

THE INFLUENCE OF PERSONALIZED ADS IN E-COMMERCE APPLICATIONS IN INDONESIA ON USER SATISFACTION LEVELS

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Abstract: The rapid growth of technology and the internet has propelled the development of the e-commerce industry in Indonesia. In efforts to enhance sales and customer interactions, e-commerce companies are increasingly adopting the use of advertisements tailored to individual preferences, known as personalized ads. This study aims to investigate the influence of personalized ads in e-commerce applications in Indonesia on user satisfaction levels. The study employs a quantitative research method, and data collection is conducted through the distribution of questionnaires. The collected data is then statistically analyzed using SPSS. The research findings indicate that personalized ads have a positive influence on user satisfaction levels in e-commerce applications in Indonesia. Users who receive personalized ads are more satisfied with the e-commerce application compared to users who do not receive personalized ads.

Keywords: Personalized Adsense, E-Commerce, User Satisfaction

INTRODUCTION

Currently, the internet has become an essential component of people's lives worldwide, and over time, the internet as a whole continues to undergo significant changes. These changes have formed a close relationship between individuals and the internet. In 2017, the number of internet users in Indonesia reached 143.26 million users, or 54.68% of the population, an increase compared to 2016's figure of 132.7 million users (APJII, 2017). This number further surged during the COVID-19 pandemic in Indonesia, with an increase of up to

73.7% or 196.7 million users in the second quarter of 2020 (APJII, 2020).

The increase in internet users during the COVID-19 pandemic provides a glimpse of the emerging digital transformation within Indonesian society. One major factor accelerating changes in widespread behaviors was the pandemic's imposition of lockdowns and restrictions, compelling people to work from home and reduce face-to-face interactions for extended periods. This situation forced Indonesians to adapt to new habits where daily activities became heavily reliant on information technology (Arianto, 2021).

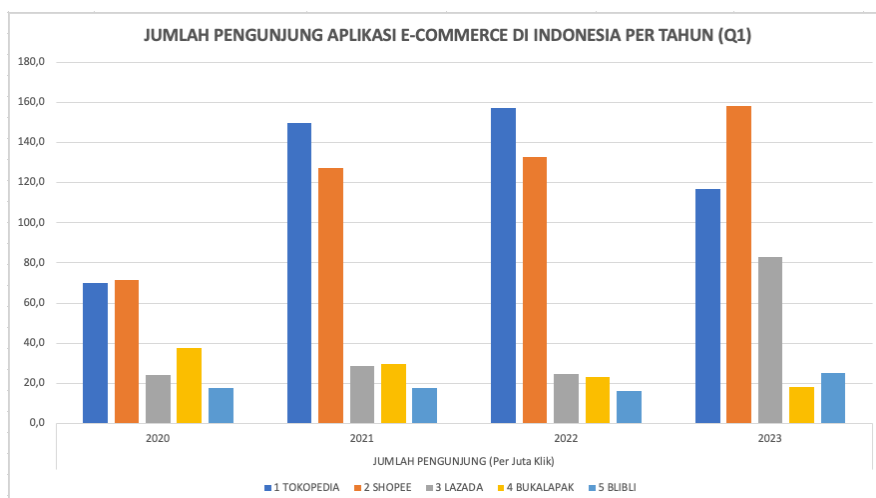
This illustrates the crucial role of information technology today in shaping new habits and behaviors within society.

The COVID-19 pandemic indirectly influenced economic disruptions in Indonesia, prompting businesses to shift towards digital platforms as a response to the economic crisis. Government policies enforcing social restrictions opened new opportunities for creative economy companies, such as over-the-top (OTT) platforms and online shopping applications, to attract new customers (Muhyiddin, Hanan Nugroho, 2021).

One such example is Electronic Commerce, commonly known as e-commerce, which encompasses the sale, distribution, purchase, and marketing of goods or services through the internet (Setyoparwati, 2019). With the impact of the pandemic in Indonesia, the e-commerce sector has seen significant growth. Around 21 million e-commerce consumers emerged, with 72% of them

originating from non-metropolitan areas. Since the pandemic, the usage of e-commerce applications in Indonesia has increased by 3.6 times compared to pre-pandemic times, highlighting the substantial role of the e-commerce sector in driving digital economic growth in the country (Ridhwan et al., 2021).

