

Third-Party Online Food Delivery vs Silo Fast-Food Restaurant Application, Which One Will Sustain in Greater Jakarta?

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Abstract

Online food delivery has been growing rapidly in Greater Jakarta which is the most populous metropolitan area in Indonesia. The rapid growth has opened lots of opportunities for businesses to join in the market. Various types of online food delivery such as third-party online food delivery applications and silo fast-food restaurant applications have been emerging at the speed of light in the area. The competition between each business has been very intense that makes us wonder which type of application will sustain in the future. We have performed survey-based research to capture the preferences of the users specified on the university students as the potential target who use online food delivery service the most. The result of this research shows that the sustainability of online food delivery relies on its competitive advantages in terms of pricing, timesaving, and practicality.

Keywords

Third-Party Online Food Delivery Application, Silo Fast-Food Restaurant Application, Sustainability, University Student, The Greater Jakarta.

1. Introduction

Online transport services have been coming to Indonesia since 2010, this type of service has grown rapidly since 2015 when GoJek, one of Indonesia's local transportation platforms launched a mobile app for motorcycle-taxi service and became popular in Indonesia (Damaini et al. 2018). Various online-based transportation services are also growing rapidly in Indonesia especially in areas such as Jakarta, Bogor, Depok, Tangerang, and Bekasi. The Statista report noted that the number of monthly active users (MAU) of ride-hailing company GoJek as of November 2019 are mostly from Indonesia, with a total MAU reach 29.2 million users. The next position is Vietnam with a MAU of 4.3 million users. Then Thailand and Singapore with 2 million and 800 thousand users, respectively (statista.com 2021). Indonesia has the largest GoJek users due to crowded conditions and the population density in urban areas (Moerti 2020). This is an opportunity for online transport service providers since public transportation is still a problem in Indonesia. (Damaini et al. 2018).

In the beginning, GoJek only has three services, namely Go-Ride for motorcycle-taxi service to pick up passengers, Go-Send for document delivery, and Go-Shop for fulfilling all customer request through online drivers. Catherine Hindra Sutjahyo, Chief Food Officer of GoJek Group said that for approximately one month, 80% of public demand for Go-Shop was food. Therefore, Go-Food was launched due to the large demand for food as an alternative to Go-Shop (Vamela 2021). Go-Food services help empower Micro Medium Small Enterprises (MSMEs) by becoming Go-Food merchant partners, not only big restaurants, or food merchant owner, but also home businesses can also register on Go-Food online without having a physical merchant. Beside Go-food from GoJek, there is also Grab-Food from Grab which was launched on 2 May 2016. The first intention of this new service is to provide the people of Jakarta to try all types of new cuisines without having to be stuck in traffic or having to make reservations in advance said Cheryl Goh, Group VP of Grab Marketing (grab.com 2016) market segmentation for food delivery services on Grab or Grab-Food is Gen Z. Moreover, Gen Z is a digital native generation. They understand and use technology and digital platforms every day. Likewise, with GoJek. GoJek's VP of Corporate Affairs Food and Groceries Rosel Lavina said, in capturing the Gen Z market, the strategy that Gojek generally applies is to build character. "So, the content that we

present can always be relevant to their daily lives. This is an added value for Gen Z circles," he said. Both GoJek and Grab are targeting the Gen Z market because the potential is considered large. According to the census of the Central Statistics Agency (BPS), Generation Z is the largest segment in Indonesia which covers 27.94% of the total population (Burhan 2021). IDN Times conducted a survey to observe the consumer's behavioral change in using the online food delivery service that involved 258 respondents in 6 cities in Indonesia. The result shows that there is a consumer's behavioral change caused by online FDA service. And to our surprise, 44.2% of the respondents are university students that still have no fixed income and 70.9% of the respondents, order food online because they are too lazy to go outside (Cahya 2019). Based on these findings, we choose university students because they are part of the Gen-Z and a potential target since they use online food delivery services the most compared to other types of users such as office workers, etc.

