

Research Article

Factors Impacting Users' Negative Interaction Behaviors When They Enjoy Short Videos on TikTok

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Short video media has become an essential new media channel for Chinese people to obtain information daily. However, an interesting negative interaction phenomenon exists, such as many users canceling likes after giving likes to a video, hiding their likes and following list. Our article aims to explore the factors impacting users' negative interaction behaviors that may lead to short video media burnout. The structural equation modeling method was used to analyze 423 valid responses in a survey from TikTok users in the Chinese mainland. The results indicate that information redundancy concerns, social image concerns, information disclosure concerns, and content value deviation are the main potential variables that affect users' negative interactions when they enjoy short videos on TikTok. We concluded that privacy concern is critical for users' negative interaction behaviors compared to the video content dimension. This article extends short video users' engagement behavior research by first investigating the influence factors of TikTok users' negative behaviors. This article also provides practical and managerial implications for app designers on stimulating users' active interaction and participation through the innovative design of privacy management functions.

1. Introduction

According to the 50th "Statistical Report on the Development of the Internet in China," by June 2022, the number of short video users in China reached 962 million, accounting for 91.5% of the total netizens. Short video media has become an essential new media channel for Chinese people to obtain information daily. Attracting users to engage in viewing, creating, and commenting on short videos, TikTok (in Chinese: Dou Yin), which had more than 800 million short video users in China alone by 2022, currently represents one of the most successful Chinese social media applications in the world [1]. Perhaps some of the factors that have made TikTok popular are immersive experience [2, 3], entertainment [3], personalized and endless content available [4], and opportunity to seek fame [5]. In addition, by accurately recommending the content users may like based on intelligent algorithms, TikTok app can effectively promote the generation of positive interaction (positive likes,

comments, sharing, etc.). However, the openness of the user's list of follows and likes and the opaque intelligent recommendation algorithm will also cause some users to pay attention to privacy, including basic personal information and personal preferences.

Concerns over data privacy have continued to mount over the years amidst the prevalence of the social media networking service TikTok [6]. Given privacy concerns, users may have negative interactive behavior when enjoying short videos, such as not giving likes after watching short videos, canceling likes after giving likes, and hiding their likes list. Based on the observations of many users and our sample survey data (92% of respondents), the above negative interactive behaviors of Chinese TikTok users are prevalent. It is necessary to study the reason for these negative interactions that have not been focused on in previous studies and may lead to the short video media burnout problem. From the perspective of privacy concerns, this article aims to probe into the influencing factors of short video users'

negative interactive behavior. It is expected to be beneficial to extend short video users' engagement behavior research and provide practical and managerial implications for app designers on stimulating users' active interaction and participation through the innovative design of privacy management functions.

2. Literature Review

2.1. A Review of the Internet and Social Media Privacy Issues. Scholars began to discuss privacy and consciousness at the beginning of the 20th century [7]. To measure the relationship between users' perception of privacy and behavior, "concern" was introduced as a concept of privacy measurement [8]. Privacy concerns can be summarized as users' concerns about controlling, collecting, and using their personal information or privacy issues [9]. Privacy is challenged online and especially on social media. Nevertheless, people use social media platforms and post their private information, besides their privacy concerns [10]. Users and researchers have paid more and more attention to the Internet and social media privacy issues [10–22], such as studying users' privacy concerns and paradoxes while using the Internet service [10–13, 21], exploring the influencing factors or influence of privacy concerns [14–17, 20], and the negative impact of the lack of privacy regulation on social media [19]. In addition, many scholars studied privacy concerns in the digital field based on relevant information systems theories, such as privacy computing theory [21], protection motivation theory [22], rooted theory [20], and privacy trade-off theory [12].

2.2. Privacy Research Related to the Short Video. Given the characteristics of short video media and its big data technology involving users' privacy issues, information leakage has become a problem that has troubled short video users [23]. Scholars have studied privacy policy and addiction issues and explored the influence of privacy policies on users' usage of short videos [23–28]. It is found that short video users have a low level of privacy awareness [24] and that users' reading perception of the privacy policy is affected by policy representation and policy content [25]. In the relationship between privacy concerns and user behavior, it is found that privacy concern is a mediating factor of users' positive using behavior and that Internet privacy concern negatively affects the dependence degree of short videos [26].

Privacy concerns have become one of the hot topic in recent years. Nevertheless, the research mainly focuses on Weibo, WeChat, and other social media. While short videos, a new media form that has emerged recently, are rarely involved. Therefore, our research on the adverse interaction behavior of short video users from the perspective of privacy concerns will enrich the research results in related fields.

2.3. User Behavior Research Related to the Short Video App. The research on user behavior of short videos mainly focuses on the use or continued use intention [3, 29–33], purchase intention [34–37], and other behavioral influence of short

video media [38–40]. It is found that perceived enjoyment, social influence, and narcissism positively impact users' intention to use the TikTok app [29]. The continued use intention of TikTok is affected by many factors, such as habit, compatibility, experience [30], user satisfaction, new product novelty, and privacy concern [31].

