Citizen Crisis Self-Efficacy: An SEM Analysis of Data from Three Chinese Communities

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Abstract. 21st-century witnesses urban cities being upset by various hazards, like contagious illness, economic fluctuation, and rare climate hazards, which urban cities suffer from an oblivion of their micro-level coping ability and resiliency. It is vital to explore their perceived efficacy of coping behavior after being tested by the pandemic. This research established a model to explore the relationship between *vulnerability coping behaviors* (VCB)and *crisis self-efficacy* (CSE), adding mediators *community resilience* (CR)and *anticipation of extreme crisis* (AEC). By random sampling from three urban cities, Beijing (207), Shanghai (220), and Wuhan (226) in June 2024, June *structural equation model* analysis shows that two mediations by CR and AEC are significant, but the chained mediation failed. The model also passes the cross-sample invariance test, ensuring its stability.

As an exploratory study, it contributes to the field of disaster resilience research as follows: (1)It expands the *coping* theory by developing a new construct, *anticipation of extreme crisis,* to surpass the common scenarios and develop a model to explain other antecedents of *crisis coping efficacy*. (2) Wuhan and Shanghai citizens derive lower *crisis self-efficacy* from their *anticipation of extreme crises*, and they bolster their crisis efficacy on *community resilience*. While Beijing citizens trust less in *community resilience* than themselves to cope. Besides, their crisis efficacy is more aligned with the *anticipation of extreme crises*.

Keywords: Crisis Self-Efficacy, Vulnerability Coping Behavior, Community Resilience, Structural Equation Model.

1 Introduction

The 21st century has witnessed more hazards like excessive flooding in urban cities, Chikungunya fever, and new variations of pandemics. Abnormal is the *new normal*, especially for urban citizens who gradually feel a decreased sense of safety and weaning advantages of living in the city. Yet disaster resilience literature focuses less on individual perception of crisis efficacy than on physical assets, infrastructure at the mass scale urban resilience [1] . It is vital to evaluate how far citizens may be equipped psychologically, physically, and strategically to confront with compound crisis [2].

N. B. Abdul Ghani et al. (eds.), *Proceedings of the 2025 6th International Conference on Big Data and Social Sciences (ICBDSS 2025)*, Advances in Computer Science Research 126,
https://doi.org/10.2991/978-94-6239-598-5_6

The disaster resilience literature amasses a sum of extreme conditions of crisis concerning experts' advice towards dwellers of suburban areas. While urban citizens, due to habituation to enclosed, high-tech supported environments, are not good at formulating strategies in facing extreme conditions that expose vulnerabilities and wipe out the whole safety net and infrastructure[3].To fill this gap, a structural equation model was established to explore *vulnerability coping behaviors* (VCB)and *crisis self-efficacy* (CSE), adding mediators like *community resilience* (CR)and a new construct, *anticipation of extreme crisis* (AEC).

The article consists of 7 sections, section 1,2 generalized about research background, literature review, and propose hypotheses with a theoretical model. Sections 3 and 4 test the measurement model, then evaluate the structural model. Sections 5 and 6 discuss the results and present limitations, conclusion, and practical implications.

2 Literature Review and Hypotheses Development

2.1 Literature Review

(1) *Crisis Self-Efficacy* (CSE) CSE refers to the subjective appraisal of coping abilities with hazardous situations. It embodies efficiency to deal with emergencies, anticipation of future crises, and evaluations of outside agencies' interactive processes. It proved to be a proliferate *mediator or moderator* to predicates adjustment disorder [4]or learning organizations [5]. It was also being posited as an antecedent [6], or dependent variable of ICT adoption [7]. More literature deals with certain crisis scenarios for expert-related categories [8]. This study aims to reveal the mechanism between individual CSE and other antecedents of coping actions, such as valuations of community resilience related to prospects of extreme disaster scenarios, some or natural disasters and some are comprehensive hazards derived from man-made disputes or crises.

(2) *Vulnerability Coping Behaviors* (VCB) Coping is a traditional psychological concept to describe "cognitive and behavioral efforts to manage internal and/or external demands that are appraised as taxing or exceeding the resources of the person" [9]. *Coping* literature elaborates on different skills, abilities, and plans to plow through difficult situations, traumas, or disaster events [10]. Most research focused on particular challenges, such as risk attempts, particular obsessions, emotional coping strategies [11], and maladaptive syndrome [12]. VCB refers to behaviors under continuous appraisal of one's vulnerable points in strained situations; it revolves around practical behaviors and dilemmas to face a crisis. VCB echoes the need to counter a hazardous world and the agency to remedy the vulnerability in advance. There always lies the gap between the level of urban community resilience and micro-level strategies of coping [13].