As of 2023, Indonesia ranks among the top 10 countries with the largest e-commerce markets, securing the 9th position with a market value of \$43 billion US Dollars. This value is six times greater than Indonesia's e-commerce market value in 2018, which stood at \$8 billion US Dollars (McKinsey & Company Reselles, 2023). Visitor numbers to e-commerce applications in Indonesia have also grown annually, with Shopee and Tokopedia leading the pack, each having 158 million and 117 million visits in 2023, respectively, with visitors typically aged between 18 to 45 years old.



Graph 1. Number of E-commerce Visitors in Indonesia (Quarter 1)

Source: databox (processed data)

With the emerging competition among e-commerce applications, various strategies are being implemented by each application to maintain customer loyalty and retention. Loyalty is a state in which customers repeatedly make purchases from the same brand or place (Richard L Oliver, 1999). In order for a business or product to generate substantial profits, the loyalty of buyers, or in this context, visitors to e-commerce applications, becomes fundamental to stand out among other e-commerce platforms. However, it is essential to understand that user or buyer loyalty arises only when individuals experience satisfaction after engaging in repeated activities. Therefore, it's crucial for e-commerce applications to ensure buyer satisfaction, and one of the methods currently adopted by many Indonesian e-commerce platforms to encourage users to transact on their app is the strategy of personalized advertising.

According to the American Marketing Association, advertising is a business practice in which companies pay to place their messages or brands in specific locations. Advertising serves as a tool for businesses to exchange information with their existing customers and potential customers (Mumbai University). The presence of advertising in a company's marketing activities can help drive product sales, making advertising a vital marketing strategy, particularly in the modern world where companies compete to sell

their products as attractively as possible, utilizing the advantages of the rapidly changing internet and technology.

The term "personalized advertising" or "personalized ads" has existed for a long time and traditionally referred to personalized promotional or marketing activities directed at individual people. This concept evolved into personalized advertising based on individual preferences with the goal of enhancing marketing efficiency (Pavlou & Stewart, 2000). Through research conducted by McKinsey & Company on respondent expectations regarding personalization, the results indicated that 71% of respondents expect personalization systems to be a standard service offered by companies to their customers (McKinsey & Company, 2021). This demonstrates that with technological advancements and increased public awareness of service offerings, the presence of personalization systems can significantly influence customer satisfaction.

In Indonesian e-commerce applications, the strategy of personalized ads is formed based on data collected by the system from users, including transaction histories, frequently searched product types, and personal user data. With this data, the application can deliver different types of ads to each individual, tailored to their level of relevance or personal relevance. These personalized ads can include the latest products relevant to the user's previous searches or discounts on

similar products (Boerman et al., 2021). Personalized advertising can also serve as a benchmark for users to assess how well the system adapts the information displayed in ads to individual e-commerce app users (Yu & Jung, 2016). Additionally, it can help reduce irrelevant ads for each user, filtering out unsuitable information and thereby minimizing ad irritation caused by irrelevant ads (Baek & Mamoto, 2012).

However, concerns have emerged about the personalization content which has become a primary strategy for many e-commerce

applications. While personalized ads can enhance the relevance of displayed ads and products, the presence of personalization systems that utilize user data and monitor user behavior may also create vulnerabilities (Aguirre et al., 2015). There are instances where personalized ads make customers feel that the messages or ads offered are too personal, causing discomfort while using the system (White et al., 2007). Therefore, in its application, there is a possibility for users to stop or reduce their use of the system or, in this context, the e-commerce application.

Previous Research

Table 1. Previous Research

No	Researcher Name	Title	Result	Variable
1	Dini Agustina, Mukhamad Najib, Budi Suharjo (2016)	"Pengaruh Personalisasi Iklan Online Terhadap Sikap dan Minat Beli Konsumen"	Consumer attitudes towards advertising have a role in influencing consumer buying interest.	Variabel X2: <i>Perceived Personalization</i> Variabel Y: <i>Customer Satisfaction</i>
2	Erlangga Dewanto (2017)	"Analisa Faktor-Faktor Penentu Penghindar Konsumen Terhadap Personalized Advertising"	Consumer attitudes towards advertising have a role in influencing consumer buying interest	Variabel X3: <i>Ad Irritation</i> Variabel Y : <i>Customer Satisfaction</i>
3	Okky Chandra Santoso (2013)	"Personalized Marketing Sebagai Upaya Menciptakan Keunggulan Bersaing Perusahaan"	Content personalization and customization can be a source of a company's competitive advantage, especially in increasing customer loyalty	Variabel X1: <i>Personal Relevance</i> Variabel X2 : <i>Perceived Personalization</i>

