

What shapes digital civic engagement among educated youth? Insights from China with broader implications

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Abstract

Educated youths play a key role in digital civic engagement, yet their behaviors and underlying drivers remain largely unexplored, particularly in non-Western contexts. This study examined the overall tendencies and predictors of digital civic engagement on social media platforms among Chinese university students (N = 446). Results showed that participants engaged more frequently in information-seeking activities than in expressive or participatory forms, reflecting a generally passive engagement style. Drawing on the Integrative Model of Behavior Prediction and Relational-Developmental Systems theory, structural equation modeling further revealed that intention strongly predicts digital civic engagement, shaped by attitude and perceived behavioral control. Digital skills and a democratic university climate moderate the intention–behavior link. Parental involvement and online social capital underlie the psychological drivers of civic intention. These findings inform the design of culturally responsive educational programs and social media platforms that foster educated youths' digital civic participation.

Keywords: Digital civic engagement; Higher education; Media; Digital skills; Digital citizenship

1. INTRODUCTION

Digital civic engagement is a vital component of democratic participation, encompassing political actions and nonpolitical prosocial behaviors that aim to improve community well-being (Cho et al., 2020). Educated youths' digital engagement reflects evolving civic identities and shapes the civic competence of future generations (UNESCO, 2024). Yet their behaviors and underlying drivers remain largely

unexplored, particularly in non-Western contexts (Damiani & Fraillon, 2025). In China, rapid digitalization amid state-influenced social-political structures creates a distinctive context: while social media platforms (e.g., WeChat, Weibo, Bilibili, Xiaohongshu, etc.) broaden civic expression, participation remains constrained (W. Huang et al., 2021). This paradox underscores the need to examine the digital civic practices of Chinese educated youths.

Scholars have conceptualized various levels of civic participation in response to digitalization. The OECD (2001) identifies three forms: information (one-way communication), consultation (two-way feedback), and active participation (direct citizen influence). Extending the OECD framework, Polat (2005) outlined three Internet civic functions: information provision, a communication medium, and a public discourse space. Building on this, S. Huang et al. (2016) conceptualized Chinese university students' digital civic engagement in three dimensions: acquiring civic information, expressing and discussing civic ideas via platforms like blogs or WeChat, and participating in civic actions such as volunteering, donating, and advocacy.

Two theoretical streams dominate existing literature in understanding the factors influencing digital civic engagement. One emphasizes technology-centered models such as the technology acceptance model (Zolotov, 2018), the unified theory of acceptance and use of technology (Alarabiat et al., 2021), diffusion of innovation (Ninčević Pašalić & Ćukušić, 2024), and information system success model (Abdul Wahi & Berenyi, 2024). These studies highlight factors like perceived ease of use, perceived usefulness, digital skills (Xu et al., 2019a, 2019b), and computer self-efficacy (M. Choi et al., 2018).

A second, emerging stream emphasizes psychological and institutional factors. Empowerment theory highlights users' agency in e-participation (Sharma et al., 2024),

while participatory atmosphere are shown to strengthen civic engagement (Zeldin et al., 2018). Trust theory links civic technology use to institutional trust (R. G. Li, 2024). Incentive-based models point to motivations like social belonging and civic solidarity (Angenendt, 2023). Theory of planned behavior studies identify behavioral control and civic values as predictors of civic participation (W. Huang et al., 2021). Together, these studies suggest psychosocial factors are especially important in youth-centered civic contexts.

Despite these advances, several gaps persist. First, technical adoption models still dominate, with limited focus on how individual agency interacts with socialcultural contexts. Second, many studies emphasize civic intentions over actual behaviors (Alarabiat et al., 2021; Baber, 2020), and fewer explore how psychological drivers emerge. Third, conventional “dutiful” acts like voting, petitioning remain overemphasized (Cho et al., 2020), while youth-led, interest-driven, digitally practices are often overlooked (OECD, 2022). Finally, empirical research on educated youths remains rare, particularly in non-Western, low- to middle-income regions like China (Schoon et al., 2025).

Our study addresses these gaps by focusing on actual digital civic engagement behaviors and proposing two research questions (RQs):

RQ1. What are the Chinese educated youths’ overall tendencies across the digital civic engagement dimensions, especially in information acquisition, expression, and action?

RQ2. How do intrapersonal factors and external contexts explain their engagement patterns?

To explore RQ1, we surveyed Chinese university students’ digital civic engagement across the three dimensions. To address RQ2, we adopted an integrated

framework: the Integrative Model of Behavior Prediction (IMBP; Fishbein & Ajzen, 2010) which captures key psychological drivers; and Relational-Developmental Systems Theory (RDST; Lerner et al., 2015), which explains how these psychological traits emerge from dynamic socialcultural interactions. Together, IMBP and RDST offer a comprehensive lens for understanding how internal dispositions and external contexts shape youth digital civic behaviors under real-world constraints.

Our study contributes theoretically and practically. Theoretically, it provides empirical insights into university students' digital civic engagement in a culturally specific and digitally dynamic context. It moves beyond intention-focused models by examining how the intention-action link and highlighting the developmental antecedents of psychological drivers, an area often overlooked. Practically, it informs educational programs seeking to cultivate digital civic competencies in young adults, especially in centralized and institutionally constrained settings.

