

# COMMON AND UNIQUE USER EXPERIENCE PROBLEMS ON E-COMMERCE WEBSITES

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## ABSTRACT

This research evaluated the user experience (UX) on the top three most visited e-commerce websites in Malaysia, and identified common and unique issues which affected user experience while interacting with such sites. Specific user experience criteria were used in the evaluation, which was adapted from earlier research, and consists of 40 metrics. These metrics were used to evaluate the utilitarian and hedonic features on the websites. The evaluation was conducted using three methods: quantitative questionnaires, qualitative open-ended questions, and qualitative semi-structured interviews. Twenty students participated in this research and they identified ten common user experience problems related to the utilitarian features (e.g., illogical organisation of the websites' content and lack of presenting detailed information about the products); and three unique user experience problems related to the utilitarian features (i.e., not obvious navigation and lack of suggesting complementary products from other shops). Furthermore, the participants identified four common user experience problems related to the hedonic features (e.g., not visually attractive websites, not creative design, and a lack of desirable design elements which evoke users' emotions and gratitude); they also identified seven unique user experience problems on only one of the tested websites (i.e., the website was not motivating).

## KEYWORDS

User Experience, UX, e-Commerce, Common, Unique, Malaysia, Utilitarian, Hedonic

## 1. INTRODUCTION

Nowadays, user experience has become a critical success factor for e-commerce websites. Owners of e-commerce websites should recognize that customers are looking to purchase appropriate products from websites which provide an enjoyable experience (Bernardo et al., 2012). User experience is defined as: "A person's perceptions and responses resulting from the use and/or anticipated use of a product, system or service" (ISO 9241-210:2010, 2010). It includes two aspects of a product (system) relating to the utilitarian (pragmatic/functional) and the hedonic (Mtebe, 2020). The utilitarian aspect relates to the functional characteristics of the product, its utility and usability: i.e., learnability, informativeness, efficiency, customer support, and simplicity (Hassenzahl, 2008; Hassenzahl et al., 2008; Hellianto et al., 2019). The hedonic aspect, however, relates to the emotional experience, customer satisfaction and responses which result from using the product: i.e., attractiveness, entertaining features, and novel functionality (Hellianto et al., 2019; Minge & Thüring, 2018; Hassenzahl, 2005; Di'az-Oreiro et al., 2021; Febriandika et al., 2020; Hassenzahl, 2001). Customers are concerned about both the utilitarian and hedonic aspects of any e-commerce website. Good and positive user experience on e-commerce websites can increase customer's trust and intention to purchase from a website, and therefore it increases the revenue of the websites (Hellianto et al., 2019; Febriandika et al., 2020; Huang & Wang, 2022; Suidiana et al., 2021).

E-commerce is growing rapidly in Malaysia and it is expected to continue growing in the future (Chan et al., 2018; Kemp & Moey, 2020; Morgan, 2020; GlobalData, 2020). Specifically, e-commerce is expected to reach MYR 51.6 billion (US\$ 12.6 billion) in Malaysia by 2024 (GlobalData, 2020). Such growth should be considered and more attention therefore should be paid to improve the user experience of such websites in order to reap the advantages of having positive experience for users. However, the literature review showed that there is a lack of research which has evaluated the user experience on e-commerce websites in Malaysia and which has highlighted common and unique issues which affect the user experience. The aim of this research

is to evaluate the user experience on the top three most visited e-commerce websites in Malaysia and to identify common and unique issues which affect users' experience while interacting with them.

## **2. RELATED WORK**

Earlier research investigated user experience in e-commerce websites and identified key factors or attributes which affected the user experience on such websites. For example, Bozzi & Mont'Alvão (2020) investigated the user experience of female apparel e-commerce websites. The results showed that lack of detailed information about products, specifically fit and size, was the most significant problem the users faced which affected their user experience.

Alternatively, the research conducted by Sudiana et al. (2021) identified a total of 43 key success factors which could be considered to make a positive user experience on e-commerce websites. These included obvious navigation, ease of use, quality of information, attractive design, and high speed of downloading. Bonastre and Granollers (2014) also presented a set of heuristics which, if considered, can contribute to positive user experience on e-commerce websites. The heuristics were categorised into six groups based on the stages of the buying decision process. Similarly, Bascur et al. (2021) suggested a set of heuristics which should be considered to create a positive user experience on e-commerce websites. The heuristics included: usability, accessibility, desirability, usefulness, and the extent to which the websites were valuable, findable, and credible. Furthermore, Hinderks et al. (2018) developed a user experience questionnaire to measure user experience for web-based applications. This consisted of six user experience variables, which included: attractiveness, efficiency, perspicuity, dependability, stimulation, and novelty.

