

# View of Evaluating User Experience of Online Food Delivery ‘ShopeeFood’ using User Experience Questionnaire and Heuristic Evaluation

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**Abstract**—In the modern world, online food delivery service industry is growing rapidly and has become a major trend among consumers. Companies has started to compete in making the best food delivery application to win the market share. The applications made are preferred to be easy to understand, easy to learn, and give consumers a pleasant experience in getting their meals delivered. ShopeeFood is one of the features in a marketplace application called ‘Shopee’ which offers food delivery services, especially in region around Jakarta, Indonesia. This paper uses a mixed-method approach using User Experience Questionnaire (UEQ) and Heuristic Evaluation (HE). The results of UEQ evaluation showed ShopeeFood as an online food delivery application which gives positive evaluation in attractiveness, pragmatic quality, and hedonic quality. The result of HE approach also gives ShopeeFood quite a high score of 4.04 points in Likert Scale which means that ShopeeFood has fulfilled most of 10 aspects of usability in Heuristic Evaluation. Overall, ShopeeFood is concluded as an application that is easy to learn, easy to use, and gives pleasant experience to the user.

**Keywords**—HE; Online food delivery service; UEQ; usability; ux;

## I. INTRODUCTION

Computer and internet technology has been making everything easier to us. In the world when everything is available within a finger’s reach, food delivery industry surely is not left behind. Traditional food delivery has been evolved into online food delivery which offer consumer the ease of having their meals brought to the table within minutes of time.

This service offers enormous help to busy consumers with only little time to spare on getting meals, since consumers do not have to visit the restaurant at all to get their bellies filled. But to be able to deliver a good user experience, the application has to offer a good system so that the customer will not feel burdened and can feel the benefit offered.

Low quality online food delivery service might cause problems, such as: difficulty in ordering on the system, ordering the wrong food or restaurant, getting a wrong order, a slow delivery time, and several other issues. Hence companies which provides online food delivery service application ought to offer their consumers a good user experience to win the competition.

A good UX promotes a high-quality interaction between the users and the system. From the mentioned strength and weakness above, system offered by ShopeeFood presents an opportunity in online food delivery industry.

The purpose of this study was to analyse consumer’s user experience in using ShopeeFood when ordering online food

delivery in area around Jakarta, Indonesia with the approach of User Experience Questionnaire (UEQ) and Heuristics Evaluation (HE).

## II. LITERATURE REVIEW

### A. Food Delivery Service

An online food delivery service is a service that allows consumers to order meals over the internet from another website or application and then have the meals delivered to a designated location chosen by the consumer.

Online food delivery is rooted in traditional food delivery that relied on phone calls, requiring consumers to know a restaurant's phone number and a list of their meals to order. Online food delivery tends to show restaurants and their menu listings, so consumers can take the time to choose the meal they want and order in just a few clicks with minimal effort.

### B. ShopeeFood

"ShopeeFood" is a feature provided by a marketplace app "Shopee" that allows consumers to order their meals from the multitude of available restaurants listed on their listings. ShopeeFood not only provides the ability to deliver food to the consumer's table, but also makes it extremely simple to do so. Consumers simply select the food and drink they want from their chosen restaurant, enter their delivery address, choose a payment method, and a Shopee partner driver will promptly deliver the meal to them.

### C. Usability

Usability refers to the quality of the user's experience when interacting with a product or system. This experience may involve, but is not limited to, websites, software, devices or applications. Usability is about efficiency, effectiveness, and overall user satisfaction. Usability is a combination of factors including intuitive design, ease of learning, usability, recallability, frequency and severity of errors, and subjective satisfaction (Ministry of Health). United States Economic and Human Services, 2006).

The user-friendliness of the system is very important so that the system can continue to be used by users. Users will get full advantage of the user-friendly system that has high usability (Nielsen, 2019).

D. User Experience

In the world where everything is a competition, offering only good usability is no longer sufficient to be successful. In many aspects of our live, there will always be a choice of products that offer similar functionality and similar quality of usability. To succeed the competition, all aspects of consumer’s interaction with the company have to be considered as well.

An exemplary user experience meets the exact needs of the customer, comes with simplicity and elegance that makes the product a joy to own and a joy to use, and seamlessly merging the services of engineering, marketing, graphical and industrial design, and interface design (Nielsen Norman Group, 2016).

