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The Effect of Artificial Intelligence Recommender Systems on Netflix Customer Satisfaction

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Abstract *– The use of Artificial Intelligence (AI) provides numerous benefits across many sectors. One sector that significantly benefits from AI is the entertainment service industry. Major companies such as YouTube, Amazon, Netflix, Spotify, and others utilize AI to enhance their businesses, with recommendation systems being one of the key AI applications. Netflix is a company that uses its recommendation system to rapidly grow its customer base; however, many customers also unsubscribe. Apart from the percentage of customers who stop subscribing, there is a theoretical gap in existing research specifically regarding AI recommendation systems on Netflix. Some researchers state that Netflix's recommendation system is effective and provides useful guidance for users, while others argue that it still needs improvement due to biases that cause films to be recommended even when customers do not want them. Based on this, the study aims to determine whether Netflix's AI recommendation system can increase customer satisfaction, which in turn can enhance business performance. The respondents are active Netflix users aged 18 and above, located in Jakarta, West Java, Central Java, East Java, Sumatra, Kalimantan, and Sulawesi, ensuring that the results represent Indonesia.*

Keywords *- AI Recommender System, Customer Satisfaction, Netflix*

I. INTRODUCTION

AI (Artificial Intelligence) has made significant progress beyond normal expectations over the years, changing various aspects of life. AI can have a big impact on the way modern society responds to challenges in life. If used well, AI can create a fairer, healthier, and more inclusive environment. Today, AI has become a mature technology and an increasingly important part of modern life. AI is already being applied in a variety of applications, for example, recommendation systems, spam filters, image recognition, voice recognition, virtual assistants, etc. This technology covers many sectors, ranging from medical to transportation [6].
One of the companies that uses AI systems for recommendations with rapidly growing customers is Netflix, as seen in Figure 1.

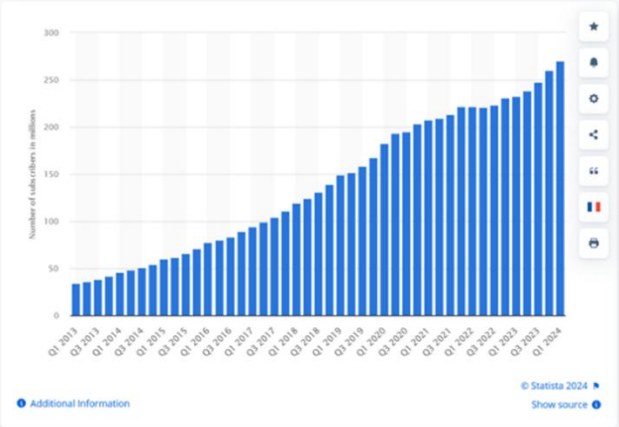

Figure 1 Netflix subscriber statistics (2013-2024)

However, behind the rapid subscriber growth, it turns out that many customers have stopped subscribing, so this could be a serious problem for Netflix. This can be seen in Figure 2.

Many Netflix customers are canceling their subscriptions, and one potential reason for this dissatisfaction is the AI recommender system, which may not align with users' interests. Research indicates that designers of fairness-aware recommender systems often unintentionally incorporate their own biases when making decisions about their platform's fairness goals [16].

AI is increasingly adopted in the service sector for simplifying operations, improving customer experience, and encouraging business growth. AI is not only beneficial for companies that use it but also

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useful to customers. Several benefits of AI for customers are customer service and personalized recommendations. For customer service, AI can help consumers as virtual assistants handle customer inquiries, provide support, and answer frequently asked questions. This AI is available 24 hours, improving response times and enhancing customer satisfaction while reducing the workload on human agents. Whereas for personalized recommendations, AI algorithms analyze customer data, including preferences, behaviors, and purchase history, to deliver personalized product recommendations and targeted marketing campaigns. This helps businesses tailor their offerings to individual customer needs, increasing engagement and sales.