Other research was found in the literature which investigated the influence of certain design variables on user experience. For example, Vila et al. (2021) examined the influence of four design variables (content, usability, functionality, and branding) on user experience of tourism websites. The results proved that both usability and branding (detailed information about tourism products and services) had significant effects on the user experience of such websites. Febriandika et al. (2020) also investigated the influence of hedonic features (attractive designs, entertaining features, and gamification) and utilitarian features of an e-commerce website on user experience. The results showed that the hedonic features of an e-commerce website significantly affected the user experience, and the trust in e-commerce. Similarly, Hellianto et al. (2019) examined the effect of functional features and hedonic features on the user experience on an e-commerce website in Indonesia. The results showed that three functional features related to directness, simplicity and informativeness affected the user experience on the site. The results also showed that the hedonic features which affected the user experience on the website related to delicacy and attractiveness. The literature showed that there is a lack of research which evaluates the user experience of e-commerce websites using comprehensive criteria, and which provides a detailed explanation regarding specific issues users face while interacting with these websites.

## **3. METHODOLOGY**

The top three most visited e-commerce websites in Malaysia were identified using the Alexa ranking website (2021), which is one of the major global ranking websites. The three highest ranking according to Alexa for April 2022 were: Shopee.com.my, Lazada.com.my and Pgmall.my. In this paper, we will refer to the three websites as website 1, website 2 and website 3, respectively for simplicity. In order to evaluate the user experience of the three selected websites, the user experience (UX) evaluation criteria, which were developed by earlier research (2022) specifically for e-commerce websites, were used (see Table 1). The criteria included 40 metrics; 27 of them were suggested to evaluate utilitarian quality, and 13 of them were suggested to evaluate the hedonic quality of e-commerce websites.

Table 1. The UX criteria suggested by Hasan (2022)

The UX evaluation criteria	
Metrics to evaluate utilitarian quality	Metrics to evaluate hedonic quality
<ol style="list-style-type: none"> <li>1. Obvious navigation;</li> <li>2. Logical and clear structure;</li> <li>3. Effective internal search engine;</li> <li>4. A progress indicator is displayed at the top of the checkout pages;</li> <li>5. "Call to action buttons" (i.e., "add to cart" or "buy now") are displayed clearly;</li> <li>6. Clear advertising of new products;</li> <li>7. Detailed information about the product is provided;</li> <li>8. Up-to-date content;</li> <li>9. Clear presentation of order charges;</li> <li>10. Accurate presentation about the delivery dates;</li> <li>11. Related products are recommended clearly;</li> <li>12. Quick downloading of the website's pages;</li> <li>13. Accessible shopping cart from all the sites' pages;</li> <li>14. Simple registration;</li> <li>15. Alternative methods for the delivery of the order are provided;</li> <li>16. Alternative methods for the payment are provided;</li> <li>17. Consistent interface;</li> <li>18. Easy-to-order process;</li> <li>19. Easy to learn;</li> <li>20. Efficiency;</li> <li>21. Availability of privacy policy;</li> <li>22. Clear presentation of the shipping, return or exchange policy;</li> <li>23. Visible contact information;</li> <li>24. Informative frequently asked questions (FAQ) section;</li> <li>25. If an error occurs, simple and clear error messages are displayed to get out of the error;</li> <li>26. Secure website (i.e., security logos are displayed);</li> <li>27. Foreign language and currency support.</li> </ol>	<ol style="list-style-type: none"> <li>1. Enjoyable experience;</li> <li>2. Being pleased to interact with the website;</li> <li>3. Visually attractive interface;</li> <li>4. Meeting expectations;</li> <li>5. Exciting website;</li> <li>6. Interesting website;</li> <li>7. Motivating website;</li> <li>8. Creative website;</li> <li>9. Inventive website;</li> <li>10. Having innovative features;</li> <li>11. Having desirable design elements which evoke emotion and gratitude;</li> <li>12. Having novel functionality;</li> <li>13. Allowing users to engage in their tasks.</li> </ol>

