



From an entertaining app to a search engine: A case of user-generated innovation in social media platforms

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ABSTRACT

TikTok, a prominent social media platform, facilitates the creation and dissemination of brief video content. Its remarkable success can be attributed to a sophisticated algorithm employing artificial intelligence and machine learning, tailoring user feeds to align with individual interests. Despite widespread application in various research domains, there exists a notable gap in studies investigating TikTok's utility as a search engine. This study aims to ascertain the prevalence of TikTok's use as a search engine among Saudi users and to identify the key factors influencing this behavior. We adopted a survey questionnaire approach to gather and analyze data from 123 participants. The results indicate that a significant majority (89.4 %) of respondents utilize TikTok as a search engine. Our study identified that the perceived reliability of TikTok, along with the quality of its visual content and the opportunity for skill acquisition, significantly influences its use as a search engine. Based on these findings, we propose several enhancements to augment TikTok's functionality as a search engine.

1. Introduction

TikTok, the social media platform, was launched by the Chinese company ByteDance in 2016. It hosts quick videos across various fields. It originally focused on lip-syncing as well as dancing to catchy hooks, but recently, it has diversified to encompass comedy, technical skills, workout coaching, and a huge collection of other professional genres [1].

A survey conducted in June 2020 targeting TikTok users in the age group of 16–64 from the United States and the United Kingdom revealed that the predominant motivation for 60 % of the respondents was the pursuit of engaging video content. To pass time, was the second most common reason followed by participating in hashtag challenges [1].

TikTok's strong algorithm, that personalizes video suggestions to users depending on their engagements with contents, is being used by an increasing number of teens to get information that is tailored to their preferences. Along with such customization, the software gives off the impression that actual individuals are providing the information, as opposed to just soulless websites [2].

Numerous studies on TikTok in several topics have been conducted. A previous study looked into the economics and marketing of TikTok, to find how it can generate revenue [3]. Another study investigated how

individuals use TikTok in terms of behavioral production, as well as the significance of personality traits and user motives as predictors of usage behavior [4]. This research was conducted to study the impact of TikTok application on teenagers and students, by using a survey and interviews in Thailand and found that most of users are satisfied with the app, but even those who have a bad experience do not stop using it. Additionally, TikTok appears to offer a superior protection service when compared to other apps. It should be noted that this is more of an issue for the person providing care for the user, because it could be challenging for parents to determine whether something is really safe. This could be caused by the difference in literacy levels between very literate and limited technology users. The solution to these problems might lie in the efforts being made to educate the older population. Also, Curriculum themes may be introduced in elementary schools to prevent abuse, and parental supervision ought to be a priority [5]. Through interviews and discussions, a qualitative approach was used to examine how TikTok usage affects young people's self-expression [6]. In order to determine what distinguishes the application to have this popularity, a study that TikTok sponsored, collected data from roughly 8000 survey respondents who answered questions concerning their opinion about TikTok and its content. The result was the users are able to be their true selves and feel at ease using the TikTok app, which led to the app being regarded as a

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community for its users. They added that TikTok was different and special, and that it brought them joy [7].

Many research explored the adoption of TikTok as an application using the Technology Acceptance Model [8], also in specific areas such as education [9], and in the context of shopping [10]. While previous studies looked at motivations to use conventional search engines, no previous research looked at the use of TikTok as a search engine explained in the context of TAM, therefore, we attempt to explore this in this study. For example, a research found that factors such as a person's experience with computers, the effectiveness of search systems, their personal motivations, and their perceptions of technology acceptance all play a significant role in shaping their inclination to use search engines for retrieving information [11]. However, we do not know if these motivations are still the same for using other apps for information retrieval that are not designed for this intention.

Due to lack of studies examining how peoples' search habits are changing, in a world where many are switching to using TikTok as a search engine, we are investigating TikTok's users attitudes regarding the search process and the app affordances in this regard.

In this study, we adopted a survey methodology to identify whether a significant number of users tend to use TikTok as a search engine or not. By recognizing the motivating factors behind their decision to choose it over other engines and whether they find it trustworthy or not. Looking at other variables, our findings will help shed light on TikTok's role as a brand-new search engine, and how it unexpectedly acquired this feature as a competitive advantage.

2. Literature review

This section provides an in-depth review of existing literature, focusing on multiple dimensions of TikTok usage. It delves into the diverse ways in which users engage with the platform, encompassing a range of activities from content creation to consumption.

2.1. TikTok usage

In exploring the multifaceted engagement of users with the TikTok platform, it becomes evident that TikTok's role extends far beyond mere entertainment. While the app is widely regarded as a source of amusement, recent research highlights its growing utility in diverse domains, including education and tourism, which challenges the common perception of TikTok as solely a leisure tool. This shift underscores the platform's adaptability in serving the varied needs of its user base.

