

The Influence Of Smartphone User Interface On Consumer Purchase Intention

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| Keyword | Abstract |
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| User Interface, Smartphone, Purchase Intention | One of the reasons why a smartphone product fails is due to a suboptimal user interface. A suboptimal user interface makes users hesitate to purchase the smartphone product. This study aims to determine the effect of the user interface on consumer purchasing interest. Several influencing factors include design, features, comfort, ease, and optimization of the user interface. This study uses a linear regression method. The sampling technique was conducted by distributing a Google form via WhatsApp, resulting in a sample size of 50 respondents. Using linear regression analysis, the relationship between the predictor variable $x = 1$ and the response variable y was 3.2585 with a regression equation of $y = 2.798 + 0.4605x$. The results of this study prove that smartphone UI influences consumer purchasing intention. |

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I. Introduction

The IT world is synonymous with smartphones and digital devices, especially in today's world, where smartphones are inseparable. This is because the interface serves as a bridge between the user and the technology itself. Each smartphone has a different interface design according to its function and user needs.

When comparing competing products that offer similar functions, ease of use and appearance are crucial for a product's acceptance in the market. One technique that can be used to differentiate a product is by presenting an attractive design with its own unique characteristics that differentiate it from the general design.

Understanding customer behavior, which can change over time, requires careful attention. A quality product alone is not enough; it must truly meet requirements. This is the path to strong loyalty. Customers are considered satisfied with a product's quality if the company successfully retains its customers and prevents them from switching to competitors' products (Miftakh, 2013:4).

One design technique that can be used is the smartphone's user interface (UI). The aesthetics of user interface design can be a key indicator of a smartphone's success. Besides design aesthetics, understanding customer desires is a key

consideration in the successful development of a smartphone. Intention and behavior are key factors in determining a person's choice and use of a smartphone.

We analyzed the influence of smartphone user interfaces (UI) on consumer purchasing intentions using linear regression. We collected data using a questionnaire as the research instrument.

The use of statistics in processing research data influences the level of analysis of the research results. Regression analysis/testing is the study of the relationship between one variable, the explanatory variable, and one or more dependent variables. If there is only one independent variable, the regression analysis is called simple regression. Regression analysis/testing is widely used in calculating the final results of scientific articles/research. The results of the regression analysis/test calculations will be incorporated into the research conclusions and will determine whether the research was successful.

II. Literature Review

User Interface (UI)

A user interface represents the visual and interactive layer that connects users with a system. It encompasses elements such as shapes, colors, icons, and typography, all designed to optimize usability and aesthetic appeal. Effective UI design is not merely about appearance but also

about aligning with user behavior and cognitive processes. Recent studies highlight that smartphone app interfaces must integrate human-computer interaction principles to enhance user satisfaction and engagement (Su, 2024). Furthermore, user experience (UX) sharing behaviors demonstrate that UI design significantly influences how users perceive and recommend smartphone applications, making it a critical factor in digital product success (Zhang & Li, 2025).

Smartphones

Smartphones have evolved from simple communication devices into multifunctional tools equipped with general-purpose operating systems. These systems allow users to install applications, customize features, and extend device functionality, effectively transforming smartphones into portable computers. The widespread adoption of smartphones across age groups—from children to the elderly—illustrates their role as essential communication and productivity tools. Research indicates that smartphones are now embedded in daily life, serving not only for communication but also for education, entertainment, and organizational activities (Islamboulia et al., 2025).

However, the ubiquity of smartphones also raises concerns. Studies show that excessive smartphone use can negatively impact digital well-being, particularly among students and young adults (Islamboulia et al., 2025; Giansanti, 2025). At the same time, smartphones remain indispensable for modern communication, with their integration into social and professional contexts making them a fundamental necessity (Nature, 2024).

Integration of UI and Smartphone Usage

The synergy between smartphone UI design and user behavior underscores the importance of intuitive, accessible, and attractive interfaces. As smartphones become central to everyday life, the design of their interface directly affects usability, satisfaction, and long-term adoption. Recent literature emphasizes that UI design must balance aesthetic appeal with functional clarity to support diverse user groups and contexts (Su, 2024; Zhang & Li, 2025).

III. Methode

This study employs a survey research design using linear regression analysis to examine the influence of smartphone user interface (UI) importance on consumer purchase intention. A total of 50 respondents participated in the study. Data were collected through an online questionnaire distributed via Google Forms, shared via WhatsApp messaging. The electronic questionnaire consists of structured questions with predefined response options, ensuring consistency and ease of analysis. The survey was conducted over a two-week period, allowing sufficient time for participant engagement and response collection. The use of online surveys has been widely recognized as an efficient and reliable method for gathering consumer perception data, particularly in technology adoption and digital marketing research (Alalwan, 2024; Dwivedi et al., 2025). Linear regression analysis was selected due to its effectiveness in identifying relationships between independent and dependent variables in consumer behavior studies (Kumar & Sharma, 2023).

IV. Result And Discussion

Data Preparation

The x-data (predictor variable) of this study is the range of values for the importance of smartphone UI. The following are the rules for writing tables and figures:

Table 1. The Importance of Smartphone UI

| The Importance of Smartphone UI | | |
|---------------------------------|-------------------|-----------|
| Index | Description | Frequency |
| 1 | Strongly Disagree | 4 |
| 2 | Disagree | 3 |
| 3 | Somewhat Disagree | 9 |
| 4 | Agree | 16 |
| 5 | Strongly Agree | 18 |

The linear regression method uses numerical data in its calculations, and the data above is in numerical form with index labels 1-5. Next, calculations were performed to find the mean and standard deviation of the 50 data points. The resulting mean was 4.18 and the standard deviation was 1.04. Because the standard deviation is smaller than the mean, the mean can be used as a representation of the entire data set. The mean also approaches 4 (the fourth index),

indicating that the data indicates that the average consumer agrees that smartphone UI influences consumer purchase intention.