To evaluate the user experience of the three websites using the UX criteria, questionnaires and semi-structured interviews were employed. The questionnaires were designed to collect: background information from the participants, as well as quantitative and qualitative data regarding users' experience while interacting with each of the three websites. The questionnaire included 40 statements corresponding to the 40 metrics of the UX criteria. Twenty voluntary students from the School of Computing at the UTM University participated in this research and evaluated the three websites, using a within-subjects approach. For each website, the participants were asked to rate their agreement to each of the statements using a seven-point Likert scale. The participants were also asked to respond to open-ended questions corresponding to the 40 statements to identify specific problems relating to each statement. After filling-out the questionnaires, the participants were asked to join a semi-structured interview to discuss more about their experience while interacting with the websites. An advertisement for voluntary participants was sent to the students of the Faculty of Computing at the UTM University via WhatsApp, Telegram and Email. The advertisement clarified that the researchers would give each participant an honorarium of RM50.

Regarding the analysis, descriptive analysis was used to describe the background information of the participants. Likert scores were calculated for each statement in each of the questionnaires related to the three e-commerce websites to describe participants' responses to the 40 statements. A Likert score of 1-3 was regarded as a negative response, 5-7 as a positive response and 4 as a neutral one. Negative responses identified

several user experience problems on the websites. The qualitative data obtained from participants' responses to the open-ended questions for each of the 40 statements in each of the questionnaires relating to the three e-commerce websites were analysed. These also identified various user experience problems on the websites. The qualitative data obtained from the analysis of the semi-structured interviews were examined and this resulted in identifying more details regarding users' problems on the websites.

It is worth mentioning that in this paper we used method 1 or M1 to refer to the quantitative method used in the questionnaire using Likert scores. Method 2 or M2 refers to the qualitative method used in the questionnaire using open-ended questions while Method 3 or M3 refers to the qualitative method using interviews. User experience problems identified by each of the three methods were compared and this resulted in identifying common and unique problems on the tested websites. The results of the analysis of the three methods and the user experience problems which were identified by each of the three methods are presented in the Results and Discussion Section.

#### 4. RESULTS AND DISCUSSION

This research addressed the gap which was identified in the literature and evaluated the user experience of the top three most visited e-commerce websites in Malaysia using comprehensive criteria. This section presents the results obtained from the analysis of the three methods employed in this research: the quantitative data obtained from the analysis of the Likert scores of the questionnaires; the qualitative data obtained from the analysis of the open-ended questions in the questionnaires; and the qualitative data obtained from the analysis of the interviews. It also presents the common and unique user experience problems on the websites. This section also highlights similar findings obtained from earlier research regarding common user experience problems which were identified previously.

The 20 students who participated in this research were: 18 males and 2 females. Their ages were between 18 to 22 years old. All the participants had experience in purchasing products from e-commerce websites. The results showed that the three tested websites had various user experience problems related to utilitarian and hedonic features. Table 2 summarizes the user experience problems related to the utilitarian features, obtained from the analysis of the three methods, while Table 3 summarizes the user experience problems related to the hedonic features, obtained from the analysis of the three methods. Tables 2 and 3 show that the quantitative analysis of the questionnaire obtained from the analysis of the Likert scores (M1) identified the smallest number of user experience problems, while the qualitative data obtained from the interviews (M3) identified the largest number of user experience problems on the websites.

Table 2. The user experience problems relating to the utilitarian features, which were obtained from the analysis of the three methods

	Problems Related to Utilitarian Features	Website 1			Website 2			Website 3		
		M1	M2	M3	M1	M2	M3	M1	M2	M3
1	The navigation is not obvious throughout the website	x	x	x	x	x	x	x	✓	✓
2	The website has unclear/ illogical structure / hierarchy	x	✓	✓	x	✓	✓	x	✓	✓
3	The website has an ineffective internal search engine	x	x	x	x	x	x	✓	✓	✓
4	Lack of progress indicator at the top of the checkout pages	✓	✓	✓	✓	✓	✓	✓	✓	✓
5	Lack of providing detailed information about the products	x	✓	✓	x	✓	✓	x	✓	✓
6	Inaccurate and unclear information about the delivery dates	x	x	✓	x	x	✓	x	x	✓
7	Lack of recommending related or complementary products from the website	x	x	x	x	x	x	✓	✓	✓
8	Slow downloading of the website's pages	x	x	x	x	✓	✓	✓	✓	✓
9	Lack of providing alternative methods for the delivery of the order	✓	✓	✓	✓	✓	✓	✓	✓	✓
10	The website is inefficient	x	x	x	x	✓	✓	x	✓	✓