For instance, one study explored TikTok's potential in educational settings, particularly for enhancing students' speaking skills. Conducted at STKIP PGRI Bandar Lampung, this research involved 20 third-semester English Language Education students. By employing a quantitative descriptive method alongside classroom action research, the study demonstrated notable improvements in students' engagement and performance. The average score for learning activities in the pre-course phase was 68.88, while post-intervention, in the second cycle, the average score increased to 76.75, marking a significant boost of 7.75 points. This finding highlights TikTok's effectiveness as a tool in augmenting both student participation and language skills [12].

Similarly, TikTok's influence is evident in the tourism sector, where it has become a popular platform for potential travelers seeking inspiration, information, and recommendations for their next trip. The increasing role of TikTok in shaping travel decisions is underscored in a study by [13], which analyzed how TikTok impacts travelers' destination choices. Their research revealed statistically significant differences in the factors influencing travel decisions, particularly when broken down by age group. The findings suggest that tourism companies can capitalize on TikTok's reach and short-video format to attract a wider audience and build more lasting connections with customers. This emphasizes TikTok's capacity to function not only as a social platform but as a powerful tool in influencing consumer behavior in various

industries.

In a similar vein, a study by Syam and Meldawati [14] examined the everyday usage patterns of TikTok among students, shedding light on its role in their daily routines. Based on an online survey of 26 students, the study found that TikTok is a major source of entertainment, with most students using the app at least once a day. Entertainment-focused content was by far the most popular among users, reinforcing TikTok's status as a go-to platform for casual entertainment. However, the study also noted that, despite its popularity, there was no direct impact of TikTok usage on students' communication skills, suggesting that while the platform serves as an entertainment hub, its educational impact may still be limited in certain contexts [14].

These studies demonstrate that TikTok is increasingly recognized not only for its entertainment value but also for its broader applications across educational and commercial domains. From enhancing learning outcomes to influencing travel choices, TikTok's versatility in meeting diverse user needs highlights its transformative potential in modern digital culture.

2.2. The app effects

TikTok usage has a diverse impact, particularly among students, with potential benefits and drawbacks. While TikTok has proven to be a powerful tool for educational enrichment, enabling users to access informative content outside of traditional learning settings, it also presents risks when consumed excessively. The findings across several studies illustrate this nuanced spectrum of effects, suggesting that TikTok's role in users' lives is multifaceted and complex.

A study by Liang [15] examined how college students in Beijing engage with TikTok and the influence it has on their daily lives. Conducted with a sample of 350 students from two universities, the research found that TikTok is a significant part of students' routines, with entertainment and educational videos being the most commonly viewed types of content. While the app offers entertainment, relaxation, and a sense of community, the study also revealed negative consequences linked to overuse. Students reported that excessive TikTok consumption could lead to addiction, procrastination, and even a decline in academic performance. These findings highlight the need for moderation, as excessive use can disrupt the balance between leisure and academic responsibilities [15]. TikTok's application as an educational tool was explored during the COVID-19 pandemic. A study by [15,16] focused on pharmacy students and their use of TikTok for learning. The study showed that TikTok had a notable positive impact on students' academic engagement. A significant majority—84 % of students—found it easier to access course resources via TikTok, and 80 % reported feeling more motivated to learn. This suggests that, when used thoughtfully, TikTok can be an effective educational tool that enhances students' learning experiences, providing a dynamic and engaging alternative to traditional methods.

Conversely, another study examined the effects of TikTok on the academic performance of information technology students. Although the platform offers valuable content, the research found a mixed response. Of the 100 students surveyed, 37 % felt that TikTok was distracting them from their studies, while 38 % disagreed. While some students reported benefiting from the app by gaining useful information and improving academic performance, others cited negative effects, such as exposure to risky content and physical issues like vision problems. This highlights the need for students to strike a balance between using TikTok for educational purposes and managing its potential distractions [17].

Beyond academic outcomes, TikTok also influences users' consumer behavior. A study by Jarboe [18] found that TikTok plays a crucial role in product discovery, with 58 % of users reporting that they had discovered a product or service through the app. Additionally, 57 % of users were inspired to make a purchase after watching a TikTok video, with younger consumers particularly influenced by the platform's

content. This underscores TikTok's growing importance in shaping consumer behavior, highlighting its potential as a powerful marketing tool for brands looking to reach a young and engaged audience [18].

