RESEARCH IN MANAGEMENT OF TECHNOLOGY AND BUSINESS
e-ISSN: 2773-5044

RMTB

Vol. 5 No. 1 (2024) 840-855
https://publisher.uthm.edu.my/periodicals/index.php/rmtb

The Relationship between Supply Chain Practices Towards Customers Satisfaction of the F&B Industry in Johor

Kan Jia Xin[1], Hafizah Zulkipli[1]*

[1] *Department of Management and Technology, Faculty of Technology Management and Business, Universiti Tun Hussein Onn Malaysia, 86400 Batu Pahat, Johor. MALAYSIA*

*Corresponding Author: hafizahz@uthm.edu.my
DOI: https://doi.org/10.30880/rmtb.2024.05.01.058

Article Info

Received: 31 March 2024
Accepted: 30 April 2024
Available online: 30 June 2024

Keywords

Supply chain practices, usage of information technology (IT), postponement strategy; customer satisfaction; food and beverage (F&B)

Abstract

The food and beverage (F&B) sector are constantly evolving, with a greater emphasis on consumer happiness and rapid service delivery. This study investigates the dynamic interaction between supply chain practices and customer satisfaction in the F&B industry in Johor, Malaysia. The main objective is to identify the relationship between two key supply chain practices, namely information technology (IT) and postponement strategy, and their impact on customer satisfaction. A quantitative research approach was adopted using convenience sampling to gather insights from employees in the F&B industry in Johor. The research focuses on restaurant employees, drawing on their unique perspectives and experiences of supply chain management in the industry. The results of this study point out a strong and positive correlation between customer satisfaction, usage of information technology and postponement strategy in the F&B supply chain. Furthermore, the use of IT helps improve data management efficiency and facilitates agile decision-making, while postponement strategy can be more flexible to meet different customer needs. Supply chain practices are a way to help companies gain a high degree of competitive advantage. Hence, integrated supply chain practices are key drivers to improve customer satisfaction in the F&B industry.

1. Introduction

In the ever-changing food and beverage industry, where consumer satisfaction is crucial for business success, applying efficient supply chain management practices is critical (Sabir et al, 2014). Due to the significant productivity gains in the food and beverage industry achieved by operational efficiencies, a growing number of businesses are realizing the need of supply chain management (SCM). Consequently, to remain viable and competitive, these companies are required to evaluate and improve their SCM practices to maintain customer satisfaction (Kazancoglu *et al.*, 2020; Qorri *et al.*, 2021). The shift in emphasis from simple productivity to the particulars of SCM is especially clear when it applies to small and medium enterprises, as the environment of uncertainties and complexities is created by the challenges of globalization and evolving customer requirements.

Moh (2023) highlights a mixed review of the F&B industry's outlook. As a result, F&B industry income in gross domestic product (GDP) will increase by another 8% in the year 2023 after comparing with year 2022. The Statista Research Department (2023) reports a substantial contribution of 21 billion Malaysian ringgit to the GDP from food services in 2022, attributed to the normalization of consumer and tourist spending. Besides that, industry experts like Professor Dr. Yeah Kim Leng foresee the potential of Chinese tourists in rejuvenating the

F&B sector, signaling its significance in fueling economic growth and addressing unemployment issues (Moh, 2023). In the Malaysia market, the F&B industry is very huge, and it is important to the economic growth because it can raise the GDP and solve the issues of unemployment. While companies should show their competitive advantage to competition with other companies and maintain customers.

The F&B industry in Malaysia is highly competitive. Bouzembrak *et al.* (2019) emphasize the importance of adopting innovative technology in the food supply chain to gain a competitive advantage. Examples of usage of information technology that can be utilized in the food supply chain include the Internet, RFID, and wireless sensor networks. Companies that enhance their supply chain efficiency can improve performance, seize opportunities, gain a competitive edge, and boost customer satisfaction (Duong *et al.*, 2020). Furthermore, the strategic implementation of postponement strategies in the food supply chain can yield significant benefits. Zinn (2019) suggests that postponement strategies can reduce supply chain costs, but their impact on customer satisfaction levels must be carefully considered.

1.1 Research Background

Situated in the southernmost part of Peninsular Malaysia, Johor shares close proximity to Singapore, fostering opportunities for the expansion of F&B businesses (Yun, 2022). The closure of the Malaysia- Singapore border due to the COVID-19 pandemic has significantly impacted Malaysia's economy, where the F&B industry plays a pivotal role in supporting domestic economic growth. Albattat (2019) investigates on factors influencing Singaporean tourist visiting Johor reveals that food tourism has directly influenced Singaporean tourist experience and intention revisit Johor. Thus, customer satisfaction as an important part of contribute to the growth of F&B industry. The services quality, price, food safety and environment of food and drink will be a measurement to determine customer satisfaction. The positive significant relationship between services quality, price, food safety and environment of F&B industry with customer satisfaction (Tan *et al.*, 2023). Therefore, if F&B restaurants lose customer support, may lead to their downfall in the future.