When users use short video apps, negative behavior will accompany privacy concerns. At present, academic research on negative behavior is mainly manifested as burnout behavior, dropout behavior, and even unsustainable use intention. Many scholars believe that the influencing factors of negative behavior are primarily divided into internal and external dimensions, mainly internal factors based on information and content itself and external factors dominated by social pressure [41–46]. Information factors (such as offensive content, ambiguity, advertising interference, and rampant rumors) of short video content are the main influencing factors of burnout and negative behavior [41].

Unlike the existing research, the negative behavior of this article refers to the conduct of not giving likes to short videos and privacy-setting behavior caused by privacy concerns. Therefore, this article explores the factors influencing users' negative interaction behaviors after watching short videos, attempting to play a slightly supplementary role in relevant research.

3. Theoretical Model and Hypotheses

3.1. Theoretical Background and Model

3.1.1. Communications' Privacy Management and Impression Management Theories. Communications' privacy management (CPM) theory uses a boundary metaphor to understand how individuals manage their privacy [47, 48]. Lankton et al. pointed out that self-disclosure refers to users deciding to disclose how much and what information to share in the relevant principles [48]. In this article, users' concerns about information disclosure may lead to negative interactive behavior. To protect their privacy, users will limit self-disclosures and not provide or post certain personal information. Therefore, the users' information disclosure concerns must be considered to construct the theoretical model.

In addition, based on image management theory which deals with how individuals wish to present themselves to satisfy their needs and goals [49], the social image concerns' (SIC) variable is introduced into our theoretical model. Individuals will construct their self-image and manage their impression by selectively disclosing or not disclosing certain information on social media [50, 51]. In the scenario of this article, short video app users' likes, favorites, or comments on the short videos will be seen by their social friends. To present a good social image to their social friends, users will have concerns about the social image when giving likes and comments.

3.1.2. Theoretical Model. Based on the combination of CPM theory and impression management theory, from a vision of privacy concerns, this article puts forward four potential

variables related to user privacy, which may affect users' negative interactions, such as privacy awareness, Internet privacy consciousness, information disclosure concerns, and social image concerns. On this basis, information redundancy concerns, content value deviation, and video quality defects are added, covering three potential variables related to user value perception and short video quality.

Based on previous empirical research experience and the theoretical relationship between variables, this article constructs a theoretical model of impact factors of negative interaction behavior of short video users. In summary, five independent variables (privacy awareness, Internet privacy consciousness, information redundancy concerns, content value deviation, and video quality defects), two mediation variables (information disclosure concerns and social image concerns), three control variables (age, gender, and education), and one dependent variable (negative interactions) are investigated in the conceptual mode (see Figure 1).

3.2. Constructions and Hypotheses

3.2.1. Negative Interactions. NI is defined as users' negative interaction behaviors of not giving likes and comments to the short videos they browse or setting the list of liked content to be private and invisible, even canceling likes. Although there are many influencing factors, this paper mainly studies the impact of online privacy awareness, Internet privacy consciousness, information disclosure concerns, social image concerns, video quality defects, and content value deviations on users' negative interactions.

3.2.2. Video Quality Defects. VQD is defined as the possible defects in text, graphics, images, video, audio, and other dimensions in short videos, which may impact users' negative interaction behaviors. In the research and design process, our team found in in-depth interviews with some users that the quality of short videos may affect users' interactive behaviors. Therefore, variables about the quality of the video content are added in constructing the theoretical model.

Generally, the higher the video quality, the stronger the user's intention to interact positively. However, the level of video quality measured by different users will affect the interactive behavior of users when watching short videos to a certain extent. This article suggests that users with higher video quality standards are likelier to show negative interactive behavior when watching videos with more quality defects. Hence, we put forward a hypothesis:

H1: video quality defects are positively related to users' negative interactions on TikTok.

3.2.3. Content Value Deviation. CVD is the deviation between the users' perceived value of the short video and the expected value of the information, emotional, entertainment, practical, aesthetic, and cultural.

Usually, the perceived value is considered by many scholars to be one of the essential positive factors affecting

the active use behavior of short video users [52]. Low-quality information perception significantly impacts short video social media burnout [53]. Thus, it can be imagined that users do not have positive interactive behaviors such as likes or comments after watching a short video, perhaps, because the value of the short video content perceived by users does not reach the critical importance that makes them produce positive interactive behavior. For example, the degree of innovation is insufficient, and the practicality is not strong. Therefore, a second hypothesis is made:

H2: content value deviation is positively related to users' negative interactions on TikTok.

3.2.4. Information Disclosure Concerns. IDC is defined as users' concerns about the risk of information leakage that short video apps may cause in user information data collection and mining. With the wide application of algorithm technology, a personalized push mechanism arises at a historic moment. Relying on its powerful algorithm technology, the short video app accurately pushed short video content in line with users' preferred behavior, according to the type of short video content browsed by users, how often they watch it, and whether they give likes, comments, retweets, and other user behaviors.

