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Research Article

Climate change information sharing behavior on social media among young users in Guangzhou, China

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ABSTRACT

In China, the use of audio-visual media and interactive features to improve user engagement and understanding of climate change has made social media prominent in the dissemination of climate change information, particularly among young people who are the main users of social media. This empirical study uses the technology acceptance model to explore the factors impacting the intention and behavior of climate change information sharing. This study employed quantitative methods and purposive sampling, engaging 552 young adults aged 18–30 years through an online questionnaire. SPSS and SmartPLS analyzed the data, leading to the findings of this study. The results revealed that perceived ease of use (PEU), perceived usefulness (PU), and social media influencer trust (SMIT) considerably affected this cohort's intention to share climate change information on social media (BiliBili). Furthermore, this study found that environmental concern is a moderator that affects the relationship between PEU, PU, SMIT, and intention to share climate change information. This study contributes to the body of knowledge on climate change communication, particularly in understanding Chinese youth's climate change sharing behavior using social media.

Keywords: climate change, technology acceptance model, information sharing behavior, social media, China

INTRODUCTION

Climate change has induced a global shift in climate and ecosystems towards a state of disruption, and China is confronted with distinct threats. In recent years, China has been exposed to increasingly severe weather and catastrophic events, and people may be exposed to immediate or indirect risks to their survival (Cai et al., 2022). Given the risks associated with its higher population, China is experiencing more severe climate effects than other countries. The average warming rate from 1951 to 2020 reached 0.26 °C per decade, which is higher than the global average for the same period (CMA Climate Change Center, 2021). The economic and social losses caused by climate change are likely incalculable (Duan et al., 2022).

Despite the Chinese government's commitment to achieving peak carbon emissions by 2030 and carbon neutrality by 2060, national monitoring and verification of sustainable development still faces significant challenges, particularly due to the presence of weak regulatory mechanisms with respect to anthropogenic CO_2 emissions (Chen et al., 2022). Media communication has the potential to be efficacious in constructing social cognitive systems that realign the focus of sustainable behavior to the individual level (Xu et al., 2023).

With the ascendancy of social media, the dissemination of information has evolved to become more pervasive, timely and interactive. The development of information technology has given rise to the concept of interaction, in which the authority of the content creator is deconstructed, and the audience becomes the creator of the content (Hansen, 2021). This shift affords individuals the opportunity to articulate their individual perspectives, champion environmental initiatives, and engage in collective discourse (Knupfer et al., 2023). In particular, youth online participation through social media platforms has changed the landscape of climate change social movements (Wielk & Standlee, 2021). Youth can become active producers of knowledge by sharing information on social media, rather than simply passively receiving it from outside sources. Feelings of a sense of responsibility among youth motivates active participation in communication about the crisis (Naqbi et al., 2022).

BiliBili is one of China's most prominent user-generated content platforms in the online video space, and it is increasingly used to engage the public in science communication (Xia, 2022). Users of BiliBili are essential for climate communication and related awareness-raising by exchanging ideas, engaging in discussions on large-scale emergencies, and contributing collective knowledge on specific topics (Zha, 2023). Users can present complex climate change issues as accessible and engaging content using various formats, such as animations, science videos, and personal insights, which can then help increase audience attention and understanding (Ding et al., 2022). In particular, BiliBili's implementation of the bullet screen feature fundamentally alters, reconfigures, and enhances the viewer's multifaceted video-watching encounters. This augmentation facilitates a distinctly inventive and profoundly evaluative sharing of bullet screens and thereby fosters a broader spectrum of audience engagement (Zhou & Zhou, 2022). In fact, a recent study conducted by Che et al. (2024) also found that BiliBili is a great platform for Chinese youth to obtain and engage with climate information.

Although climate change communication is essential, past studies have shown that this area is still underexplored, especially in China. A major gap to be rectified is that research has been limited to the specific manifestations of climate issues in social media coverage, including social and industry impacts as well as studies of the content of the coverage, without addressing the individual behaviors of social media users (Ding et al., 2021). Further discussion and validation for specific groups is needed to support broader generalization of results to a wider range of people, especially those most vulnerable to the direct impacts of climate change (Bayes et al., 2020).

THEORETICAL FOUNDATION

This study employed technology acceptance model (TAM) as the theoretical basis. The TAM is used to elucidate and forecast individual behaviors concerning the adoption of novel technology (Davis, 1989). In social media investigation, the TAM has evolved into a robust instrument for scrutinizing users' inclinations and adoption patterns around various social media platforms (Alenazy et al., 2019). The fundamentals of the TAM, including the perception of usefulness and ease of use, offer a practical framework for understanding users' attitude and intention towards social media (Elareshi & Ziani, 2019).

Furthermore, the TAM initially overlooked the impact of society on the acceptance and use of new information systems, as external influences might affect behavioral intention through direct, indirect, and mediated routes (Lee et al., 2015). These features contribute to a more encompassing comprehension, thereby enhancing TAM's capacity to elucidate user conduct on social media (Chi, 2018).

In this study, the intention and behavior to share climate change information on BiliBili are defined, as follows: the intention refers to the willingness of online users to upload or repost climate change-related information when they perceive it as beneficial to others, while the behavior refers to the actual act of uploading or reposting such information with the goal of addressing the climate crisis.

