

Enhancing Users' Satisfaction: Revealing the Key Factors Influencing the Usage of Online Food Delivery Service Applications Among University Students

Journal of Tourism, Hospitality & Culinary Arts (JTHCA)
2024, Vol. 16 (1) pp 993-1010
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UiTM Press
Submit date: 15th August 2023
Accept date: 13th Sept 2023
Publish date: 30th April 2024

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Proposed citation:

Humaidi, N. F. A., Jamil, S. N. M., Gannasin, S. P., & Samat, N. (2024). Enhancing Users' Satisfaction: Revealing the Key Factors Influencing the Usage of Online Food Delivery Service Applications Among University Students. *Journal of Tourism, Hospitality & Culinary Arts*, 16(1), 993-1010.

Abstract

Online food delivery service (OFDS) applications are an essential medium nowadays for customers to purchase foods and beverages through their electronic devices instead of going to physical food establishments. This study aimed to determine the factors that significantly influence users' satisfaction using the OFDS applications among university students staying in college. The factors evaluated include time-saving orientation (TSO), price saving (PS), security system (SS), information quality (IQ), and safety packaging (SP). A total of 402 responses were collected via a self-administered online questionnaire that consisted of seven main sections: respondent's demographic information, followed by the five independent variables sections (TSO, PS, IQ, SS, SP), and the dependent variable section (users' satisfaction). Reliability and normality tests and multiple linear regression analyses were performed. Findings showed that all the five factors evaluated in this study significantly affected users' satisfaction with the usage of OFDS (p -value < 0.05; adjusted R^2 value: 0.689). Specifically, information quality (IQ) was found to have the most significant effect (mean standard deviation: 3.74 ± 0.71 ; standardised β -

coefficient: 0.268) towards users' satisfaction with OFDS usage among university students staying in colleges. The output from this study can be used for the improvisation of OFDS applications.

Keywords:

Online food delivery service; users' satisfaction; time and price saving, security system; information quality; safety packaging

1 Introduction

Food and beverages are considered basic yet critical needs for humans that can be obtained by cooking at home, dining in restaurants, and ordering from online platforms such as websites and applications (Hooi et al., 2021). An exponential rate has been noted for the latter especially after the COVID-19 pandemic as some customers still prefer to order their food online. Online food delivery service (OFDS) application is one of the technologies that help restaurants build opportunities and relationships with customers.

Fast food companies mostly use their own OFDS application. Meanwhile, other foodservice establishments use third-party aggregators such as GrabFood, Food Panda, Shopee Food, and DeliverEats for OFDS (Shankar et al., 2022). Customers prefer to use OFDS applications due to several factors such as convenience, price saving, time-saving, navigational design, availability of restaurants, previous online purchase experiences, reviews, food hygiene, and food riders, besides inter-personal and psychological factors (Fakfare, 2021; Prasetyo et al., 2021; Shankar et al., 2022; Yeo et al., 2017).

For a developing country like Malaysia, by the year 2026, OFDS usage is expected to reach a market size of USD 319.1 million (Pitchay et al., 2022) with working adults and students in higher education institutions being the major users of OFDS. As the university students have now returned to their respective campus to resume their face-to-face learning, it will be interesting to know the key factors that influence their satisfaction with the usage of OFDS applications.

To date, there are many studies that have been conducted to evaluate the determinants of OFDS usage among university students where the responses also included those students who are staying in off-campus residences. However, in this study, university students who are staying in colleges, prohibited from cooking in hostels and have transportation issues with dining out was focused. This study aimed to determine the influence of time-saving orientation, price saving, information quality, security system, and safety packaging factors on the satisfaction among university students staying in colleges.