Admittedly, a personalized recommendation algorithm enables users to see what they want to see. Still, collecting and mining user behavior data will also increase the risk of user information disclosure on the short video platform. The stronger the social media users' perception of privacy leakage, the higher the personal effectiveness of privacy settings and the stronger the willingness to adopt privacy settings [14]. Users' concerns about the risk of information disclosure will harm their interactive behavior, such as consciously reducing the number of views and likes of certain types of short video content. Therefore, a third hypothesis is made:

H3: information disclosure concerns positively relate to users' negative interactions on TikTok.

3.2.5. Social Image Concerns. SIC refers to users' concern that their collection of short video content may harm their social image. Short video app has a solid social attribute, which can closely relate reality to the social relationship of the online world. On the short video apps, users' likes, favorites, or comments on the short videos will be seen by their social friends. In that case, inferring users' behavior or interest preferences based on their favorite content is straightforward, undoubtedly affecting the users' social image. For example, suppose users like or collect videos of delicious food. They may be labeled "foodies." Alternatively, if they like or collect videos of beautiful women, they may be labeled "lecherous."

Therefore, users will take negative interactive behavior to the short video content that may damage their social image to create or maintain their positive social image. In particular, users more concerned about personal privacy may have negative behaviors such as turning off the "favorite list"

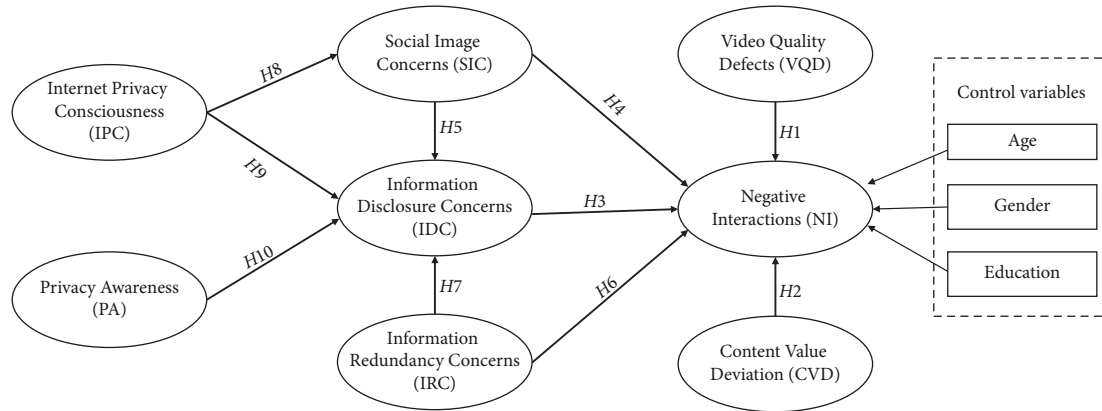


FIGURE 1: The theoretical model of impact factors for TikTok users' negative interactions.

and “follow list” to prevent personal preference information from being disclosed. Therefore, this article puts forward the following hypothesis:

H4: social image concerns positively relate to users' negative interactions on TikTok.

H5: social image concerns positively relate to users' information disclosure concerns.

3.2.6. Information Redundancy Concerns. IRC is defined as the concerns of users about the information redundancy that their positive interaction may cause. When users follow similar information or receive duplicate information, there will be information redundancy [54]. The similarity of data selected by social media users will make the platforms push more similar information, leading to information redundancy [43]. Excessive intake will make users feel “submerged,” trigger various negative emotions, and lead to unsustainable user behavior [53].

Information redundancy may be caused by repeated push of homogeneous content and users' likes or favorites. On the one hand, collecting users' behavior data and content preferences and pushing similar information based on algorithms will make users unwittingly trapped in a media environment of information redundancy and enhance their concerns about information leakage. On the other hand, ordering too many videos by giving likes will reduce users' efficiency in finding their favorite content. Therefore, when using short video apps, users may take negative interactive behavior to avoid the above situation. Thus, we put forward the following assumptions:

H6: information redundancy concerns positively relate to users' negative interactions on TikTok.

H7: information redundancy concerns are positively related to information disclosure concerns.

3.2.7. Internet Privacy Consciousness. IPC refers to people's general and ideological understanding of their privacy in the network environment, which leads to the psychological attitude

of protecting their privacy and respecting the privacy of others. Yang Fan concluded that privacy consciousness has the characteristics of objectivity, subjectivity, independence, and acquired nature [55]. Social communication in the context of social media has high frequency, making the number and volume of information exchange achieve a qualitative leap. With the infinite extension of cyberspace, the tentacles of algorithms and big data penetrate deeply into every online user, personal privacy space is getting narrower and narrower, and people are almost naked in front of big data. Online privacy has become an independent consciousness for people to look at online social interaction.

As a typical representative of social media, short video users will naturally form corresponding privacy awareness in using short videos, which will have a particular impact on their user behavior. Users with higher Internet privacy consciousness are prone to social media concerns, while higher social image concerns will reduce users' interactive behavior when using short video apps. Based on the above discussion, this article puts forward the following hypotheses:

H8: internet privacy consciousness positively relates to users' social image concerns.

