

THE EFFECT OF THE USE OF ARTIFICIAL INTELLIGENCE, PERSONALIZED MARKETING, AND CUSTOMER EXPERIENCE ON CUSTOMER LOYALTY (Case Study on the Spotify Digital Music Platform)

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Abstract

This study aims to analyze the influence of Artificial Intelligence (AI), Personalized Marketing, and Customer Experience on Consumer Loyalty on the Spotify digital music platform. The research was conducted at Universitas Malikussaleh, located in Bukit Indah, Muara Dua Sub-district, Lhokseumawe City, Aceh. The population in this study consists of active students of Universitas Malikussaleh who use Spotify, with a purposive sampling technique and a total sample of 120 respondents. Data collection was carried out through surveys using both offline and online questionnaires. The data analysis method used was Multiple Linear Regression, which included tests for validity, reliability, classical assumptions, t-tests, F-tests, and coefficient of determination (R^2). The results show that simultaneously, the three independent variables have a significant effect on consumer loyalty. Partially, Artificial Intelligence has the greatest and most significant influence ($\beta = 0.444$; sig = 0.000). Customer Experience also has a significant effect ($\beta = 0.251$; sig = 0.001), while Personalized Marketing does not show a significant effect ($\beta = 0.176$; sig = 0.109). These findings indicate that Artificial Intelligence technology and good user experience play an important role in retaining Spotify users. This research is expected to serve as a reference for developing digital marketing strategies in the music streaming industry, particularly within the freemium business model like Spotify.

Keywords: *Artificial Intelligence, Personalized Marketing, Customer Experience, Customer Loyalty, Spotify*

INTRODUCTION

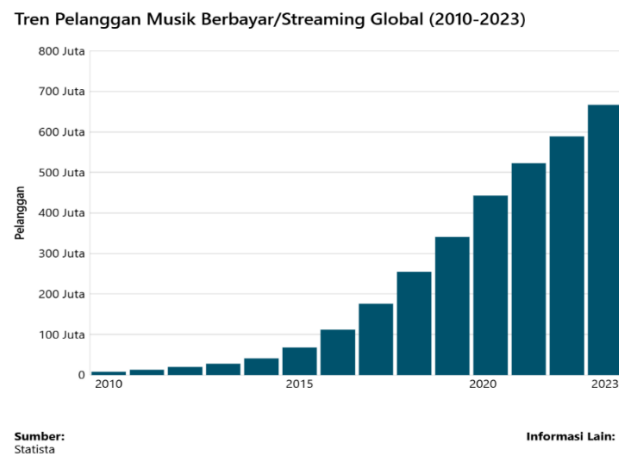
The development of digital technology has brought significant changes in how companies interact and build relationships with consumers. Three key components that have become the main focus in modern marketing strategies today are the use of Artificial Intelligence (AI), the implementation of Personalized Marketing strategies, and the creation of an optimal Customer Experience (Ifekanandu et al., 2023). These three aspects serve as the foundation for companies to create more relevant and effective interactions while fostering long-term customer loyalty (Huang & Rust, 2021). A tangible phenomenon of digital innovation can be observed in the global music industry. Before the digital era, music consumption relied on physical media such as CDs, cassettes, and vinyl records (Fauzan et al., 2023). A major shift occurred between 1990 and 2000 with the emergence of Napster and iTunes as pioneers of digital music (Sharrow, 2024). However, the most significant revolution took place in 2008 with the launch of Spotify, which introduced subscription-based music streaming services powered by Artificial Intelligence algorithms to deliver personalized music recommendations (Yin & Fu, 2021). This innovation transformed the way consumers enjoy music—from physical ownership to unlimited access—while offering a flexible and practical experience (Ruddin & Santoso, 2022). Data from the International Federation of the Phonographic Industry (IFPI), processed by Statista, shows that the number of paid digital music subscribers has surged dramatically over the past decade. In 2023, the total number of subscribers reached 667 million, an increase of 78 million compared to the previous year (Santika, 2024). This growth has also contributed to the rise of global recorded music industry revenues, which reached US\$28.6 billion, with 67.3% of the total generated from digital streaming services (Redaksi, 2024). These figures highlight a major shift in music consumption behavior, where customer loyalty is increasingly

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directed toward digital platforms that can provide convenience, broad access, and personalized experiences (Ifekanandu et al., 2023).



