



## RESEARCH ARTICLE

# Community identity profiles and COVID-19-related community participation

Xiangkun Wang<sup>1</sup>  | Zhixu Yang<sup>2</sup>  | Ziqiang Xin<sup>3</sup> |  
Yuntena Wu<sup>1</sup> | Shisan Qi<sup>1</sup>

<sup>1</sup>School of Psychology, Inner Mongolia Normal University, Hohhot, China

<sup>2</sup>School of Economics, Central University of Finance and Economics, Beijing, China

<sup>3</sup>Department of Psychology, Renmin University of China, Beijing, China

## Correspondence

Ziqiang Xin, Department of Psychology, Renmin University of China, 59 Zhongguancun Street, Haidian District, Beijing 100872, China.

Email: [xinziqiang@sohu.com](mailto:xinziqiang@sohu.com)

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## Abstract

Prior studies have revealed that community identity promotes participation. However, it remains unclear whether heterogeneous community identity profiles emerged and how they differed in coronavirus disease 2019 (COVID-19)-related community participation. Thus, the current study used a person-oriented approach to address these issues. A total of 1,083 Chinese residents participated in a national online survey in mid-March 2020. A latent profile analysis found that residents belonged in one of four community identity profiles: *Strong identifiers* (43.7%), *function-dominant identifiers* (25.0%), *emotion-dominant identifiers* (19.8%) and *weak identifiers* (11.5%). The *strong identifiers* profile showed the most positive COVID-19-related community management attitude and the highest participation intention and participation behaviour among the four profiles. Compared with *strong identifiers*, other profiles displayed less positive management attitude and lower participation intention and, in turn, exhibited less participation behaviour. The findings can help community organizers and administrators design intervention programs targeting specific subgroups amid the COVID-19 pandemic. Please refer to the Supplementary Materials section to find this article's Community and Social Impact Statement.

## KEYWORDS

community identity, community participation, COVID-19 pandemic, latent profile analysis

## 1 | INTRODUCTION

From February 2020 to recently, the coronavirus disease 2019 (COVID-19) outbreak has spread globally, leading almost all countries and territories to face prevention and control challenges (World Health Organization, 2020). China was the first country to experience this outbreak, and it was also among the earliest ones to control the viral pandemic (Shaw, Kim, & Hua, 2020). Scholars, officials and journalists have called for governments worldwide to study China's successful experience in pandemic responses (e.g., Cyranoski, 2020; Fleming, 2020; Lin, 2020). The keys to effective containment in China could include the government's lockdown policy and neighbourhood committees' policy implementation (Lin, 2020). However, any attempt to contain the virus requires active community participation (Marston, Renedo, & Miles, 2020). Investigating the antecedents of COVID-19-related community participation is relevant to governments and communities globally (Gilmore et al., 2020). The current study aimed to (a) seek out unique community identity profiles, (b) explore the associations between community identity profiles and COVID-19-related community participation behaviour and (c) test the mediating roles of community management attitude and participation intention in the identity-participation linkage.

### 1.1 | COVID-19-related community participation

Community participation refers to community residents' engagement in community affairs management and collective activities where residents achieve a common goal without pay (Xin, 2020; Zimmerman & Rappaport, 1988). Community participation occupies a central position in community psychology because it drives many outcomes of interest, including the sense of community, subjective well-being and community development (Albanesi, Cicognani, & Zani, 2006; Christens, 2012; Christens, Speer, & Peterson, 2016). Community participation is also crucial for preventing and controlling various pandemics, such as the Ebola virus disease outbreak (Gillespie et al., 2016) and the COVID-19 pandemic (Marston et al., 2020).

COVID-19-related community participation has conceptual uniqueness and practical relevance. Conceptually, there are similarities and differences between conventional community participation and COVID-19-related community participation. We can deem the latter a subset of the former. The former's goals and contents might be pretty broad, such as well-being improvement and community rights protection (e.g., Albanesi et al., 2006; McNamara, Stevenson, & Muldoon, 2013; Van Vugt, 2001). However, the latter's goal is to prevent and control the COVID-19 outbreak, and its contents comprise compliance with lockdown, cooperation with community management and community support through volunteering (Marston et al., 2020). Practically, the most critical difference between conventional and COVID-19-related community participation might lie in that the latter plays a paramount role in the COVID-19 prevention and control for individuals, communities and governments. For community residents, the COVID-19-related community participation might reduce the public's infectious risks and promote public health (Gilmore et al., 2020). For communities, such community participation could mitigate the pandemic's immediate damage and build community resilience in future emergencies (Marston et al., 2020). For governments, such participation can relieve the pressure of epidemic prevention and control (Kwok et al., 2020). Thus, given that the COVID-19 outbreak continues to spread globally, investigating how COVID-19-related participation is contingent on community identity profiles could benefit individuals, communities and governments worldwide.