H9: internet privacy consciousness positively relates to users' information disclosure concerns.

3.2.8. Privacy Awareness. As an essential variable in privacy protection research, PA refers to the emotional concerns of users about being unable to control the illegal collection, monitoring, acquisition, transmission, and preservation of personal information. Users' attention to privacy will positively affect privacy settings and the disclosure of personal information [48]. During the use of apps, the more cautious the user is about providing basic personal information (such as age, gender, geographic location, bank account, and identity information), the higher the level of user's information redundancy concerns. Thus, we put forward the following assumptions:

H10: privacy awareness is positively related to users' information redundancy concerns.

4. Data and Methodology

4.1. Design of Measuring Scale. This article mainly adopts the literature review methods and focus group deduction to effectively measure potential variables in designing the measurement scale. After developing the preliminary measurement scale, we invited two associate professors with similar empirical research and five doctoral students with experience using short video apps to form an expert group. Combined with the existing measurement items, the expert group discusses the conceptual definition of each potential variable, the scope of measurement indicators, and the measurement contents, words, and problem expressions of the initial scale. According to the feedback from the expert group, some questions with ambiguous terms were modified, and some items that could not effectively reflect the structure of potential variables were deleted.

Finally, a measurement scale containing eight potential variables and 27 items was formed. The corresponding relationship between the potential variables and measurement items is shown in Table 1. These 27 items were measured on five-point Likert scales requesting the respondents. Likert scales commonly measure attitude, providing “a range of responses to a given question or statement” [56].

4.2. Data Collection and Sample Characteristics. The data for this article were collected by a web survey of loyal users of the TikTok app between October and November 2021 in mainland China. The questionnaire consists of (1) demographic and socioeconomic information such as gender, age, education, occupation, and short video app usage experience and (2) 5-point Likert survey questions of 27 indicator items of 8 potential variables. The instrument was tested with a group of 50 respondents before the final launch of the survey. After the presurvey, this article optimized the questionnaire’s topic description and sequence setting.

When the formal survey was launched, we applied snowballing among the interested TikTok users to extend the participant base. First, the questionnaire was sent to our 50 social friends by e-mail and WeChat and then snowballed from them to their social friends. Finally, 443 responses were received. Subsequently, 443 original sample data were cleaned with unsuitable data to ensure that the sample data used for empirical analysis had higher filling quality. According to the previous online survey experience, the samples with obviously less response time are mostly questionnaires filled out carelessly by users. Therefore, according to the average time (100 seconds) spent filling out the questionnaire during the presurvey, we rejected 20 short-time samples whose response time was too short (less than 100 seconds). Finally, 423 valid data samples (of which 46.6% were male) for empirical analysis were obtained.

The distribution of respondent ages was as follows: 18–25, 25.7%; 26–35, 36.5%; 36–45, 21.1%; over 45, 16.7%. Data were also gathered regarding academic background: master’s degree or above, 15.4%; bachelor’s degree, 46.8%; college degree, 20.3%; high school graduate or lower, 17.5%. The majority (71.9%) of the respondents used short video

apps for more than 1 hour daily, and 36.9% for more than 3 hours daily. 69.7% of the respondents set their short video content visible to some friends or only to themselves. The detailed sample characteristics are shown in Table 2.

4.3. The Research Methods Involved. In this article, structural equation modeling (SEM) was used. To test the reliability and validity of the instrument, factor analysis and reliability test function in SPSS22.0 were used. The relationship between the research process, methodology, and analysis tools is shown in Table 3.

5. Data Analysis Results

5.1. Reliability and Validity Analysis. In this article, Cronbach’s α will be used to measure the internal consistency of the questionnaire, and the composite reliability (CR) and average variance extracted (AVE) will be used to explain and reflect the internal consistency reliability. This article uses the “reliability analysis” function of the SPSS22.0 tool to test Cronbach’s α . Many scholars believe that the questionnaire has good internal consistency when Cronbach’s α exceeds 0.7.

Validity measures whether the measurement means or tools can accurately reflect the desired measurement goals. It is generally divided into content validity and construct validity. Content validity demonstrates the appropriateness of the measured questions to the measured potential variables. In this article, the expression of the measurement items of the eight potential variables is compiled under the full demonstration of the questionnaire development expert group. Therefore, the questionnaire and measurement model both have good content validity. Construct validity is generally divided into convergence validity, discriminant validity, and characteristic validity. In our article, convergence and discriminant validity were used to test the construct validity of the measurement model.

The test standards (Table 4) of reliability, convergence validity, and discriminant validity of the measurement model were advised by Wu Ming-long [57]. The relevant statistics data involved in the test standards can be found in Tables 5 and 6.

As shown in Table 5, all the item loadings are over 0.7. Cronbach’s α values of the potential variables ranged from 0.790 to 0.929, and composite reliability (CR) values ranged from 0.856 to 0.937, which indicate that the measurement model had good reliability. Furthermore, all the AVE values of the potential variables were over 0.6, which suggests that the measurement model had good convergence validity.

