

## How Do Young individuals in Vietnam Use and Perceive Satisfaction with Artificial Intelligence Algorithms on TikTok?

<http://dx.doi.org/10.25008/jkiski.v9i1.1047>

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**Submitted:** March 6, 2024, **Revised:** March 17, 2024, **Accepted:** April 1, 2024

Accredited by Kemdikbudristek No. 152/E/KPT/2023

**Abstract** - This study focuses on how young people in Vietnam use and feel satisfied with artificial intelligence algorithms on TikTok. The research paper aims to investigate and better understand how this group of young people interact and use the TikTok platform, with the integration of artificial intelligence algorithms. The study was conducted based on the results of an initial questionnaire survey on a simple random sample based on the germ development sampling method among students in Vietnam. The quantitative data is analyzed based on SPSS software. The results of the study show that the majority of young people in Vietnam have a basic knowledge and understanding of artificial intelligence algorithms on TikTok. They use them to find engaging content, watch videos, and engage with the community on the platform. However, the study also found some risks associated with using artificial intelligence algorithms on TikTok. It is a risk of privacy violation and interference with personal freedom when algorithms can track, analyze and collect the personal data of users. Thereby, the research team analyzed the data based on the use and satisfaction theory. In summary, this study has mentioned how the young public in Vietnam use and feel satisfied with the artificial intelligence algorithm on TikTok. In addition to the benefits, attention should be paid to the ethical and privacy issues associated with the use of this technology to protect the interests of users.

**Keywords:** TikTok; use and satisfactions; artificial intelligence; positive; negative.

### Introduction

In recent years, the use of artificial intelligence algorithms on social media platforms has skyrocketed, revolutionizing the way people in Vietnam, especially the young public, interact with online content. One such platform that has seen a significant integration of these algorithms is TikTok. This popular video-sharing app has become a cultural phenomenon among the youth, providing them with a unique space to express themselves creatively and connect with their peers. With the incorporation of AI algorithms, TikTok has managed to captivate the young public in Vietnam, offering personalized and satisfying experiences tailored to their preferences.

First and foremost, the algorithms behind TikTok have the capability to analyze users' preferences and behavior patterns. By observing the videos users engage with, like, comment on, and share, the AI algorithms can curate a personalized feed that aligns with their interests. This ability to provide tailored content ensures that users are constantly exposed to videos that align with their tastes, making their experience on the platform highly satisfying.

Moreover, TikTok's AI algorithms have revolutionized the way users discover new content. The "For You" page, driven by AI, acts as a gateway to fresh and diverse videos that users may not have

normally encountered. By exposing them to a wide range of content from creators with different backgrounds and styles, TikTok fosters exploration and serendipitous discovery. This feature appeals to the young public in Vietnam as it allows them to step out of their comfort zones and explore new trending challenges, dances, and trends. This element of surprise and novelty keeps users engaged and satisfied, as they are constantly exposed to refreshing and exciting content.

This study is the first step in understanding how the public uses TikTok and is satisfied with the platform in the context of artificial intelligence interfering with the TikTok social network's algorithms.

## **Theoretical Framework**

### *Social networks*

According to the Cambridge Dictionary, "mạng xã hội" in English is "social network" with the following two understandings: In Sociology: different groups of people that you know. In modern social life: a website or computer program that allows people to communicate and share information on the internet using a computer or mobile phone.

According to Lê Hải, "social networks" are services that connect participating members in a virtual online space for various purposes, regardless of space and time (Lê Hải, 2017, p. 26). Đỗ Thị Thu Hằng believes that "social networks are internet services that allow users to interact, communicate, share data, information, and provide services that enable members to interact and respond through messages, feedback..." (Phạm Huy Kỳ and Đỗ Thị Thu Hằng, 2019, p. 65).

### *The TikTok platform*

TikTok is a technological product that was shaped as a social networking platform and was launched in 2017, based on the development and inheritance of the operating mechanisms of the video application and social network exclusively for the Chinese market known as Douyin. TikTok quickly became an app that attracted a large number of users, directly competing with major Western social networking platforms such as Facebook, YouTube, and others.

