TikTok Adoption: The case of Generation Z in Vietnam during the Covid-19 pandemic

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Abstract

This article investigates how the content and source characteristics of the TikTok platform impact Generation Z's intention to use the application. A quantitative method is adopted. Overall, 217 respondents participated in the study through questionnaires, and the data were analyzed by SmartPLS 4.0. The research revealed three main findings. Firstly, all examined variables under the content characteristics on TikTok positively impact the Perceived Ease of Use, while TikTok source characteristics strongly influence Perceived Usefulness. Secondly, users' involvement and attitude were confirmed as multi-mediators between Perceived Ease of use, Perceived Usefulness, and Intention to use. Finally, the mediating role of perceived usefulness in the relationship between source characteristics and attitude was also confirmed. The study reveals the market preparedness of the Vietnam market for the growth and penetration phase for platform adoption. To foster this stage, brands should adequately enhance the diverse content and extend source characteristics to better increase users' involvement and intention to use of target audience.

Keywords: TikTok, User Involvement, Source-Characteristics, Content-Characteristics, Generation Z.

JEL Classifications: M31, L81, C52

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1. Introduction

Digitalization economy transformation is the central objective of many governments in the integrated 5.0 society since it is vital for economic sustainability (Afonasova et al., 2019). According to the study of Buhalis and Park (2021), the digitalization process requires five years to facilitate fully. However, this process has been shortened due to the pandemic in 2020.

After Covid-19 lockdowns have pivoted to online activities in all fields due to the national lockdowns (Deloitte Report, 2020), most people's daily activities, including work, shopping behaviors, and entertainment, have shifted online. Since then, people tend to spend more time online rather than before the Covid pandemic. The new pace of consumer behavior highlighted the role of "speed" and "convenience" when consumers make their decisions; many scholars described this impact as fragmentation (Do and Do 2020; Tran and Le, 2020). Consumers are less patient and more distracted from the in-depth information and tend to seek simple content for comprehension. Thus, enterprises are encouraged to digitalize their activities in multiple online platforms to better reach their target audiences in the new normal.

TikTok was founded and developed by ByteDance – an innovative business and multinational internet technology company headquartered in China since March 2012. Notably, TikTok experienced the highest growth in the entertainment industry based on the recent report of Kantar (2021) and TikTok Creator Marketplace (2022). With the availability in over 150 markets, the brand value increased by 47%, which made up approximately $41.5B in the trade market. In 2020, TikTok became one of the top 45 most valuable and most popular global brands (Kantar, 2021). With global ambition, the global firm should enter and secure the following markets: key markets (as they provide critical resources for competitive advantage); emerging markets (as they offer enormous opportunities for business growth); platform markets for 'hub-setting' and sourcing markets to exploit resources. Recent studies about TikTok emphasized various applications of TikTok in key markets such as China, for both individuals and Chinese government adoption (Choi et al., 2021; Ma and Hu, 2021) and the US (Beaudoin et al., 2021). Other studies provide two highlights in their findings: (1) user adoption in critical markets apart from China, such as the US (Beaudoin et al., 2021), Pakistan (Iqbal et al., 2020), among others, and (2) business platform elaboration to explain the road of success (Ma and Hu, 2021). Thus, it can be said that the studies conducted in emerging markets were blurred.

Available in 155 countries, TikTok positioned itself as a global player. The global firm should enter and secure the following markets: key markets, emerging markets, platform markets, and sourcing markets. Among those, the emerging market offers enormous opportunities for business growth and long-term profitability. Having entered an emerging market such as Vietnam at the end of 2018, TikTok is beginning product growth and actively competing with other existing social media platforms such as Facebook and Instagram - which dominated the market many years ago. Due to the constantly expanding youth population and fast-developing economy, Vietnam is a prime market for social media platforms such as TikTok. In addition, Vietnam's unique socio-cultural context,

including its digital landscape, user behaviors, and regulatory environment, presents distinct dynamics that warrant exploring TikTok adoption and diffusion patterns. As mentioned, more about TikTok studies in business expansion and adoption in emerging nations, particularly in Vietnam, is needed. Therefore, conducting a series of studies in different countries is imperative to offer insights for TikTok to reach the next step of its entry strategy – penetrating those markets and securing stable growth.

This study explores the impacts of TikTok's characteristics on Generation Z's adoption in Vietnam during the Covid-19 pandemic. By reviewing relevant literature on social media adoption and TikTok adoption in other countries, this research proposes two second-order variables illustrating TikTok's application to test its impacts and take evidence from the Vietnamese market. One highlight of this study is that the researchers added one crucial variable - users' involvement during COVID-19 to examine behavior during such a pandemic.

Researchers have examined both source and content characteristics that impact users' attitudes and intentions to use. There are three highlights taken from this study. Firstly, the relationships from all first-order variables of source characteristics and content characteristics show significant influences on the intention to use. Notably, the users' involvement and attitude are revealed as multi-mediators between Perceived Ease of use, Perceived Usefulness, and Intention to use. And finally, the mediator of perceived usefulness was also confirmed.

2. Literature Review

2.1 TikTok application

TikTok, launched by ByteDance (China) - an innovative and high-tech application, is a social media video-focused platform (Wang, 2020). In terms of the target audience, TikTok aims to engage users with short videos, focusing on the effects of the modern lifestyle's new pace in recent years (Wang, 2000). According to a study by Meng and Leung (2021), TikTok is a fast-growing, short-form, video-sharing app that allows users to create and share 15-second (or up-to-10-minute) videos of any topic. Notably, TikTok also offers a user-friendly experience that takes under 30 minutes the interaction between users and the app (Wang, 2020).

Because of the convenience and real-time content, consumers tend to engage with short videos (Wang 2020) due to the effects of the new pace of the modern lifestyle. Having captured the trendiness of shorter videos, TikTok became a remarkable growth and expansion phenomenon that allows content creators to create short-15second-loop videos and share them with other TikTok users (Meng and Leung, 2021). As a social media platform, TikTok also allows cognitive and affective reactions such as liking, commenting, and sharing (within TikTok and through other platforms). Furthermore, TikTok elevates the video creation experience using AI and AR effects. Animations with different themes, camera art filters, and updated music carefully tailored for each nation are provided to enable users to generate high-quality entertainment videos. The video creation application can be described as a virtual playground (Meng and Leung, 2021).

2.2 Theoretical Foundation and Construct Selection

The research model of this study was developed by the two fundamental theories, including the Technology Acceptance Model (TAM) proposed by Davis et al. (1989) and the Innovation Diffusion Theory (IDT) proposed by Rogers (1983). First, derived from social psychology theories such as the Theory of Reasoned Action, TAM is revised and adopted in the Technology sector (Rao and Troshani, 2007). Being influenced by external variables, TAM suggests two factors – Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) as determinants of users' attitudes toward Technology acceptance to use and intention to purchase (Davis et al., 1989). Secondly, the IDT is suitable for examining the degree of users' adoption of an innovative platform like TikTok (Yuen et al., 2021). Hence, in this study, four main variables of TAM, including Perceived usefulness (PU), Perceived ease of use (PEOU), Attitude, and Purchase intention, and the variables in IDT are adopted to develop the research model.

