

Why Do Users Participate in Hashtag Challenges in a Short-form Video Platform?: The Role of Para-Social Interaction^{*, **}

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Abstract

One of the interesting social phenomena in short-form video platforms is the hashtag challenge wherein ordinary users are encouraged to create by imitating short viral videos on a particular theme. Despite the increasing popularity of hashtag challenges, theoretical discussion on related user behavior is still very insufficient. In this study, we attempted to examine the impact of micro-influencers in order to understand users' willingness to participate in hashtag challenges. For this purpose, the para-social interaction theory and imitation behavior literature were adopted as key theoretical basis. In an empirical investigation using 243 survey data from TikTok users, our study found that a user's illusion of intimacy with a micro-influencer (i.e., para-social interaction) had significant positive impact on the intention to participate in a hashtag challenge. This study also showed that the degree of para-social interaction in a short-form video platform was determined by both media content-related factors and media character-related factors (i.e., content attractiveness, physical attractiveness, and attitude homophily). Our work in this study provided significant theoretical and practical implications on how to leverage micro-influencers for the success of hashtag challenges in a short-form video platform.

Keywords : hashtag challenges, short-form video platform, para-social interaction, imitation behavior, TikTok

숏폼 비디오 플랫폼에서 사용자는 왜 해시태그 챌린지에 참여하는가?: 준사회적 상호작용을 중심으로^{*, **}

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요약

일반 사용자가 특정 주제에 관한 짧은 바이럴 동영상을 모방·제작·공유하는 해시태그 챌린지는 숏폼 비디오 플랫폼의 흥미로운 사회 현상 중 하나로 단연 손꼽힌다. 그러나 해시태그 챌린지의 인기가 높아지고 있음에도 불구하고, 관련 사용자 행동에 대한 이론적 논의는 여전히 매우 부족하다. 본 연구는 해시태그 챌린지에 대한 사용자의 참여 의도를 보다 정확히 이해하기 위해서 마이크로 인플루언서의 영향을 관심있게 살펴보고자 하였다. 이를 위해 준사회적 상호작용 이론과 모방 행동 문헌을 주요 이론적 근거로 활용하였다. TikTok 사용자를 대상으로 한 243개 설문조사 데이터를 분석한 결과, 본 연구는 사용자가 마이크로 인플루언서와 친밀감을 느끼는 환상(즉, 준사회적 상호작용)이 해시태그 챌린지에 대한 유저의 참여 의도에 상당한 긍정적인 영향을 미친다는 것을 알 수 있었다. 또한, 숏폼 비디오 플랫폼에서 준사회적 상호작용의 정도는 크게 미디어 콘텐츠 관련 요소와 미디어 캐릭터 관련 요소(콘텐츠 매력도, 신체적 매력도, 태도 유사성)에 의해 결정된다는 것을 알 수 있었다. 본 연구는 숏폼 비디오 플랫폼에서 마이크로 인플루언서의 활용 효과를 높이기 위한 방법에 관한 이론적·실무적 시사점을 제공한다.

주제어 : 해시태그 챌린지, 숏폼 비디오 플랫폼, 준사회적 상호작용, 모방 행동, 틱톡

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I. Introduction

Given the rise and rapid proliferation of mobile Internet technology, people's entertainment styles have undergone tremendous changes. As a new media form based on the mobile Internet environment, short-form video applications that allow individuals to create, share, and view short bite-sized videos are gaining huge popularity all over the world (Wu, 2021). Short-form videos are easily produced by individual users on their mobile phones and immediately shared online with others in social media platforms such as TikTok, Instagram, and YouTube. As for the duration, short-form videos usually range from a few seconds to a few minutes depending on the platform (Horner, 2022; Mileva, 2022; Safavinia, 2022).

Redefining the way people consume video content, short-form videos have been recognized as an excellent method of attracting user attention and driving engagement (Horner, 2022). Given the hectic pace of today's lifestyle, people prefer shorter, snappy content that only takes a few seconds to digest. Short-form videos such as viral audio clips and TikTok dances can convey a message in a fun, interactive manner to meet users' entertainment and information needs. Furthermore, as user-generated content, short-form videos are perceived as authentic, making them look relevant and engaging for other users (Horner, 2022; Mileva, 2022; Mohony, 2022).

Another key reason behind the popularity is that short-form videos serve as a powerful tool for marketing revenues. As a recent report

of HubSpot on marketing trends shows, short-form videos offer the best return on investment compared to other marketing strategies on social media (Safavinia, 2022). Other surveys have also stressed high conversion rates and continued investment for short-form videos. Specifically, over nine-tenth of companies have landed customers by using short-form videos, and one in two companies that have used short-form videos are willing to increase their investment (Safavinia, 2022).

Various platforms are already proving that short-form videos can captivate, inspire, and compel users. TikTok has recently gained global recognition as the most popular go-to platform for short-form videos. TikTok features a never-ending stream of short-form videos to explore, including a wealth of filters, music, animation, and camera effects to help users create more fun and interactive videos (Mileva, 2022; Wu, 2021). Since its global launch in 2017, the total downloads of TikTok have reached 1.5 billion over 150 countries in 39 languages (Lewis, 2020; Mileva, 2022). Meanwhile, TikTok has also been ranked as the seventh-most downloaded app of the 2010s (Wu, 2021).

Other top platforms used to release short-form videos include YouTube Shorts and Instagram Reels. YouTube has recently started promoting its first short-form video service, YouTube Shorts. People can generate and share their own video content of up to 60 seconds. Similarly, having witnessed a surge in the popularity of TikTok, Instagram recently unveiled Instagram Reels, its video feature

that allows for 15-30 second videos. Instagram Reels is growing steadily, having recorded over one billion monthly active users (von der Osten, 2022).