E. User Experience Questionnaire (UEQ)

The main purpose of the User Experience Questionnaire (UEQ) is to enable rapid and direct measurement of the user experience of interactive products. UEQ is a questionnaire based on six scales, representing the most important UX aspects of the larger set of products that result from construction (Laugwitz, Held, & Schrepp, 2008).

The UEQ items are questions with a 7-point response scale. They consist of pairs of terms with opposite meanings that encompass thematic dimensions. Examples of elements that represent scale stimuli are:

Annoying ○○○○○○ Enjoyable

The six scales and the corresponding items are:

1. **Attractiveness:** The impression of the product as a whole. Will users like the product? *Items: annoying/enjoyable, good/bad, unlikable/pleasing, unpleasant/pleasant, attractive/unattractive, friendly/unfriendly.*
2. **Efficiency:** Can you use the product quickly and efficiently? Does the UI look organized? *Items: fast/slow, inefficient/efficient, impractical/practical, organized/cluttered.*
3. **Perspiciuity:** Is the product easy to use? Does it feel familiar? *Items: not understandable/understandable, easy to learn/difficult to learn, complicated/easy, clear/confusing.*
4. **Dependability:** Do users feel in control of their interactions? Are interactions with the product safe and predictable? *Items: unpredictable/predictable, obstructive/supportive, secure/not secure, meets expectations/does not meet expectations.*
5. **Stimulation:** Is the product interesting and exciting to use? Are users motivated to continue using the product? *Items: valuable/inferior, boring/exciting, not interesting/interesting, motivating/demotivating.*
6. **Novelty:** Is the design of the product innovative and creative? Does the product capture the user's attention? *Items: creative/dull, inventive/conventional, usual/leading edge, conservative/innovative.*

Point 2, 3, and 4 are goal-oriented and practical aspects of quality. Point 5 and 6 are not goal-oriented. Point 1 is purely a value dimension. We hypothesize that user impressions on the attractiveness scale shape their impressions on other scales. Fig. 1 shows the assumed scale structure of the UEQ.

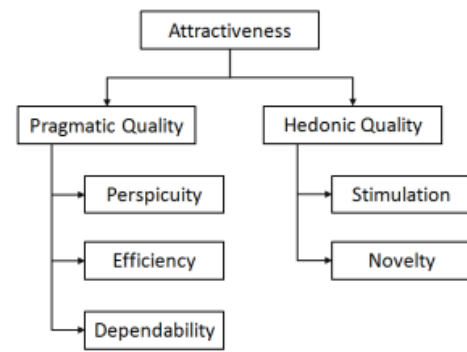


Fig. 1. Scale structure of the UEQ.

Additional information concerning the UEQ can be seen at <https://www.ueq-online.org/>. This site also allows to download of the handbook, a data analysis tool, and various translations of the questionnaire.

F. Heuristic Evaluation (HE)

Heuristic evaluation is a usability engineering technique for finding usability problems in user interface design so that they can be addressed as part of the iterative design process. Heuristic evaluation involves a small group of evaluators examining an interface and assessing its conformance with accepted usability principles (Nielsen and Molich, 1990; Nielsen 1994).

Nielsen’s Heuristic Evaluation has ten criteria to make an assessment:

1. **Visibility of System Status:** The design should always keep the user informed of what is happening, through appropriate feedback in a timely manner.
2. **Match Between System and the Real World:** The design must speak the language of the user. Use words, phrases, and concepts that are familiar to users, rather than internal jargon. Follows real-world conventions, making information appear in a natural and logical order.
3. **User Control and Freedom:** Users often take actions by mistake. They need a clearly marked "exit" to get out of the unwanted action without going through a lengthy process.
4. **Consistency and Standards:** Users need not wonder if different words, situations or actions mean the same thing. Follow industry and platform conventions
5. **Error Prevention:** Good error messages are important, but the best designs carefully prevent problems from occurring in the first place. Eliminate or verify error-prone terms and give users the option to confirm before they take action.
6. **Recognition Rather than Recall:** Minimize user memory load by displaying items, actions, and options. Users do not need to memorize information from one part of the interface to another. Information needed to use the design (for example, field labels or menu items) should be visible or easily accessible when needed.
7. **Flexibility and Efficiency of Use:** Shortcuts — hidden from novice users — can speed up interactions for professional users, so the design can meet the needs of even the most

advanced user. use inexperienced and experienced. Allows users to adjust routine actions.

