



## Integrating Mindfulness into Community Renewal: Theoretical Framework and Empirical Evaluation

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**SUMMARY:** *Objective: This study aimed to examine the effects of a Mindfulness-Based Community Renewal (MBCR) intervention on residents' mindfulness, empathy, and sense of community within an urban renewal context. Methods: Fifty community residents were randomly assigned to either an experimental group receiving four biweekly mindfulness workshops over eight weeks or a control group receiving standard planning workshops. Measures of mindfulness (MAAS), empathy (TEQ), and sense of community (SCI) were administered before and after the intervention. Repeated-measures ANOVA was conducted to analyze differences between groups over time. Results: The experimental group showed significant improvements in empathy and sense of community compared with the control group, while gains in mindfulness were modest. Group  $\times$  time interaction effects were significant for empathy and sense of community but not for mindfulness. Conclusions: Integrating mindfulness-based practices into community engagement appears to enhance relational and collective outcomes among residents. Although mindfulness itself showed limited short-term change, the intervention contributed to increased empathy and stronger community bonds. These findings suggest that MBCR may be a feasible strategy to support inclusive and resilient community renewal processes. Future studies should employ larger samples and longer follow-up periods to further validate these results.*

**KEYWORDS:** *Mindfulness; Community Renewal; Social Cohesion; Participatory Planning*

## 1 Introduction

With the continuous acceleration of urbanization, cities across the globe are confronted with increasingly complex social, economic, and environmental challenges. Community renewal has thus become a central topic in urban studies, as it is regarded as a key strategy for enhancing neighborhood vitality, improving social integration, and achieving sustainable urban transformation [1, 2]. However, conventional approaches to community renewal have predominantly emphasized physical regeneration and economic development, often at the expense of the psychological, emotional, and participatory dimensions that are essential to the long-term sustainability and cohesion of urban communities [3, 4].

Current research increasingly recognizes that successful community renewal requires more than infrastructural upgrades or spatial reorganization. Attention to the “soft” aspects—such as social capital, trust, empathy, and residents' sense of belonging—has proven vital to fostering resilient and adaptive urban environments. The lack of effective communication, mutual understanding, and genuine stakeholder participation has been identified as a major barrier to

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the achievement of inclusive and sustainable community outcomes [5]. These challenges are further complicated by the growing diversity of urban populations and the fragmentation of social networks within contemporary cities.

In recent years, mindfulness—conceptualized as non-judgmental, present-centered awareness—has attracted considerable scholarly attention as a potential resource for enhancing well-being, social cohesion, and collaborative problem-solving across multiple domains, including health, education, and organizational management [6]. Empirical studies indicate that mindfulness practices may support the development of empathy, emotional regulation, and active listening, thereby facilitating more constructive dialogue and collaborative decision-making [7, 8]. In the context of community renewal, these capacities are regarded as increasingly important for enabling diverse stakeholders to navigate conflicts, build consensus, and participate effectively in co-creative processes.

Despite these promising findings, there remains a paucity of research regarding the systematic integration of mindfulness principles into the theoretical frameworks and design methodologies of community renewal [9, 10]. Existing studies tend to address mindfulness and community renewal as separate topics, and few attempts have been made to articulate clear conceptual linkages or actionable design approaches that bridge these domains. Given the growing recognition of the limitations of traditional models, there is a clear need to investigate whether and how mindfulness may contribute to more inclusive, responsive, and effective community renewal strategies. The present study seeks to address this research gap by examining the conceptual foundations and design implications of integrating mindfulness into community renewal. The objectives of this paper are threefold:

To develop a theoretical framework that integrates mindfulness into community renewal.

To empirically assess the impact of a mindfulness-based intervention in a real-world urban neighborhood.

To clarify the mechanisms by which mindfulness enhances social cohesion, participatory decision-making, and conflict resolution in community settings.

By pursuing these objectives, this study seeks to enrich the scholarly discourse at the intersection of mindfulness and urban studies, while also offering empirically informed recommendations for planners, policymakers, and practitioners aiming to promote more human-centered and resilient forms of urban transformation.

## 2 Literature Review

### 2.1 Community Renewal: Concepts and Approaches

Community renewal refers to the comprehensive process of revitalizing urban neighborhoods, aiming to address physical deterioration, socio-economic decline, and the erosion of social cohesion. The concept has evolved in tandem with shifts in urban policy and theory, moving from early top-down models of physical redevelopment to more holistic, participatory, and community-centered paradigms [11]. Initial efforts in community renewal, particularly in post-war Western contexts, often prioritized large-scale infrastructure upgrades, clearance of deteriorated housing, and economic regeneration. While these interventions succeeded in altering the urban fabric, they frequently overlooked the needs and agency of existing residents, resulting in social fragmentation and the weakening of local networks [12].

Contemporary approaches to community renewal emphasize the interplay between physical, social, economic, and psychological factors. The rise of sustainable development and social sustainability discourses has highlighted the importance of “soft” dimensions—such as social capital, trust, place attachment, and participatory governance—in shaping community

resilience and well-being [13]. Social capital, defined as the networks of relationships and norms of reciprocity within a community, has been shown to facilitate collective action, reduce vulnerability, and improve health and safety outcomes [14].

