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The Influence of Song Recommendation Algorithm Strategies and User Experience on Listener Engagement with Spotify Among Young People in Depok City

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ABSTRACT

The development of digital technology has shifted how people consume music, with streaming platforms like Spotify becoming increasingly popular, especially among young users. This study aims to examine the influence of song recommendation algorithm strategies and user experience on listener engagement with Spotify among young people in Depok City, Indonesia. Using a quantitative approach with purposive sampling, the study targeted users aged 10 to 29 years. The results showed that song recommendation algorithm strategies and user experience significantly influenced listener engagement on Spotify. Among the two variables, user experience had a more dominant influence. These findings indicate that optimizing the user interface and personalization features could enhance user engagement on music streaming platforms. The study highlights the importance of aligning technological features and personalized services with user expectations to maintain long-term engagement.

1. INTRODUCTION

The advancement of digital technology has significantly transformed the way people consume music. Previously, music was primarily accessed through radios, compact discs, or downloaded files. In the current digital era, streaming platforms such as Spotify have become the primary option for music consumption, particularly among the younger generation. Spotify offers a variety of appealing features, including personalized song recommendations based on user preferences and a user-friendly interface. One of the most notable aspects that distinguishes Spotify from other music platforms is its algorithmic recommendation strategies. As noted by Situmorang et al. (2021), music recommendation models can serve as automatic music selectors, making it easier for users to discover songs that match their preferences. By utilizing advanced algorithms, Spotify is able to suggest songs that align with users' tastes and listening habits while also curating personalized playlists such as Daylist, which recommends songs based on time and mood, Daily Mix, which compiles favorite tracks across genres, Release Radar, which introduces the latest songs from frequently played artists, Discover Weekly, which suggests new songs aligned with user preferences, and on repeat, which organizes the most frequently played tracks. These algorithm-driven features are designed to ease music discovery and enhance the overall listening experience. Nevertheless, despite the convenience offered by the recommendation algorithm, certain challenges remain in the personalization process. For instance, the playlists occasionally include irrelevant songs or exhibit repetitive patterns. Furthermore, when users' musical tastes evolve, the algorithm may require time to adjust its recommendations. These issues can lead to a monotonous experience and potentially reduce listener engagement as users feel the system is not responsive to their changing interests. Besides algorithmic personalization, user experience also plays a crucial role in shaping listener engagement. Spotify's interface is visually appealing and easy to navigate, even for new users. A positive user experience can lead to increased satisfaction and encourage users to spend more time on the application. Nonetheless, several usability issues remain. Among these are frequent advertisements for free account users, which cannot be skipped and frequently appear after a song ends or when selecting a new song, thereby disrupting the listening flow. Users have also expressed dissatisfaction regarding unavailable lyrics or buffering issues. In addition, some users feel limited in customizing certain features, such as reordering recommended playlists or selecting categories for

daily playlists, which indicates a gap between user expectations and the actual service experience. Santoso (2021) stated that the concept of customer engagement aims to increase the time and attention given by users or potential users to a brand, such as Spotify, through the application and other digital platforms. Listener engagement has become one of the primary goals of music streaming services like Spotify. Engagement is not only demonstrated by how frequently users listen to music but also through other activities such as saving songs, sharing playlists, following artists, and subscribing to premium services. According to the Statistics Indonesia (BPS), the population aged between 10 and 29 years reaches 663,739 individuals. This age group, which includes students and young professionals, is highly familiar with digital technology and frequently uses music streaming platforms as part of their daily routines. Given this behavioral trend, they represent a relevant population for examining the effects of Spotify's song recommendation algorithm strategies and user experience on listener engagement. This research is intended to fill the gap in the existing literature by specifically analyzing the influence of song recommendation algorithm strategies and user experience on listener engagement among young Spotify users in Depok City. The findings of this study are expected to provide valuable insights for the development of more adaptive, personalized, and user-centered digital music services.