(3) *Community Resilience (CR) Community resilience* is primarily categorized into two approaches: One emphasizes tangible infrastructure and institutional resources such as transportation systems and emergency services. The other focuses on intangible capacities, including mitigation strategies exemplified by crisis leadership and social capital. Though a mixed approach applied comprehensive index may lend much credit, particularized micro-level case-studies are still needed for citizens who are accustomed

to safety and are unaware of how resilient they are. For example, Bangkok was surprised by the collapse of buildings that failed to withstand extreme violent earthquakes due to the infrastructure standards in March 2025.

(4) *Anticipation of Extreme Crisis* (AEC) Urban cities turn to minimize disasters and ensure safety. However, the illusion was disturbed by new, unexpected disasters. Urban citizens seldom anticipate coping capacity and efficacy during extreme crises, unless they learn thematically from books or documentaries, identifying patterns where minor mistakes acerbated into disasters, but are still unable to test their capacity to cope [14]· Where safety culture sees mentioning crisis as taboo, crisis learning is impeded [15]. However, the pandemic enabled citizens to anticipate how stakeholders around them will act during extreme crises, without which they could only imagine, or be reluctant to anticipate [16]. The research on AEC is necessary to reveal the mechanism between VCB and CSE.

2.2 Hypothesis Development and the Theoretical Model

Prior research suggests, CSE is positively correlated with individual coping strategies to recover from vulnerabilities (VCB); additionally, the perceived vulnerability, physically and psychologically, is also correlated with perceived possible exposure to extreme crisis or hazards. CSE is also affected by CR, from multiple aspects like crisis leadership, daily safety measures and disaster protocols, social capital, etc, among all these, CR is also under subjective appraisal leading to variations of personal CSE, such as social punishment from pandemic-related stigmas, since perception of risks leads back to vulnerability. To bridge the gap between VCB→CSE evaluations, three hypotheses are developed. (Fig.1)

H1: VCB and CSE is mediated by CR.
H2: VCB and CSE is mediated by AEC.
H3: VCB and CSE is mediated by CR and AEC.

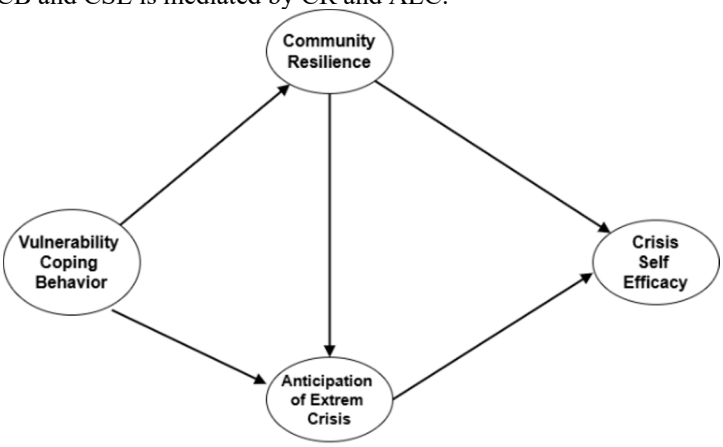

Fig. 1. Theoretical Model

3 Measures and Data Collection Procedures

3.1 Measures of the Key Variables

VCB was adapted by the 60-item COPE scale [17]. It formulated individual behaviors about conscience behaviors to retrieve and enhance self-perceived weakness. It included items like" *I discuss and distribute my experience of dealing with crises on the internet",* etc. ***CSE*** was adapted from Schwarzer and Jerusalem's [18]GSE index and Park and Avery's [19]*Crisis Self-Efficacy* index. It used items like "*I am confident of my ability in crisis management",* etc. ***CR*** was resorted to Norris et al.'s [20]and Cutter's [21]research and adapted to Chinese situations. It used items like" when *aid from outside of the community is absent or obsolete, community leaders will invent a new social organization to substitute for similar functions"*, etc. The new construct ***AEC*** was adapted from the 60-item COPE scale and modified to suit extreme urgent conditions. It used items like" I will purchase resources around the strategy of the doomsday bunker and imitate their strategies.", etc. All items use 7-point Likert scales, aside from a few 1-100 slider items. (The questionnaire is at the back of the article)