### 1.2 | Community identity profiles

Community identity refers to the degree to which individuals identify with the territorial community where they live, mainly a residential area (Hummon, 1986). Previous literature has controversies over the components of community identity. Puddifoot (1995) posited a six-component community identity model. However, his subsequent empirical

research (Puddifoot, 2003) did not support the initial postulation, suggesting that this theoretical model failed to reflect the community identity's nature. By contrast, Xin and Ling (2015) proposed an alternative, bipartite model of community identity. This model postulated that community identity consisted of two components: functional identity reflects the satisfaction of community function and administration, and emotional identity refers to the strength of the emotional connection between residents and their community (Xin & Ling, 2015). Follow-up empirical work has offered converging and robust evidence to this bipartite community identity model (e.g., Wang, Yang, Hu, & Chen, 2021; Xin, Yang, & Ling, 2017; Yang & Xin, 2016a). Hence, the present research simultaneously explored the two components of community identity (i.e., functional and emotional identity).

Prior research has primarily used a variable-oriented approach to examine how community identity or its components impact community participation (e.g., Puddifoot, 2003; Van Vugt, 2001; Wang et al., 2021; Yang & Xin, 2016a). However, past studies have neglected to use a person-oriented approach to seek the unique response patterns underlying community identity's different components. Given this research gap, our first aim was to adopt a person-oriented approach, particularly latent profile analysis, to differentiate multiple community identifiers for the following reasons. Methodologically, community psychologists have increasingly advocated a person-oriented approach (e.g., cluster analysis, latent class analysis and latent profile analysis) in review articles and used it in empirical research (e.g., Bogat, 2009; Christens, Collura, & Tahir, 2013; Yang & Xin, 2016b; Yoo, 2019). Following this research line, we used this method to examine the heterogeneity in community identity. Practically, such heterogeneity is vital for community organizers and administrators because they tend to think the scientific findings of "categories" or "types" of people more appealing and much easier to understand than relationships among variables (e.g., Bogat, 2009; Christens et al., 2013; Yang & Xin, 2016b). In this regard, our findings might benefit community professionals if they need to design differential intervention programs targeting specific community identifiers amid the COVID-19 outbreak.

We expected a four-type of community identifiers for the following reasons. Prior studies have differentiated between *strong identifiers* from *weak identifiers* using the mean split technique (e.g., Van Vugt, 2001; Yang & Xin, 2016a). Based on this literature, we reasonably expected two subtypes: *strong identifiers* and *weak identifiers*. The *strong identifiers* subgroup would score high in both functional and emotional identity, whereas the *weak identifiers* subgroup would score low in both functional and emotional identity. Apart from these two subtypes, the person-oriented approach enables us to reveal additional theoretically meaningful subtypes (Bergman, Magnusson, & El-Khoury, 2003; Bogat, 2009). According to the bipartite community identity model, functional identity and emotional identity are distinct but interrelated (Xin & Ling, 2015). For instance, empirical work has demonstrated that the two components had a medium correlation with each other (e.g., Xin et al., 2017; Yang & Xin, 2016a). Thus, we speculated that there would exist two additional profiles as follows. The *Function-dominant identifiers* subgroup would describe the residents scoring high in functional identity but low in emotional identity, whereas the *emotion-dominant identifiers* subgroup would comprise the individuals low in functional identity but high in emotional identity. Altogether, we generated the first hypothesis as follows:

**H1.** Four community identity subtypes would emerge: *strong identifiers*, *function-dominant identifiers*, *emotion-dominant identifiers* and *weak identifiers*.

### 1.3 | Community identity profiles and COVID-19-related community participation

Ample evidence has demonstrated a pan-cultural phenomenon that community identity promoted community participation (e.g., McNamara et al., 2013; Van Vugt, 2001; Wang et al., 2021; Yang & Xin, 2016a). In a dry and water-scarce summer in the United Kingdom, *strong community identifiers* consumed less water than *weak identifiers* (Van Vugt, 2001). In Ireland, as community identity increased, the frequency of joining with community members to address a common issue became significantly greater (McNamara et al., 2013). In China, *strong identifiers* were more inclined to reach out to another community member in an emergency than *weak identifiers* (Yang & Xin, 2016a).

However, prior literature on the identity–participation linkage has two limitations. First, the context of such community participation did not pertain to an epidemic outbreak. So, it is imprudent to conclude that the identity–participation association would persist amid the COVID-19 pandemic without offering evidence. Second, few studies examined the role of community identity subtypes on participation and associated psychological mechanisms. Therefore, our second aim was to test the link between community identity profiles and COVID-19-related participation behaviour and the mediating roles of management attitude and participation intention.