To further explain Chinese youth's intention and behavior to share climate change information, additional variables were added to augment the existing TAM model namely as social media influencer trust (SMIT) and environmental concern (EC). Trust is crucial in social media, influencing users' behavior, interaction and engagement (Håkansson & Witmer, 2015). Compared to traditional celebrity advocacy and science communication, the authority of social media influencers is more dispersed, and climate change communication now includes sharing everyday experiences that introduce personal emotions and even

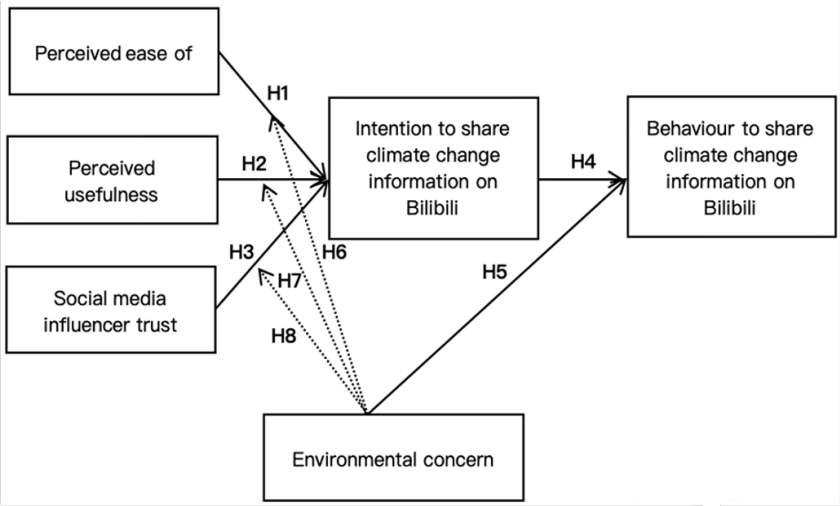

Figure 1. Theoretical framework of study (Source: Authors)

counter-narratives, which can enhance trust (Haastrup, 2023). Since the 1970s, increased environmental awareness has led researchers to include variables reflecting ECs in their research (Saari et al., 2021). As knowledge grows, people pay more attention to the environment and adopt more sustainable practices to change the state of the environment (Ramísio et al., 2019). Therefore, this study added the following new variables: SMIT, and EC (see **Figure 1**). The hypotheses are developed based on the study's theoretical framework, as follows.

Hypotheses Development

In the digital era, social media dominates communication and interaction regarding climate change, particularly among youths (Junaidi et al., 2020). Bilgihan et al. (2016) found that perceived ease of use (PEU) is the main driver of intention to share travel knowledge online. Although existing research does not examine the intention of youth to share climate change information on BiliBili, it can be theorized that PEU positively impacts intentions to share on BiliBili. Accordingly, the study hypothesizes that:

Hypothesis 1 (H1). PEU positively affects Chinese youth's intention to share climate change information on BiliBili.

Khan et al. (2021) identified perceived usefulness (PU) as a positive subjective concept held by users, i.e., potentially positive thoughts arising from social media adoption. During a crisis, the exchange of sustainability-related information in social media dramatically increases as a solution for better environmental management and sustainability, and users can play an essential role by providing a voice for the climate change crisis (Dwivedi et al., 2022). The following hypothesis is therefore proposed:

Hypothesis 2 (H2). PU positively affects Chinese youth's intention to share climate change information on BiliBili.

Social media influencer is defined as third-party participant who shares content and interactions, build personal profiles on social networks, and build relationships with and influence organizational stakeholders (Enke & Borchers, 2019). Malik et al. (2016) showed trust positively impacts users' intentions to share photos. Moreover, the proclivity for information sharing is heightened when a relationship of trust is established (Liou et al., 2015). Therefore, the following hypothesis is proposed:

Hypothesis 3 (H3). SMIT positively affects Chinese youth's intention to share climate change information on BiliBili.

Rees and Bamberg (2014) showed that climate protection requires social change and that perceived social norms help understand the link between social identity and collective action. When a person has a stronger behavioral intent to use a particular information system, they use that system more frequently. The nature of social media motivates users to share information and engage in interpersonal communication during natural and environmental disasters and other environmental events (Finch et al., 2016). Therefore, the following hypothesis is proposed:

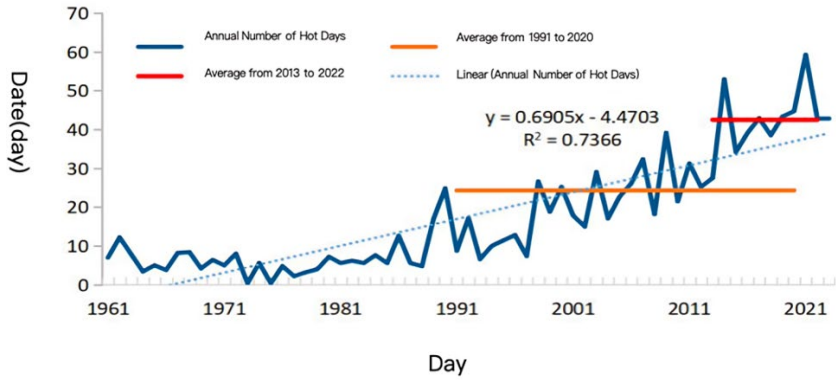

Figure 2. Guangzhou climate change phenomena (2023): Yearly average number of hot days in Guangzhou from 1961 to 2023 (days) (Source: Guangzhou Meteorological Bureau Website, 2023)

Hypothesis 4 (H4). Chinese youth's intention to share climate change information positively affects Chinese youth's behavior to share climate change information on BiliBili.