2 Literature Review

2.1 Online food delivery service (OFDS) applications

The OFDS applications have become an integral part of daily life in Malaysia after the COVID-19 pandemic (Kumaran et al., 2020). The predominant meal delivery services

in Malaysia are FoodPanda and GrabFood (Mat Nayan & Hassan, 2020), which provide a variety of cuisines and food selections from nearby eateries and hawkers. These applications have provided people with a safe way to enjoy their favourite foods and drinks without endangering their health. Also, they are convenient and time-saving. The availability of a large variety of meal selections, discounts and promotions, convenience, safety, and time-saving are the main reasons why OFDS have gained popularity in Malaysia. The market is expected to expand during the upcoming years as a result of people's fast-paced lifestyles, rising per capita incomes, and consistently rising food demand.

2.2 Users' satisfaction

Users' satisfaction in OFDS is a complex idea as it is closely related to how well services meet customers' expectations. Szyndlar (2023) emphasises that it fundamentally measures how well the service delivered not only meets but also surpasses the customer's expectations. This satisfaction is dynamic and influenced by a wide range of elements making the OFDS experience (Mat Nayan & Hassan, 2020). Shah et al. (2020) shed light on an essential point: users' satisfaction is significantly impacted by the experience of using an OFDS application. Users' satisfaction is inevitably increased when a procedure is simple, easy, and effective (Guo et al., 2023; Pratama & Cahyadi, 2020). Positive interactions with these platforms and the relationships they foster also play a crucial part. Users' satisfaction naturally rises when the consumer experience is characterised by simplicity of use, promptness of service, and hassle-free transactions (Kermanshachi et al., 2022; Nigatu et al., 2023).

Along with the experiential component, accessibility appears as a key element influencing consumer happiness in OFDS. The significance of accessibility for customer satisfaction is emphasised by Alalwan (2020) and Correa et al. (2019). Users' satisfaction levels are greatly increased by OFDS operations, including benefits like time-saving feature and the opportunity to compare rates across several restaurants. The ease of speedy order placement made possible by thorough information and open pricing not only saves time, but also gives customers the power to make educated decisions (Prasetyo et al., 2021; Zygiaris et al., 2022). Their sense of control over their dining choices is fostered by this empowerment, which increases satisfaction. Users' satisfaction in the context of OFDS is thus built on the combination of positive experiences, accessibility, and the empowerment of choice, outlining a dynamic and evolving landscape shaped by the interaction between user expectations and the platforms' service offerings.

The experiences and satisfaction of users are intimately shaped by a number of crucial aspects in the world of food delivery services on the internet (Macias et al., 2023). The factors that influence users' experiences and satisfaction with OFDS have been the subject of numerous research. This study focused on factors such as time-saving orientation, price saving, information quality, security system, and safety packaging, which were evaluated in relation to satisfaction among university students who use OFDS applications.

2.3 Time-saving orientation and users' satisfaction

Time-saving orientation has developed into more than just a desire in the modern world of constant commotion; it has become a need. Given the demands of their fast-paced lives, Jensen (2012) explains this phenomenon by emphasising how people have an innate need to save time. OFDS has emerged as the best remedy for this inclination. The demands of modern life frequently make the customary practice of eating out inconvenient (Cohen & Story, 2014; Robson et al., 2016). Most people cannot afford the luxury of having to wait in a restaurant before their food is served. As a result, there is a sharp increase in demand for OFDS, which coincides perfectly with the urgent need to maximise time consumption.

The attraction of OFDS lies in its ability to bring unparalleled efficiency and convenience in addition to fulfilling its primary promise of doorstep delivery. Users feel comfortable in the simplified approach provided by these platforms among the plethora of everyday obligations. The OFDS provide users with a wide range of possibilities (Ray et al., 2019). Users can quickly browse various culinary options and choose items that suit their tastes and dietary requirements.

More importantly, these online platforms give users access to a price comparison feature for food across different eateries, a priceless tool (Jun et al., 2021; Pourrahmani et al., 2023). Customers are empowered by this feature, which enables them to act quickly and with knowledge. Given the constant time constraints people experience nowadays, having the opportunity to quickly analyse and compare food prices not only saves time but also guarantees their gastronomic options fit within their financial restrictions. As a result of this, the numerous advantages offered by OFDS go beyond merely appeasing the deeply ingrained demand for time-saving that permeates contemporary culture to redefine the dining experience by fusing efficiency, diversity, and cost-consciousness.