2. LITERATURE REVIEW

2.1. Song recommendation algorithm strategies

The advancement of digital marketing has revolutionized the way companies connect with their target audience by integrating digital tools, platforms, media, data, and technology. Within this context, song recommendation algorithm strategies have emerged as a pivotal innovation that utilizes digital data to provide users with personalized and contextually relevant experiences. According to Chaffey and Ellis-Chadwick (2022), such strategies enable companies to effectively reach audiences by tailoring content based on user preferences and behaviors. These algorithms analyze users' listening habits, demographics, and contextual data to deliver music recommendations that are not only accurate but also enhance user satisfaction and engagement. Sánchez-Moreno et al. (2020) state that an ideal Music Recommender System (MRS) aims to deliver the right music to the right user at the right time, recognizing that time significantly influences both the user's context and the way their musical tastes evolve. This highlights the importance of real-time responsiveness in recommendation strategies, as user preferences are dynamic and influenced by situational and emotional contexts. Furthermore, Anderson et al. (2020) argue that online platforms must balance between recommending content that aligns with users' immediate preferences and facilitating exploration to maintain long-term user satisfaction. This dual function underscores the strategic complexity of recommendation systems that not only enhance the short-term listening experience but also contribute to sustained listener engagement over time.

2.2. User experience

In parallel with recommendation strategies, user experience (UX) has become a critical consideration in the design and development of digital products. Clemmensen (2024) defined UX as encompassing the feelings, expectations, and emotional responses that users experience during interactions with a system. Positive user experience is achieved when users associate favorable emotions directly with the product, indicating the importance of emotional design alongside functional usability. Tullis and Albert (2023) further expand this definition by emphasizing that UX reflects the user's overall connection with a product, including intentions, emotions, and impressions formed through repeated interactions. The goal for designers is to ensure that systems are not only easy to use and efficient but also engaging and enjoyable, creating a meaningful and satisfying user experience.

2.3. Listener engagement

Listener engagement, while closely related to the broader concept of customer engagement, specifically refers to the cognitive, emotional, and behavioral involvement of users in consuming audio content such as music and podcasts. Alsheail et al. (2023) asserted that successful technologies are characterized by their ability to captivate users on multiple levels, as users invest their time, attention, and emotions into these interactions. This implies that mere usage is insufficient; true engagement is marked by depth of interaction and emotional resonance. García-Marín (2020) conceptualizeed engagement as the synthesis of user behaviors, attitudes, and interests in relation to media content. It includes participation in activities, identification with content, and the underlying motivations that drive these actions. Listener engagement thus encompasses attention, curiosity, participation, emotional connection, and the cognitive investment users make while consuming audio content. In summary, song recommendation algorithms strategies, user experience, and listener engagement are interrelated concepts that collectively shape the effectiveness of digital music platforms. Recommendation strategies personalize content delivery, user experience ensures meaningful and intuitive interaction, and listener engagement reflects the depth and quality of users' relationships with the content. Together, these elements form a framework for understanding how digital platforms can optimize both short-term satisfaction and long-term loyalty.

2. METHODOLOGY

3.1. Research design

This research adopts an associative design with a quantitative approach. The quantitative method is considered appropriate as this study utilizes numerical data obtained through the distribution of structured questionnaires. The associative design is used to examine the relationship between two independent variables, namely the Song Recommendation Algorithm Strategies and User Experience, with the

dependent variable, which is Listener Engagement. This research is cross-sectional because the data were collected during a specific period, which is from April to May 2025.

3.2. Population and sample

The population in this study comprises young individuals in Depok City aged 10 to 29 years, totaling approximately 663,739 people based on 2024 data from the Statistics Indonesia (BPS). A purposive sampling technique is used, targeting active Spotify users within the specified period. The minimum sample size is determined using the Slovin formula with a 10% margin of error, resulting in 100 respondents.

3.3. Data collection method and literature

The data has been collected through questionnaire (Survey). The questionnaire is designed based on the research variables and distributed directly to respondents. It consists of closed-ended statements measured using a 5-point Likert scale, ranging from "Strongly Disagree" to "Strongly Agree". In addition, A\a literature review was conducted to gather and synthesize relevant theories, prior research findings, and conceptual frameworks to support the research analysis and instrument development.