Minton and Rose (1997) were the first to find that EC predicts behavioral intentions. Mayerl and Best (2019) showed a clear association between EC and willingness to sacrifice and protect the environment in Canada, France, and the United States. Pakistani's EC and paying to combat global climate change had a positive effect on the relationship between individual concern about climate change and actions to reduce the impacts of climate change and intention to pay to mitigate such impacts (Rasool & Ogunbode, 2015). Therefore, based on the above, the hypotheses are as follows:

Hypothesis 5 (H5). EC positively affects Chinese youth's behavior to share climate change information on BiliBili.

EC as a moderating variable applied in studies (Chen et al., 2022; Minton & Rose, 1997; Paul et al., 2016). The rise of social media provides an easy and low-cost way to share information online, enhancing the ease of sharing information on climate change (Knupfer et al., 2023). Moreover, Qi et al. (2020) noted that the COVID-19 pandemic changed the psychology of consumers in China and explained that they are beginning to focus more on environmental issues. High EC on the part of consumers seems to increase behavioral intent to engage in climate change action (Hoang et al., 2019). Furthermore, Martínez et al. (2020) found that trust has the predictive power of post credibility and leads to greater interest in influential posts. Users participate in environmental practices due to their intrinsic environmental and social concerns. Catastrophic domestic and global environmental events increase EC and enhance intention to protect the environment (Janmaimool & Chudech, 2020). Therefore, the following hypotheses are proposed:

Hypothesis 6 (H6). EC positively moderates the relationship between PEU and Chinese youth's intention to share climate change information on BiliBili.

Hypothesis 7 (H7). EC positively moderates the relationship between PU and Chinese youth's intention to share climate change information on BiliBili.

Hypothesis 8 (H8). EC positively moderates the relationship between SMIT and Chinese youth's intention to share climate change information on BiliBili.

METHODOLOGY

Study Area

This study was conducted in Guangzhou, which has a subtropical climate characterized by high temperatures and humidity (Deng et al., 2023). As shown in **Figure 2** and **Figure 3**, extreme weather conditions such as high temperatures and heavy rains occurred in Guangzhou in 2023, and hailstorms occurred in the spring of 2024.

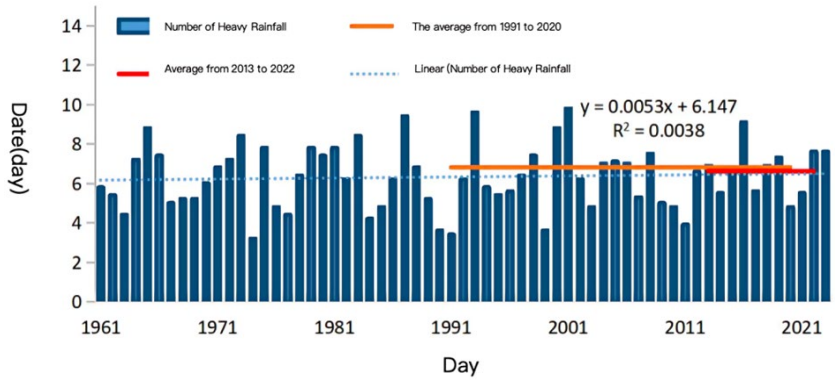

Figure 3. Guangzhou climate change phenomena (2023): Yearly average number of heavy rainfall days in Guangzhou from 1961 to 2023 (days) (Source: Guangzhou Meteorological Bureau Website, 2023)

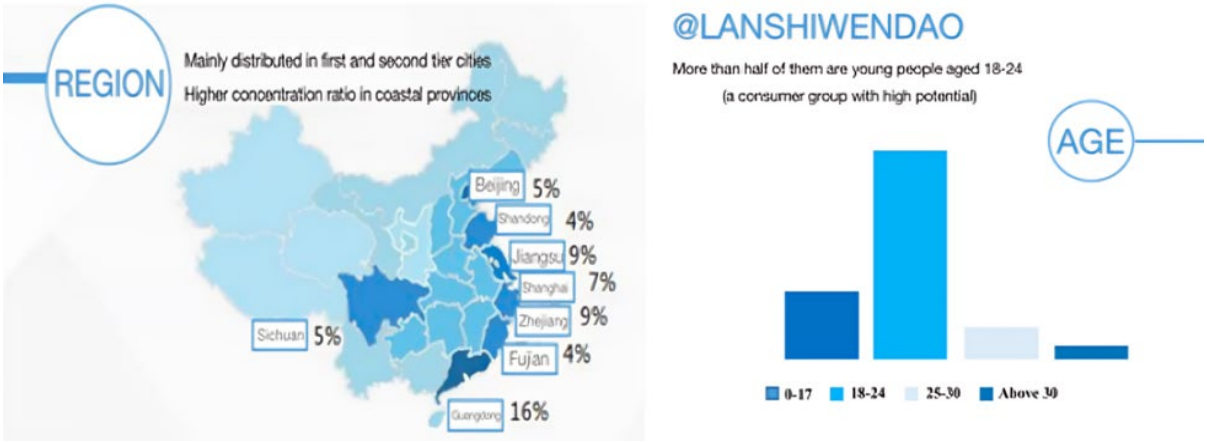

Figure 4. BiliBili user analysis report-region distribution (2022) (Source: Lanshiwendao, 2022)

