

## From Click to Cuisine: Navigating the Landscape of Customer Satisfaction in Online Food Delivery Apps

Amily Fikry, \*Azreen Joanna Abdul, Ameena Sibghatullah, Nur Shahrulliza Muhammad, Zatul Fahany Harun  
Faculty of Business and Management, Universiti Teknologi MARA, Puncak Alam, Malaysia  
amily@uitm.edu.my, \*azreen890@uitm.edu.my, amena@uitm.edu.my,  
nurshahrulliza@uitm.edu.my, zatulfahany@uitm.edu.my  
Corresponding Author: Azreen Joanna Abdul

**Abstract:** Technological advancements have revolutionized the food industry, enabling restaurant food delivery to homes. In Malaysia, families with children prefer online food delivery apps (OFDA) over singles, citing crowd avoidance, time-saving, and craving satisfaction. This research analyzes sociodemographic factors (age, income, gender, occupation, marital status, education, order frequency) influencing OFDA satisfaction. Through convenience sampling with 447 responses obtained via Google Forms, results indicate no significant differences in satisfaction based on age, income, gender, occupation, or education. However, marital status and order frequency show distinctions. The research concludes with limitations, recommendations, and implications for practitioners.

**Keywords:** *Food delivery applications, human-computer interaction, Malaysia, food ordering*

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### 1. Introduction and Background

Technological advancements have altered the landscape of the food and beverage industry. In addition to dining in restaurants, restaurant-quality food can now be consumed from the comfort of one's home. For example, customers can taste sumptuous restaurant-quality food while watching television at home. This food delivery culture became prevalent during the COVID-19 pandemic when people were confined to their homes and restricted from buying food or groceries. On a global scale, the food delivery business gained prominence in developed markets, such as Australia, Canada, the United Kingdom, and the United States, following the lockdown imposed in 2020 to curb COVID-19. Most consumers were millennials and Generation Z'ers (Ahuja, Chandra, Lord, and Peens, 2021). In Malaysia, young families with children are more inclined to order via online food delivery apps (OFDA) than single people to avoid crowds, save cooking time, and satisfy cravings (Grab, 2022).

Despite the emergence of OFDA, the satisfaction in utilizing the apps relies on customers' demographic profiles. The ensuing variances lead to inconsistent and questionable outcomes. Youngsters and women are more satisfied with using OFDA than older adults (Dela Rosa and Separa, 2022) and men (Hwang, Lee, and Kim, 2019; Techarattanased, 2019).

As such, this study aims to analyze the key differences between sociodemographic profiles (age, monthly income, gender, occupation level, marital status, education level, and order frequency) and the satisfaction of using OFDA within Malaysia.

### 2. Literature Review

#### Customer satisfaction in using online food delivery applications (OFDA)

The intention to use OFDA was first examined to assess consumers' satisfaction with using the apps (Rita, Eiriz, and Conde, 2023). Only counterparts who intend to use OFDA would do so in reality and evaluate the OFDA quality (dissatisfied, satisfied, or delighted). This scenario denotes the effects of the OFDA quality spillover on satisfaction (Lin, Au and Baum, 2023). Hence, the current work analyzed the notable variances between sociodemographic profiles and satisfaction in using OFDA within Malaysia.

#### Age and satisfaction in using OFDA

The age-consumer satisfaction link in food delivery applications is intricate and multidimensional. In line with current studies, young adults in their 20s demonstrate specific preferences and attributes that significantly influence their satisfaction level in using these apps. Lee (2022) highlighted the significance of lifestyle factors,

such as dietary preferences, in influencing young individuals' happiness levels. As age is crucial in mediating the relationship between happiness and other factors, the apps' influence varies among age cohorts (Verhoef et al., 2002). Dela Rosa and Separa (2022) claimed that age determines consumers' satisfaction with online meal delivery services.

In particular, most individuals between 29 and 40 years old demonstrate significant preferences and opinions. Muninggar et al. (2022) revealed a positive and statistically significant relationship between age, customer satisfaction, and loyalty in the OFDA context. This finding underscores the need to internalize the requirements and inclinations of different age groups. From a scholarly perspective, young individuals between 16 and 30 years old reflect the highest level of engagement with OFDA. This strong inclination denotes that younger customers prefer convenience and prompt services (Borgohain, 2019). Students under 30 are more inclined to use OFDA (Pal et al., 2021; Anbumathi, Dorai, and Palaniappan, 2023). Regardless, contradictory findings were found regarding the variances between age and satisfaction in using the apps. Allah Pitchay et al. (2021), Belanche, Flavian, and Perez-Rueda (2020), and Hong et al. (2023) found no key differences between attitude, age, and intention to use OFDA.