According to statistics from We Are Social and Meltwater, as of January 2023, TikTok ranks 6th among the top 10 most popular social networking platforms in the world with 1.051 billion users (We are Social and Meltwater, 2023, p.182). Previously, before facing widespread boycotts and bans in many countries around the world as it is today, in 2019, TikTok led the list of the most downloaded apps on the Apple App Store, surpassing well-known names like YouTube, Instagram, WhatsApp, and Facebook Messenger, with 33 million downloads in three months.

In the Vietnamese market specifically, TikTok ranks third among the top 15 most widely used social networking platforms, accounting for 77.5% of the total of over 70 million social media users in Vietnam as of the end of 2022 (We are Social and Meltwater, 2023, p.54).

### *Artificial Intelligence*

The work "The AI Revolution" by Brett King (Vietnamese translation in 2019 from the original work "Augmented") provides a systematic overview of AI. According to King, in each historical period, technological breakthroughs have always been powerful enough to create waves that we still refer to today. These breakthroughs have shaped new eras characterized by dominant technologies.

According to King, humanity has gone through four developmental eras, each characterized by the dominance of one or a group of core technologies. Specifically: (1) The Industrial Age or the Age of Machinery (1800-1945); (2) The Atomic Age, the Age of Energy, or the Space Age (1945-1975); (3) The Information Age or the Digital Age (1975-2015); (4) The Augmented Intelligence Age (2015-present).

Taking the Information Age or the Digital Age as an example, the core technological principles of this era include computing power, network connectivity, and data storage, with the Internet being the focal point. In the current phase, AI technology is a disruptive element contributing to the creation of a new era - the Augmented Intelligence Age. In this work, King does not delve into defining the concept or specific forms of AI but rather examines and evaluates it as a factor that impacts social life, supported by numbers and charts in the fields of business, management, and personnel. The focus is on what AI has achieved and its potential in the future. Different fields and technological advancements lead to diverse interpretations and definitions of AI. Overall, there is still no unified definition, as perspectives

vary over time when discussing AI. The scope and capabilities of AI remain a topic of debate as technology continues to advance, leading to the re-evaluation of previously labeled AI applications.

Summarizing the viewpoints and evaluations of many researchers throughout history, we can understand the development of AI on three levels:

*Machine Intelligence*: AI at an early stage, where computers are programmed with algorithms to solve problems and can deliver results equivalent to or surpassing those of humans, especially with big data. *General Artificial Intelligence*: Computers can learn, even deep learning, and can propose improvement methods beyond pre-programmed options, coming up with new solutions based on previous learning. *Superintelligence*: This is the highest level of AI, characterized by its advanced development: the ability to reason and infer perfectly combined with big data, effectively using natural language to represent knowledge and thereby solving problems that humans cannot or suggesting complex strategies.

Among these levels, Level 1 and Level 2 are continuing to develop and are widely applied in many fields, particularly in the field of information and communication.

### *Uses and gratifications theory*

Research on public satisfaction with mass media emerged in the 1970s, also known as the first version of the Uses and Gratifications theory. During the rapid development of the Internet and the emergence of numerous new media platforms, the theory evolved into its second version.

In the second version, during the era of social media with the explosive growth of the Internet and social networks, researchers identified and agreed upon three characteristics of mass communication: interactivity, non-massification, and asynchronicity.

"The Uses and Gratifications theory considers the public as active individuals who choose and use media to serve their purposes and satisfy their needs... The theory tends to emphasize that the characteristics of the public such as lifestyle, needs, thoughts, and education... will determine the extent and nature of the media's impact on them" (Pham Hai Chung, editor, 2019, p. 107).

In this study, we apply the five propositions of scholars who developed the Uses and Gratifications theory to examine the usage and satisfaction of students at the University of Social Sciences and Humanities, Ho Chi Minh City, when using the TikTok social media platform.

### **Material and Methodology**

In this study, we mainly applied quantitative research methods. Quantitative research can be understood as a research strategy that emphasizes the quantification of data collection and analysis (Alan Bryman, 2012, p. 35).