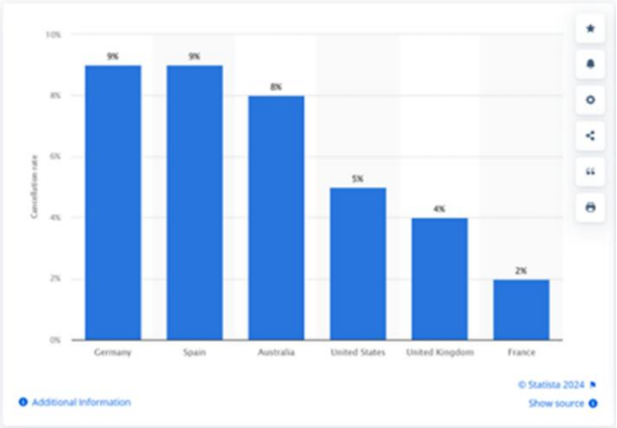

Figure 2 Netflix unsubscribe statistics (2013-2024)

A recent study by MIT Sloan Management Review found that more than 80% of organizations see AI as a strategic opportunity, and almost 85% see AI as a way to achieve competitive advantage [14].This is supported by many studies; others expressed benefit from AI, among others stating that AI is shifting from science fiction to a commercial body that is essential in allowing companies to remain profitable . Organizations implementing AI applications are expected to achieve gains in terms of added business value, such as increased revenue, cost reduction, and improved business efficiency [1] . The field of recommender systems will continue to play a pivotal role in using the wealth of data now available to make these choices manageable, effectively guiding people to the truly best few options for them to evaluate [3] .

There are several research studies that indicate that, contrary to some beliefs, many organizations are investing in AI technologies in their pursuit of a competitive advantage. However, despite this growing interest in AI, many companies struggle to extract significant value from these [8] . The anticipated benefits of AI may not materialize, even when organizations dedicate time, effort, and resources to the adoption process [12] .

Research has indicated that AI-driven recommendation systems on platforms like Netflix have certain limitations that need to be addressed for improvement. These systems must optimize both the likelihood that a user will select a recommended item and their enjoyment of it, encouraging them to return to the service. The decision Tree algorithm has been proposed as a viable solution to enhance these recommendation systems and improve the accuracy of rating classifications for platforms like Netflix [13].

With existing differences in study results about the application of AI on Netflix, the author seeks to find out whether Netflix subscribers in Indonesia benefit from the AI features available on Netflix, and if so, what those benefits are. The use of artificial intelligence on Netflix impacts customer satisfaction.

This expected study can serve as a valuable reference for advancing knowledge, especially in service fields focused on customer satisfaction. It can help companies develop and improve technologies that enhance customer interaction and experience. This includes personalized recommendation systems that cater to individual preferences and needs. For customers, the benefit is the ability to maximize the AI features available on Netflix, thereby increasing user satisfaction.

A survey on research was carried out in Indonesia. Indonesia can represent South-east Asia and even the world, because Indonesia is the 4th country with most populous country in the world. Because Indonesia was the main target of Netflix's expansion, Netflix chose Southeast Asia to be one of the target markets, especially Indonesia. With the large population and the large number of internet users reaching 132 million and internet access via mobile reaching 371 million, this data makes Netflix see Indonesia as a very promising market.

II. LITERATURE REVIEW

Artificial Intelligence (AI) is a multifaceted field, and defining it precisely can be challenging due to its diverse applications and evolving nature. In its broadest definition, AI is equated with algorithms. However, this is not an especially useful approach for our analysis. Algorithms predate AI and have been widely used outside this field. The term 'algorithm' is derived from the name of the ninth-century Persian mathematician Mohammed ibn Musa al-Kharizmi and refers to a specific instruction for solving a problem or performing a calculation. If we were to define AI simply as the use of algorithms, it would include many other activities, such as the operations of a pocket calculator or even the instructions in a cookbook.