Other factors involving sensorial experience (Molinillo-Jimenez et al., 2022) and intrinsic (perceived enjoyment and involvement) and extrinsic (perceived ease of use, convenience, and perceived usefulness) motivators (Meena and Sarabhai, 2023) provided significant differences concerning age group and satisfaction in using OFDA. These inconsistencies led to the development of the first hypothesis:

**H1:** A significant difference exists between age and satisfaction with using food delivery apps.

#### **Monthly income and satisfaction in using OFDA**

Current studies denote a nuanced relationship between sociodemographic variables of age and income and consumer satisfaction in OFDA. The impact of monthly income on customer satisfaction regarding OFDA is intriguing. Essentially, youngsters' choices and actions significantly affect their satisfaction levels, with income also playing a pivotal role in developing users' perceptions and expectations of these apps.

Shafiee and Abdul Wahab (2021) underscored a significant relationship between individuals' income levels and purchase intentions. Based on this outcome, affluence notably impacts users' interactions with and perceptions of the value associated with OFDA. Prasetyo et al. (2021) identified several aspects of price, promotions, and overall service quality, which are vital in influencing customer satisfaction and loyalty towards OFDA. Although Senthil, Gayathri, and Chandrasekar (2020) did not emphasize monthly income, significant correlations were identified between discounts and satisfaction in using the apps. Consumers' economic levels potentially impact their responsiveness to these attributes, subsequently influencing their overall happiness with OFDA. Based on the critical role of monthly income in affecting satisfaction in using the apps, the second hypothesis was developed:

**H2:** A significant difference exists between monthly income and satisfaction in using food delivery apps.

#### **Gender and satisfaction in using OFDA**

Gender could affect consumers' satisfaction with using OFDA (Muhammad et al., 2023). For example, Kanwal et al. (2022) highlighted more differences than similarities regarding the impact of gender on online purchases. Hwang, Lee, and Kim (2019) and Techarattanased (2019) also identified key differences between gender and satisfaction in using OFDA, specifically among women, when the purchases involve routine items (Francioni et al., 2022). Nevertheless, the findings derived by Hussien and Mansour (2020) proved contradictory. The third hypothesis was developed based on these inconsistencies:

**H3:** A significant difference exists between gender and satisfaction in using food delivery apps.

#### **Occupation level and satisfaction in using OFDA**

Asgari et al. (2023) disclosed that unemployed individuals or part-timers seldom use online delivery apps. Meanwhile, other researchers revealed no significant variances between occupation level, online grocery shopping (Eriksson and Stenius, 2022), and satisfaction with using online shopping (Balderaz and Campos, 2020). Balderaz and Campos (2020) indicated the high frequency of online purchases among permanent teachers compared to their part-time counterparts. Similarly, Shafiee and Abdul Wahab (2021) found no significant link between occupation level and the intention to purchase food using apps in Malaysia. Given the

lack of in-depth examination and conclusive outcomes, the fourth hypothesis was developed:

**H4:** A significant difference exists between occupation level and satisfaction in using food delivery apps.

#### **Marital status and satisfaction in using OFDA**

In Malaysia, single and married individuals revealed notable differences in their intention to order food via delivery apps (Shafiee and Wahab, 2021). Likewise, a key difference was identified between married and single Taiwanese respondents' satisfaction in using food delivery apps (Foodpanda). In Taiwan, single respondents were more satisfied using OFDA than their married counterparts (Liu, Chen, and Zhang, 2021). No significant differences were identified between marital status and the willingness to order online food in India (Laddha, 2019). Following these contradictory outcomes, the fifth hypothesis was developed:

**H5:** A significant difference exists between marital status and satisfaction in using food delivery apps.

#### **Education level and satisfaction in using OFDA**

Highly educated people are more price-sensitive to the additional fees charged when making online purchases. As such, these individuals spend more time seeking suitable products pre-purchase (Asgari et al., 2023). Shafiee and Abdul Wahab (2021) noted a lack of substantial connections between education level and the propensity to purchase food via apps. Nguyen (2014) identified significant differences between education level and online vendor satisfaction. Regardless, Richa (2012) revealed contradictory findings. These inconclusive results led to the development of the sixth hypothesis:

