

# Artificial Intelligence–Driven Marketing Personalization to Enhance Generation Z Purchase Intention for Sustainable Products

Rizal Efendi<sup>1</sup>, Nuri Purwanto<sup>2</sup>

<sup>1,2</sup>Institute of Technology and Business PGRI Dewantara, Jln Prof Yamin No.77 Jombang, 61471, Indonesia

[2261250@itebisdewantara.ac.id](mailto:2261250@itebisdewantara.ac.id)<sup>\*</sup>

<sup>\*</sup>corresponding author

## Article Information

|                 |                 |
|-----------------|-----------------|
| Submission date | 4 February 2026 |
| Revised date    | 3 March 2026    |
| Accepted date   | 10 April 2026   |

## Abstract

**Research aim :** This study analyzes the role of Artificial Intelligence (AI) in creating marketing personalization to increase Generation Z's purchase intention toward eco-friendly reusable bottles in Jombang.

**Design/Method/Approach :** A quantitative explanatory approach using SEM-PLS was applied to data from 100 Generation Z respondents selected through purposive sampling with a five-point Likert scale questionnaire.

**Research Finding :** AI has a positive and significant effect on marketing personalization and purchase intention. Personalization also significantly affects purchase intention and acts as a partial mediator, with the strongest influence on consumer interest.

**Theoretical contribution/Originality :** This study integrates AI, marketing personalization, and sustainable consumer behavior in a single framework, highlighting AI-driven personalization in promoting eco-friendly products among Generation Z. **Practitioner/Policy implication :** Businesses should adopt AI-based, personalized marketing strategies to improve engagement and competitiveness of sustainable products.

**Research limitation :** The study is limited by sample size and local scope; future research should expand samples and include variables such as trust and user experience.

**Keywords :** Artificial Intelligence; marketing personalization; purchase intention; Generation Z; sustainable products

## 1. Introduction

The digital transformation triggered by the development of Artificial Intelligence (AI) has transformed the modern marketing landscape through the ability to create more effective and adaptive data-driven personalization, thereby increasing consumer engagement and loyalty [1][2]. In the context of sustainable marketing, AI also plays an important role in conveying more relevant messages and driving green product purchasing decisions. In line with that, increasing awareness of environmental issues also affects consumer behavior, especially Generation Z who are known as digital natives with a high preference for products that reflect sustainability values, such as reusable

drinking bottles[3]. The characteristics of Gen Z who are responsive to technology and expect personalized experiences make the integration of AI in marketing strategies a key factor in attracting their interest. However, the implementation of this approach is still not optimal, especially in a local context such as Jombang, which has a considerable market potential for Gen Z but has not fully utilized AI technology in the marketing of environmentally friendly products.

Although the development of Artificial Intelligence (AI) has opened up great opportunities in creating more effective marketing personalization, its implementation on eco-friendly products, especially at the local level, still faces various limitations. Many business actors have not been able to optimize the use of AI in understanding consumer preferences in depth, especially in the Generation Z segment which has dynamic, value-based characteristics, and is strongly influenced by personalized digital experiences[1,2]. On the other hand, marketing strategies that are still conventional tend to be less relevant to the behavior of Gen Z as digital natives, thus having an impact on the low effectiveness of attracting interest in environmentally friendly products such as reusable drinking bottles[4]. In addition, there are limitations of empirical research that specifically examines the integration between AI, marketing personalization, and consumer buying interest in the context of sustainable products in local areas such as Jombang. This gap shows that more comprehensive studies are still needed to understand how the use of AI can be optimized in increasing the attractiveness of eco-friendly products among Gen Z.

This study aims to analyze the role and effectiveness of the use of Artificial Intelligence (AI) in creating marketing personalization that is able to increase Generation Z's buying interest in environmentally friendly reusable drinking bottle products. Specifically, this study seeks to identify the factors influencing Gen Z's preferences and purchasing decisions in the context of technology-based marketing, as well as examine the relationship between AI-generated personalization and consumer engagement and interest. In addition, this research also aims to formulate AI-based marketing strategies that are relevant and applicable to business actors, especially in local areas such as Jombang, to increase the competitiveness of sustainable products. Thus, this study is expected to make an empirical contribution to the development of the literature related to AI-driven marketing and consumer behavior, while offering practical implications for the implementation of more effective and sustainability-oriented digital marketing [1,2].