The COVID-19 pandemic arrived in early 2020 for Indonesia, and the government issued public activity restriction that enforced people to stay at home. The restrictions have made consumers to be more socially restrictive resulting in more demand for online food delivery service since they are not allowed to go outside their homes without any urgent matters. This is because the delivery is done without any contact between the deliverer and the recipient (Hidayat 2020). Other services such as Traveloka and Shopee which are lifestyle and e-commerce applications started to join the market by adding food delivery to its services. On the other hand, several restaurants are also starting to launch their own applications and getting enthusiasm from Indonesian people. The application is included in the top rating chart for the food & drink category application on the Google Play Store for Android and the App Store for iOS by April 29th, 2021. The application, such as McDonald's, the world's largest fast-food restaurant from California, USA which launched its application in 2019, Kopi Kenangan, one of the fastest growing grab-and-go coffee chains in Indonesia also launched its application in 2019, and Chatime, a beverage restaurant from Taiwan which is famous for its Pearl Milk Tea Beverages products also launched an application in September 2020, so that people can place orders for pick-up and delivery. Based on these facts, it is concluded that online food deliveries are becoming a trend in Indonesia. A lot of online food ordering mobile applications are appearing everywhere. Two types of food ordering applications currently exist in Indonesia: third party online food delivery applications and silo fast-food restaurant applications. Third-party online food delivery applications are transportation-based applications with lots of options for restaurants while silo fast-food restaurant applications are applications that only sell one specific restaurant's menu. To make the readers clearer about the difference between third party food delivery application and silo fast-food restaurant application, we created a comparison in table 1 to show the difference between both application types based on our desk research below:

Table 1. Features comparison between third party online food delivery application and silo fast-food restaurant application

Features	Third party Online Food Delivery Application	Silo Fast-Food Restaurant Application
Push notification for promo in specific restaurant	V	V
Personalization	X	V
Using loyalty points for the transaction	V (general)	V (more specific)
Delivery service monitored by the restaurant	X	V
Many choices of restaurant	V	X
Free shipping promo	More	Less
Memory in phone	More data usage	Less data usage
Food Recommendation	X	V
Restaurant recommendation	V	X
Can only order from that specific restaurant	X	V
Can compare prices between restaurants	V	X
Application maintenance	Often	Less often

This research has the following objective: (1) To identify the majority preferences between the third-party online food delivery application and silo fast-food restaurant application in Greater Jakarta, Indonesia; (2) To identify the sustainability of third-party online food delivery application and silo fast-food restaurant application; (3) To analyze what is the indicator that makes university students choose the third-party online food delivery application or silo fast-food restaurant application in Greater Jakarta, Indonesia; (4) To identify how both applications can sustain longer.

2. Literature Review

The previous research mostly explains about how food delivery applications affect the consumers' behavior and purchase intentions. Some of the research mentioned are:

Table 2. Literature review based on previous research that has been conducted related to online food delivery application

Title	Year	The Finding of Results
The Impact of Online Food Applications during the Covid-19 Pandemic	2021	The rise of food and beverage purchases online started in early 2020 just after the pandemic hits and the government started the social restrictions. This resulted in increased transaction in GrabFood online food delivery by 4% which concludes that consumer behavior in a work from home or split office situations, prefer to use online food deliveries. (Candra et al. 2021)
Role of mobile food-ordering applications in developing restaurants' brand satisfaction and loyalty in the pandemic period	2021	This research shows that if the user of mobile food ordering application is satisfied with the application, they will also be satisfied with the restaurant brand and be loyal to it. Using structural model, this study finds out there is a positive impact of mobile food-ordering application usage satisfaction on brand satisfaction and brand loyalty. (Dirsehan and Cankat 2021)
First party and third-party food delivery apps, which is better in Indonesia?	2020	This research is doing comparison between the first party and third-party food delivery application in Indonesia. Using qualitative method, out of five respondents who have used the pizza delivery app, the result shows that the first party application is more preferred because it is more trustworthy than the third-party app. (Benhardy & Ronadi 2020)
Evaluating the customers' dining attitudes, e-satisfaction, and continuance intention toward mobile food ordering apps (MFOAs): evidence from Bangladesh	2020	This research shows that perceived confirmation and usability is significant to the mobile food application usage in Bangladesh. The intention to use mobile food application continuously is affected by the customer's e-satisfaction. (Al Amin et al. 2021)
Impact on Online Food Delivery on Customers	2020	The objectives for this study is to understand how the customers are aware about mobile food applications, the factors of why they use those applications, what are their expectations, do they understand other methods of comparing online food applications, are they aware of the electronic ordering process, and which site do they order food from most using information gathered through sets of questions and secondary information collected from various sources ranging from magazines through websites of people working in the industry. (Churchil et al. 2020)
Review of Online Food Delivery Platforms and their Impacts on Sustainability	2020	This study finds out there are positive & negative impacts of online food delivery based on the three pillars of sustainability framework which consist of Economic, social, environmental impact. The stakeholders should consider how to minimize the negative impacts & promote the positive impacts of online food delivery to ensure that it will sustain in every sector. (Li et al. 2020)
The Effect of Food Delivery Application on Customer Loyalty in Restaurant (Korea)	2020	This research shows that customer's usability, mobility, and reliability impacted the satisfaction and loyalty of food delivery application in South Korea. This research also found out that being informative is not significant to the satisfaction and loyalty. We can come out to a conclusion that food application developers should focus on improving mobility and trust instead of providing too much information. (Cha and Seo 2020)