**H6:** A significant difference exists between education level and satisfaction in using food delivery apps.

#### **Order frequency and satisfaction in using OFDA**

The frequency of food ordering from OFDA may or may not affect customer satisfaction with the apps. Compared to novice customers, customers who utilize the same OFDA may find the delivery apps convenient to use and place frequent orders (Sobika and Raj, 2021). As revealed by Martha et al. (2021), online customers who are satisfied with OFDA tend to order 3.8 times more than dine-in customers. Chotigo and Kadono (2021) also disclosed the exact connection between order frequency and satisfaction in using OFDA among the Thai and Chinese populations (Wang et al., 2022). In this vein, the seventh hypothesis was developed:

**H7:** A significant difference exists between order frequency and satisfaction in using food delivery apps.

### **3. Research Methodology**

This section presents the research samples and instruments, respondent selection, and questionnaire distribution. Essentially, the current work chose OFDA users as respondents. Empirical data were gathered via purposive sampling. Only individuals who fulfilled the researchers' criteria were selected. Hence, the study recruited consumers who live in Malaysia and have used OFDA in the past month.

The criteria above were set in the screening questions, which are used to choose respondents that complement the study aim. Counterparts who did not meet the criteria were excluded from answering the remaining questionnaire. Alalwan (2020) and Cyr et al. (2008) adopted the instruments to measure satisfaction. With purposive sampling, questionnaires were distributed online via Google Forms and analyzed with IBM SPSS 28.

### **4. Results**

447 respondents were recruited based on gender, age, marital status, occupation level, monthly income, and education level. Regarding gender distribution, 325 (72.7%) of the respondents were women, while the remaining 122 (27.3%) were men. Based on the demographics of occupation level, 322 (72%) of the individuals were self-employed, while 322 (72.0%) were between 21 – 30 years old. In terms of marital status, 411 (91.9%) respondents were single, 35 (7.8%) of them were married, and 1 (0.2%) was divorced. The diversity of occupation levels is evident, with 382 (85.5%) respondents encompassing students, followed by 33 (7.4%) civil servants. Based on monthly income patterns, 308 (68.9%) respondents earned under RM2,500, 38 (8.5%) of them earned from RM 2,501 to RM 5,000, 28 (6.3%) earned between RM 5,001 and RM 10,000, 7 (1.6%) earned RM 10,001 and above, and 65 (14.5%) were categorized under 'others.' With regards to education level, 366 (81.9%) respondents were categorized as 'others,' 2 (0.4%) of them attended high school, 10 (2.2%) attended matriculation, 38 (8.5%) graduated with a diploma, 22 (4.9%) held a Master's degree, and 9 (2.0%) held a

Doctoral degree.

**Profile of Respondents:** Table 1 summarizes the characteristics of the total sample of customers or subscribers who participated in the study.

**Table 1: Demographic Information**

| <b>Demographic Profile</b> | <b>Frequency</b> | <b>Percentage (%)</b> |
|----------------------------|------------------|-----------------------|
| <b>Gender</b>              |                  |                       |
| Male                       | 122              | 27.3                  |
| Female                     | 325              | 72.7                  |
| Total                      | 447              | 100                   |
| <b>Age</b>                 |                  |                       |
| Below 20 years old         | 90               | 20.1                  |
| 21 – 30 years              | 322              | 72.0                  |
| 31 – 40 years              | 21               | 4.7                   |
| 41 – 50 years              | 10               | 2.2                   |
| 51 – 60 years              | 4                | 0.9                   |
| Total                      | 447              | 100                   |
| <b>Occupation level</b>    |                  |                       |
| Self-employed              | 322              | 72                    |
| Students                   | 21               | 4.7                   |
| Unemployed                 | 10               | 2.2                   |
| Others                     | 4                | 0.9                   |
| Total                      | 447              | 100                   |
| <b>Marital Status</b>      |                  |                       |
| Single                     | 411              | 91.9                  |
| Married                    | 35               | 7.8                   |
| Divorce                    | 1                | 0.2                   |
| Total                      | 447              | 100                   |
| <b>Occupation level</b>    |                  |                       |
| Civil servants             | 33               | 7.4                   |
| Self-employed              | 7                | 1.6                   |
| Students                   | 382              | 85.5                  |
| Unemployed                 | 4                | 0.9                   |
| Others                     | 21               | 4.7                   |
| Total                      | 447              | 100                   |
| <b>Monthly Income</b>      |                  |                       |
| No income                  | 1                | 0.2                   |
| Below RM2,500              | 308              | 68.9                  |
| RM 2,501 – RM 5,000        | 28               | 8.5                   |
| RM 5,001-RM 10,000         | 28               | 6.3                   |
| RM 10,001 and above        | 7                | 1.6                   |
| Others                     | 65               | 14.5                  |
| Total                      | 447              | 100                   |