We drew on the social exchange framework and social identity theory to formulate a prediction on how COVID-19-related participation is subject to community identity profiles. Through the lens of the social exchange framework (Blau, 1964; Cropanzano & Mitchell, 2005; Homans, 1958; Yamagishi & Kiyonari, 2000), in-group cooperation is subject to the cost–benefit calculation and expected reciprocity. Individuals could cooperate with other in-group members for the sake of future rewards and benefits (Cropanzano & Mitchell, 2005; Yamagishi & Kiyonari, 2000). Extending this logic to the community context, residents with strong functional identity may engage in more COVID-19-related community activities to reciprocate their community and expect future safety and security in return. On the other hand, according to social identity theory (Ellemers & Haslam, 2012; Tajfel, 1974), social identity's emotional component represented the affective significance of a group or community. The high emotional identity blurred the boundaries between private interests and community benefits, thereby promoting community engagement (Ellemers & Haslam, 2012; McNamara et al., 2013; Van Vugt, 2001). Altogether, functional identity can signal the reason-based motivation for expected reciprocity. By comparison, emotional identity could reflect an affect-based motive for establishing an emotional connection with the community. Despite the distinct mental processes, both of the two community identity components predicted more participation (e.g., McNamara et al., 2013; Van Vugt, 2001; Xin & Ling, 2015; Yang & Xin, 2016a). Thus, we reasonably speculated that residents with high functional and emotional identity (i.e., *strong identifiers*) would evince more participation than the other community identity groups. We did not generate a specific prediction about how all of the four community identity profiles differed from each other in participation behaviour because of no direct evidence. Instead, we produced the second hypothesis later.

**H2.** Compared with *strong identifiers*, the other profiles would display less COVID-19-related participation behaviour.

Two potential psychological mechanisms—COVID-19-related community management attitude and participation intention—were postulated and tested to explain why community identity profiles exhibited different participation behaviour. We operationalized community management attitude as the evaluation of the COVID-19-related community management with some degree of favour or disfavour and participation intention as the willingness to engage in COVID-19-related community volunteer activities. Based on the theory of planned behaviour (Ajzen, 1991, 2012), various distal variables may shape actual behaviour, but attitude and intention served as two proximal, independent and causal antecedents of behaviour. That might be because an attitude represents the desirability of a particular goal or behaviour, while an intention signals the end of the deliberation about one's prepared effort and preferred means to achieve the desired goal (Ajzen, 2012). Empirically, meta-analytic studies have supported these claims. A meta-analysis (Sheeran et al., 2016) involved 67 experiments on the attitude–behaviour relations in diverse health domains (e.g., disease management behaviour and epidemic prevention behaviour). This study showed that changing attitude had a medium effect on behaviour ( $d = 0.38$ ) (Sheeran et al., 2016). Another meta-analysis of 43 experiments found that an intentional change caused a medium behavioural change ( $d = 0.36$ ) (Webb & Sheeran, 2006). Thus, we assumed that community identity profiles were linked to COVID-19-related participation via attitude and intention. The specific hypothesis was as follows:

**H3.** Compared with *strong identifiers*, the other groups would exhibit less COVID-19-related participation behaviour via less positive community management attitude and lower levels of community participation intention.

## 1.4 | Overview of the present research

To examine these hypotheses, we conducted a national online survey in mid-March in China, including a large sample. We used a person-oriented approach (latent profile analysis) to identify distinct community identity subtypes that varied in functional and emotional identity. After that, we tested these community identity subtypes' associations with COVID-19-related community participation and the mediating roles of community management attitude and participation intention in the identity-participation linkage.

## 2 | METHODS

### 2.1 | Participants

We recruited 1,083 Chinese residents (49.8% males;  $M_{\text{age}} = 30.95$  years, range = 19–65 years) from an online survey platform (<http://www.wjx.cn/>) as participants. The participants completed the survey between 13 and March 19, 2020, while the COVID-19 outbreak spread nationwide and worldwide. Their residence covered 30 provinces (or autonomous regions/municipalities) in mainland China. All of the participants offered informed consent. The IRB of Sociology and Psychology at a Chinese university approved the study procedures.

Of the sample, 4.4% of the participants made less than ¥2000 a month, 26.8% earned ¥2,000–¥4,999 per month, 46.2% received ¥5,000–¥9,999 monthly (¥1 = US\$0.14 at the time of the survey). The remaining 22.6% had an average monthly income equal to or greater than ¥10,000. Concerning the educational level, 37.2% had an associate diploma or a lower level of education, 56.6% obtained a bachelor's degree and 6.2% held a master's or doctor's degree. As for the *hukou* (a Chinese household registration record identifying a citizen as a rural or urban resident) status, 69.7% were urban residents, and 30.3% were rural ones.