As shown in Table 6, the square root value of the AVE for each potential variable was more significant than the correlation scores with other variables, which suggests that the measurement model had good discriminant validity. The results show that the characteristics of each potential variable are significantly different from those of other potential variables. That is to say, these potential variables are relatively independent, and the measurement model is

TABLE 1: Construction and measurement items.

Construction	Code	Items
Social image concerns (SIC)	SIC1	I pay attention to my image in the eyes of other users, especially my real friends
	SIC2	I am worried that acquaintances will see the videos I give praise in real life (such as family, friends, and leaders)
	SIC3	It makes me worried that the praised content will give people the impression that I am a certain kind of person, for example, complimenting rustic videos will give others a sense of low interest
Information redundancy concerns (IRC)	IRC1	I think praising videos are for collecting valuable content; videos without collection value are not worthy of my likes
	IRC2	I am worried that too many contents I praised make it inconvenient to find them later
	IRC3	I am worried that too much similar information will make it inconvenient to find in the future
	IRC4	I am worried that the platform will always push me to similar information after praising certain information too much
Information disclosure concerns (IDC)	IDC1	I am afraid that the short video platform may use my private information without my knowledge
	IDC2	I am afraid that the short video platform may sell my information for profit without my consent
	IDC3	I am worried that the short video platform may obtain my information and use it for other purposes through my usage behavior, for example, to analyze my daily likes to get my interests and preferences
Video quality defects (VQD)	VQD1	I would not praise videos with poor picture quality
	VQD2	I would not praise videos whose background music is not beautiful or suitable
	VQD3	I would not praise videos that are not aesthetic enough
	VQD4	I would not praise videos whose editing quality is not good enough
	VQD5	I would not like videos with inappropriate copywriting
Content value deviation (CVD)	CVD1	I had the impulse to praise a good video, but I did not praise it in the end because the motivation was not strong enough
	CVD2	I would not praise videos that are good in content but not far more innovative than other similar videos
	CVD3	I would not praise videos that are pretty good in content but not practical
Privacy awareness (PA)	PA1	It will arouse my concern that the short video platform requires me to provide basic information, such as gender and age
	PA2	It will arouse my concern that the short video platform requires me to provide my physical information (e.g., positioning)
	PA3	When the short video platform asks me for a bank account, it alerts me
Internet privacy consciousness (IPC)	IPC1	I seldom use the function of recording my location when posting short videos
	IPC2	It will improve my probability of being cheated by providing personal information to the short video platform
	IPC3	I rarely provide device information to the platform when enjoying short videos, such as my mobile phone brand or performance information

TABLE 1: Continued.

Construction	Code	Items
Negative interactions (NI)	NI1	When enjoying short videos, I rarely praise them
	NI2	I set my "likes list" to be invisible to some friends or visible only to myself
	NI3	I have had the experience of praising a video and then canceling it

TABLE 2: Sample population characteristics (N = 423).

Category	Classification	Frequency	Percentage (%)
Gender	Male	197	46.6
	Female	226	53.4
Age	18-25	109	25.7
	26-35	154	36.5
	36-45	89	21.1
	Over 45	71	16.7
Education	High school graduate or lower	74	17.5
	College degree	86	20.3
	Bachelor's degree	198	46.8
	Master's degree or above	65	15.4
Average daily app usage time	Less than 1 hour	119	28.1
	1 to 3 hours	148	35.0
	3 to 5 hours	99	23.4
	More than 5 hours	57	13.5
Privacy settings for short video content	Be visible to all	128	30.3
	Be visible to some friends	139	35.2
	Be visible only to themselves	146	34.5

TABLE 3: Relationship between the research process, methodology, and analysis tools.

Research process	Methodology	Main tools
Data collection	Online questionnaire investigation	https://www.wjx.cn/
Sample characteristics	Descriptive statistical analysis	Excel 2016
Reliability and validity of instrument	Factor analysis + reliability and validity test	SPSS 22.0 + Amos 21.0
Theoretical model test	Confirmatory factor analysis + path analysis + model fitting analysis	Amos 21.0

TABLE 4: Test standards for reliability and validity of the measurement model.

Category	Test standards
Reliability	(i) Standardized item loading >0.5 (sig. $P < 0.05$)
	(ii) Cronbach's $\alpha > 0.7$
	(iii) CR > 0.7
Convergence validity	(i) Standardized item Loading >0.5 (sig. $P < 0.05$)
	(ii) Cronbach's $\alpha > 0.7$
	(iii) CR > 0.7
	(iv) AVE > 0.5
Discriminant validity	(i) Standardized item Loading >0.5 (sig. $P < 0.05$)
	(ii) Cronbach's $\alpha > 0.7$
	(iii) CR > 0.7
	(iv) AVE > 0.5
	(v) AVE square root > absolute value of correlation coefficient

reasonable and credible. The above results allowed the researchers to proceed with the computation for hypothesis testing.

