ReI 1	0.985	0.970	0.985	0.970	0.64	0.643
	ReI 3	0.985					

Note(s): CA= Cronbach’s Alpha, CR= Composite Reliability, AVE= Average Variance Extracted

4.2.3.2. Validity Assessment (Convergent Validity & Discriminant Validity)

In order to assess convergent validity, the average variance extracted (AVE) must be more than 0.5 (Rasoolimanesh & Ali, 2018). Discriminant validity, on the other hand, can be assessed using cross-loadings, the Fornell-Larcker Criterion, and the Heterotrait-Monotrait Ratio (HTMT). Specifically, all items should load higher on their intended construct than on any other construct. Additionally, the AVE of each construct should exceed the squared correlation between that construct and any other construct. To confirm discriminant validity, the 95% confidence intervals for all HTMT ratios should be below one (Risher & Hair, 2017).

Table 6 demonstrates that the reflective constructs; customer satisfaction (CS), revisit intention (RI), and recommendation intention (ReI) exhibit strong convergent validity, with average variance extracted (AVE) values well above the 0.50 threshold. CS shows an AVE of 0.955, RI has an AVE of 0.954, and ReI achieves the highest AVE at 0.970, confirming that each construct explains a substantial portion of variance in its indicators. These findings validate the robustness and reliability of the measurement model in capturing the intended constructs effectively.

Table 7 assesses the discriminant validity of the reflective constructs; customer satisfaction (CS), revisit intention (RI), and recommendation intention (ReI) using cross-loadings. The results show that each indicator has the highest loading on its respective construct, confirming discriminant validity. For CS, indicators CS1 (0.977), and CS3 (0.977) have higher loadings on CS compared to RI and ReI. Similarly, RI indicators RI1 (0.977) and RI5 (0.977) load higher on RI than on CS or ReI, and ReI indicators ReI1 (0.985) and ReI3 (0.985) show stronger loadings on ReI.

Table (7) Discriminant validity: cross-loadings

	Customer Satisfaction (CS)	Revisit Intention (RI)	Recommendation Intention (ReI)
CS1	0.977	0.813	0.768
CS3	0.977	0.794	0.724
RI1	0.815	0.977	0.838
RI5	0.791	0.977	0.815
ReI1	0.752	0.830	0.985
ReI3	0.753	0.837	0.985

Table 8 confirms good discriminant validity among the constructs; customer satisfaction (CS), revisit intention (RI), and recommendation intention (ReI), as all HTMT values are less than 0.90. Specifically, the HTMT values are 0.884 between CS and RI, 0.807 between CS and ReI, and 0.881 between RI and ReI, indicating that the constructs are distinct. These results align with the guidelines by Risher and Hair (2017), confirming that each construct measures a unique concept.

Table (8) Discriminant validity: Heterotrait-Monotrait Ratio (HTMT)

	CS	RI
Customer Satisfaction (CS)		
Revisit Intention (RI)	0.884	
Recommendation Intention (ReI)	0.807	0.881

Table 9 confirms discriminant validity for the constructs; customer satisfaction (CS), revisit intention (RI), and recommendation intention (ReI) using the Fornell-Larcker Criterion. The square roots of the average variance extracted (AVE) for each construct are greater than their correlations with other constructs, validating discriminant validity. Specifically, CS (0.951), RI (0.977), and ReI (0.985) all show higher AVE values compared to their correlations with other constructs, further supporting the distinctiveness of these constructs.

Table (9) Discriminant validity: Fornell-Larcker Criterion

	Customer Satisfaction (CS)	Revisit Intention (RI)	Recommendation Intention (ReI)
CS	0.951	0.815	0.751
RI	0.815	0.977	0.846
ReI	0.751	0.846	0.985

4.2.4. Assessment of the Structural Model

After confirming that the measurement of constructs is reliable and valid, the next step involves assessing the results of the structural model. First, the structural model is checked for any potential collinearity problems. Once determined that collinearity is not an issue, the importance and relevance of the structural model linkages are assessed, specifically the path coefficients.