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4	Aminatu Juhria, Nurtika Meinitasari, Fadel Iqbal Fauzi, Abdul Yusuf (2021)	"Pengaruh <i>e-service quality</i> terhadap kepuasan pelanggan di aplikasi <i>e-commerce</i> Shopee"	There is a positive influence between <i>e-service quality</i> on customer satisfaction levels in <i>Shopee e-commerce</i>	Variabel X1: <i>Personal Relevance</i> Variabel Y : <i>Customer Satisfaction</i>
5	Kabu Khadka, Soniya Maharjan (2017)	" <i>Customer Satisfaction and Customer Loyalty</i> "	There is a relationship between customer satisfaction and loyalty that customers will show to a company	Variabel X2: Perceived Personalization Variabel Y : Customer Satisfaction
6	Sanne Dahlgren, Beatrice Tabell (2017)	" <i>Personalized Advertising and its Difficulties with Customer Privacy</i> "	In order for customer satisfaction to be achieved, transparency of how data is used is one of the things that customers want	Variabel X3: Ad Irritation Variabel X2 : Perceived Personalization Variabel Y: Customer Satisfaction
7	Hilton, Marudut Sianturi, Salman Faris, Rosita (2022)	" <i>The Influence of Digital Marketing and Advertising on Customer Satisfaction with Price as Moderating Variable (Case Study of Online Shopping at Shopee)</i> "	Customer satisfaction relates to how <i>digital marketing</i> plays a role in delivering appropriate content	Variabel X2: Perceived Personalization Variabel Y : Customer Satisfaction
8	Margaretha Habeahan (2016)	" <i>Text Message Advertising Avoidance: A Comparison Between Location Based Text Message Advertising And Unsolicited Text Message Advertising</i> "	<i>Ad Irritation, Perceived personalization and Privacy Concern</i> are factors that influence customers not to use ad personalization	Variabel X2: Perceived Personalization Variabel X3: Ad Irritation Variabel Y : <i>Customer Satisfaction</i>
9	Kaili Dong, S (2019)	" <i>Avoiding Personalized Ads on Social Media</i> "	There is a desire not to have ad personalization because of the negative attitude	Variabel X2: Perceived Personalization Variabel X3: Ad Irritation

			that arises through the experience of using ad personalization	
10	Paul A. Pavlou, David W Stewart	<i>"Measuring The Effects and Effectiveness of Interactive Advertising: A Research Agenda</i>	Direct advertising can be effective in attracting customers to use the app	Variabel Y : <i>Customer Satisfaction</i>

RESEARCH METHODOLOGY

Types and Designs of Research

This research is a type of research with a quantitative approach, by conducting a literature study of related research to study the relationship between existing variables, and collecting questionnaires to help see how customers see personalized ads in influencing customer satisfaction levels.

Population and Sample

Population is an area or place of objects or subjects of research, both people, event goods have a quantity and quality and certain characteristics. While the sample is part of the population element that represents population characteristics (Darwin et al., 2021). Based on this understanding, the population for this study is:

Population: People from all walks of life, backgrounds, ages, religions and genders who live in Indonesia and use active e-commerce applications .

Sampling will be carried out by purposive sampling method or sampling carried out based on specific criteria applied by the researcher. So based on this study, the research samples are:

Sample : sampling is carried out by the method of distributing questionnaires to 150-200 people.

Variable Operational Definition

Operational Data variables in this study are variable X and Variable Y. These variables will then be tested to determine their correctness (Hikmawati, 2020)

Table 2. Operationalization of Research Variables

No	Variabel Penelitian	Ukuran	Skala	Indikator
1	Personal Relevance (X1)	Persentase	Rasio	1. Products relevant to past searches 2. Assisting decision making

2	<i>Perceived Personalization (X2)</i>	Persentase	Rasio	<ol style="list-style-type: none"> 1. The ads displayed give a feeling of pleasure or satisfaction 2. The information used helps the ads that show
3	<i>Ad Irritation (X3)</i>	Persentase	Rasio	<ol style="list-style-type: none"> 1. Ad disruption 2. Discomfort with advertising
4	<i>Customer Satisfaction (Y)</i>	Persentase	Rasio	<ol style="list-style-type: none"> 1. Customers using the application 2. Love the presence of ads personalization.