A second-order formative conceptualization of source characteristics and content characteristics

To develop the first-order and second-order dimensions drawn from the literature, the source – characteristics and content – characteristics are shown as multidimensional variables. Researchers selected first-order dimensions through prior literature with a solid theoretical foundation and proven to have critical generalization.

Source characteristics

As mentioned in the paper of Su and Li (2023), the media characteristics refer to the 'source' characteristics. Hence, based on IDT, prior papers and authors from the first-order dimensions drive the platform and interface characteristics.

Innovation Diffusion Theory centers around five constructs in determining whether consumers might purchase and adopt innovations: Relative Advantage, Complexity, Compatibility, Observability, and Trialability (Yuen et al., 2021). The variable 'complexity' was employed to examine the inverse correlation with decision-making, whereas the present investigation centers on elucidating the affirmative aspects and fortifying the association to engage in utilization (Hsbollah & Idris, 2009). According to Iqbal (2020), the target consumers of TikTok are adolescents and young people born between 1997 and 2012, commonly known as Generation Z (Gen-Z), which accounts for almost 60% of the customer base. Gen-Z is typically defined as "digital natives" who quickly adopt innovation, high education, and high social and cultural difference awareness (Muliadi, 2022). The company signpost highlights super personalisation (The New York Times, 2021) for those audiences; the algorithm is designed to match each personal user. Hence, complexity is not a barrier for that target to access the platform and is withdrawn from the first-order dimensions list because this research's target audience is Gen Z.

Furthermore, a review of 56 prior studies by Ukapabi and Karjaluoto (2018) suggests that homophily is a strong determinant of PU and PEOU. To be precise, homophily is a core foundation of influential human communication beliefs among individuals; it enables the communication process

to be easier, faster, and more effective. People with correlative attributes such as age, gender, lifestyle, or education tend to join a group to share the same interests (Ayeh et al., 2013). They start to share both material and virtual consumption experiences from the interaction, resulting in responsibility for the group. In the context of TikTok, users' behavior is influenced by matched influencers on this application.

On the other hand, reviewing the construct of 'Observability' refers to how innovation outcomes are visible (Shiau et al., 2018). In some prior papers, Observability did not show the impact on PEOU (Al-Rahmi et al., 2019) and PU (Wang, 2022). Additionally, considering the exposure level, homophily holds deeper engagement towards society than observability, as the users can expose the outcomes of the innovation and engage to have detailed reviews. Therefore, the authors replaced 'Observability' with 'Homophily' in the first-order dimensions list.

Based on the preceding discussion, test model one (TM-1), illustrated in Fig.1, will be constructed with instruments from IDT.

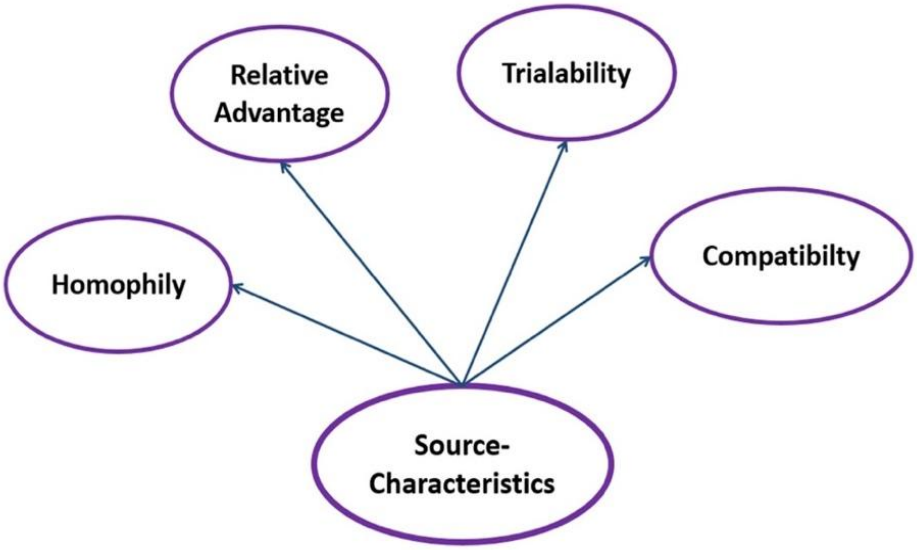

Figure 1. Test model 1 (TM1)

Content characteristics

The overall goal of marketing content is to cultivate positive customer relationships and drive sales strategically. This leads to selecting five first-order variables: valence, aesthetic appeal, relevance, reliability, and entertainment value (Bazi et al., 2023). These factors are considered essential to the analysis of TikTok content since they all work together to provide a comprehensive assessment of the effectiveness of the material. Valence evaluates the overall positive or negative emotional tone; aesthetic appeal guarantees visual attractiveness, relevance guarantees alignment with audience interests, reliability emphasizes trustworthiness, and entertainment value boosts engagement. In order to achieve successful marketing results, the authors need to thoroughly grasp the elements affecting consumer perception and interaction with TikTok content.

Regarding TikTok content, the authors analyze to select five first-order variables, including aesthetic, relevance, reliability, entertainment, and valence (illustrated in Figure 2).

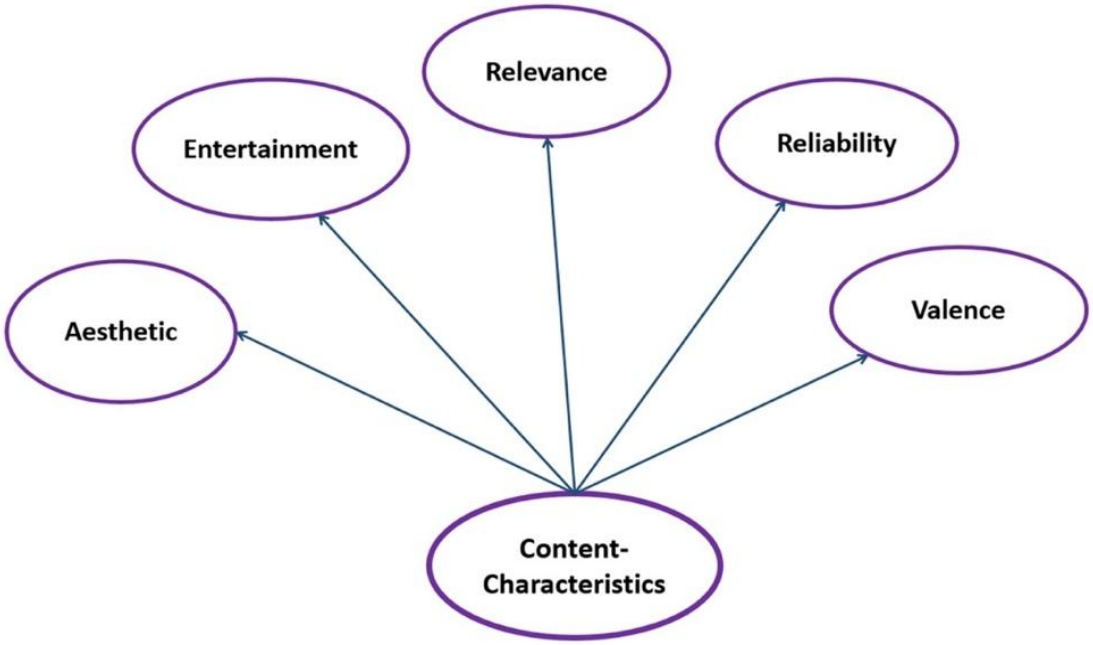

Figure 2. Test model 2 (TM2)

Aesthetics is a crucial variable found in previous studies (Hsiao, 2013); it refers to the emotional exposure from interacting with stimuli (Pengnate et al., 2019). Different evaluations and judgments about the balance of beauty can be expressed by colors, content, music, or animation (Cyr et al., 2006). Creating aesthetic video content and application interfaces might influence users' acceptance of short-interactive video content like TikTok. With a unique advantage, TikTok recommends videos based on learning users' preferences and usages of the app and the recommended content based on local tastes, mainly offering users entertainment (Ma and Hu, 2021). Hence, another variable that can be used to describe the content characteristics of TikTok is entertainment.