4.2.4.1. Assessment of Collinearity Issues of the Structural Model

Before evaluating structural relationships in a Partial Least Squares Structural Equation Modeling (PLS-SEM) framework, multicollinearity must be evaluated to ensure that the regression results are not affected. Multicollinearity happens when two or more predictive constructs are strongly linked, leading to skewed estimates and inaccurate conclusions (Russo & Stol, 2021). The method for assessing multicollinearity in structural models is similar to that used in formative measurement models, with a single significant distinction: the scores of external latent variables are used to determine the variance inflation factor (VIF) values (Hair et al., 2021). VIF values can help identify whether variables in the structural model represent overlapping notions. A VIF score larger than a certain threshold, often 5, reveals potential multicollinearity problems that must be addressed (Hair et al., 2017). As a result, researchers must examine VIF values to ensure that problems with collinearity do not influence computed route coefficients that are determined through a series of regression experiments (Sarstedt et al., 2021).

The assessment of multicollinearity in the PLS-SEM model, as presented in Table (10), shows that the variance inflation factor (VIF) values for all predictor constructs are below the threshold of 10, indicating no significant multicollinearity issues. Specifically, the VIF values for revisit intention (4.971), recommendation intention (3.877), epidemic prevention service quality (3.309), and customer satisfaction (3.832) are within acceptable limits. These results confirm that the predictor constructs do not suffer from excessive collinearity, ensuring reliable and stable estimates in the structural model.

Table (4) Predictor Constructs Multicollinearity Assessment: Variance Inflation Factors (VIFs)

Target Constructs	Full collinearity VIFs
Revisit Intention (RI)	4.971
Recommendation Intention (ReI)	3.877
Customer Satisfaction (CS)	3.832
Epidemic Prevention Service Quality (EPSQ)	3.309

4.2.4.2. Assess the Significance and Relevance of the Structural Model Relationships

When assessing a structural model in PLS-SEM, it is critical to consider both the significance and relevance of links between constructs. This is accomplished by examining the path coefficients, which represent the intensity and direction of these interactions. A significant route coefficient indicates a substantial association between constructs, which can be evaluated using bootstrapping, a nonparametric resampling method. Bootstrapping enables the estimation of standard errors, and confidence ranges for route coefficients without relying on normal data distribution assumptions (Hair et al., 2021; Rasoolimanesh & Ali, 2018). A route coefficient is usually considered significant at the 5% level if zero is not within the 95% confidence interval calculated from bootstrapping (Hair et al., 2021). To improve the robustness of significance testing, current research recommends utilizing a large number of resamples, such as 10,000, to assure reliable estimations. Aside from statistical significance, it is critical to assess the relevance or effect size of the correlations. Cohen's f^2 evaluates the change in R^2 when removing a certain path from the model. To provide more insight into the strength of the correlations, effect sizes are categorized as tiny (0.02), medium (0.15), or big (0.35) (Cohen, 1992).

Table 11 presents the results of the significance testing for the structural model's path coefficients, showing all relationships are statistically significant with p-values less than 0.001. Epidemic prevention service quality (EPSQ) significantly impacts customer satisfaction (CS) with a strong path coefficient of 0.80 and a large effect size of 0.634. EPSQ also positively influences revisit intention (0.35) and recommendation intention (0.40), both with medium effect sizes. However, the relationships between customer satisfaction (CS) and both revisit intention (0.54), with large effect and recommendation intention (0.44), with medium effect are significant

Furthermore, table (6) presents the coefficient of determination (R^2) values for the target constructs, which measure the model's explanatory power. The R^2 value for customer satisfaction (CS) is 0.63, indicating that the model explains 63% of the variance in CS. For revisit intention (RI), the R^2 value is 0.72, suggesting a strong explanatory power of the model for this construct. Similarly, the R^2 value for recommendation intention (ReI) is 0.64, showing good explanatory power for ReI as well. Additionally, the Stone-Geisser Q^2 values are 0.629 for CS, 0.719 for RI, and 0.643 for ReI, all exceeding the 0.50 threshold, indicating strong predictive relevance of the model.