3.4. Measurement indicators

3.4.1. Song recommendation algorithm strategies

The Song Recommendation Algorithm Strategies variable was measured using five key indicators adapted from Fayyaz et al. (2020). These indicators reflect the technical and behavioral mechanisms through which music recommendation systems operate to enhance user engagement, namely:

1. Collaborative Filtering: This technique provides recommendations based on the preferences of other users with similar listening histories. It includes two sub-approaches:

a. User-based filtering, which identifies users with similar preferences and recommends songs they have enjoyed.

b. Item-based filtering, which recommends songs frequently played together with those previously liked by the user.

2. Content-Based Filtering: This indicator refers to recommendations based on the attributes of previously consumed music, such as genre, tempo, or instrumentation.

3. Demographic-Based Filtering: This strategy tailors recommendations using demographic data such as age, gender, and geographic location.

4. Utility-Based Filtering: This involves suggestions derived from the perceived usefulness or value of a song, often captured through user actions like ratings, playlist additions, or likes.

5. Knowledge-Based Filtering: This method uses explicitly expressed user preferences, such as specific genre requests or favorite artists, to personalize recommendations.

3.4.2. User experience

The User Experience variable was assessed using six indicators that describe users' subjective evaluations of their interaction with the system, based on Novitasari et al. (2020). These indicators are:

1. Attractiveness: Reflects the overall visual and emotional appeal of the system interface.
2. Perspicuity: Measures how easily users can understand and navigate the system.
3. Efficiency: Indicates how quickly and easily users can achieve their goals using the system.
4. Dependability: Represents the degree of trust and perceived control users feel when interacting with the system.
5. Stimulation: Reflects the extent to which the system interaction is perceived as enjoyable or engaging.
6. Novelty: Refers to the level of innovation and creativity users experience, contributing to the perceived uniqueness of the system.

3.4.3. Listener engagement

The Listener Engagement variable was operationalized through four indicators as proposed by Lalmas et al. (2022), which capture both behavioral and emotional dimensions of user involvement with digital music platforms:

1. Flow: Describes deep immersion during music listening, characterized by sustained attention, enjoyment, and the absence of distraction.
2. Aesthetics: Pertains to user responses to the visual or auditory appeal of content, which evokes curiosity, aesthetic pleasure, and satisfaction.
3. Play: Refers to engagement through exploratory, enjoyable listening experiences that fulfill psychological and social needs.
4. Information Interaction: Captures how users interact with and respond to music-related content through interface elements that are informative, interactive, and sensorially rich.

3.5. Data analysis method

3.5.1. Data quality test

In data quality testing, there are two essential types of tests used to assess the reliability and consistency of the data: the validity test and the reliability test. These tests are employed to ensure that the measurement instrument can produce valid and reliable data.

1. Validity test

Validity testing assesses whether a measurement instrument accurately captures the intended concept. Rosita et al. (2021) stated that a questionnaire is valid when each item effectively represents and reflects what is being measured. This is done by correlating individual item scores with the total score of the variable. The r value is then compared to the r table at a degree of freedom equal to the sample size minus the number of items. According to Wulandari et al. (2022), the decision criteria are as follows:
a. If r value > r table and significance < 0.05, the item is considered valid.
b. If r value < r table and significance > 0.05, the item is considered not valid.

2. Reliability test
Reliability testing evaluates the internal consistency and stability of a measurement instrument. Indartini and Mutmainah (2024) stated that a questionnaire is reliable when respondents provide consistent answers over time. Internal reliability was assessed using the Cronbach's Alpha method, where a value greater than 0.60 indicates acceptable reliability. Sanaky (2021) provided the following interpretation criteria for Cronbach's Alpha:
a. $\alpha > 0.70$: sufficient reliability.
b. $\alpha > 0.80$: all items are reliable and the test is consistent.
c. $\alpha > 0.90$: very high reliability.
d. α between 0.70 and 0.90: high reliability.
e. α between 0.50 and 0.70: moderate reliability.
f. $\alpha < 0.50$: low reliability.
An instrument is considered reliable when it produces stable and consistent results under similar conditions.