2.4 Price saving and users' satisfaction

Price saving describes the benefits people receive from financial savings and eliminating extra expenditures related to the purchase or use of goods (Yeo et al., 2017). The OFDS frequently offer a range of promotions and special discounts that benefit the customers. Additionally, compared to conventional food service facilities, OFDS platforms frequently offer less expensive food items, which increases their user appeal and convenience (Wang et al., 2019).

In order to increase users' satisfaction levels, variables like promotional offers, special discounts, free delivery services, and cashback offers are crucial (Alipour et al., 2018; Prasetyo et al., 2021; Xu & Roy, 2022). The availability of these cost-saving options in OFDS not only influences consumers' financial decisions favourably, but also greatly raises their overall pleasure with the service. This emphasises how important a link there is between customer happiness and price reductions.

2.5 Information quality and users' satisfaction

Ghasemaghaei and Hassanein (2019) stated that information quality refers to how people perceive the correctness and dependability of the information provided within the application interface. When high-quality information is easily accessible, it improves customer satisfaction and encourages more spending. On the other hand, users of OFDS are put off from using the service by inaccurate or misleading information (Prasetyo et al., 2021). As a result, Ji et al. (2006) found that the structure and quality of the information inside OFDS platforms are critical in determining consumer happiness and encouraging loyalty.

In essence, the OFDS application must seamlessly provide correct and reliable information. Customers are more inclined to trust the service and report higher levels of satisfaction when they receive detailed, trustworthy, and transparent information (Kumaran et al., 2020). Customers are more likely to interact with the platform and make purchases as a result of the platform's increased credibility. Conversely, users' trust and faith in the service are damaged when they are presented with inaccurate information or ambiguous details, which makes them feel uneasy.

In the context of OFDS, where customers mainly rely on the digital interface for menu options, prices, delivery information, and reviews. Thus, the necessity of information quality becomes even more obvious (Kumaran et al., 2020). In addition to satisfying users' informational needs, a well-organised and accurate information system fosters a great user experience. Thus, investing in guaranteeing the quality and authenticity of information inside OFDS platforms goes beyond convenience for customers; it also plays a crucial role in how satisfied users are with the service, how they decide what to buy, and how long they will stay a customer.

2.6 Security system and users' satisfaction

The ability of a website to protect users' personal information during online transactions, assuring protection against unauthorised use, is characterised as security in the context of online services (Christy & Matthew, 2005). It is a critical element that affects consumers' propensity to employ a specific service (Prasetyo et al., 2021). However, as noted by Tabrizchi and Rafsanjani (2020), security also raises issues, notably with regard to payment methods and data storage in online transactions. Some consumers have avoided online buying because of their anxiety over data security, the potential for non-delivery, credit card theft, and post-purchase services (Perumal et al., 2021).

Zulkarnain et al. (2015) showed that consumers' levels of confidence have a major impact on their willingness to conduct online transactions. Users are more likely to trust a platform when they believe it to be secure and have strong security measures in place to protect their personal data, as it increases user happiness and usage. On the other side, security worries, particularly those involving payments and data management, can discourage potential consumers, affecting their pleasure and confidence in online services.

It is impossible to stress how crucial online platform security is, as it impacts users' whole experience and happiness beyond being only a technical need (Kumaran et al., 2020; Saeed, 2023). Online service providers must, therefore, make significant security investments to ensure that customers' personal information is secure. Taking care of these issues not only reduces possible dangers but also fosters trust among users, allowing them to freely interact with online services, increasing their pleasure and building a long-lasting relationship with the platform.