Moreover, table (11) presents the significance testing results of the total effects for the relationships between (EPSQ) and the BIs, revisit intention (RI) and recommendation intention (ReI). Both path coefficients are statistically significant, with p-values less than 0.001, supporting the relationships. The path from EPSQ to RI has a path coefficient of 0.782 and an effect size of 0.614, indicating a large effect. Similarly, the total effect from EPSQ to ReI is 0.752 with an effect size of 0.571, also a large effect, highlighting EPSQ's significant influence on both RI and ReI. Additionally, table (11) presents the mediation effect testing results for the relationships between (EPSQ) and the behavioral intentions of revisit intention (RI) and recommendation intention (ReI), with customer satisfaction (CS) as the mediator. The results show that customer satisfaction partially mediates both relationships. For EPSQ and revisit intention, the direct effect is significant ($\beta = 0.35$, $p <$

0.001), and the indirect effect through CS is also significant ($\beta = 0.432, p < 0.001$). Similarly, for EPSQ and recommendation intention, the direct effect is significant ($\beta = 0.44, p < 0.001$), with the indirect effect through CS also significant ($\beta = 0.352, p < 0.001$).

4.2.5. Hypotheses Testing

The study tested its hypotheses based on the results of the proposed structural model, as shown in Table 11 figure 2. The results demonstrate that EPSQ ($\beta = 0.35, p < 0.01; \beta = 0.40, p < 0.01$) has a significant direct impact on both RI and ReI, supporting H1_a and H1_b. Additionally, EPSQ ($\beta = 0.80, p < 0.01$) significantly affects CS, supporting H2. Furthermore, CS ($\beta = 0.54, p < 0.01; \beta = 0.44, p < 0.01$) has a significant impact on both RI and ReI, supporting H3_a and H3_b. To test the indirect effects (mediation relationships), the SEM results show that EPSQ influences RI and ReI through CS. Additionally, the SEM results confirm that EPSQ directly impacts RI and ReI.

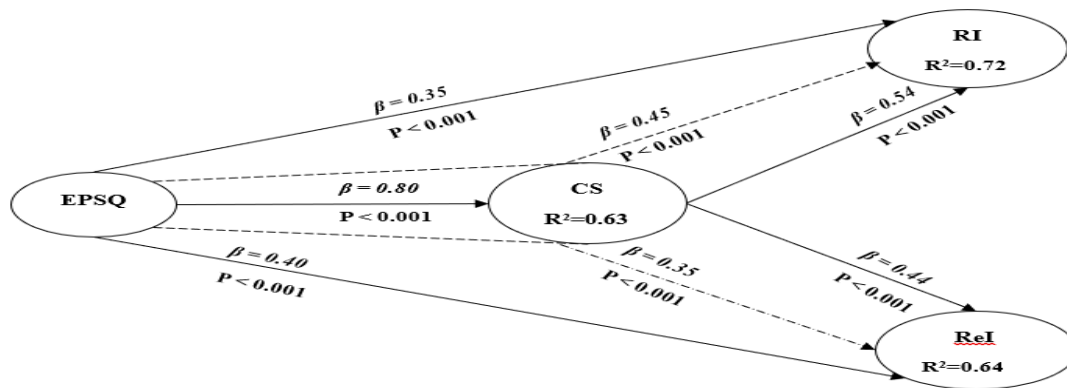


Figure 2) Results of the Hypothesis Testing for the Structural Model.

Therefore, customer satisfaction partially mediates the effect of EPSQ on both RI and ReI, supporting H4_a and H4_b.