In recent years, the integration of effective supply chain management has become integral for businesses, ensuring the timely delivery of goods, services, or products while bridging the gap between businesses and customers. Supply chain management involves planning, sourcing, manufacturing, delivery, logistics, and product returns (IBM, 2023). An effective supply chain management of F&B can minimize costs, waste, and time in production line. Nowadays, supply chain management trend is implemented of digital, collaborative, adaptive and modular tool to ensure the information with stakeholders' visibility and reliability (Colibri, 2023). Modern supply chain management is combined multi department used a same management tool to improve company performance. Thus, a strong supply chain management can enhance current supply chain management. The supply chain practices that can be applied into F&B industry are information technology and postponement strategy. Marr (2022) states that McDonald's has implemented artificial intelligence (AI) and the Internet of Things (IoT) for restaurant dining, drive-thru service, and home delivery service. These technologies can create a convenient digital customer experience, leading to a more efficient ordering process. Additionally, postponement strategies are employed in final assembly, packaging, and distribution. Companies like Burger King and Subway use postponement strategies in their supply chains, allowing them to prepare product materials before receiving orders (Rietze, 2006).

In addition to customer service, a successful food chain demands efficient administration, especially in supply chain management. A company's supply chain is the network of businesses, individuals, activities, and resources involved in the delivery of a product or service (Chopra & Meindl, 2015). In conclusion, good supply chain management can help businesses increase operational efficiency, reduce costs, and improve customer satisfaction.

1.2 Problem Statement

In the food and beverage (F&B) industry of today's competitive landscape, ensuring customer satisfaction remains a top priority for businesses. However, challenges persist in maintaining prompt service delivery during peak hours, which directly impacts customers' dining experiences. Studies by Davis and Heineke (1998) and Sumaedi & Yarmen (2015) reveal that extended waiting times lead to dissatisfaction among patrons, influencing their perceptions of food quality, despite the excellence of the cuisine offered. This phenomenon is vividly illustrated in SCR Corporation's local franchise, SCR Desa, where service lapses during high-traffic lunch hours result in sluggish food delivery and compromised customer service, profoundly affecting overall satisfaction (Kanyan *et al.*, 2016).

Moreover, ensuring food safety standards remains a critical concern in the F&B sector. Instances reported by Alarabiya News (2020) and Teller Report (2022) spotlight serious food safety breaches in major chain outlets, including the use of expired ingredients and tampering with expiration labels. These alarming incidents highlight the urgency for stringent food safety protocols within the industry.

Therefore, this research paper will address these critical challenges by examining the relationship between usage of information technology and postponement strategy towards customer satisfaction in the F&B industry.

Therefore, to achieve the research objectives the level of usage of information technology and postponement strategy towards customer satisfaction of the F&B industry in Johor is determined. Furthermore, the level of customer satisfaction of the F&B industry in Johor also determined. Consequently, the relationship between the level of usage of information technology and postponement strategy towards customer satisfaction of the F&B industry in Johor is identified.

1.3 Research Scope

This study aims to explore and analyze the relationship between usage information technology and postponement strategy towards customer satisfaction. Specifically, it focusses on how the implementation and utilization of information technology and postponement strategy influence customer satisfaction in Johor, Malaysia. The research targets employees working within the F&B sector in the Johor region. To gather comprehensive insights, a questionnaire will be meticulously developed and distributed among F&B industry employees in Johor. The scope of this study is delimited solely to the F&B industry and will be exclusively conducted within the geographic confines of Johor.

1.4 Significance of Study

This research is significant as it examines the link between usage of information technology, delay strategy, and customer happiness in the F&B business. By understanding these links, the study intends to increase the understanding on how information technology and delay strategy may be used to promote consumer happiness in the F&B industry. This study's findings have the potential to assist F&B companies in implementing efficient methods and technology that minimize delays, boost efficiency, and eventually improve the entire customer experience.

The findings of this study have the potential to guide F&B companies to adopt effective strategies and technologies to reduce lead times, increase efficiency, and ultimately improve the overall customer experience developed can help, enabling targeted solutions that foster customer loyalty and trust. Consequently, this study contributes to ongoing efforts to improve F&B operations and service delivery, benefiting companies and consumers.

2. Literature Review

The relationship between the usage of information technology (IT) and the postponement strategy has become increasingly important in the food and beverage industry, particularly in improving customer satisfaction. This literature review aims to provide an overview of the existing research on the topic. The review will examine the role of IT in enabling postponement strategies, and the impact of these strategies on customer satisfaction.