Along with the hyper growth of short-form video platforms, interesting social phenomena are also emerging in the field. Above all, this study is particularly interested in the emergence of micro-influencers and their impacts on other users. Micro-influencers are those who are considered experts in their respective niches by their followers (Mahony, 2022; Yang, 2020). Compared to traditional celebrity-influencers, micro-influencers are basically one of the people but are proving to be more valuable in social media marketing. Companies are increasingly shifting to micro-influencers due to several benefits. For example, micro-influencers often establish intimate connections with their audiences based on authenticity and credibility, resulting in higher engagement rate of their followers compared to celebrity-influencers (Mahony, 2022).

Another notable trend is that hashtag challenges (HTCs) are more prevalent than ever (Geysler, 2022; Lewis, 2020; Tribe, 2022; Wu, 2021). An individual can set a viral HTC to encourage others to create short-form videos on a particular theme. In an introductory video, the person chooses to use specific custom hashtags to demonstrate the theme of the challenge and explains to others what to do to meet the challenge. Others then video themselves completing the action and participate in the challenge by uploading the

video to their accounts with the dedicated hashtags. All of the video submissions are then collected automatically and spread on their own. Thus, HTCs serve as an effective way for accumulating various enjoyable videos that can attract new users and retain existing users on a short-form video platform. HTCs are usually simple and fun, such as lip-syncing, bottle flipping, dancing to a specific music, and executing an outfit transition.

Interestingly, users are more likely to participate in HTCs if they see someone in their social circle already participating (Tribe, 2022). In this regard, there is growing interest in the role of micro-influencers in the spread of HTCs (Mileva, 2022; Tribe, 2022). This is because users often form empathy and attachment to micro-influencers and feel as if they are in a real relationship with someone socially popular. The illusion of intimacy may then lead them to mimic the behavior of micro-influencers, such as taking and uploading a short video of HTC performing the requested actions.

Given the increasing importance of their roles, micro-influencers are often found to increase their fan base and expand their popularity through self-branding techniques (Yang, 2020). They tend to build and manage their own media personalities by creating video contents showing their own characters and colors. Popular creators have been seen to be affiliated with Multi-Channel Network (MCNs), a new business that supports micro-influencers in persona building, content production, promotion, copyright management, and

monetization and gets a portion of the revenue in return (Choi & Kim, 2020; Li, 2019). For example, MCNs help build an attractive media persona and customize video contents with personal characteristics to make the persona stand out. In China, the number of short-video MCNs already exceeded 30,000 in 2021, and their outstanding business performances have been recognized (Li, 2022).

In this paper, we attempt to delve deeper into the impact of micro-influencers on the short-form video platforms in terms of two primary questions. First, we are interested in examining the extent to which the imitation behavior of users is actually affected by the nature of their interactions with micro-influencers. For this, a theoretical foundation has been sought through a thorough review on imitation behavior and para-social interaction. Another interest of this research is to investigate what factors determine the degree of para-social interaction in the short-form video context. To this end, we classify potential antecedents into two categories: media content-related factors and media personality-related factors.

In the succeeding sections, we review the theoretical foundation. Section 3 presents our research model and hypotheses. Next, Sections 4 and 5 provide an overview of the methodology and results of our empirical study, respectively. Finally, in Section 6 and Section 7, we discuss the research findings and implications and provide some future research directions.

II. Theoretical Underpinnings

1. Imitation Behavior

We refer to the literature on mimicry and social imitation in order to understand the participation of users in HTC. In a short-form video platform, user participation in HTCs takes place in the form of imitation behavior. HTCs encourage regular users to post videos of themselves performing a short, easy-to-imitate action. For example, in the “Blinding Lights Challenge” by Canadian singer-songwriter The Weeknd, people imitate simple fun dance moves while his song “Blinding Lights” is playing in the background (McGuire, 2022). Another example of a popular HTC is the one by energy drink V (#VMakeItHappen) where people mimic drastic physical transformations from low energy to high energy after taking a sip of the energy drink (Tribe, 2022). As the challenge videos go viral, imitation continues among users, resulting in an influx of new videos.

Mimicry has long been of interest to scholars in various fields including communication, developmental psychology, social psychology, neuroscience, and consumer behavior (Chartrand & Lakin, 2013). Indeed, mimicry can be seen in nearly every social interaction. For example, we often copy the facial and emotional expressions (e.g., happiness, sadness) of others in everyday life (Duffy & Chartrand, 2015). Behavioral mimicry is also common as people adopt someone’s gestures, mannerisms, and motor movements (Chartrand

& Lakin, 2013).

Prior studies have consistently stressed that mimicry has significant impacts on the relationships with others and their behaviors. In particular, mimicry can lead to an increase of liking and empathy between interactants (Chartrand & Bargh, 1999). When behavioral mimicry (e.g., posture) occurs in a classroom for example, higher levels of rapport were reported between teachers and students (Bernieri, 1988). Moreover, when one is mimicked by someone, the person is more likely to experience feelings of empathy toward the mimicker (e.g., feelings of being understood); in turn, smoother interaction is likely to increase (Maurer & Tindall, 1983; Stel & Vonk, 2010). To this end, people are sometimes more willing to divulge their personal information to strangers who imitate their behaviors (Guéguen, et al. 2012). In short, mimicry plays an important functional role as social glue that brings people together and strengthens their bond (Lakin, et al. 2003).