In online marketing literature, two variables, relevance, and reliability, have significantly impacted how people interpret information. Relevance refers to users' perception regarding helpfulness and application, whereas reliability indicates trustworthiness (Stieglitz and Kaufhold, 2011). When applied to TikTok, the platform is positioned as a video-sharing and live-streaming social network that combines functions of several social network sites such as YouTube, Instagram, and Facebook (Ma and Hu, 2021). TikTok allows users to upload videos (15 seconds) easily with ready-made music and effects. The application automatically recommends relevant content for users' newsfeeds based on user's interests and preferences, also called the "for you page." Additionally, TikTokers can expose information by watching videos and comments from other users. Hence, it can be said that this information source has a degree of reliability.

The concept of valence indicates the ability of people to perceive whether attributes are positive or negative (Behringer and Sassenberg, 2015). TikTok is a social media application that encourages

participants to follow and interact with each other by commenting, sharing messages, and further sharing videos on other platforms. According to Ma and Hu (2021), these interactions are fundamental to creating “Stickiness" to the application and brand loyalty. Hence, valence is another modification added to test model 2 of content characteristics.

Users' involvement in Covid-19

Users' involvement relates to personal relevance (needs and values) with products and services. This variable is fundamental to developing software or applications (Bano et al., 2018) and affects its successful commercialization (Conradie et al., 2019). The environment strongly deviates from the user's involvement. During the Covid-19 pandemic, according to Altman and Bastian (Harvard Business Review, 2021), the digital flow soared since the end of 2020, rising 53% precisely. However, people's mobility was restricted to restrain virus transmission. Therefore, the need to use social media has accelerated to become a pervasive part of society (Wong et al., 2020). Hence, this study will adopt user involvement as a critical variable to develop a research model for the current TikTok application.

2.3 Hypotheses development

The research model is proposed from all mentioned discussions, and the hypotheses are presented in Fig.3.

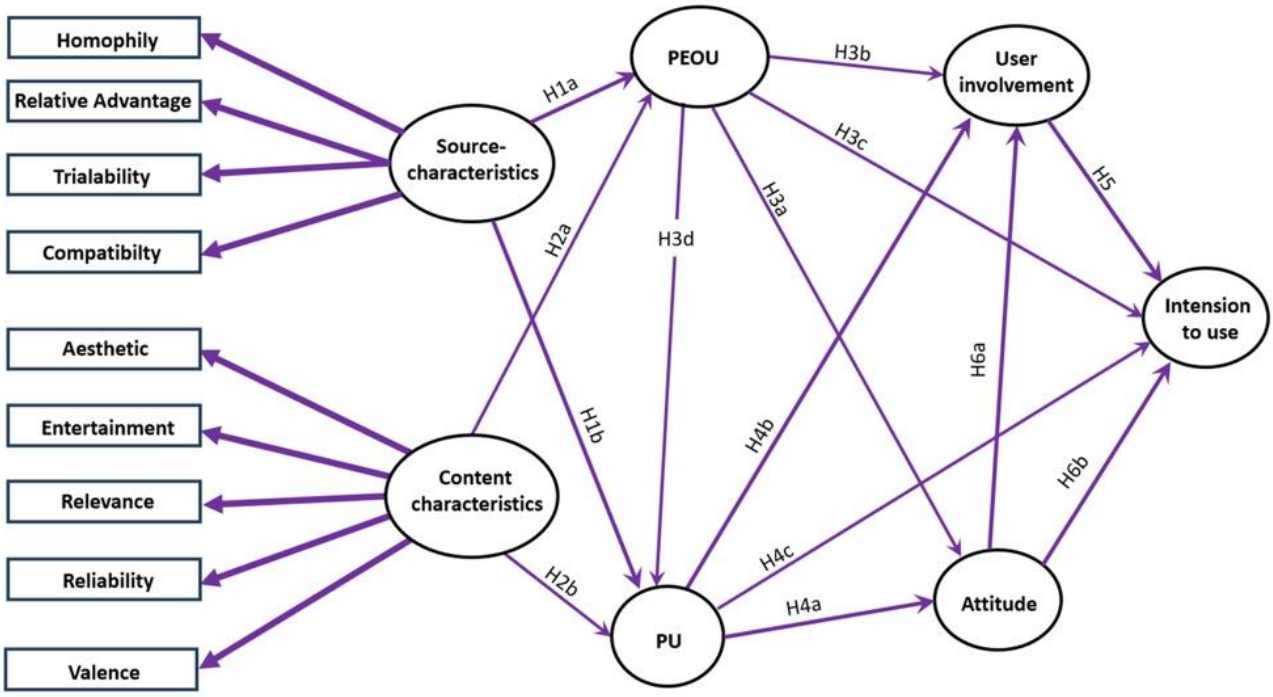

Figure 3. The proposed research model (Source: Research Team, 2023)

2.3.1 Source characteristics with perceived usefulness and perceived ease of use

Homophily is a term describing a phenomenon on social media sites. A homophily group refers to people with similar attributes such as age, gender, or social status (Kawakami et al., 2013). For TikTok, a community was developed that consists of the global young generation, especially Gen-Z. Earning millions of monthly increased active users (Zuo and Wang, 2019), making up the total users

of over 1 billion (Statistia, 2024), this platform encourages users to share and re-share videos within this community and further repost on other social media sites. According to the findings of Ayeh et al. (2013), participants in the same community where they perceived other people hold the same interests, experiences, and perceptions will likely actively expose and share information as a responsibility towards the community. Through experience sharing, other members might perceive the usage and how to adopt a new product and service (Ladhari et al., 2020). Hence, it is feasible to predict a relationship between homophily towards PU and PEOU.

Relative advantage refers to consumers evaluating the innovation's benefits (Mehra et al., 2020). With TikTok, they center around super short (15 seconds) instead of their competitors, such as YouTube or Facebook. Young users are provided the tools to film and post their clips online. It focuses right on convenient entertainment way. This positioning is a market gap (Ma and Hu, 2021) owing to customer behavior as fragmentation. Those can be categorized as relative advantages generated from TikTok. Based on the suggestions of Raza et al. (2017) or Pitafi et al. (2020), the relative advantage of this platform solely will be examined in the impacts on both PU and PEOU.