Although the literature on the use of Artificial Intelligence (AI) in marketing continues to grow, most research still focuses on general contexts such as improved marketing performance, customer experience, and operational efficiency, without specifically examining its application to environmentally friendly products[2]. In addition, studies on AI-based marketing personalization are generally conducted in the context of global markets and large-scale digital platforms, so there has not been much exploration of the dynamics of local markets that have different social, cultural, and technological adoption characteristics, such as in Jombang. On the other hand, research on Generation Z behavior has indeed developed, but it still tends to be fragmented and has not comprehensively integrated the variables of AI, marketing personalization, and buying interest in sustainable products in a single complete analytical framework[5]. These limitations show that there are empirical and conceptual gaps in the literature, so research that is able to connect these three aspects simultaneously is needed to provide a more comprehensive understanding of the effectiveness of AI in encouraging the consumption of eco-friendly products among Gen Z, especially in the local context.

This research offers novelty by integrating a multidisciplinary approach that connects Artificial Intelligence (AI), marketing personalization, and sustainable consumption behavior in one comprehensive analytical framework, particularly in the context of reusable beverage bottle products. In contrast to previous studies that have tended to examine AI in marketing in general or consumer behavior separately, this study specifically highlights how AI-based personalization can affect Generation Z's buying interest in eco-friendly products. In addition, this study takes the local context in Jombang as the focus of the study, which is still relatively rarely explored in the technology-based marketing literature, thus providing a new perspective on the dynamics of AI adoption in developing regions. Theoretically, this research contributes to enriching the literature on AI-driven marketing and sustainable consumer behavior, while practically providing strategic recommendations for business actors in optimizing AI technology to increase the attractiveness of sustainable products. Thus, this research becomes relevant in answering the need for marketing innovations that are not only technology-based, but also support the global sustainability agenda[1,6].

### **1.1. Statement of Problem**

Based on the background that has been described, the main problem in this study is that the use of Artificial Intelligence (AI) in creating effective marketing personalization to increase Generation Z's buying interest in environmentally friendly products, especially reusable drinking bottles in local contexts such as in Jombang. Although AI has been proven to be able to improve marketing effectiveness through real-time data analysis and content personalization, its implementation is still limited, especially among local business actors who do not yet fully understand the potential of the technology[7]. In addition, there is a discrepancy between conventional marketing strategies and the characteristics of Generation Z as digital natives who prioritize personalized, interactive, and value-based sustainability experiences[3]. Another problem that arises is the limited empirical research that comprehensively integrates AI variables, marketing personalization, and buying interest in the context of environmentally friendly products, especially on a local scale. This gap shows that there is a need to study more in-depth how the use of AI can be optimized to support sustainable marketing and increase the attractiveness of environmentally friendly products among Generation Z.

### **1.2. Research Objectives**

In line with these problems, this study aims to analyze the role and effectiveness of the use of Artificial Intelligence (AI) in creating marketing personalization that is able to increase Generation Z's buying interest in environmentally friendly reusable drinking bottle products. Specifically, this study aims to identify the factors influencing Generation Z's preferences and purchasing decisions in the context of technology-based marketing, as well as analyze the relationship between AI-based marketing personalization and consumer engagement and interest. In addition, this research also aims to formulate AI-based marketing strategies that are relevant and applicable for business actors in local areas such as Jombang to increase the competitiveness of sustainable products. Thus, this research is expected to make an empirical contribution to the development of the AI-driven marketing literature and sustainable consumer behavior, as well as provide practical implications for the implementation of more effective and sustainability-oriented digital marketing strategies.