5.2. Fitness Test of the Structural Model. The fitness test of the structural model is carried out in Amos 21.0. In the structural model, the degree of freedom was 304, and the Chi-square (χ^2) value was 376.656 ($P = 0.003 < 0.05$). The smaller the Chi-square ($P > 0.05$) is, the more suitable the model is. However, because the Chi-square value is susceptible to the data sample size, most scholars suggest it should only be used as a reference index. Hair and Hang

believe that the expectation of the Chi-square value needs to be significant ($P < 0.05$) when the sample size is more than 250 [58]. All the fitness indices in Table 7 are within the acceptable threshold limits advised by Hu and Bentler [59].

As shown in Table 7, the statistical values of fitness indices are close to or up to the recommended values. The fitness test results show that the structural model put forward in this article has good fitness.

5.3. Path Analysis of the Structural Model. As shown in Table 8, in terms of direct effect hypotheses, we find that information redundancy concerns ($\beta = 0.236$ and $T = 3.731$), social

TABLE 5: Item loadings, AVE, and composite reliability of the measurement model.

Items	Video quality defects	Information redundancy concerns	Social image concerns	Information disclosure concerns	Content value deviation	Internet privacy consciousness	Privacy awareness	Negative interactions
VQD4	0.876***							
VQD2	0.876***							
VQD3	0.867***							
VQD5	0.866***							
VQD1	0.842***							
IRC2		0.875***						
IRC3		0.866***						
IRC1		0.836***						
IRC4		0.794**						
SIC2			0.890***					
SIC1			0.885***					
SIC3			0.878***					
IDC2				0.893***				
IDC3				0.869***				
IDG1				0.859***				
CVD2					0.875***			
CVD3					0.864***			
CVD1					0.855***			
IPC2						0.882***		
IPC1						0.873***		
IPC3						0.863***		
PA2							0.882***	
PA3							0.835***	
PA1							0.828***	
NI3								0.829***
NI1								0.816***
NI2								0.800***
Eigenvalue	3.946	3.130	2.599	2.526	2.429	2.424	2.293	2.134
Cumulative variance interpretation (%)	14.615	26.209	35.834	45.191	54.189	63.167	71.658	79.560
Cronbach's α	0.929	0.906	0.914	0.907	0.887	0.875	0.841	0.790
CR	0.937	0.908	0.915	0.906	0.899	0.906	0.885	0.856
AVE	0.749	0.711	0.782	0.764	0.748	0.762	0.720	0.664

Extraction method: principal component; rotation method: orthogonal rotation method with Kaiser standardization. Rotation converges after six iterations. Note: *** $P < 0.001$, ** $P < 0.01$, and * $P < 0.05$.

TABLE 6: Correlation scores and discriminant validity test.

Constructs	VQD	CVD	SIC	IRC	IDC	IPC	PA	NI
VQD	0.865							
CVD	0.318	0.865						
SIC	0.238	0.318	0.884					
IRC	0.250	0.301	0.356	0.843				
IDC	0.207	0.331	0.319	0.386	0.874			
IPC	0.141	0.236	0.208	0.312	0.247	0.873		
PA	0.247	0.183	0.221	0.206	0.332	0.233	0.849	
NI	0.173	0.262	0.325	0.356	0.250	0.197	0.132	0.815

Note. The numbers in bold represent the square root of the AVEs. The others are the correlation scores.

image concerns ($\beta = 0.193$ and $T = 3.415$), information disclosure concerns ($\beta = 0.146$ and $T = 3.051$), content value deviation ($\beta = 0.128$ and $T = 2.082$) all have positive direct effects on users' negative interactions, thereby accepting Hypothesis 2, Hypothesis 3, Hypothesis 4, and Hypothesis 5. In addition, social image concerns ($\beta = 0.167$ and $T = 3.353$), information redundancy concerns ($\beta = 0.265$, $T = 5.003$), and privacy awareness exhibit a positive and significant direct effect on users' information disclosure concerns, thereby supporting Hypothesis 6, Hypothesis 7, and Hypothesis 10. Hypothesis 8 is also accepted because of a positive and meaningful direct relationship between internet privacy consciousness and social image concerns ($\beta = 0.231$ and $T = 4.281$). All the above hypotheses were supported at least at the 0.01 significance level.

However, Hypothesis 1 ($P = 0.652 > 0.05$) and Hypothesis 9 ($P = 0.136 > 0.05$) are not supported. The analysis results show that video quality defects cannot directly lead to the emergence of users' negative interaction behavior when they enjoy short videos on TikTok. This phenomenon is widespread on short video platforms. When users see an interesting or valuable video (although the video production level is not high), they will also actively give likes or comments to the video. It also shows that the value of the video content will have a more significant impact on the users' interactive behavior than the defects of video production quality. In addition, although not positively directly related to users' information disclosure concerns, internet privacy consciousness may indirectly affect users' information disclosure concerns by positively affecting users' social image concerns.