The method used for investigation is the questionnaire, which aims to survey the current situation using quantitative questions, with a sample size selected through simple random sampling. Simple random sampling is chosen because it allows each unit of the population to have an equal chance of being selected, ensures fairness among individuals in the population, and allows for generalization from the sample to the population as a whole.

After determining the research subject and scope, we proceeded to select the sample based on the formula: Yamane Taro's (1967) formula for sample size calculation:

$$n = \frac{N}{(1+N \cdot e^2)}$$

In which: n is the required sample size to calculate; N is the population size; e is the desired margin of error [calculated as a percentage from the formula (1 - assumed confidence level)]. In this case, we chose a 95% confidence level, corresponding to a desired margin of error of 5%. Applying the formula, we have  $e = 1 - 95\% = 0.05$ . Based on the 2021-2022 Annual Transparency Report of the University of Social Sciences and Humanities, Vietnam National University Ho Chi Minh City, the total number of students in the university is 13,291. Applying the sample size formula, we have:

$$n = \frac{N}{(1+N \cdot e^2)} = \frac{13.291}{(1+13.291 \cdot 0,05^2)} = \frac{13.291}{34,2275} = 388$$

In this, for the convenience of the survey process, we rounded the survey sample size up to 390. The total number of samples required for the survey is 390. In the actual survey process, we collected 402 survey questionnaires, but only 391 questionnaires met the criteria and 11 questionnaires did not. Therefore, the total number of questionnaires included in the data processing is 391, which represents a sufficient sample size for the population. Data processing method: Quantitative data were processed using SPSS software version 26.0.

**Results and Discussion**

Recently, TikTok has emerged as a prominent platform, attracting huge attention. In an era where a device with internet connectivity, such as a computer or smartphone, is sufficient, individuals are not only consumers but also sources of information. On the other hand, TikTok is one of the social media platforms that employs artificial intelligence in its algorithm for content display to users. However, not all users are aware of this fact.

**Table 1.** The current state of awareness of artificial intelligence being applied in the TikTok platform among students

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	363	36,3	92,8	92,8
	No	10	1,0	2,6	95,4
	Don't know	15	1,5	3,8	99,2
	Not interested	3	0,3	0,8	100,0
	Total	391	39,1	100,0	
Missing	System	608	60,9		
Total		999	100,0		

Among a total of 391 participating students in the survey, 92.8% of them responded that they are aware of artificial intelligence being involved in the algorithm of the TikTok social media platform. 2.6% believed that artificial intelligence does not intervene in the TikTok platform's algorithm, 2.6% answered that they did not know, and only 0.8% showed no interest in this issue.

**Table 2.** The usefulness of artificial intelligence algorithms in organizing short video content on the TikTok platform for students

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completely useless	15	1,5	3,8	3,8
	Somewhat useful	217	21,7	55,5	59,3
	Normal, nothing special	71	7,1	18,2	77,5
	Useful	73	7,3	18,7	96,2
	Very useful	15	1,5	3,8	100,0
	Total	391	39,1	100,0	
Missing	System	608	60,9		
Total		999	100,0		

In assessing the usefulness of the artificial intelligence algorithm applied to display short video content on the TikTok platform, among users, 3.8% of students considered it to be very useful, 18.7% found it useful, 18.2% perceived it as normal, 55.5% believed that the artificial intelligence algorithm is somewhat useful, and only 3.8% considered it to be completely useless.

**Table 3.** The current state of fear regarding personal information being tracked and leaked when TikTok utilizes students' artificial intelligence algorithms

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	350	35,0	89,5	89,5
	No	19	1,9	4,9	94,4
	Not interested	22	2,2	5,6	100,0
	Total	391	39,1	100,0	
Missing	System	608	60,9		
Total		999	100,0		

Out of a total of 391 participating students in the survey, 89.5% stated that they have concerns about their personal information being tracked and leaked when TikTok utilizes artificial intelligence algorithms. 4.9% reported that they have no concerns about being tracked or having their personal information leaked, while the remaining 5.6% showed indifference towards the issue.