Table (5) Structural model findings

Relationship	Path Effect	β	Standard Error	Effect Size		P values	Conclusion
EPSQ -> CS	Direct effect	0.80	0.045	0.634	Large	< 0.01	Support
CS -> RI	Direct effect	0.54	0.046	0.449	Large	< 0.01	Support
CS -> ReI	Direct effect	0.44	0.047	0.339	Medium	< 0.01	Support
EPSQ -> RI	Direct effect	0.35	0.048	0.273	Medium	< 0.01	Support
EPSQ -> ReI	Direct effect	0.40	0.047	0.304	Medium	< 0.01	Support
EPSQ -> CS -> RI	Indirect effect	0.43	0.033	0.341	Medium	< 0.001	Support
EPSQ -> CS -> ReI	Indirect effect	0.35	0.034	0.267	Medium	< 0.001	Support
EPSQ -> RI (Total & Direct)	Total Effect	0.78	0.045	0.614	Large	< 0.001	Support
EPSQ -> ReI (Total & Direct)	Total Effect	0.75	0.045	0.571	Large	< 0.001	Support

Note: EPSQ= Epidemic Prevention Service Quality, RI= Revisit Intention, ReI= Recommendation Intention, CS= Customer Satisfaction

5. Discussions

In order to examine the relationship between epidemic prevention service quality and behavioral intentions (revisit intention and recommendation intention), the study found that revisit intention is significantly impacted directly by epidemic prevention service quality (H1_a). This result is in line with research by Abdou et al. (2022) and Fernandhytia et al. (2022), which showed that behavioral intentions like repurchase and revisit intentions are positively influenced by health protocols and perceived service quality. This bolsters the current study's result, which highlights how excellent preventive measures can greatly increase patrons' intentions to return to restaurants.

However, the finding contrast with those of Wei et al. (2021), Zhong et al. (2021), Ababneh et al. (2022), and Guyo-Eusebio and Olazo (2022), who found that COVID-19 preventive measures did not significantly affect dining or behavioral intentions during restaurant visits.

Furthermore, the study indicated that epidemic preventive service quality has a strong direct impact on recommendation intention (H1b). This finding is consistent with previous studies indicating that protective measures have a favorable effect on behavioral intentions. For example, Quan et al. (2022) discovered that virus protection methods had a beneficial impact on behavioral intentions, such as the intention to return and suggest hotels. This is consistent with the current study's findings, which show that high-quality epidemic prevention strategies can improve recommendation intentions. This study, however, contradicts with that of Ababneh et al. (2022), who discovered that COVID-19 safety measures had no significant direct effect on behavioral intentions, including recommendations in fast food restaurants.

Regarding identifying the effects of the epidemic prevention service quality on customer satisfaction, the study found that epidemic prevention service quality has a significant positive effect on customer satisfaction (H2). This finding aligns with the studies of Rukuni and Maziriri (2020), who found that COVID-19 safety precautions were essential for raising customer satisfaction. Their study, which looked at how COVID-19 readiness tactics affected consumer behavior in South African retail establishments, showed that procedures including cleaning shelves, counters, and entryways greatly raised customer satisfaction, and Huete-Alcocer and Hernandez-Rojas (2022) discovered that COVID-19 safety measures improve restaurant customer satisfaction and loyalty. Their study, which examined city loyalty based on tourists' perceptions of COVID safety measures in traditional restaurants in Córdoba, Spain, on a sample of 154 tourists, found that perceptions of restaurant COVID safety significantly influenced satisfaction with the restaurant, local cuisine, and the overall image of the city, thereby increasing loyalty. Similarly, Ababneh et al. (2022) investigated the impact of a novel concept, COVID-19 safety, on customer satisfaction and behavioral intentions in the UAE fast-food restaurants, taking into account the effects of service quality, perceived value, and food quality. Adherence to COVID-19 safety procedures was found to be a significant factor in consumer satisfaction during the pandemic. Nevertheless, this result contrasts with Kayumov et al. (2024), who examined the relationship between service quality factors and COVID-19 safety with overall satisfaction and customer loyalty toward halal ethnic restaurants during the pandemic. Their data revealed five dimensions of service quality: COVID-19 safety, employee service, ambiance, cleanliness, and food quality. While cleanliness and food quality positively influenced overall satisfaction, COVID-19 safety had a negative impact. This disparity can be attributed to the differing importance of halal values compared to COVID-19 safety values. Halal values are deeply intertwined with the religious and cultural beliefs of Muslim consumers, reflecting a vital aspect of their religious identity and daily needs, thus making their influence on satisfaction more pronounced (Osman et al., 2024).