In social psychology literature, two functions of imitation were identified: instrumental and social (Užgirls, 1981, 1984). Imitation basically indicates a reproduction made after witnessing an action produced by someone; furthermore, imitation serves two different functions (Over & Carpenter, 2013). Instrumental function focuses on copying behavior made to learn a new skill, whereas social imitation highlights the social goals that people want to achieve through imitation (Over, 2020). When learning goals are greater, people are more interested in achieving a particular result than in their

interaction and relationship with another; in this case, imitation takes an individualistic form of social learning (Carpenter & Call, 2002). On the other hand, when imitation is purely based on social reasons, it has a communication function since people want to convey their social messages to others, such as “I am like you” and “I am one of you” (Bavelas, et al. 1986; Carpenter, 2006). They imitate others more closely because they have a goal to affiliate. Accordingly, this type of imitation is often characterized by faithful copying (Nielson, et al. 2008).

This literature review allows us to understand user participation in HTCs in terms of social imitation. Specifically, users’ HTC participation can be seen as a kind of faithful copying. That is, it may not simply be a video posting to a viral challenge, but rather a representation of social messages toward the person(s) being imitated. For example, users may decide to record videos of themselves imitating the behavior of someone because they feel intimacy and want to be more connected with that person. In this regard, we provide another theoretical underpinning of this paper—the para-social interaction theory—to delve into the nature of social influence affecting users’ imitation behavior on a short-form video platform.

2. Para-social Interaction

Previous studies have found that people experience a sense of friendship with media personalities such as soap opera characters

and TV hosts (Hartmann, 2016; Rubin & Perse, 1987; Stasi, 1988). They feel that they know the characters in the same intimate way they know their real-life friends while actually being in a one-sided, non-reciprocal relationship (Ballantine & Martin, 2005; Horton & Wohl, 1956). Media viewers tend to believe that a media character is like other people in their social networks even though their interaction with the character is vicarious rather than actual (Perse & Rubin, 1989).

Para-social interaction is defined as an illusionary feeling of being in an actual social interaction with a media personality (Hartmann, 2016; Labrecque, 2014). Since first conceptualized by Horton and Wohl (1956), the concept of para-social interaction has been established primarily in media and communication literature. For example, Perse and Rubin (1989) highlight that para-social interaction is a normal, natural consequence of media consumption. Viewers often pay attention to and get caught up in the action of the persona; furthermore, they emotionally experience being transported to another imaginary world where they become involved in an interaction with the media character (Alperstein, 1991). Thus, it has been emphasized that the experience of para-social interaction is related to the suspension of disbelief wherein viewers are in touch with their imaginary world, not in the real world (Ballantine & Martin, 2005).

According to literature, advances in media technologies (e.g., digital imaging and interactive design) enhance a viewer's sense

of co-presence and mutual awareness with a media persona (Campos-Castillo & Hitlin, 2013). As a consequence, the viewer is likely to perceive the media character as a social being and to feel that they are engaging in a reciprocal relationship (Lee & Watkins, 2016).

Recently, the advent of social media has sparked a new field of academic research on para-social interaction. Earlier, social media was expected to have potential for two-way interaction; however, interaction with a media personality in social media turned out to remain one-sided in most cases (Stever & Lawson, 2013). For example, popular user channels on YouTube are found to maintain the extent of reciprocation to be low in their interaction with the audience (Lee & Watkins, 2016; Sokolova & Kefi, 2020). Thus, the para-social interaction theory has been regarded as an appropriate theoretical framework for understanding the one-sided interaction between a media persona and his or her fans in social media sites.

The aforementioned nature of para-social interaction has attracted enough attention for scholars to take a look at the causes and preconditions of para-social interaction. Several theories have been adopted to provide theoretical understanding and insights, such as uses and gratifications theory, uncertainty reduction theory, personal construct theory, and social exchange theory (Conway & Rubin, 1991; Perse & Rubin, 1989). For example, the uses and gratifications theory and uncertainty reduction theory have been used to explain the effects of attraction and homophily on para-

social interaction (Rubin, 1985; Turner, 1993).

It has also been found that para-social interaction can lead to positive relationship outcomes. For example, viewers would like to become similar to a media character and borrow some aspects of the personality as a result (Boon, 2001; Peter, 2004). Furthermore, those engaged in para-social interaction strive to do something positive in order to affirm their relationship with a media persona, such as purchasing items through a home shopping program that has the same host (Grant, et al. 1991; Stephens, et al. 1996). Along similar lines, Horton and Wohl (1956) pointed out that viewers tend to reward a persona's sincerity with increased loyalty and personal disclosures when immersed in para-social interaction (Porter & Donthu, 2008; Zheng, et al. 2020). Para-social interaction can also increase the perception of credibility, thereby likely affecting attitudes and behaviors. According to Lalbreque (2014), when feelings of para-social interaction remain higher, media users are more likely to trust a media personality.

In sum, our review on para-social interaction can provide a solid theoretical basis for understanding the nature of social interaction and its plausible consequences in our research context. In a short-form video platform, a user's interaction with a popular video creator (i.e., micro-influencer) can be understood as an illusionary experience of being engaged in a real reciprocal relationship. This interactional involvement is also highly likely to result in positive interactional behaviors that stem from a user's desire to identify and reciprocate with