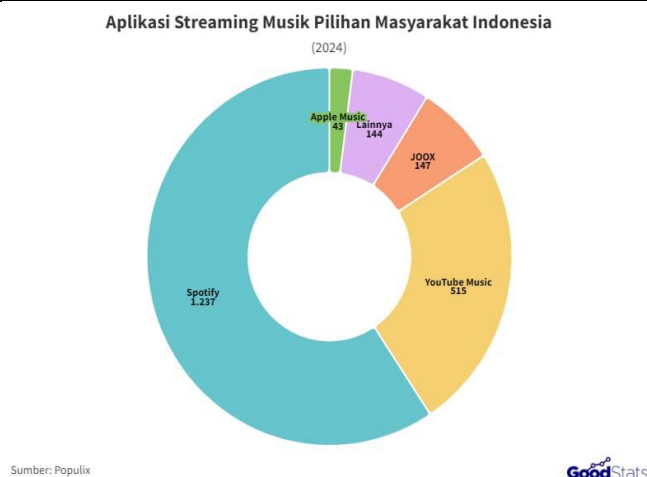
Source: Erlina F. Santika, Databoks (2024)

Figure 1. Global Music Streaming User Trends (2010–2023)

In line with this, the concept of Marketing 5.0 introduced by Kotler et al. (2021) emphasizes the importance of integrating technologies such as AI, the Internet of Things (IoT), and big data in designing experience-based marketing strategies. Marketing is no longer merely transactional; instead, it prioritizes personalization and relevance to make consumers feel more connected to the brand (Huang & Rust, 2021). This view is reinforced by Adnan et al. (2024), who highlight that the implementation of Artificial Intelligence and personalization strategies can enhance Customer Experience by providing deeper interactions, measuring effectiveness through ROI, and strengthening customer loyalty. Spotify serves as a concrete example of the application of Marketing 5.0 principles in the digital entertainment industry. Features such as Discover Weekly, Release Radar, Daily Mixes, and Spotify Wrapped leverage AI algorithms powered by machine learning to deliver music recommendations tailored to user preferences (Gomathy, 2022). These features not only help users discover new music but also create unique and personalized listening experiences. For instance, Discover Weekly automatically updates a weekly playlist based on the user's listening history, while Spotify Wrapped presents a yearly summary of the user's music journey that can be shared on social media, fostering emotional and social engagement among users (Janice & Kusumawati, 2024).

In this context, AI plays a central role in analyzing consumer behavior patterns in real time, providing relevant recommendations, and enhancing the quality of the overall experience (Singh & Singh, 2024). At the same time, personalized marketing strategies contribute to greater satisfaction and stronger consumer–platform relationships (Wilson et al., 2024). When combined with a positive customer experience, this dynamic has the potential to encourage users to remain loyal to a particular service (Tulcanaza-Prieto et al., 2023). In other words, personal and relevant interactions are a crucial foundation for building consumer loyalty in the digital era. Although several studies have examined the role of AI in the music industry, there remains a lack of research that specifically explores the integration of AI, personalized marketing, and customer experience in fostering consumer loyalty—particularly within the freemium business model employed by Spotify. The freemium model provides free access to users while offering paid premium features to enhance the overall experience (Jael, 2023). Addressing this gap in the literature is crucial, as consumer loyalty on freemium platforms is not solely determined by the quality of free services but also by the company's success in converting free users into premium subscribers.

Based on this phenomenon, the present study focuses on Spotify as the object of investigation. Beyond being a global pioneer, Spotify also holds the highest adoption rate among music streaming services in Indonesia, with a user preference rate of 50% (Sugiarti, 2024). A preliminary survey conducted by the researcher among students at Universitas Malikussaleh further revealed that 88.2% of respondents use Spotify as their primary platform for digital music consumption. These findings underscore the relevance of Spotify as the research object, particularly in the context of university students, who represent digital natives as well as a potential consumer segment for digital music services.



Source: Sugiarti, GoodStats (2024)

Figure 2. Music Streaming Applications Preferred by Indonesian Consumers

Accordingly, this study aims to analyze the influence of Artificial Intelligence, Personalized Marketing, and Customer Experience on consumer loyalty within the digital music platform Spotify. Unlike previous research that has largely examined these variables separately, this study integrates them into a single comprehensive model. The research is expected to provide empirical contributions to the development of digital marketing literature while also offering practical recommendations for the digital entertainment industry in designing more effective data-driven marketing strategies to build long-term relationships with consumers.

LITERATURE REVIEW

Digital Marketing

According to Kotler et al. (2021), digital marketing is a form of modern marketing that leverages digital technology to create added value for consumers. Kotler et al. (2021) also explain that the concept of marketing has evolved through five eras. Marketing 1.0 focused on products (product-driven), Marketing 2.0 emphasized customers (customer-driven), Marketing 3.0 highlighted values and humanity (value-driven), Marketing 4.0 integrated online and offline interactions (digital-driven) (Adnan & Aiyub, 2020), while Marketing 5.0 stresses the utilization of advanced technologies such as Artificial Intelligence (AI), the Internet of Things (IoT), and big data to create relevant and meaningful customer experiences. Meanwhile, Rusydi Abubakar et al. (2023) assert that the implementation of digital marketing does not rely solely on technology but also requires innovation and creativity for companies to deliver unique, relevant experiences and enhance customer loyalty.