In its strictest definition, AI stands for the imitation by computers of the intelligence inherent in humans. Purists point out that many current applications are still relatively simple and therefore not true AI. That makes this definition inappropriate for our report, too; to use it would be to imply that AI does not exist at

present. We would effectively be defining the phenomenon out of existence.

A common definition of AI is that it is a technology that enables machines to imitate various complex human skills. This, however, does not give much to go on. It does nothing more than render the artificial intelligence in different words. As long as those 'complex human skills' are not specified, it remains unclear exactly what AI is. The same applies to the definition of AI as the performance by computers of complex tasks in complex environments.

It is not surprising that AI is so difficult to define clearly. After all, it is an imitation or simulation of something we do not yet fully understand ourselves: human intelligence. This has long been a subject of research for psychologists, behavioral scientists, neurologists, and others. While we know a lot about intelligence and the human brain, that knowledge remains far from complete, and there is no consensus on exactly what human intelligence is. Until such a consensus is reached, it is impossible to be precise about how that intelligence can be artificially imitated [15] .

Recommender systems are efficient tools for filtering online information, which has become widespread due to changing user habits, personalization trends, and increased internet access. Although recent recommender systems excel at providing precise recommendations, they still face various limitations and challenges such as scalability, cold start, sparsity, and more. With a variety of techniques available, selecting the right one becomes a complex task when building application-focused recommender systems. Furthermore, each technique comes with its own set of features, advantages, and disadvantages, raising additional questions that need to be addressed [5].

Customer satisfaction is defined as the degree of feeling a customer experiences after comparing the performance or results received with their expectations [11] . Chiguvi, Muchingami, and Chuma [4] described customer satisfaction as the extent to which a firm fulfills the needs, desires, and expectations of its customers. According to Karim and Chowdhury [10] , customer satisfaction is a crucial factor in determining an organization's competitiveness. When customers are highly satisfied with the service provided, they are more likely to make repeat purchases and share positive word-of-mouth, thereby attracting new customers.

On the contrary, dissatisfied customers may share negative feedback with others and switch to alternative products or services. Customer satisfaction is defined as a person's feeling of pleasure or disappointment that arises from comparing a product's perceived performance to their expectations [11] . This definition is also supported by [18] , who stated that customer satisfaction reflects an assessment of whether a product or service meets or exceeds the level of fulfillment expected by the user. However, Felix [7] challenges these definitions and describes customer satisfaction as an indicator of how positively a customer perceives the service they received. Overall, customer satisfaction is the perception formed by comparing expectations before a purchase with actual experiences after the purchase [2].

Hennayake [9] mentioned that customer satisfaction depends on the product's perceived performance relative to the expectations of the buyer. In addition, the customer is dissatisfied if the performance of the product does not meet expectations, and if the performance of the product exceeds customer expectations, the customer is highly satisfied.

III. METHODOLOGY

The population in this research is Netflix online streaming users. The sampling technique used in this research is convenience sampling. Samples taken in this research will be 385 respondents (using the following formula, Sample Size Calculation): Sample Size = N / (1 + N*e 2).

Primary data was collected to address the research objectives through multiple methods: an online questionnaire distributed via Google Forms, as well as direct and indirect observation. **Direct observation** involved analyzing how Netflix displays its recommendation features, such as the "Top 10" lists, "Because You Watched," and other personalized categories visible on the user interface. **Indirect observation** was conducted by reviewing external sources, including academic articles, online reviews, user forums, and blog posts that describe the functioning and user experience of Netflix's AI-based recommendation system.

The questionnaire was designed to measure variables related to Netflix users' interaction with the AI recommendation system. It included items that assess how often users select content from personalized recommendations, such as "Kami Rasa Kamu Akan Suka Ini" and "Tontonanmu Berikutnya," as well as general recommendations like "Top 10 Films in Indonesia" and "Baru di Netflix." Respondents were asked to rate both their frequency of use and satisfaction with these recommendations using a Likert scale ranging from 1 (Never) to 5 (Always). This approach allowed us to capture the influence of both personal and general AI recommendation systems on user satisfaction.