This research provides empirical evidence that the diverse preventive measures and strategies adopted by restaurants to mitigate virus transmission (i.e., cleaning, disinfecting, and safeguarding its environment during an outbreak; the ability to care for and reassure customers; the adaptability of services in response to the changing epidemic landscape; the provision of additional epidemic prevention services; the management of staff mobility and deployment; and the capacity to monitor staff temperatures and arrange seating effectively) are critical to improving customer satisfaction.

In examining the impact of customer satisfaction on behavioral intentions, particularly revisit intention and recommendation intention, the study found that customer satisfaction significantly enhances revisit intention (H3_a), which is consistent with the majority of previous studies. For

example, Han et al. (2009) developed and validated a theoretical framework to explore the relationships between consumption emotions, customer satisfaction, switching barriers, and revisit intention in full-service restaurants in the USA, highlighting a strong link between satisfaction and revisit intention. This pattern is evident in other studies as well, such as Kim et al. (2013), who investigated the connections between perceived food healthiness, value, satisfaction, and patronage intentions in mid-to-upscale restaurants in South Korea, finding that customer satisfaction plays a key role in driving revisit intention. Likewise, Marinkovic et al. (2014) identified satisfaction as a significant factor influencing revisit intention in full-service restaurants. Zuratulraha et al. (2016) also supported this by finding a substantial relationship between customer satisfaction and revisit intention in restaurants. Mannan et al. (2019) confirmed that customer satisfaction positively influences revisit intention in dining restaurants, while Richardson et al. (2019) examined various elements of the dining experience in quick-service restaurants in the USA, concluding that overall satisfaction positively affects the intention to return. Furthermore, Cakici et al. (2019) found a positive correlation between customer satisfaction and revisit intention in restaurants, particularly in relation to perceived price fairness. Rajput and Gahfoor (2020) highlighted that food quality, service quality, and physical environment quality significantly affect revisit intention in fast-food restaurants, while word of mouth moderated this relationship to a lesser extent. Chun and Nyam-Ochir (2020) similarly found that customer satisfaction positively influenced revisit intention, and Khamis et al. (2022) confirmed this relationship in quick-service restaurants among higher education students. The results of this study, therefore, align with the body of research consistently demonstrating a strong positive relationship between customer satisfaction and revisit intention across different restaurant settings.

This study also revealed that customer satisfaction has a notable positive effect on recommendation intention (H3_b), which is in line with most prior research. Numerous studies consistently report a strong and significant link between customer satisfaction and the intention to recommend. For instance, Kim et al. (2009), Jalilvand et al. (2017), Konuk (2019), Al-Ansi et al. (2019), Richardson et al. (2019), Chun and Nyam-Ochir (2020), Solunoğlu (2020), and Bayram et al. (2023) found that higher levels of customer satisfaction led to increased recommendation intentions in diverse contexts, including fast-food chains, traditional restaurants, and organic eateries. These findings are also reflected in broader hospitality industry research, where customer satisfaction typically fosters positive behavioral intentions like revisiting and recommending (Ababneh et al., 2022; Bufquin et al., 2017; Clemes et al., 2018; Namin, 2017; Qin et al., 2010; Ryu & Han, 2010b; Ryu et al., 2008; Shahzadi et al., 2018; Slack et al., 2021; Truong et al., 2017). This suggests that customers who are satisfied with epidemic prevention service quality in quick-service restaurants (QSR) are more likely to revisit or recommend the place to others. Additionally, the results indicate that customer satisfaction has a more substantial influence on return intention (RI) than on recommendation intention (ReI). This suggests that while satisfied customers are more inclined to return, the effect of satisfaction on recommendation intention is relatively less pronounced, implying that other factors may have a stronger influence on a customer's decision to recommend.