As TikTok is available in many virtual stores, such as Google Play and Apple Store (Ma and Hu, 2021), people can freely access TikTok by downloading the application via their smartphones and digital devices. The individual perceiving whether they can test or try an innovation is also called trialability. The trial version will allow users' experiences as references for later consumption (Makanyeza, 2017). Previous experience enables future users to spend less effort exposing and engaging with new technology (Yuen et al., 2021). It might improve the ease of use and usefulness perception level afterward. Hence, this paper will examine the association between experiences with PU and PEOU.

TikTok is specifically designed for adolescents and young people under 25; all features in the application are designed to match this target audience (Wang, 2020). For example, the video filters and theme music are sorted following local trends in each nation. Additionally, the display, features, effects, and even the working system of TikTok are compatible with the target market. In other papers, compatibility refers to the compatibility level between products/services and individuals' values and lifestyles (Püschel et al., 2010). Prior papers examined the effect of compatibility on PU and PEOU in other settings, such as education (Alhasan et al., 2023) and IoT context (Karahoca et al., 2018). Furthermore, a higher compatibility degree predicts a higher chance of adoption (Makanyeza, 2017). Hence, the influence of compatibility on PU and PEOU is hypothesized as positive in this study.

From the mentioned arguments, relative advantage, trialability, compatibility, observability, and homophily are likely to impact PU and PEOU. These five variables are constructed as first-order constructs of sources - characteristics. Hence, the authors develop the following hypotheses:

H1a: Sources - characteristics of TikTok positively impact Generation Z's Perceived ease of use

H1b: Sources - characteristics of TikTok positively impact Generation Z's Perceived usefulness

2.3.2 Content-characteristics with perceived usefulness and perceived ease of use

Aesthetics refers to users' perception of beauty and emotional appeal from things or stimuli (Hsiao et al., 2013). In a virtual platform, Lavie and Tractinsky (2004) showed that a blogger with aesthetic recognition would generate empathy from viewers and influence users' positive attitudes afterward. It can be recognized from current studies that acknowledge beauty's power in human thought and behavior (Gilal et al., 2018). Another role of aesthetics proven in the study of Li and Yeh (2010) is that it can provoke trust and perceived usability. Hence, the authors can assume that Aesthetics will positively affect PU and PEOU.

TikTok has positioned itself as a playground (Ma and Hu, 2021) and aims to up-mood, whereas using social networks can be relationship generation, entertainment, and information sharing (Perrin, 2015). If the consumers perceive enjoyment and entertainment, they are likely to generate higher PU and PEOU (Ma and Hu, 2021) and intention to adopt. Furthermore, young people consider entertainment as a key determinant to adopt other similar innovations such as Instagram (Hwang and Cho, 2018). Thus, the authors predict a relationship between the entertainment features of TikTok PU and PEOU.

Using AR and algorithms, videos on TikTok are recommended to match users' interests (Meng and Leung, 2021). As a result, the suggested content has higher relevance to users' preferences. Moreover, the users of TikTok are their acquaintances, friends of friends, and celebrities/experts. Users' reliability is judged by the number of "followers" and "likes" they accumulate. Therefore, content on TikTok is considered reliable and relevant to users, and that information can influence participants' perceptions afterward. Hence, it is reasonable to develop hypotheses indicating the impact of Reliability and Relevance on PU and PEOU.

TikTok allows users to express their emotions, such as Valence, by clicking "Like," "heart," and verbalizing their opinions by "comments." Their feedback can be positive or negative, depending on their video evaluations, and valence information can alter users' perceptions afterward (Purnawirawan et al. (2015). In the meta-analysis of Purnawirawan et al. (2015). Hence, this study will examine the impact of valence on PU and PEOU under the content characteristic construct.

TikTok allows users to express their emotions – as Valence by clicking "Like," "heart," and verbalizing their opinions by "comments". Their feedback can be positive or negative, depending on their video evaluations. It can be called message valence, following the definition cited in Purnawirawan et al. (2015). In the meta-analysis of these authors, review and feedback valence might alter PU and PEOU, which has been proven in many studies, such as Doh and Hwang (2009) and Hair and Ozcan (2018). The comments on TikTok can impact PU and PEOU since they might develop evaluations and perceptions of viewers.

From the abovementioned arguments, aesthetics, entertainment, relevance, reliability, and valence will likely impact PU and PEOU. These five variables are first-order constructs of TikTok's Content - characteristics. Hence, the authors develop the following hypotheses:

H2a: Content - characteristics of TikTok positively impact Generation Z's Perceived ease of use

H2b: Content - characteristics of TikTok positively impact Generation Z's Perceived usefulness

2.3.3 Perceived ease of use and Perceived usefulness toward Generation Z's attitude and intention to use

TAM is adopted to assess users' willingness to adopt new technology. PEOU and PU strongly influence users' attitudes and views about the information system. According to previous studies, when using these technologies, individuals are more likely to respond to social media videos and engage in online shopping (Vijayasarathy, 2004). It examines perceived ease of use and usefulness towards consumers' attitudes and intentions (Chetioui et al., 2021). The recent research of Chetioui et al. (2021), conducted with the Facebook platform, and Savitri and Irwansyah (2021) - conducted with Instagram, have proven the positive impact of PEOU and PU on those social media platforms on users' attitudes and intention to use. In addition to its favorable association with user attitude, PEOU can predict and affect PU. Camilleri and Falzon's (2020) study suggests that people who find online streaming easy will likely find it useful. Perceived usefulness and ease of use are linked in several research. As TikTok has been positioned as a live-streaming and social media platform, it is reasonable to construct the hypotheses to examine the PEOU and PU of TikTok towards Generation Z's attitude and intention to use:

H3a: Generation Z's perceived ease of use positively impacts Generation Z's attitude towards TikTok

H3c: Generation Z's perceived ease of use positively impacts Generation Z's intention to use TikTok

H3d: Generation Z's perceived ease of use positively impacts Generation Z's perceived usefulness toward TikTok

H4a: Generation Z's Perceived usefulness positively affects Generation Z's attitude toward TikTok

H4c: Generation Z's Perceived usefulness positively affects Generation Z's intention to use TikTok

2.3.4 Perceived ease of use, perceived usefulness, consumers' attitude, and TikTok Adoption with users' involvement

Users' involvement manifests in the degree of consumer participation in performing the behavior. Engaged with personal value systems, users base their needs, wants, and values on reaching different degrees of involvement (O'Cass and Choy, 2008). During the Covid-19 pandemic, lockdown restrictions forced consumers to spend longer online activities and engage in social media as they need for daily communication. Hence, it can be said that consumers show higher involvement during Covid-19 and even the "new normal" situation.

When customers perceive the ease of use and usefulness, they will likely leverage the usage towards things and stimuli (Kumari, 2022). Furthermore, once consumers acknowledge the benefits of technology, they are inclined to continuous interest, which shows the extant level of involvement (Bonn et al., 2016).

On the other hand, the association between user involvement and attitude has been investigated across various studies, as evidenced by the works of Barki and Hartwick (1989; 1994) and McClure and Seock (2020). Furthermore, Hawk (1989) also said that although the initial attitude of users toward a system is essential when installing, user attitudes after a period of use could be more important in the long run. Therefore, a platform like TikTok has a greater opportunity to increase user involvement by improving users' attitudes towards the platform. A study by Dabbous and Barakat (2020) claimed that TikTok users like to support other users by rating and commenting. They tend to be more involved and play an active role by commenting. Moreover, generation Z spends more time on the app, participates in trends, and creates and shares content, enhancing their active participation and fostering a deeper connection with the TikTok community.