| Education Level |     |      |
|-----------------|-----|------|
| High School     | 2   | 0.4  |
| Matriculation   | 10  | 2.2  |
| Diploma         | 38  | 8.5  |
| Masters         | 22  | 4.9  |
| Doctorate       | 9   | 2.0  |
| Others          | 366 | 81.9 |
| Total           | 447 | 100  |

### Hypothesis testing

This study performed hypothesis testing via ANOVA and t-test analyses. Table 2 below summarizes the research results.

**Table 2: Summary of Findings**

| Hypotheses   | Findings                              | Hypotheses (Supported/Not Supported) | Test                      |
|--|---------------------------------------|--------------------------------------|---------------------------|
| H1: A significant difference exists between age and satisfaction in using food delivery apps.              | No significant difference (p = 0.534) | Not supported                        | One-way ANOVA             |
| H2: A significant difference exists between monthly income and satisfaction in using food delivery apps.   | No significant difference (p = 0.505) | Not supported                        | One-way ANOVA             |
| H3: A significant difference exists between gender and satisfaction in using food delivery apps.           | No significant difference (p = 0.816) | Not supported                        | Independent Sample T-test |
| H4: A significant difference exists between occupation level and satisfaction in using food delivery apps. | No significant difference (p = 0.691) | Not supported                        | One-way ANOVA             |
| H5: A significant difference exists between marital status and satisfaction in using food delivery apps.   | Significant difference (p < 0.001)    | Supported                            | One-way ANOVA             |
| H6: A significant difference exists between education level and satisfaction in using food delivery apps.  | No significant difference (p = 0.451) | Not supported                        | One-way ANOVA             |
| H7: A significant difference exists between order frequency and satisfaction in using food delivery apps.  | Significant difference (p < 0.001)    | Supported                            | One-way ANOVA             |

### H1: A significant difference exists between age and satisfaction in using food delivery apps.

A one-way between-groups analysis of variance served to explore the impact of age on satisfaction in using OFDA. Respondents were divided into five groups by age (Group 1: below 20 years old; Group 2: 21-30 years old; Group 3: 31-40 years old; Group 4: 41-50 years old; and Group 5: 51-60 years old). No statistically significant difference was determined at the  $p < .05$  level in satisfaction scores for the five age groups:  $F(4,442) = 0.787, p > .05$ . Overall, H1 was not supported.

**H2: A significant difference exists between monthly income and satisfaction in using food delivery apps.**

A one-way between-groups analysis of variance served to explore the impact of monthly income on satisfaction in using OFDA. Respondents were divided into six groups by monthly income (Group 1: no income; Group 2: under RM2,500; Group 3: RM 2501-RM 5000; Group 4: RM 5,001-RM 10,000; Group 5: RM 10,001 and above; and Group 6: others). No statistically significant difference was identified at the  $p < .05$  level in satisfaction scores for the six groups of monthly income:  $F(5, 441) = 0.864, p > .05$ . Summarily, H2 was not supported.

**H3: A significant difference exists between gender and satisfaction in using food delivery apps.**

An independent-sample t-test was conducted to compare the satisfaction scores of men and women using OFDA. No significant difference existed in scores for men ( $M = 5.0020, SD = 0.87266$ ) and women ( $M = 5.0226, SD = 0.8145; t(445) = -0.233, p = .816$ , two-tailed). The magnitude of the differences in means (mean difference = .85, 95% CI: -1.80 to 1.87) proved to be very small ( $\eta^2 = .0001$ ). As such, H3 was not supported.

