

A study on the mediating effect of community music participation between perceived community environment and psychological Well-Being –taking the elderly population in Chengdu as an example

Funan Wang^{1*}, Ali Khatibi², Jacqueline Tham³

¹Chengdu Vocational University of the Arts, Conservatory of Music, Chengdu, Sichuan Province, 611433, China

²Management and Science University, Postgraduate Center, Selangor Darul Ehsan, Shah Alam, 40100, Malaysia

³Management and Science University, Postgraduate Center, Selangor Darul Ehsan, Shah Alam, 40100, Malaysia

Abstract

This study employs quantitative research methods, using Chengdu, China as a case study, to investigate the relationships and underlying mechanisms between perceptions of the community environment, participation in community music activities, and psychological well-being. Community environmental perception was categorised into two dimensions: basic environmental perception and organisational management perception. Community music participation was divided into behavioural participation and emotional participation. Psychological well-being was subdivided into self-actualisation and psychological vitality. A questionnaire survey was conducted among 595 elderly residents of Chengdu. Statistical analysis and structural equation modelling were performed using AMOS software. (1) Community environmental perception exerts a significant positive influence on psychological well-being; (2) Community environmental perception significantly drives community music participation; (3) Community music participation significantly enhances psychological well-being; (4) Community music participation partially mediates the relationship between community environmental perception and psychological well-being. This study validated the pathway from perceived community environment to psychological well-being via community music participation, revealing that community environments not only directly influence older adults' psychological well-being but also exert indirect effects by empowering and facilitating engagement in meaningful cultural activities. The findings provide empirical evidence and practical pathways for enhancing older adults' mental health through optimised community environmental design and the cultivation of community cultural ecosystems.

Keywords: Community music participation, Psychological Well-Being, Perception of community environment, Elderly population

1. Introduction

China is accelerating into a profoundly ageing society. The National Bureau of Statistics' Seventh National Population Census Bulletin, released on 11 May 2021, indicates that the current elderly population (aged 60 and above) has reached 264 million, accounting for 18.7% of the total population, signifying a comprehensive transition into an ageing society (National Bureau of Statistics, 2021). Projections indicate that by 2025, the population aged 65 and above will exceed 210 million, representing approximately 15% of the total. By the 2030s, China's elderly population aged 65 and above is projected to reach 310 million, accounting for 22.3% of the total population. By mid-century, the elderly population aged 65 and above is expected to approach 380 million, constituting 27.9% of the total (Huaxia Times, 2020). Chengdu, a major metropolis in western China with a population of 20 million, has

seen its over-60s population reach 21.34% (Chengdu Municipal Bureau of Statistics, 2021), placing it in the advanced super-aged society stage ahead of schedule. Against this backdrop of population ageing, the elderly population has become a research focus for scholars.

At present, community music culture development in China remains in its nascent stages. It is imperative to explore community cultures aligned with Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, addressing the 'contradiction between the people's ever-growing needs for a better life and unbalanced and inadequate development.' This endeavour aims to enrich people's spiritual and cultural lives while striving tirelessly towards the Second Centenary Goal (Central People's Government of the People's Republic of China, 2017). Amidst the transformation of China's principal social contradiction, community music development must align closely with the central tasks of the Party and

the state. Centred on the people, it should fundamentally aim to enhance public happiness and satisfaction, actively exploring the factors influencing community music and well-being under new circumstances (Gao, 2023).

(Wang, 2025) As China's ageing process accelerates, the quality of life for the elderly is receiving increasing attention. Well-being, as a crucial indicator of quality of life, holds particular significance for the elderly. It refers to an individual's evaluation and satisfaction with their life circumstances, serving as a key measure of personal quality of life (Shang & Tian, 2024). Since the Fifth Plenary Session of the 19th CPC Central Committee elevated proactive responses to population ageing to a national strategy, enhancing the quality of life for the elderly, promoting their physical and mental health, and increasing their sense of well-being have become focal issues across society. Research by Zong (2022) indicates that survey data reveals one-third of older adults have experienced depressive symptoms. With advancing age, middle-aged and elderly individuals progressively confront challenges such as physical decline, age-related illnesses, shifting interpersonal relationships, and cognitive deterioration.

Community music activities represent an effective pathway for enhancing psychological well-being (Damsgaard & Jensen, 2021). Participation in community music offers extensive benefits, including relaxation, emotional release, stress reduction, happiness, cognitive stimulation, social connection, a sense of contribution, increased self-confidence and self-esteem, and perceived physical advantages (Heard & Bartleet, 2024). Community music positively impacts participants' physical and mental wellbeing. It not only enhances quality of life and physical health but also bolsters psychological wellbeing and fosters positive attitudes. Through musical activities, participants can alleviate stress, gain emotional support, and elevate personal happiness. Prioritising community music initiatives by providing residents with more accessible and high-quality musical resources enables them to enjoy the joys of community music, making participation an integral part of residents' healthy lifestyles (Chen, 2024).