2.7 Safety packaging and users' satisfaction

In OFDS, high-quality packaging is crucial for assuring customer satisfaction that goes beyond cosmetic considerations. According to Setiawardani et al. (2021), packaging needs to be hygienic and protect food from impurities like dust, light, and bacteria in addition to being aesthetically pleasing. According to Ambrose and Harris (2017), packaging is an essential element for maintaining the food's quality and safety up until it is consumed. According to Yildirim et al. (2018), maintaining the food product's flavour, texture, and nutritional value is equally important. Together, these elements highlight how crucial safe packaging is to the online food delivery sector.

In OFDS, user satisfaction levels are directly impacted by effective packaging (Gu et al., 2022). It serves as a barrier of defence, making sure that food is kept fresh and clean in transportation. In addition to serving a utilitarian purpose, attractive packaging conveys the professionalism and concern of the service provider. Users' overall eating experiences are improved when their orders are delivered in packaging that emanates cleanliness and freshness (d'Astous & Labrecque, 2021). This focus on detail promotes a favourable perception, creates confidence, and raises the possibility of repeat business.

For OFDS providers, purchasing dependable, hygienic packing materials is crucial. In addition to protecting the food, it represents the provider's commitment to providing a top-notch client experience. The OFDS can greatly increase user pleasure by putting safety packaging first fostering loyalty and positive referrals. The success and survival of OFDS platforms in the cutthroat digital market are dependent on this strategic focus on packing quality.

3 Methodology

3.1 Participants

The primary data was obtained from the questionnaire distributed to the target respondents. The respondents were the students from the University of Technology MARA (UiTM), Dungun, Terengganu, who specifically stayed in hostels. The number of students that stay in UiTM Dungun hostels was 4219. The sample size was calculated based on the formula stated by Taherdoost (2017), where the margin of error ($E = 5\%$), Z-value of 1.96 (confidence level: 95%) and estimation of variance ($P = 50\%$) were used. A minimum sample size of 385 was required. In this study, 402 university students

staying in hostels participated in the survey, meeting the minimum sample size requirement.

3.2 Conceptual framework

Figure 1 shows the conceptual framework used in this study. Five independent variables, which are time-saving orientation, price saving, information quality, security, and safety packaging, were evaluated in relation to users' satisfaction, the dependent variable.

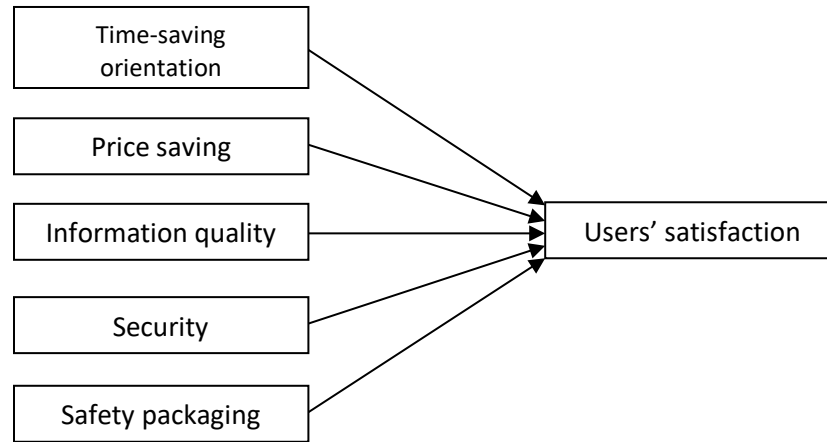


Figure 1: Conceptual Framework

3.3 Questionnaire

A self-administered questionnaire was developed using an online survey form to determine the users' satisfaction with OFDS. The questionnaire consisted of 36 questions and was divided into seven sections. The first section was about the respondent's demographic information (gender, age, field of study, total income per month, total food expenses per month, number of OFDS usage per month), followed by the variables sections: (1) time-saving orientation, (2) price saving, (3) information quality, (4) security system, (5) safety packaging, and (6) users' satisfaction. Table 1 shows the constructs, measurement items and respective sources used in this study. The survey was measured using the 5-point Likert-scale method (1 – strongly disagree, 5 – strongly agree).