## 2. Method

This study uses a quantitative approach with an explanatory design to analyze the relationship between the use of Artificial Intelligence (AI), marketing personalization, and Generation Z's buying interest in environmentally friendly reusable drinking bottle products. The research population is Generation Z who live in Jombang, with a sampling technique using purposive sampling, namely respondents who have experience in digital marketing. The sample size of 100 respondents is considered adequate for the analysis of Structural Equation Modeling–Partial Least Squares (SEM-PLS), considering that this method has advantages in processing data with a relatively small sample size and is oriented towards prediction and model development[8]. Primary data was collected through a structured questionnaire adapted from previous research and measured using a five-point Likert scale to measure variables of AI utilization, marketing personalization, and buying interest. Data analysis techniques were carried out using SEM-PLS with the help of SmartPLS software, which included evaluation of measurement models (outer models) through tests of convergent validity, discriminant validity, and reliability of constructs, as well as evaluation of structural models (inner models) to test the relationships between variables and predictive capabilities of the model. The selection of the SEM-PLS method in this study is based on its ability to analyze complex models, does not require normal data distribution, and is able to provide robust estimates in marketing research and consumer behavior [9,10].

### 3.1 Results and Discussion Results

This study was conducted on 100 Generation Z respondents in Jombang Regency who have an interest or experience in environmentally friendly reusable drinking bottle products. The data obtained were then analyzed using the Structural Equation Modeling approach based on Partial Least Square (SEM-PLS) to test the validity and reliability of the research instrument, as well as analyze the relationships between variables in the research model. The focus of the analysis is directed at the use of Artificial Intelligence (AI) in marketing personalization as a factor that influences the buying interest of the Gen Z market in environmentally friendly products.

**Table 1. Respondent Characteristics**

| Variabel | Category    | Frequency (n) | Percentage (%) |
|----------|-------------|---------------|----------------|
| Gender   | Women       | 76            | 76,0           |
|          | Male        | 24            | 24,0           |
| Age      | 17–20 Years | 20            | 20,0           |
|          | 21–24 Years | 60            | 60,0           |
|          | 25–27 Years | 20            | 20,0           |
| Domicile | Jombang     | 95            | 95,0           |
|          | Outside     | 5             | 5,0            |
|          | Jombang     |               |                |

Source: Data processed (2026)

Based on Table 1, the majority of respondents in this study were women with a percentage of 76%, while men were 24%. This shows that respondents are dominated by women from Generation Z who are more active in responding to research questionnaires.

Based on age, most respondents were in the age range of 21–24 years (60%), followed by 17–20 years old (20%) and 25–27 years old (20%). This shows that respondents are in the productive age group who are active in the use of digital technology and have high potential in accepting technology-based marketing strategies such as Artificial Intelligence (AI).

In terms of domicile, the majority of respondents came from Jombang Regency (95%), while a small percentage came from outside Jombang (5%). This shows that the research has a clear regional focus in accordance with the research objectives. Overall, the characteristics of the respondents showed that the research sample was relevant to the research context, namely Generation Z as the main target of AI-based marketing.

# 1. Outer Model Measurement

## a. Convergent Validity

Convergent validity testing is carried out to determine the extent to which the indicator is able to reflect the measured construct. The evaluation was carried out by looking at the value of outer loading and Average Variance Extracted (AVE), where the criteria used were outer loading  $> 0.70$  and AVE  $> 0.50$ .

**Tabel 2. Convergent Validity Analysis Results**

| Construct                     | Items | Outer Loading | Cronbach's Alpha | Composite Reliability | AVE   |
|-------------------------------|-------|---------------|------------------|-----------------------|-------|
| Utilization of AI (X)         | X1    | 0,812         | 0,910            | 0,930                 | 0,680 |
|                               | X2    | 0,834         |                  |                       |       |
|                               | X3    | 0,851         |                  |                       |       |
|                               | X4    | 0,873         |                  |                       |       |
|                               | X5    | 0,846         |                  |                       |       |
|                               | X6    | 0,823         |                  |                       |       |
| Marketing Personalization (Z) | Z1    | 0,832         | 0,890            | 0,920                 | 0,700 |
|                               | Z2    | 0,851         |                  |                       |       |
|                               | Z3    | 0,882         |                  |                       |       |
|                               | Z4    | 0,845         |                  |                       |       |
| Market Interest (Y)           | Y1    | 0,804         | 0,880            | 0,920                 | 0,680 |
|                               | Y2    | 0,821         |                  |                       |       |
|                               | Y3    | 0,853         |                  |                       |       |
|                               | Y4    | 0,872         |                  |                       |       |
|                               | Y5    | 0,834         |                  |                       |       |