3.2 Data Collection and Participants

To investigate urban cities of China where the pandemic had a serious influence on crisis learning for individual citizens, three cities were chosen. Wuhan was the first and most heavily traumatized by the pandemic, which entails a heavy load of crisis governance and resourceful civil communities. Beijing had its first affected case in June 2020. Municipal government responded with high administrative efficiency and stringency downward the district level control [22]. Shanghai, with foreign enterprises withdrawn successively, plodded with staggering economic resilience and accurate grid control of local communities. The questionnaire was modified by scholars who had expertise in public management. After a pilot study in Shanghai, items with too low factor loadings were deleted and modified for more clarity. The anonymity of respondents was guaranteed and informed in the introduction of the questionnaire. The random sample, cross-sectional surveys in June 2024 in the three cities, obtained 250 samples each. The data were trimmed due to missing data. Final samples were Beijing (N=207), Shanghai (N=220), and Wuhan (N=226). Respondents profile is in Table 1 below. The samples shared a common trait of high in educational level, a high-level percentage of respondents married with children, and a considerable percentage of young and middle-aged population.

Table 1. Summary Table of Demographic Characteristics (Sampling Profile)

Specific Classification	Beijing (N=207)	Shanghai (N=220)	Wuhan (N=226)
Educational Level			
High School Graduate	8 (3.86%)	9 (4.09%)	15 (6.64%)

College Graduate	193 (93.24%)	209 (95.00%)	204 (90.27%)
PhD Graduate	6 (2.90%)	2 (0.91%)	7 (3.10%)
Income Level(rmb/month)			
Below 2,000	8 (3.86%)	3 (1.36%)	14 (6.19%)
2,000 - 5,000	34 (16.43%)	16 (7.27%)	34 (15.04%)
5,000 - 8,000	69 (33.33%)	52 (23.64%)	69 (30.53%)
8,000 - 10,000	67 (32.37%)	51 (23.18%)	67 (29.65%)
10,000 - 13,000	29 (14.01%)	98 (44.55%)	42 (18.58%)
Age Distribution			
Below 25	18 (8.70%)	18 (8.18%)	31 (13.72%)
26 - 35	115 (55.56%)	115 (52.27%)	122 (53.98%)
36 - 45	56 (27.05%)	70 (31.82%)	56 (24.78%)
46 - 55	14 (6.76%)	12 (5.45%)	14 (6.19%)
Above 56	4 (1.93%)	5 (2.27%)	3 (1.33%)
Marital Status			
Unmarried	47 (22.71%)	47 (21.36%)	55 (24.34%)
Married without Children	16 (7.73%)	16 (7.27%)	8 (3.54%)
Married with Children	144 (69.57%)	157 (71.36%)	163 (72.12%)

In order to delve deeper into citizens' crisis self-efficacy, a few brief supplementary interviews were conducted. We selected a few survey participants as below: a Shanghai citizen who have been served as a volunteer (20 years old, college student, male) and a Wuhan community grid worker (33 years old, female) as well as two resident committee members (one 42 years old male from Shanghai, and a 39 years old female from Beijing). The Semi-structured interviews, each lasting approximately 15 minutes, were conducted online. The interview focused on their personal experiences and understanding of community resilience during the pandemic, and comparison with other crises they have coped with.

3.3 Data Analysis Procedures

This research deployed *structural equation modeling* (*SEM*), a multivariate data analysis method, to analyze relationships among constructs of latent variables, which are encountered often in social sciences. For the start, the correlation matrix of key variables, convergent validity, and composite reliability of the measurement model was tested by SPSS 25 and Amos 24. To fit the requirements of maximum likelihood, normality tests were conducted. Then, the proposed model was tested in Amos 24. The indices for assessing the measurement model are Cronbach's Alpha with *AVE*, and Cronbach's Alpha should be better," greater than 0.7", while "0.6 to 0.7" is acceptable. *AVE* should be better above 0.5 no less than 0.4[23]. *CR* should be above 0.7[24]. The threshold values for assessing model fit in *SEM* include absolute fit and incremental fit indices. The absolute fit indices are *NFI, IFI, TLI*, and *CFI*. The basic fit indices include *RMSEA* and χ^2/df. χ^2/df should be between 1 to 3[25]. Absolute fit indices "above 0.9" =good, acceptable when "0.8 to 0.9". *RMSEA* <0.05 is a good fit; it is acceptable if 0.05<*RMSEA*<0.08[26]. The mediation paths are calculated by the Amos 24 bootstrapping process and confidence intervals.