Regarding identifying the role of customer satisfaction as a mediator between behavioral intentions (revisit and suggestion) and the quality of epidemic prevention service. The study demonstrated that the link between the epidemic prevention service quality and the intention to revisit (H4_a) or recommend (H4_b) is considerably mediated by customer satisfaction. This aligns with previous research that identified significant mediating roles for customer satisfaction, such as in studies by

Konuk (2019) and Chun and Nyam-Ochir (2020). Notably, Ababneh et al. (2022) came to the conclusion that the association between COVID-19 precautions and behavioral intentions, such as intents to revisit and recommend, is totally mediated by customer satisfaction. Thus, while the direct effects are confirmed, the hypothesized mediating effects of customer satisfaction in this study were supported by the data. This indicates that customers likely assess their dining experiences based on the perceived effectiveness of safety protocols, which influences their decisions to return or recommend.

6. Theoretical Implications

This study makes significant additions to our understanding of the significance of epidemic prevention service quality in the restaurant industry, specifically in terms of customer satisfaction and behavioral intentions in the quick-service restaurant sector. This study advances the theoretical framework for analyzing how external health-focused stimuli (such as epidemic prevention service quality) influence internal customer response (satisfaction) and subsequent behaviors (revisit and recommendation intentions). The study's findings highlight various theoretical implications that improve existing knowledge in the service quality and consumer behavior literature in hospitality.

This study extends the use of the Stimulus-Organism-Response (SOR) framework in the restaurant business amid emergencies such as the COVID-19 epidemic. It shows that external stimuli, such as epidemic prevention measures, not only affect customer satisfaction (the internal organism) but also significantly influence customers' behavioral responses, including revisit and recommendation intentions. While SOR has been widely used in other contexts, its application to safety measures in the restaurant industry, especially during a global health crisis, is a novel contribution. The study underscores that customer behavior is strongly influenced by perceptions of safety, positioning the SOR theory as a valuable tool for understanding customer reactions to health-related stimuli. Also, this study underlines the importance of epidemic prevention service quality in molding customer satisfaction and affecting behavioral intentions. Unlike previous research that has focused on traditional service quality dimensions like food quality, service speed, and ambiance, this study introduces epidemic prevention service quality as a key factor affecting customer behavior. Finally, the large direct benefits of epidemic prevention service quality on revisit and recommendation intentions emphasize the need of including health and safety aspects into future service quality models in the hospitality sector.

7. Practical Implications

The study's conclusions have important real-world ramifications for the quick-service restaurant sector, especially in light of the COVID-19 pandemic's continued difficulties. First and foremost, restaurant managers and operators should prioritize the implementation of high-quality epidemic prevention measures, as these directly enhance customers' revisit and recommendation intentions. Given that the perceived quality of health and safety protocols significantly influences customer behavior, it is crucial for restaurants to invest in cleaning, disinfecting, and safeguarding their environments. This includes visible sanitization practices, proper staff training in health protocols, and transparent communication about the measures being taken to ensure customer safety.

Furthermore, recognizing that customers value safety during a pandemic underscores the need for businesses to adapt their service delivery models accordingly. Marketing strategies should highlight the effectiveness and quality of epidemic prevention measures, positioning these protocols as key differentiators in a competitive market. By demonstrating a strong commitment to safety, restaurateurs can build trust and encourage repeat visits, even during uncertain times.