2.1 Conceptual Definition

2.1.1 Customer Satisfaction

In today's business landscape, customers play a vital role, as the profit or loss of a business hinges on customer demand for products or services (Ali *et al.*, 2021). Customer satisfaction, an internal feeling as defined by Oliver (1980), can be expressed through their experiences with products, services, transactions, or company interactions (Powton, 2018). Customers tend to remember and reward positively. This study investigated the relation between usage of information technology and postponement strategy in relation to customer satisfaction. It also emphasized usage of information technology and delay strategy, two factors that affect consumer happiness. The respondents in this study were employees of F&B industry in Johor. This research will pick the food and beverage business in Johor as its focus area. The negative experiences can discourage customers' future interactions (Said *et al.*, 2018).

Two key theories related to customer satisfaction are contrasted theory and the expectancy-disconfirmation paradigm (EDP). Contrast theory, as described by Yi (1990), posits that when a product fails to meet customer expectations, customers tend to exaggerate the discrepancy, thus affecting their satisfaction. On the other hand, the expectancy-disconfirmation paradigm (EDP), proposed by Oliver (1977; 1980), suggests that customers form expectations about the anticipated performance of a product or service before purchase. Discrepancies between the actual outcome and expectations can lead to either positive or negative customer satisfaction. Ultimately, customer satisfaction influences a customer's intention to repurchase a product or reuse a service in the future (Daragahi, 2017).

In conclusion, understanding and addressing customer satisfaction is crucial for business success, as it directly impacts customer demand and the likelihood of repeat business.

2.1.2 Food and Beverage (F&B) Industry

Grey (2023) states that food is essential for life to sustain growth, energy, along with living. Nutrients including carbohydrates, fats, proteins, minerals, and vitamins can be found in food. Beverages are now considered essential to diets because drinks can as a social gathering tool and hydrate the body (Restaurant Business Staff, 1997).

Food and beverage services, or F&B services, allow people select of food and beverages (Glion, 2023). F&B included cafes and coffee shops, food courts, restaurants, bars, hawker centres, and food stalls. In line with Research and Markets (2019), Malaysia's F&B market is expanding as a result of the country's fast-growing population, rising disposable income, changing consumer preferences, and innovative product offerings. The Department of Statistics Malaysia (2023) examine indicates that the food service industry in Malaysia in 2022 comprised 8.54 thousand full-service restaurants, 7.72 thousand fast food restaurants, and 13.28 thousand street stalls.

By Meiner and Tanner (2023), full-service restaurants offer a breakfast, lunch and dinner menu that includes food and beverages as well as takeaway options. According to Kendall (2023), fast food is a type of food that is mass-produced and intended to be prepared and distributed quickly. The fast-food brands in market Malaysia main dominated by American franchises such as McDonald's, KFC, Pizza Hut, and Burger King. However, local fast-food brands like Secret Recipe, Marry Brown and Pappa Rich are growing and getting popularity among Malaysian (Quoquab *et al.*, 2020). A street stall is defined as a long table where food or beverages are set out for sale to passersby on a city, town or village road (Collins dictionary, 2023). The F&B industry is significant in Malaysia since it contributes significantly to the country's GDP when combined with the economy and culture. This is because people's food habits are finished outside become a trend, which means eating out is more often (Edwards, 2013).

2.1.3 Supply Chain Practices

Supply chain management initially emerged in 1982 as a method for raw material supply inventory management (Oliver & Webber, 1982). Marinagi *et al.*, (2014) state that in light of the global economic change, organizations should assess their business models in order to improve supply chain efficiency. Consequently, a business, organization, or company needs supply chain management since it may detect possible issues, optimize prices dynamically, and increase inventory availability (IBM, 2023). One of the approaches can determine the supply chain performance is achieved with target was applied supply chain practices (Puška *et al.*, 2019). According to research by Sundaram *et al.*, (2016), organizations should support supply chain performance adjustments due to global supply chain channel optimization.

Supply chain management practices as an operation activity can determine effectiveness and efficiency (Sandhu *et al.*, 2013). Lutkevich (2023) states the best practices in supply chain included lean supply chain management and logistics techniques, increase inventory velocity, collaborate with other businesses, postponement strategy, information quality, and information sharing. Some of the research determine those practices can affect in supply chain management of an organization and customer satisfaction (Hague & Islam, 2013; Manokaran, 2019; Lagat *et al.*, 2016; Prataviera *et al.*, 2020). This study includes usage of information technology and postponement strategy as the supply chain practices in F&B industry.