3.5.2. Classical assumption test

1. Normality test
Normality testing is conducted to ensure that the residuals in the regression model are normally distributed. In this study, the One-Sample Kolmogorov-Smirnov test was employed with a significance level of 0.05. The data are considered normally distributed if the significance value exceeds $\alpha = 0.05$.

2. Multicollinearity test
Multicollinearity testing is used to determine whether there is a perfect or near-perfect linear relationship among the independent variables in a regression model. A regression model is considered to exhibit multicollinearity if some or all of its independent variables are perfectly linearly correlated. This condition can be identified using the Variance Inflation Factor (VIF) and Tolerance values. According to Mardiatmoko (2020), multicollinearity is not present if the VIF value is less than 10.00 and the Tolerance value is greater than 0.10.

3. Heteroscedasticity test
Heteroscedasticity testing assesses whether residual variances differ across observations in a regression model. A good model should exhibit homoscedasticity. The Glejser test detects heteroscedasticity by regressing absolute residuals on each independent variable. Based on Kuncoro and Sudiyatno (2022), if the Prob. Chi-Square value is greater than 0.05, heteroscedasticity is not present. If the value is less than 0.05, heteroscedasticity is indicated.

3.5.3. Multiple linear regression analysis

Multiple linear regression is applied to examine the influence of two or more independent variables on a dependent variable, identifying both the strength and direction of the relationships. As stated by Sudariana and Yoedani (2022), this analysis helps determine the dominant predictors and supports data-driven conclusions. The model used in this study refers to Muthahharah and Fatwa (2022):

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

Y = Listener Engagement
X_1 = Song Recommendation Algorithm Strategies
X_2 = User Experience
β_0 = Constant
β_1 = Regression Coefficient for X_1
β_2 = Regression Coefficient for X_2
ε = Error Term

3.5.4. Hypothesis test

Hypothesis testing is a statistical method used to evaluate the validity of a preliminary assumption about population parameters based on sample data, as stated by Anuraga et al. (2021). This study employed both the t-test and F-test to assess the significance of relationships between variables. The t-test evaluates the individual effect of each independent variable on the dependent variable, while the F-test examines the collective influence of all independent variables.

1. t-Test

The t-test is used to assess the regression coefficient of each independent variable (X_1 and X_2) separately, to determine whether each has a significant partial effect on the dependent variable (Y). The test compares the t value to the t table at a significance level of $\alpha = 0.05$, based on Pratama and Permatasari (2021). The decision criteria are as follows:

a. If t value > t table and Sig. < 0.05, the independent variable has a partial effect on the dependent variable.

b. If t value < t table and Sig. > 0.05, the independent variable has no partial effect on the dependent variable.

2. F-Test

The F-test is used to examine the simultaneous significance of independent variables (X_1 and X_2) on the dependent variable (Y). According to Pratama and Permatasari (2021), the decision criteria are as follows:

a. If F value > F table and Sig. < 0.05, the independent variables have a simultaneous effect on the dependent variable.

b. If F value < F table and Sig. > 0.05, the independent variables have no simultaneous effect on the dependent variable.

3.3.5. Coefficient of determination (R^2)

The coefficient of determination R-squared indicates the proportion of variance in the dependent variable that can be explained by the independent variables. The adjusted R-squared provides a more accurate measure as it accounts for the number of predictors used in the model as stated by Cynthia et al. (2022). According to Soepalman et al. (2023), R-squared values can be interpreted as follows:

a. R-squared greater than 0.67 indicates a strong model.

b. R-squared greater than 0.33 and up to 0.67 indicates a moderate model.

c. R-squared greater than 0.19 and up to 0.33 indicates a weak model.