2. THEORETICAL FRAMEWORK

We integrate IMBP with RDST to examine digital civic engagement among Chinese university students. IMBP offers a robust framework for understanding how attitudes, subjective norm, and perceived behavioral control, shape behavioral intentions, which in turn predict behavior. It also highlights the moderating role of enabling conditions, such as skills and contextual support, in translating intention into action (Fishbein & Ajzen, 2010). RDST complements IMBP by emphasizing the developmental origins of these psychological drivers, shaped through interactions with family, peers, and digital networks (Overton, 2013).

2.1. Psychological Drivers of Digital Civic Engagement

According to IMBP, behavior is primarily guided by intention, which is shaped by three constructs: attitudes, subjective norm, and perceived behavioral control

(Fishbein & Ajzen, 2010). Intention reflects motivational readiness to act and is the most immediate predictor of behavior.

Attitude refers to an individual's overall evaluation of performing a behavior, based on the anticipated outcomes and the value placed on them (Fishbein & Ajzen, 1975). Attitude toward digital civic engagement involves weighting benefits, such as enhanced civic identity, self-worth, and empowerment, against risks like privacy concerns and information overload (Cho et al., 2020). The evaluation of these outcomes determines whether university students develop a positive or negative attitude, which in turn influences their intention to engage. We thus hypothesize that university students' attitude toward digital civic engagement is positively associated with their intention to engage (H1).

Subjective norm is an individual's estimate of social pressure to perform or refrain from a behavior, shaped by both expectations and observed behaviors of significant others (Fishbein & Ajzen, 2010). For university students, norms may arise from perceived encouragement by peers, or faculty and observations of peer engagement in civic activities. These social cues can shape their sense of what is expected and valued in their academic and social environments. Prior studies confirm the significance of subjective norm on shaping intention for civic behavior (Soltani Delgosha et al., 2024). We therefore hypothesize that subjective norm is positively associated with university students' intention for digital civic engagement (H2).

Perceived behavioral control refers to individuals' confidence in their ability to act, shaped by personal resources and external constraints such as internet access, platform usability, and institutional environments (Fishbein & Ajzen, 2010). Higher perceived control is consistently linked to greater civic intention (J.-C. Choi & Song, 2020; Schoon et al., 2025). Accordingly, we hypothesize that university students'

perceived behavioral control is positively associated with their intention toward digital civic engagement (H3).

Behavioral intention, as the proximal predictor of actual behavior, reflects motivational readiness to act (Fishbein & Ajzen, 2010). University students with a strong intention in digital political discussions or other forms of civic engagement are more likely to participate in online activities such as digital advocacy or discussion (Jeyaraj, 2021). Thus, we hypothesize that university students' intention positively associates with their digital civic engagement behaviors (H4).

2.2. Moderators: Digital skills and democratic university climate

While intention is essential, IMBP posits that actual behavior depends on enabling conditions, including individual skills and environmental facilitators (Fishbein & Ajzen, 2010). In our context, we examine two key moderators: digital skills and democratic university climate.

Digital skills refer to task-specific competencies supporting citizenship, collaboration, and creativity (Vuorikari et al., 2022). The EU Digital Competency Framework outlines five dimensions: information and data literacy, communication and collaboration, digital content creation, safety, and problem solving. These skills enable university students to navigate platforms, evaluate content, and engage effectively in civic life (van Laar et al., 2025). Research shows digital skills help turn civic intention into action (Cho et al., 2020; Park et al., 2023; Prasetyo et al., 2024). We hypothesize that digital skills moderate the digital civic intention- behavior link (H5).

A democratic university climate refers to an environment that cultivates open dialogue, shared governance, and active student participation in institutional affairs (Maxwell, 2002). Such a climate supports the enactment of civic intentions despite institutional constraints (Caliskan et al., 2020). A democratic university climate is

especially relevant in China, where student governance operates under centralized political structures (W. Huang et al., 2021). Thus, we hypothesize that a democratic university climate moderates the relationship between intention and digital civic behaviors (H6).

2.3. Antecedents of Psychological Determinants

While IMBP identifies psychological predictors of behavior, it does not explain how they develop. RDST addresses this by emphasizing the co-construction of self-identity, motivation, and capability through interactions with family, community, and digital environments (Lerner et al., 2015; Overton, 2013). According to RDST, civic identity is generally rooted in adolescence (Obradović & Masten, 2007) and continues to develop into young adulthood, especially as individuals interact with broader civic environments (Vézina & Poulin, 2019). Among various developmental contexts, family and community environments are important in shaping civic responsibility and efficacy (Morgan et al., 2024). Family and community contexts are especially influential in collectivist cultures like China, where values are shaped by parental involvement and online social capital.

Parental involvement, defined as parents modeling and encouragement of civic values, has been shown to influence youths' political orientation (Sanver-Gürsoy et al., 2025) and prosocial behaviors (B. Zhang et al., 2024). This effect may be particularly pronounced in China, where the traditional home-centered culture rooted in Confucian values and the concept of filial piety reinforce parental authority over value transmission (Gu & Li, 2023; Lily et al., 2022). Accordingly, we hypothesize that parental involvement is positively associated with university students' (a) attitude, (b) subjective norm, and (c) perceived behavior control toward digital civic engagement (H7a-c).

Online social capital refers to the civic and informational resources embedded within digital networks (Putnam, 1993). While previous studies confirm its link to civic participation (Black et al., 2022), less is known about its psychological mechanisms. Our study fills this gap by arguing that online networks enhance civic attitudes by showcasing successful examples, bolster subjective norms through peer support, and strengthen perceived control by demonstrating accessible participation pathways. Accordingly, we hypothesize that online social capital is positively associated with university students' (a) attitude, (b) subjective norm, and (c) perceived behavior control toward digital civic engagement (H8a-c). Fig. 1 presents the hypothesized model, integrating IMBP and RDST to test these relationships (H1–H8c).