Information technology (IT) is a key element in the practical field of supply chain management and has a huge impact on operational efficiency and strategic decision-making. Information systems, including IT, play a role in collecting, storing, and processing data and knowledge within the supply chain landscape (Zwass, 2022). Information technology resources and capabilities can lead to rapid data transfer, improved service, and reduced supply chain costs (Jimenez *et al.*, 2018; Dias *et al.*, 2022). In addition, the integration of IT provides companies with ways to enhance capabilities and creates an environment conducive to product innovation (Randhawa *et al.*, 2017). IT can build a competitive advantage in supply chain management and determine the relationship between technology adoption and strategic positioning (Marinagi *et al.*, 2014). The development of information systems in organizations is both an enabler of technology and the basis for building competitive advantage.

Postponement is an internal supply chain strategy that is a dynamic approach that involves deliberately delaying activities to later stages of the production process. This strategy can enhance an organization's agility and flexibility in creating products that satisfy diverse customer needs and preferences (Yi *et al.*, 2011). Adoption postponement strategy that increases agility, thereby reducing errors in forecasting demand and increasing the ability to effectively meet customer needs (Chuen, 2019). However, organizations should align the implementation of postponement strategies on their market characteristics and product types to prevent unsuitable outcomes (Lagat et al, 2016). Therefore, companies can delicately balance responsiveness and

efficiency coordination in supply chain processes while implementing postponement strategies. This is a key factor for companies seeking good performance in their supply chain practices.

2.2 Previous Study

2.2.1 Usage of Information Technology towards Customer Satisfaction

Studies have investigated the relationship between IT and customer satisfaction. Jovanoski *et al.* (2017) found that IT influences customer satisfaction through perceived ease of use and attitude towards technology. Similarly, Motum and Kinyua (2022) found that IT agility in non-life insurance firms is related to customer satisfaction. Haque and Islam (2013) discovered that IT infrastructure can positively impact customer satisfaction in the pharmaceutical industry. However, Manokaran (2019) found no significant relationship between IT and customer satisfaction in the SME industry, as smaller-scale IT implementations may not influence customer satisfaction.

The relationship between the usage of information technology (IT) and customer satisfaction in the F&B industry has been the subject of numerous studies. IT plays a crucial role in enhancing customer satisfaction by streamlining services, improving communication, and facilitating convenient transactions (Goyal & Goyal, 2014). For example, McDonald's company has implemented various IT strategies, such as self-ordering kiosks, mobile applications, and digital menu boards, to improve customer experience and satisfaction (Donthu & Gustafsson, 2020). According to research by Goyal and Goyal (2014), information technology has a favorable effect on consumer satisfaction in the F&B business since they save waiting time, delivers correct information, and offers individualized services.

In addition, IT helps food restaurants to gather and analyze client data to determine their tastes and consequently adapt their offers (Chen & Popovich, 2003). This data-driven strategy enables McDonald's to make educated decisions and enhance their marketing initiatives, hence increasing consumer happiness (Donthu & Gustafsson, 2020). Moreover, IT improves connection between F&B industry and its consumers via social media and mobile applications, enabling the corporation to handle customer complaints expeditiously and efficiently (Chen & Popovich, 2003).

In conclusion, most studies suggest a significant relationship between usage of information technology and customer satisfaction (Jovanoski *et al.*, 2017; Motum & Kinyua, 2022; Haque & Islam, 2013), with only one study finding no significant relationship (Manokaran, 2019).

2.2.2 Postponement Strategy towards Customer Satisfaction

Previous studies have examined postponement as an organizational concept connected to time and its application across different parts of the supply chain (Zinn, 2019). Weskamp *et al.* (2019) argued that a postponement strategy could address supply chain challenges in forecasting customer demand, managing inventory, and preventing shortages. Budiman and Rau (2019) noted that postponement delays product customization to circumvent high-risk uncertain inventory. Prataviera *et al.* (2020) discovered that a postponement strategy could allocate a geographic perspective and enhance the traditional perspective in a global environment with a downstream focus.

Research conducted by Lagat *et al.* (2016) determined that supply postponement significantly affects customer satisfaction. Similarly, Yi *et al.* (2011) found that companies with greater flexibility using postponement strategies in their supply chains could reduce perceived uncertainties and boost customer satisfaction. Saad *et al.*, (2021) proposed a framework linking supply chain management practices (SCMP) and customer relationship management (CRM) to achieve better organizational performance. In this framework, postponement served as an element of SCMP, and customer satisfaction as an element of CRM. The findings of Saad *et al.* (2021) indicated that the framework assists businesses in understanding SCMP and enhancing CRM to elevate organizational performance. However, Manokaran (2019) found no significant relationship between postponement strategy and customer satisfaction in the small and medium-sized enterprise (SME) industry, as SMEs may not support the implementation of postponement strategies.

Research conducted by Yang *et al.* (2004) found that postponement strategy positively impacts customer satisfaction by increasing product variety, reducing lead times, and minimizing stockouts. This strategy allows McDonald's to cater to diverse customer preferences and deliver products that meet their expectations, thus enhancing customer satisfaction (Yang *et al.*, 2004). Moreover, the postponement strategy enables McDonald's to better manage its inventory and reduce waste, leading to cost savings that can be passed on to customers in the form of lower prices or promotional offers (Hoek *et al.*, 2001).