Based on the variable operational table above, then:

1. Independent variable, is a variable that affects other variables (Sahir, 2021). In this study, the independent variables are three variables X, *Personal Relevance (X1)*, *Perceived Personalization (X2)*, and *Ad Irritation (X3)*.
2. The dependent variable, or bound variable is a variable that is affected by the independent variable and is a result of the independent variable (Sahir, 2021). In this study the dependent variable is customer satisfaction, or *Customer Satisfaction (Y)*.

Data Types and Sources

Data Type

The data used is ratio data, in order to display the absolute quantity of the calculation results in this research

analysis. Based on the time of data collection, this study uses quantitative data, or data presented in the form of numbers (Priadana & Sunarsi, 2021)

Data Sources

The data to be used in this study is primary data. The data used are taken directly for the object of research by the researcher. In this case, the data will come from the results of the questionnaire that the author disseminates against the desired sample (Darwin et al., 2021)

Data Collection Techniques

The data collection technique carried out is to distribute questionnaires. This questionnaire will be distributed to 150-200 correspondents with different backgrounds. Through the questionnaire distributed, there were 10 questions focusing on correspondents'

experiences with the ad personalization system in *e-commerce applications*.

Data Analysis Methods

The Data Analysis method aims to process the received data into information. In order to facilitate the process of forming data into information, statistical calculations are used to be the basis for making conclusions (Priadana & Sunarsi, 2021).

RESULT AND DISCUSSION

RESULT

Validity Test

The validity test carried out is by measuring variable data to be used in research. This validity test will show whether the variables to be used for research are valid. The validity testing step will be carried out using SPSS, on 15 correspondents who filled out the questionnaire.

Table 3. Validity Test

Personalized Ads	Personalized Ads	User Satisfaction	Total
Pearson Correlation	1	.576**	.873**
Sig. (2-Tailed)		.002	.000
N	15	15	15
User Satisfaction	Pearson Correlation	.576**	1
	Sig. (2-Tailed)	.002	.000
	N	15	15
Total	Pearson Correlation	.873**	.880**
	Sig. (2-Tailed)	.000	.000
	N	15	15

Based on the data in table 3 it can be seen that all instruments have pearson correlation values greater than r Table = 0.412 (N = 15) and Sig. (2-tailed) correlation values for all .000 items are smaller than 0.05 so that it can be concluded that all statement items are

declared valid, so the questionnaire is declared valid for use.

Reliability Test

Reliability Test in this study, conducted to see the consistency of research instruments, this reliability test will be carried out on correspondents and processed using SPSS.

Table 4. Reliability Test

No.	Variabel	Cronbach Alpha	Information
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1	Personalized Ads (X)	0.768	Reliabel
2	User Satisfaction (Y)		Reliabel

Based on the reliability test in table 4, a Cronbach Alpha value of 0.768 was obtained which is greater than 0.600 so that the questionnaire was declared to have a good level of consistency and reliability for use in future research.

The Multiple Linear Regression Test aims to measure the influence of the three variables on the predetermined dependent variable. Through multiple linear regression tests, there will also be predictions of related variable values using independent variables.

Multiple Linear Regression Test

Table 5. Regression Test

Model		Unstandardized B	Coefficients Std. Error	Satandardized Coefficient Beta	t	Sig.
1	(Constant)	2.884	4.578		.630	.534
	Personalized Ads	.550	.164	.536	3.359	.000

Based on table 5 regression test results obtained a significance value of $0.000 < 0.05$, which means that Personalized Ads have a positive and significant effect on the level of user satisfaction.

independent variables on the dependent variable.