Intention to Use Online Food Delivery Service in Malaysia among University Students	2021	This research finds out the intention to use OFD service is to save time, save money, perceived usefulness, and give the feeling of prior online purchase experience. (Hooi et al. 2021)
Platform logistics or self-logistics? Restaurants' cooperation with online food-delivery platform considering profitability and sustainability	2021	Comparing between Self-logistic strategy and Platform logistic strategy, the conclusion to this study finds that different price decisions result in opposite relationships between online food & logistics price and the commission rate. Under the Self-logistics strategy, the restaurant determines an online bundled food & logistics price. (Niu et al. 2021)
What factors determining customer continually using food delivery apps during 2019 novel coronavirus pandemic period?	2020	The result of the research is customer's continuance intention of using FDAs during the COVID-19 pandemic is not only determined by satisfaction, but also influenced by perceived task-technology fit, trust, performance expectancy and social influence. (Zhao & Bacao 2020)
A Descriptive Analysis on Sustainable Business Strategy of Online Food Service Industry	2021	A descriptive study, this literature was systematically analyzed with the use of porter five force model and PESTLE Framework to comprehend the advances in the online food delivery industry. The research concludes that during COVID-19, some of the chief delivery aggregators launched contactless delivery systems. The online food delivery industry must introduce new features by upgrading their apps and offer more promos or discounts to retain the existing customers and for increasing their customer base. (Frederick & Parappagoudar 2021)
An Exploratory Study on The Intention to Use Online Food Delivery Among Corporate Workers	2021	Research aimed at investing the intention to use OFD service among corporate workers in Klang Valley the modified technology acceptance model to describe the acceptance of the online food delivery as a platform to improve quality of life. The results show that most corporate workers have moderate intention to use online food delivery services. They prefer to have food delivered to them, but they would not use the services in a daily basis. (Muhammad et al. 2021)
The value proposition of food delivery apps from the perspective of theory of consumption value	2020	The result of the study reveals that price, prestige, conditional, and visibility values have significant positive associations with purchase intentions toward FDAs. FDAs must maintain a steady flow of benefits, such as discounts for members, free items on condition, and special discounts to enhance the price value derived from FDA use. In conclusion, the findings in this paper are consistent with its predecessor and it has been discussed informally the consumers ordering through FDAs are looking for a price advantage. (Kaur et al. 2021)
Customer Satisfaction and Loyalty for Online Food Services Provider in India: An Empirical Study	2021	This research finds out there is a relationship between online food ordering application quality and customer satisfaction in India. This study came out with multiple suggestions for the food service providers, so they can create an application that is easy to use by the customer. (Sinha et al. 2021)
The Impact of Online Food Delivery Services on Restaurant Sales	2020	This study analyzes the possibility of cannibalization of brick-and-mortar store to online food delivery services using difference-in-differences methodology. It also finds out that there is a crowding-out effect and market expansions due to the OFD service and hybrid restaurants. It is found that convenience is the major factor for a consumer to order online. To survive in the online food delivery market, the stores should understand the consumer's behavior. (Collison 2020)