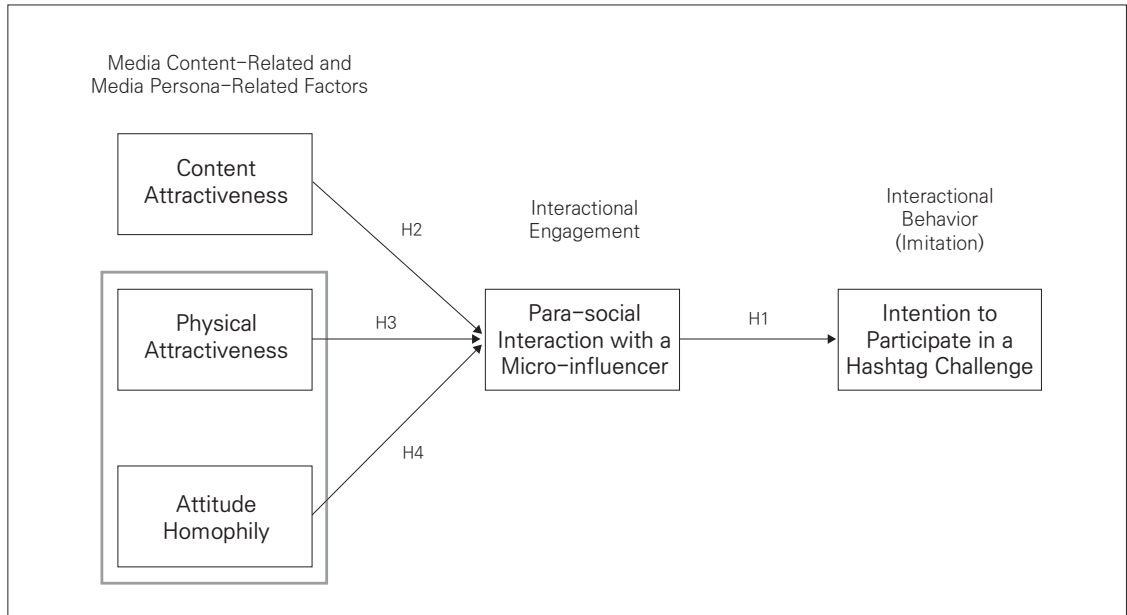
the micro-influencer.

III. Research Model and Hypothesis Development

Building on the literature review, we have developed a research model to examine the para-social interaction and imitation behavior of users in the context of short-form video platform. Our research model proposes that a user's experience of para-social interaction plays a particularly significant role in increasing participation in HTCs. As another interest of this research, we intend to examine what factors determine the extent of para-social interaction in our research context. In particular, three primary factors have been drawn from literature, which are categorized as either media content-related or media character-related: content attractiveness, physical attractiveness, and attitude homophily. In this section, we discuss how our hypotheses are theoretically developed based on literature. Figure 1 presents the hypothesized relationships tested in this study.

1. Effect of Para-social Interaction on the Intention to Participate in a Hashtag Challenge

Prior studies have indicated that media users engaged in para-social interaction are eager to learn personal details about a media character (Sokolova & Kefi, 2020). They tend to adopt some good aspects of the popular personality in order to improve themselves and look better (Boon, 2001; Peter, 2004). Such need for



(Fig. 1) Research Model
(그림 1) 연구모형

identification is likely to lead them to imitate a socially recognized behavior of the popular figure.

The copying behavior can also be reinforced by another motive. As the literature suggests, those experiencing para-social interaction with a media persona are likely to express their affection through behaviors such as collecting memorabilia of the character and purchasing items recommended by the character (Ballantine & Martin, 2005; Hofstetter & Gianos, 1997; Lalbreque, 2014). This suggests that people are more willing to do something consistent with the behavior of the popular figure when the feeling of intimacy or illusion of being in a real companionship with a media personality remains greater. This is a means of

affirming their relationship with the character and a form of reciprocation (Grant, et al. 1991; Porter & Donthu, 2008).

In a short-form video platform, media stars (i.e., micro-influencers) are unlikely able to address their social fans individually as the number of regular users is very huge. On the other side, however, media viewers (i.e., ordinary users) may fall prey to the illusion of being part of the social world of their favorite micro-influencers. Such illusion of intimacy may then lead them to behave like the popular figures. Thus, we propose that:

H1: Para-social interaction with a micro-influencer has a positive effect on the intention to participate in a Hashtag challenge related to the micro-influencer.

2. Effect of Content Attractiveness on Para-social Interaction

The uses and gratifications theory is known to provide a theoretical framework for understanding why and how people choose specific media to satisfy specific needs (Blumler & Katz, 1974; Kim & Kim, 2011). Much of the research on video-sharing platform (e.g., Yaqi, et al. 2021) has also used the theoretical perspective to examine a user's needs (e.g., preference, motivation) and behaviors (e.g., satisfaction, use intention). According to recent reports, the most popular video genre on TikTok is comedy (Yang, 2020). Frequently viewed video types include those videos that make users laugh and deliver instant gratification, such as pranking videos, reaction videos, and funny dancing videos, followed by other types of videos like gaming, sports, and cartoon. This indicates that the degree of enjoyment is a key characteristic of short-form video that attracts the most users.

Prior studies have also suggested that para-social interaction can be predicted by positive emotions. Using the uses and gratifications perspective, Perse (1990) found that feeling happy while watching a TV news program was associated with para-social interaction. On the contrary, negative emotions such as feeling sad and angry were found to be unrelated to a viewer's experience of para-social interaction. One likely theoretical interpretation of this finding is that, when consuming media content that is more enjoyable, people are likely to be more immersed in an illusionary world where

they are having interaction with a media persona, falling out of touch with the real world. Taken together, the literature above led us to propose that, when a short-form video posted by a micro-influencer is more attractive in terms of enjoyment, users are more likely to engage in para-social interaction with the micro-influencer.

H2: The attractiveness of a short-form video in terms of enjoyment has a positive effect on para-social interaction with the micro-influencer who creates it.

3. Effect of Physical Attractiveness on Para-social Interaction

Media and communication literature has argued that a viewer's feeling about the appearance and behavior of a media character can influence an opinion about the character, which in turn affects the para-social interaction experience (Alperstein, 1991; Perse & Rubin, 1989). Since para-social interaction with a media persona is basically voluntary, it reflects personal focus such as preference for physical attractiveness, as in a real relationship (Ballantine & Martin, 2005; Rubin & Perse, 1987). Indeed, a media user's relationship with a media character, on the whole, develops in a manner similar to a real interpersonal relationship (Rubin & McHugh, 1987).