Test hypothesis:

H0 : all independent variables simultaneously have no significant effect on the dependent variable

H1 : All independent variables have a significant influence on the dependent variable simultaneously

F Statistical Test (Simultaneous)

Statistical Test F is performed to find out what independent variable has a simultaneous influence on the dependent variable. Statistical Test F will show the combined effect of all

Significant Probability : 0.05

1. If F count < F table = H0
2. If F calculate > F table = H1

Table 6. Test F

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.005	3	.002	4.732	.002 ^b
	Residual	.016	53	.000		
	Total	.023	55			

Based on table 6 it can be obtained that the decision that H0 is rejected and H1 is accepted. This can be seen from the calculated F value of 4.73. While the resulting significance value is 0.002 which is smaller than 0.05. Thus it can be concluded that this model is feasible to use, and the independent variable personalized ads have a simultaneous influence on the dependent variable of tax aggressiveness.

Statistical Test T

Statistical test T is a type of test used to see the difference between the estimated value and the value of the

results of statistical calculations. This approximate value will be determined by the author, in order to test the correctness or falsity of the hypothesis.

Test hypothesis:

H0 : all independent variables have no partial effect on the dependent variable

H1 : All independent variables have a significant influence on the dependent variable partially

Significant Probability : 0.05

1. If T count < T table = H0
2. If T count > T table = H1

Table 7. T Test

Model		Unstandardized B	Coefficients Std. Error	Satandardized Coefficient Beta	t	Sig.
1	(Constant)	2.884	4.578		.630	.534
	Personalized Ads	.550	.164	.536	3.359	.002

Based on table 7 regression test results obtained a calculated t value of 3.359 > t table 0.695, so it can be concluded that H01 is rejected and Ha1 is accepted.

Coefficient of Determination Test

The Coefficient of Determination test is carried out to see the magnitude of the influence of the independent

variable on the related variable. If the number of coefficients of determination of the regression model applied is 0 (zero), then the influence of the independent variable on the dependent variable is smaller. And vice versa, if the value is greater, then the regression results are better.

Table 8. Test coefficient of determination (R²)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.536	0.287	.262	1.52507

Table 8 shows that the value of the coefficient of determination in R

Square is 0.287 or equivalent to 28.7%. This means that the effect of

personalized ads on increasing user satisfaction by 28.7%, while the remaining 71.3% is influenced by outside factors that are not discussed in this study.

DISCUSSION

The research results indicate that personalized ads have a positive influence on the level of user satisfaction with e-commerce applications in Indonesia. This is in line with what was revealed by (Halimi et al., 2011) that personalization has an impact on customer satisfaction and loyalty. Currently, many companies are attempting to enhance customer loyalty by building relationships with their customers. Personalization aims to make marketing efforts more effective, as companies can better understand specific consumer needs and preferences, ultimately achieving competitive advantage and business development (Kurniawati & Suwarno, 2011).

Users who receive personalized ads are more satisfied with the e-commerce application compared to users who do not receive personalized ads. Personalized ads are tailored to users' preferences, shopping behavior, and search history. By displaying ads that are relevant to their interests and needs, users feel acknowledged and valued. These fitting ads make users perceive that the e-commerce platform understands and accommodates their preferences, thereby enhancing satisfaction.

Personalized ads also assist users in discovering products or services that best suit their needs. The information presented through ads helps users better comprehend the benefits of products, ultimately facilitating wiser purchasing decisions. Furthermore, with personalized ads, users experience a more personalized shopping journey. Ads adjusted to individual preferences create a more intimate and enjoyable interaction, enhancing user satisfaction in exploring the offered products and services.

Personalized ads present special offers, discounts, or promotions aligned with user interests. This adds value for users and motivates them to actively engage in shopping activities within the e-commerce application, leading to higher satisfaction levels. Users who feel acknowledged and serviced according to their preferences tend to exhibit higher loyalty towards the e-commerce platform. Personalized ads help establish long-term relationships with users, bringing positive impacts on overall satisfaction levels.

CONCLUSION

The results indicate that the use of personalized ads has a positive impact on the level of user satisfaction of e-commerce applications in Indonesia. The findings show that users who receive personalized ads tend to be more satisfied with their experience using e-commerce apps compared to users who do not receive personalized ads. Personalized ads have the ability to serve

ads that are more relevant and appropriate to individual preferences and needs, which in turn increases user satisfaction. This research supports the idea that ads personalization can play an important role in increasing positive interactions between users and e-commerce apps, by presenting ads that better suit user interests and preferences, personalized ads can help reduce user discomfort with irrelevant ads, thereby improving the image of the app and increasing user trust in e-commerce platforms.

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