3. RESULTS

4.1. Respondent characteristics

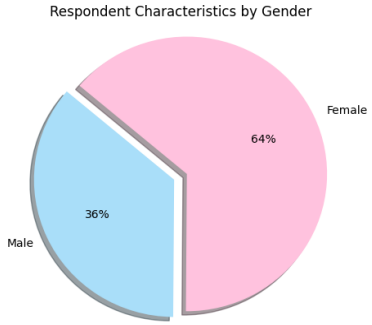

Figure 1. Respondent characteristics by gender

The majority of respondents are female, accounting for 64% of the total, while male respondents make up 36%. This indicates a greater interest or accessibility among female users in participating in this survey as seen in figure 1.

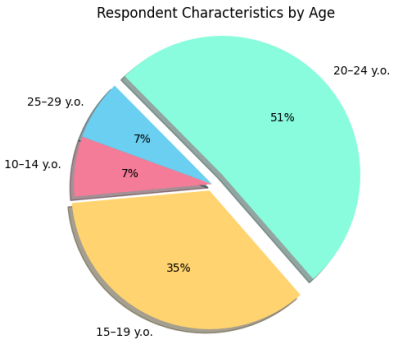

Figure 2. Respondent characteristics by age

As seen in figure 2, the majority of respondents are between 20 and 24 years old (51%), followed by those aged 15 to 19 (35%). Respondents aged 10 to 14 and 25 to 29 each constitute only 7% of the total sample, which may be attributed to limited access to streaming platforms or time constraints associated with their respective life stages.

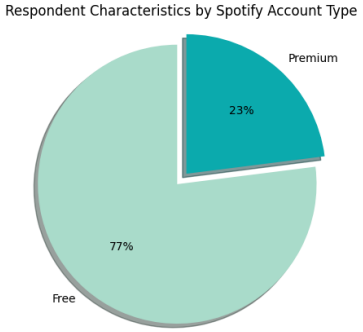

Figure 3. Respondent characteristics by spotify account type

A significant proportion of respondents (77%) use the free version of Spotify, whereas only 23% are Premium users as shown in figure 3. This indicates that the majority of young users continue to rely on the free service, possibly due to financial considerations or perceived adequacy despite its limitations.

4.2. Descriptive statistical analysis

Based on the distribution of responses as seen in figure 4, the majority of respondents selected "Strongly Agree" and "Agree" for most statements, indicating a high level of satisfaction and positive user experience with Spotify's song recommendation algorithm and features.

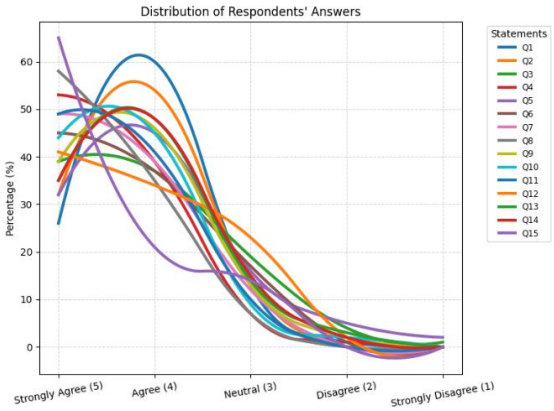

Figure 4. Distribution of respondents' answer

As seen in table 1, the results of the descriptive statistical analysis indicate that the Song Recommendation Algorithm Strategies variable had a minimum value of 12 and a maximum value of 25, with a mean of 20.82 and a standard deviation of 2.512. The User Experience variable ranged from 17 to 30, with a mean of 26.06 and a standard deviation of 2.912. Meanwhile, Listener Engagement had scores between 11 and 20, with a mean of 16.96 and a standard deviation of 2.155. These findings suggest that all three variables are in the high category, with a relatively stable distribution across respondents.

Table 1. Descriptive statistics.

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Song Recommendation Algorithm Strategies	100	12	25	20.82	2.512
User Experience	100	17	30	26.06	2.912
Listener Engagement	100	11	20	16.96	2.155

4.3. Data quality test

4.3.1. Validity test

This study involved 100 respondents, resulting in a degree of freedom (df) of 98, with a critical r-value of 0.196 at the 0.05 significance level. The validity test indicates that all items under the variables Song Recommendation Algorithm Strategies, User Experience, and Listener Engagement have correlation coefficients (r-value) exceeding the r-table value and significance levels below 0.05. These results confirm that all indicators used in the study are valid and appropriate for further analysis as seen in table 2.