Moreover, the city is facing the consequences of climate change, including increasing electricity consumption, dengue disease, and natural disasters (Zheng et al., 2020). Therefore, as the provincial capital, Guangzhou is representative.

Research Population and Sample

According to the content of the program for the development of Chinese youth (2016‑2025), 'youth' is usually defined as people between the ages of 14 and 35 (Central Committee of the Communist Party of China & State Council of China, 2017). Also, based on the data presented in the 'BiliBili User Analysis Report 2022', it is noted that users aged 18–24 constitute 60.28% of BiliBili users, while users aged 25–30 account for 16.71% (see **Figure 4**). But given that individuals under 18 are considered minors and are subject to restrictions on social media and cell phone usage imposed by parents and by the platforms themselves and given that BiliBili users are primarily under 30 years of age, the age range of study subjects is, thus, set as 18–30 years.

Instrument

The questionnaire was translated into Chinese as the respondents were all Chinese. The Likert five-point scale was used for respondents to assess survey items, ranging from 1 (strongly disagreed) to 5 (strongly agreed). To ensure the scale's validity, the variables utilized in this study were based on established and validated scales. Moreover, certain items were slightly modified to align with the social media context. Specific items and sources can be found in **Table 1**.

Data Collection and Analysis

The questionnaire was collected through the Chinese online survey platform Wenjuanxing in September 2023. The questionnaire was collected through the Chinese online survey platform Wenguanxing in September 2023, and a total of 552 respondents from young people aged 18–30 in Guangzhou were received.

Table 1. Summary of the construction items and sources

Construct	Code	Questionnaire items	Source
PEU	PEU1	BiliBili is flexible to interact with.	Rauniar et al. (2014)
	PEU2	I find it easy to get BiliBili to do what I want to do.	
	PEU3	It is easy to become skillful at using BiliBili.	
	PEU4	I find BiliBili easy to use.	
	PEU5	Interaction with BiliBili is clear and understandable.	
PU	PU1	Using BiliBili enables me to get re-connected with people that matter.	Rauniar et al. (2014)
	PU2	I find BiliBili useful in my personal life.	
	PU3	Using BiliBili enhances my effectiveness to stay in touch with others.	
	PU4	Using BiliBili makes it easier to stay in touch.	
	PU5	Using BiliBili makes it easier to stay informed with my friends and family.	
SMIT	SMIT1	Social media influencer is trustworthy.	Pop et al. (2021)
	SMIT2	Social media influencer is reliable.	
	SMIT3	Social media influencer is honest.	
	SMIT4	Social media influencer is dependable.	
	SMIT5	Social media influencer is believable.	
	SMIT6	I trust the information provided by social media influencer.	
	SMIT7	Social media influencer is more trustworthy than mass media.	
	SMIT8	Social media influencer is more trustworthy than another influencer.	
	SMIT9	Social media influencer is more trustworthy than official account.	
ISCCIB (I)	I1	I intend to share climate change information on BiliBili in the future.	Ma et al. (2018)
	I2	I expect to share climate change information on BiliBili.	
	I3	I plan to share climate change information on BiliBili.	
EC	EC1	I am very concerned about the environment.	Paul et al. (2016)
	EC2	I would be willing to reduce my consumption to help protect the environment.	
	EC3	Major political change is necessary to protect the natural environment.	
	EC4	Major social changes are necessary to protect the natural environment.	
	EC5	Environmental laws should be enforced more strongly.	
BSCCIB (B)	B1	I frequently leave my comments about climate change information on BiliBili.	Dah-Kwei et al. (2015)
	B2	I spend time on my BiliBili to update new climate change information and knowledge.	
	B3	I update my BiliBili regularly on climate change information.	
	B4	I frequently share my experience or know-how with other users on climate change information on BiliBili.	
	B5	I share my educational knowledge with other users about climate change information on BiliBili.	
	B6	I provide my knowledge and useful climate change information on BiliBili at the request of other users.	
	B7	I post useful documents or files on my BiliBili to share with other users on climate change information.	

Notes: ISCCIB: Intention to share climate change information on BiliBili. BSCCIB: Behavior to share climate change information on BiliBili.

In this study, SPSS were used for descriptive statistics, including demographic information and descriptive statistics of the variables. Then, SmartPLS 4.0 analyzed the partial least squares structural equation modelling (PLS-SEM) technique, encompassing an evaluation of both the measurement and structural models.