Table 1: Construct and measurement items

Construct	Items	Measures	References
Time-Saving Orientation (TSO)	TSO1	I can easily find things that I need in an online food delivery service (OFDS) application.	Alreck & Settle (2002)
	TSO2	I believe that using online food delivery service (OFDS) applications is very useful in the purchasing process.	

	TSO3	I believe that using online food delivery service (OFDS) applications helps me accomplish things more quickly in the purchasing process.	
	TSO4	I believe that I can save time by using online food delivery service (OFDS) applications in the purchasing process.	
	TSO5	It is important for me that the purchase of food is done as quickly as possible using online food delivery service (OFDS) applications.	
Price Saving (PS)	PS1	I can save money by using the prices of different online food delivery service (OFDS) applications.	Escobar-Rodriguez et al. (2014)
	PS2	I like to search for cheap food deals on different online food delivery service websites or applications.	
	PS3	I feel that the discount provided encourages me to use online food delivery service (OFDS) applications.	
	PS4	I think that the promotion expiry date influences me in making an order.	
	PS5	Online food delivery service (OFDS) applications offer better value for my money.	
Information Quality (IQ)	IQ1	I think that the online food delivery service (OFDS) applications provide the right information that I need.	Lee et al. (2019)
	IQ2	I enjoy using online food delivery service (OFDS) applications because it gives me believable information.	
	IQ3	I think that online food delivery (OFDS) service applications provide accurate information.	
	IQ4	I feel that information in the online food delivery service (OFDS) applications is in an appropriate format.	
	IQ5	I find that online food delivery service (OFDS) applications provide me with up-to-date information related to restaurants, food, and discount.	
Security System (SS)	SS1	I can feel secure because online food delivery service (OFDS) applications have protective payment instrument steps before transaction occurs.	Suhartanto et al. (2019)
	SS2	I think that verification steps prior to usage both for user and driver can reduce the risk.	
	SS3	I think that online food delivery service (OFDS) applications provider should not give personal information to other agents.	
	SS4	I would feel safe providing sensitive information about myself over the online food delivery service (OFDS) applications.	Khalilzadeh et al. (2017)
	SS5	I have confidence in the security of my transaction with online food delivery service (OFDS) applications.	
Safety Packaging (SP)	SP1	Restaurants listed in online food delivery service (OFDS) applications strictly follow safety guidelines in packaging.	Fakfare (2021)
	SP2	I also concern with packaging material that influences food cleanliness.	Prasetyo et al. (2021)
	SP3	I find that health information of people involved in preparing and delivering my order ensures the food hygiene.	

	SP4	I think the packaging is capable to store the food without damage or leakage temporarily.	Setiawardani et al. (2021)
Users' Satisfaction (US)	S1	I am satisfied with the way online food delivery services (OFDS) application carried out transaction.	Alalwan (2020)
	S2	The delivery service meets my expectation.	Uzir et al. (2021)
	S3	I believe I did the right thing to choose this online food delivery service (OFDS) applications for food delivery.	Fakfare (2021)
	S4	I will use the online food delivery service (OFDS) applications again in the future.	Cai and Leung (2020)
	S5	Overall, I am satisfied with the online food delivery service (OFDS) applications.	Suhartanto et al. (2019)

3.4 Data collection and analysis

Data collection was carried out in hybrid distribution. The link to the online survey form was distributed to various online group chats among students who stay in hostels. Besides the online group chat, a QR code was generated to allow students to scan and get the link for the online survey form. Potential respondents were chosen and asked to complete the questionnaire based on the sampling technique. Everyone who took part was completely voluntary and anonymous. Once all the data was gathered, statistical analysis was performed using SPSS Statistical software (IBM).