TikTok's impact on students and its broader user base is multifaceted, offering both educational opportunities and risks. While it can enhance learning and serve as a valuable source of information, its potential for distraction and negative effects on academic performance cannot be ignored. As TikTok continues to evolve, it is crucial for users, particularly students, to navigate the platform mindfully, leveraging its benefits while avoiding its pitfalls.

2.3. The algorithm

This section delves into how users perceive and interact with TikTok's algorithmic recommendation system, an often invisible yet powerful mechanism that shapes the platform's content flow. Algorithms play a significant role in the way we experience social media, yet users often develop assumptions about how they function, attempting to "game" the system to increase the visibility of their videos. These assumptions are influenced by their desire to have their content featured on TikTok's "For You" page, which serves as the central hub for content discovery.

In a study by Klug [19], interviews with TikTok users revealed several common beliefs about how the algorithm works, such as the importance of video sharing frequency, the timing of posts, and the strategic use of hashtags. To explore these assumptions further, Klug conducted a large-scale data analysis of 300,617 videos from TikTok. The findings confirmed that higher user engagement—through likes, comments, and shares—does indeed increase the likelihood that a video will appear in trending sections. Additionally, posting videos at specific times was shown to boost the chances of their popularity. However, contrary to widespread belief, using popular hashtags did not appear to have a significant impact on the video's visibility. This research highlights a key misconception: many users assume that more likes and views directly influence the algorithm's decisions, when, in reality, TikTok takes into account a broader range of factors, including user behavior and interaction patterns [19]. Klug's findings point to a larger issue—the presence of false assumptions about how TikTok's algorithm functions, which can negatively affect user experience and well-being. Misunderstandings about the algorithm's prioritization of content may lead to frustration, misinformation, and unhealthy practices. In light of these issues, Klug recommends that social media platforms, including TikTok, adopt greater transparency and offer educational initiatives to help users better understand how their algorithms work and what content is promoted.

Expanding on this, Bhandari and Bimo [20] explored the broader implications of TikTok's algorithmic content distribution system on user identity. Their research suggests that TikTok is reshaping the way users define themselves and engage with content. Drawing on interviews with TikTok users, the authors argue that the platform offers a new form of "self-making," where users are continuously remade by the algorithmic content they consume and create. This experience raises important questions about the role of technology in shaping personal identity, as the algorithm exerts influence not only on what users see but also on how they perceive themselves and their place within digital spaces. TikTok, in this sense, is not just a social media platform but a space where users' identities are constructed through an ongoing process shaped by algorithms.

However, the influence of algorithms can take a darker turn, particularly when it comes to vulnerable users. A recent report [21] revealed troubling findings about the harmful effects of TikTok's algorithm on teenagers. The investigation discovered that the platform was recommending videos promoting anorexia, self-harm, and other dangerous behaviors, often under the guise of innocuous or positive hashtags. The study found that TikTok's algorithm tended to push users towards increasingly extreme content over time, which could exacerbate

the harmful impact on teens' mental health. In response, TikTok has pledged to strengthen its content moderation policies to prevent the spread of harmful material. Yet, this case underscores the challenges faced by social media platforms in regulating content and protecting their most vulnerable users.

2.4. The app's content reliability

This section evaluates the credibility and trustworthiness of the content disseminated through TikTok's platform. The collective findings of these studies have converged on the assessment that the reliability of TikTok's information is, overall, moderate to low. The research has underscored the pressing need to enhance the quality and veracity of the content circulating within this social media ecosystem.

A study looks at the reliability of diabetes related information posted on TikTok. The result was that the information in the diabetes videos on TikTok is acceptable, however, TikTok may not fully meet the health information needs of people with diabetes, and users should be careful when using TikTok as a source of information related to diabetes [22]. Another study reported that the reliability and quality of TikTok videos related to orthodontics is poor [23]. Another work [24] assesses the validity and quality of well-liked TikTok videos about orthognathic surgery. The findings showed that most TikTok videos about orthognathic surgery were unreliable and of poor quality [23]. A work for Rajan & Ismail [25], studied the reliability of TikTok videos for myopia, found that the reliability was medium to weak, so it must be treated with caution with the content related to myopia on TikTok. The study analyzed the top 100 TikTok videos on thyroid cancer, finding most were posted by surgeons focusing on basic anatomy and information, but overall quality was insufficient for patient education. It underscores the need for improving the quality of medical information on short-video platforms. A comparative study of TikTok and YouTube that studied the reliability and caliber of orthodontic videos posted on the two platforms. Neither the TikTok nor YouTube videos were trustworthy or of a high caliber. In contrast to TikTok videos, YouTube videos were generally of higher quality and dependability. It's significant to highlight that inaccurate information could be found in YouTube videos as well [24].