The analytical method used in this study employed IBM SPSS version 22. The analysis began with assumption testing, which included classical tests such as the residual normality test, multicollinearity test,

heteroscedasticity test, and autocorrelation test. After the assumption tests were completed, hypothesis testing was conducted using the T-test and F-test.

To test the hypothesis, the study first examines whether personalized system recommendations influence customer satisfaction. Next, it investigates whether general system recommendations have an effect on customer satisfaction. Finally, it assesses whether a combination of personalized and general system recommendations influences overall customer satisfaction. The questionnaire uses a Likert scale from 1 to 5, where a score of 1 indicates respondents who have never experienced the feature, and a score of 5 indicates respondents who experience it frequently.

Respondents are active Netflix users with 18 years old the top located in Jakarta, West Java, Central Java, East Java, Sumatra, Kalimantan, and Sulawesi, so results can represent Indonesia.

System AI recommendations in this research are divided into two types: personalized and general. Personalized AI recommendations use personal data such as user reviews (e.g., "Not for Me," "I Like This," and "Love This"), viewing history, whether the user finishes watching a show or not, search history, and other individual behavior. Examples of personalization on Netflix include "Kami Rasa Kamu Akan Suka Ini" ("We Think You'll Like This"), where Netflix suggests shows based on previous viewing habits, and "Tontonanmu Berikutnya" ("Your Next Watch"), which recommends the next show based on what the user recently watched. Meanwhile, general AI recommendations are based on non-personal data such as the Top 10 movies, new releases on Netflix, bestsellers, award winners, and other general trends.

H1: Recommender System (Personal) has a significant effect on customer satisfaction among Netflix application users.

H2: Recommender System (General) has a significant effect on customer satisfaction among Netflix application users.

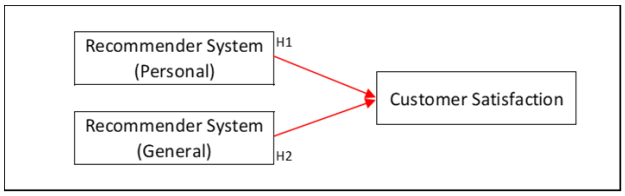

Figure 3 Hypothesis

IV. FINDINGS AND DISCUSSION

Study This. Already tested with validity and reliability tests, with results as follows:

Table I Validity & reliability X1

X1	r	r-table	validity	Alpha Cronbach's	Reliability
a	0.837	0.257	valid	0.822	reliable
b	0.830	0.257	valid		
c	0.809	0.257	valid		
d	0.756	0.257	valid		

Table R value for Alpha 0.05 it is all 0.257. r X1 value in each question own mark above 0.257, which is all questions are valid. Cronbach's Alpha value is 0.822 (≥ 0.720), p This shows that the data is reliable.

Table II Validity & reliability X2

X2	r	r-table	validity	Alpha Cronbach's	Reliability
a	0.598	0.257	valid	0.899	reliable
b	0.751	0.257	valid		
c	0.633	0.257	valid		
d	0.664	0.257	valid		
e	0.616	0.257	valid		
f	0.771	0.257	valid		
g	0.788	0.257	valid		
h	0.761	0.257	valid		
i	0.749	0.257	valid		
j	0.815	0.257	valid		
k	0.654	0.257	valid		

Table R value for Alpha 0.05 is all 0.257 r X2 value for each question own mark above 0.257, that is, all questions are valid. Cronbach's Alpha value is 0.899 (≥ 0.720), p This shows that the data is reliable.

Table III Validity & reliability Y

Y	r	r-table	validity	Alpha Cronbach's	Reliability
a	0.779	0.257	valid	0.921	reliable
b	0.857	0.257	valid		
c	0.874	0.257	valid		
d	0.853	0.257	valid		
e	0.842	0.257	valid		
f	0.908	0.257	valid		

Table R value for Alpha 0.05 is all 0.257 R Y value in each question's mark above 0.257; that is, all questions are valid. Cronbach's Alpha value is 0.921 (≥ 0.720), p This shows that the data is reliable.