3. METHODS

3.1. Participants

Data were collected through an online questionnaire survey administered to university students at four top-tier universities in China, all directly affiliated with the Ministry of Education. These institutions were strategically selected from eastern, western, southern, and northern regions to ensure geographic diversity. Stratified random sampling was employed to capture a demographically representative sample. The survey, accessed via a QR code, was conducted over a two-week period.

A total of 505 responses were received. After removing 59 cases with invariant responses, the final data set included 446 valid cases, yielding a valid response rate of 88.3%. Table 1 presents the demographic characteristics of the sample.

Table 1. Demographic characteristics of the participants (N = 446).

Demographic characteristics	Frequenc	Percentage
<i>Gender</i>		
0-female	348	78.0
1-male	98	22.8
<i>Grade</i>		
0- freshman/sophomore	255	57.2
1- junior/ senior	93	20.9
2- graduate-level education	98	22.0
<i>Major</i>		
0- social sciences/arts	268	60.1
1- natual sciences/engineering	178	39.9
<i>Birthplace (Hukou)</i>		
0- rural area	220	49.3
1- urban area	226	50.7
<i>Parent's educational attainment</i>		
0- lower than junior college	319	71.5
1- junior college and above	127	28.5

3.2. Measurement of constructs

Each construct was measured using previously validated multi-item scales. Items were rated on a five-point Likert scale (1 = “strongly disagree” or “never”, 5 = “strongly agree” or “very often”).

Digital civic engagement. Digital civic engagement was assessed using a 19-item instrument adapted from S. Huang et al. (2016). The scale comprises three subdimensions: information acquisition (four items, e.g., “I use the Internet to access information about domestic and international issues.” $\alpha = .769$); expression and discussion (nine items, e.g., “I often express my opinions on political or social issues on the Internet.”; $\alpha = .943$); participation action (six items, e.g., “I work with others online to solve local, national, or global issues.”; $\alpha = .861$). The overall reliability was .943. Confirmatory factor analyse (CFA) showed acceptable fit: $\chi^2 = 519.165$, $\chi^2 / df = 3.580$, CFI = .935, TLI = .923, GFI = .889, RMSEA = .076.

Intention. Intention to engage in digital civic activities was assessed using four items adapted from Alarabiat et al. (2021) and Baber (2020) (e.g., “I have a strong desire to continue following, discussing, and participating in civic issues online.”). The

scale demonstrated strong internal reliability ($\alpha = .910$). CFA indicated a good model fit: $\chi^2 = 2.868$, $\chi^2 / df = 1.434$, CFI = .996, TLI = .995, GFI = .998, RMSEA = .026.

Attitude. Attitude was assessed using six items adapted from Ajzen (2006) and Francis et al. (2004). A sample item includes, “I think following, discussing, and participating in social and political issues on the internet is beneficial to society”.

Cronbach’s α was .928, with a well-fitting CFA model: $\chi^2 = 8.459$, $\chi^2 / df = 1.692$, CFI = .998, TLI = .995, GFI = .994, RMSEA = .039.

Subjective norm. Subjective norm on digital civic engagement was measured with four items adapted from Ajzen (2006) and Pastor et al. (2024), such as “My peers would follow, discuss, and participate in social and political issues on the internet”. The scale showed good reliability ($\alpha = .876$), and the CFA supported excellent fit: $\chi^2 = 2.504$, $\chi^2 / df = 1.252$, CFI = .999, TLI = .998, GFI = .997, RMSEA = .024.

Perceived behavioral control. Perceived behavioral control was assessed with four items adapted from Ajzen (2006), including statements like “I think I can follow, discuss, and participate in social and political issues on the internet”. The reliability was acceptable ($\alpha = .850$), with CFA indicating good model fit: $\chi^2 = 4.032$, $\chi^2 / df = 2.016$, CFI = .981, TLI = .943, GFI = .983, RMSEA = .049.

Parental involvement. Parental involvement was assessed using four items adapted from X. Wang and Xing (2018), such as “My parents are concerned about how I interact online with people they do not know”. Internal consistency was acceptable ($\alpha = .774$), and the CFA results indicated satisfactory model fit: $\chi^2 = 5.666$, $\chi^2 / df = 2.833$, CFI = .992, TLI = .977, GFI = .994, RMSEA = .064).

Online social capital. Online social capital was measured using nine items instrument adapted from Chow and Chan (2008), and Lin and Lu (2011), comprising three subdimensions: social interaction ties (three items, $\alpha = .896$), shared value (three

items, $\alpha = .894$), and social trust (three items, $\alpha = .788$). A sample item is “I engage in a high level of interaction with other members on social network sites”. The overall Cronbach’s α was .904. CFA results showed good fit: $\chi^2 = 48.165$, $\chi^2 / df = 2.007$, CFI = .990, TLI = .986, GFI = .977, RMSEA = .048.

Digital skills. Digital skills were assessed using 17 items aligned with the EU digital competency framework (Vuorikari et al., 2022). The scale comprises five subdimensions: information and data literacy (three items, $\alpha = .686$), communication and collaboration (four items, $\alpha = .785$), digital content creation (four items, $\alpha = .783$), safety (three items, $\alpha = .701$), and problem-solving (three items, $\alpha = .732$). One example item is “I use online resources to solve practical problems”. The overall Cronbach’s α was .781, and CFA showed acceptable fit: $\chi^2 = 12.143$, $\chi^2 / df = 3.036$, CFI = .987, TLI = .967, GFI = .989, RMSEA = .068.