Why do people purchase from food delivery apps? A consumer value perspective	2021	Ever since the Covid-19 pandemic started, FDAs have been steadily gaining popularity due to features such as 'contactless delivery'. Result shows that association of visibility with consumption values suggest that advertisements and observation of peers' use of FDA affected consumers' perception of different forms and degrees of value obtained through consumption of FDAs. (Tandon et al. 2021)
Comparative Analysis of Key Factors Encouraging Food Delivery App Adoption Before and During the COVID-19 Pandemic in Thailand	2021	The factor of food delivery app's satisfaction before the pandemic was the price value however it changes during the pandemic. pre-pandemic era, the price value, social influence, habit, trust, convenience, and application quality significantly influenced satisfaction and in turn, satisfaction impacts the intention to use. (Chotigo and Kadono 2021)
Customers response to online food delivery services during COVID-19 outbreak using binary logistic regression	2020	Post Covid-19 pandemic, restaurants and services associated with them are severely affected prompting the Indian government to categorize F&B related services under the essential service label. The critical issues for OFDs in India are the health of individuals who deliver the food and the sanitation of the restaurants which forced existing customers to reconsider their decision for future purchases. (Mehroliya et al. 2020)
Why do people use food delivery apps (FDA)? A uses and gratification theory perspective	2020	Examining FDAs in the context of the USA, identifying their visibility to the extent of advertising, observability, and the usage of innovative products as observed by other consumers. The conclusion found was that the significant association of visibility with consumption values suggests that ads and observation of peers' use of FDAs affected consumers' perception of different forms and degrees of value derived through their consumption of FDAs. (Ray et al. 2019)
To survive or to thrive? China's luxury hotel restaurants entering O2O food delivery platforms amid the COVID-19 crisis	2021	Over the past two decades, the luxury segment in China's restaurant industry has expanded steadily including the burgeoning of luxury restaurants within hotel proximities. Due to the pandemic, fierce competition, declining customers, and increasing cost, these restaurants are under pressure to obtain and retain customers Over the past two decades, the luxury segment in China's restaurant industry has expanded steadily including the burgeoning of luxury restaurants within hotel proximities. (Yang et al. 2021)

The previous research shown in table 2 mostly explains about how food delivery applications affect the consumers' behavior and purchase intentions. The novelty point of this research is we would like to compare the third-party online food delivery application between silo fast-food restaurant application in Greater Jakarta. Our research respondents are also specified to university students because they are the most often to use online food delivery services based on previous survey. We want to know what is the indicators that make them choose each application type and will it sustain in the future.

3. Methods

The method that we use for this research is a quantitative approach by using questionnaire to collect the data. For data collection, we used online questionnaire Google Forms to collect the data necessary to analyze the effect of the existence of food delivery application towards the sustainability of fast-food applications in Greater Jakarta. Our questionnaire consisted of 8 main questions and 4 supporting questions to filter our respondent (Year of birth, Address, Occupation, and behavior when ordering food/drink online), distributed with the use of social media towards university students. The table 3 shown below explain about the indicators of each question that we will ask to our respondents.

Table 3. Research questions and indicators

No	Questions	Indicators
1	Location	Profile Segmentation
2	Year of birth	Profile Segmentation
3	Occupation	Profile Segmentation

4	Have you ever ordered via Silo Fast-Food Restaurant Application and Third-party Online Food Delivery Application?	Profile Segmentation (Behavior)
5	What are your reasons for ordering food/drink via mobile application?	Cause of Behavior
6	How often do you order food/drink via the application?	Engagements (Habit)
7	What indicators are most important to you when ordering food/drink online?	Feature
8	How many Third-Party Online Food Delivery Applications are there on your handphone?	Engagement
9	How many Silo Fast-Food Restaurant Application are there on your mobile other than Third-party Online Food Delivery Application?	Engagement
10	If one type of application were omitted, which one would you remove?	Preferences
11	Why did you choose to remove Silo Fast-Food Restaurant Application?	Reason for preference
12	Why did you choose to remove the Third-party Online Food Delivery Application?	Reason for preference