4 Results

4.1 CMV Test

Two efforts were deployed to reduce the CMV effect. First, the questionnaire was reviewed by experts from different professional fields, and it uses different scale types to measure *CMV*. Second, CFA was deployed to test CMV effects[27]. By comparing the theoretical model with a single-factor model in which all indicators were loaded onto one latent factor, the results showed that the single-factor model exhibited a very poor fit (χ^2/df = 7.3, *CFI* = 0.74, *TLI* = 0.69, *RMSEA* = 0.175, Beijing sample; or χ^2/df = 8.59, *CFI* = 0.731, *TLI* = 0.682, *RMSEA* = 0.186, shanghai sample) stands in stark contrast to the good fit of the theoretical model. This indicates that a single factor is insufficient to account for the variance, and common method bias is not a serious concern in this study.

4.2 Evaluation of the Measurement Model

To evaluate the measurement model, confirmatory factor analysis was conducted using Amos 24. The convergent validity, composite reliability, and Cronbach's Alpha of the construct and model fit of the whole theory model are reported below. For the Shanghai sample: 0.814<α<0.917,0.534<*AVE*<0.786; 0.819<CR<0.917, all HTMT is below 0.85 except that of AEC-VCB=0.995. Beijing Sample: 0.715<α<0.907,0.5<*AVE*< 0.794, 0.716<CR <0.92, HTMT are all below 0.85, and Wuhan Sample: 0.673<α<0.914,0.437<*AVE*<0.781, 0.687<*C*R<0.915. HTMT is all below 0.85. Among all the indices, one of the Shanghai variables (AEC-VCB) may have unsatisfactory HTMT, and the Wuhan AVE of variable CR was below the threshold value. Besides, the construct AEC may have similar connotations with VCB for some

Shanghai citizens, but the other two cities have proper HTMT values. Consider that the metrics did not adhere to established metrics but were adapted to Chinese local communities, and with particular emphasis on the subjective dimension of resilience, this is understandable.

The model fits of the measurement model generally were fit for further analysis. Shanghai increment fit indices were between 0.933 to 0.963, χ^2/df=2.14, RMSEA=0.072. Wuhan increments fit indices range between 0.926 to 0.966, χ^2/df=1.794, *RMSEA*=0.059. Beijing increments fit indices range between 0.922 to 0.957, χ^2/df=2.155, *RMSEA*= 0.075. (all *NFI, IFI, TLI*, and *CFI>0.9, and RMSEA<0.06*) Next, the measurement model was put to a multi-group confirmatory analysis test, from the configural invariance model (with proper model fits, *CFI*=0.96, *RMSEA*=0.4) to metric invariance model, the scalar invariance model, and the strict invariance model. Calculated results shown value of increment of *CFI* is below 0.01 (threshold value 0.01[28]). So the measurement model is endowed with the necessary psychometric properties.

4.3 Evaluation of Structural Model and Hypothesis Testing

By calculation of indicators, most absolute values of the skew were smaller than 1.5[29], and no absolute value of kurtosis was greater than 3.00[30]. The data quality fit the multivariate normal distribution requested by the maximum likelihood criteria for *SEM* analysis. Calculated by Amos 24, the results showed a good model fit. Shanghai sample: χ^2/df=2.117, *NFI*= 0.933, *IFI*= 0.963, *TLI*=0.953, *CFI*=0.963, *RMSEA*=0.071. Beijing sample: χ^2/df=2.138, *NFI*=0.921, *IFI*=0.957, *TLI*=0.945, *CFI*=0.956, *RMSEA*=0. 074.Wuhan sample: χ^2/df=1.774, *NFI*=0.825, *IFI*=0.966, *TLI*= 0.957, *CFI*=0.966, *RMSEA*=0.059.