Democratic university climate. Democratic university climate was measured using four items adapted from Vieno et al. (2005), such as “Our school welcomes students to be involved in making campus management regulations”. The scale showed acceptable reliability ($\alpha = .718$), and CFA results confirmed good model fit: $\chi^2 = 5.533$, $\chi^2 / df = 2.767$, CFI = .975, TLI = .925, GFI = .988, RMSEA = .078.

Controlled variables. Prior research has indicated that various demographic and personality-related factors significantly influence youth digital civic engagement. Specifically, studies have linked gender (Kara, 2018), academic major (Al-Abdullatif & Gameil, 2020), socioeconomic status (often proxied by birthplace; H. J. Kim & Chung, 2020), and parents’ education level (Yildiz et al., 2020) to differences in citizenship behaviors. Moreover, personality traits such as extraversion have been associated with higher likelihoods of online engagement in political discussions (Boulianne & Galipeau,

2025). Accordingly, we controlled for gender, academic major, birthplace, parents' education level, and personality orientation.

3.3. Data analysis approach

We employed a multi-stage analytic strategy using SPSS 29 and AMOS 26. For RQ1, we conducted descriptive analysis to examine overall tendencies of digital civic engagement among Chinese university students.

For RQ2, we used structural equation modelling (SEM) to test the hypothesized relationships among latent constructs. We first assessed the measurement model via CFAs, examining reliability, convergent validity, and discriminant validity. We then tested the structural model for direct effects of attitudes, subjective norm, and perceived behavioral control on behavioral intention (H1–H3), and intention on digital civic engagement behavior (H4). We also modeled parental involvement and online social capital as exogenous antecedents of the psychological predictors (H7a–c and H8a–c). To test moderation (H5 and H6), interaction terms (intention $\times$ digital skills; intention $\times$ democratic university climate) were constructed and incorporated into the SEM following Marsh et al. (2004).

Control variables were included to isolate focal effects. All paths were tested using bootstrapping (2,000 resamples, 95% CI) to ensure robustness.

4. RESULTS

4.1. Descriptive results

Table 2 presents the means, standard deviations, and correlations among the study variables. In addressing RQ1, we examined item-level descriptive statistics for digital civic engagement. Overall, Chinese university students reported a moderate-to-low engagement level ($M = 2.79$, $SD = 0.66$). Among the three dimensions, information acquisition scored highest ($M = 3.15$, $SD = 0.66$), particularly for “gaining information

about political or global issues via the Internet” ($M = 3.58$, $SD = 0.77$). Action-oriented participation was moderate ($M = 2.85$, $SD = 0.78$); “volunteering online” ($M = 3.13$, $SD = 1.02$) was more common than “signing petitions online” ($M = 2.69$, $SD = 1.05$) or “organizing petitions” ($M = 2.61$, $SD = 1.02$). Expression and discussion scored lowest ($M = 2.58$, $SD = 0.77$), especially for direct expression like “contacting government officials online” ($M = 2.46$, $SD = 0.92$) and “challenging dominant perspectives” ($M = 2.50$, $SD = 0.96$).

Exploratory t-tests showed no significant differences in digital civic engagement by gender ($p = .192$), academic major ($p = .728$) or birthplace ($p = .240$). However, Chinese university students whose parents lacked college-level education reported higher engagement ($p < .01$, Cohen’s $d = 0.66$). Similarly, self-identified extraverts reported significantly higher engagement ($p < .01$, Cohen’s $d = 0.66$.)

4.2. Results of the measurement model

As shown in Table 2, all standardized factor loadings exceeded 0.50 (Hair et al., 2020), supporting item reliability. Composite reliability (CR) values were all above 0.70, confirming internal consistency. Average variance extracted (AVE) values ranged from 0.456 to 0.718; while AVE values above 0.50 are preferred (Cheung et al., 2024), slightly lower values are acceptable when CRs exceed 0.70 (Fornell & Larcker, 1981). All Cronbach’s α values also exceeded 0.70.

Discriminant validity, assessed using the Fornell–Lacker criterion, was supported: the square roots of AVEs for each construct exceeded their inter-construct correlations (Table 3). The measurement model demonstrated acceptable fit: $\chi^2 = 3229.679$, $\chi^2 / df = 2.158$, CFI = 0.912, TLI = 0.904, GFI = 0.826, RMSEA = 0.051[95% CI: 0.045, 0.050], SRMR = 0.058.

4.3. Results of the structural model and hypotheses testing

The structural model fit the data well: $\chi^2 = 2597.21$, $\chi^2 / df = 2.35$, CFI = 0.918, TLI = 0.911, GFI = 0.837, RMSEA = 0.055 [95% CI: 0.047, 0.052], SRMR = 0.062.

Table 2. Reliability and convergent validity of the measurement model (N = 446).