2.5. The acquisition of new information & skills while using TikTok

The integration of TikTok in educational settings and its role in disseminating information across various domains has been the focus of recent academic studies, highlighting its potential as a multifaceted tool for learning and information sharing. One study explored the perspectives of high school students in China on utilizing TikTok for English language learning, both within and beyond the classroom setting. The findings indicated a positive reception towards incorporating TikTok as a pedagogical tool in EFL classrooms and as a strategy for extracurricular English learning, underscoring a strong desire for teacher guidance in effective TikTok utilization for language acquisition [26]. Another research effort focused on TikTok's application in literature education, where a quasi-experimental study with 150 students showed high engagement and positive knowledge acquisition in literature through TikTok, suggesting its viability as an educational tool for literature studies [25]. A study demonstrated that using the TikTok app in an English education context significantly improved students' speaking skills and engagement, with activities showing a notable increase in mean scores [27]. Another study employed content analysis to assess the accuracy and type of COVID-19 related content. The study categorized videos into themes such as disease knowledge, personal precautions, and community crisis management, highlighting TikTok's potential and challenges in providing reliable health information [28]. Concurrently, another study by Pornpitakpan, [29], explored the potential of short video applications like TikTok in disseminating health-related information, highlighting both the opportunities and challenges posed by

their technological features for user consumption and the ongoing need for research into their effectiveness as educational tools.

The use of TikTok by news publishers and independent news creators was scrutinized in a study examining content production and dissemination across over 40 countries. Findings revealed uneven publisher adoption, with concerns over the platform's transparency and the spread of misinformation, despite its growing use by reputable news organizations for engaging short-form content [30,31].

2.6. People's preference to see visuals when searching

There are many factors that contribute to users' perceptions of enjoyment and utility in consuming short-form video content. The findings suggest that TikTok's emphasis on multimedia-rich, visually-driven experiences aligns well with user preferences, offering a distinct advantage in engaging today's digital audience. This appeal lies in the platform's ability to provide content that is both concise and visually stimulating, catering to users' behavioral tendencies toward quick, immersive experiences.

A key aspect of TikTok's success is its ability to induce what is known as the "flow experience." Cheng [32] examined how this psychological state influences users' enjoyment and behavior, such as following and sharing content. Through a survey of 406 TikTok users, the study found that the flow experience significantly impacts users' engagement with short videos. When individuals experience flow, they become deeply immersed in the content, which increases the likelihood of them sharing or following content that resonates with them. This sense of engagement is a critical driver in TikTok's popularity, as it transforms passive consumption into active participation, fostering a sense of connection and satisfaction.

Beyond the psychological experience of flow, TikTok's success can also be attributed to its unique communication features and its relationship with visual culture. Nie [30] analyzed TikTok's popularity by investigating three key factors: the platform's communication capabilities, its impact on how users communicate, and its role in shaping the visual culture of short-form videos. Using a SWOT analysis, the study concluded that TikTok's "swiping" style, its diverse distribution methods, and the growth of user creativity have contributed to its distinctive communication effect. The platform's design and content curation have made it an effective tool for short video communication, facilitating a visually compelling and user-friendly environment. Based on these findings, the study suggests strategies for enhancing TikTok's impact, including optimizing content review processes, expanding communication channels, and continuing to innovate in video creation.

In a broader context of visual content consumption, a study by Yoon [33] focused on college students' image search behavior. Though not directly related to TikTok, the research sheds light on users' broader visual consumption patterns. The study found that Google and Google Images were the preferred search engines for college students due to their familiarity and ease of use. While participants reported a high success rate of 85.6 % in retrieving relevant images, they expressed a desire for search engines to return more precise and high-quality images. Additionally, students wanted more contextual information alongside the images, such as textual details to complement their visual search. This highlights a broader trend in user behavior—individuals not only seek engaging visuals but also expect relevant, high-quality content that aligns with their needs, whether for academic purposes, presentations, or personal use.

2.7. Hypotheses

Due to the reviewed literature, in this research, we investigate the following hypotheses:

- H1. The perceived reliability of the searching results has a positive effect on the use of TikTok as a search engine.

- H2. Acquisition of new skills and information positively effect the use of TikTok as a search engine.
- H3. The preference of seeing visuals such as short videos and pictures when searching has a positive effect on the use of TikTok as a search engine.

3. Methods

For data collection, we utilized an online survey methodology. The participants were from different age groups, different genders, and education level. The questions were all closed-ended.

Some of the main questions asked were: "On a scale of 0 to 5, how do you prefer to see visuals such as pictures and videos when searching rather than reading text?", "On a scale of 0 to 5, how do you find your acquisition of new skills and information after using TikTok as a search engine?", and "On a scale of 0 to 5, how reliable do you find the results when searching on TikTok?".