In the case of TikTok, PU, and PEOU are the cognitive assessments and perceptions (Jegundo et al., 2020), whereas consumers' attitude is an overall practical evaluation of the external environment. Thus, the authors argue that Generation Z's PU and PEOU might navigate users' involvement within the TikTok platform. The following hypotheses are constructed:

H3b: Generation Z's perceived ease of use positively impacts users' involvement

H4b: Generation Z's Perceived usefulness positively impacts users' involvement

H6a: Generation Z's attitude towards TikTok positively impacts (their) users' involvement

Since adoption or actual buying behavior results from a high level of self-relevance and a high match with users' needs. During the Covid-19 pandemic, TikTok grew tremendously in popularity among young people, from teenagers to those under 25 due to the lockdown regulations. According to the recent research by Zhang et al. (2021), COVID-19 foster social media engagement in general, and futher short video sites like TikTok. Since users develop their high attachment and behavior of using those platforms to interact with the community. Therefore, in this study context, we posit that the higher involvement, explained by incremental behavior shift since the pandemic, will encourage user continue to adopt to use TikTok, notably for the young. Hence, the final hypothesis is constructed as follows.

H5: Users' involvement positively affects Generation Z's intention to adopt TikTok.

2.3.5 Generation Z's attitude towards TikTok adoption

The relationship between consumers' attitudes and intention to use has been centered for a long time. Many studies confirmed that attitude does affect the intention to use products and services (Do

and Do, 2020; Wong et al., 2020). Furthermore, adopted from TAM, the researcher raised a hypothesis to test the relationship between the two mentioned variables:

H6b: Generation Z's attitude towards TikTok positively affects their intention to use.

3. Research Method

The research follows a quantitative approach, including a web-based survey designed explicitly for TikTok users in Vietnam, collected between September 2021 and March 2022. Participants were chosen based on a survey of existing users who had been using the app for at least two months. Another pre-selection criteria were established regarding demographic factors to ensure Gen Z's data representativeness. The online survey was conducted with a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) to measure respondents' answers. Demographic questions were included in the survey by sample profiling of the respondents.

The survey consists of three parts. In the first part, participants were asked if they had used TikTok, which allowed this study to recruit the relevant respondents for the study. The second part of the survey was used to identify the demographic characteristics of respondents, including age, gender, experience using TikTok, and frequency of using this app. The third part covers questions for seven main variables (See appendix for more detail): Source characteristics, Content characteristics, perceived ease of use (Davis, 1989), perceived usefulness (Davis, 1989), Users' involvement (Zaichkowsky, 1985), Attitude toward using (Chebat and Vercollier, 2003), and Intention to use (Mutahar et al., 2017). Validated multi-item scales were adopted from related literature. Notably, two second-order constructs, which are Source characteristics and Content characteristics, were measured through scales related to 9 first-order constructs, namely Homophily (Ayeh et al., 2013), Relative advantage (Moore and Benbasat, 1991), Trialability (Mutahar et al., 2017), Compatibility (Verrecchia, 2016), Aesthetic (Chen et al., 2014), Entertainment (Zhao et al., 2015), Relevance, Reliability (Chen et al., 2014), Valence (Zhao et al., 2015). A pilot test of this survey was conducted with ten people from universities and colleges for feedback about wording and layout. Then, the adjusted scale was used as a measurement scale in the actual survey.

In this study, the non-probability convenience sampling method is applied, which means that the sample is collected from a group of people who are easy to approach (Saunders et al., 2012). Most researchers prefer this method because of its numerous advantages, including being extremely fast, time-efficient, and cost-effective (Henry, 1990). The sample size is determined using empirical formulas for each processing method, including sample size calculation for factor analysis (Hair et al., 2010) and regression analysis (Tabachnick and Fidell, 2007). The volume of the research sample must follow a formula: $n >= 8m + 50 = 162$ observations (where n is the sample size, m is the number of independent variables of the model, m = 14). To analyze confirmatory factors (CFA), the collected data need at least five observed variables on a single observed variable (Hair et al., 2010). Therefore, the minimum sample size is $N = 5 * x$ (x is the total number of observed variables), and the sample size should not exceed 100. In this research, as a result, the sample size that factor analysis

and multiple regression analysis need is N = max (205). Nevertheless, a bigger sample size was collected to gain more data reliability and eliminate invalid responses. In conclusion, the minimum sample size for this research will be 217 after reviewing and removing inappropriate samples from the 234 samples.

4. Data Analysis

From the descriptive analysis results in Table 1, there are 217 respondents. The female rate of using TikTok is higher than males, consistent with the TikTok users' population in Vietnam. Regarding the frequency of using apps, 12.4% use less than 5 minutes daily, and the majority use between 5 to 20 minutes (53.4%) daily. Since the TikTok clip was very short compared to other platforms, such as Facebook, the authors categorized the exposure time in a minute range. These results indicate that the TikTok platform is only suitable for short content, for instance, a key hook sentence or information. The average number of videos customers are exposed to daily is approximately 5-15 (depending on the content length). Hence, content developers should emphasize video effects or the main key message for the first 5-10 seconds to retain users' attention.

Another interesting fact that emerged from the descriptive data shows that for Generation Z, this application is relatively new; most of the respondents spend little time on this platform. Respondents can still be considered in the trial period using TikTok. Finally, the collected data was coded into SPSS 25 software for descriptive statistical analyses to test the reliability and validity. To test the hypotheses with structural equation modeling (SEM), SmartPLS 4.0 was applied.

Table 1. Demographic characteristics of respondents

Variables	Description	Frequency	Percent
Age	13-17 years old	32	14,7%
	18-22 years old	153	70,6%
	22-25 years old	32	14,7%
Gender	Female	112	51,6%
	Male	102	47,0%
	Others	3	1,4%
TikTok usage per day	less than 5 minutes	27	12,4%
	5-10 minutes	65	29,9%
	10-20 minutes	51	23,5%
	20-30 minutes	37	17,1%
	more than 30 minutes	37	17,1%

This study employs two stages to evaluate data from the questionnaire, following Anderson and Gerbing's (1991) approach. Cronbach's Alpha was used to assess the scales' reliability. The factor is reliable when Cronbach's Alpha is higher than 0.6 (Hair et al., 2010). According to Table 2, the reliability of all variables in this study has a Cronbach's Alpha greater than 0.6, indicating that the

items in the scales are internally consistent. Furthermore, most variables have an AVE greater than 0.5, meaning that the measurements of all constructs have a high level of convergent validity (Fornell and Larcker, 1981). The C.R. also shows that both constructions have a high level of internal consistency reliability, as shown in Table 2 below.