In conclusion, most studies suggest a significant relationship between postponement strategy and customer satisfaction (Lagat *et al.*, 2016; Yi *et al.*, 2011c; Saad *et al.*, 2021). However, one study found no significant relationship between the two (Manokaran, 2019). This literature review highlights the importance of

considering the context and industry when examining the impact of postponement strategies on customer satisfaction.

2.3 Research Framework

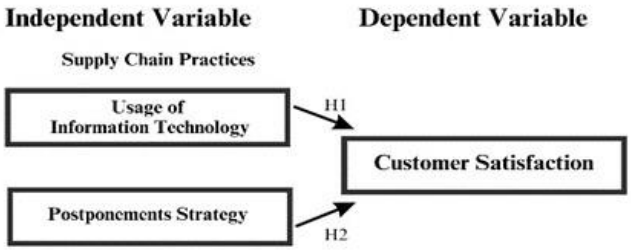

Fig. 1 *Conceptual framework*

2.4 Research Hypotheses

H1: Usage of information technology has a significant relationship with customer satisfaction.
H2: Postponement strategy has a significant relationship with customer satisfaction.

3. Research Methodology

This chapter determines the method for collecting data and analyzing data. In this research using a quantitative approach is the main methodology. Besides, detailed information such as research design, population and sampling, data collection, and data analysis were covered in this chapter.

3.1 Research Design

The study employs a correlational research design to explore the relationship between usage of information technology and postponement strategy in relation to customer satisfaction within the F&B industry in Johor. The methodology encompasses aspects such as population selection, sampling, instruments used, and the flow of the research process.

3.2 Data Collection

The primary data source in this study consists of questionnaires distributed among respondents. Additionally, the research includes a review of previous articles, journals, news sources, and online materials related to the subject matter to supplement and complement the primary data collection process.

3.3 Research Instrument

The research instrument utilized in this research is a structured questionnaire. The questionnaire items measuring usage of information technology, postponement strategy, and customer satisfaction were derived from Manokaran (2019), as illustrated in Table 1. The questionnaire is segmented into three sections: Section A covers demographic information, Section B encompasses independent variables, and Section C focuses on the dependent variable, allowing for the collection of comprehensive data from respondents.

Table 1 *Research instrument questionnaire*

Section	Category	Number of items	Sources
A	Demographic		
B	Usage of information technology	5	Manokaran, 2019
	Postponement strategy	5	Manokaran, 2019
C	Customer satisfaction	5	Manokaran, 2019

3.4 Population and Sampling

The focus of the research is the relationship between usage of information technology and postponement strategy towards customer satisfaction and the population in this study includes employees of F&B industry in

Johor. According to the Department of Statistics Malaysia (DOSM) (2022), the F&B industry in Johor recorded a total labor force of 16,135 ('000) in 2021.

This study focuses on the entire workforce within the F&B industry in Johor as its population. The sampling method employed is convenient sampling, which falls under non-probability sampling and involves selecting readily available and relevant participants (Saunders *et al.*, 2016). Convenience sampling offers advantages such as cost-effectiveness and accessibility to respondents, yet it may introduce bias due to its non-random selection process (Nikolopoulou, 2022).

The researcher employed convenient sampling by distributing questionnaires online and conducting on-site visits to restaurants within Johor. To ensure a representative sample, the selection was randomly executed within the F&B employee cluster, aiming for an equal chance of inclusion for each employee. Utilizing Krejcie and Morgon's (1970) tables, the estimated F&B employee population of 16,135 ('000) within a larger population of over 1,000,000, determined the sample size of 384 respondents.

3.5 Data Analysis

The research will employ the Statistical Package for Social Science (SPSS) software for data analysis, utilizing descriptive statistics for the demographic information in section A of the questionnaire to compute mean, median, and mode, and presenting comprehensive summaries through figures and tables. Additionally, sections B and C, focusing on usage of information technology, postponement strategy, and customer satisfaction, will undergo correlation analysis using SPSS. This analysis aims to elucidate the relationships between these variables within the food and beverage industry in Johor, providing insights into the degree and direction of their associations.

4. Result and Discussion

This section presents the results and discussion on the relationship between supply chain practices and customer satisfaction of the F&B industry in Johor by providing data and analysis. Data collected through questionnaires was distributed to 300 employees in the F&B industry in Johor. The findings will identify the link between usage of information technology, postponement strategy, and customer satisfaction. In this section, data are presented as means and percentages.