We have assessed our questionnaire beforehand by doing readability test, so that the respondent understands all our questions in the questionnaire. Here is the result of our questionnaire readability test:

Table 4. Research's questions readability test result

Tester	Feedback	Response
Johan Felix Alfarrel	Tester suggested question no 7 to be added an additional choice which is discount and cashback	Added discount and cashback option for question no 7
Felicia Grimaldi	All clear	-
Josephine Young	All clear	-
Adinata Susanto	All clear	-
Shelly Chantika	Too many choices	-

Based on our readability test result shown in table 4, one tester gave us a suggestion to add other choices on question number 7. This is due to the previous multiple choices available on number 7 are not clear enough for the tester to choose. On question number 7 we ask, "What indicators are most important to you when ordering food/drink online?". The choices available before are delivery fee promos, cheap prices, able to chat with the driver, food recommendation feature, loyalty points, and distance. One of the testers suggested us to add discounts and cashbacks as a choice. So, we decided to add this suggestion to our questionnaire. Based on the input from our testers, we finally decided to share our questionnaire that has been revised. We distributed our questionnaire using LINE, WhatsApp, Instagram, and Discord. We have segmented the LINE, Discord, and WhatsApp groups so that the respondents are relevant subjects which are university students, residing in the Greater Jakarta area, born within the year 1995 – 2010. Sampling technique used is non-probability since we have already decided and judged the respondents that have filled our questionnaire therefore, we used Judgement sampling. Snowball sampling technique is used to share the questionnaire from LINE, Discord, Instagram, and WhatsApp groups to other groups with the same respondent's category. Our questionnaire has been prepared in advance and the data collection procedure was conducted by the following details:

- Date: 2 November 2021 – 20 November 2021
- Place: Online (35 LINE groups, 3 WhatsApp groups, and 1 Discord group, Instagram story)

We managed to get 310 respondents as our raw data, but only 106 that match our required data. Using our first 4 supporting questions shown in table 3, the data that we consider valid are the respondents who is currently residing in the Greater Jakarta, is an active university student born in 1995-2010, and also had used both types of applications which are the third-party online food delivery application and the silo fast-food restaurant application, and still have both type of applications installed on their phone by the time they fill in the questionnaire. The reason behind this decision is because we want to know which application is more preferred by the respondents and what are their considerations for these preferences. Data cleansing is done using Python, and for the data visualization we use Tableau as the tools.

4. Results and Discussion

Based on 106 filtered data from our questionnaire, here are the results of the 8 main questions that we have asked towards our respondents depicted in bar graphics.

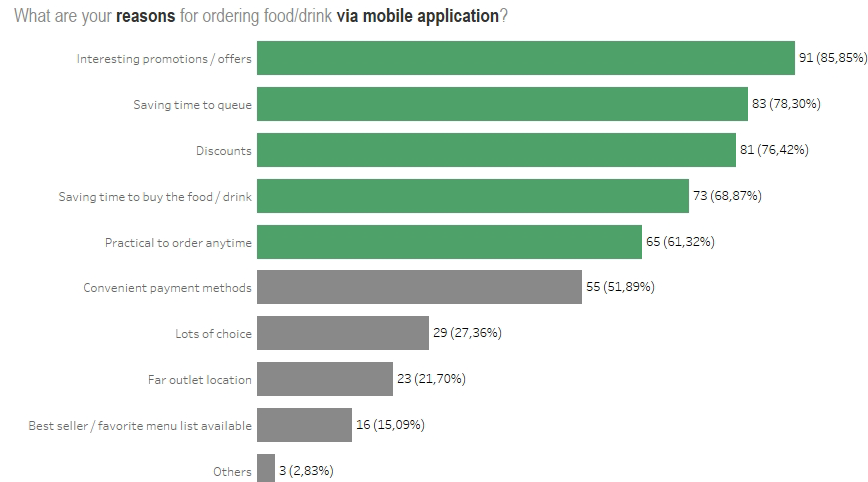


Figure 1. The reasons university students order food/drink via mobile application