RESULTS

Demographic Profiles of Respondents

The results of the survey (see **Table 2**) record that 52.2% of female respondents and 47.8% of male respondents completed the questionnaire. This percentage was consistent with the data on Guangzhou's registered population in the seventh population census of China in 2020, which showed that the female population of Guangzhou is larger than the male population (CMA Climate Change Center, 2021). Respondents were concentrated primarily among students and individuals who had just entered the workforce, with ages ranging between 18 and 30. Among them, 92% of respondents held a bachelor's degree or higher. This finding suggested that young people with higher levels of education were more concerned about the current status of climate change and demonstrated a greater willingness to share information about climate change on BiliBili.

Table 2. Respondents' demographic profiles

Demographic variables	Categories	Frequency	Percentage (%)
Gender	Female	288	52.20
	Male	264	47.80
Age	18–20	75	13.60
	21–25	239	43.30
	26–30	238	43.10
Education	High school	44	8.00
	Undergraduate	375	67.90
	Master	111	20.10
	PhD	22	4.00
Occupation	Student	168	30.40
	Private employee	294	53.30
	Civil servant	62	11.20
	Entrepreneur	16	2.90
	Not working	4	0.70
	Others	8	1.40
Monthly income	0 (no income)	82	14.90
	Less than ¥ 4,000	160	29.00
	4,001–8,000	254	46.00
	8,001–15,000	40	7.20
	Above 15,000	16	2.90

Measurement Model

Partial least squares structural equation is a well-established path analysis modelling technique that can minimize residual variance in endogenous variables while elucidating complex relationships between multiple variables via reflective and formative constructs for testing causal models (Hair et al., 2011). Owing to the exploratory nature of this research, PLS-SEM is, therefore, deemed a suitable method for this study. Measuring internal consistency, assessments of convergent validity and construct reliability are important elements to address to validate the measurement model (Sideridis et al., 2018). Construct reliability is determined by the composite reliability (CR) value, whereas the convergent validity is determined using the average variance extracted (AVE) value. In addition, Cronbach's alpha (CA) is considered a measure of scale reliability (Shrestha, 2021).

As shown in **Table 3**, the loadings and AVE of the constructs in this study were well above the required threshold values. In line with previous recommendations, the outer loadings exceeding 0.708 indicate that more than 50% of the variation in the indicators is explained, thereby demonstrating the acceptable reliability of the study items (Purwanto & Sudargini, 2021). The external loadings of all the data in this study are more than 0.708, the CR value is more than 0.7, and the AVE value is more than 0.5. This proves that the variables are satisfactory and acceptable, and all have a high level of internal consistency and reliability. The CA coefficient is greater than 0.8, indicating good internal consistency.

Table 3. Measurement model

Items	Loadings	CA	CR	AVE
PEU1	0.807	0.862	0.901	0.645
PEU2	0.790			
PEU3	0.776			
PEU4	0.864			
PEU5	0.777			
PU1	0.845	0.855	0.896	0.633
PU2	0.767			
PU3	0.808			
PU4	0.782			
PU5	0.774			
SMIT1	0.807	0.924	0.937	0.625
SMIT2	0.829			
SMIT3	0.845			
SMIT4	0.826			
SMIT5	0.819			

Table 3 (continued).

Items	Loadings	CA	CR	AVE
SMIT6	0.747			
SMIT7	0.746			
SMIT8	0.737			
SMIT9	0.750			
I1	0.884	0.882	0.927	0.810
I2	0.907			
I3	0.909			
EC1	0.930	0.961	0.969	0.864
EC2	0.931			
EC3	0.931			
EC4	0.927			
EC5	0.928			
B1	0.801	0.911	0.929	0.653
B2	0.811			
B3	0.776			
B4	0.786			
B5	0.785			
B6	0.813			
B7	0.880			

Table 4. Discriminant validity (Fornell-Lacker criterion)

Constructs	1	2	3	4	5	6
PEU	0.803					
PU	0.609	0.796				
SMIT	0.582	0.519	0.791			
Intention to share climate change information on BiliBili	0.523	0.539	0.543	0.900		
EC	0.212	0.165	0.229	0.314	0.929	
Behavior to share climate change information on BiliBili	0.506	0.518	0.538	0.562	0.178	0.808

Table 5. Discriminant validity (HTMT criterion)

Constructs	1	2	3	4	5	6
PEU						
PU	0.708					
SMIT	0.651	0.583				
Intention to share climate change information on BiliBili	0.598	0.620	0.601			
EC	0.231	0.18	0.241	0.340		
Behavior to share climate change information on BiliBili	0.570	0.587	0.587	0.626	0.190	

Discriminant validity is used to ensure that the observed variables used in a measurement model measure the latent variable. This study used three approaches to assessing discriminant validity: the Fornell-Larcker criterion, the heterotrait-monotrait (HTMT) criterion and cross-loadings.

As shown in **Table 4**, all diagonal values (the square root of AVE) are greater than the non-diagonal values (the correlation between constructs). The HTMT values meet the requirements of 0.85 and 0.90. All loads are greater than the corresponding cross-loadings.

Therefore, this confirms that the measurement model has sufficient validity and discriminant validity (see **Table 4**, **Table 5**, and **Table 6**).