Wei (2023) highlighted in their research that community public music services lack

professionalism and systematization, fail to keep pace with evolving needs, and require greater innovation. Other scholars have noted issues within community music education, including an overemphasis on technical skills at the expense of moral education, low-level objectives that hinder positioning, high demand coupled with insufficient supply, narrow participation and weak coordination, as well as imbalances and inadequacies (Ma, 2022). Community music activities face significant constraints, including inadequate venues, poorly organised events, limited diversity in musical expressions, insufficient government funding and policy support, and a shortage of qualified instructors (Guo, 2022). Xie (2022) observed that most communities struggle to foster positive social cohesion, with limited neighbourly interaction. Participants lack effective channels for communication and mutual recommendation of community music initiatives. Wang (2021) further noted insufficient momentum in community music culture development, overall uneven progress, and inadequate innovation within the sector.

Wei (2023) proposed in their research that community public music services lack professionalism and systematisation, fail to keep pace with developments, and require enhanced innovation. Other scholars have highlighted issues within community music education, including an overemphasis on technical skills at the expense of moral education, low-level objectives and positioning difficulties, high demand coupled with insufficient supply, narrow participation and weak coordination, as well as imbalances and inadequacies (Ma, 2022). The implementation of community music activities is significantly constrained by venue limitations, inadequate organisational structures, limited diversity in musical expression, insufficient governmental policy support and funding, and a shortage of qualified instructors (Guo, 2022; Jam et al., 2018). Xie (2022) observed that most communities struggle to foster positive social atmospheres, with limited neighbourly connections. Participants lack effective channels for interaction and communication, hindering mutual sharing and recommendation of community music activities. Wang (2021) noted insufficient momentum in community music culture development, overall uneven progress, evident disparities in development, inadequate innovation, and poorly targeted services.

OuYang (2020) identified several challenges in community music education: a shortage of qualified personnel, inadequate funding, and disorganised management systems. Key developmental obstacles include insufficient educational resources, insufficient teaching staff, monotonous educational models, lack of specificity and adaptability, and insufficient promotion and publicity. Ding (2023) identified further issues within community music education: students generally lack solid foundational musical skills, and the quality of their completed musical works tends to be low. Elderly participants demonstrate limited proficiency in utilising digital and intelligent networks, relying on relatively narrow avenues for acquiring musical knowledge. This significantly impedes both their learning progress and motivation.

2. Literature Review

A favourable perception of the community environment exerts a significant positive influence on older adults' well-being. Yin (2024) found that community spatial, natural, and management environments, alongside public services and neighbourly relations, directly enhance well-being. Di and Wang (2025) indicated that accessible transport and high-quality elderly care services bolster social participation and community cohesion. Zhang (2024) demonstrated that age-friendly facilities, greenery, and convenience in community parks elevate well-being by promoting health, psychological comfort, and social integration. Liao and Gao (2023) further validated the positive roles of perceived convenience of community facilities, social interactivity, and natural/built environments; Liu et al. (2022) supplemented this with the critical influence of community aesthetics and fitness environments. Collectively, these studies indicate that optimising multidimensional community environments constitutes a vital pathway for enhancing older adults' well-being.

Lei (2023) refined the impact of distinct community environmental dimensions, finding the built environment significantly positively influences psychological well-being, though its weight may be lower than the overall effect of the social environment on subjective well-being. Zheng et al. (2023) added an environmental perception perspective, demonstrating that residents' positive

perceptions of natural elements exert a particularly pronounced positive effect on subjective well-being, underscoring the importance of natural components in environmental experiences.

The physical conditions, organisational management, and service capacity of the community environment constitute key determinants of resident participation in community music activities. Research by Xie & Guo (2020) and Chen & Chen (2022) underscores the foundational role of infrastructure, highlighting that comprehensive music teaching facilities form the basis for attracting and sustaining resident engagement. The absence or inadequacy of such facilities directly constrains activity quality and appeal. The core bottlenecks lie in teaching staff and management services. Chen & Chen (2022), Lin (2021), and Xie (2023) all indicate that shortages of professional teaching staff and inefficient management services are common constraints on deep engagement. This manifests as: staff exhibiting weak service awareness and inadequate communication skills (Lin, 2021); poor dissemination of activity information, inadequate organisational support, and limited effectiveness of instructors (Xie et al., 2023); and managers being detached from residents' needs, resulting in activities becoming perfunctory (Lin, 2021). Deficiencies in organisational ecology and resource safeguards were further revealed by Xie et al. (2023) as systemic barriers: supply-demand imbalances, poor spatial and facility management (irrational layout, inefficient maintenance), funding shortages with single sources, and human resource scarcity. Fei's (2023) research on community sports was analogised to suggest that cultivating community musical atmosphere and facilities holds equal importance. Yao's (2023) investigation into university students' sports participation indirectly corroborates the role of organisational support and environmental cultivation in fostering engagement. Specifically regarding community musical environments, Cheng et al.'s (2022) cited work indicates that enhancing perceived environmental elements—including providing high-quality musical facilities, organising diverse musical activities, and creating spaces facilitating musical exchange among residents—positively influences psychological well-being.