Construct	Items	Standardized Factor Loadings Range	CR	AVE	Cronbach's α
Parental Involvement	4	0.624 ~ 0.857	0.779	0.473	0.773
Online Social Capital	8	0.532 ~ 0.880	0.901	0.538	0.905
Attitude	6	0.795 ~ 0.854	0.928	0.682	0.928
Social Norm	4	0.700 ~ 0.861	0.881	0.650	0.876
Perceived behavioral control	4	0.720 ~ 0.795	0.850	0.587	0.850
Intention	4	0.798 ~ 0.896	0.910	0.718	0.910
Digital skills	17	0.543 ~ 0.768	0.797	0.472	0.781
Democratic university climate	4	0.504 ~ 0.810	0.742	0.456	0.718
Digital Civic Engagement	19	0.597 ~ 0.845	0.922	0.601	0.924

Note. All standardized factor loadings are significant at $p < .001$

Table 3. Means, standard deviations, Pearson correlations, and discriminant validity (N = 446).

Construct	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1. Parental Involvement	3.44	0.80	.688								
2. Online Social Capital	3.60	0.71	.112*	.733							
3. Attitude	3.50	0.67	.119*	.217**	.826						
4. Social Norm	3.31	0.68	.191**	.182**	.690**	.806					
5. Perceived Behavioral Control	3.28	0.70	.146**	.214**	.625**	.708**	.766				
6. Intention	3.34	0.77	.197**	.204**	.735**	.619**	.623**	.847			
7. Digital skills	2.50	0.69	.073	.106*	.098*	.067	.073	.074	.666		
8. Democratic University Climate	3.64	0.60	.092	.300**	.181**	.260**	.290**	.114*	.045	.653	
9. Digital Civic Engagement	2.62	0.79	.153**	.131**	.306**	.378**	.456**	.436**	.083	.152**	.775

Note. * $p < .05$, ** $p < .01$. Bold diagonal values indicate the square roots of AVE.

Table 4. Results of the Structural Model.

Hypothesized Path	<i>B</i>	<i>SE</i>	β	<i>t</i>	95% CI
H1: Attitude $\rightarrow$ Intention	0.596	0.068	0.560***	8.749	[0.421, 0.775]
H2: Subjective Norm $\rightarrow$ Intention	-	0.096	-0.013	-	[-0.246, 0.203]
H3: Perceived Behavioral Control $\rightarrow$ Intention	0.335	0.082	0.321***	4.075	[0.153, 0.562]
H4: Intention $\rightarrow$ Digital Civic Engagement	0.306	0.055	0.541***	8.075	[0.209, 0.421]
H5: Intention $\times$ Digital Skills $\rightarrow$ Digital Civic Engagement	0.127	0.063	0.084*	2.017	[0.003, 0.250]
H6: Intention $\times$ Democratic University Climate $\rightarrow$ Digital Civic Engagement	0.148	0.062	0.101*	2.381	[0.026, 0.271]
H7a: Parental Involvement $\rightarrow$ Attitude	0.089	0.053	0.089	1.677	[-0.036, 0.228]
H7b: Parental Involvement $\rightarrow$ Subjective Norm	0.192	0.051	0.213***	3.767	[0.082, 0.321]
H7c: Parental Involvement $\rightarrow$ Perceived Behavioral Control	0.176	0.057	0.174**	3.087	[0.050, 0.325]
H8a: Online Social Capital $\rightarrow$ Attitude	0.226	0.053	0.216***	4.011	[0.087, 0.387]
H8b: Online Social Capital $\rightarrow$ Subjective Norm	0.140	0.049	0.147**	2.712	[0.018, 0.283]
H8c: Online Social Capital $\rightarrow$ Perceived Behavioral Control	0.219	0.056	0.205***	3.681	[0.074, 0.386]

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

As shown in Table 4, attitude ($\beta = 0.560$, $p < .001$) and perceived behavioral control ($\beta = 0.321$, $p < .001$) significantly predicted intention, confirming H1 and H3. Intention significantly predicted digital civic engagement behavior ($\beta = 0.541$, $p < .001$).

.001), supporting H4. However, subjective norm did not significantly predict intention ($\beta = -0.013$, $p > .05$), thus H2 was not supported. The interaction effects supported H5 and H6: digital skills ($\beta = 0.084$, 95%CI [0.003, 0.250], $p < 0.05$) and democratic university climate ($\beta = 0.101$, 95%CI [0.026, 0.271], $p < 0.05$) both moderated the intention- behavior link.

Parental involvement significantly predicted subjective norm ($\beta = 0.213$, $p < .001$) and perceived behavioral control ($\beta = 0.174$, $p < .01$), supporting H7b and H7c, but not attitude ($\beta = 0.089$, $p > .05$), thus not supporting H7a. Online social capital significantly predicted all three psychological drivers: attitudes ($\beta = 0.216$, $p < .001$), subjective norm ($\beta = 0.147$, $p < .001$), and perceived behavioral control ($\beta = 0.205$, $p < .001$), confirming H8a - H8c.

The final model explained 67.9% of the variance behavioral intention and 35.6% in engagement behavior. Standardized path coefficients are presented in Fig. 2.

5. DISCUSSION

This paper examined the overall tendencies of digital civic engagement among Chinese educated youths and identified key psychological, relational, and contextual influences. Engagement was moderate-to-low ($M = 2.79$, $SD = 0.66$), with participants favoring information acquisition ($M = 3.15$, $SD = 0.66$) over participatory actions ($M = 2.85$, $SD = 0.78$), and opinion expression ($M = 2.58$, $SD = 0.77$), indicating a cautious and observational approach to digital civic life.