*The current situation of students' usage and satisfaction with TikTok*

**Table 4.** The benefits that students receive when using the social media platform TikTok

	Responses		Percent of Cases
	N	Percent	
4.1 Quickly catch up with trending news	360	17,5%	92,1%
4.2 The abundance of highly entertaining content	327	15,9%	83,6%
4.3 Learn many things from TikTok	296	14,4%	75,7%
4.4 Possible to earn money from TikTok	215	10,5%	55,0%
4.5 Build a personal brand	217	10,6%	55,5%
4.6 Easily become famous	165	8,0%	42,2%
4.7 Purchase items directly on TikTok	223	10,9%	57,0%
4.8 Able to create favorite videos on TikTok	246	12,0%	62,9%
4.9 Others	6	0,3%	1,5%
<b>Total</b>	2055	100,0%	525,6%

During the usage of the TikTok social media platform, students in public have identified the following benefits for themselves: 92.1% of them stated that TikTok helps them quickly grasp trending news, 83.6% acknowledged TikTok for its high entertainment value, 75.7% learned a lot from TikTok, 62.9% expressed satisfaction with TikTok as they can creatively make their favorite videos on the platform, 57% mentioned the ability to make purchases directly on TikTok, 55.5% built their brands on TikTok, 55% can earn money from TikTok, 42.2% found it easy to become famous on the TikTok social media space, and only 1.5% cited other reasons.

**Table 5.** The risks that students encounter when using TikTok

	Responses		Percent of Cases
	N	Percent	
5.1 Exposed to harmful and toxic content	349	18,4%	89,5%
5.2 Subjected to sexual assault	76	4,0%	19,5%
5.3 Experiencing online violence	183	9,7%	46,9%
5.4 Personal data collection	225	11,9%	57,7%

5.5 Loss of concentration	255	13,5%	65,4%
5.6 Prone to addiction	307	16,2%	78,7%
5.7 Engaging in dangerous challenges	112	5,9%	28,7%
5.8 Easily purchasing counterfeit or fake goods	187	9,9%	47,9%
5.9 Vulnerable to copyright infringement	199	10,5%	51,0%
<b>Total</b>	1893	100,0%	485,4%

Regarding the risks of using the TikTok social media platform, 89.5% of students stated that they had encountered spam and harmful content, 78.7% mentioned that using TikTok could lead to addiction, 65.4% claimed that TikTok caused them to lose focus, 57.7% expressed concerns about personal data collection, 51% worried about copyright infringement issues on TikTok, 47.9% reported the possibility of purchasing counterfeit or fake products when shopping on TikTok, 46.9% acknowledged the potential exposure to online violence, 28.7% highlighted the presence of dangerous challenges on TikTok, and 19.5% stated they faced the risk of sexual harassment.

Analyze the current situation from the perspective of the "Use and Satisfaction" theory

**Table 6.** The decision to continue using the TikTok social media platform by students

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	349	34,9	89,3	89,3
	No	42	4,2	10,7	100,0
	Total	391	39,1	100,0	
Missing	System	608	60,9		
<b>Total</b>		999	100,0		

Through the survey, it was found that 89.3% of students stated that they would continue using the TikTok social media platform, while only 10.7% said they would consider whether to continue or stop using it in the future. A surprising correlation is that all 391 participants in the survey reported experiencing at least one risk while using TikTok, meaning that 100% of the participants recognized negative signs from TikTok's content, yet they continued to use the platform. The reason could be that they perceive more benefits from TikTok than the potential risks they may encounter.

Here, we can observe a correlation between the use of TikTok and the public's satisfaction with this social media platform. The student public expressed their intention to continue using TikTok in the future, despite facing risks, alongside the benefits they derive from TikTok, indicating a certain level of satisfaction that leads them to the decision to remain engaged with TikTok. Furthermore, their continued use of TikTok demonstrates a consideration of the benefits received versus the risks encountered.