Table 2. Validity test

Variables	Indicator	R Table	R Value	Interpretation
Song Recommendation Algorithm Strategies (X_1)	X1	0,196	0,532	Valid
	X2		0,484	Valid
	X3		0,406	Valid
	X4		0,493	Valid
	X5		0,626	Valid
User Experience (X_2)	X6		0,469	Valid
	X7		0,548	Valid
	X8		0,547	Valid
	X9		0,603	Valid
	X10		0,646	Valid
	X11		0,634	Valid
Listener Engagement (Y)	Y1		0,537	Valid
	Y2		0,684	Valid
	Y3		0,477	Valid
	Y4		0,619	Valid

4.3.2. Reliability test

Table 3. Reliability statistics

Cronbach's Alpha	N of Items
0.834	15

As seen in table 3, the reliability test shows that all items under the variables Song Recommendation Algorithm Strategies, User Experience, and Listener Engagement have a Cronbach's Alpha value of 0.834, which falls within the 0.70–0.90 range. According to established interpretation criteria, this indicates that the instrument is highly reliable, with all items demonstrating internal consistency and suitability for use in this study.

4.4. Classical assumption tests

4.4.1. Normality test

The normality test was conducted using the One-Sample Kolmogorov-Smirnov Test in SPSS. The resulting significance value was 0.168, which is greater than 0.05, thus indicating that the residuals follow a normal distribution.

4.4.2. Multicollinearity test

The multicollinearity test, conducted using the Tolerance and Variance Inflation Factor (VIF) values in SPSS, shows that Song Recommendation Algorithm Strategies (X_1) and User Experience (X_2) have Tolerance values of 0.845, which is greater than 0.10, and VIF values of 1.183, which is less than 10.00. These results indicate the absence of multicollinearity between the two variables.

4.4.3. Heteroscedasticity test

The heteroscedasticity test shows that the significance value for the variable Song Recommendation Algorithm Strategies (X_1) is 0.250, while that for User Experience (X_2) is 0.383. As both values exceed the 0.05 threshold, the results indicate that there is no heteroscedasticity in either variable.

4.5. Multiple linear regression analysis

The multiple linear regression analysis produced a constant value (β_0) of 2.429, with regression coefficients of 0.301 for Song Recommendation Algorithm Strategies (X_1) and 0.317 for User Experience (X_2). The resulting regression equation is:

$$Y = 2.429 + 0.301X_1 + 0.317X_2 + \varepsilon$$

This equation indicates that when both independent variables are zero, Listener Engagement (Y) is 2.429. An increase of one unit in X_1 increases Y by 0.301, while a one-unit increase in X_2 increases Y by 0.317, assuming other factors remain constant. These results suggest that both variables positively influence Listener Engagement.

4.6. Hypothesis testing

4.6.1. t-Test

The t-test results show that the t-value for Song Recommendation Algorithm Strategies (X_1) is 4.183 and for User Experience (X_2) is 5.122, both of which are greater than the t-table value of 1.660. Additionally, the significance values for both variables are 0.000, which are less than 0.05. These findings indicate that H_0 is rejected, while H_1 and H_2 are accepted, meaning both variables have a statistically significant effect on Listener Engagement (Y). This suggests that enhanced recommendation strategies and a better user experience significantly increase listener engagement.

4.6.2. F-Test

The F-test results show a significance value of 0.000, which is less than 0.05, and an F-value of 35.858, which is greater than the F-table value of 3.09. Therefore, H_3 is accepted, indicating that Song Recommendation Algorithm Strategies (X_1) and User Experience (X_2) have a significant simultaneous effect on Listener Engagement (Y).