4 Findings

4.1 Pilot test result

A pilot test was conducted in which 42 students participated, and a reliability test was carried out to evaluate the validity and reliability of research constructs and measurement items. According to Taber (2018), Cronbach's Alpha within the range of 0.60 and 0.80 is considered moderate and acceptable. The Cronbach's Alpha found in this study for the following variables TSO, PS, IQ, SS, SP and US were 0.896, 0.887, 0.881, 0.850, 0.877 and 0.869, respectively.

4.2 Demographic characteristics of participants

Table 2 represents the demographic profile of participants in this survey. The data showed out of 402 respondents, 70.4% are females and 29.6% are males. The majority of the participants were 18 to 23 years old. For the field of study, most of the participants are from social science (53%), followed by science and technology, art, and engineering. The table shows that 58% of participants received less than RM 300 for their total income per month, most probably this group of students solely depend on the remaining amount of financial loan after deduction of tuition fee. Meanwhile, 42% of participants have an income between RM 300 and RM 900 monthly, possibly from their engagement in part-time work, online affiliate marketing programs and personal online business. About 70% of participants spent within the range of RM 100 and RM

300 on their food per month. The majority of participants (88.3%) of participants only used OFDS 1 to 10 times a month.

Table 2: Demographic characteristics of participants

Characteristics		Frequency	Percentage (%)
Gender	Male	119	29.6
	Female	283	70.4
Age	18 – 20	196	48.8
	21 – 23	169	42.0
	24 – 26	34	8.5
	27 and above	3	0.7
Field of Study	Science and Technology	73	18.2
	Engineering	53	13.2
	Art	63	15.7
	Social Science	213	53.0
Total Income per Month	Less than RM 300	233	58.0
	RM 300 – RM 599	116	28.9
	RM 600 – RM 899	33	8.2
	More than RM 900	20	5.0
Total Food Expenses per Month	Less than RM 100	48	11.9
	RM 100 – RM 200	152	37.8
	RM 201 – RM 300	118	29.4
	More than RM 300	84	20.9
Number of Online Food Delivery Services (OFDS) Usage	1 – 10 times a month	355	88.3
	11 – 20 times a month	33	8.2
	21 – 30 times a month	10	2.5
	> 30 times a month	4	1.0

4.3 Variable mean, normality and reliability test results

Table 3 shows the variable characteristics derived from 402 respondents. In this study, the highest mean was noted for TSO (4.08), while the lowest mean was recorded for PS (3.71). Reliability test values (Cronbach Alpha's) indicate variable internal consistency. A high level of internal consistency was found with Cronbach Alpha's values between 0.881 and 0.910, as Cronbach Alpha's values above 0.7 indicate good reliability.

Table 3: Variable characteristics

	No of Items	Mean	Std. Deviation	Kurtosis	Skewness	Cronbach's Alpha
TSO	5	4.08	0.712	0.795	-0.718	0.894
PS	5	3.71	0.793	0.060	-0.404	0.910
IQ	5	3.74	0.709	-0.337	0.085	0.881

SS	5	3.85	0.701	0.147	-0.223	0.885
SP	4	3.87	0.733	-0.410	-0.242	0.888
US	5	3.94	0.659	-0.539	-0.158	0.879

The findings highlight the important role that time-saving orientation, cost-savings, information quality, security system, and safety packing play in users' satisfaction with OFDS applications. The strong positive correlations between these variables and users' satisfaction are clear, with a significant explanatory power of 69.3% (R^2). The p-value is less than 0.05, denoting the statistical significance of these associations, and supporting the validity of the analysis. These results emphasise how important it is for businesses to give these criteria top priority to improve customer satisfaction and create loyalty in the cutthroat market for OFDS. These characteristics play a critical role in determining customers' opinions and experiences.