Additional support is provided by Chaffey and Ellis-Chadwick (2019), who define digital marketing as the process of applying digital technologies to create, communicate, and deliver value to customers while efficiently managing relationships through various digital channels. Similarly, Ryan (2020) emphasizes that digital marketing is not only intended for promotion but also for building real-time connections that enable companies to respond to consumer needs quickly and effectively. Based on these expert perspectives, it can be concluded that digital marketing is a modern marketing strategy that integrates digital technologies with innovation and creativity to build interactive relationships, deliver added value, and sustain long-term relationships with consumers.

Consumer Loyalty

Consumer loyalty is an essential concept in marketing (Adnan & Rusydi, 2021) as it enhances customer retention, strengthens brand reputation, and reduces the costs of acquiring new customers, particularly in the digital sphere such as Spotify (Yin & Fu, 2021). To understand how Artificial Intelligence, Personalized Marketing, and Customer Experience influence this phenomenon, the present study adopts the Multidimensional Loyalty Model. According to Närvänen et al. (2020), customer loyalty is a complex construct composed of multiple interrelated dimensions. With effective and efficient management of consumer loyalty, companies can achieve significant savings in costs associated with attracting new customers (Haleem et al., 2022). This study adopts Oliver's (1999) multidimensional loyalty model, which positions loyalty as a tiered process, beginning with cognitive loyalty,

followed by affective loyalty, and ultimately conative loyalty. This approach is reinforced by Närvänen et al. (2020) in the context of digital consumer behavior. Murhaban et al. (2023) further emphasize that customer-oriented businesses view loyalty as a crucial element for retaining customers and preventing them from switching to competitors. A structured understanding of the factors shaping loyalty enables companies to design more effective marketing strategies to retain and strengthen consumer loyalty.

The Relationship Between Artificial Intelligence (X) and Consumer Loyalty (Y)

Previous studies have shown that Artificial Intelligence (AI) plays a significant role in enhancing consumer loyalty through various mechanisms that support customer experience and personalized interactions. Janice & Kusumawati (2024) note that AI can improve customer experiences and personalized interactions, which contribute to consumer loyalty. Khana et al. (2023) add that AI-based personalized marketing strategies have been proven to increase customer satisfaction, which in turn positively affects loyalty. Research by Ifekanandu et al. (2023) also supports these findings by demonstrating that personalized experiences enabled by AI can create deeper emotional connections between consumers and brands, which is a key factor in building loyalty. Furthermore, Febriani et al. (2022) explain that AI's ability to analyze consumer data and predict preferences enables businesses to create experiences tailored to individual needs, thereby increasing satisfaction and loyalty. Similarly, Shin et al. (2020) emphasize that the use of AI-based chatbots in consumer interactions can improve service experiences, which contribute to customer loyalty. Considering the findings of previous studies on the influence of Artificial Intelligence on consumer loyalty, the following hypothesis can be proposed:

H1: Artificial Intelligence has a positive effect on consumer loyalty.

The Relationship Between Personalized Marketing (X²) and Consumer Loyalty (Y)

The relationship between Personalized Marketing (X²) and consumer loyalty (Y) has become a major focus in marketing literature. Numerous studies indicate that personalized marketing strategies can significantly enhance consumer loyalty. According to Gao and Liu (2023), personalized marketing can create more meaningful experiences, ultimately encouraging consumers to remain loyal to a brand. Suryawijaya and Wardhani (2023) also note that personalized marketing strengthens the emotional bond between brands and consumers, which plays a crucial role in fostering loyalty. In line with these findings, Singh & Singh (2024) demonstrate that personalized experiences not only increase customer satisfaction but also build stronger relationships between brands and consumers. This emotional connection is a key driver of loyalty, as consumers tend to remain committed to brands that understand and meet their individual preferences (Ramos & Blind, 2020). Moreover, personalized marketing can enhance customer satisfaction, which serves as another important factor influencing loyalty (Khana et al., 2023). When consumers feel that their needs are met through personalized interactions, their overall satisfaction improves, which in turn strengthens their loyalty to the brand. Thus, brands that prioritize personalized marketing strategies are more likely to experience a positive impact on consumer loyalty over time. Based on the analysis of previous studies, the following hypothesis can be proposed:

H2: Personalized Marketing has a positive effect on consumer loyalty.