8. *Aesthetic and Minimalist Design*: Interfaces should not contain irrelevant or rarely needed information. Each additional information unit in an interface competes with related information units and reduces their relative visibility.
9. *Help Users Recognize, Diagnose, and Recover from Errors*: Error messages should be expressed in plain language (no error codes), state the problem accurately, and suggest solutions in a meaningful way.
10. *Help and Documentation*: Preferably the system doesn't need further explanation. However, documentation may be needed to help users understand how to perform their tasks.

### III. METHODOLOGY

#### A. Data Collection Procedures

The research was conducted using a questionnaire with questions based on UEQ and HE aspects. The questionnaire is made with Google Form and divided into 3 parts: introduction, UEQ questions, and HE questions.

On the first part, prospective respondents were filtered on whether they are qualified to meet the research criteria or not. For the prospective respondent who was not a user of ShopeeFood, the questionnaire will end immediately, and their result will not count for the research.

This research is based on data collected from 100 respondents of ShopeeFood users living in area around Jakarta, Indonesia.

#### B. Data Analysis

This research is divided into two parts: UEQ-based approach and HE-based approach.

Questions on the second part of the questionnaire consist of a pair of terms with opposite meanings with 7-points scale in between them. The answers will then be calculated with data analysis tools provided by The UEQ Team from the website.

The last part of the questionnaire is question related to Nielsen's Heuristic Evaluation. Every aspect of HE is divided into 2 questions: a 5-point Likert Scale Sentiment Level (Very dissatisfied, not satisfied, neutral, satisfied, very satisfied) to get overall point of the aspect, and an essay question to get user's sincere opinion regarding heuristic aspects of ShopeeFood. The result on Likert Scale will be averaged to get overall point of ShopeeFood's usability and the essay answers will be summarized into similar-themed points.

### IV. RESULT AND DISCUSSION

#### A. UEQ Analysis Result

All collected data are then compiled on UEQ data analysis tools of Microsoft Excel given by UEQ website. Then the result of calculation will automatically be calculated by the tools.

On reading the result, values between -0.8 and 0.8 represent a more or less neutral evaluation of the corresponding scale, values > 0.8 represent a positive

evaluation and values < -0.8 represent a negative evaluation.

The overall results of the ShopeeFood UEQ scale are depicted in Fig. 2, where the average on the Attractiveness scale is 1.405; Perspicuity 1.483; Efficiency 1.193; Dependability 1.305; Stimulation 1.315; and Novelty 0.938.

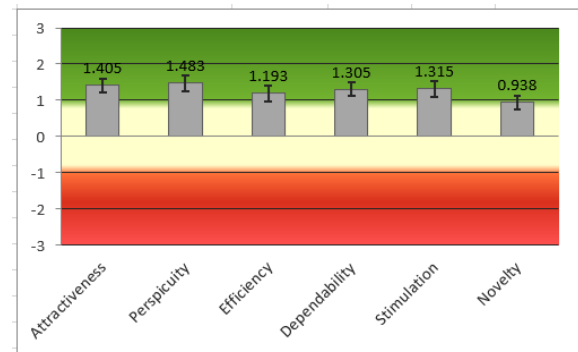


Fig. 2. UEQ 6 scales result.

As mentioned before, the 6 aspects of UEQ are narrowed down onto 3 categories, which are attractiveness – user's interest in using the system, pragmatic quality – system's accuracy and efficiency, and hedonic quality – system's design, creativity and innovation.

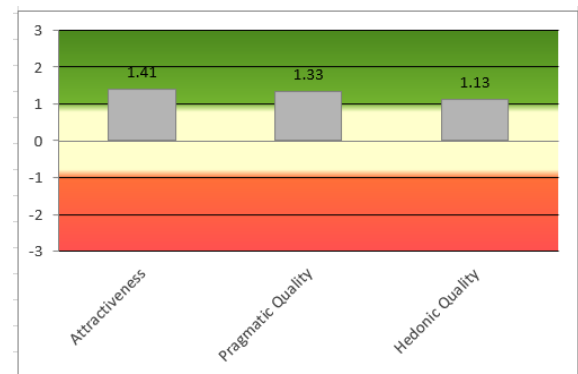


Fig. 3. UEQ 3 categories result.