To reach the participants, we disseminated the survey on different social media platforms such as WhatsApp, Instagram, and Twitter by providing them with a link that is easy to access. The survey began with the recruitment message that defines the purpose of the research.

The survey was divided into two sections. The first section consisted of three demographic questions about age, gender, and education level, and the question that determined whether or not the participant had used TikTok as a search engine before. Similarly, the following question "on a scale of 0 to 5, how likely are you to use TikTok as a search engine?" was asked. This was done to identify the percentage of people who use TikTok as a search engine in comparison of those who do not.

The second section included questions regarding the topic, we used the scalable questions that allow the respondents to choose on a scale of 0 to 5 to measure the effect of the independent variables which are reliability of results when searching on TikTok, the acquisition of new skills and information after using TikTok as a search engine, and the respondent preference to see visuals when searching rather than reading text on the dependent variable which is using TikTok as a search engine.

According to the literature, single-item measures can serve as reliable and valid tools for assessing straightforward, unidimensional constructs when carefully designed and applied. Research suggests that single-item measures are suitable for: Simple, unidimensional constructs: Such as satisfaction, perceptions, or preferences. Contexts requiring reduced participant burden: For exploratory surveys or large-scale studies. Practical applications: Where speed and clarity in data collection are prioritized. In our study, we focused on measuring direct concepts such as preferences for visual content, skill acquisition, and reliability of results. Given these considerations, single-item measures were employed to ensure efficient data collection while minimizing participant fatigue [34,35].

4. Results

In this research, we investigated the following Hypotheses:

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- H2. Acquisition of new skills and information positively effect the use of TikTok as a search engine.
- H3. The preference of seeing visuals such as short videos and pictures when searching has a positive effect on the use of TikTok as a search engine.

We have surveyed 123 participants and we found that 89.4 % of respondents utilize TikTok as a search engine, whereas 10.6 % do not.

4.1. Mean and standard deviations

As shown in Table 1, participants age ranged between 18 – 48 years

Table 1

Descriptive Statistics for Key Variables ($N = 123$).

Variable	N (Valid)	Missing	M	SD	Min	Max
Time*	110	13	1.93	1.07	0.00	3.00
Using**	110	13	0.43	0.82	0.00	3.00
Education	123	0	2.62	0.93	0.00	4.00
Age	123	0	1.01	0.77	0.00	4.00
Gender	123	0	1.15	0.36	1.00	2.00

Note:.

* Time spent per day using TikTok?.

** Using TikTok as a search engine?.

($M = 1.0081$, $SD = 0.77349$). The ages of the participants in this study are as follows (0 = 18–27), (1 = 28–37), (2 = 38–48). However, most respondents (67.5 %) were aged 18–27. Also, 84.6 % were female, and 15.4 % were male. For education, 66.7 % were college students, 11.4 % were middle school student, 10.6 % were high school student, 11. % were others ($M = 2.6179$, $SD = 0.92789$). The participants use of TikTok ranged from less than one hour to >2 h a day ($M = 1.9273$, $SD = 1.07267$). The time in this study is as follows: (0 =Less than one hour), (1=One hour),(2 =Two hours),(3 =More than two hours). Even though 73.6 % stated that their main use of TikTok is for entertainment, 14.5 % of respondents use it primarily for searching and 7.3 % for learning purposes ($M = 0.4273$, $SD = 0.81791$). Nonetheless, 89.4 % of participants stated that they use TikTok as a search engine instead of giants such as Google and Yahoo.

4.2. Correlations

We found positive correlations between reliability and using TikTok as a search engine ($r = 0.563$, $p < 0.001$). As the reliability increases, the use of TikTok as a search engine increases as well. There is a positive relationship between the preference for visuals and the use of TikTok as a search engine, $r = 0.362$, $p < 0.001$. With the increase in the preference for visuals, the use of TikTok as a search engine increases. There is also a positive correlation between acquisition of new skills and information and using TikTok as a search engine ($r = 0.518$, $p < 0.001$). Also, there is a positive correlation between time and the use of TikTok as a search engine ($r = 0.344$, $p < 0.001$). Also, there is a positive correlation between the visual's preference and the acquisition of skills and new information ($r = 0.392$, $p < 0.001$).

4.3. Regression models

We ran regression models to test the proposed hypotheses. The below model tested the first hypothesis which is the positive effect of perceived result reliability on the decision to use TikTok as a search engine.

H1. The perceived reliability of the searching results has a positive effect on the use of TikTok as a search engine.

The model (as shown in Tables 2 & 3) was significant (Adjusted R-squared = 0.334), ($F = 26.565$, $p > 0.001$). Therefore, we have enough evidence to support hypothesis 1.