Table 2. All path coefficients and bootstrapped results

Path	Beijing	Shanghai	Wuhan
VCB→CR	0.450***	0.374***	0.390***
VCB→AEC	0.652***	0.952***	0.743***
CR→AEC	0.227**	-0.021(ns)	0.102(ns)
AEC→CSE	0.358**	0.350***	0.684***
CR→CSE	0.680***	0.709***	0.727***
Path1: VCB → CR →CSE (Hypothesis 1)	0.234* (38.3%)	0.333*** 56.2%	0.508*** 62.0%

Path	Beijing	Shanghai	Wuhan
Path2: VCB→AEC→ CSE (Hypothesis 2)	0.306*** 50.3%	0.265*** 44.7%	0.283*** 34.5%
Path3: VCB → CR →AEC → CSE (Hypothesis 3)	0.069** (P=0.01) 11.4%	0.006 (P=0.730) -1.0%	0.029 (P=0.189) 3.5%

Note:*** : $P < 0.001$， ** : $P < 0.01$: (ns): $P > 0.05$. Results were calculated by Amos 24.

Next, the three mediations were calculated. Hypothesis 1 and Hypothesis 2 are supported, while Hypothesis 3 failed. (Results in Table 2, all standardized path coefficients are in Fig. 2. The effects of indicators are omitted due to article length)

5 Discussion

In the section below, the inferences about particular model paths and the mediation paths will be discussed.

5.1 Discussion of the Sectional Path of the Model

(1) Among all sectional paths, AEC→VCB is of a high level, while the coefficients of AEC→CR are either small, insignificant, or negative; only the Beijing coefficient 0.227*** is prominent. (almost similar to path CSE→AEC)

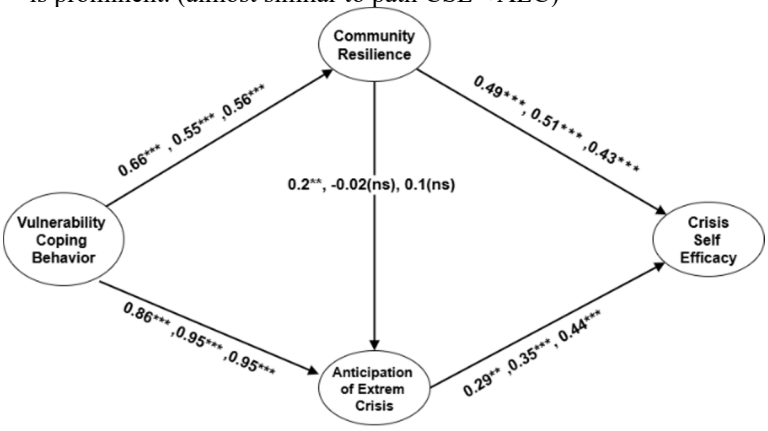

Fig. 2. Model with Standardized Path Coefficients (coefficients from left to right are Beijing, Shanghai, Wuhan)

This may indicate that for all three cities, AEC is not significantly correlated with *CR*; Beijing Citizens held a low-level correlation. While two other cities' citizens are

not unaware of uncertainties brought about by extreme crisis, they may not expect very much from the communities' preparedness. Shanghai citizens may have better safety sensitivity since whenever the CR is enhanced, their AEC eases (negative coefficient). The Wuhan case should be analyzed further with other evidence, though AEC→VCB with high coefficients and percentage signify their own agency in mitigating vulnerability.

(2) Wuhan and Beijing samples both have CSE→CR and AEC→VCB with high coefficients (>0.65). It points to the fact that both citizens are generally alert to the possibility of extreme conditions, and they open their eyes to how the community prepares effectively to enhance disaster resilience, not ignorance or oblivion of it. These findings were also corroborated by remarks of the interviewees: The Beijing residents committee member said, "It is always remembered the whole committee resident members that our city is under particular political responsibility as the capital city, so the community basement, as a bunker from potential disasters, was periodically prepared and cleaned. We, as committee members, have made substantial contributions to practice daily safety measures of our community and fulfilling our obligation, though it may not seem to be a great deal for young people. " The Wuhan interviewee (grid worker) agreed with this opinion not on political responsibility grounds, but that "Our community is famous for governance ability because we resolve the difficult human related crises, and we have won a few prizes in our city. Though it is not so often for us to confront major events as huge as a pandemic, there are long disputes concerning high altitude throwing objects which entangle adjacent buildings in lawsuits, and public space noise which arouses great disputes. I do not think such entanglement can be resolved efficiently elsewhere, and the hazards are unusual because Wuhan citizens are very inflammable and eager to resort to the appeal of the government and public media. The whole community, including all CCP party members and grid workers, are mobilized to participate in dealing with these affairs. The disputes are finally resolved by a collective effort to let all stakeholders and our resident community members go through many meetings, with help from experts in mediation. "