The first question asked the respondents about the reasons why they order food or drink via mobile application. Based on the data shown in figure 1, most of them (about 85.85%) chose interesting promotions / offers, about 78.30% use it to save time from queuing, 76.42% answered because of the discounts, 68.87% to save time to buy the food/drink, 61.32% answered they use it because it is practical for them to order anytime, about 51.89% answered because of the convenient payment methods. Based on this data we can conclude that the encouraging factors for university students to order food/drink via mobile application are because of the interesting promotions / offers, discounts, and because they want to save time from having to buy the food and drinks by themselves. They can also make an order anytime with various payment methods. So, price, timesaving, and practicality are the things that should be highlighted by mobile application to attract more users that are university students.

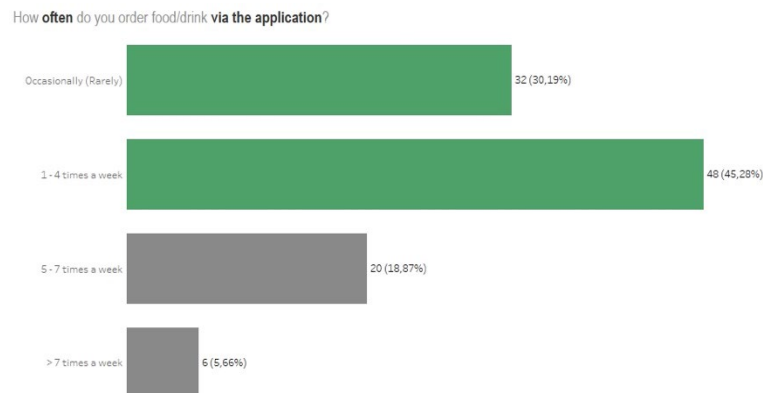


Figure 2. How often the respondents order food / drink via application

The second question asks the respondents how often they order food or drink via the application. From the chart shown on figure 2, most university students (about 45.20%) order food/drink via the application 1 to 4 times a week. Only 30.19% of the respondents answered they use it rarely. From this data we can conclude that the engagement comes from the university students is high since almost 70% of them use the application at least once a week. We can say from this data that university students use online food delivery service on daily basis. The third question asks the respondents, what indicators are most important to them when ordering food/drink online. Based on the respondents' answers displayed on figure 3, the most important indicators are discount with a total of 90.57% answers, followed by delivery fee promos, cheap prices, and cashback as the top 4 answers. Based on these data we can conclude that most university students order food online because of the price. Only 1.89% of respondents use online food delivery because of the distance. We can assume that university students will still use online food delivery even though the restaurants' location is near them as long as the price is cost-effective for them.



Figure 3. Indicators are most important to the responders when ordering food/drink online

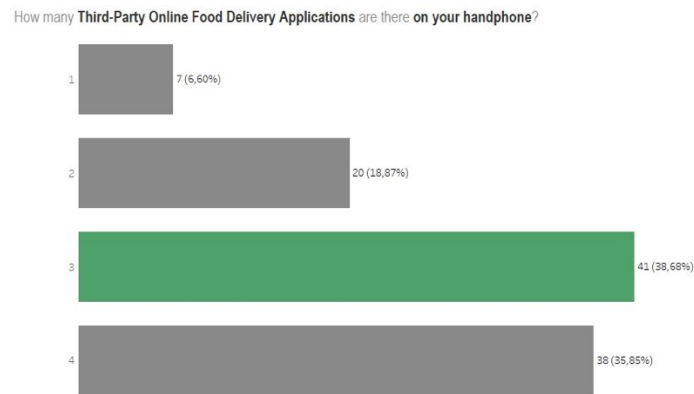


Figure 4. The total of third-party online food delivery applications available on responders' phone

The fourth question asks the respondents how many third-party online food delivery application do they have on their phone. Based on the chart shown in figure 4, most respondents answered that they have 3 third-party applications (about 38.68%), followed by 4 applications (about 35.85%). Based on this data, we can conclude that most university students are not loyal to one application. When they order food / drink online, they put some consideration first, which application shall they use. This means the applications need to focus on making their application more benefitable than the others since university students put some thoughts before choosing the application to order from.