In the below model, we tested the second hypothesis which is the positive effect of acquisition of new skills and information on the decision to use TikTok as a search engine.

Table 2

Model Summary.

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	.578	.334	.321	1.077

Note. The table summarizes the regression model, including the correlation coefficient (R), the coefficient of determination (R²), the adjusted R², and the standard error of the estimate.

Table 3

Analysis of Variance (ANOVA).

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	61.630	2	30.815	26.565	.000
Residual	122.957	106	1.160		
Total	184.587	108			

H2. Acquisition of new skills and information positively affect the use of TikTok as a search engine.

The model (as shown in Tables 4 & 5) was significant (Adjusted R-squared = 0.278), ($F = 20.646$, $p > 0.001$). Therefore, we have enough evidence to support hypothesis 2.

In the below model, we tested the third hypothesis which is the positive effect of preferring visuals such as short videos as search results on the decision to use TikTok as a search engine.

H3. The preference of seeing visuals such as short videos and pictures when searching has a positive effect on the use of TikTok as a search engine.

The model (as shown in Tables 6 & 7) was significant (adjusted R-squared= 0.132), ($F = 8.159$, $p > 0.001$). Therefore, we have enough evidence to support hypothesis 3.

5. Discussion

5.1. Misinformation risks on social media

Misinformation on social media platforms poses significant risks both locally and globally, with the potential to disrupt societies, influence public opinion, and even impact political processes. The nature of social media, where content can spread quickly to a vast audience, often makes it a fertile ground for the rapid dissemination of false or misleading information. Understanding these risks and their effects on communities is crucial for addressing the growing challenges posed by misinformation in today's digital age.

One of the primary risks of misinformation is the erosion of trust in institutions, such as governments, health organizations, and education institutions [36]. When misinformation spreads unchecked, it can create confusion and skepticism among the public. For instance, during the COVID-19 pandemic, misinformation about the virus, vaccines, and public health measures led to widespread distrust in health authorities and governments [37]. People who were exposed to false claims might have been less likely to follow health guidelines, such as wearing masks or getting vaccinated, which could exacerbate the spread of disease and hinder public health efforts. This undermines the effectiveness of legitimate information and may cause a breakdown in cooperation within communities.

Another significant adverse effect is that misinformation often plays a substantial role in deepening societal divisions. False or biased information that aligns with certain political or ideological viewpoints can further polarize communities, making it difficult for individuals to find common ground [38]. In a global context, social media can amplify divisive narratives, leading to the formation of echo chambers where people are only exposed to content that reinforces their existing beliefs. This creates a more fragmented society where open dialogue and compromise become increasingly difficult. Locally, this can contribute to tensions between different social or political groups, while globally, it

Table 4

Model Summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.528	.278	.265	1.117

Note: The values indicate the fit of the regression model, with R2R^2R2 representing the proportion of variance explained by the model.

Table 5
ANOVA.

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	51.490	2	25.745	20.646	.000
Residual	133.428	107	1.247		
Total	184.918	109			

Table 6
Model summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.364	.132	.116	1.225

Note. Predictors: (Constant), "On a scale of 0 to 5, how do you prefer to see visuals such as pictures and videos when searching rather than reading?", Frequency.

Table 7
ANOVA.

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	24.469	2	12.235	8.159	.001
Residual	160.449	107	1.500		
Total	184.918	109			

can fuel international conflicts, misinformation wars, and diplomatic challenges.

5.2. Perceived reliability and TikTok as a search engine

The study found a positive effect of perceived reliability on search engine choices. Participants also reported using TikTok as a search engine when they believe the platform is allowing them to acquire skills and information. This could also be considered a reason leading to more trust in the platform, and therefore, use it in an unpredictable way, i.e. as a search engine. When participants perceive TikTok as a credible source, this would affect their choice of search engine therefore affects their acceptance of the found results which is in-line with source credibility theory. Source credibility theory is a key concept in the fields of communication, persuasion, and social psychology [29]. It refers to how the credibility of a source of information affects the recipient's perception, acceptance, and persuasion of the message being communicated. The theory posits that the effectiveness of a message is significantly influenced by the audience's perception of the source's credibility [29].