4.1 Descriptive Analysis for Demographic profile

Overall, Demographic analysis measures background information about respondents. In this study, demographic composition included gender, age, race, education level, and labor force status. Table 2 presents all information data, frequencies, and percentages of respondents (N=300) in numerical form.

Table 2 *Demographic information of respondents*

Category	Details	Frequency	Percentage (%)
Gender	Male	138	46
	Female	162	54
Age	18-24 years old	97	32.3
	25-34 years old	125	41.7
	35-44 years old	60	20
	45-54 years old	13	4.3
	55-64 years old	5	1.7
Race	Malay	122	40.7
	Chinese	134	44.7
	Indian	44	14.7
Education Level	Primary school	2	0.7
	Secondary school	56	18.7
	Diploma	151	50.3
	Degree and above	91	30.3
Labor Force Status	Working full-time	222	74
	Working part-time	78	26

4.2 Reliability Analysis

Table 3 shows the reliability analysis of pilot test (N=30) and actual study (N=300). The pilot study's Cronbach's alpha value for the dependent variables related to customer satisfaction is 0.775, which is considered as good. Next, the independent variables' Cronbach's alpha values for usage of information technology and postponement strategy are 0.841 and 0.828 respectively which result considered as very good. Thus, the result of Cronbach's alpha value for pilot study is reliable and can be accepted.

Besides that, the actual study was carried out because the result of the pilot study demonstrated that the questionnaires were valid and reliable. The Cronbach alpha value of actual study for customer satisfaction is 0.688 as moderate in result, usage of information technology is 0.783 as good in result, and postponement strategy is 0.770 as good in result. Thus, the result of Cronbach's alpha value for actual study is reliable and can be accepted.

Table 3 *The results of reliability test*

Variables	N of items	Pilot test (N=30) Cronbach's Alpha	Interpretation	Actual test (N=300) Cronbach's Alpha	Interpretation
			Dependent variable		
Customer Satisfaction	5	0.775	Good	0.688	Moderate
			Independent variable		
Usage of information technology	5	0.841	Very Good	0.783	Good
Postponement strategy	5	0.828	Very Good	0.770	Good

4.3 Descriptive Analysis

Table 4 shows the results of the overall descriptive analysis of variables in this study (N=300). The data will be analyzed using two values: the mean score and the standard deviation. Variable data include usage of information technology (M = 4.0680, SD = 0.5274), postponement strategy (M = 4.0753, SD = 0.5139), and customer satisfaction (M = 4.1527, SD = 0.4350). The results for the usage of information technology, postponement strategy, and customer satisfaction are convinced to be high. Besides, the standard deviations are all at lower values, which means that the data dispersion is smaller, and the data points are more concentrated around the mean. This result indicates that usage of information technology and postponement strategy have a direct relationship with customer satisfaction.

Table 4 *Overall descriptive analysis of variables*

Variables	N	Mean (M)	Std. deviation (SD)	Interpretation
Usage of Information Technology	300	4.0680	0.52742	High
Postponement Strategy	300	4.0753	0.51394	High
Customer Satisfaction	300	4.1527	0.43496	High

4.4 Normality Test

Based on the Table 5 shows the results of the normality test. The value presented for 300 sets of data collected according to Kolmogorov-Smirnov and Shapiro-Wilk is significant because the value is below 0.05 (p-value < 0.001). Due to the significance value is lower than 0.05, the data in this study are abnormal, and Spearman's correlation test will be performed subsequently.

Table 5: *Result of normality test for customer satisfaction*

Dependent variable	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Customer Satisfaction	0.159	300	<0.001	0.924	300	<0.001

a: Lilliefors Significance Correction

4.5 Correlation Analysis

Table 6 shows Spearman's correlation results with usage of information technology, postponement strategy, and customer satisfaction. Firstly, there is a moderate positive correlation ($r = 0.586$, $p < 0.001$) between using information technology and adopting postponement strategy, suggesting a connection between these operational methods. Furthermore, there is a significant positive correlation between usage of information technology and customer satisfaction ($r = 0.633$, $p < 0.001$), indicating that a higher usage of technology aligns with higher satisfaction levels. Moreover, adopting a postponement strategy has a strong positive correlation ($r = 0.614$, $p < 0.001$) with customer satisfaction, indicating that strategic decisions positively impact overall satisfaction. With a considerable sample size ($N = 300$) for each correlation, these findings highlight the close relationship between usage of information technology, postponement strategy, and their collective effect on enhancing customer satisfaction.