**H4: A significant difference exists between occupation level and satisfaction in using food delivery apps.**

A one-way between-groups analysis of variance explored the impact of occupation level on satisfaction in using OFDA. Respondents were divided into five groups by occupation level (Group 1: civil servants; Group 2: self-employed; Group 3: students; Group 4: unemployed; and Group 5: others). No statistically significant difference was evident at the  $p < .05$  level in satisfaction scores for the five occupation level groups:  $F(4, 442) = 0.560, p > .05$ . Hence, H4 was not supported.

**H5: A significant difference exists between marital status and satisfaction in using food delivery apps.**

A one-way between-groups analysis of variance served to explore the impact of marital status on satisfaction in using OFDA. Respondents were divided into three groups by marital status (Group 1: single; Group 2: married; and Group 3: divorced). A statistically significant difference was identified at the  $p < .001$  level in satisfaction scores for the three groups of order frequency:  $F(4, 444) = 12.343, p < .001$ . Despite this statistical significance, the actual difference in mean scores between the groups proved to be relatively small. Computed with  $\eta^2$ , the effect size reflected .05. As such, H5 was supported.

**H6: A significant difference exists between education level and satisfaction in using food delivery apps.**

A one-way between-groups analysis of variance explored the impact of education level on satisfaction in using OFDA. Respondents were divided into six groups by occupation level (Group 1: high school; Group 2: matriculation; Group 3: diploma; Group 4: masters; Group 5: doctorate; and Group 6: others). No statistically significant difference was identified at the  $p < .05$  level in satisfaction scores for the six education level groups:  $F(5, 441) = 0.945, p > .05$ . As such, H6 was not supported.

**H7: A significant difference exists between order frequency and satisfaction in using food delivery apps.**

A one-way between-groups analysis of variance served to explore the impact of order frequency on satisfaction in using OFDA. Respondents were divided into five groups by order frequency (Group 1: 1 to 3 times a month; Group 2: once a week; Group 3: 2-3 times a week; Group 4: 4-5 times a week; and Group 5: every day of the week). A statistically significant difference existed at the  $p < .001$  level in satisfaction scores for the five groups of order frequency:  $F(4, 442) = 6.126, p < .001$ . Despite reaching statistical significance, the actual difference in mean scores between the groups was relatively small. Calculated via  $\eta^2$ , the effect size denoted .05. Post-hoc comparisons with the Tukey HSD test revealed the mean score for Group 5 ( $M = 3.3125, SD = 1.72$ ) to significantly vary from Group 2 ( $M = 4.95, SD = 0.89$ ), Group 3 ( $M = 5.07, SD = 0.955$ ), Group 4 ( $M = 5.407, SD = 1.72$ ), and Group 1 ( $M = 5.0031, SD = 0.73$ ). In this regard, H7 was supported.

**Discussion**

The OFDA gained much prominence during the Covid-19 outbreak. Following the movement control order (MCO) enforcement, customers were forced to remain at home and either consume home-cooked meals or buy them from OFDA. Other factors involving a hectic work life also increased OFDA usage. Hence, the current work aimed to analyze the significant differences between (i) sociodemographic profiles of age, monthly income, gender, occupation level, marital status, education level, and order frequency and (ii) satisfaction in using OFDA within Malaysia. Online survey forms were distributed to 447 respondents and gathered with an almost equal spread of the demographic distribution. Notably, SPSS 10.0 was used for data analysis. Two statistical tools, an independent sample t-test, and one-way ANOVA, evaluated the elicited responses. Resultantly, H5 and H7 were

supported while H1, H2, H3, H4, and H6 were not.

The empirical outcomes revealed no significant difference between age and OFDA satisfaction. Thus, H1 was not supported. Past works revealed young users' tendency to be more tech-savvy (Fikry et al., 2023 and Muhammad et al., 2023), which reflects a higher satisfaction level in using OFDA compared to older users (Eriksson and Stenius, 2022; Liu, Chen, and Zhang, 2021). Mobility issues among older adults may increase online purchasing frequency (Asgari, Azimi, Titiloye, and Jin, 2023) via OFDA, subsequently improving their satisfaction when using online apps. In other words, contentment leads to satisfaction (Gupta and Chandan, 2020). Notwithstanding, this study revealed no significant difference between age and satisfaction (Balderaz and Campos, 2020; Gupta and Chandan, 2020) when using OFDA.