### 2.2 | Measures

#### 2.2.1 | Community identity

We used the Community Identity Scale (Xin & Ling, 2015) to gauge community identity. The eight-item instrument consists of four items designed to measure functional identity and the other four to assess emotional identity. The sample item for functional identity is, "I recognize the community's (or village's) administration level." The sample item for emotional identity is, "I feel the community (or village) has become a part of my life." Participants rated each item on a 6-point scale (1 = *not true at all*; 6 = *extremely true*). Previous research has offered support to this scale's sound psychometric properties (e.g., Xin et al., 2017; Xin & Ling, 2015; Yang & Xin, 2016a). In the present study, the scale's reliability was sound ( $\alpha = .83, .78$  and  $.83$ , for the whole scale, functional identity subscale and emotional identity subscale, respectively). As for the scale's construct validity, we conducted a measurement model (confirmatory factor analysis) comprising functional identity and emotional identity as the two latent variables and corresponding items as manifest variables. The model fit was good,  $\chi^2(17) = 94.22$ ;  $p < .001$ ; CFI = 0.98; TLI = 0.96; RMSEA = 0.07; SRMR = 0.03. Factor loadings ranged from 0.47 to 0.79 for functional identity and from 0.58 to 0.84 for emotional identity.

#### 2.2.2 | Community participation behaviour

Residents rated how often they had participated in the COVID-19-related community prevention and control activities within the previous month. The four items included: (a) Have you supported and cooperated with the access

restrictions imposed by the community (or village) during the outbreak? (b) Have you supported and cooperated with the temperature checks conducted by the community (or village) during the outbreak? (c) Have you supported and cooperated with the household information registration conducted by the community (or village) during the outbreak? (d) Have you supported and cooperated with the household inspection or telephone survey conducted by the community (or village) during the outbreak (1 = *never*, 2 = *sometimes*, 3 = *often*)? Moreover, a measurement model wherein all the four items loaded onto a single latent factor offered a sound fit to these data,  $\chi^2(1) = 1.79$ ;  $p > .05$ ; CFI = 0.99; TLI = 0.99; RMSEA = 0.03; SRMR = 0.01. Factor loadings ranged from 0.40 to 0.68. Thus, the average scores of the four items (internal reliability = 0.65) represented participation behaviour.

### 2.2.3 | Mediating variables

The mediating variables included COVID-19-related community management attitude and community participation intention. Two items ( $\alpha = .62$ ) were used to measure community management attitude: (1) Do you support the community (or village) to strengthen the closed management during the outbreak (1 = *not support at all*, 6 = *extremely support*)? (2) Do you agree that the community (or village) restricts the number of times residents enter and leave the community weekly during the outbreak (1 = *extremely disagree*, 6 = *extremely agree*)? Also, we used two indicators ( $\alpha = .86$ ) to assess community participation intention: (a) Are you willing to serve as a voluntary inspector for epidemic prevention once a week for your community (or village) (1 = *extremely unwilling*, 6 = *extremely willing*)? (b) Are you willing to serve as a temperature checker for commuters at the entrance of the community (or village) (1 = *extremely unwilling*, 6 = *extremely willing*)? We conducted a measurement model consisting of the two mediators as two latent variables and the corresponding indicators as the manifest variables. Results showed that the two-factor model provided an excellent fit to these data,  $\chi^2(1) = 3.30$ ;  $p > .05$ ; CFI = 0.99; TLI = 0.99; RMSEA = 0.05; SRMR = 0.01; factor loadings ranged from 0.65 to 0.91. Thus, the average scores were created to represent the two mediators, respectively.

## 2.3 | Analytic strategies

Firstly, we performed a latent profile analysis (LPA) to identify residents' community identity profiles based on the Community Identity Scale's eight items' responses using Mplus 8.3 software (Muthén & Muthén, 1998-2017). According to Nylund-Gibson and colleagues (Nylund, Asparouhov, & Muthén, 2007; Nylund-Gibson & Choi, 2018), we used the following criteria on model fits to determine the optimal number of latent profiles—Bayesian information criterion (BIC), sample-size adjusted Bayesian information criterion (SABIC), Vuong-Lo-Mendell-Rubin adjusted likelihood ratio test (VLMR-LRT) and bootstrapped likelihood ratio test (BLRT). The models with small BICs and SABICs are superior to those with large values. For VLMR-LRT and BLRT, a  $p$ -value less than .05 indicates that the  $G$  profile model is better than the  $G-1$  profile model, where  $G$  represents the number of profiles. The other criteria are interpretability and the proportion of persons in each profile. Each profile should include over 5% of individuals to avoid extracting unstable and invalid categories. According to these criteria, we compared the 2- to 4-profile models.

Next, we conducted a multivariate analysis of covariance (MANCOVA) to test the relations between community identity profiles and COVID-19-related community participation behaviour, management attitude and participation intention. We then performed a multicategorical mediation model (Hayes & Preacher, 2014) using PROCESS macro (Hayes, 2017) to test whether community identity profiles were indirectly related to participation behaviour via attitude and intention. The covariates included age, gender, education, *hukou* status and personal monthly income. Following Hayes and Preacher (2014), the multicategorical mediation analysis created dummy codes for the community identity profiles, modelled the *strong identifiers* profile as the reference category and calculated direct and indirect

effects of the other community profiles relative to this reference category. A bootstrapping procedure with 5,000 resamples estimated each relative indirect path's 95% confidence interval (CI). The CI excluding zero indicates a significant indirect effect.