11	Lack of suggesting solutions if an error has occurred while interacting with the website	✗	✓	✓	✗	✓	✓	✗	✓	✓
12	Inaccurate foreign language support	✗	✓	✓	✗	✓	✓	✗	✓	✓
13	Lack of foreign currency support	✗	✓	✓	✗	✓	✓	✗	✓	✓
✗: A problem was not identified by the method										
✓: A problem was identified by the method										

Table 3. The user experience problems relating to the hedonic features, which were obtained from the analysis of the three methods

	Problems Related to Hedonic Features	Website 1			Website 2			Website 3		
		M1	M2	M3	M1	M2	M3	M1	M2	M3
1	The user's experience with the website was not enjoyable	✗	✗	✗	✗	✗	✗	✗	✓	✓
2	The user was not pleased to interact with the website	✗	✗	✗	✗	✓	✓	✓	✓	✓
3	The website was not visually attractive	✗	✓	✓	✗	✓	✓	✗	✓	✓
4	The website did not meet the user's expectations	✗	✗	✗	✗	✗	✗	✗	✓	✓
5	The website is motivating	✗	✗	✗	✗	✗	✗	✗	✗	✓
6	The website was not creative	✗	✗	✗	✗	✓	✓	✗	✓	✓
7	The website was not inventive	✗	✗	✗	✗	✗	✗	✗	✓	✓
8	The website did not have innovative features	✗	✗	✗	✗	✗	✗	✗	✓	✓
9	The website did not have desirable design elements which evoked emotion and gratitude	✗	✓	✓	✗	✓	✓	✗	✓	✓
10	The website did not have novel functionality: it was not new or unusual in an interesting way	✗	✗	✗	✗	✗	✗	✗	✓	✓
11	The website did not allow users to engage in their tasks	✗	✗	✗	✗	✗	✗	✗	✓	✓
✗: A problem was not identified by the method										
✓: A problem was identified by the method										

Specifically, the results obtained from the analysis of the three methods identified 13 user experience problems related to utilitarian features (including 10 common and 3 unique problems), and 11 problems related to hedonic features (including 4 common and 7 unique problems). The following explains in detail the user experience problems which affected the participants while interacting with the tested websites.

- *User Experience Problems Related to the Utilitarian Features*

The participants identified ten common user experience problems on the tested websites related to the utilitarian features, as shown in Table 1. These related to:

1. Illogical and unclear organisation of the websites' content. This problem was identified from the analysis of methods 2 and 3 on all the websites.
2. Lack of displaying a progress indicator at the top of the checkout pages. This problem was identified from the analysis of the three methods on all the websites.
3. Lack of presenting detailed information about the products, such as materials or size. This problem was identified from the analysis of methods 2 and 3 on all the websites. This problem was also one of the most significant problems which affected user experience on e-commerce websites according to earlier research (Hellianto et al., 2019; Sudiana et al., 2021; Bozzi & Mont, 2020; Vila et al., 2021).
4. Inaccurate and unclear information about the delivery dates. This problem was identified from the analysis method 3 only on all the websites.
5. Slow downloading of the website's pages. This problem was identified on website 2 based on the analysis from methods 2 and 3. It was also identified on website 3 based on the analysis of the three methods. It is worth mentioning that earlier research (Sudiana et al., 2021) considered high speed of downloading as one of the key success factors which could be considered to make a positive user experience of e-commerce.

6. Lack of supporting alternative methods for the delivery of the order. This problem was identified from the analysis of the three methods on all the websites.
7. Inefficient website. This was related to the poor organization of website 3, difficulty in finding a product in it and slow downloading of its pages. This problem was also identified on website 2 because it uses many pop-ups which disturbed users and because of the slow downloading of its pages. This problem was identified from the analysis of methods 2 and 3. Efficiency was also considered as one of the user experience variables that should be taken into consideration to result in a positive user experience (Hinderks et al., 2018).
8. Lack of providing simple and clear error messages if an error occurs while interacting with the websites. This problem was identified from the analysis of methods 2 and 3 on all the websites.
9. Inaccurate foreign language support; when the language of the interface of the websites was changed, only a few elements were displayed using the selected language. This problem was identified from the analysis of methods 2 and 3 on all the websites.
10. Lack of foreign currency support; prices of the products were only displayed in Malaysian Ringgit (RM). This problem was identified from the analysis of methods 2 and 3 on all the websites.