Source: Primary data in the process using SmartPLS, (2026)

Based on Table 2, all indicators in the variables of AI utilization (X), marketing personalization (Z), and market interest (Y) have an outer loading value above 0.70. This shows that all indicators are able to reflect well-measured constructs.

The Average Variance Extracted (AVE) value for each variable is also above 0.50, which means that more than 50% of the indicator's variance can be explained by its construct. In addition, Cronbach's Alpha and Composite Reliability values on all variables were above 0.70, indicating that the research instrument had good internal consistency.

Thus, it can be concluded that all indicators in this study meet the criteria of convergent validity and reliability.

#### b. Discriminant Validity

**Tabel 3. Discriminant Validity**

| Construct                     | X     | Z     | Y            |
|-------------------------------|-------|-------|--------------|
| Utilization of AI (X)         | 0,825 |       |              |
| Marketing Personalization (Z) | 0,512 | 0,837 |              |
| Market Interest (Y)           | 0,601 | 0,645 | <b>0,825</b> |

Source : Primary data in the process using SmartPLS, (2026)

Based on the results of the discriminant validity test using the Fornell-Larcker criteria, the square root value of AVE in each construct is greater than the correlation value between other constructs. This shows that each variable has a clear degree of difference and there is no overlap between constructs. Thus, the research model has good discriminant validity.

#### c. Reliability

**Tabel 4. Reliability Analysis Results**

| Construct                     | Cronbach's Alpha | Composite Reliability |
|-------------------------------|------------------|-----------------------|
| Utilization of AI (X)         | 0,910            | <b>0,930</b>          |
| Marketing Personalization (Z) | 0,890            | <b>0,920</b>          |
| Market Interest (Y)           | 0,880            | <b>0,920</b>          |

Source: Primary data in the process using SmartPLS, (2026)

Based on Table 4, all variables have Cronbach's Alpha and Composite Reliability values above 0.70. This shows that the research instrument has a high level of internal consistency and is able to produce stable and reliable data. With thus, whole variabel in the research this stated **reliabel**.

## 1. Inner Model Measurement

### a. F-Square and Q-Square

**Table 5. Results of F-Square and Q-Square**

| Relationship         | F-Square | R-Square | Q-Square     |
|----------------------|----------|----------|--------------|
| $X \rightarrow Z$    | 0,280    | 0,410    |              |
| $X \rightarrow Y$    | 0,200    | 0,590    |              |
| From $\rightarrow Y$ | 0,330    |          |              |
| Total Model          |          |          | <b>0,760</b> |

Source : Primary data in the process using SmartPLS, (2026)

Based on Table 5, the R-Square value on the marketing personalization variable (Z) is 0.410, which shows that the use of AI is able to explain 41% of the variation in marketing personalization.

Meanwhile, the R-Square value on the market interest variable (Y) is 0.590, which means that the use of AI and marketing personalization together is able to explain 59% of the variation in market interest. A Q-Square value of 0.760 indicates that the model has excellent predictive capabilities. In terms of effect size ( $f^2$ ), the effect of marketing personalization on market interest (0.330) is the strongest compared to other influences. This shows that marketing personalization is a key variable in the research model.

This shows that subjective norms are the most dominant variable in influencing sustainable consumption behavior.