Attitude ($\beta = 0.560$) and perceived behavioral control ($\beta = 0.321$) strongly predicted intention, which in turn significantly predicted behavior ($\beta = 0.541$). The intention-behavior link was further enhanced by digital skills ($\beta = 0.084$) and a democratic university climate ($\beta = 0.101$). At the relational level, parental involvement predicted subjective norm ($\beta = 0.213$) and perceived behavioral control ($\beta = 0.174$), but

not attitudes ($\beta = 0.089$). Online social capital positively influenced all three psychological drivers: attitude ($\beta = 0.216$), subjective norm ($\beta = 0.147$), and perceived control ($\beta = 0.205$). These results suggest that Chinese educated youths' digital civic engagement is shaped not only by personal beliefs and efficacy but also by family, peer, and institutional contexts.

5.1. Overall tendencies of digital civic engagement

Chinese educated youths favor information acquisition over expression or action, suggesting a generally passive, information-seeking orientation. This cautious engagement style reflects China's sociocultural context, where institutional constraints shape civic opportunities. Despite expanded access to digital platforms, engagement remains bounded by state governance structures. As W. Huang et al. (2021) describe, Chinese universities operate a dual-track governance system, blending student unions with Communist Youth League Committees oversight. This configuration conditions youths' political socialization and discourage expressive behavior.

Information acquisition received the highest scores, suggesting educated youths' deliberate efforts to stay informed on civic issues. However, this engagement is largely passive, as it does not involve public expression or interaction. Algorithm-driven content feeds on popular apps may facilitate this tendency, indicating that digital civic engagement begins with information exposure, intentional or not, making it a purposeful yet restrained form of civic involvement. Expression and discussion scored lowest, suggesting reluctance among university students to voice their civic views, likely due to self-censorship and perceived risks (Pang, 2008; Sun & Zhao, 2022).

Action-oriented participation showed moderate, with higher endorsement of noncontentious activities (e.g., online volunteering) and lower for riskier actions like petitions or advocacy. This pragmatic preference for service-based contributions likely

reflects institutional and cultural norms that discourage confrontational activism (Rothschild, 2024).

These tendencies suggest that while Chinese educated youths appear interested in civic issues, their participation is mediated by safety considerations and sociopolitical acceptability. This mirrors findings from other constrained contexts (Alam et al., 2022 in New Zealand), and contrasts with youth in more open digital societies, where direct expression and mobilization are more common (Tsouparopoulou et al., 2025). In sum, Chinese educated youths balance civic curiosity with institutional caution.

5.2. Effects of Psychological Drivers and Moderating Conditions

5.2.1. Psychological Drivers of Intention

Our findings reaffirm the central role of psychological drivers in explaining Chinese educated youths' digital civic engagement. Attitude and perceived control emerged as robust predictors of intention, with attitude exerting the greatest influence. This suggests that when Chinese educated youths perceive civic actions as valuable and feel confident in their capacity to engage, they are more likely to form intentions to participate.

These results align with previous studies linking positive attitude to civic behavior across various contexts, including e-participation and ethical decision-making (Alarabiat et al., 2021; Boulianne & Galipeau, 2025; Y. Zhang, 2024). Our findings also support the IMBP's proposition that perceived behavioral control is crucial for socially sensitive behaviors. This aligns with Alsaleh's (2025) study in Kuwait, where the centralized educational system heightens the importance of individual agency in forming civic intention.

Interestingly, subjective norm did not significantly predict intention. While this diverges from findings in traditional civic engagement research (Y. Kim & Khang,

2014; Pastor et al., 2024; Pedović et al., 2025), it aligns with studies in digital settings that suggest weaker normative effects (Aljasir, 2023; Wachs et al., 2021) due to online disinhibition effect (Suler, 2004). However, Chinese university students illustrate a contextual paradox. Despite online spaces theoretically liberating users from face-to-face scrutiny, these educated youths remain guarded by internalized fears of surveillance and reprisal (Aradau & McCluskey, 2022; Kneiep et al., 2024). Our observations suggest that they have anticipated negative consequences for outspoken online activism, resulting in “anticipatory subjective norm” shaped by observed risks, even in semi-anonymous environments. This helps explain why subjective norm appears to have limited influence in our statistical model.

Overall, these findings echo Fishbein’s (2008) argument that the relative importance of attitude, perceived behavioral control, and subjective norm varies across behavioral domains and populations under study. In the Chinese contexts, attitudes and perceived control dominate in shaping civic intention, while subjective norm appears less salient due to competing psychological and sociopolitical constraints.

5.2.2. Conditional Moderators of the Intention–Behavior Link

Educated youths with stronger digital competencies were more likely to act on their civic intentions, consistent with research emphasizing digital skills as tools of empowerment in active civic participation (Moon & Bai, 2020; Örtengren & Olofsson, 2024; von Gillern et al., 2024). However, the moderation effect was modest, likely due to the narrowing digital divide among Chinese university students (L. Wang & Liu, 2021). Moreover, basic digital skills may not equate to digital civic competencies, which are more context-dependent and tied to civic goals (Manca et al., 2021). This distinction may help explain the weak correlations between digital skills and other psychological predictors in our data. Research suggests that digital skills support civic

engagement most effectively when embedded within broader educational and societal support systems (van Laar et al., 2020). In China's centralized education system, where academic development and ideological alignment are tightly controlled, the civic applications of digital skills may be constrained by institutional norms and political sensitivities.