While existing literature mentions 'community environment,' it fails to clearly define and

operationalise the core construct of 'perceived community environment.' Research often confuses discussions of broad community environments (e.g., Xie et al., 2023's spatial aspects and facility maintenance) or generic cultural activity management issues (e.g., Lin, 2021's service awareness), lacking targeted examination of music environments' unique attributes and their specific impact on elderly participation. Fei's (2023) sports analogy and Yao's (2023) university student sample further diminish direct relevance.

Existing literature exhibits insufficient consideration of the elderly population's distinct characteristics and contextual applicability. Evidence primarily draws from mixed-resident cohorts (Xie & Guo, 2020; Xie et al., 2023) or non-elderly groups (Yao, 2023), while Lin's (2021) analysis of management issues did not focus on older adults. Older adults possess distinct needs regarding community environment perception: heightened demands for facility safety/accessibility, greater reliance on clear and consistent information delivery, and heightened sensitivity to inclusive and welcoming group atmospheres. Existing research has not validated the intensity or specificity of the inhibitory effects of proposed environmental factors (e.g., part-time instructors, information gaps) on elderly participation.

Given these consensus points and limitations, this study will clearly define and focus on the core independent variable of 'community environmental perception'. It will explicitly define and measure 'community environmental perception' to examine its impact on psychological well-being within the context of Chengdu's elderly population. This study not only examines the physical and social attributes of the environment itself but also views community music participation as a key mediating pathway linking community environmental perception to the psychological well-being of older individuals. It aims to reveal how the environment influences psychological states by fostering actual participation behaviors.

3. Research hypotheses

H1: Perceptions of the community environment are positively correlated with psychological well-being among elderly residents in Chengdu.

H2: Perceptions of the community environment among elderly residents in Chengdu are positively correlated with participation in community music activities.

H3: Participation in community music activities among elderly residents in Chengdu is positively correlated with psychological well-being.

H4: Participation in community music activities mediates the relationship between psychological well-being and perceptions of the community environment among elderly residents in Chengdu.



Figure 3.1 Research framework diagram

4. Research Methodology

This study requires measuring participants' perceptions of the community environment, engagement in community music activities, and mental health status. Data collection employs a questionnaire survey comprising four sections with 35 questions, designed to assess one independent variable, one mediating variable, and one dependent variable. The study population comprises elderly residents of Chengdu. According to the 7th National Population Census of 2020, Chengdu's population aged 60 and above totals 3,764,069 individuals, accounting for 17.98% of the total population (Chengdu Municipal Bureau of Statistics, 2021). Given the substantial size of the target population, six districts were selected using proportional stratified random sampling, considering population density and geographical distribution across Chengdu's regional zones, based on 2021 elderly population statistics from the Chengdu Municipal Bureau of Statistics.

The sample size was calculated according to Yamane's (1967) formula, which stipulates that for target populations exceeding 100,000, the minimum required sample size at a 95% confidence level and 5% precision rate is 384. Consequently, a minimum of 504 questionnaires were distributed. This study collected 687 questionnaires, of which 595 were

valid.

The structural model was tested for fit. The specific results of the fit indices are as follows: chi-square/df=1.251, the model's RMSEA value is .021, falling between 0 and 1 and below 0.08, indicating overall good model fit. CFI = .989, GFI = .949, TLI = .988, all exceeding 0.9, indicating the model possesses high overall fit. In summary, the structural model exhibits good fit, with all indices suggesting acceptable model fit. This indicates that the structural model employed in this study effectively explains and predicts relationships among research variables, demonstrating high reliability and accuracy.

The results confirm that H1-H3 are valid. Employing the Bootstrap algorithm to examine the mediating effect of community music participation, the findings indicate that H4 is also valid.

5. Results

Based on the conceptual framework, this study

constructs a structural equation model, with the specific structural model depicted in Figure 5.1.