As shown in Table 4, information quality (IQ) has a strong and direct influence on customer satisfaction in US-based online food delivery service applications ($\beta = 0.268$, $p < 0.001$). This finding emphasises the critical importance of accurate information, detailed information, and real-time updates about restaurants, menus, locations, food costs, and delivery fees. These applications are crucial resources for students since they need this information to make decisions. Notably, the thorough and trustworthy information offered within these apps greatly enhances user pleasure. These results substantially support Ji et al. (2006) claim that the quality and organisation of information within mobile applications directly affect users, boosting happiness and loyalty among customers. This study, which answers the main research question with actual data, not only validates this concept but also emphasises how important information richness and accuracy are in forming positive user experiences within OFDS applications, which support the arguments by Kumaran et al. (2020) and Prasetyo et al. (2021).

Table 4: Multiple linear regression coefficients of variables

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.451	0.121		3.722	<.001
	TSO	0.171	0.036	0.185	4.704	<.001
	PS	0.067	0.030	0.080	2.256	.025
	IQ	0.249	0.042	0.268	5.961	<.001
	SS	0.192	0.041	0.204	4.687	<.001
	SP	0.227	0.038	0.252	6.043	<.001

a. Dependent Variable: US

Safety packaging (SP) was found to have a significant beta value of 0.252 ($\beta = 0.252$, $p < 0.001$), presenting it as a key element in determining how satisfied students are with applications for online food delivery services. Ambrose and Harris (2017) showed that safety packaging serves as a shield, maintaining the quality and safety of manufactured

food up to consumption. This result confirms that students are aware of the critical relevance of food cleanliness over merely attractive packaging. The focus on safety packaging is consistent with the idea that the flavour, texture, or nutritional content of the food product should not be compromised by packing materials, as underlined by Yildirim et al. (2018). These students understand the need to have their food packaged securely and hygienically demonstrate their thoughtful approach to OFDS and emphasise their preference for quality and safety over flashy features.

Student satisfaction and safety packaging have a strong correlation, reflecting a larger consumer trend. It demonstrates how customers put the integrity and safety of their food first in the world of online food delivery services. Recognising the value of appropriate packaging coincides with consumers' growing awareness of health and hygiene standards, demonstrating a need for service providers to be transparent and give quality assurance. This information emphasises the need for investment in safe, hygienic packing practices for online food delivery platforms in order to assure consumer happiness and maintain a competitive edge in the market.

The findings are supported by a beta value of 0.204 ($\beta = 0.204$, $p < 0.001$), demonstrating the significant correlation between the security system (SS) and students' satisfaction with online food delivery service applications. This outcome highlights the growing importance of security precautions in online transactions, particularly for students who depend on digital technology more and more for convenience. Due to their convenience and extensive digital exposure, students favour online transactions. Still, it is interesting to note that information quality and safety packing have a greater impact on satisfaction than security measures. This discrepancy may be due to students' hesitation to disclose personal information online, which lowers their degree of assurance in the security of online transactions. This observation is consistent with those made by Kumaran et al. (2020); Saeed (2023) and Zulkarnain et al. (2015) who found that customers' confidence levels significantly influence their decisions to make online transactions.

Findings also offer insight into how consumer behaviour is changing in the digital age. Even if the benefits of online shopping are well known, the research points out one important factor that significantly impacts on consumers' satisfaction: their confidence in the security of these transactions. This knowledge is priceless for companies that offer online food delivery services because it highlights the necessity for strong security safeguards and open communication to increase customer confidence. Understanding and addressing these issues can help users, especially students, who make up a sizable portion of the user base, bridge the gap between their propensity for digital transactions and their need for a secure online environment.

Time-saving orientation (TSO) has been found to have a significant relationship with the satisfaction of students on using online food delivery services with the beta value ($\beta = 0.185$, $p < 0.001$). Even the previous researcher stated that the Food Delivery

Application (FDA) provide ease to customers by providing various option in term of the type of foods and option to compare food price from various restaurant (Ray et al., 2019), which can save time for the customer. Still, the result of this study shows a weak significant relationship between these two variables. The reason for this result may be that some of the online food service providers do not ensure the food reaches the consumer in the compatible time given, which contributes to the dissatisfaction of the students.