Table 6. Discriminant validity (cross loading)

Constructs	Items	1	2	3	4	5	6
PEU	PEU1	0.807	0.498	0.467	0.423	0.152	0.414
	PEU2	0.79	0.487	0.474	0.428	0.206	0.38
	PEU3	0.776	0.475	0.477	0.424	0.163	0.402
	PEU4	0.864	0.495	0.456	0.389	0.142	0.394
	PEU5	0.777	0.487	0.458	0.43	0.186	0.44
PU	PU1	0.459	0.845	0.369	0.411	0.072	0.408
	PU2	0.508	0.767	0.42	0.43	0.165	0.433
	PU3	0.511	0.808	0.442	0.444	0.181	0.427

Table 6 (continued).

Constructs	Items	1	2	3	4	5	6
	PU4	0.442	0.782	0.424	0.428	0.132	0.415
	PU5	0.498	0.774	0.405	0.429	0.102	0.375
SMIT	SMIT1	0.446	0.369	0.807	0.426	0.159	0.398
	SMIT2	0.463	0.413	0.829	0.449	0.187	0.419
	SMIT3	0.491	0.425	0.845	0.455	0.179	0.441
	SMIT4	0.473	0.407	0.826	0.436	0.139	0.432
	SMIT5	0.454	0.411	0.819	0.432	0.191	0.443
	SMIT6	0.463	0.418	0.747	0.406	0.185	0.455
	SMIT7	0.407	0.399	0.746	0.387	0.165	0.398
	SMIT8	0.471	0.436	0.737	0.431	0.220	0.402
	SMIT9	0.467	0.414	0.75	0.436	0.200	0.437
ISCCIB (I)	I1	0.472	0.472	0.496	0.884	0.256	0.501
	I2	0.463	0.478	0.485	0.907	0.298	0.507
	I3	0.478	0.505	0.485	0.909	0.294	0.509
EC	EC1	0.209	0.157	0.216	0.300	0.929	0.166
	EC2	0.187	0.145	0.186	0.290	0.931	0.159
	EC3	0.177	0.168	0.234	0.295	0.932	0.175
	EC4	0.174	0.133	0.167	0.270	0.926	0.135
	EC5	0.234	0.163	0.251	0.301	0.929	0.187
BSCCIB (B)	B1	0.406	0.418	0.425	0.434	0.133	0.801
	B2	0.420	0.419	0.446	0.432	0.199	0.811
	B3	0.365	0.384	0.420	0.424	0.140	0.776
	B4	0.420	0.430	0.426	0.447	0.148	0.786
	B5	0.414	0.433	0.420	0.477	0.150	0.785
	B6	0.417	0.397	0.457	0.470	0.140	0.813
	B7	0.419	0.447	0.447	0.488	0.102	0.880

Notes: ISCCIB: Intention to share climate change information on BiliBili. BSCCIB: Behavior to share climate change information on BiliBili.

Table 7. Collinearity statistics (VIF)

Constructs	VIF
PEU → Intention to share climate change information on BiliBili	1.957
PU → Intention to share climate change information on BiliBili	1.762
SMIT → Intention to share climate change information on BiliBili	1.690
Intention to share climate change information on BiliBili → Behavior to share climate change information on BiliBili	1.109
EC → Behavior to share climate change information on BiliBili	1.109
EC × PEU → Intention to share climate change information on BiliBili	1.525
EC × PU → Intention to share climate change information on BiliBili	1.409
EC × SMIT → Intention to share climate change information on BiliBili	1.355

Structural Model

Having verified that the measurement model assessment is satisfactory, the next step in PLS-SEM modelling is to evaluate the structural model. It is vital to ensure the structural model's capacity to forecast endogenous constructs by assessing the path coefficients, coefficient of determination (R^2), and cross-validated redundancy (Q^2) (Henseler & Sarstedt, 2012).

Table 7 shows that the VIF values of the independent variables are all less than 3.3, indicating that transverse multicollinearity is not a concern in this study (Hair et al., 2014).

Table 8 shows the results of the eight hypotheses of this study. Direct effects (**H1**, **H2**, **H3**, and **H4**) showed substantial positive effects with p-values less than 0.001 and betas of 0.181 (**H1**), 0.227 (**H2**), 0.233 (**H3**), and 0.561 (**H4**), respectively. EC has no effects on Chinese youth's behavior to share climate change information on BiliBili (**H5**) (β = 0.002, p = 0.963).

In addition, EC moderates the relationship between PEU and intention to share climate change information on BiliBili (**H6**) (β = 0.139, p = 0.002); between PU and intention to share climate change information on BiliBili (**H7**) (β = 0.133, p = 0.007) and between SMIT and intention to share climate change information on BiliBili (**H8**) (β = 0.130, p = 0.007).