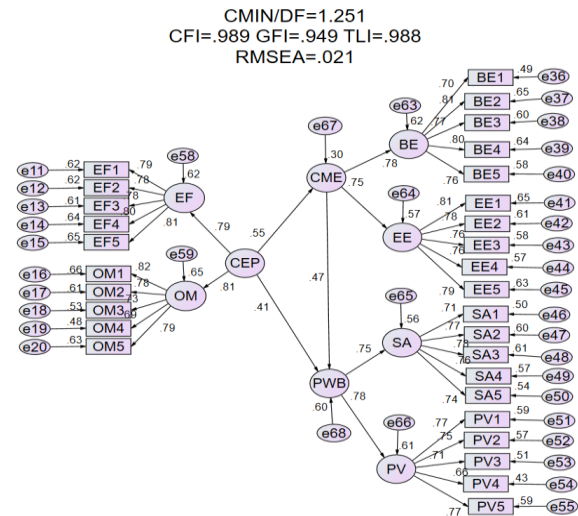


Figure5.1 Structural model
Source: AMOS

Table 4.11 Summary of hypothesis tests

H	Hypothesis	P-value	Relationship	Finding
H1	Perceptions of the community environment are positively correlated with psychological well-being among elderly residents in Chengdu.	***	Positive	Supported
H2	Perceptions of the community environment among elderly residents in Chengdu are positively correlated with participation in community music activities.	***	Positive	Supported
H3	Participation in community music activities among elderly residents in Chengdu is positively correlated with psychological well-being.	***	Positive	Supported
H4	Participation in community music activities mediates the relationship between psychological well-being and perceptions of the community environment among elderly residents in Chengdu.	0.000	Positive	Supported

6. Conclusions

The research findings indicate that: (1) Perceptions of the community environment exert a significant positive influence on psychological well-being. Both dimensions of community environmental perception—basic environmental perception (e.g., cleanliness, safety, facility accessibility) and organizational management perception (e.g., community services, capacity for organising cultural

activities)—directly and positively predict two dimensions of psychological well-being: sense of self-actualisation and psychological vitality. This indicates that older adults' positive evaluations of both the physical community environment and management services directly contribute to their sense of life's meaning and purpose (self-actualisation) and help maintain an optimistic, energetic psychological state (psychological vitality).This finding suggests that the development

of age-friendly communities must balance the quality of physical spaces with the effectiveness of organisational management, thereby directly enhancing the psychological wellbeing of older adults through systematic environmental improvements.

(2) Community environmental perception exerts a significant positive driving effect on participation in community music activities. Research indicates that favourable perceptions of the basic environment provide convenient physical spaces (e.g., activity venues) for elderly individuals to engage in musical activities, while positive perceptions of organisational management directly create opportunities and an enabling atmosphere for participation (e.g., organising activities, providing support). Together, these factors significantly enhance behavioural engagement (frequency and persistence of participation) and affective engagement (level of involvement, sense of belonging, and enjoyment during activities) in musical pursuits among the elderly. This finding suggests that communities should prioritise age-friendly design and accessibility in activity venues, while enhancing their capacity to organise and plan cultural events. This dual approach to hardware and software will lower the barriers to participation in musical activities for older adults.

(3) Community music participation exerts a significant positive enhancement effect on psychological well-being. Both dimensions of community music participation demonstrate positive impacts on psychological well-being. Deep behavioural engagement, through regular social interaction and skill acquisition, enhances older adults' sense of self-worth and accomplishment (facilitating self-actualisation). Meanwhile, profound emotional engagement, via aesthetic experiences, emotional resonance, and a sense of belonging, directly nourishes older adults' positive emotions and psychological energy (enhancing psychological vitality). On this basis, the design of community music activities should focus on fostering sustained behavioural engagement and strive to cultivate an artistic atmosphere that sparks emotional resonance and profound experiences. This elevates the activities beyond mere entertainment, transforming them into effective vehicles for psychological nourishment.

(4) Community music participation exerts a

significant partial mediating effect between perceived community environment and psychological well-being. This constitutes the core finding of this study. Path analysis indicates that perceived community environment not only directly influences psychological well-being but also exerts an indirect effect via the pathway of 'promoting community music participation'. Perceptions of basic environmental conditions primarily influence behavioural engagement by providing venues and convenience, thereby affecting psychological well-being—particularly the self-actualisation dimension. Perceptions of organisational management, meanwhile, exert a comprehensive positive effect on psychological vitality and self-actualisation by simultaneously fostering behavioural and emotional engagement through creating opportunities, cultivating atmosphere, and offering support. This mediating effect validates the causal chain: 'environmental empowerment → behavioural activation → psychological enhancement'. This mechanism demonstrates that, within constrained resources, communities can amplify the positive impact of environmental development on mental wellbeing by strategically nurturing and supporting music-based cultural activities. This fosters a virtuous cycle where activities encourage participation, and participation enhances happiness, thereby maximising psychological benefits.

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