The Relationship Between Customer Experience (X³) and Consumer Loyalty (Y)

The relationship between Customer Experience (X³) and consumer loyalty (Y) has been widely demonstrated in previous research. Riyanto and Muchayatin (2023) state that positive customer experiences significantly enhance consumer loyalty by creating strong emotional connections and increasing satisfaction with the service. Singh & Singh (2024) also found that consumers who have positive experiences with a brand tend to demonstrate higher loyalty and are more willing to recommend the brand to others. Furthermore, Janice & Kusumawati (2024) emphasize that positive customer experiences contribute to greater consumer engagement, repeat purchases, and word-of-mouth promotion, which are strong indicators of consumer loyalty toward a service. In addition, customer experience plays an important role in shaping consumer interactions and engagement with platforms, particularly within the context of effective marketing strategies. Positive customer experiences can increase consumer satisfaction, which ultimately contributes to the long-term sustainability of service usage (Suryawijaya & Wardhani, 2023). Overall, previous studies suggest that Customer Experience not only influences consumer satisfaction but also plays a crucial role in strengthening engagement and loyalty toward digital services. Based on the analysis of prior research, the following hypothesis is proposed:

H3: Customer Experience has a positive effect on consumer loyalty.

The Relationship Between Artificial Intelligence (X1), Personalized Marketing (X2), and Customer Experience (X3) on Consumer Loyalty (Y)

The rapid development of digital technology has transformed interaction patterns between consumers and service providers, particularly in application-based industries such as digital music platforms like Spotify. In this context, the roles of Artificial Intelligence (AI), Personalized Marketing strategies, and Customer Experience serve as three fundamental pillars in establishing long-term relationships between consumers and brands. Previous studies have shown that when these three variables are implemented in an integrated manner, they are capable of creating holistic and meaningful consumer experiences, which ultimately contribute to higher consumer loyalty. Janice & Kusumawati (2024) highlight that the integration of AI into music recommendation processes, when combined with personalization strategies and enjoyable user experiences, fosters deeper interactions between consumers and digital platforms.

Furthermore, Kaushik and Sharma (2023) argue that the application of AI-based technologies can strengthen personalization in marketing through more accurate and real-time insights into user preferences. When this information is utilized to deliver relevant and tailored content, the user experience becomes more meaningful, directly influencing loyalty. Supporting this perspective, Becker and Jaakkola (2020) emphasize the importance of users' emotional and cognitive experiences in digital interactions. Their findings reveal that consumer loyalty is not only shaped by the functional aspects of a service but also by the extent to which consumers feel "understood" and "valued" by the platform through personalized recommendations, consistent experiences, and sustained engagement. Additionally, Wiastuti and Sigar (2021) assert that effectively implemented personalized marketing can build strong psychological connections between consumers and brands. When such strategies are supported by advanced AI capabilities and positive customer experiences, they create an integrated digital ecosystem that sustains consumer retention over the long term. Considering these prior findings, it can be concluded that the effects of Artificial Intelligence, Personalized Marketing, and Customer Experience on Consumer Loyalty are not merely individual but also simultaneous and collective. Together, these three factors form a complementary system that strengthens both the emotional and functional bonds consumers have with digital platforms. Based on the literature review and analysis, the following hypothesis is proposed:

H4: Artificial Intelligence, Personalized Marketing, and Customer Experience collectively have a positive effect on consumer loyalty.

Conceptual Framework

The conceptual framework of this study illustrates the interrelationships among the research variables. Artificial Intelligence (X1), Personalized Marketing (X2), and Customer Experience (X3) are positioned as independent variables, while Consumer Loyalty (Y) serves as the dependent variable. Each independent variable is hypothesized to have a direct effect on consumer loyalty (H1, H2, H3), and simultaneously, the three variables are expected to exert a collective influence on loyalty (H4).