Although we are not necessarily looking at the source of the information which would likely be a user on TikTok who posted a video that is not vetted for its information, we may consider the source here as the platform because platforms are found to have an effect on perceived credibility [39]. According to the theory, users of TikTok who use it as a search engine and perceive it as trustworthy, will accept the information as factual. It's important to understand that the burgeoning dominance of TikTok in the realm of information dissemination heralds a significant transformation in the media landscape, underpinned by a cultural shift towards a preference for engaging, visually driven content that emphasizes personal connection and community interaction. This evolution challenges traditional media producers and search engines to innovate, integrating multimedia elements and interactive features to meet changing consumer demands. However, this shift also raises critical concerns regarding information integrity and literacy, as the platform's emphasis on social proof and influencer endorsements may inadvertently prioritize popularity over factual accuracy, underscoring an urgent need for users to develop enhanced critical evaluation skills. As we navigate this dynamic digital terrain, the balance between engaging content and factual reliability becomes paramount, shaping the future of information consumption and literacy in the digital age.

Majority of social media platforms such as Meta (owner of Facebook and Instagram) and others use the services of third parties to enforce fact checking [4042-44]. The use of third parties is to showcase the independence in this controversial task, however, these social media platforms have been under scrutiny for possibly being biased based on political agendas. Although TikTok as well as many other social media platforms have a set of policies and clear guidelines regarding accuracy verification and combating misinformation [41], verifying the accuracy of information on TikTok, where content creation is predominantly user-driven and lacks traditional editorial oversight, presents a complex array of challenges. For example, there are many areas that social media platforms need to improve their fact-checking efforts such as gen AI content, locally generated misinformed content, and the onset of trending issues where misinformation peaks due to curiosity and lack of information. The very nature of these platforms—celebrating user-generated content for its authenticity and immediacy—also opens the door to misinformation, either unintentionally through the sharing of unverified facts or deliberately through the dissemination of false information. One of the primary hurdles is the sheer volume and speed at which content circulates on these platforms. The rapid dissemination allows little room for fact-checking or critical analysis before a piece of information goes viral. Unlike traditional media outlets, which typically have layers of fact-checking and editorial review, content on TikTok and similar platforms can be published instantly by anyone, making it difficult to control the spread of inaccurate information.

5.3. Visual Language Evolution

The preference for visual content on platforms like TikTok is significantly shaping the way we disseminate information. This shift towards a more visual language comes with the ability to convey emotions, reactions, and complex concepts through short videos without needing verbal or written explanations. This universality enables people from different linguistic backgrounds to connect, share, and understand each other more deeply, fostering a shared global culture. Based on previous research, it was found that the interface design and presentation of a result positively influence users' trust perceptions of search results, which in turn affects their preference of search results presentation and appearance [27]. Other features of the interface design have varying effects on users' behaviors such as the placement of tools, background color, colored areas, and toolbar features [42; 43; 44].

The ease of access and consumption provided by smartphones and platforms like TikTok has further accelerated the trend of making visual content a dominant form of communication worldwide. Along with preference to see visuals in search results comes the enabling of individuals to bridge communication gaps effortlessly. It also increases accessibility for those with literacy challenges or disabilities by providing alternative ways to receive and share information. This language evolution of the newer generations be it through using memes to comment, or watching a short video to understand a recipe (rather than reading it from a book) is an important language evolution; and is one that was developed incrementally similar to other traditional verbal languages developed earlier [45]. However, the rapid and widespread dissemination of visual content also poses challenges, such as the risk of misinformation. Visuals, such as images and videos, can be easily manipulated or taken out of context, making them powerful tools for spreading false information. This capacity for visual misinformation complicates efforts to discern truth from falsehood, influencing public opinion and potentially leading to real-world consequences. As these visuals circulate quickly and widely, they can reinforce misleading narratives and deepen societal divisions, highlighting the need for critical media literacy and robust fact-checking mechanisms to mitigate the impact of misinformation in the digital landscape.

5.4. AR and VR as the next frontier in search

Although AR and VR were not particularly studied in this research, these technologies may be used to enhance the search experience and may be an interesting addition to traditional search engines as well. The integration of Augmented Reality and Virtual Reality technologies with platforms like TikTok is expected to revolutionize the way users engage with content, offering immersive search and learning experiences that transcend traditional boundaries. As these technologies evolve, we can anticipate a future where users don't just scroll through videos but enter fully immersive environments that enhance learning and exploration. For example, through AR, educational content on TikTok could be brought to life in the user's immediate environment, allowing them to visualize complex scientific concepts or historical events in 3D space around them. This hands-on interaction promotes a deeper understanding and retention of information.

5.5. Theory implications

The theory of TAM posits that two main factors affect the intention to use a technology, namely usefulness and ease of use [46]. Perceived usefulness is the degree to which a person believes that using a particular system would enhance their job performance. According to the results, some users perceive TikTok as useful for acquiring new skills and information. If users find that TikTok provides valuable information and helps them learn new things, they are more likely to use it as a search engine. Rauniar et al [47] found that perceived usefulness plays a critical role in driving user engagement on social platforms, alongside other factors such as trustworthiness and playfulness, which can further enhance the adoption of platforms like TikTok. Similarly, Lamimi et al [9] highlighted the importance of perceived usefulness in influencing students' attitudes toward using TikTok for microlearning.