The y-data (response variable) is purchase intention for smartphones and smartphone UI.

Table 2. Purchase Intention Smartphones Regarding Smartphone UI

| Purchase Intention Smartphones Regarding Smartphone UI | | |
|--|-------------------|-----------|
| Index | Description | Frequency |
| 1 | Strongly Disagree | 4 |
| 2 | Disagree | 3 |
| 3 | Somewhat Disagree | 9 |
| 4 | Agree | 16 |
| 5 | Strongly Agree | 18 |

Next, calculations were performed to find the average and standard deviation of the 50 existing response data. The average obtained was 3.00 and the standard deviation was 1.20. Because the standard deviation value is smaller than the average value, the mean value can be used as a representation of the entire data. The average can also be seen that the value is in the range of 3 (the 3rd index), so it can be said that in this data, the average respondent believes that smartphone UI does not always influence consumer purchasing intention.

Linear Regression Calculation

Predictor data (x) is obtained from the sum of all values of the x-variable (Importance of Smartphone UI), while response data (y) is the sum of all values of the y-variable (Smartphone Purchase Intention Regarding Smartphone UI). Then, each x- and y-value is raised to the power of two and added together.

Table 3. Predictor and Response

| Predictor (x) | Response (y) | x ² | y ² | xy |
|---------------|--------------|----------------|----------------|-----|
| 150 | 209 | 526 | 927 | 662 |

Source: Researcher

From the calculation of the number of existing data, and simplified in the form of the table above, the values $\sum x = 150$, $\sum y = 209$, $\sum x^2 = 526$, $\sum y^2 = 927$ and $\sum xy = 662$ are obtained, then these values are substituted into the equation to find

the value of the constant (a) with the following calculation:

$$a = \frac{(\sum y)(\sum x^2) - (\sum x)(\sum xy)}{n(\sum x^2) - (\sum x)^2}$$

$$= \frac{(209)(526) - (150)(662)}{50(526) - (150)^2}$$

$$= \frac{5317}{1900}$$

$$= 2,798$$

then find the regression coefficient value (b) with the following calculation:

$$a = \frac{n(\sum xy) - (\sum x)(\sum y)}{n(\sum x^2) - (\sum x)^2}$$

$$= \frac{50(662) - (150)(209)}{50(526) - (150)^2}$$

$$= \frac{35}{76}$$

$$0,4605$$

From the calculation results of the equation above, the constant (a) = 2.798 and the regression coefficient (b) = 0.4605 are obtained. So the linear regression model of the data above is $y = 2.798 + 0.4605 x$. From this model, predictions will be used to prove the influence of smartphone UI on consumer purchasing intention. With x being the label of the importance of smartphone UI from the category of strongly disagree to strongly agree = [1,2,3,4,5], the following results are obtained:

- a. $x = 1, y = 2.798 + 0.4605 (1), y = 3.2585$ (Less Influence)
- b. $x = 2, y = 2.798 + 0.4605 (2), y = 3.719$ (Less Influence)
- c. $x = 3, y = 2.798 + 0.4605 (3), y = 4.1795$ (Influence)
- d. $x = 4, y = 2.798 + 0.4605 (4), y = 4.64$ (Influence)
- e. $x = 5, y = 2.798 + 0.4605 (5), y = 5.1005$ (Very Influential)

From the results of the research above, it was found that the smartphone UI does not always influence consumer purchasing interest, with the lowest category ($x = 1$) getting a prediction of "Less Influential" because the y value is in the range of 4 (the smallest predicted value is 3.2585 the largest predicted value is 5.1005). Then between x and y there is a positive correlation because the y value tends to increase as the x value increases. So it can be concluded that the smartphone UI influences consumer purchasing interest.

V. Conclusion

Based on the results and discussion, the author can conclude that smartphone UI does not always influence consumer purchasing intention. Using linear regression analysis, the relationship between the predictor variable $x = 1$ and the response variable y is 3.2585 with the regression equation $y = 2.798 + 0.4605x$. The relationship obtained is positive (+) which illustrates that every increase in the predictor variable (smartphone UI) will affect consumer purchasing interest. The better the UI of the smartphone, the higher the consumer's purchasing intention.

Based on the results and discussion, it can be concluded that the smartphone user interface (UI) does not always exert a decisive influence on consumer purchasing interest. The linear regression analysis produced a positive relationship, with the regression equation $y = 2.798 + 0.4605x$, indicating that every improvement in the predictor variable (smartphone UI) is associated with an increase in consumer purchase intention. This suggests that while UI quality contributes positively, its effect may be moderated by other factors such as brand trust, perceived value, and digital engagement. Recent studies confirm that UI and UX design enhance consumer attitudes toward mobile applications and devices, but purchasing decisions are also shaped by broader experiential and relational dimensions (Alalwan, 2024; Zhang & Li, 2025). Moreover, research on mobile commerce highlights that aesthetic appeal and usability of interfaces increase consumer satisfaction, yet functional reliability and trust remain critical determinants of purchase behavior (Dwivedi et al., 2025). Therefore, the findings of this study align with contemporary literature, emphasizing that

smartphone UI is an important but not exclusive driver of consumer purchasing interest.

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