4. DISCUSSION

The findings indicate that both the song recommendation algorithm strategies and user experience significantly influence listener engagement on Spotify. This supports previous research by Chaffey and Ellis-Chadwick (2022) who emphasized that recommendation algorithms, by utilizing content based on user preferences and behavior, can enhance personalization and engagement. The influence of algorithmic recommendations with a regression coefficient of 0.434 shows when Spotify delivers relevant songs, it enhances user involvement and strengthens their connection with the platform. Although overall performance is positive, there are still areas of improvement, such as the ability of the algorithm to adjust more accurately to user moods, musical preferences, and evolving playlist categories. Strengthening real-time behavioral analysis and integrating contextual elements in the algorithm could help improve personalization and relevance for each listener. User experience holds an even stronger influence, with a higher regression coefficient of 0.532, indicating that an intuitive interface, aesthetic appeal, ease of use, and emotional comfort all play a vital role in shaping listener engagement. This supports the argument of Tullis and Albert (2023), who explain that user experience reflects the user's overall connection with a product through repeated interactions that shape their impressions, emotions, and intentions. Although the general experience is positive, some results suggest that the listening journey could be further improved by increasing the emotional resonance of the app, providing clearer features, enhancing design aesthetics, and ensuring consistent audio quality. These efforts can contribute to a more immersive and enjoyable experience. An interesting finding from this study is the dominance of free users, which reached 77 percent. This suggests that even without premium features, high engagement is still achievable. One reason could be the strong performance of Spotify's core functionalities, particularly in delivering a satisfying recommendation and interface experience. Although this study is based on 100 users, the result provides insight into the possibility of converting satisfied free users into premium subscribers through more targeted offers, personalized experiences, or emotional value enhancements. In conclusion, continuous development in both the recommendation algorithm and user experience can help Spotify deliver a more adaptive, enjoyable, and relevant service. These improvements are expected to strengthen listener engagement and build a deeper, long-term connection between users and the platform.

5. CONCLUSION

This study confirms that both Song Recommendation Algorithm Strategies and User Experience significantly influence Listener Engagement on Spotify among young people in Depok City. Individually and simultaneously, both variables demonstrate strong effects, highlighting the importance of personalization and user-centered design in digital music platforms. The findings contribute to digital marketing and consumer behavior theory, and provide practical insights for streaming service providers to enhance algorithmic systems and user experiences. Future research may explore other influencing factors such as brand perception or emotional attachment, as well as employ broader geographic or methodological scopes.

REFERENCES

Alsheail, M., Alexandrovskz, D., & Gerling, K. (2023). Designing for disengagement: challenges and opportunities for game design to support children's exit from play. 1-10. arXiv preprint arXiv:2303.15400.

Anderson, A., Maystre, L., Anderson, I., Mehrotra, R., & Lalmas, M. (2020, April). Algorithmic effects on the diversity of consumption on spotify. In Proceedings of the web conference 2020 (pp. 2155-2165).

Anuraga, G., Indrasetianingsih, A., & Athoillah, M. (2021). Pelatihan pengujian hipotesis statistika dasar dengan software r. BUDIMAS: Jurnal Pengabdian Masyarakat, 3(2), 327-334.

Chaffey, D., & Ellis-Chadwick, F. (2022). Digital marketing: Strategy, implementation and practice (8th ed.). Pearson Education Limited.

Clemmensen, T. (2024). Usability and User Experience. In Designing for Usability, Inclusion and Sustainability in Human-Computer Interaction (pp. 1-25). CRC Press.

Cynthia, D., Hermawan, H., & Izzuddin, A. (2022). Pengaruh lokasi dan kualitas pelayanan terhadap keputusan pembelian. Publik, 9(1), 104-112.

Fayyaz, Z., Ebrahimian, M., Nawara, D., Ibrahim, A., & Kashef, R. (2020). Recommendation systems: Algorithms, challenges, metrics, and business opportunities. Applied sciences, 10(21), 1-20.

García-Marín, D. (2020). Mapping the factors that determine engagement in podcasting: design from the users and podcasters' experience. Communication & society, 49-63.