Perceived ease of use is the degree to which a person believes that using a particular system would be free from effort. Therefore, according to the supported hypotheses, if users find TikTok easy to use and navigate for searching information, this positively affects their likelihood of using it as a search engine, thus, influencing the intention to use this technology. Rauniar et al. [47] emphasized that ease of use remains a significant determinant of user adoption on social media platforms, further supporting its relevance in platforms like TikTok. Han [48] found that ease of use is significantly linked to technological self-efficacy, which indirectly impacts user attitudes and behaviors, rather than directly influencing TikTok acceptance for shopping purposes.

Moreover, other variables such as perceived reliability and the preference to see visuals when searching had a significant influence on decisions to use TikTok as a search engine. These are considered as external variables in the framework of TAM and therefore predicted to have a modest effect on the model. Lamimi et al. [9] found that content richness positively affects students' attitudes and intentions to use TikTok for delivering educational content.

These findings help in understanding the factors that influence user acceptance which can help designers and developers create more effective and user-centered TikTok enhancements. By focusing on improving perceived usefulness and ease of use, technology adoption can be facilitated. For example, considering the finding related to perceived reliability, TikTok developers may introduce verified badges for vetted information and news pieces that may consider expertise in subject matter and citation of the content. This evaluation may be done through the app, or through users' verification and feedback and reporting systems. Another design implication is working on enhancing search algorithms through prioritizing search results based on trusted content or allowing users to filter out suspicious and false content.

By leveraging the findings from the study and explaining it with the TAM model, TikTok can enhance its functionality as a search engine by focusing on perceived usefulness, ease of use, and trustworthiness.

Implementing practical features such as an for example improved search algorithm, Verified Content Badge system, user-friendly interface, and transparent operations will encourage users to adopt TikTok for their search needs. This approach not only aligns with the TAM model but also positions TikTok as a reliable and efficient search platform, fostering greater user engagement and satisfaction. Future research may further explore these suggestions as they were not tested in this study.

5.6. Limitations

This study presents several limitations that should be considered when interpreting the results. First, the research was conducted exclusively within Saudi Arabia, which may limit the generalizability of the findings to other geographic regions. Cultural, social, and political factors are known to have an influence on the way users interact with social media platforms [49], which could differ from users in other countries. Future studies could aim to include more diverse cultural contexts to determine whether the patterns observed in this study are consistent across different regions or if they are specific to Saudi Arabia. Another key limitation is the demographic makeup of the respondents. The majority of participants in this study were female, which introduces a gender imbalance that may affect the findings. Gender-based differences in social media use, may have influenced the results. It is essential to consider this skew when attempting to generalize the findings. Additionally, the majority of participants were young individuals, mostly college students. This age group is known to be highly active on platforms like TikTok, which is predominantly used by younger generations. As such, the findings may not fully capture the perspectives or behaviors of older generations who may engage with the platform differently. Given that TikTok users are generally younger, this study's sample is reflective of the broader user base, but caution should be exercised when generalizing the findings to older age groups.

6. Conclusion

In conclusion, the study reveals that TikTok's sophisticated algorithm, which leverages artificial intelligence and machine learning to personalize content, has not only contributed to its success as a social media platform but also highlighted its potential as a search engine. The survey conducted among young users demonstrates that a substantial majority utilize TikTok for search purposes, driven by its perceived reliability, the high quality of its visual content, and the opportunities it offers for skill acquisition. These findings underscore the importance of recognizing TikTok's role beyond entertainment, suggesting that it could serve as a valuable resource for information search and learning. Consequently, the study proposes enhancements to further improve TikTok's functionality as a search engine, indicating a promising avenue for future research and development in digital information dissemination and retrieval.

CRediT authorship contribution statement

Mashael Almoqbel: Writing – review & editing, Writing – original draft, Supervision, Project administration, Methodology, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Jana Alrassi:** Writing – review & editing, Writing – original draft, Supervision, Data curation. **Sara Alzahrani:** Writing – review & editing, Writing – original draft, Supervision, Data curation. **Hajar Alrashidi:** Writing – review & editing, Writing – original draft, Supervision, Data curation. **Sabah Jarallah Aldoshan:** Writing – review & editing, Writing – original draft, Supervision, Data curation. **Abdullah Alatiqi:** Writing – review & editing, Supervision, Resources.

Declaration of competing interest

None

Data availability

Data will be made available on request.

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