Likewise, educated youths who perceived their institutional environment as open and participatory were more likely to act on their civic intentions. This confirms that democratic climates provide psychological safety for civic action (Karakos et al., 2016; Schulz et al., 2025). Nevertheless, this effect was also limited, possibly due to the exam-oriented, hierarchical nature of Chinese higher education (X. Li & Zhao, 2020). Evidence from the International Civic and Citizenship Education Study (Council of Europe, 2018) and related literature highlights that democratic climates only foster civic engagement when backed by institutional and pedagogical support (Schulz et al., 2025).

In sum, while digital skills and democratic climates can enhance the intention-behavior link, their civic potential in China appears constrained by institutional norms and sociopolitical sensitivities.

5.3. The Effects of Relational and Contextual Influences

While psychological determinants are central in forming educated youths' intentions, our findings reveal that these internal drivers are embedded within relational and contextual ecologies. In Chinese university student case, parental involvement and online social capital significantly influenced their digital civic engagement, albeit to varying degrees.

Parental involvement significantly influenced subjective norm and perceived behavioral control. This supports existing literature on parents as influential in shaping children's civic efficacy, particularly in digital contexts (Valenzuela et al., 2019).

However, it did not significantly influence educated youths' attitudes toward digital civic engagement. This result diverges from studies suggesting parents help shape civic attitudes (Valenti et al., 2023). One explanation may be a generational shift: rather than inheriting attitudes from parents, Chinese educated youths may be more influenced by peer interactions, personal experiences, and digital media. Prior studies also suggest that youth civic attitudes are increasingly shaped by horizontal, peer-based digital networks rather than vertical, familial authority (Fliaguine et al., 2024). As emerging adults, university students may have developed independent value systems less susceptible to parental influence (Dotterer, 2022). Moreover, in Confucian-influenced cultures, parental guidance tends to emphasize moral conduct and academic success over civic engagement (B. Zhang et al., 2024), further limiting parents' effect on civic attitudes.

In contrast, online social capital played a stronger and more consistent role across all three psychological determinants. This corroborates the literature showing that online communities offering shared civic values, trust, and networks positively influence civic engagement (Cahigas et al., 2023). Active participation in such networks helps university students develop control and confidence in engaging with digital civic issues. These communities not only provide a platform for youth to validate meaningful civic identities (González-Bailón & Lelkes, 2023; Putnam, 1993), but also help them navigate constraints rooted in more traditional, family-centered contexts, allowing for more autonomous expression.

Overall, our findings highlight the indispensable role of relational and contextual factors in digital civic engagement. Psychological readiness is important, but intention alone is insufficient without supportive ecosystems. Digital skills and democratic university climate moderate the intention–behavior link, while parents and online

communities serve as proximal socializing agents that shape educated youths' confidence, norms, and motivations.

5.4. Limitations and future works

First, the cross-sectional design limits causal inference. Future studies should employ longitudinal or experimental designs to trace the developmental dynamics of digital civic engagement. Moreover, the use of self-reported data may introduce social desirability bias. Mixed-method approaches that integrate digital behavioral trace data, peer or instructor evaluations, and platform analytics are recommended to capture more objective patterns of engagement.

Second, our study draws on a sample of 446 university students from four top-tier ministerial universities, which limits generalizability but provides insights into digitally engaged youth in elite Chinese university contexts. Incorporating non-ministerial universities in future studies could enhance generalizability.

Third, our IMBP–RDST framework overlooks critical macro-level and technological factors. IMBP emphasizes intrapersonal drivers without considering how institutional trust shapes those cognitions (Levi & Stoker, 2000). Conversely, RDST highlights microsystem interactions (family, peers) but fails to address how platform affordances (e.g., algorithmic curation, anonymity) or political socialization through media and schooling inform civic behaviors. Future research should consider integrating Institutional Theory (Scott, 2013), Political Socialization Theory (Niemi & Hepburn, 1995), and Affordance Theory (Evans et al., 2017) to offer a fuller account of digital civic engagement.

6. CONCLUSION AND IMPLICATIONS

Our study offers an integrative account of digital civic engagement among Chinese university students by combining IMBP with an RDST perspective. Findings

reveal a generally passive and information-seeking engagement orientation, with limited expression or participatory action. While intention directly predicts engagement, its enactment depends on individual capacities(e.g., digital skills) and institutional support (e.g., a democratic university climate). Furthermore, subjective norm, and perceived behavioral control are shaped by broader relational and contextual influences, particularly parental involvement and online social capital.

These findings offer important implications for scholars, educators, and digital learning designers working to foster digital civic agency through technology-enhanced learning. First, higher education institutions should integrate civic learning opportunities into digital pedagogies that allow university students to critically engage with sociopolitical issues in low-risk, scaffolded ways. This includes designing media literacy curricula focused on online information evaluation and constructive social media use for civic purposes like online civic reasoning (McGrew, 2020). This approach is also supported by findings from Römer et al. (2023), who demonstrated that student-centered, hands-on media literacy interventions can improve media competencies in disadvantaged youth. Moreover, experiential activities such as co-designing classroom rules, running mock student committees, or planning community initiatives can cultivate civic attitudes and participatory habits, even in institutional constrained systems.

Second, digital civic education initiatives must account for students' broader social ecologies. Pedagogical designs that incorporate reflective tasks on family civic values, critical analyses of online civic networks, and peer-collaboration exercises can deepen critical awareness and strengthen digital civic identities. Serious games and immersive technologies also offer promising pathways for developing civic agency and

digital citizenship (Liu & Shadiey, 2025), bridging individuals' micro-level skills with broader democratic aims.