### 3 | RESULTS

#### 3.1 | Community identity profiles

Table 1 depicts the means, standard deviations and correlations of study variables. Table 2 summarizes the LPA results. Among the four solutions, the 4-profile model had the smallest BIC and SABIC. Additionally, the significant  $p$ -values of VLMR-LRT and BLRT suggest that the 4-profile model was superior to the 3-profile one. Furthermore, the 4-profile model had more than 5% of the sample in each profile without ambiguity about the interpretability. In sum, we selected the 4-profile as the final model.

Figure 1 presents the estimated means of Community Identity Scale's eight items for the four community identity profiles. The MANCOVA, conducted to compare the four groups, showed an overall significant difference between the four profiles on functional identity and emotional identity (Wilks' lambda = .11,  $F [6, 2,146] = 731.44$ ;  $p < .001$ ;  $\eta_p^2 = 0.67$ ). Table S1 in the supplementary materials presents—distinct by profile—the means, standard deviations,  $F$ -ratios and post-hoc comparisons (with Bonferroni correction) for scores on functional and emotional identity. The first—and largest—latent profile ( $n = 473$ ; 43.7% of the sample) included residents who reported the highest levels of both functional identity ( $M = 5.07$ ;  $SD = 0.49$ ) and emotional identity ( $M = 4.86$ ;  $SD = 0.58$ ). We labelled this profile *strong identifiers*. The second profile ( $n = 271$ ; 25.0% of the sample) displayed relatively high levels of functional identity ( $M = 4.68$ ;  $SD = 0.51$ ) and comparably low emotional identity ( $M = 2.91$ ;  $SD = 0.61$ ). Furthermore, in this profile, results for a paired-sample  $t$  test showed functional identity was significantly greater than emotional identity,

**TABLE 1** Descriptive statistics and correlations between study variables ( $N = 1,083$ )

Study variable	1	2	3	4	5
1. Functional identity	—				
2. Emotional identity	.44***	—			
3. Community participation behaviour	.18***	.10***	—		
4. Community management attitude	.26***	.21***	.35***	—	
5. Community participation intention	.27***	.37***	.28***	.36***	—
$M$	4.46	3.89	2.85	5.34	4.65
$SD$	0.91	1.21	0.27	0.81	1.24

Abbreviations:  $M$ , mean;  $SD$ , standard deviation.

\*\*\* $p < .001$ .

**TABLE 2** Criteria for latent profile models of community identity ( $N = 1,083$ )

Model tested	BIC	SABIC	VLMR-LRT ( $p$ value)	BLRT ( $p$ value)
Two profiles	27,448.26	27,368.86	<.001	<.001
Three profiles	26,956.01	26,848.02	.045	<.001
Four profiles	26,511.19	26,374.62	<.001	<.001

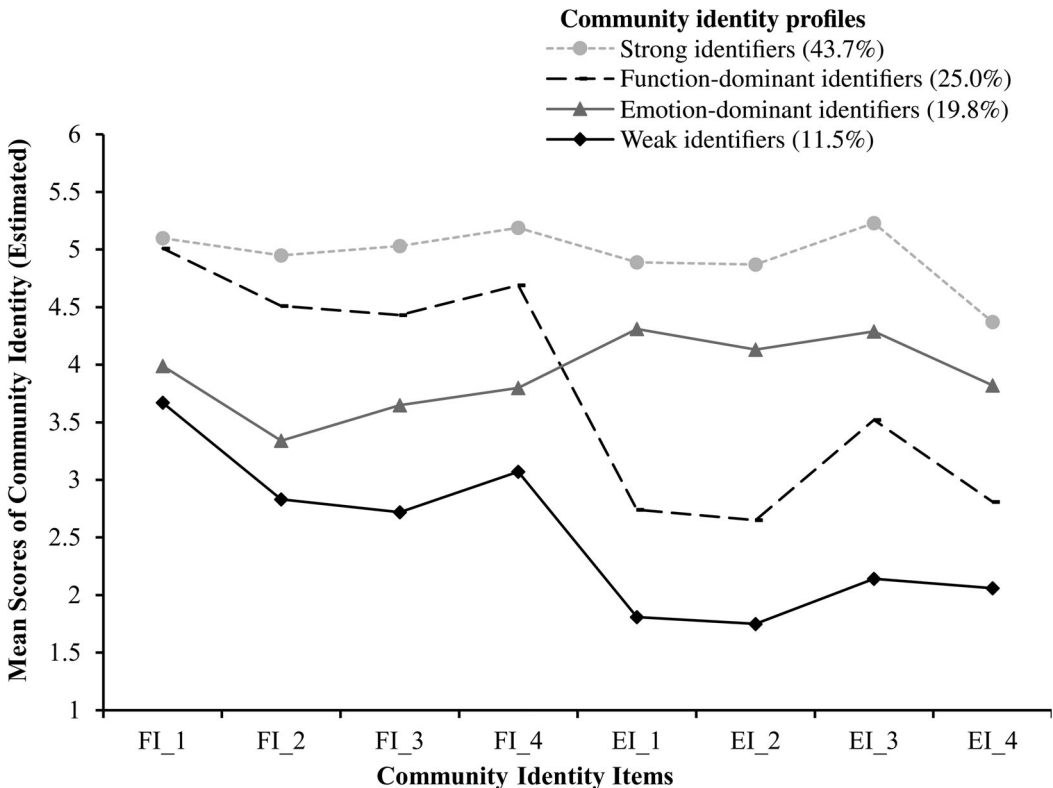
Abbreviations: BIC, Bayesian information criterion; BLRT, bootstrapped likelihood ratio test; SABIC, sample-size adjusted Bayesian information criterion; VLMR-LRT, Vuong-Lo-Mendell-Rubin adjusted likelihood ratio test.