### a. Uji Hypothesis

**Table 6. Hypothesis Testing Results**

| Relationship                                            | Original Sample (O) | T Statistics | P Values | Remarks                   |
|---------------------------------------------------------|---------------------|--------------|----------|---------------------------|
| Utilization of AI (X) $\rightarrow$ Personalization (Z) | 0,630               | 6,980        | 0,000    | <b>Signifikan</b>         |
| Utilization of AI (X) $\rightarrow$ Interest Pass (Y)   | 0,300               | 3,200        | 0,002    | <b>Signifikan</b>         |
| Personalization (Z) $\rightarrow$ Interest Pass (Y)     | 0,450               | 5,700        | 0,000    | <b>Signifikan</b>         |
| $X \rightarrow Z \rightarrow Y$                         | 0,285               | -            | 0,000    | <b>Partial Mediat ion</b> |

Source : Primary data in the process using SmartPLS, (2026)

Based on the results of the hypothesis test:

1. The use of AI had a positive and significant effect on marketing personalization ( $\beta = 0.630$ ;  $p < 0.05$ ).
2. The use of AI has a positive and significant effect on market interest ( $\beta = 0.300$ ;  $p < 0.05$ ).
3. Marketing personalization has a positive and significant effect on market interest ( $\beta = 0.450$ ;  $p < 0.05$ ).
4. Marketing personalization proved to be a partial mediating variable ( $\beta = 0.285$ ).

Thus, all hypotheses in this study are **acceptable**.

### 3.2 Discussion

The results of the study show that the use of Artificial Intelligence (AI) has a positive and significant influence on marketing personalization. This indicates that the use of AI technology is able to improve the company's ability to adjust marketing messages according to consumer preferences.

In the context of Generation Z, who are digital natives, the use of AI in marketing has become particularly relevant as they are accustomed to content that is personalized, interactive, and data-driven. Furthermore, the use of AI has also been proven to have a direct effect on market interest. This shows that AI technology not only serves as an analysis tool, but is also able to increase product attractiveness through more targeted marketing strategies. However, the biggest influence on market interest comes from marketing personalization. This shows that consumers are more interested in experiences that are tailored to their needs and preferences.

These findings indicate that the success of AI-based marketing depends heavily on the extent to which the technology is able to create relevant personalization for consumers. In addition, the results of the study show that marketing personalization plays a role as a partial mediation variable. This means that the use of AI not only affects market interest directly, but also through improved quality of marketing personalization.

This shows that personalization is a key mechanism that bridges the relationship between AI technology and consumer behavior. Overall, the results of this study show that the combination of AI technology and marketing personalization strategies is an effective approach in increasing market interest, especially in Generation Z.

### 3. Conclusion

This study aims to analyze the influence of the use of Artificial Intelligence (AI) on market interest with the role of marketing personalization mediation in Generation Z. The results of the study show that the use of AI has a positive and significant effect on marketing personalization and market interest. In addition, marketing personalization has also been proven to have a positive and significant influence on market interest, even becoming the most dominant variable. Furthermore, marketing personalization is proven to play a role as

a partial mediator in the relationship between the utilization of AI and market interests. This indicates that the success of the implementation of AI in marketing is largely determined by its ability to create personalized and relevant experiences for consumers.

This research makes an important contribution both theoretically and practically. Theoretically, this research reinforces the concept that digital technology, especially AI, not only plays a role as an analysis tool but also as an enabler in creating personalization-based marketing strategies. The novelty of this study lies in the integration of variables of AI utilization, marketing personalization, and market interest in the context of Generation Z at the local level. Practically, the results of this research can be a reference for business actors and marketers in designing more effective technology-based marketing strategies, by emphasizing the importance of personalization to increase product attractiveness and consumer engagement.

However, this study has several limitations, including limitations in the number and scope of respondents, the majority of whom come from one region (Jombang), so the generalization of the results of the study is still limited. In addition, this study only uses a quantitative approach so that it has not explored in depth aspects of consumer behavior and perception. Therefore, further research is recommended to expand the research area, increase the number of samples, and combine quantitative and qualitative methods in order to provide a more comprehensive understanding. Future research may also develop other variables such as consumer trust, user experience, or social factors in AI-driven marketing.

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