Table 2. Reliability and Validity Analysis

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Aesthetic	0.737	0.749	0.851	0.657
Attitude	0.810	0.810	0.887	0.724
Compatibility	0.825	0.828	0.884	0.657
Content characteristics	0.907	0.914	0.921	0.441
Entertainment	0.721	0.731	0.843	0.641
Homophily	0.690	0.692	0.829	0.617
Intention to use	0.838	0.846	0.903	0.756
PEOU	0.777	0.781	0.870	0.690
PU	0.746	0.747	0.855	0.663
Relative advantage	0.624	0.628	0.799	0.571
Relevance	0.795	0.816	0.880	0.711
Reliability	0.768	0.769	0.867	0.685
Source characteristics	0.901	0.905	0.916	0.460
Trialability	0.619	0.637	0.797	0.570
User involvement	0.797	0.800	0.868	0.621
Valence of review	0.697	0.707	0.831	0.622

Furthermore, discriminant validity was met because all square roots of each construct's AVE were greater than the correlation of the constructs with each other in the structural model. The discriminant validity of this model was validated based on the data in Table 3. Furthermore, Harman's single factor test applied the standard method bias test. The skewness and kurtosis of the answers were evaluated since normality tests can only provide limited advice for using the nonparametric PLS-SEM technique (Hair et al., 2013). The majority of the answers were within the appropriate skewness and kurtosis ranges of -1 to +1.

In accordance with Hair et al.'s (2010) guidance on construct validity assessment, the adequacy of model fit is examined, a crucial step in validating the theoretical underpinnings of the model. Following their recommendation to incorporate at least one index from model fit categories, the Normed Fit Index (NFI) was selected to measure model fit in this investigation. The NFI, with values ranging from 0 to 1, provides insight into how closely the proposed model aligns with the observed data. An NFI value exceeding 0.8 (in this study, NFI = 0.887) validates the suitability and stability of

the higher-order structural framework. This ensures the validity and integrity of the analytical procedures employed.

The study hypotheses were tested using bootstrapping techniques. Another nonparametric technique for assessing the accuracy of the PLS estimate is the bootstrap. According to Hair et al. (2010), the bootstrap samples should be 5000 times. As shown in Table 4, "Intention to use" is directly influenced by attitude, involvement, and Perceived Usefulness. In this case, Attitude, Involvement, and Perceived usefulness are multi-mediators that mediate the relationship between Perceived Ease of use, Perceived Usefulness, and Intention to use.

Table 3. Discriminant Validity Analysis

	Aesthetic	Attitude	Compatibility	Entertainment	Homophily	Intention to use	PEOU	PU	Relative advantage	Relevance	Reliability	Trialability	User involvement	Valence
Aesthetic	0.811													
Attitude	0.592	0.851												
Compatibility	0.597	0.685	0.811											
Content characteristics														
Entertainment	0.543	0.663	0.628	0.801										
Homophily	0.631	0.602	0.694	0.555	0.786									
Intention to use	0.552	0.696	0.565	0.518	0.594	0.869								
PEOU	0.542	0.575	0.535	0.451	0.452	0.456	0.831							
PU	0.503	0.716	0.698	0.594	0.602	0.658	0.573	0.815						
Source characteristics														
Relative advantage	0.492	0.596	0.674	0.631	0.617	0.508	0.423	0.572	0.755					
Relevance	0.711	0.588	0.613	0.530	0.661	0.707	0.490	0.583	0.531	0.843				
Reliability	0.682	0.597	0.572	0.425	0.564	0.607	0.477	0.555	0.444	0.745	0.828			
Trialability	0.626	0.56	0.698	0.578	0.678	0.547	0.539	0.645	0.637	0.620	0.537	0.755		
User involvement	0.567	0.708	0.654	0.557	0.572	0.726	0.554	0.741	0.546	0.695	0.647	0.630	0.788	
Valence	0.478	0.484	0.594	0.483	0.597	0.436	0.368	0.561	0.515	0.549	0.58	0.573	0.614	0.789

Table 4. Hypotheses testing results (SC: Source characteristics; CC: Content characteristics; IU: Intention to use; UI: User involvement)

Hypothesis	Relationship	Path coefficients	Mean	SD	T-Statistics	p-value	Decision
Direct Effects							
H1a	SC → PEOU	0.292	0.294	0.124	2.357	0.018	Supported
H1b	SC → PU	0.467	0.466	0.088	5.320	0.000	Supported
H2a	CC → PEOU	0.337	0.338	0.112	2.998	0.003	Supported
H2b	CC → PU	0.186	0.189	0.087	2.132	0.033	Supported
H3a	PEOU → Attitude	0.246	0.247	0.069	3.582	0.000	Supported
H3b	PEOU → UI	0.113	0.112	0.054	2.097	0.036	Supported
H3c	PEOU → IU	-0.042	-0.042	0.060	0.695	0.487	Not Supported
H3d	PEOU → PU	0.201	0.200	0.066	3.063	0.002	Supported
H4a	PU → Attitude	0.575	0.574	0.066	8.760	0.000	Supported
H4b	PU → UI	0.443	0.444	0.060	7.354	0.000	Supported
H4c	PU → IU	0.144	0.143	0.065	2.205	0.027	Supported
H5	UI → IU	0.412	0.414	0.070	5.891	0.000	Supported
H6a	Attitude → UI	0.326	0.327	0.059	5.483	0.000	Supported
H6b	Attitude → IU	0.326	0.325	0.067	4.840	0.000	Supported
Indirect Effects							
	SC → PEOU → PU	0.059	0.059	0.032	1.825	0.068	Not Supported
	CC → PEOU → PU	0.068	0.068	0.033	2.032	0.042	Supported
	PEOU → PU → IU	0.029	0.028	0.016	1.779	0.075	Not Supported
	PEOU → Attitude → IU	0.08	0.08	0.027	2.945	0.003	Supported
	PEOU → UI → IU	0.047	0.046	0.024	1.938	0.053	Supported
	PU → Attitude → IU	0.187	0.187	0.046	4.034	0.000	Supported
	PU → Attitude → UI	0.187	0.187	0.039	4.754	0.000	Supported
	PU → UI → IU	0.182	0.183	0.040	4.577	0.000	Supported
	Attitude → UI → IU	0.134	0.135	0.034	3.924	0.000	Supported