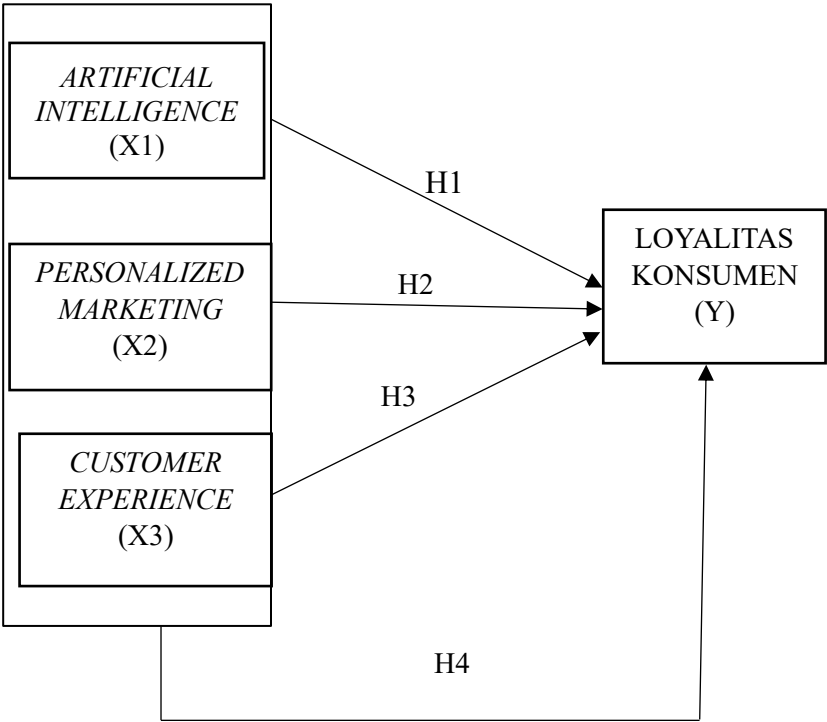


Figure 3. Conceptual Framework

Based on the figure above, it can be seen that there are three independent variables, namely Artificial Intelligence (X1), Personalized Marketing (X2), and Customer Experience (X3), which influence the dependent variable, Consumer Loyalty (Y). The relationship between these variables is tested partially using the t-test and jointly (simultaneously) through the R² test to measure how well the independent variables explain the variance in the dependent variable.

METHOD

This study employs a quantitative approach with a survey design to analyze the influence of Artificial Intelligence (X1), Personalized Marketing (X2), and Customer Experience (X3) on Consumer Loyalty (Y) among Spotify users within the student population of Malikussaleh University.

Data and Samples

The data and samples of this research consist of Malikussaleh University students who actively use Spotify. The sampling technique applied is purposive sampling, with the following respondent criteria: (1) active students of Malikussaleh University in the even semester of 2024, (2) active Spotify users within the last three months, and (3) have used AI-based personalization features such as Discover Weekly, Release Radar, or Spotify Wrapped. The determination of the sample size refers to the opinion of Hair et al. (2019), who suggest that an adequate sample size in multiple linear regression analysis with SPSS ranges from 10 to 20 observations for each estimated parameter. The formula is as follows:

Sample Size = Number of Indicators × (10 to 20)

In this study, 12 indicators were used, and the researcher determined 10 observations for each indicator. Therefore, the calculation is as follows:

Sample Size = 12 × 10 = 120

Based on this calculation, the total sample used in this study consists of 120 respondents, who are students of Malikussaleh University. Accordingly, the research involved 120 students from various faculties and study programs. The respondents’ profile indicates that the majority were aged between 18–23 years, and most were female, which aligns with the general demographic of Spotify users within the campus environment.

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Primary data were collected through structured questionnaires distributed both online and offline. The questionnaire contained closed-ended statements developed from indicators of previous research, covering four main variables, namely Artificial Intelligence, Personalized Marketing, Customer Experience, and Consumer Loyalty. Respondents' answers were measured using a five-point Likert scale, ranging from 1 = Strongly Disagree (STS) to 5 = Strongly Agree (SS). Measurement and Reliability. Each variable was operationalized based on indicators validated by previous studies. The validity test of the instrument was carried out using the Pearson Product-Moment correlation method, in which an item is declared valid if the correlation coefficient is greater than the r-table value at a significance level of 5% ($\alpha = 0.05$). The reliability test was conducted using Cronbach's Alpha, with a criterion value > 0.60 indicating that the instrument is reliable.

Data Analysis

The data analysis method used in this study is multiple linear regression with the assistance of SPSS version 27 software. This method was chosen based on the research objective, which is to analyze the influence of more than one independent variable on the dependent variable. The independent variables in this study consist of Artificial Intelligence (X1), Personalized Marketing (X2), and Customer Experience (X3), while the dependent variable is Consumer Loyalty (Y). Before conducting the regression analysis, validity and reliability tests were performed on the research instrument to ensure the reliability of the questionnaire. Subsequently, classical assumption tests were carried out, including normality test, multicollinearity test, and heteroscedasticity test. These tests aim to ensure that the regression model used is unbiased and meets the BLUE (Best Linear Unbiased Estimator) assumptions.

The multiple linear regression model in this study is formulated as follows:

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Description:

Y = Consumer Loyalty

a = Constant

X1 = Artificial Intelligence

X2 = Personalized Marketing

X3 = Customer Experience

$\beta_1, \beta_2, \beta_3$ = Regression coefficients of each independent variable

ε = Error term

In addition, the analysis also employed the correlation coefficient (R) to examine the strength of the relationship among variables and the coefficient of determination (R^2) to measure the extent to which the independent variables can explain the dependent variable. The study further used the t-test and F-test for hypothesis testing, aimed at determining the partial effect of each independent variable on the dependent variable as well as the simultaneous effect of the independent variables on the dependent variable. The significance level (α) used in this study is 5% (0.05).

RESULTS AND DISCUSSION

Respondent Characteristics

Based on the data collected, this study involved 120 respondents who are students of Malikussaleh University. The majority of respondents were female, within the age range of 18–24 years. Most respondents actively use Spotify, particularly utilizing personalization features such as Discover Weekly, Release Radar, and Spotify Wrapped. These characteristics indicate that the respondents belong to the digital native generation, who are familiar with music streaming platforms and Artificial Intelligence-based technologies.