5.4. Conceptual Model Path Analysis Results. Figure 2 shows a graphical view of the path analysis of the conceptual model, which provides us with an explanation model to understand the causes of short video app users' negative interactions from a vision of privacy concerns. Path analysis results of the conceptual model show that IDC ($\beta = 0.193$), IRC ($\beta = 0.167$), SIC ($\beta = 0.146$), and CVD ($\beta = 0.128$) are the main potential variables that affect short video app users' negative interactions. However, the direct effect of VQD on users' negative interactions is not significant, so VQD (with a gray background) is removed from the model.

6. Results and Discussion

6.1. Privacy Concern Is the Critical Reason for Users' Negative Interaction Behavior. In the era of social media, big data,

artificial intelligence, and other technologies make users' privacy more likely to be disclosed. With the strengthening of the intelligent recommendation function of the TikTok app, the redundancy of the information pushed by the short video platform has become a problem that must be considered. Furthermore, on short video apps, users' likes, favorites, or comments on the short videos will be seen by their social friends. The acquaintance social recommendation function makes users with high social image concerns worry about being given a misunderstood label by their friends. Due to the protection of private information and personal preference, users are likelier to have negative interaction behaviors, such as not giving likes after watching short videos, canceling likes after giving likes, and hiding their like list.

This study indicated that social image concerns (SIC), information redundancy concerns (IRC), and information disclosure concerns (IDC) are positively related to users' negative interactions on TikTok. SIC can explain why users hide their follow-list and like-list; IRC and IDC are reasons for users not to give likes after watching short videos or cancel preferences after giving likes. Given that SIC, IRC, and IDC are all related to users' privacy concerns, we concluded that privacy concern is critical for users' negative interaction behavior.

6.2. Video Content Is Not a Necessary Factor for Users' Negative Interaction Behavior. Usually, we think that video content value and quality are essential factors affecting user interaction behavior. However, this article found that video quality defects (VQD) had no direct and significant effect on the users' negative interaction behavior. Furthermore, the impact of content value deviation (CVD) on users' negative interactions is also less critical ($\beta = 0.128^{**}$ and $T = 2.082$). Therefore, we believe video content is unnecessary for users' negative interaction behavior.

The following points can explain this situation. Firstly, video content quality may be essential in studying positive interactive behavior. Still, VQD is not applicable in negative interaction research because of other more important factors. Compared with the quality of video content, the value of video content can affect the interactive behavior of users more. Secondly, CVD may affect whether or not they give likes after watching short videos. Still, it does not certainly influence whether users will spend time finding videos they want to cancel preferences in many liked videos.

TABLE 7: Model fitness indices computed by AMOS 21.0.

Fitness indices	χ^2/df	Absolute fit index			Incremental fit index			Parsimony-adjusted index			
		RMSEA	GFI	AGFI	NFI	TLI	IFI	CFI	PNFI	PCFI	PGFI
Recommended value	<3	<0.05	>0.9	>0.9	>0.95	>0.95	>0.95	>0.95	>0.5	>0.5	>0.5
Current model	1.239	0.024	0.940	0.926	0.950	0.988	0.990	0.990	0.823	0.857	0.756
Fitness results	Goodness	Goodness	Goodness	Goodness	Acceptable	Goodness	Goodness	Goodness	Goodness	Goodness	Goodness

Basic parameters of the structural model: $N=423$; $\chi^2 = 376.656$ ($P = 0.003$); $df = 304$. Note: $\chi^2 = \text{Chi-square}$; $df = \text{degree of freedom}$; recommended values followed cutoffs were advised by Hu and Bentler [59].

TABLE 8: Results of path analysis of the structural model.

Sr.	Hypothetical path relationship	T	Sig. (P)	Beta (β)	Result
H1	Video quality defects \rightarrow negative interactions	0.451	0.652	0.026	Not Supported
H2	Content value deviation \rightarrow negative interactions	2.082	**	0.128	Supported
H3	Social image concerns \rightarrow negative interactions	3.415	***	0.193	Supported
H4	Information disclosure concerns \rightarrow negative interactions	3.051	***	0.146	Supported
H5	Information redundancy concerns \rightarrow negative interactions	3.731	***	0.236	Supported
H6	Social image concerns \rightarrow information disclosure concerns	3.353	***	0.167	Supported
H7	Information redundancy concerns \rightarrow information disclosure concerns	5.003	***	0.265	Supported
H8	Internet privacy consciousness \rightarrow social image concerns	4.281	***	0.231	Supported
H9	Internet privacy consciousness \rightarrow information disclosure concerns	1.491	0.136	0.082	Not Supported
H10	Privacy awareness \rightarrow information disclosure concerns	4.385	***	0.232	Supported

Note. *** = significance level of 0.001 and ** = significance level of 0.01. When the significance level (P) < 0.05, the standardized path coefficient (β) is significant.