Consistent with this, prior research has found that the attractiveness of a media personality can affect a viewer's para-social interaction (Lee & Watkins, 2016). Specifically, physical attractiveness which refers to the extent to

which a media figure's physical features and aesthetic beauty are appealing or pleasing has been demonstrated to be a strong predictor of para-social interaction (Perse & Rubin, 1989; Sokolova & Kefi, 2020). Thus, users are deemed more likely to engage in para-social interaction with a micro-influencer when his/her appearance is perceived to be more attractive in a short-form video platform.

H3: The physical attractiveness of a micro-influencer has a positive effect on para-social interaction with the micro-influencer.

4. Effect of Attitude Homophily on Para-social Interaction

As suggested by the uncertainty reduction theory, a relationship develops as individuals become better able to predict the other's behavior (Cole & Leets, 1999). In a similar vein, it has been noted that discovering each other's similarities helps move through various stages of an interpersonal relationship (Altman & Taylor, 1973). The more people find themselves similar to each other, the more likely they are to communicate and interact with each other. This is because they can confirm their own beliefs through the interaction, increasing the certainty in life (Eyal & Rubin, 2003).

The notion of homophily is a term coined to describe the fact that a relationship easily forms between those who are alike in some designated respects such as beliefs, attitude, and the like (Turner, 1993). The literature on interpersonal communication explains that liking increases between the interactants when

uncertainly is reduced due to the similarity (Cole & Leets, 1999). Based on this, prior studies have found that attitude homophily is another important predictor of para-social interaction (McCroskey, et al. 2006; Turner, 1993). The social exchange theory also provides an explanatory value to the process of para-social interaction; that is, para-social interaction with a media figure is considered a high-reward, low-cost exchange if the character is similar in important respects (Cole & Leets, 1999). Accordingly, we hypothesize that short-form video users are more likely to engage in para-social interaction with a micro-influencer when the degree of attitude homophily with the micro-influencer is higher.

H4: The attitude homophily with a micro-influencer has a positive effect on the para-social interaction with the micro-influencer.

IV. Research Methodology

1. Data Collection

To test our research model, we collected data using the online survey service TenCent questionnaire (<https://wj.qq.com/>). TenCent questionnaire is a free online questionnaire survey platform, and we chose this China-based service for two reasons. First, TikTok, also called Douyin in China, is the fastest growing short-form video platform around the world. Another reason is that, with the support of TenCent's two social media services QQ and WeChat, questionnaires can be quickly distributed and collected.

For our data gathering, TenCent questionnaire sent out invitations to 856 individuals to participate in the online survey. Respondents who completed the survey as required were then rewarded with a red envelope (\$ 0.36) with no intermediate costs. Initially, 394 copies were collected, with a response rate of 46%. Then, 40 responses from non-TikTok users and 111 invalid responses in terms of a reverse score question (AH6) were excluded. Finally, 243 valid data were used for the analysis.

The survey questionnaire consisted of four parts. The first part was designed to screen out inappropriate respondents. If a participant chose “usually do not use TikTok,” then the survey ended immediately. In the second part, respondents were required to fill out their demographic information including age, gender, occupation, education, income, Internet use experience, average daily use of smartphone, average daily use of TikTok, etc. The third part of the questionnaire randomly showed to a participant one of three short-form videos, all of which were Hashtag challenge videos. According to the popularity index provided by TikTok, three Hashtag Challenge videos were selected as high-, medium-, and low-popularity, respectively. We decided to provide the specific Hashtag Challenge videos based on a pilot test with 75 participants. In the pilot test, a recall-based survey was found to be ineffective for our study. Users could not distinguish hashtag challenge videos from normal videos, but they also had a limited memory. Finally, in the fourth part of the survey, participants were

asked to answer the main questions related to the research model.

2. Pretest

Prior to the main survey, a pretest was conducted to improve respondents’ understanding of the questionnaire. Five subjects including one professor and three graduate students were invited and asked to answer the questions without any prompts. They were free to discuss any ambiguity or complexity of the questionnaire with one of the authors at any time. After the questions were all answered, it was checked whether the intended meanings of the researcher were consistent with the understanding of the respondents.

3. Measures

All measurement items are shown in Table 1, along with the source of the items. We adapted the existing validated measures to this study wherever possible. Each study variable was measured using a 7-point Likert scale. The items for content attractiveness were borrowed from previous studies (e.g., Hartmann & Vorderer, 2010). The physical attractiveness variable was measured with three items drawn from McCroskey and McCain (1974). Six items were adopted from literature (e.g., McCroskey, et al. 1975) to measure attitude homophily. Finally, we modified four items for participation intention based on prior research (e.g., Lee & Watkins, 2016).