The 3 categories scale are depicted in Fig. 3. With the same standard values of between -0.8 and 0.8 for neutral stance, > 0.8 for positive evaluation, and < -0.8 for negative evaluation.

Attractiveness stands alone as a pure valence dimension, and ShopeeFood got 1.41 of this scale. Whereas the pragmatic quality got 1.33, and hedonic quality 1.13. Based on this depiction, ShopeeFood got a good evaluation result overall with every category getting more than 0.8 points.

#### B. Hasil analisis dengan HE

On calculating the points of every aspect of HE, every answer of the Likert Scale is assigned to a point as depicted in Table 1.

TABLE I. Points in Likert Scale.

Sentiment Level	Numerical Value
Very dissatisfied (VD)	1
Not satisfied (NS)	2
Neutral (N)	3
Satisfied (S)	4
Very satisfied (VS)	5

The calculation of the questionnaire result is obtained from multiplying the numerical value of each sentiment by the amount of respondent, then adding the totals and dividing the number by the total number of respondents.

TABLE II. Visibility of system status Likert Scale.

Sentiment Level	Numerical Value	Responses	Total Point
VD	1	1	1
NS	2	2	4
N	3	19	57
S	4	52	208
VS	5	26	130
TOTAL			400
Divided by 100 (number of respondent)			4.00

Visibility of system status – as represented by question number 1 (Likert Scale) and 2 (essay question) – got the result of 4.00 point in Likert Scale, as seen on Table II. With several opinions regarding the visibility of system status aspect:

- Visual displayed on apps is easy to understand, consumers can easily tell on which steps of the progress they are at.
- The placement of the buttons tends to be confusing because they are not too common.
- Adding the amount of food ordered is considered difficult.
- The ordering process might be hard for new users to get used to.

TABLE III. Match between system and the real world Likert Scale.

Sentiment Level	Numerical Value	Responses	Total Point
VD	1	1	1
NS	2	0	0
N	3	14	42
S	4	52	208
VS	5	33	165
TOTAL			416
Divided by 100 (number of respondent)			4.16

Match between system and the real world – as represented by question number 3 (Likert Scale) and 4 (essay question) – got the result of 4.16 point in Likert Scale, as seen on Table III. With several opinions regarding the match between system and the real world aspect:

- The use of language is easy to understand.
- The use of jargon is words usually used in everyday scenario; therefore, it is still understandable even by new users.

TABLE IV. User control and freedom Likert Scale.

Sentiment Level	Numerical Value	Responses	Total Point
VD	1	1	1
NS	2	4	8
N	3	18	54
S	4	51	204
VS	5	26	130
TOTAL			397
Divided by 100 (number of respondent)			3.97

User control and freedom – as represented by question number 5 (Likert scale) and 6 (essay question) – got the result of 3.97 point in Likert Scale, as seen on Table IV. With several opinions regarding the user control and freedom aspect:

- Some user object that they cannot cancel ongoing order.
- Wrong order might still be changed by manually telling the driver on chat, but it is considered tricky because it cannot always be done.
- The ‘back’ button always available on every page is much appreciated.

TABLE V. Consistency and standards Likert Scale.

Sentiment Level	Numerical Value	Responses	Total Point
VD	1	1	1
NS	2	6	12
N	3	18	54
S	4	40	160
VS	5	35	175
TOTAL			402
Divided by 100 (number of respondent)			4.02

Consistency and standards – as represented by question number 7 (Likert Scale) and 8 (essay question) – got the result of 4.02 point in Likert Scale, as seen on Table V. With several opinions regarding the consistency and standards aspects:

- Displayed buttons are easy to understand.
- Icon and symbols used are quite commonly used; therefore, easy to understand.

TABLE VI. Error prevention Likert Scale.

Sentiment Level	Numerical Value	Responses	Total Point
VD	1	2	2
NS	2	8	16
N	3	15	45
S	4	36	144
VS	5	39	195
TOTAL			402
Divided by 100 (number of respondent)			4.02

Error prevention – as represented by question number 9 (Likert Scale) and 10 (essay question) – got the result of 4.02 point in Likert Scale, as seen on Table VI. With several opinions regarding the error prevention aspect:

- A ‘review order’ page available before user confirm to order the meal.
- ‘Restaurant is busy’ notification is shown when the restaurant exceeds certain number of order load to prevent long waiting time.
- Food or restaurant which are not available are greyed-out and cannot be chosen.
- Error prevention works as intended.