Examining the current situation based on the propositions of the Uses and Gratifications theory, we found that the student public actively chooses to use TikTok to serve their purposes and satisfy their personal needs.

*Firstly*, "the public is proactive, and their use of media is purposeful" (Pham Hai Chung, 2019, p. 111). In the survey, the student public indirectly revealed their active use of TikTok for personal purposes by highlighting the benefits of TikTok (see Table 4).

*Secondly*, "the satisfaction of the public's needs is related to their choice of specific media" (Pham Hai Chung, 2019, p. 111). In reality, this relationship can be seen in the fact that 92.1% of the participating students stated that they use TikTok to quickly capture news and trends. This is reasonable since TikTok is a social media platform featuring short videos with rapid updates, user-generated content from around the world, and support from artificial intelligence, allowing users to access desired

information groups instead of scattering. TikTok satisfies multiple needs at once, such as listening, watching, being creative, and staying updated on individual users' desired trends.

*Thirdly*, "the media must compete with other forms of satisfying needs" (Pham Hai Chung, 2019, p. 112). In this study, we have not addressed this research issue. However, the competition between social media platforms and other traditional mass media forms is evident. If there were another form of mass media that allowed users to capture news and trends faster than TikTok, the public would certainly consider using that alternative.

*Fourthly*, "the public can be aware of their media usage behavior, preferences, and motivations and provide the media with an overall picture of these issues" (Pham Hai Chung, 2019, p. 112). This issue becomes apparent in the 10.7% of students who stated that they will not continue using TikTok in the future. The main reason could be that they perceive the risks of using TikTok outweigh the imbalanced or insufficiently attractive benefits it offers. In that case, TikTok becomes a mass media platform that does not meet the needs and preferences of that specific public group.

*Fifthly*, "the public is not concerned with judgments about the relationship between their needs and specific media or content" (Pham Hai Chung, 2019, pp. 112-113). If further researched, this issue may reveal many interesting correlations within the group of 89.3% of students who continue using TikTok despite recognizing the risks associated with it. On the other hand, this group may also assess that these risks are insignificant compared to the benefits that TikTok provides.

AI algorithms play a crucial role in enhancing the overall user experience on TikTok. With features such as automatic video editing, background music suggestions, and real-time filters, users can effortlessly create professional-looking content without extensive technical know-how. This ease of content creation empowers the young public in Vietnam to freely express their creativity and share it with the world. AI algorithms simplify complex editing processes, saving users time and effort, resulting in a seamless and enjoyable content creation experience.

However, it is important to acknowledge the potential drawbacks of AI algorithms on TikTok. The personalized feed can sometimes create echo chambers, limiting users' exposure to diverse perspectives and opinions. Moreover, privacy concerns surround the collection and utilization of user data by these algorithms. It is crucial for platforms like TikTok to address these concerns and ensure transparency and user control over their data.

## Conclusions

Preliminary research results show that the majority of student public is aware of artificial intelligence's intervention in the content display algorithm of the TikTok social media platform. Among them, more than half of the participating students stated that the intervention of AI in content display for TikTok users is useful. However, alongside the benefits that TikTok brings to the majority of users, there are still existing risks and concerns among the student public regarding issues such as personal data collection and information leakage when using TikTok.

The research results also partly indicate that student public use TikTok for personal purposes and indirectly express their current satisfaction by intending to continue using this social media platform. Thus, the research also demonstrates that the Uses and Gratifications theory approaches the study by starting from the public's needs for mass media and supplements and combines it with approaches from the media perspective to create a picture of the current social media landscape in Vietnam.

In conclusion, the young public in Vietnam have embraced the integration of AI algorithms on TikTok, finding satisfaction in the platform's ability to offer personalized content, facilitate discovery, and enhance their overall user experience. As TikTok continues to evolve, it is imperative for the platform to strike a balance between personalization and diversity, while addressing concerns about data privacy. Ultimately, the incorporation of AI algorithms on TikTok has transformed the way young individuals in Vietnam engage with online content, providing them with a dynamic and fulfilling platform for self-expression and community-building.

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