〈Table 1〉 Measurement Items

〈표 1〉 측정도구

Variables	Items	Sources
Content Attractiveness	CA1: I find this video is interesting.	Hartmann & Vorderer (2010); Tauer & Harackiewicz (1999)
	CA2: I find this video enjoyable.	
	CA3: I find this video fun.	
Physical Attractiveness	PA1: I find him/her very attractive physically.	McCroskey & McCain (1974)
	PA2: I think he/she is quite handsome/pretty.	
	PA3: He/She is good-looking.	
Attitude Homophily	AH1: The person in the video thinks like me.	McCroskey, et al. (2006); McCroskey, et al. (1975); Lee & Watkins (2016)
	AH2: He/She is similar to me.	
	AH3: He/She is like me.	
	AH4: He/She and I have a lot in common.	
	AH5: His/Her behaves like me.	
	AH6: He/She and I have nothing in common.	
Para-social Interaction	PS1: I look forward to watching more of his/her videos.	Rubin, et al. (1985); Lee and Watkins (2016)
	PS2: If he/she appears on TikTok, I would watch it.	
	PS3: I see he/her like an old friend.	
	PS4: He/She makes me feel comfortable, as if I am with friends.	
Participation Intention	PI1: I have the willingness to imitate the video and participate in this Hashtag Challenge.	Lee & Watkins (2016)
	PI2: My willingness to participate in this Hashtag Challenge would be high if I were shooting a short video.	
	PI3: I hope to imitate the video and participate in this Hashtag Challenge.	
	PI4: I want to imitate the video and participate in this Hashtag Challenge in the future.	

4. Sample

Out of the 243 samples in all, 127 were male (52.2%) and 116 were female (47.8%). 49.8% of the respondents (n = 121) were aged 10~19

years, with 41.1% (n=100) in their 20s. The number of participants in other age groups was relatively very low. This suggests that the main users of short-form video platforms are young people.

The education levels of our respondents were concentrated in high school ($n = 84$, 7%), Junior college ($n = 62$, 25.5%), and undergraduate ($n = 76$, 31.3%). In terms of income, about 53.5% ($n = 130$) of the respondents were found to earn less than 2,000 yuan per month, which was reasonable considering that nearly 50% of the respondents were minors.

Only 11.5% ($n = 28$) of the respondents had less than three years' Internet experience, whereas the rest mostly had 3-7 years' experience ($n = 102$, 42%), 7-10 years' experience ($n = 56$, 23%), or 10-15 years' experience ($n = 42$, 17.2%). Among the respondents, only 2.9% ($n = 7$) reported using a smartphone for less than an hour per day. In contrast, most of the respondents reported using a smartphone for at least three hours daily. Finally, for TikTok use, 42% of the participants ($n = 102$) were found to use it for less than an hour per day, and 44% used it for one to three hours ($n = 107$).

V. Data Analysis and Results

In this study, data analysis was conducted using SmartPLS. Partial Least Squares (PLS) is a technique that uses a component-based approach to estimate structural equation models (Chin, 1998). PLS has been extensively used in IS research because of its many advantages (Kim, et al. 2013, 2016, 2019). For instance, it allows every indicator to contribute differently to the composite score of the latent variable (Chin, et al. 2003).

1. Measurement Model Assessment

Prior to analyzing the structural model, we first assessed the measurement model in terms of reliability and validity. As for the reliability of the measurement items, both Cronbach's Alpha and composite reliability (CR) scores of all the multi-item variables were found to be greater than the benchmark of 0.70 (Chin, et al. 2003; Fornell & Larcker, 1981). In addition, the AVE (average variance extracted) of each construct was larger than 0.8, which is well above the threshold of 0.50.

Next, in the case of convergent validity, the higher the correlation between items measuring the same construct is, the lower the correlation between items measuring different constructs, with more convergent validity secured. The item loadings of each construct were higher than the recommended value of 0.7 (Gefen, et al. 2000) except for AH6, which was then removed. Another item (PI3) was also excluded due to a high VIF (>10). Eventually, it was found that all items were heavily loaded on their intended factors than on other factors, indicating good convergent validity (Chin, et al. 2003).

To ensure adequate discriminant validity, the square root of the average variance extracted (AVE) score of each variable must be greater than its correlations with other latent variables (Fornell & Lacker, 1981). As shown in Table 3, we found that the square roots of all AVE scores were greater than their correlations with other constructs, showing satisfactory discriminant validity. In sum, the measurement

〈Table 2〉 Convergent Validity Test

〈표 2〉 집중타당성 분석

Variable	Item	Loadings	AVE	CR	Cronbach's a
Content Attractiveness (CA)	CA1	0.945	0.905	0.966	0.947
	CA2	0.957			
	CA3	0.952			
Physical Attractiveness (PA)	PA1	0.905	0.821	0.932	0.891
	PA2	0.922			
	PA3	0.891			
Attitude Homophily (AH)	AH1	0.892	0.806	0.954	0.939
	AH2	0.891			
	AH3	0.901			
	AH4	0.920			
	AH5	0.882			
Para-Social Interaction (PSI)	PSI1	0.922	0.835	0.953	0.934
	PSI2	0.904			
	PSI3	0.900			
	PSI4	0.930			
Participation Intention (PI)	PI1	0.961	0.920	0.971	0.956
	PI2	0.963			
	PI4	0.953			

〈Table 3〉 Discriminant Validity Test

〈표 3〉 판별타당성 분석

Variables	Mean	SD	AH	CA	PI	PA	PSI
AH	2.921	1.596	0.8978				
CA	3.927	1.686	0.5648	0.9516			
PI	3.689	1.987	0.4797	0.4292	0.9592		
PA	3.965	1.588	0.5517	0.7517	0.4432	0.9065	
PSI	3.429	1.792	0.6465	0.7244	0.5406	0.7126	0.9143

* The diagonal values shown in bold are the square root of AVEs.

model was proven to be appropriate in terms of reliability and validity.