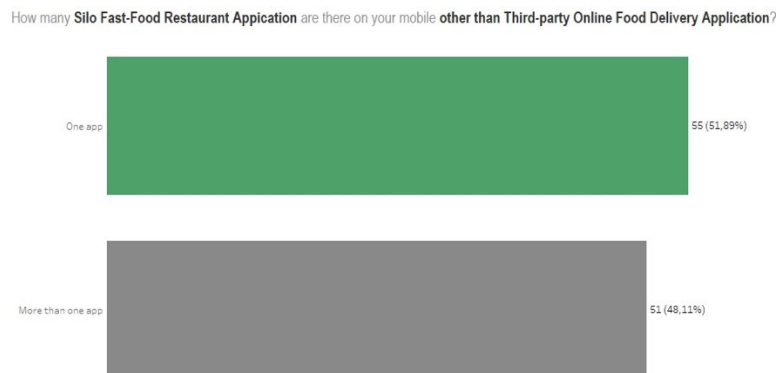


Figure 5. The total of silo fast-food restaurant applications available on respondents' phone

The fifth question asks the users how many silos fast-food restaurant applications there on their mobile phone are excluding the third-party online food delivery applications. Based on the data depicted in figure 5, About 51.89% of university students answered that there is only one silo fast-food restaurant application installed on their phone. These university students also have the third-party applications available on their phone based on the question number 4. We can conclude that these university students who answered they have only one silo fast-food restaurant application has dependency towards this application. They choose to keep this one application from a certain restaurant because they might be a loyal customer to this restaurant and still feel the benefit in saving the application on their phone. This data also suggest that the users of silo fast-food restaurant applications are mostly the loyal customers of the restaurants.

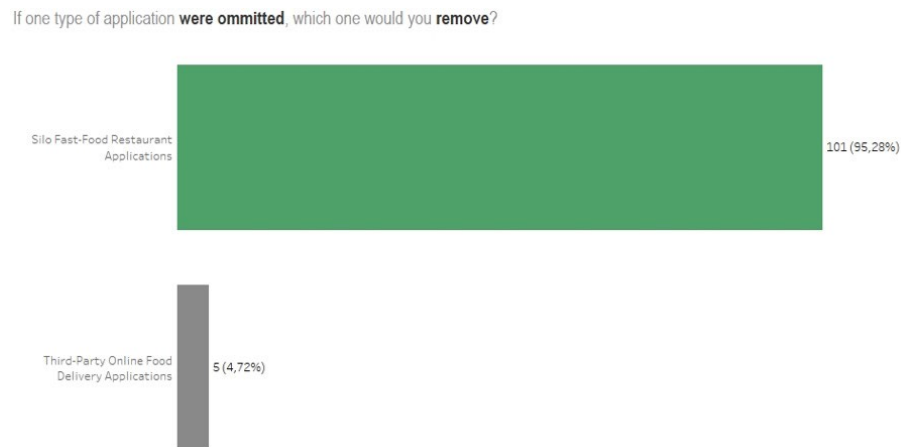


Figure 6. Respondent's preferences between silo fast-food restaurant application and third-party online food delivery application

The sixth question asks the users if one type of application were omitted, which one would they remove. Based on figure 6, almost a unanimous vote with 95.28% chose to remove silo fast-food restaurant application while only 4.72% chose to remove third-party online food delivery application. It could be concluded that majority of the university students prefer to use third party online food delivery application. This is because most silo fast-food restaurant application still lacks certain features that can makes its user loyal to use it.



Figure 7. The reason why users choose to remove the third-party online food delivery application

The seventh question is addressed to the users that chose to omit third-party online food delivery application. We asked the users their reasons in choosing to remove the third-party online food delivery application. Based on the chart shown in figure 7, about 80% answered that the reason is because notification for specific restaurant is not available. 60% said because there are too many choices of food. We can conclude that the university students who prefer to use

silo fast food restaurant applications than third party online food delivery applications are the users who have repeatedly ordered food / drink from the restaurant. They do not think third-party online food delivery application is necessary for them because when they order food / drink online, they mostly order from specific restaurants only.