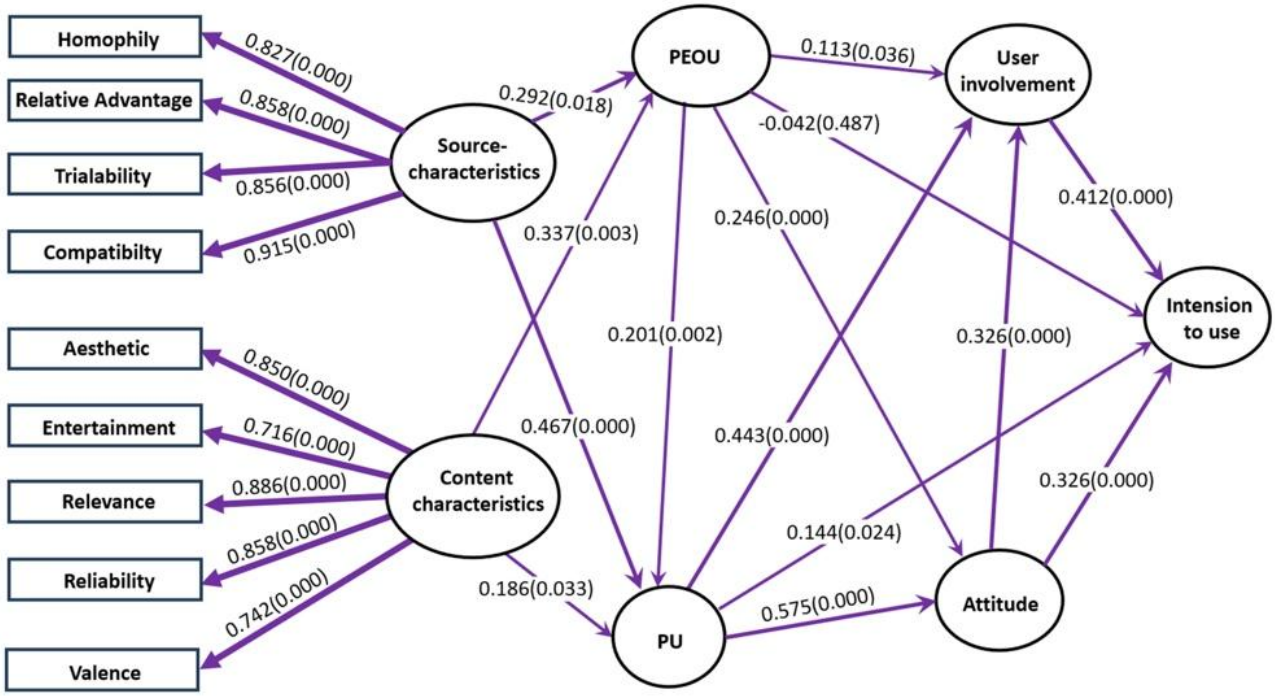

Figure 4. SEM Results

Based on the figure below, Gen Z's User Involvement and User Attitude toward TikTok significantly directly impacts Intention to use (H5, t= 5.891, b= 0.412, p=0.000 & H6b, t= 4.840, b= 0.326 p=0.000). This finding reinforces the results of previous research. It emphasizes the importance of User Involvement and User Attitude as major factors influencing Gen Z's intended use of short video platforms such as TikTok.

Other direct relations to Intention to Use hypotheses need to be rejected due to p>0.05, including Perceived Ease of Use (H3c, t= 0.695, b= -0.042, p=0.487). The technological issue is no longer a barrier for Gen Z, which suggests an indirect effect of both Perceived Ease of use, Perceived usefulness, User Involvement, and User Attitude factors on the intention of Gen Z users.

The most important relationship in this study was the influence of Source characteristics and Content Characteristics on Perceived ease of use and Perceived usefulness (H1a, t=2.357, b= 0.292, p=0.018; H1b, t=5.320, b= 0.467, p=0.000 & H2a, t=2.998, b=0.337, p=0.003; H2b, t=2.132, b=0.186, p=0.033). The results reported in Table 4 and Figure 4 show that the direct effects between Source characteristics and Perceived ease of use are weak (H1a, b= 0.292, p=0.018). However, Source characteristics strongly influence Perceived usefulness (b=0.467, p=0.000), and Content characteristics strongly influence Perceived ease of use (b=0.337, p=0.003).

Moreover, Perceived usefulness is the mediator which influences the relationship between Source characteristics and Perceived ease of use. The results demonstrate that when the users realize that the platform's usage is helpful, the source characteristics of this platform are easier to use from a Gen Z viewpoint. In other words, the interaction between source and usable qualities depends on how valuable the platform is.

5. Conclusions, discussions, implications, and future research

5.1 Conclusions and Discussion

This study aims to investigate how the content and source characteristics of the TikTok platform impact Generation Z's intention to use the application. Using the PLS-based SEM technique, this survey-based empirical study primarily investigates factors impacting TikTok adoption of Generation Z in emerging countries such as Vietnam. Using a quantitative approach, including a web-based survey designed explicitly for TikTok users in Vietnam, the results highlighted three original and novelty findings.

First, this paper developed two second-order constructs: source characteristics and content characteristics, which are two groups of determinants of PU and PEOU. The former consists of five first-order variables (relative advantage, trialability, compatibility, observability, and homophily), and the latter includes five first-order factors (aesthetic entertainment, relevance, reliability, and valence).

The paper adds to current knowledge and shows the relevance of the TAM and IDT model in the current context by showing how source and content characteristics impact PU, PEOU, and later intention to adopt. Although both groups revealed significant association towards its examined consequences, source characteristics showed a stronger link with PU, while the content characteristics showed a stronger link for PEOU. For source characteristics, the results are consistent with prior studies adopted by the IDT in examining innovation adoption, such as Yuen et al. (2021) and Pinho et al. (2021), which examined first-order variables only. Moreover, homophily is a variable adopted to explain social media platforms' attributes and confirmed as a first-order variable of source characteristics. For content characteristics, the positive influences towards PU and PEOU are also confirmed, which are in line with studies on innovation adoption topics as follows: Wang (2020) - examined the entertainment factor, Rushnan (2020) - looked aesthetics factor, Kapoor and Dwivedi (2020) - examined reliability and relevance factor. The content of TikTok was created by its users, and under the effect of "relevance," content was familiar to other users since users share the same meanings and values. It is worth noting that the authors examined all determinants to show aspects of the TikTok platform linked with consumers' perceptions.

When comparing the effects between these two second-order constructs with PU and PEOU, it was found that Source characteristics have more potent effects on PU than PEOU. In contrast, the Content characteristics of TikTok have stronger impacts on PEOU than on PU. The content of TikTok was created by its users, and under the effect of "relevance," content was familiar to other users since they shared the same meanings and values. Therefore, it takes little effort to understand and adopt TikTok's content. The platform's source develops working systems and functions in the application. Hence, it promotes adoption by enhancing users' perceptions about its uniqueness – the short clips community.

Second, the finding related to Users' involvement and Attitude is interesting. Two variables are multi-mediators of other factors to the intention to adopt TikTok of Generation Z. When Generation Z considers using TikTok, they are influenced by other factors rather than involvement and attitude. Previous studies on innovative applications and social media have confirmed the direct effect of users' participation on product/service design and intention to use (Bhatti et al., 2021). Hence, this study has drawn attention to users' emotional factors (attitude and involvement) and the application in generating penetration in an emerging market like Vietnam.

Finally, Perceived usefulness is a mediator in influencing the relationship between Source characteristics and Attitude. Other studies that applied TAM in constructing a research framework confirm the theory by showing the relationship between PU and philosophy. However, the mediator's role differed depending on different applications and contexts. For example, motivation was confirmed as a mediator of technology and attitude (Pan, 2020); risk perception is a mediator in healthcare applications. Interpreted from these results, TikTok needs to pay extra attention to its source characteristics.

5.2 Implications

The study extends and refines theoretical frameworks, particularly the TAM and IDT, for Generation Z TikTok adoption. Integrating Source and Content Characteristics: The study adds source (relative advantage, compatibility) and content (relevance, reliability) determinants to TAM and IDT. The study provides a complete picture of technology adoption by evaluating the platform's functional aspects (source characteristics) and content attractiveness (content characteristics). Second, the study distinguishes source and content features to understand better how they affect consumers' usefulness and simplicity of use. Users prioritize functional elements (source characteristics) when rating usefulness, while content attractiveness and familiarity considerably influence ease of use. This deep knowledge of the complexity of technology adoption enhances current theories.