2. Structural Model Assessment

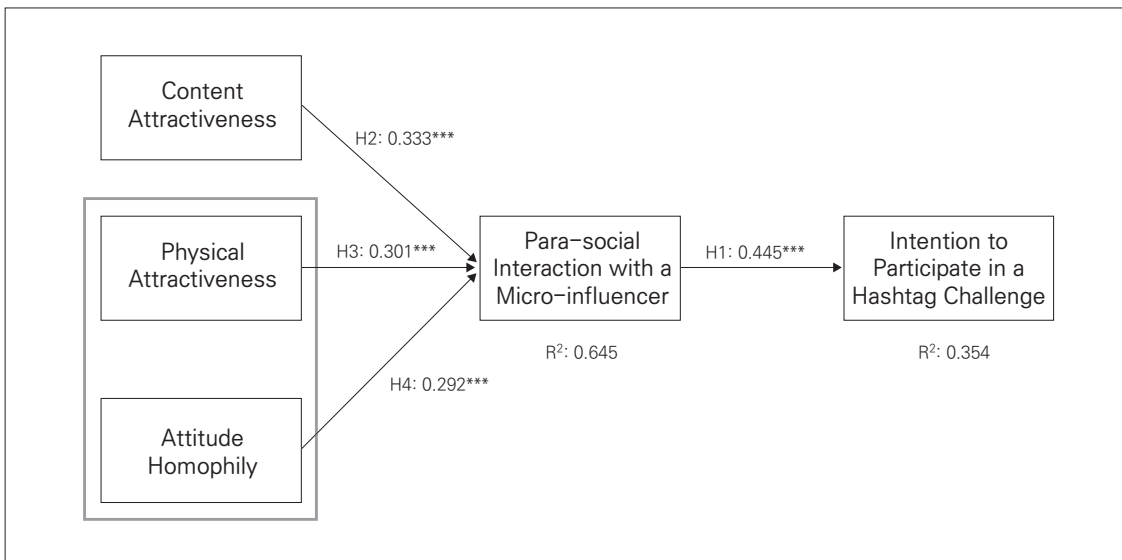
To test the structural model, we analyzed the significance of all the standardized path coefficients using the bootstrap method with 500 subsamples. Table 4 and Figure 2 present

the results of testing our hypotheses.

Specifically, para-social interaction was found to have a significant positive influence on the intention for imitation behavior (i.e., participation in HTC) (H1: $\beta=0.445$, $p<0.001$). This indicates that a video consumer who has an illusionary feeling of intimacy toward a micro-influencer appearing in the video is willing to participate in the same Hashtag

〈Table 4〉 Structural Model Test
〈표 4〉 구조 모형 분석

Path	Path Coefficients	Standard Deviation	t	P Values	Hypotheses
PSI → PI	0.445	0.0717	6.2168	< .001	H1 Supported
CA → PSI	0.333	0.0724	4.6032	< .001	H2 Supported
PA → PSI	0.301	0.0821	3.6677	< .001	H3 Supported
AH → PSI	0.292	0.0633	4.6193	< .001	H4 Supported



〈Fig. 2〉 Results of the Structural Model Test (N=243)
〈그림 2〉 구조 모형 분석 결과(N=243)

〈Table 5〉 Results of Subsample Analysis
 〈표 5〉 서브샘플 분석 결과

	Low popularity (#kick dance, 58.4 million)		Medium popularity (#Don't hibernate, 1.8 billion)		High popularity (#Auspicious new year, 6.5 billion)	
N	82		85		76	
R ²	0.731(PSI), 0.500(PI)		0.747(PSI), 0.301(PI)		0.507(PSI), 0.431(PI)	
Path	Path Coefficients	t	Path Coefficients	t	Path Coefficients	t
PSI → PI	0.456	4.06	0.447	3.310	0.455	3.408
CA → PSI	0.302	1.87	0.450	4.475	0.216	1.772
PA → PSI	0.281	1.682	0.324	3.580	0.333	1.900
AH → PSI	0.392	3.816	0.193	2.578	0.267	1.882

challenge by imitating the video of the micro-influencer. Our results also revealed that the degree of para-social interaction is positively affected by the three independent variables in our research model: content attractiveness (H2: $\beta=0.333$, $p < 0.001$), physical attractiveness (H3: $\beta=0.301$, $p < 0.001$), and attitude homophily (H4: $\beta=0.292$, $p < 0.001$).

Further analysis was conducted to confirm that these results are consistent across the three specific videos used in this study. We first split the data into three subsamples that represent the low, medium, or high popularity of Hashtag challenge videos, and then analyzed the structural model for each. As a result, all the hypotheses were supported as in the entire sample, indicating that the theoretical relationships proposed in this study do not vary according to the popularity of video content. Details are described in Table 5.

VI. Conclusion

With the rapid development of mobile information technology, online video content has become more accessible and established itself as a representative entertainment content for users. Moreover, with the popularity of video content penetrating social media, short-form video platforms have emerged as a new online place where users can form their media personalities, gain popularity, and become a micro-influencer. Unlike celebrity-influencers such as actors and athletes, micro-influencers are ordinary people but are considered popular figures in certain fields. Since they are deemed authentic and credible, micro-influencers can significantly affect others' attitude and behavior.

This study focused on examining how regular users interact with micro-influencers in a short-form video platform. For this purpose, the para-social interaction theory and the

imitation behavior literature were adopted as a key theoretical basis. In an empirical investigation using 243 survey data from TikTok users, our study confirmed that users' imaginary feeling of being in a relationship with a micro-influencer (i.e., para-social interaction) can increase users' imitation behavior, leading to participation in the same hashtag challenge. Another finding of this study demonstrated that the extent of para-social interaction could be predicted by both media content-related and media character-related factors (i.e., content attractiveness, physical attractiveness, and attitude homophily).

1. Theoretical Implications

Our study contributes to literature in several ways. First of all, this paper proves that the para-social interaction theory is able to explain the nature of relationship with a micro-influencer in the context of short-form video platform. Despite the fact that the unprecedented proliferation of short-form videos coincides with the rapid increase of micro-influencers, there is little research effort to understand better the influencer phenomenon from a relational point of view.