(3) A few sectional paths are with low path coefficients (about 0.3), such as AEC→CR, CSE→AEC for Beijing; CR→VCB, and CSE→AEC for Shanghai, and CR→VCB for Wuhan. (Table 1)

This indicates a low level of efficacy evaluation of certain paths. Shanghai and Beijing citizens are not confident in their self-efficacy concerning extreme crisis, while Wuhan citizens are not confident enough in vulnerability coping, together with the influences of CR. Beijing citizens had a low sense of how CR correlates with their anticipation of a possible extreme crisis. These low path coefficients show: among the three cities, Wuhan citizens held a low confidence about CR enhancement extracted power from individual endeavors; Shanghai and Beijing citizens may evaluate with a positive attitude for VCB towards *CR*, hence helping to enhance community disaster preparedness. Effect sizes of variable VCB (as *IV* in the model) also complete the discussion. Wuhan *VCB*=0.755±0.035 ranks the lowest, Shanghai as the highest (0.843±0.029), while Beijing *VCB* ranks in the middle (0.81±0.053). This result is also supported by the interview (the Shanghai resident member)," Shanghai communities have been eager to expect possible major crises. As we know, there have been more unprecedented

typhoons hit Shanghai, and we have also developed more protocols even for inner land communities. For those communities that are not professional in dealing with such a comprehensive crisis, we also share experience and push them to develop their own way to mitigate the crisis, concerning flooding in land, population control, with local wandering animals that attack elders and children. Their capacities are all developing quickly in individual communities. We have confidence because we have successfully gained experience and updated our techniques, and Shanghai citizens are mostly self-disciplined, and they have a sense of civic obligation. We can face a major crisis even if another quarantine were there."

The path CR→AEC should be discussed further. It is located where citizens find themselves untrusted, estranged from the community disaster preparedness process. This correlation bears a relation between those who are more individualistic, or Machiavellian towards the community, and good Samaritans, as the reverse side of the example. It may signify personal traits, or traits of community management, as they can be full prepared but authoritative, or biased towards local citizens, or a community with arrangements and protocols to involve civic participation and equity when there is a possible crisis. The *individual-group* discrepancy existed here, which may show statistical evidence of minor or negative coefficients. These results also echoed the opinion of the Shanghai volunteer who has served in the pandemic patrolling and nucleic testing services. He said, "I have been transferred to a few communities in this city and other cities. I really appreciate the organizational power and efficiency in Shanghai, but the individual citizens were quite diverse, and some are selfish and uncivilized or even mean towards volunteers. Though basically, people felt safe, and cameras are everywhere. Shanghai's public services and community-level organizations are all good; the local officials were getting things done, but some reckless individuals may cause serious damage to the whole. I also met with a few local committees' resident members here who also do not recognize our work and the risk we take during the pandemic. I think the pandemic is such an obvious case."

5.2 Discussion of Mediation Paths of the Model

(1) Amid the three mediation paths, the first is the mediation path (VCB→CR→CSE).CR induced a medium percentage of CSE, while Beijing ranks the lowest (38.3%). It indicates a medium level accentuality that citizens attributed to CR when it comes to updating personal resources in terms of CSE. Among all the antecedents leading to CSE, Beijing citizens accounted endeavor from CR as the lowest.

(2) Mediation path VCB→AEC→ CSE refers to effects induced by *AEC*. Beijing citizens notably occupy 50%, and Shanghai also has 46% while Wuhan ranks low. It may not be inferred that the former two citizens were oversensitive towards their own effective efforts to cope with extreme conditions of crisis, but that they certainly have been sensitive to the consideration of CSE from such scenarios. Wuhan citizens may not be so sensitive to mitigating the crisis from this angle.

(3) The chained mediation VCB→CR→AEC→CSE refers to a comprehensive evaluation of personal CSE taking into account the extreme crisis scenarios as the basic safety evaluation based on CR. This mediation was only significant for Beijing, which

ranks the lowest among the effects compared with ratios induced only by *its CR* or *AEC,* but Beijing has 11.4%, and Shanghai has a minor negative percentage; Wuhan ranks in the middle (3.5%).