Table 6 *Results of correlation analysis*

		Spearman's rho correlations		
		Usage of information technology	Postponement strategy	Customer satisfaction
Usage of information technology	Correlation coefficient		0.586**	0.633**
	Sig.(2-tailed)		< 0.001	< 0.001
	N		300	300
Postponement strategy	Correlation coefficient	0.586**		0.614**
	Sig.(2-tailed)	< 0.001		< 0.001
	N	300		300
Customer satisfaction	Correlation coefficient	0.633**	0.614**	
	Sig.(2-tailed)	< 0.001	< 0.001	
	N	300	300	

4.6 Hypotheses Result

The correlation analysis results show that there is a strong correlation coefficient between the usage of information technology and customer satisfaction postponement strategy. At the same time, there is a moderate correlation coefficient between usage of information technology and postponement strategy. H1 and H2 support the hypothesis that there is a significant relationship between usage of information technology, postponement strategy and customer satisfaction in the restaurant industry. Therefore, all hypotheses are supported.

5. Conclusion

This chapter includes an overview of the study, discusses the findings, outline respondent demographics, addresses research limitations and offers recommendations.

5.1 Level of Usage of Information Technology and Postponement Strategy towards Customer Satisfaction of The F&B Industry in Johor

The first objective of this study was to identify the level of usage of information technology and postponement strategy on customer satisfaction within Johor's F&B industry. The findings revealed a high level of both usage of information technology and postponement strategy towards customer satisfaction in Johor's F&B industry. Notably, the scores attributed to the postponement strategy were higher than those of usage of information technology.

Prior research by Ho *et al.*, (2015) shows the significance of usage of information technology in influencing customer satisfaction. Their findings emphasized how robust technology availability and its continual development significantly improve customer relationship management within organizations. Ho. *et al.* (2015) recommended implementing customer relationship management that aligns with technology requirements, such as a customer-oriented website. In addition, Lau (2020) explored the role of new technologies, such as 5G, Wi-Fi,

AI, and robotics, in enhancing operational efficiency and guest satisfaction within the hotel industry. These technological advancements directly impact customer satisfaction by improving service quality and responsiveness. Moreover, Cheng *et al.* (2010) illustrated how a toaster company in Hong Kong implemented a postponement strategy to streamline production schedules and meet customer demands promptly. The postponement strategy reduced the production time while maintaining product variety, resulting in enhanced customer satisfaction due to improved responsiveness and cost-effectiveness. The study by Luo and Zhang (2019) examined the operations mechanism in service- oriented manufacturing, revealing how the adoption of postponement strategies supported manufacturers in adapting to meet customer requirements.

5.2 Level of Customer Satisfaction of the F&B Industry in Johor

The second objective of this study aimed to determine the level of customer satisfaction of the F&B industry in Johor. The way used to examine the level of customers satisfaction by descriptive analysis of the data collected and mean scores to determine the level of customer satisfaction categorized as low, moderate, and high.

After conducting the descriptive analysis, the study revealed a high level of customer satisfaction within Johor's F&B industry. According to the Malaysian Institute of Economic Research (MIER), the Consumer Sentiment Index (CSI) in Malaysia showed a significant gain of about 14 points quarter-on- quarter (q-o-q) in the first quarter of 2021, reaching a ten-quarter high of 98.9 points (Malaymail, 2021). Even though the quarterly CSI is still below the 100-point optimistic criterion, it shows encouraging changes in consumer attitudes. Although the data shows that the CSI in the first quarter of 2023 was 99.2 and did not exceed the optimistic threshold of 100, overall from the third quarter of 2021 to the first quarter of 2023, the CSI value has been between 90 and 110 (Lim, 2023). This sign shows that the CSI is constantly getting better, and even if there are signs of decline, it has not fallen below 90. The National Covid-19 Immunization Programmed in 2021 and the revival of the domestic and global economies are two major factors that are positively impacting consumer sentiment. These elements have certainly contributed to lowering consumer anxiety and encouraging a more positive perspective. The result of the study shows a high level of customer satisfaction which is consistent with the significant improvement in consumer spending trends. The survey indicates that the rise in the CSI can be attributed to consumers' strong optimism over the state of the economy and their financial prospects for the upcoming months. In comparison to the previous quarter, a greater percentage of households asked agreed that the nation's financial status had improved in 2021. Furthermore, the expectation of higher earnings and a favourable employment trend in Q1 2021 provide support to the idea that Malaysian consumers are benefiting from a generally successful economy. The positive narrative around the employment situation is reinforced by the rise in the percentage of respondents who said there were more jobs available and a decline in those who claimed jobs were hard getting by.

In summary, the study's objective of finding a high level of customer satisfaction in Malaysia is supported by the positive trends observed in the Consumer Sentiments Index, improvements in financial and employment expectations, and customers' stated intentions to shop. The elements highlighted point to an overall healthy economic situation that is beneficial to customer satisfaction in the Malaysian market. The information and data support the discussion of the study's objective, which is to determine Malaysia's high degree of customer satisfaction.