$t(270) = 38.13; p < .001; d = 2.31$ . We described this profile as *function-dominant identifiers*. The third profile ( $n = 214$ ; 19.8% of the sample) had intermediate levels of both functional identity ( $M = 3.65$ ;  $SD = 0.54$ ) and emotional identity ( $M = 4.13$ ;  $SD = 0.59$ ). However, we conducted a paired-sample  $t$  test, and results indicated this profile reported significantly higher levels of emotional identity than functional identity,  $t(213) = 8.35; p < .001; d = 0.57$ . Hence, we characterized this profile as *emotion-dominant identifiers*. Finally, the fourth profile, which contained 11.5% of the sample ( $n = 125$ ), comprised residents with the lowest levels of both functional identity ( $M = 3.05$ ;  $SD = 0.71$ ) and emotional identity ( $M = 1.94$ ;  $SD = 0.64$ ). So, we labelled this profile *weak identifiers*.

In the supplementary materials, we depict participants' demographic characteristics in each community identity profile (see Table S2) and results for multinomial logistic regression on the associations between demographics (predictors) and community identity profiles (outcomes; see Table S3). This regression model predicted participants' category membership in each remaining profile relative to the *strong identifiers* profile. As shown in Table S3, results indicated that the only significant predictors were *hukou* status and income. Rural residents ( $B = 0.51$ ;  $SE = 0.19$ ;  $p = .008$ ) and those earning less than ¥5,000 a month ( $B = 0.44$ ;  $SE = 0.19$ ;  $p = .023$ ) were more likely to be in the *emotion-dominant* (vs. *strong*) *identifiers* profile than urban residents and those receiving ¥5,000 or higher a month.

### 3.2 | Community identity profiles and community participation

As presented in Table 3, results for MANCOVA showed that the main effect of community identity profiles was significant (Wilks' lambda = .86,  $F[9, 2,609] = 19.18; p < .001; \eta_p^2 = 0.05$ ). Subsequent univariate analyses of



**FIGURE 1** The latent profiles of Chinese residents' community identity ( $N = 1,083$ ). EI = emotional identity. FI = functional identity; F1\_1 to EI\_4 represent the eight items of the Community Identity Scale



**TABLE 3** Multivariate analyses of covariance (MANCOVA) comparing the community identity profiles on outcomes of interest ( $N = 1,083$ )

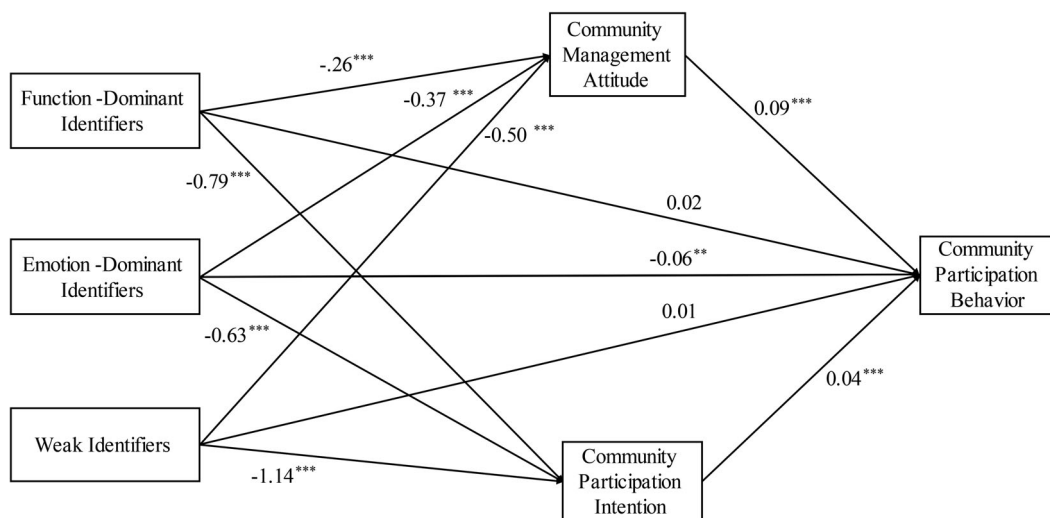
Variables	1. Strong identifiers ( $n = 473$ )	2. Function-dominant identifiers ( $n = 271$ )	3. Emotion-dominant identifiers ( $n = 214$ )	4. Weak identifiers ( $n = 125$ )	Univariate $F \eta_p^2$	Means different, $p < .05$
	$M (SD)$	$M (SD)$	$M (SD)$	$M (SD)$		
Community participation behaviour	2.89 (0.21)	2.86 (0.26)	2.77 (0.32)	2.81 (0.32)	10.69*** (.03)	1 > 3/4; 2 > 3
Community management attitude	5.53 (0.60)	5.28 (0.85)	5.17 (0.86)	5.04 (1.10)	19.76*** (.05)	1 > 2/3/4; 2 > 4
Community participation intention	5.10 (0.92)	4.30 (1.26)	4.50 (1.20)	3.96 (1.65)	47.52*** (.12)	1 > 2/3/4; 2/3 > 4