Study this too has done it also been tested with the classical assumption test, and passed due to the normality test with mark Asymp. Sig 0.200 more big than 0.05, in the multicollinearity test, there is no collinearity, in the heteroscedasticity test, no presence of heteroscedasticity, in the autocorrelation test, no presence of autocorrelation.

To find out the effect of the artificial intelligence recommendation system on Netflix customer satisfaction, a T-test and an F-test were carried out with the following results:

Table IV T-test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.148	2.434		1.704	.097		
	X1	.670	.242	.447	2.769	.009	.494	2.026
	X2	.219	.106	.335	2.078	.045	.494	2.026

a. Dependent Variable: Y

X1 significance = 0.009 → < 0.05
X2 significance = 0.045 → < 0.05

X1 is influential towards Y
X2 is influential towards Y

Table V F-test

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	761.004	2	380.502	20.433	.000[b]
	Residual	688.996	37	18.622		
	Total	1450.000	39			

a. Dependent Variable: Y

b. Predictors: (Constant), X2, X1

Significance = 0.000 → X1 & X2 are influential towards Y

Table VI Determination coefficient

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.724[a]	.525	.499	4.31526	1.800

a. Predictors: (Constant), X2, X1

b. Dependent Variable: Y

X1 & X2 are influential against Y of 52.5%.

On research, This is known that the AI recommender system is influential to satisfaction, so this study strengthens research previously stated that the AI recommender system helps businesses tailor their offerings to individual customer needs, increasing engagement and sales.

From the results of the study, it is also known how often respondents are using Netflix is as follows

Table VII Determination coefficient

FREQUENCY	%
Every day	25.0%
Several times a week2	42.5%
Once a week	7.5%
Less than once in a week	25.0%
TOTAL	100.0%

From this data can see that Most people use Netflix more than 1 time in 1 week; however, although thereby it turns out Still many people are still aware that Netflix uses Artificial Intelligence, as seen in figure 3.

As many as 45% of respondents No unaware that Netflix uses Artificial Intelligence.

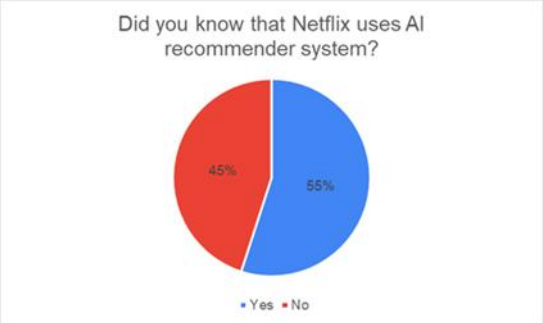

Figure 3 AI recommender system awareness

V. CONCLUSION

From the study results, it can be concluded that the AI personal recommender system significantly influences customer satisfaction. Not only the personal AI recommender system, but the general AI recommender system also has a positive impact on customer satisfaction, with a combined influence score of 52.5%. However, despite the influence of these AI systems, a large portion of Netflix users—45%—are still unaware that Netflix uses an AI recommender system.

For Netflix, it is essential to communicate that they utilize an AI recommender system to help users discover their favorite shows. This system aims to make it easier for users to find content that matches their preferences. Additionally, this recommendation feature can attract potential subscribers who have not yet signed up for the service. For researchers, it is important to note that the influence of the AI recommender system on customer satisfaction is only 52.5%. This means that 47.5% of customer satisfaction is affected by factors outside of the AI recommender system. Therefore, identifying other variables impacting customer satisfaction can provide valuable insights for future studies.

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I am also thankful to all the respondents who generously shared their time and insights. Their participation made it possible to gather meaningful data and draw relevant conclusions regarding the impact of AI recommender systems on customer satisfaction.

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support during this research journey. Their insights and encouragement helped me stay focused and motivated.