Table 8. Path coefficient of hypothesis

No	Hypothesis/relationship	β	SD	t-value	p-value	Decision
H1	PEU → Intention to share on BiliBili	0.181	0.039	4.617	0.000	Support
H2	PU → Intention to share on BiliBili	0.227	0.039	5.828	0.000	Support
H3	SMIT → Intention to share on BiliBili	0.233	0.040	5.907	0.000	Support
H4	Intention to share on BiliBili → Behavior to share on BiliBili	0.561	0.028	20.374	0.000	Support
H5	EC → Behavior to share on BiliBili	0.002	0.039	0.047	0.963	Reject
H6	EC × PEU → Intention to share on BiliBili	0.139	0.045	3.075	0.002	Support
H7	EC × PU → Intention to share on BiliBili	0.133	0.049	2.704	0.007	Support
H8	EC × SMIT → Intention to share on BiliBili	0.130	0.048	2.687	0.007	Support

Note. SD: Standard deviation

Table 9. Model results for R^2 and Q^2

Constructs	R^2	Q^2
Intention to share climate change information on BiliBili	0.517	0.406
Behavior to share climate change information on BiliBili	0.316	0.204

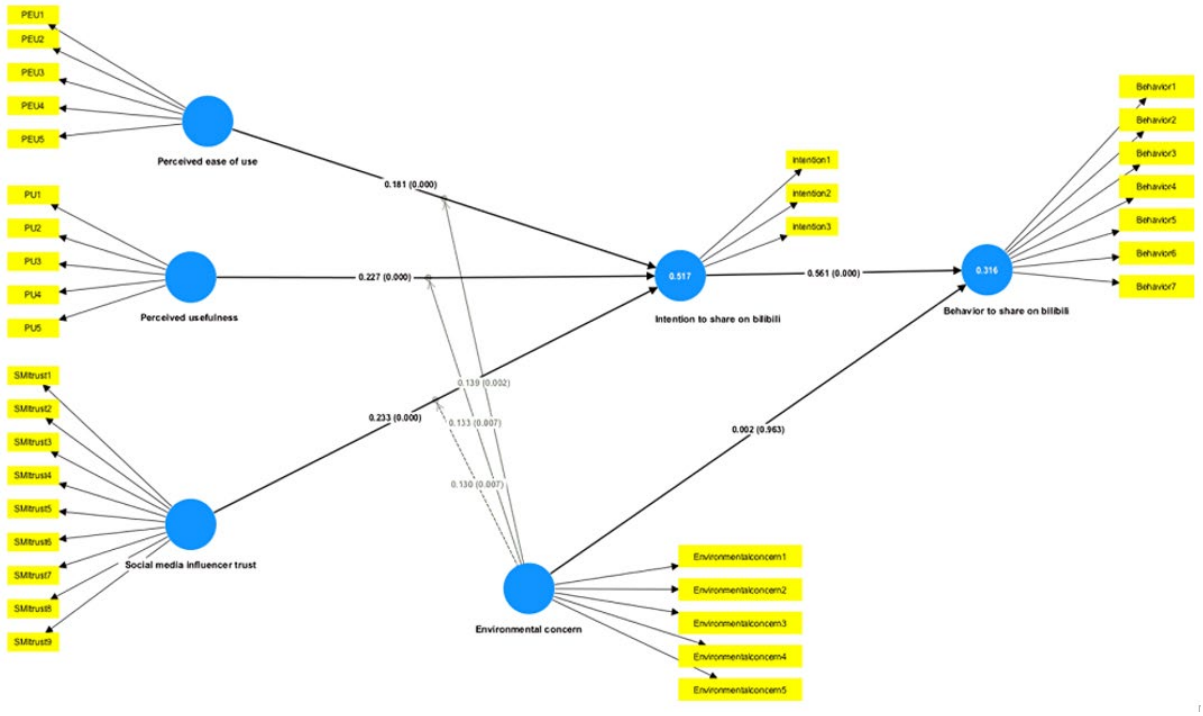

Figure 5. Structural model with path coefficient (β + p-value) and R^2 (Source: Authors)

According to **Table 9**, the R^2 of intention to share on BiliBili is 0.517, which means that 51.7% of the variability in the intention to share climate change information on BiliBili can be moderately explained by PEU, PU, and SMIT. In comparison, 48.3% of the variability is explained by other variables not discussed in this study. The R^2 of behavior to share climate change information on BiliBili is 0.316, which means that 31.6% of the variability in behavior to share climate change information on BiliBili can be explained by intention to share climate change information on BiliBili, while the remaining 68.4% is explained by other variables not discussed in this study. Therefore, a moderate to weak effect is shown. Intention to share on BiliBili has an R^2 of 0.407, and behavior to share on BiliBili has an R^2 of 0.204. The path model can be considered to have good predictive relevance because all endogenous latent variables have Q^2 values greater than zero.

Figure 5 shows the path coefficient (β + p-value) and R^2 values for all the variables in the study. They show that the model fit in this study is reasonably good, has a strong explanatory power for the endogenous variables, and that the moderating variable has a substantial impact on the relationships in the model.

The effect size, or f^2, describes the size or fraction of the dependent variable predicted by the predictor or independent variable. It reveals the relative effect of each independent variable or predictor on the endogenous variable. Detailed results are shown in **Table 10**.