The participants also identified three unique user experience problems related to the utilitarian features only on website 3, as shown in Table 1. These related to:

1. The navigation was not obvious throughout the website; this problem was identified from the analysis of methods 2 and 3. Obvious navigation is considered one of key success factors which should be considered to make a positive user experience on e-commerce websites (Sudiana et al., 202).
2. Ineffective internal search engine function; the internal search results included redundant and inaccurate results. This problem was identified from the analysis of all the methods.
3. Lack of suggesting complementary products from other shops. This problem was identified from the analysis of all the methods.

- *User Experience Problems Related to the Hedonic Features*

The participants identified four common user experience problems on the tested websites related to the hedonic features, as shown in Table 2. These related to:

1. The users were not pleased to interact with the websites 2 and 3. The users explained the reasons behind this, which related to it not being easy to return products to website 2 and the excessive number of pop-up advertisements displayed on it. For website 3, the reasons for users being displeased related to its failure to present many products. This problem was identified on website 2 based on the analysis from methods 2 and 3, and it was identified on website 3 based on the analysis of the three methods.
2. The design of the websites was very simple and not visually attractive; this problem was identified from the analysis of methods 2 and 3 on all the websites. Attractive design is one of the key success factors which could be considered to make a positive user experience on e-commerce websites (Sudiana et al., 2021; Hinderks et al., 2018). Also, earlier research showed that unattractive design of e-commerce websites significantly affected the user experience (Hellianto et al., 2019; Febriandika et al., 2020).
3. The design of the websites was not creative. This problem was identified from the analysis of methods 2 and 3 on websites 2 and 3.
4. The design of the websites lacked desirable design elements which evoked users' emotions and gratitude. This problem was identified from the analysis of methods 2 and 3 on all the websites.

The participants also identified seven unique user experience problems only on website 3 relating to the hedonic features, as shown in Table 2. These related to:

1. The users did not have an enjoyable experience while interacting with website 3. This was related to the small font size used in the website, the illogical structure, and the inefficient internal search function. This problem was identified from the analysis of methods 2 and 3.
2. The website did not meet users' expectation because of its slow downloading of the website's pages, the poor organisation, and the ineffective search function. This problem was identified from the analysis of methods 2 and 3.
3. The website was not motivating; it did not display many products and its design was not of high quality. This problem was identified from the analysis of method 3 only.
4. The website was not an inventive website; it lacked continuous improvements of its services to satisfy its customers. This problem was identified from the analysis of methods 2 and 3.

5. The website lacked innovative or unique features, such as a customised internal search function. This problem was identified from the analysis of methods 2 and 3.
6. The website lacked novel functionality. This problem was identified from the analysis of methods 2 and 3. Novelty is one of the user experience variables that should be considered on e-commerce websites to gain a positive user experience (Hinderks et al., 2018).
7. The website did not allow users to engage in their tasks; this was related to the fact that this website (website 3) had many problems which affected participants' engagement with the website. These included: the lack of an effective internal search engine function; lack of suggesting complementary products; slow downloading of website's pages. This problem was identified from the analysis of methods 2 and 3.

## 5. CONCLUSION

Owners of e-commerce websites should evaluate and improve the user experience of their websites to reap the benefits of positive user experience such as increased revenue, increased customer's trust and intention to purchase from a website. This research evaluated the user experience on the top three most visited e-commerce websites in Malaysia, and shed the light on specific common and unique utilitarian (functional) and hedonic features which affected the experience of users while interacting with the websites. A total of 20 students participated in this research. Three methods were employed in the evaluation: quantitative (M1), qualitative using open-ended questions (M2), and qualitative using interviews (M3), and the evaluation was conducted based on specific 40 UX evaluation criteria. The results identified 13 user experience problems on the tested websites related to utilitarian features, including ten common and three unique problems. The results also identified 11 user experience problems on the tested websites related to hedonic features, including four common and seven unique problems. The results of this research could help the managers of the tested e-commerce websites to improve the user experience of their websites by addressing the identified problems, helping them, therefore, to reap the advantages of positive user experiences.

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