Drawing upon the para-social interaction theory, our study provides empirical evidence that the unique characteristic of the relationship between micro-influencers and ordinary users in a short-form video platform is manifested in the uni-directional illusion of intimacy. As with the media character-viewer relationship in mass media, short-form video users are

found to project their emotions onto a micro-influencer appearing in video content, subsequently unilaterally treating the character as their friends. In short, our study has expanded the scope of application of the para-social interaction theory from mass media to the short-form video platforms.

Our study further presents evidence that para-social interaction is a critical factor in users' participation in a hashtag challenge. The growing importance of micro-influencers is already spurring the short-form video industries, and many industry reports highlight cooperating with micro-influencers as an effective strategy for the success of viral hashtag challenges. However, little academic effort has been made to develop and test the theoretical understanding of the impact of micro-influencers on users' participation in a hashtag challenge. We have filled this gap by interpreting the para-social interaction theory and adapting it to our research context.

Next, our study makes another contribution in terms of the main predictors of para-social interaction. The research model proposed in this study illustrates that the preconditions of para-social interaction can be categorized as either media content-related or media personality-related factors. The literature on para-social interaction has focused primarily on the influence of factors related to media characters such as their attractiveness and homophily. Adding new to this literature, this study provides insight that video content-driven gratifications such as enjoyment can also play an important role in the formation

of para-social interaction. Future research may use the two categories to explore other important antecedents of para-social interaction in the short-form video context.

Our third contribution is that this study extends the previous research on behavioral mimicry to the context of social media. Since the advent of Web 2.0, the role of users has been regarded as more important not only as a content consumer but also as a content provider (Kim, et al. 2009; Kim & Joe, 2012; Lee & Park, 2012). Accordingly, much of the literature has attempted to explain the content creation behavior of users on a theoretical basis.

In order to understand users' creation behavior with regard to short-form videos, our study referred to theories on human imitation for several reasons. First, hashtag challenges that stand out in a short-form video platform involve a user's video creation. Second, the video production of users for hashtag challenges can only be accurately explained when the influence of popular figures is taken into account. Therefore, we have used the literature on imitation behavior as a theoretical bridge. According to our results, the participation in a hashtag challenge by users is largely determined by their intention to imitate the micro-influencer featured in the challenge video.

2. Practical Implications

This study also has practical implications. Altering the ways people communicate, social

media environments have been perceived to provide new opportunities for brand marketing. The number of users engaging with brands on a social network-based platform is steadily increasing. Short-form video platforms are also offering multiple solutions for brands to entice user engagement and convert into customers. For example, brands can set up their own hashtag challenges in TikTok so that users participate and create a short-form video around their brands or products.

Given the trends, our study provides important insight on how to leverage micro-influencers effectively in a short-form video platform. Specifically, our findings suggest that companies need to pay attention to the extent to which micro-influencers who create videos about their brands are able to form para-social interaction with their audiences. Encouraging the production of secondary videos imitating popular characters can be another effective marketing strategy for a company. Based on our results, a more sophisticated strategy can also be drawn using the characteristics of micro-influencers. For example, when planning a hashtag challenge for a specific target group of customers, brands can sponsor or partner with a micro-influencer with whom the target customers would feel homophily. In this case, brands can expect increased user engagement, driven by users' illusion of intimacy with the micro-influencer.

Next, our study also has implications for those looking to emulate the success of micro-influencers. Short-form video platforms serve as a gateway for ordinary people to become

popular figures. Many users are attempting to attract the attention of other users through their own interesting content videos. They want to be a media star with whom other users want to connect and build a relationship. Based on our results, it is important to think about how to appeal visually and how to make others feel that someone who appears to be “one of them” has made an entertaining video.

Our third contribution is an implication for emerging platforms for short-form videos. There are already a growing number of TikTok copycats on the market, offering some variations of the short-form video model. For example, Reels has been recently launched on Instagram, with the distinct advantage of being part of the Instagram platform. Our findings in this study can be used to develop primary guidelines for the newcomers. In particular, encouraging para-social interaction and user imitation should be central to one of their key strategic efforts to ensure a continuous influx of user-generated shorts. For example, as a way of increasing a user’s para-social interaction with micro-influencers, platform businesses may advance video production tools to encourage micro-influencers to make their challenge videos more attention-grabbing and enjoyable. In addition, short-form video platforms may also support the formation and growth of communities where normal users can feel more connected with their favorite micro-influencers. Short-form video platforms can further thrive when micro-influencers in various niches continue to make interesting videos and similar videos are reproduced in

various versions by their followers.

3. Limitations and Future Research

As with any study, our study has several limitations that present opportunities for future research. For instance, our findings are limited to the specific platform since our survey data was collected only from TikTok users. Although TikTok is currently the number one platform with numerous micro-influencers, our findings will have more generalizability after our research model is empirically tested in other short-form video platforms.

Another limitation of this study is that the antecedent variables of para-social interaction are not explored sufficiently. Since para-social interaction is an individual’s psychological perception, the more a user experiences various interactions with a micro-influencer, the more factors possibly affecting para-social interaction there are. Even though significant implications have been derived from our three predictors, further exploration and empirical investigation are recommended. However, it is worth noting that future studies may adopt the two categories presented in this study (i.e., media content-related or media character-related factors) and then dig deeper into the potential predictor variables.

Future research may also extend this study to consider other potential consequences of para-social interaction. One possible investigation would be to focus primarily on branded hashtag challenges and to examine whether the impact of para-social interaction

can reach further stages such as conversion into customers. In addition, future studies may apply a longitudinal research design to understand better the formation of para-social interaction and its impact on user behaviors.

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