To my peers and friends, thank you for the constant encouragement and helpful discussions that enriched this work.

Lastly, I acknowledge the limitations of this study, particularly the geographic concentration of respondents and the inclusion of infrequent Netflix users due to the limited number of participants. These constraints highlight areas for future research, especially in exploring broader variables influencing customer satisfaction beyond AI recommender systems.

Once again, I extend my heartfelt thanks to everyone who contributed to this research endeavor.

REFERENCES

[1] S. Alsheibani, Y. Cheung, C. Messom, and M. Alhosni, "Winning AI strategy: six-steps to create value from artificial intelligence," Americas Conference on Information Systems, Online, 2020.

[2] G. Armstrong, S. Adam, S. Denize, and P. Kotler, *Principles of marketing*. Pearson Australia, 2014.

[3] C. G. Uribe and N. Hunt, "The Netflix Recommender System: Algorithms, Business Value, and Innovation," *ACM Transactions on Management Information Systems*, vol. 6, no. 4, pp. 1–19, 2015.

[4] D. Chiguvi, L. Muchingami, and R. Chuma, "A study on customer satisfaction in commercial banks in Botswana," *International Journal of Innovative Research in Science, Engineering and Technology*, vol. 6, no. 4, pp. 5112–5119, 2017.

[5] D. Roy and M. Dutta, "A systematic review and research perspective on recommender systems," *Springer*, vol. 9, article no. 59, 2022.

[6] B. Delipetrev, et al., "Historical Evolution of Artificial Intelligence," *Publications Office of the European Union*, EUR 30221 EN, 2020.

[7] R. Felix, "Service quality and customer satisfaction in selected banks in Rwanda," *Journal of Business & Financial Affairs*, vol. 6, no. 1, pp. 246–256, 2017.

[8] T. Fountaine, B. McCarthy, and T. Saleh, "Building the AI powered organization," *Harvard Business Review*, vol. 97, no. 4, pp. 62–73, 2019.

[9] H. M. G. Y. Hennayake, "Impact of service quality on customer satisfaction of public sector commercial banks: A study on rural economic context," *International Journal of Scientific and Research Publications*, vol. 7, no. 2, pp. 156–161, 2017.

[10] R. Karim and T. Chowdhury, "Customer satisfaction on service quality in private commercial banking sector in Bangladesh," *British Journal of Marketing Studies*, vol. 2, no. 2, pp. 1–11, 2014.

[11] P. Kotler and K. L. Keller, *A Framework for Marketing Management*, Prentice Hall, 2011.

[12] E. E. Makarius, D. Mukherjee, J. D. Fox, and A. K. Fox, "Rising with the machines: A sociotechnical framework for bringing artificial intelligence into the organization," *Journal of Business Research*, vol. 120, pp. 262–273, 2020.

[13] Mukhsinin, et al., "Implementation of Decision Tree Algorithm for Movie Recommendation and Rating Classification on the Netflix Platform," *Indonesian Journal of Machine Learning and Computer Science*, vol. 4, no. 2, pp. 570–579, Apr. 2024.

[14] S. Ransbotham, D. Kiron, P. Gerbert, and M. Reeves, "Reshaping business with artificial intelligence: Closing the gap between ambition and action," *MIT Sloan Management Review*, vol. 59, no. 1, 2017.

[15] Seikh, et al., *Mission AI: The New System Technology*, Springer, 2021.

[16] Smith, et al., "Exploring User Opinions of Fairness in Recommender Systems," in *CHI'20 Workshop on Human-Centered Approaches to Fair and Responsible AI*, 2020.

[17] Statista, "Netflix subscribers and churn rate," [Online]. Available: https://www.statista.com/statistics. [Accessed: Sept. 1, 2025].

[18] N. Walter, T. Cleff, and G. Chu, "Brand experience's influence on customer satisfaction and loyalty: A mirage in marketing research," *International Journal of Management Research and Business Strategy*, vol. 2, no. 1, pp. 130–144, 2013.