Note: Overall MANCOVA: Wilks' lambda = 0.86,  $F(9, 2,609) = 19.18$ ;  $p < .001$ ;  $\eta_p^2 = .05$ . Covariates: gender, age, education, personal monthly income, hukou status.

Abbreviations:  $M$ , mean;  $SD$ , standard deviation.

\*\*\* $p < .001$ .

covariance indicated that community identity profiles had significant associations with participation behaviour ( $F[3, 1,074] = 10.69$ ;  $p < .001$ ;  $\eta_p^2 = 0.03$ ), community management attitude ( $F[3, 1,074] = 19.76$ ;  $p < .001$ ;  $\eta_p^2 = 0.05$ ) and participation intention ( $F[3, 1,074] = 47.52$ ;  $p < .001$ ;  $\eta_p^2 = 0.12$ ). Further pairwise comparisons with Bonferroni correction are also summarized in Table 3. For community participation behaviour, *strong identifiers* exhibited higher scores than *emotion-dominant identifiers* or *weak identifiers* ( $ps < .05$ ). *Function-dominant identifiers* reported more participation behaviour than *emotion-dominant identifiers* ( $ps < .01$ ). Furthermore, for community management attitude, the *strong identifiers* subgroup score was significantly higher than that of the other three subgroups ( $ps < .01$ ).



**FIGURE 2** The multicategorical mediation model linking the three community identity profiles with community participation behaviour via community management attitude and community participation intention. The reference category is the *strong identifiers* profile. Path coefficients are unstandardized beta coefficients. \*\*  $p < .01$ . \*\*\*  $p < .001$

The *function-dominant identifiers* subgroup's score was significantly higher than that of the *weak identifiers* subgroup ( $ps < .05$ ). Similarly, for community participation intention, except for the non-significant difference between *function-dominant* and *emotion-dominant identifiers*, all pairwise comparisons were significant ( $ps < .05$ ). Specifically, the residents classified as *strong identifiers* reported the highest scores, followed by *function-dominant* and *emotion-dominant identifiers*, whereas *weak identifiers* displayed the lowest score.

Altogether, the *strong identifiers* profile displayed the highest attitude, intention and behaviour. Moreover, the *weak identifiers* profile was consistently among the groups displaying the lowest attitude, intention and behaviour.

Figure 2 shows the mediation results linking the three community identity profiles (predictors) with participation behaviour (outcome variable) via community management attitude and participation intention (mediators), relative to the *strong identifiers* profile. All indirect paths were significant when controlling for demographics. Specifically, *function-dominant identifiers* displayed significant less participation behaviour via lower levels of management attitude ( $B = -0.02$ ; 95% CI  $[-0.038, -0.012]$ ) and participation intention ( $B = -0.03$ ; 95% CI  $[-0.044, -0.017]$ ). Moreover, the *emotion-dominant identifiers* profile was associated with less participation behaviour via lower management attitude ( $B = -0.03$ ; 95% CI  $[-0.052, -0.019]$ ) and participation intention ( $B = -0.02$ ; 95% CI  $[-0.037, -0.012]$ ). Finally, the *weak identifiers* profile exhibited less participation behaviour via lower management attitude ( $B = -0.05$ ; 95% CI  $[-0.071, -0.025]$ ) and intention ( $B = -0.04$ ; 95% CI  $[-0.067, -0.024]$ ).