Finally, restaurant managers must regularly monitor consumer input on safety measures and change their policies accordingly. Engaging consumers via surveys or feedback forms gives significant insights into their opinions of service quality and safety, allowing restaurants to adjust and grow in response to changing customer expectations.

8. Conclusion

This study advances our knowledge of how customer satisfaction and behavioral intentions in the hospitality sector particularly in quick-service restaurants are impacted by the quality of epidemic prevention service. The results highlight how important the quality of epidemic prevention service is in influencing consumer choices in times of crisis, such as the COVID-19 pandemic. Revisit and recommendation intentions are positively impacted by high-quality epidemic prevention service, which also increase customer satisfaction. While the study aligns with previous research, it provides new insights by highlighting the direct/indirect impact of epidemic prevention measures on customer behavior, a factor that was largely underexplored in traditional service quality studies.

9. Limitations and Future Research Directions

Limitations of the study include the use of self-reported data, which might introduce bias, the small sample size (400), and the demographic makeup (Egypt), which can limit generalizability. Additionally, the cross-sectional design makes it more difficult to identify causal links or track changes over time. Larger, more varied samples and longitudinal designs should be used in future studies to monitor changes over time. Furthermore, a more thorough understanding might be obtained by employing a mixed-methods approach. Investigating cutting-edge technologies for the prevention of epidemics may also provide insightful information on consumer behavior. Investigating similar constructs in other areas of hospitality and foodservice could provide a broader perspective on how epidemic prevention measures influence customer satisfaction and customer behavior across various contexts.

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العلاقة بين جودة خدمة الوقاية من الأوبئة المدركة لعملاء مطاعم الخدمة السريعة ورضاهم، ونواياهم السلوكية

المستخلص

تتناول هذه الدراسة العلاقة بين جودة خدمة الوقاية من الأوبئة ورضا العملاء باعتبارها عوامل مؤثرة على النوايا السلوكية في مطاعم الخدمة السريعة. استخدمت هذه الدراسة منهجية كمية لجمع البيانات من 400 عميل في مطاعم الخدمة السريعة في مصر من خلال مسح على شبكة الانترنت. من بين 450 استجابة تم استلامها، تم استبعاد 50 استجابة بسبب عدم الاكتمال أو عدم الصلاحية، مما أسفر عن 400 استجابة صالحة، بمعدل استجابة يبلغ حوالي 88.9%. بحثت الدراسة في تأثير جودة خدمة الوقاية من الأوبئة على رضا العملاء والنوايا السلوكية، بالاعتماد على نظرية المحفز-الكائن-الاستجابة (S-O-R). تم اختبار الفرضيات باستخدام نمذجة المعادلات الهيكلية عبر برنامج WarpPL8. تشير النتائج إلى أن جودة خدمة الوقاية من الأوبئة تؤثر إيجابياً على نية إعادة الزيارة ونية التوصية، كما أن رضا العملاء يؤثر أيضاً بشكل إيجابي على هذه النوايا. علاوة على ذلك، يعمل رضا العملاء كوسيط جزئي بين جودة خدمة الوقاية من الأوبئة ونية إعادة الزيارة والتوصية. تساهم هذه الدراسة في الأدبيات من خلال دمج جودة خدمة الوقاية من الأوبئة، ورضا العملاء، والنوايا السلوكية في نموذج واحد. وتوفر رؤى حول التفاعل بين هذه العوامل، مما يعزز الفهم لدورها في صناعة مطاعم الخدمة السريعة، لا سيما خلال الأزمات الصحية العامة مثل جائحة COVID-19. تحمل النتائج دلالات عملية لصناع القرار في القطاع، حيث تسلط الضوء على كيفية تحسين تدابير الوقاية من الأوبئة لتعزيز رضا العملاء والتأثير على نية إعادة الزيارة والتوصية.

الكلمات الدالة: جودة خدمة الوقاية من الأوبئة، رضا العملاء، النوايا السلوكية، مطاعم الخدمة السريعة، نية إعادة الزيارة، نية التوصية