Table 10. Effect size f^2 of direct effect

No	Hypothesis/relationship	F^2	Effect size (Kenny, 2016)
H1	PEU → Intention to share on BiliBili	0.035	Large
H2	PU → Intention to share on BiliBili	0.061	Large
H3	SMIT → Intention to share on BiliBili	0.067	Large
H4	Intention to share on BiliBili → Behavior to share on BiliBili	0.415	Large
H5	EC → Behavior to share on BiliBili	0.000	No
H6	EC × PEU → Intention to share on BiliBili	0.024	Medium
H7	EC × PU → Intention to share on BiliBili	0.022	Medium
H8	EC × SMIT → Intention to share on BiliBili	0.022	Medium

H1, **H2**, **H3**, and **H4** have large effect sizes. In addition, the moderating variable EC (**H6**, **H7**, and **H8**) had medium effect sizes, indicating that EC plays a moderate moderating role in sharing intention and behavior (see **Table 10**). Therefore, the proposed research model has good predictive relevance.

DISCUSSION

According to the results of this study, PEU, PU, and SMIT have been confirmed to be direct factors affecting Chinese youth's intention to share climate change information on BiliBili. This result is consistent with earlier research findings (Ahmad et al., 2023; Brar et al., 2022; Kavota et al., 2020; Yossatorn et al., 2023). BiliBili users can easily act as communicators of information prevailing trends in climate change, increasing its users' intention to share climate change information. When technology benefits society, people's reliance on it and the likelihood of using it increase in the long term (Suharini et al., 2023). Even small actions can play an important role in counteracting the negative psychological consequences of climate change perceptions (Trott, 2021). Moreover, a social media influencer is likely to be more effective at sharing information about climate change if they have earned the trust of users (Pop et al., 2021). Therefore, technical perception and trust enhance the acceptance of this information, by youth on BiliBili, thereby their positive willingness to engage in climate change discussions and act by sharing information on climate change.

However, a substantial association between EC and behavior to share climate change information (**H5**) was not found to be supported. Rather, the study's findings suggest that EC is not an influential determinant of climate change sharing behavior among Chinese youth. Nevertheless, some past studies have found EC to have a substantial impact on actual climate change behaviors (Gkargkavouzi et., 2018). Several factors could explain the invalidity of the current hypothesis. First, cultural differences in different countries cause differences in users' emotions and values in the context of social media and are the reason why the findings of existing studies differ from those of the current study (Luo et al., 2021). Furthermore, excessive emphasis on advancements in climate change mitigation may cause complacency, where individuals may perceive a diminished imperative for personal climate action (Brosch, 2021). Therefore, further research is needed on the applicability of EC for this cohort.

In addition, individuals exhibiting a heightened concern for the environment are inclined to cultivate more favorable attitudes, a phenomenon posited to augment their tangible behavioral intentions to participate in environmental conservation efforts (Hoang et al., 2019). This study discovered that EC has a medium impact on the connections between PEU, PU, SMIT, and intention to share climate change information on BiliBili. This implies that youth with deep EC have other reasons to consider when climate change sharing intentions. Tandoc and Eng (2017) found that the frequency of dissemination of information by these influencers increases only when major international and national climate change events occur. It is noteworthy that individuals with heightened ECs exhibit stronger intentions to share climate change information specifically during these periods.

CONCLUSION AND RECOMMENDATIONS

Theoretical Contribution

This study develops a comprehensive model of the impact of social media use on youth intention and behavior to share climate change information. The theoretical significance of the model was demonstrated in

the results of a survey of 552 respondents. This is consistent with the results of previous studies using the TAM to analyze behavioral intention when voluntarily disclosing and sharing their opinions about major disaster events on social media (Brar et al. 2022; Kavota et al. 2020). Although climate change communication has been studied in the United States (Chen et al., 2023), Canada (Gislason et al., 2021), and Germany (Said et al., 2023), the results of this study differ from those of these countries. The technological perception of social media has a substantial effect on Chinese youth to share climate change information on BiliBili. However, the role of EC as a moderator requires further research.

Practical Contribution

This study proved that Chinese youths' intention to share climate change information on BiliBili is influenced by multiple factors. This means that social media platforms can specify operations and content that are more in line with their users. Social media platforms should optimize their user interfaces to ensure that the sharing process is simple and easy to implement, and that the content is practical and actionable. Climate action strategic planning should select influencers who align with the interests and values of young people and enhance the dissemination of information.

Limitation

First, this study focus on Guangzhou may result in limited reflection of different climate change information sharing behavior in the whole China. The results still need to be confirmed by studying the young social media users in different cities in China.

Second, this study's questionnaire data collection method mainly applied purposive sampling. Although the questionnaire sample collected information effectively from a sample of Guangzhou youth aged 18–30, it is worth noting that the sampled social media users were concentrated in urban areas, and this sample's differences from rural groups were not considered, which may have impacted the distribution of respondents in the survey. Hence, future researchers can consider to study the rural groups' young social media users and compare the result with this study.

Third, considering the diverse types of social media platforms, it is necessary to explore climate change information analysis behavior on other platforms in the future, especially whether the differences in user and social media features affect the final results.

Finally, although quantitative research provides intuitive data, it often needs to be combined with qualitative research to gain a more comprehensive understanding when understanding complex social phenomena. Future research can increase qualitative research, such as in-depth interviews and group discussions

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