Third, the study found that involvement and attitude multi-mediate Generation Z's TikTok adoption. Identifying emotional elements as mediators helps us understand adoption by acknowledging users' subjective impressions and attitudes. The study helps us comprehend the complicated relationship between cognitive and affective aspects of technology adoption by including these emotional factors in the theoretical framework.

The study extends existing frameworks, provides a nuanced understanding of adoption determinants, identifies multi-mediators, applies the framework in emerging markets, and offers practical implications for platform design and promotion. These contributions improve our understanding of technology adoption processes and have implications for theory development and practice on developing social media platforms like TikTok.

Several practical implications can be generated from this research regarding how TikTok and other social media platform foster their business growth in emerging markets such as Vietnam.

First, it reveals the market preparedness stage in Vietnam. The target audience of TikTok is young people who belong to Generation Z. This study was conducted with a group of people who have tried TikTok before. It shows the low rate of respondents who have never experienced this platform (only 6% have never tried this app). This finding suggests a favorable environment for TikTok's entry and growth in Vietnam. Resulting in huge success in other nations (Wang et al., 2019); TikTok is on its internationalization, such as in the US, and then to other markets. As mentioned in Shen et al. (2017), market preparedness is a significant determinant of market entry and penetration of international firms. The infrastructure system is high standards for developed countries such as the US. Consumers are ready to adopt innovative apps (Rebecca, 2022). By acquiring Musical.ly, TikTok can quickly enter and penetrate. However, with emerging markets, imperfections remain in entering and expanding. For example, in India, the market opens multiple platforms (Hill, 2014) for innovative firms to enter, seek market share, and secure a global player position.

A recent study by Chakraborty et al. (2020) explained some reasons leading to the slow penetration of TikTok in India. The Indian market is not mature enough for this level of technological advancement. People are not educated enough on the usefulness of this application. They refer to TikTok as a 'waste of time.' However, when it comes to Vietnam, according to the recent report of Aspin (2020), Instagram and TikTok are competing for their market dominance in micro-videos. This study proved that Generation Z's willingness to adopt this application reveals the market readiness for market growth in Vietnam. Hence, it proved a potential market for TikTok to invest in and move forward from the entry stage to the growth stage in Vietnam.

Secondly, building a centralized community is essential to enhance both the quantity and quality of users, as it significantly impacts consumers' positive evaluation of TikTok. Regarding the platform impact on PEOU and PU, the strong antecedent of PEOU was Content characteristics, and the strong antecedent of PU was Source characteristics. Taken from the research findings, PU shows a higher effect on Attitude and further intention to use. At the same time, the source characteristics of TikTok have a larger impact on PU than content characteristics. Thus, the platform should enhance the source elements in their marketing campaign to highlight compatibility and relative advantage towards the users' cohort. Besides, the community should be centralized to foster members' quantity and quality since it significantly impacts consumers' positive evaluations. The role of app design and algorithm needs to be highly focused since it will leverage compatibility and attractiveness with users.

At the same time, for content improvement, the quantity and quality of content were contributed by various parties, such as users, other businesses/organizations, and developers. Operating as an open platform, TikTok has the opportunity to capitalize on its diversity by actively promoting individual and organizational content creators. This approach could increase content alignment with target users' interests. Additionally, the authors suggest TikTok needs to invest in its CRM (customer relationship management) system to retain B2B and B2C relationships. By prioritizing CRM, TikTok can attract many new users (intention to use) and retain its existing user base. Establishing clear

indicators of users' interest in content creators is a valuable guidepost, benefiting both TikTok users and content creators on the platform.

5.3 Limitations and Future Research

Starting from the results related to the research proposed, this study was conducted in a singular emerging market. Thus, a further study could strengthen the generalization by conducting in cross-emerging nations or other national categories such as platform countries or marketing countries to provide more precise market information for global strategy. Furthermore, our study has shown the determinants of users' adoption. Thus, an interesting topic would be examining innovative media platform challenges regarding market disruption since it allows for the signpost for strategy correction.

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Appendix: Measurement scale table

No	Constructs	Questions	Source
RA1	Relative Advantage	Overall, the advantages of using TikTok far outweigh the disadvantages	Moore & Benbasat, 1991
RA2		Using TikTok enhances my effectiveness on the job	
RA3		I think TikTok would provide a valuable service for me	
TR1	Trialability	I have had a great deal of opportunity to try various short video app as TikTok	Mutahar et al., 2017
TR2		I would use or be more likely to use TikTok if I could test this app first	
TR3		After a period of TikTok experience, I feel TikTok has more outstanding features than other similar platforms	
HO1	Homophily	The type of video I like is similar to other users on TikTok as shown by heart drop and comment	Ayeh et al., 2013
HO2		I feel my hobbies between me and celebrities on TikTok are the same	
HO3		I like videos from celebrities on TikTok	
CO1	Compatibility	Using TikTok would fit well with the way that I make, edit and watch video	Verrecchia, 2016
CO2		I like to try new technology	
CO3		I like to adopt new innovation	
CO4		TikTok is compatible with my lifestyle	
AE1	Aesthetic	I think content of this TikTok app looks: aesthetic	Chen et al., 2014
AE2		I think content of this TikTok app looks: pleasant	
AE3		I think content of this TikTok app looks: clear	
EN1	Entertainment	I find TikTok primarily an entertaining application	Zhao et al, 2015
EN2		I browser the TikTok app for pleasure	
EN3		Using TikTok is an agreeable way of passing time	
RE1	Relevance	The information I get through TikTok is relevant as it matches my needs	Filieri, R., & McLeay, F. 2013
RE2		The information I get through TikTok is appropriate for satisfying my needs	
RE3		The use of TikTok is relevant for my job in the future	
REL1	Reliability	I think the content of this TikTok app is accurate	Chen et al, 2014

REL2		I think the content of this TikTok app is consistent with facts	
REL3		I think the content of this TikTok app is reliable	
VA1	Valence of reviews	I pay more attentions to positive comment in this TikTok app	Zhao et al., 2015
VA2		Positive comments are more valuable in this TikTok app	
VA3		The volume of negative comments for the videos also reflects that the content of the video is not healthy in this TikTok app	
PEOU1	Perceived ease of use	TikTok app is easy to use	Davis, 1989
PEOU2		I would find TikTok flexible to interact with user community	
PEOU3		It would be easy for me to become skillful using TikTok app	
PU1	Perceived usefulness	I would find TikTok useful in my life	
PU2		Using TikTok in my life would enable me to create short video more quickly	
PU3		Using TikTok would improve my skill to make a video	
UI1	User involvement	I would be interested in reading information about how the TikTok app is operated	Zaichkowsky, 1985
UI2		I would be interested in reading the consumer comments article about this TikTok app	
UI3		I have compared product characteristics among brands in the Tiktok app	
UI4		I have a most-preferred brand of this TikTok app	
AT1	Attitude towards using	I like the content video on this TikTok app	Chebat and Vercollier, 2003
AT2		I feel creating video with TikTok is interesting	
AT3		I feel that most of video on TikTok are attractive	
IN1	Intention to use	I intend to use TikTok frequently	Mutahar et al., 2017
IN2		I would use TikTok for my entertainment and business needs	
IN3		I want to use it as much as possible	