This indicates that despite Beijing citizens' high regard for CR leading to CSE, AEC is prominent among their total efforts lead to CSE, while CR is low compared with other predictors. It may indicate that in terms of extreme crisis, Beijing citizens do not fully trust community efforts, but rely more on their own. While Shanghai citizens have a greater sense of safety, in appearance, *the* negative CR→AEC indicate they recognize the merit of community-level preparedness confronting extreme cases, and that their burdens may be alleviated a little by efforts from CR. However, Shanghai AEC is the highest effect indicating their alertness toward extreme conditions as well as their high regard for coping behaviors are diluted by influences from CR, possibly because (1)CR offset the efforts of AEC to make it in vain. (2)CR is so effective that it makes AEC coping personal efforts unnecessary. According to the aforementioned interviews, both may be the case. Shanghai citizens are aware of the possibilities of extreme crisis and prepared for it, but these attempts are revoked a little by CR. Wuhan citizens have low alertness towards extreme conditions (AEC^{Wuhan} 0.643 ± 0.095, while $AEC^{Beijing}$ 0.73± 0.111, and $AEC^{Shanghai}$ 0.793 ± 0.049, but trust more in CR, and their CR leads to a large percentage of CSE. (their *CR→CSE* effects rank the highest) This also echoed by Wuhan interviewee (grid worker)," Extreme hazards are not very often in our communities, but Wuhan citizens cause more man-made hazards, which is its particular traits different from other cities. The rewards and prizes Wuhan communities are entitled to are more about human-made hazards, rather than infrastructure-related."

5.3 Limitations and Future Research

(1) It relies heavily on quantitative methods and self-report inventory, which may introduce risks of social desirability bias, potentially inflating the relationship between variables, and limiting its validity. Despite the procedural remedy of the CMV test, the issue remains as an inherent limitation that would threaten validity. (2) This research is cross-sectional, and further research may benefit from a longitudinal design. To establish the cross-cultural validity of this model, future research should replicate this study in non-urban areas, such as urban-sunburn border areas and those cities whose development used to rely on factories around. This would help differentiate the universal factors from and context-specific.

6 Conclusion

To address urban citizens' post pandemic *crisis self-efficacy*, this research established a model to explore the relationship between *vulnerability coping behaviors* and *crisis self-efficacy*, with mediators of *community resilienc*e and *anticipation of extreme crisis*. *SEM* analysis of samples from Beijing (207), Shanghai (220), and Wuhan (226) shows that two mediations are significant, while one is not. As an exploratory study, this research contributes to the field of disaster resilience and the *coping* theory by developing

a new construct, *anticipation of extreme crisis, to* surpass the common coping strategies and developing a model to explain other antecedents of *crisis self-efficacy.*

The practical implications for policy makers are: Beijing citizens may have to rebuild mutual trust and norms in community resilience through transparency, such as, community officials publicize their plan and finance about mitigation of crisis. Shanghai communities should recalibrate efforts to prevent CR from offsetting individual alertness. More deliberation about certain contradictory efforts should be arranged and reformulated into safety culture, or into established community protocols. Wuhan needs to leverage its high public confidence in CR to bolster preparedness for extreme crises, such as, more chances to collaborate with professional rescue teams to test their alertness towards crises.

Questionnaire

CR: *community resilience*
63. Community leaders are good at using new techniques to cope with crises, like new local apps or procedures. 64.I rate the community resilience considering experiences of the pandemic governance in past years (1-100) 51. My community is fully prepared in advance for crises and hazards. 82. My community recovers quickly back to normal if there are low or medium level hazards, such as fire accidents, neighbor disputes.
CSE: *crisis self-efficacy*
38.I am confident in my ability of crisis arrangements. I will score (from 1 to 100) 30. My knowledge of crisis arrangement will increase and expand. I will rate it as (from 1 to 100) 23.I am confident in making good decisions to protect myself and the community if multiple crises and hazards strike. I will score my confidence from 1 to 100.
VCB: *vulnerability coping behavior*
28. From next month, I have a different plan to cope with the crisis in allocating the resources and personnel around me 16. From next month, I will seriously enhance input to the whole package plan of dealing with the compound crisis. 17. From next month, I will recommend life-saving equipment that I deem is better to cope with vulnerable situations 12. I discuss and distribute my experience of dealing with crises on the internet.
AEC: *anticipation of extreme crisis*
8. I started to read books and watch videos on human history of major extreme disasters, because I can learn from past mistakes and identify certain patterns that occurred repeatedly. 3. I will purchase resources for a doomsday bunker and imitate their strategies. 27. I, with my family and friends, designed special protocols to deal with unexpected crises like earthquakes or human-related hazards.

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