5.3 Relationship between the Level of Usage of Information Technology and Postponement Strategy towards Customer Satisfaction of the F&B Industry in Johor

The third objective of this study aimed to identify the relationship between the usage of information technology and postponement strategy towards customer satisfaction of the F&B industry in Johor. The findings confirm Hypothesis 1, indicating a positive correlation between usage of information technology and customer satisfaction. This aligns with Jovanoski *et al.*'s study (2017), which found a direct relationship between usage of information technology solutions and customer perceived ease of use and attitude during business process reengineering. Similarly, Motum and Kinyua's research (2022) emphasized that integrating usage of information technology infrastructure in non-life insurance positively impacts customer satisfaction.

According to the results of the correlation coefficient, hypothesis 2 is supported. This indicates a strong positive relationship between postponement strategies and customer satisfaction. Yi *et al.* (2011) conducted research in the textile and apparel industry in China, explored strategies under environmental uncertainties. Their study highlighted that employing postponement strategies, particularly aggressive flexibility strategies, mitigated product line complexity and prediction errors, positively impacting customer perceptions. Furthermore, Lagat *et al.* (2016) investigated the effect of supply chain management practices such as strategic of supplier partnership, supply postponement, customer relationship and information sharing on customer satisfaction and customer loyalty in supermarkets. Their findings align with Hypothesis 2 which the supply postponement strategies had a significant and positive effect on customer satisfaction and loyalty.

In summary, the research shows that there are relationships between usage of information technology, postponement strategy, and customer satisfaction in Johor's F&B industry. These findings emphasize how important it is for companies to use good technology and effective postponement strategies to increase customers satisfaction levels in the industry.

5.4 Limitation of Study

5.4.1 Narrow Scope Study

The scope of the study refers to the specific aspects of the study. A narrow scope of the study will limit all relevant aspects of the study and fail to cover it. The scope of this study has identified the respondents as employees in the F&B industry in Johor. Limitations of this study are industry-specific and geographic location. The scope of the study was limited because the findings were not suitable to be applied to different contexts due to over-reliance on a specific group.

5.4.2 Time Constraints

A research project can last one, two, three or more years. The timeline for this study is one year. Limited time for data collection and analysis affects the depth of the study. This study adopts short-term learning time, that is, preparation from pre-research, processing the project, and completing the project, because it is limited by a fixed time. A shorter time frame may result in limitations in data collection time, analysis time, extensive literature review, and review and editing time.

5.4.3 Resource Constraints

The resource constraints of this study were financial constraints and resource access. Limited financial resources can be a challenge, as funds are required to acquire materials for access to databases. For example, access to certain academic journals or publications requires a subscription fee. Additionally, some resources are difficult to access, such as those required to obtain data from the website, and limited access. From a collection and analysis perspective, insufficient resources can impact data quality.

5.5 Recommendation of Study

5.5.1 Recommendations for F&B Industry Organizations

Organizations can provide some continuous training to improve the employee skills and knowledge. In this research is focusing on supply chain practices towards customer satisfaction. Thus, organizations can through the training make sure that employees understand the trend of the market and new technologies practices. Moreover, organizations can enhance the technological infrastructure. This is because usage of information technology and postponement strategy in supply chain can increase the high operational productivity including sales system, inventory management and other departments.

5.5.2 Recommendations for F&B Industry Employers

Employees in the F&B industry should actively participate in training programs, webinars, or events for additional certification. Through these activities can improve the ability of employees to identify market changes. Therefore, employees can rapidly access information and adapt as the market changes. The training program from the organization can provide additional opportunities for employees. This is because employees can use technology and strategy to complete daily tasks and overcome limited resources or materials.

5.5.3 Recommendations for Future Researchers

For prospective researchers, I recommend considering the utilization of a longitudinal study design as an alternative to the cross-sectional methodology employed in this investigation. While our study adopted a cross-sectional approach, characterized by data collection at a specific point in time from various participant groups, a longitudinal study involves re-engaging the same participants over multiple intervals using consistent survey instruments.

The notable advantage of employing a longitudinal study lies in its capacity to facilitate prolonged observation and an in-depth comprehension of evolving phenomena. Furthermore, collaborative research initiatives offer a compelling avenue for enhanced efficiency in research endeavors. Collaborative frameworks enable researchers to pool together resources, expertise, and datasets, thereby potentially enriching the depth and breadth of investigations.

Acknowledgement

The authors would like to thank the Faculty of Technology Management and Business, Universiti Tun Hussein Onn Malaysia for its support.

Conflict of Interest

There is no conflict of interest regarding the publication of this article.

Author Contribution

The authors confirm their contribution to the paper as follows: ***Study conception and design****: K.J.X, and H.Z;* ***Data collection****: K.J.X,;* ***Analysis and interpretation of results****: K.J.X, and H.Z;* ***Draft manuscript preparation****: K.J.X. All authors reviewed the results and approved the final version of the manuscript.*

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