Lastly, these implications extended beyond China. Education systems under strong political control, such as in parts of East Asian, Middle Eastern, or post-Soviet countries, face similar tensions between maintaining political order and fostering civic development (Bee, 2021). Yet, evidence suggests that civic engagement can still be nurtured through well-designed programs (Johns et al., 2025; Truong et al., 2024). The key is to strengthen students' civic agency within allowable boundaries: policymakers and educators can embed digital citizenship and participatory pedagogies into digital learning environments and curricula (OECD, 2022), providing university students with scaffolded civic tech experiences. In doing so, they prepare a new generation of educated youths not only as competent professionals but also as active, critical, and digitally fluent civic agents, an outcome especially valuable for countries striving to balance between control and democracy (UNESCO, 2024).

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Figure 1. Hypothesized model of digital civic engagement among Chinese university students.

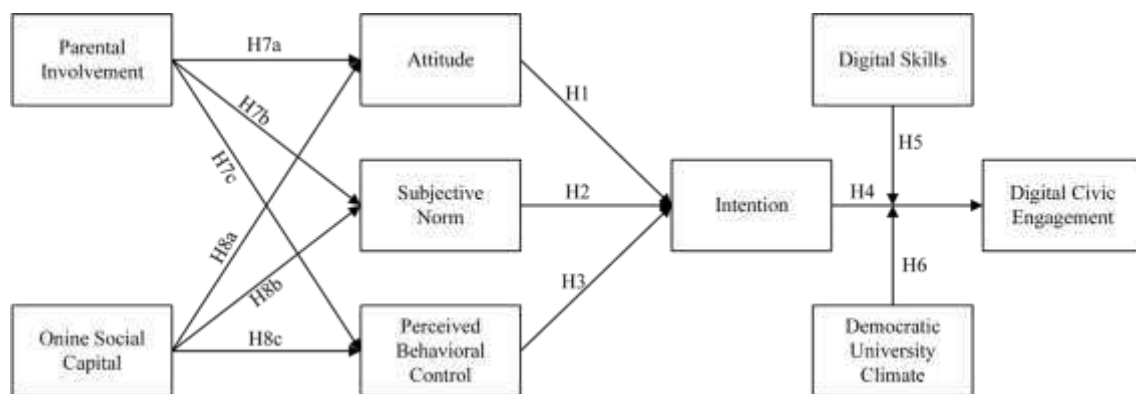
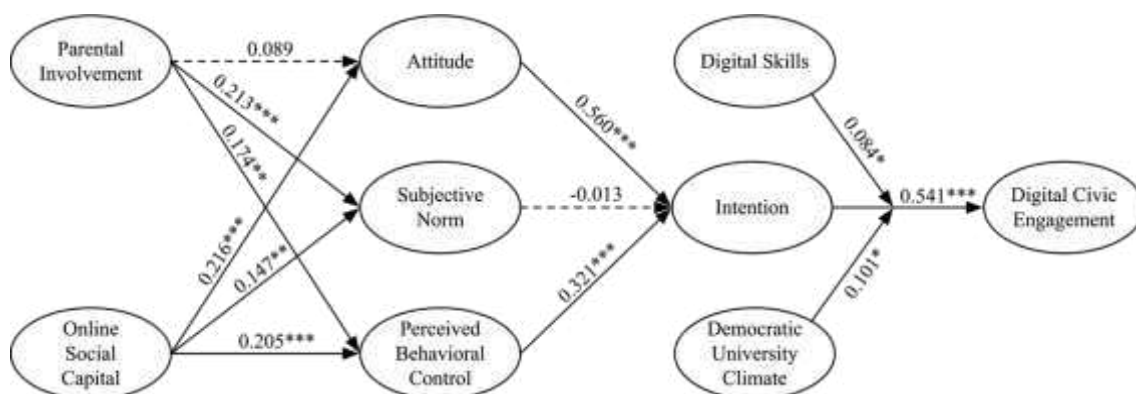


Figure 2. Hypothesis testing results. * $p < .05$, ** $p < .01$, *** $p < .00$.



Data availability

The datasets generated during or analysed during the current study are available from the corresponding author on reasonable request.

Acknowledgements

Ethics declarations

Competing interests

No potential conflict of interest was reported by the authors.

Ethical approval

This study (No.: BAC210089) was reviewed and approved by the Institutional Review Board for Human Research Protection, Shaanxi Normal University, before the commencement of data collection (Date of approval: March 13, 2023). The approval covered all procedures related to the recruitment of participants, the acquisition of informed consent, and data collection through online questionnaires. All research activities were conducted in accordance with the *Administrative Measures for Science and Technology Ethics Review (Trial)* issued by the Ministry of Science and Technology of the People's Republic of China, the *Personal Information Protection Law of the People's Republic of China (2021)*, the *Declaration of Helsinki (2024)*, and the institution's ethical guidelines for research involving human participants. No part of the research commenced before obtaining ethical approval.

Informed consent

Informed consent was obtained from all participants before they participated in the study. Written consent was obtained between April 25 and May 9, 2023, through a digital consent form embedded at the beginning of the online questionnaire by the research team. Participants were informed about the purpose of the study (academic research and publication), the voluntary nature of their participation, the procedures involved, and the assurance of anonymity and confidentiality of all responses. The consent form also clarified that there were no foreseeable risks associated with

participation and that aggregated, anonymized data would be used solely for research and publication purposes. Participants were required to read the full information page and to indicate their consent by selecting the “I agree to participate” option before they could access and complete the questionnaire.

Supplementary Files

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