Indartini, M., & Mutmainah. (2024). Analisis Data Kuantitatif. Klaten: Lakeisha

Kuncoro, N. H., & Sudiyatno, B. (2022). Analisis pengaruh kinerja keuangan terhadap return saham dengan profitabilitas sebagai variabel moderasi pada perusahaan properti dan real estate yang terdaftar di BEI. Jurnal Ekonomi dan Bisnis, 25(1), 1-19.

Lalmas, M., O'Brien, H., & Yom-Tov, E. (2022). Measuring user engagement. Springer Nature.

Mardiatmoko, G. (2020). Pentingnya uji asumsi klasik pada analisis regresi linier berganda (studi kasus penyusunan persamaan allometrik kenari muda [canarium indicum l.]). BAREKENG: Jurnal Ilmu Matematika Dan Terapan, 14(3), 333-342.

Muthahharah, I., & Fatwa, I. (2022). Analisis regresi linear berganda untuk media pembelajaran daring terhadap prestasi belajar mahasiswa di STKIP Pembangunan. Jurnal MSA (Matematika Dan Statistika Serta Aplikasinya), 10(1), 53-60.

Novitasari, S. F., Mursityo, Y. T., & Rusydi, A. N. (2020). Evaluasi pengalaman pengguna pada e-commerce sociolla. com menggunakan usability testing dan User Experience Questionnaire (UEQ): User experience evaluation on sociolla. com e-commerce using usability testing and User Experience Questionnaire (UEQ). Jurnal Sistem Informasi, Teknologi Informasi, Dan Edukasi Sistem Informasi, 1(2), 57-63.

Pratama, S. A., & Permatasari, R. I. (2021). Pengaruh penerapan standar operasional prosedur dan kompetensi terhadap produktivitas kerja karyawan divisi ekspor pt. Dua kuda indonesia. Jurnal ilmiah m-progress, 11(1), 38–47.

Rosita, E., Hidayat, W., & Yuliani, W. (2021). Uji validitas dan reliabilitas kuesioner perilaku prososial. FOKUS: Kajian Bimbingan Dan Konseling Dalam Pendidikan, 4(4), 279-284.

Sanaky, M. M. (2021). Analisis faktor-faktor keterlambatan pada proyek pembangunan gedung asrama MAN 1 Tulehu Maluku Tengah. Jurnal Simetrik, 11(1), 432-439.

Sánchez-Moreno, D., Zheng, Y., & Moreno-García, M. N. (2020). Time-aware music recommender systems: Modeling the evolution of implicit user preferences and user listening habits in a collaborative filtering approach. Applied Sciences, 10(15), 1-33.

Santoso, A. V. (2020). Analisis pengaruh digital marketing terhadap repeat purchase dengan customer engagement dan customer experience sebagai variabel intervening pada layanan pesan-antar makanan GoFood di Surabaya. Jurnal Strategi Pemasaran, 7(2), 12-12.

Situmorang, J. S., Adikara, P. P., & Ratnawati, D. E. (2021). Rekomendasi Lagu Berdasarkan Lirik Lagu Menggunakan Metode N-Gram dan Cosine Similarity. Jurnal Pengembangan Teknologi Informasi Dan Ilmu Komputer, 5(6), 2279-2288.

Soepalman, A. A., Daga, R., & Hatta, M. (2023). Pengaruh Gaya Kepemimpinan dan Fasilitas terhadap Kinerja melalui Motivasi Personil di Direktorat Lalulintas Polda Sulawesi Selatan. Jurnal Sains Manajemen Nitro, 2(1), 111-121.

Statistics Indonesia (2025) Depok municipality in figures 2025, vol. 21.

Sudariana, N., & Yoedani, M. M. (2022). Analisis statistik regresi linier berganda.

Tullis, T., & Albert, B. (2023). Measuring the user experience: Collecting, analyzing, and presenting UX metrics (3rd ed.). Elsevier.

Wulandari, I., Iskandar, M. F., & Arief, A. (2022). Pengaruh sistem informasi manajemen dan motivasi kerja terhadap kinerja karyawan di UPTD Instalasi Farmasi Kabupaten Tangerang. Jurnal EKSISHUM, 2(1), 30–44.