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Table 1 Socio-Demographic Profile of Respondents

Variable	Total (N = 120)	Percentage
Gender:		
Man	14	11,7
Woman	106	88,3
Age:		
18-20 years	38	31,7
21-24 years.	82	68,3
Faculty:		
Ekonomi dan Bisnis	80	66,7
Teknik	14	11,7
FISIP	21	17,5
Hukum	5	4,2
Duration of Spotify usage:		
3 Month	21	17,5
6 Month	32	26,7
1 Years	44	36,7
≥ 1 Years	23	19,2
Current user account type:		
Premium	14	11,7
Gratis	106	88,3
Ever upgraded to premium		
Yes	27	22,5
No	93	77,5
Total use of each feature:		
Daily Mix	101	84,2
Spotify Wrapped	44	36,7
Release Radar	42	35,0
Discover Weekly	34	28,3

Source: Primary data processed, 2025

The results presented in Table 1 show that the majority of respondents were female (88.3%), with the dominant age range being 21–24 years (68.3%). Most respondents were from the Faculty of Economics and Business (66.7%). In terms of Spotify usage, the largest proportion of respondents had been using the application for one year (36.7%), and the majority were still using a free account (88.3%). However, 22.5% of respondents had previously upgraded to a premium account. The summary of Spotify feature usage indicates that most respondents interacted with more than one feature, resulting in a usage percentage exceeding 100%. The most frequently used feature was Daily Mix (84.2%), suggesting that recommendation algorithms based on listening habits play an important role in the user experience. In addition, Spotify Wrapped (36.7%), Release Radar (35.0%), and Discover Weekly (28.3%) were also widely utilized, indicating respondents' engagement with Spotify's personalization features.

Research Instrument Evaluation Test

Subsequently, after the data were collected, the data were analyzed using validity and reliability tests. In the validity test, if the correlation coefficient value is significant at < 5% (level of significance), the question item is

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considered valid as an indicator. As shown in Table 2, all data can be declared valid and reliable because the calculated r-value is greater than the r-table value. A Cronbach's alpha coefficient of ≥ 0.60 (Lutfiah et al., 2025) was used for data reliability analysis, and all Cronbach's alpha threshold values were found to exceed 0.60. Thus, it can be concluded that all instrument items used in this study are reliable.

Table 2 Data Validity and Reliability Test Results

Variables and Questionnaire Items	r-count	Table r	Cronbach alpha coefficient (≥ 0.60)
Consumer Loyalty:			
1. Perceived quality of the Spotify platform	0,405		
2. Emotional attachment to the Spotify platform	0,465	0,1509	0,660
3. Intention to repurchase and recommend Spotify	0,554		
Artificial Intelligence:			
1. Relevance of music recommendations to consumer preferences	0,636	0,1509	0,743
2. Effectiveness of Artificial Intelligence	0,458		
3. Recommendation experience	0,636		
Personalized Marketing:			
1. Frequency of interaction with personalized content	0,635	0,1509	0,751
2. Customer response to push notifications	0,410		
3. Satisfaction with personalized experiences	0,723		
Customer Experience:			
1. Relevance of music recommendations to consumer preferences	0,257	0,1509	0,614
2. Level of emotional satisfaction	0,523		
3. Level of consumer engagement with social features	0,555		

Source: Primary data processed, 2025

The next stage is conducting the classical assumption tests, which consist of a series of processes including the data normality test, heteroscedasticity test, and multicollinearity test. The results of the classical assumption tests in this study are presented in Tables 3 and 4 below:

Tabel 3 Hasil Uji One Sample Kolmogrov Smirnov Test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		120
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	1.31296231
Most Extreme Differences	Absolute	.071
	Positive	.046
	Negative	-.071
Test Statistic		.071
Asymp. Sig. (2-tailed) ^c		.200 ^d

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

Source: Primary data processed, 2025

Table 3 shows that the Asymp Sig. (2-tailed) value in the Kolmogorov-Smirnov One Sample test is 0.200, which is much greater than the significance criterion of 0.05, indicating that the research data are normally distributed. Furthermore, the multicollinearity test was conducted by examining the tolerance value or, conversely, the Variance Inflation Factor (VIF) value. If the tolerance value is > 0.10 , it can be interpreted that there is no multicollinearity problem in the data. Similarly, if the VIF value is < 10.0 , it can be concluded that there is no multicollinearity issue in the data. The results of the multicollinearity test in this study are presented in Table 4 below:

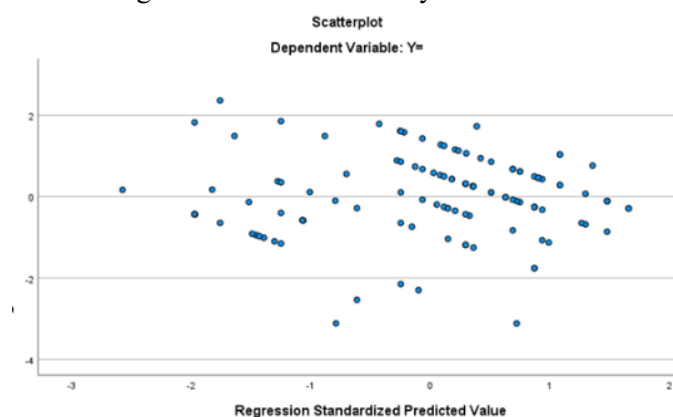
Table 4 Multicollinearity Test Results

Variabel	Tolerance	VIF
Artificial Intelligence	0.394	2.538
Personalized Marketing	0.360	2.776
Customer Experience	0.848	1.179

Source: Primary data processed, 2025

The table above shows that all independent variables have a Tolerance value > 0.1 and a VIF value < 10 . These values indicate that there is no multicollinearity problem in this research model. Furthermore, the heteroscedasticity test was carried out to assess whether there is no variance inequality from one observation to another, which in this study was tested using a scatterplot with the help of SPSS. The results of the scatterplot test can be seen in the following figure:

Figure 4 Heteroscedasticity Test Results



Source: Research Results (2025)

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Based on the figure above, it can be observed that the points are scattered in various directions, rising above the value of 0 on the Y-axis, and do not form any specific pattern. Thus, it can be concluded that there is no heteroscedasticity in the regression model, indicating that the model is suitable for predicting consumer loyalty performance using the variables Artificial Intelligence, Personalized Marketing, and Customer Experience.

Hypothesis testing

Hypothesis testing is used to determine the significant influence of the independent variables on the dependent variable by employing the correlation coefficient test, adjusted determination test (Adjusted R²), partial test (t-test), and simultaneous test (F-test). The results of the hypothesis testing in this study are presented in Table 5 as follows:

Table 5 Hypothesis Testing Results
Coefficients^a

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	2.002	0,980		2,043	0,043
	Artificial Intelligence (X1)	0,442	0,104	0,444	4,262	0,000
	Personalized Marketing (X2)	0,160	0,099	0,176	1,613	0,109
	Customer Experience (X3)	0,239	0,068	0,251	3,538	0,000
R		.710 ^a				
Adjusted R Square		.492				
F value		39.361				
Sig. f		0,000				

Source: Primary data processed, 2025

Based on the table above, the Artificial Intelligence variable (X1) has a regression coefficient of 0.442. In the equation, the regression constant (a) and regression coefficients (b) for the Personalized Marketing variable (X2) is 0.160, and for the Customer Experience variable (X3) is 0.239. The research findings indicate that Artificial Intelligence has a positive and significant t-value, which is smaller than the predetermined significance level. These results are consistent with previous studies, such as Singh & Singh (2024), who revealed that Artificial Intelligence has a positive and significant effect on consumer loyalty. Furthermore, Ifekanandu et al. (2023) also found that Artificial Intelligence has a positive and significant perception of consumer loyalty. This aligns with Gao & Liu (2023), who proposed the Artificial Intelligence Enabled Personalization (AIP) framework, stating that AI is not only used to automate processes but also to deeply understand individual preferences and provide real-time, contextual, and relevant recommendations. Similarly, Haleem et al. (2022) emphasized that Artificial Intelligence has a positive and significant effect on consumer loyalty. In addition, Gomathy (2022) also concluded that the Artificial Intelligence variable significantly influences consumer loyalty. In this study, based on the characteristics of respondents—most of whom are in the age range of 18–24 years and are university students—it is reasonable that they experience loyalty toward the Spotify platform due to the presence of advanced and responsive Artificial Intelligence (AI) (Lutfiah et al., 2025). This generation is highly familiar with digital technology and accustomed to tools that can automatically adjust services based on user preferences. In this regard, the use of AI on Spotify, which

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provides daily music recommendations, thematic playlists, and the annual Spotify Wrapped feature, creates a personalized and enjoyable experience (Janice & Kusumawati, 2024). Respondents feel that the application recognizes their musical tastes, delivers relevant surprises, and fosters emotional attachment. This creates a continuous positive experience and strengthens users' loyalty to Spotify as their preferred music platform. The research findings indicate that Personalized Marketing has a non-positive t-value because it is smaller than the predetermined significance level, and it is not significant since its significance value exceeds the threshold. These results are in line with several recent studies showing that the effectiveness of personalized marketing strongly depends on the context and characteristics of the consumer segment. This aligns with Onibokun et al. (2023), who emphasized that personalized marketing strategies do not necessarily generate a positive impact on loyalty if they are not implemented contextually and ethically. A study by Wulandari et al. (2024) revealed that overly frequent personalization through push notifications is often perceived as intrusive by younger generations, who prefer to explore content independently.