TABLE VII. Recognition rather than recall Likert Scale.

Sentiment Level	Numerical Value	Responses	Total Point
VD	1	0	0
NS	2	5	10
N	3	15	45
S	4	38	152
VS	5	42	210
TOTAL			417
Divided by 100 (number of respondent)			4.17



Recognition rather than recall – as represented by question number 11 (Likert Scale) and 12 (essay question) – got the result of 4.17 point in Likert Scale, as seen on Table VII. With several opinions regarding the recognition rather than recall aspect:

- Available instructions are clear and make it easy for the users.
- Users do not have to intentionally memorize steps to do desired actions.

TABLE VIII. Flexibility and efficiency of use Likert Scale.

Sentiment Level	Numerical Value	Responses	Total Point
VD	1	0	0
NS	2	5	10
N	3	17	51
S	4	45	180
VS	5	33	165
TOTAL			406
Divided by 100 (number of respondent)			4.06

Flexibility and efficiency of use – as represented by question number 13 (Likert Scale) and 14 (essay question) – got the result of 4.06 point in Likert Scale, as seen on Table VIII. With several opinions regarding the flexibility and efficiency of use aspect:

- Quite easy to understand, but a tutorial for new users will be appreciated.
- Too many features, it is hard to be used by new users.
- Hard to be understood, especially when used by middle-aged and elderly users.

TABLE IX. Aesthetic and minimalist design Likert Scale.

Sentiment Level	Numerical Value	Responses	Total Point
VD	1	2	2
NS	2	2	4
N	3	23	69
S	4	44	176
VS	5	29	145
TOTAL			396
Divided by 100 (number of respondent)			3.96

Aesthetic and minimalist design – as represented by question number 15 (Likert Scale) and 2 (essay question) – got the result of 3.96 point in Likert Scale, as seen on Table II. With several opinions regarding the aesthetic and minimalist design aspect:

- Information shown are relevant to usage.
- Application does not give unrelated display.
- The objects shown in application are too crowded, making it a bit hard to search a specific object.
- There are some foods which do not have any images.

TABLE X. Help users recognize, diagnose, and recover from errors Likert Scale.

Sentiment Level	Numerical Value	Responses	Total Point
VD	1	0	0
NS	2	6	12
N	3	18	54
S	4	41	164
VS	5	35	175
TOTAL			405
Divided by 100 (number of respondent)			4.05

Help users recognize, diagnose, and recover from errors – as represented by question number 16 (Likert Scale) and 17 (essay question) – got the result of 4.05 point in Likert Scale, as seen on Table X. With several opinions regarding the help users recognize, diagnose, and recover from errors aspect:

- Error notification contains information to fix the case.
- Error message use common language, so it is easy to understand.

TABLE XI. Help and documentation Likert Scale.

Sentiment Level	Numerical Value	Responses	Total Point
VD	1	4	4
NS	2	2	2
N	3	18	54
S	4	43	172
VS	5	33	165
TOTAL			399
Divided by 100 (number of respondent)			3.99

Help and documentation – as represented by question number 19 (Likert Scale) and 20 (essay question) – got the result of 3.99 point in Likert Scale, as seen on Table XI. With several opinions regarding the help and documentation aspect:

- Application help service section are easy to be found.
- The customer service is quite good, but it takes so long for a complaint to be responded.
- There should be a separate help section for ShopeeFood, not combined with the Shopee marketplace.

Compiled from all 10 aspects of HE, ShopeeFood got the average point of 4.04 Likert Scale, which shows that ShopeeFood costumers in area around Jakarta, Indonesia are satisfied with the system of ShopeeFood.

## V. CONCLUSION

Through the approach of UEQ and Nielsen’s HE, it can be concluded that: (1) ShopeeFood scores a positive evaluation from overall UEQ points, which all of them get more than 0.8 points on Attractiveness, Efficiency, Perspicuity, Dependability, Stimulation, and Novelty; (2) Average result of ShopeeFood got 4.04 Likert Scale on HE approach, which means consumers using ShopeeFood are satisfied with the system offered by ShopeeFood; (3) Overall input from consumers based essay answers mentions that ShopeeFood is quite an easy to understand system, but might take a while to get used to for a new user, especially if used by middle-aged and elderly users.

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