Finally, price saving has the lowest beta value ($\beta=0.080$, $p<0.025$). The findings indicated a less significant impact on student satisfaction with OFDS applications. A number of things influence this result. First off, although only being computed once throughout the use of these applications, transport costs frequently begin at a higher point because of the perceived value of the service. Prabowo and Nugroho (2019) showed that consumers are willing to pay extra for the convenience and advantages that OFDS provide, even if the costs are higher than those of routine purchases or sellers by the side of the road. Additionally, certain OFDS periodically entice customers to upgrade their orders by offering free delivery (Hooi et al., 2021). While using this method may boost the total order value, it may also give students the impression that OFDS usage is not cost-effective, which could have contributed to low satisfaction as more costs are involved.

The varied character of users' satisfaction in the context of online food delivery is highlighted by this research. Price reduction influences users' decisions, but other elements like transportation costs and marketing tactics temper its effects. Providers of OFDS must find a balance between providing competitive pricing and emphasizing the value and convenience they offer for customers. Understanding these complex factors is crucial for pricing strategies, ensuring that customers like students feel OFDS is cost-effective and useful.

5 Conclusion

This study aimed to provide greater insight into the factors that can affect a user's satisfaction on the usage of OFDS applications. Five factors have been taken into assumptions that can influence the user's satisfaction on the usage of OFDS applications. Data collection has been done among students, and the result for each factor can influence the user's satisfaction. Based on the data collected, information quality (IQ) was the most important factor that influenced students to use the applications. The information provided by the application provider may be accurate and understandable for the students to use. This is followed by safety packaging (SP), where the students feel the temporary packaging used by the restaurants has influenced their satisfaction.

The third factor is the security system (SS), where the data has shown that some users trusted the security systems, and some users tend to have mixed feelings about the application's security system. An application provider can enhance the security system

in the applications to gain the customer's trust. Then, time-saving orientation (TSO) also influenced satisfaction, but some users disagreed as some delivery may take some time to deliver the goods to customers. In this matter, restaurants and delivery providers should take into consideration how to improve their service in time management to ensure satisfaction can be achieved. Lastly, price saving orientation (PSO) is shown to be the factor that influence satisfaction the least that could be attributed by different monthly income levels among students.

Overall, this study contributes to the current literature on the key factors that influence OFDS usage among university students residing in college specifically who have limited access to purchase foods outside campus. Accurate information about food, price, discount, ingredients used, review and potential allergens are expected to be displayed in OFDS application for better decision by students on which food to purchase that leads to high satisfaction.

As for the managerial implication, OFDS providers should ensure high quality information is provided including calorie content, speciality of menu, ingredients being used besides business operation hours and delivery time to attract more university students to use OFDS applications. Not only that, best deal for students should be offered as some students have financial constraints with limited monthly income.

6 Limitations

The study's exclusive emphasis on college-residing university students may have limited the findings' applicability to a larger population. The experiences and expectations of users using OFDS may change depending on their age or background and these differences were not investigated in this study. Self-administered online surveys, which are prone to self-reporting bias, were the approach used for data collection. The accuracy of the results could be impacted by participants giving socially acceptable answers.

Furthermore, during the survey, respondents' moods or recent experiences may have an impact on their responses, skewing the results. While the study examined essential factors like time-saving orientation, price saving, security system, information quality, and safety packaging, other potentially relevant variables that could influence users' satisfaction, such as user interface design, delivery time, or customer service responsiveness, were not included in the analysis.

A cross-sectional design was employed in the study to record responses at a particular moment in time. It is not possible to evaluate how users' satisfaction has changed over time or investigate the causal linkages between variables with this design. A deeper knowledge of how users' satisfaction with OFDS changes over time and in various circumstances may be obtained through longitudinal studies. Furthermore, the study may have limited depth of qualitative insights that could have been gained through open-ended questions or interviews because it relied on a structured

questionnaire with predetermined response alternatives. Richer contextual information may have been obtained using qualitative methods, improving our understanding of the aspects that influence users' satisfaction.

7 About the authors

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