This is further supported by Rathod et al. (2024), who noted that digital natives, such as university students, tend to ignore overly explicit marketing messages because they are not considered personally or emotionally relevant. Moreover, based on observations during the direct distribution of questionnaires, respondents indicated that they were more aware of their overall user experience rather than recognizing that the experience was the result of personalization strategies. This suggests that active Spotify users are likely accustomed to the recommendation system, making the uniqueness or surprise element of personalization less impactful, and therefore insufficient to influence their decision to remain loyal to the service (Sepnandito & Suharyati, 2024). In this context, Kanij Fatema Tumpa (2024) highlighted that consumer loyalty is more strongly influenced by the overall experience, perceived value, and trust in the brand, rather than solely by personalized content. The research findings indicate that Customer Experience has a positive and significant t-value, which is smaller than the predetermined significance level. These findings are consistent with previous studies, such as Ertemel et al. (2021), who revealed that Customer Experience has a positive and significant effect on consumer loyalty. Similarly, Keni & Sandra (2021) also stated that Customer Experience has a positive and significant perception of consumer loyalty. This aligns with Närvänen et al. (2020), who defined Customer Experience as the overall perception of customers regarding their interactions with a brand, including functional, emotional, and sensory aspects.

Furthermore, Becker & Jaakkola (2020) emphasized that Customer Experience also has a positive and significant effect on consumer loyalty. Supporting this, Walpola & Gunawardana (2025) found that the Customer Experience variable significantly influences consumer loyalty. According to Singh and Singh (2023), enjoyable and consistent user experiences strengthen consumers' emotional connections with a brand. The significant results of the Customer Experience variable also demonstrate that users' perceptions of convenience, comfort, and overall service quality play a crucial role in shaping loyalty (Mokoena & Obagbuwa, 2024). In this context, a positive experience when using Spotify enhances consumer loyalty, as users feel valued, understood, and supported in fulfilling their daily music entertainment needs (Janice & Kusumawati, 2024). The results of this study indicate that the regression model used meets the feasibility requirements to explain the simultaneous relationship between the independent variables and the dependent variable. This study is consistent with previous research by Singh & Singh (2024), which examined the interrelation between AI, personalized marketing, and customer experience in shaping consumer loyalty, concluding that the use of AI enables more relevant and personalized interactions, thereby enhancing satisfaction and loyalty (Janice & Kusumawati, 2024). The positive relationship among these three independent variables is also reinforced by Ifekanandu et al. (2023), who demonstrated a significant influence on customer loyalty in the context of digital marketing.

This study is further supported by Gao & Liu (2023), who introduced the concept of AI-enabled personalization experience, referring to customer experiences personalized through AI technology. They concluded that such experiences, when implemented holistically alongside appropriate marketing strategies, can significantly improve consumer loyalty. In addition, Hassan et al. (2025) showed that in AI-based systems, personalization driven by AI also contributes to enhancing customer experience. These findings illustrate that Artificial Intelligence, Personalized Marketing, and Customer Experience do not operate in isolation, but rather work together in a complementary and integrated manner to shape consumer loyalty simultaneously.

CONCLUSION

This study contributes to the development of theory in the field of digital marketing, particularly in the aspect of consumer loyalty within the context of technology-based music platforms such as Spotify. Based on the results of data analysis and hypothesis testing, several conclusions can be drawn as follows: The Artificial Intelligence variable (X1) is proven to have a positive and significant effect on consumer loyalty, with a beta value of 0.444. This indicates that the higher the application of AI within the Spotify platform, the higher the level of consumer loyalty, both in terms of repeated usage and recommendations to others. Meanwhile, the Personalized Marketing variable (X2) does not have a significant effect on consumer loyalty, as indicated by a significance value of 0.109 (>0.05). This means that Spotify's content personalization strategy has not fully succeeded in increasing user loyalty, possibly due to diverse consumer preferences or limitations in the relevance of the personalized content offered. Furthermore, the Customer Experience variable (X3) has a positive and significant effect on consumer loyalty, with a beta value of 0.251. This suggests that positive experiences perceived by consumers—ranging from ease of app use, interface comfort, to satisfaction in enjoying its features—can encourage consumers to remain loyal to Spotify. The simultaneous test results show that the three independent variables (AI, Personalized Marketing, and Customer Experience) together have a significant effect on consumer loyalty, contributing 49.2% to the variation in consumer loyalty. This confirms that the combination of AI implementation and enhanced user experience remains a crucial factor in maintaining consumer loyalty on digital music platforms.

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