## 4 | DISCUSSION

Theoretically, based on the bipartite community identity model (Xin & Ling, 2015), the present research focussed on community identity's two components—functional and emotional identity. Methodologically, prior work has adopted a mean-split technique to distinguish *strong identifiers* from *weak identifiers* (e.g., Van Vugt, 2001; Yang & Xin, 2016a). Going beyond this literature, we used a model-based person-oriented approach (latent profile analysis) to elucidate more theoretically meaningful and practically vital subtypes of community identity. Four profiles of community identifiers emerged: (a) *strong identifiers* (43.7%; high in both components), (b) *function-dominant identifiers* (25.0%; high in functional identity but low in emotional identity), (c) *emotion-dominant identifiers* (19.8%; intermediate levels of both components, but emotional identity was higher than functional identity) and (d) *weak identifiers* (11.5%; low in both components). The response pattern of *emotion-dominant identifiers* diverged from the initial prediction that this profile might score high in emotional identity but low in functional identity in the absolute sense. However, this profile's emotional identity was significantly greater than functional identity in the relative sense, so this subgroup was still labelled as *emotion-dominant identifiers*. Additional analyses showed that those in the *emotion-dominant identifiers* profile were more likely to be rural residents and economically disadvantaged ones than those in the *strong identifiers* profile. Thus, it is plausible that *emotion-dominant identifiers* may have too limited financial resources to live in ideal community conditions, leading them to evince lower functional identity than emotional identity. Yet, this conjecture remains to be tested in future research.

Integrating social exchange framework, social identity theory and theory of planned behaviour, we demonstrated that the four identity profiles differed in COVID-19-related community participation behaviour wherein attitude and participation intention played the mediating roles. Specifically, lower levels of management attitude and community participation intention linked three identity groups—*function-dominant*, *emotion-dominant* and *weak identifiers*—with lower COVID-19-related community participation behaviour. These findings were in line with the robust identity-participation linkage demonstrated in previous variable-oriented studies (e.g., McNamara et al., 2013; Van Vugt, 2001; Wang et al., 2021; Yang & Xin, 2016a). However, we contributed to this stream of literature in two ways. First, going beyond the knowledge that such a linkage occurred in local social dilemmas and small-scale common issues, we demonstrate this association persisted amid a global pandemic—the COVID-19 outbreak. Second, the results that the *strong identifiers* profile exhibited the greatest participation levels highlighted that the joint roles of functional and emotional identity. The combination of the two components had led to the most desirable participation outcomes. Without the roles of both community identity components (i.e., *weak identifiers*), residents would

display less supportive attitudes toward COVID-19-related community management and exhibit reduced inclination/action to engage in COVID-19-related community activities. We speculated that functional identity reflected the reason-based motivation to reciprocate the community and seek future utility in return (Blau, 1964; Cropanzano & Mitchell, 2005; Homans, 1958). By contrast, emotional identity signalled the emotion-based goal to feel community connectedness and closeness (Ellemers & Haslam, 2012; Tajfel, 1974). As a result, the ostensibly opposite identity jointly triggered the supportive attitude and salient intention to participate in COVID-19 prevention and control actions, which, in turn, predicted more participation behaviour (Ajzen, 1991, 2012).

The present study might have two policy implications. Firstly, the *strong identifiers* profile, which had strong functional and emotional identity, accounted for more than two-fifth of the sample. As the largest profile, those in this subgroup were most likely to engage in COVID-19-related community activities among all four subgroups. A large *strong identifiers* group may explain why the communities in China could efficiently combat the COVID-19 epidemic. Previously, such a phenomenon puzzled some Western scholars and journalists (e.g., Cyranoski, 2020; Fleming, 2020; Lin, 2020). Secondly, relative to the *strong identifiers* profile, the other three profiles exhibited lower participation behaviour, in which attitude and intention served as mediators. The Chinese government and neighbourhood committees should take these results seriously. They should not be blindly optimistic about pandemic responses from Chinese residents. Instead, they must pay attention to those with marginal community identity and design informed intervention programs to boost their COVID-19-related participation. Suppose that an intervention program aimed to increase the COVID-19-related participation among the profiles with inadequate emotional identity (i.e., *weak identifiers* and *function-dominant identifiers*). Then, it is feasible to integrate interdependence elements (e.g., pronouns such as “we,” “our” and “ours”) into the name, logo and slogans of communities. Experimental research indeed found that the interdependence mindset can engender emotional identity to increase participation (Xin et al., 2017). Moreover, suppose that the intervention priority concerned those with marginal functional identity (i.e., *weak identifiers* and *emotion-dominant identifiers*). In that case, community administrators can improve service quality, respond to residents' requests positively and promote communities' livability and convenience (Puddifoot, 2003; Xin, 2020).

Despite the implications, we acknowledged several limitations. One limitation is that our sample of community residents came from China. Thus, future researchers can profitably examine whether the heterogeneity in community identity and the identity–participation linkage can be generalized to other societies. Another limitation lies in that the current findings are correlational rather than causal. For instance, the mediation analysis was performed based on cross-sectional data without allowing for causal inferences (Hayes, 2017). Future studies could benefit from replicating our findings using an experimental design.

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## CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon request.

## ORCID

Xiangkun Wang  <https://orcid.org/0000-0002-5362-834X>

Zhixu Yang  <https://orcid.org/0000-0002-6892-8716>

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## SUPPORTING INFORMATION

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