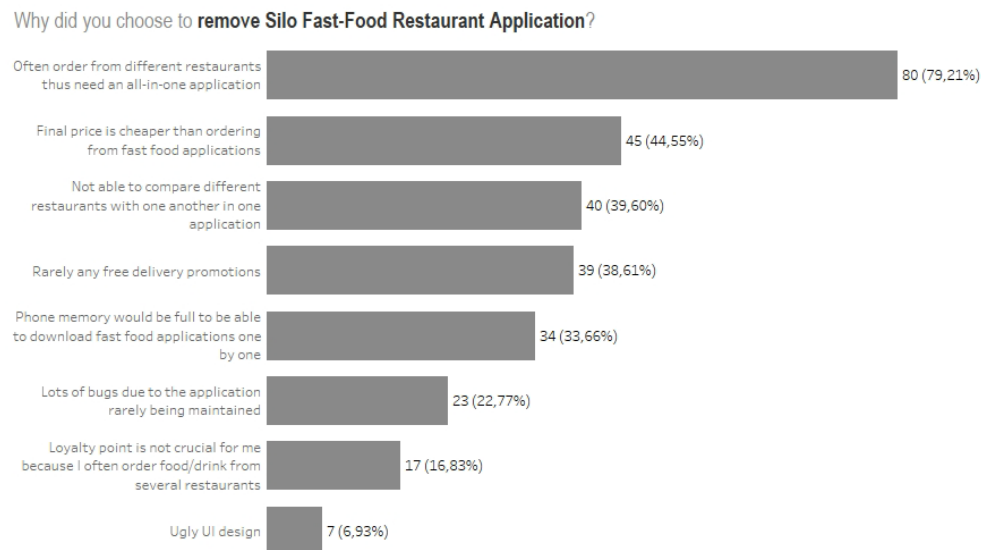


Figure 8. The reason why users choose to remove silo fast-food restaurant application

The eighth question addressed to the users that chose to omit silo fast-food restaurant application. We asked the users why they chose to remove silo fast-food restaurant application. Based on the chart shown in figure 8, about 79.21% answered the reason is because they often order from different restaurants thus, they need an all-in-one application. 44.55% said because the final price in the third-party online food delivery application is cheaper. 39.60% said that they want to compare different restaurants with one another, so they need an application which can fulfill their needs. We can conclude that the university students who prefer to use online food delivery application than silo fast food restaurant application are the users who often order from different establishments or get easily bored with one establishment and wants to achieve a reasonable price, so they need a comparison feature.

5. Conclusion and Limitation

Based on the survey's result, the third-party online food delivery application is more preferred compared to the silo fast food restaurants application. This is because university students prioritized promotion and price, and they also prefer to have an all-in-one application where they can order various menus from multiple restaurants. On the other hand, for the university students who often order from a specific restaurant only, they prefer to use the silo fast food restaurants application. For the silo fast-food restaurant application to sustain, they should offer more interesting promotion and focus on their loyal customers to keep ordering from them. Based on table 1, silo fast-food restaurant application is not as stable in terms of features compared to the third-party application since silo application is not focused on the application. But our data also show based on figure 3, that university students prioritize the price more than the feature. This means silo fast-food restaurant application still can compete as long as they can provide competitive advantage in terms of pricing. However, if the third-party application no longer can provide a competitive price, the users might also no longer use it and turns to the silo application. So, in order to sustain, both application needs to focus on giving a good price, practicality, and a good user experience for timesaving based on figure 1. To have a good user experience, silo application needs to be maintained regularly by having its own IT team or contract a trust-able vendor. When developing a new application, silo application the strategy needs to be evaluated first so the application will still be maintained when using a third-party vendor and not just a one-time contract. The limitations of this research are the location and generation. We conducted the survey in Greater Jakarta hence the result is exclusive in this area only. Different area segmentation might result different outcomes. This research is also limited to generations. Our respondents are restricted only to the university students born in 1995-2010. Different generations would produce different result and thus more research needs to be conducted.

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