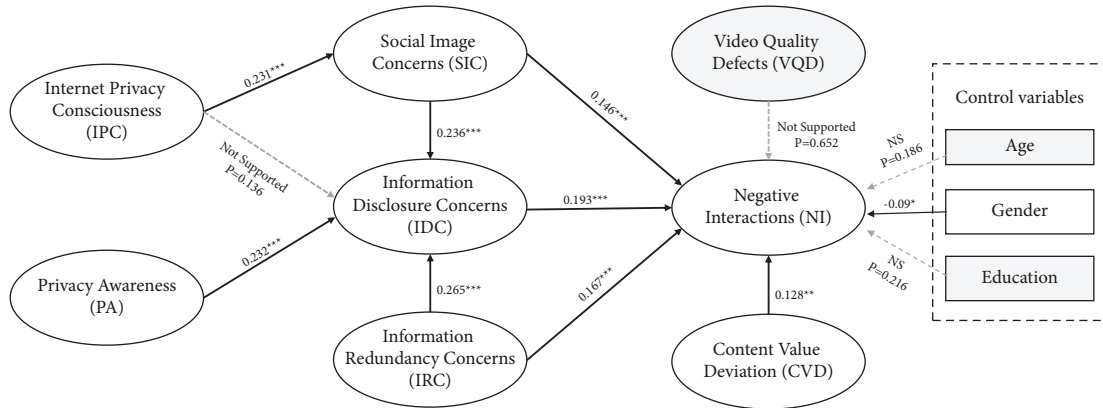


FIGURE 2: Graphical view of the path analysis of the conceptual model.

6.3. *Information disclosure Concern Is a Topic Worthy of In-Depth Study.* This article analyzed the factors that directly affect TikTok users’ information disclosure concerns. As the potential variable with the most direct effect, IDC is directly and positively affected by SIC, IRC, and PA with a significant impact. It shows that users with high social image concerns, high information redundancy concerns, and high privacy awareness are more aware of information disclosure. The results indicated that users’ information disclosure concerns would be affected by multiple factors in short video user behavior research.

Social image concerns may significantly affect users’ concerns about personal interests and hobbies being leaked to other users. Information redundancy concerns will make users worry that their content preferences will be revealed to the platform’s intelligent robots, that is, a unique phenomenon of users’ information disclosure concerns in short video media. Thus, we suggested conducting a more detailed study of information disclosure concerns from different dimensions is necessary. Therefore, this article believes that the information disclosure concern of short video users is worthy of in-depth research.

7. Implications and Limitations

7.1. *Implications.* There are several theoretical implications for this research. First, this article extends short video users’ engagement behavior research by investigating the influence factors of TikTok users’ negative behaviors, thereby enriching the literature on social media behavior. Second, from the perspective of privacy concerns, our research enriches empirical research on social media privacy and highlights the significance of privacy concerns in users’ negative behavior literature. Third, this article subdivides the dimensions of privacy concerns and proposes and verifies three critical privacy-related influencing factors, social image concerns, information redundancy concerns, and information disclosure concerns, which are positively related to users’ negative interactions on TikTok. These findings have theoretical implications for studying negative interaction

behaviors on social media. In addition, this article also provides practical and managerial implications for app designers on stimulating users’ active interaction and participation through the innovative design of privacy management functions.

7.2. *Limitations.* The following limitations of this article could lead to further studies. First, the conceptual model can only be used to explain the negative interaction behavior of short video users. Whether users’ privacy concerns are still critical in other social media situations remains to be further verified. Second, because of the differences in cultural backgrounds and values of TikTok users from different countries and regions, the research conclusions only apply to the situation on the Chinese mainland. Third, given the acquaintance recommendation feature of TikTok in China, social image concerns may not apply to other social media situations without this feature. Therefore, further research can be carried out based on users’ data in different countries and regions or other social media situations.

8. Conclusion

Under the background that short video media has become an essential new media channel for Chinese people to obtain information daily, this article aims to probe into the influencing factors of users’ negative interactive behavior, such as many users canceling likes after giving likes to a video, hiding their likes and following list. Based on the combination of communications’ privacy management theory and impression management theory, from the perspective of privacy concerns, this article puts forward a conceptual research model with five independent variables (privacy awareness, internet privacy consciousness, information redundancy concerns, content value deviation, and video quality defects), two mediation variables (information disclosure concerns and social image concerns), three control variables (age, gender, and education), and one dependent variable (negative interactions).

The structural equation modeling method was used to analyze 423 valid responses in an online survey from TikTok

users on the Chinese mainland. The results indicate that information redundancy concerns, social image concerns, information disclosure concerns, and content value deviation are the main potential variables that affect users' negative interactions. Privacy concern is critical for users' negative interaction behaviors compared to the video content dimension. It is expected to be beneficial to extend short video users' engagement behavior research and provide practical and managerial implications for app designers on stimulating users' active interaction and participation through the innovative design of privacy management functions.

Data Availability

The data for this study were collected by a web survey of loyal users of the TikTok App between October and November 2021 in mainland China. When the formal survey was launched, the authors applied snowballing among the interested TikTok users to extend the participant base. First, the questionnaire was sent to the authors' 50 social friends by e-mail and WeChat and then snowballed from them to their social friends. Finally, 443 responses were received.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Authors' Contributions

Yazheng Li wrote and edited the original draft. Jin Qian collected the data. Lu Guo conceptualized and supervised the study.

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