In line with Shafiee and Abdul Wahab (2021), no significant differences were evident between monthly income and educational level satisfaction in using OFDA. As such, both H2 and H6 were not supported. Past scholars associated a high education level with a high income bracket. Highly educated users spend more time searching for products online and consider additional online fees inconsequential (Asgari, Azimi, Titiloye, and Jin, 2023). In this vein, these users became more satisfied with OFDA than their counterparts with a low education level and income bracket. Laddha (2019) explained that most dual earners in the family possess surplus income, which leads them to use OFDA frequently. This scenario indirectly reflects dual-income earners' satisfaction in using OFDA. Individuals with little satisfaction using OFDA would not increase their order frequency using these apps.

Although past works reflected women's strong inclination to purchase online compared to their male counterparts (Balderaz and Campos, 2020), the current study generated contradictory outcomes. No significant difference existed between gender and satisfaction in using OFDA. Thus, H3 was not supported. This finding corroborated Shafiee and Wahab's (2021) study, which was also performed in Malaysia. Similar satisfaction levels across genders were discovered in India (Gupta and Chandan, 2020).

This study coincided with past empirical works (Nguyen, Nguyen, and Tan, 2021), which revealed significant differences between marital status and satisfaction in using OFDA. In this vein, H5 was supported. Specific factors potentially affect satisfaction in using online OFDA based on marital status. For example, single customers were more satisfied using these apps than their married counterparts and evaluated their contentment based on price affordability. Contrarily, married customers were more concerned about the convenience of using these apps and less price-sensitive (Liu, Chen, and Zhang, 2021). Single customers demonstrated insufficient knowledge of meal planning and home meal preparation. Hence, simple (Algheshairy et al., 2022) and user-friendly OFDAs address their need for quick meals.

The current research results revealed an increased frequency of ordering food with online apps, reflecting high satisfaction with using OFDA. As such, H7 was supported (Pal et al., 2022). Several factors may influence the significant difference between order frequency and satisfaction in using OFDA. For example, married customers with children frequently use OFDA, which may increase their satisfaction in using the apps. They try to avoid eating out with family and the stress resulting from the need to fulfill small children's demands while eating (Laddha, 2019). Furthermore, the ease of using OFDA may increase the order frequency via such apps. Customers who experience convenience in using OFDA would repeat their order with the same app, thus reflecting their satisfaction in using OFDA (Prasetyo et al., 2021).

This study also revealed no significant difference between occupation level and satisfaction in using OFDA. As such, H4 was not supported. The finding aligned with Gupta and Chandan (2020) and Eriksson and Stenius (2022) but contradicted Laddha (2019). Working individuals experienced higher satisfaction when using OFDA, which is evident from their frequent purchases via similar OFDA owing to fatigue after long hours (Laddha, 2019).

## 5. Limitations and Recommendations for Future Research

This research encountered several limitations. The current work only included Malaysia, so the empirical outcomes could not be generalized to other countries. Customers' online behavior, such as satisfaction with

OFDA, may differ across countries. As such, future works could use the same sociodemographic variable and satisfaction level in different nations when using OFDA. The research results may vary based on culture and country setting.

Variables of trust, perceived usefulness, and perceived ease of use may be used to test the effects on Malaysians' OFDA usage. Furthermore, this study assessed the impact of sociodemographic factors on customer satisfaction when using OFDA. Further research could emphasize the effect of sociodemographic elements on customer loyalty or retention to assist practitioners and researchers in segmenting these lucrative online markets.

### **Implication for Practitioners**

The diverse demographics of OFDA users regarding gender, age, education level, marital status, and order frequency potentially affect their satisfaction level in using the apps. Such diversity is vital in strategizing market segmentation for online retailer products. In this vein, several implications for practitioners were highlighted based on the study findings.

The current work revealed significant differences between marital status, order frequency, and customer satisfaction when using OFDA. Hence, industry stakeholders may segment their market based on marital status and order frequency by providing promotional monthly packages of OFDA for households with children. Relevant companies may offer attractive promotions for returning customers to increase their food purchases from the OFDAs.

Based on the empirical outcomes, significant differences existed between married people and satisfaction in using OFDA. Online food delivery service providers and restaurant owners should understand that the specific segmentation of marital status and order frequency determines the success of online food delivery services and applications. The stakeholders can focus on both market segmentations to increase the target population's acceptance and usage (Allah Pitchay et al., 2022). For example, restaurant owners can provide package menus for adults and children or married couples via OFDA.

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