Place attachment—the emotional and cognitive bonds individuals develop with their living environment—has emerged as a key driver of community participation and a determinant of the long-term success of renewal initiatives [15, 16]. Interventions that strengthen local identity and leverage existing attachments are more likely to foster community engagement and sustain renewal outcomes. Despite these advances, significant challenges persist. Power imbalances, resource constraints, and conflicting interests may impede effective participation and limit equitable outcomes [17]. Furthermore, the intangible psychological and emotional aspects of community life, although increasingly acknowledged, remain underexplored in mainstream renewal theory and practice. These limitations underscore the necessity for new conceptual frameworks and methodologies that integrate both material and non-material dimensions of community renewal.

## 2.2 Mindfulness: Definitions, Mechanisms, and Applications

Mindfulness is commonly defined as non-judgmental, present-centered awareness—a conscious, open attention to one’s experiences as they unfold moment by moment [18, 19]. Originating from Buddhist contemplative traditions, mindfulness has been secularized and widely applied in clinical, organizational, and educational settings, reflecting its universal value as a basic human capacity. Over the past two decades, research has increasingly demonstrated the positive effects of mindfulness-based interventions (MBIs) on mental health, well-being, and interpersonal functioning across diverse populations [20, 21].

A core feature of mindfulness is its emphasis on cultivating an open, accepting, and non-reactive stance toward thoughts, emotions, and bodily sensations. This attitude of non-judgment and present-moment awareness is closely linked to improvements in emotional regulation, executive functioning, and metacognitive capacity. Neurocognitive studies have shown that mindfulness practice is associated with changes in brain areas responsible for attention, emotion regulation, and self-awareness, supporting its role in fostering adaptive responses to stress and complexity [22].

Beyond individual well-being, recent scholarship has emphasized the potential of mindfulness to transform social relationships and group dynamics. Mindfulness can facilitate empathetic engagement, active listening, and constructive communication—key ingredients for social cohesion and collaborative problem-solving. Empirical evidence from healthcare settings indicates that mindfulness training can enhance empathy and communication skills among professionals, ultimately contributing to better team functioning and client outcomes. For example, Chen found that loving-kindness meditation (a form of mindfulness practice) significantly improved physicians’ empathy and communication skills, while Liu demonstrated that mindfulness meditation not only increased self-reported mindfulness, but also strengthened patient safety culture and reduced the incidence of adverse events among doctors. These findings suggest that mindfulness is not merely an individual psychological resource, but also a relational and collective capacity. Mindfulness encourages individuals to approach others with openness and compassion, facilitating mutual understanding and trust—qualities that are fundamental for resilient and adaptive communities [23].

## 2.3 Intersections of Mindfulness and Community Development

The integration of mindfulness into urban and community development is an emerging area of scholarly inquiry, reflecting growing recognition of the limitations of traditional technocratic

and materially focused models of urban governance. Recent research has begun to explore how mindfulness may contribute to more inclusive, adaptive, and emotionally intelligent approaches to urban planning, community engagement, and collective decision-making [24].

Empirical studies indicate that mindfulness-based practices can enhance the capacity of individuals and groups to navigate complex social environments, manage stress, and engage in constructive dialogue. For instance, mindfulness interventions have been associated with improved empathy, perspective-taking, and the ability to listen actively in contexts marked by diversity and conflict. These qualities are increasingly regarded as essential for the co-creation of sustainable and equitable urban futures, particularly in settings characterized by contested interests and historical inequities.

Within the context of urban planning and community renewal, several experimental and participatory initiatives have begun to integrate mindfulness principles into design charrettes, stakeholder workshops, and public deliberation processes [25]. Such efforts often emphasize the cultivation of present-moment awareness, emotional self-regulation, and a nonjudgmental attitude, with the aim of fostering more respectful, attentive, and creative engagement among diverse participants. Early findings suggest that mindfulness-based facilitation can contribute to reduced polarization, greater trust, and enhanced collective efficacy in group processes.

Despite these promising developments, the field remains in its infancy, and several limitations have been identified. Existing studies are often limited in scope, focusing on pilot interventions or case-specific analyses without fully theorizing the mechanisms by which mindfulness influences community-level outcomes [26]. There is also a need for more rigorous, comparative research that examines the scalability, sustainability, and contextual variability of mindfulness-based approaches across different urban and cultural settings. Moreover, critical perspectives highlight potential tensions between individual-focused mindfulness interventions and the structural determinants of urban inequality, emphasizing the importance of situating mindfulness within broader frameworks of social justice and collective action.

### **3 A Mindfulness-Based Model for Community Renewal**

#### **3.1 A Mindfulness-Based Model for Community Renewal**

Integrating mindfulness into community renewal entails a nuanced and multi-dimensional approach, in which several interdependent domains operate at multiple hierarchical levels. Grounded in contemporary mindfulness scholarship, theories of social capital, and collaborative planning, recent research has further highlighted mindfulness as a relational and civic capacity, and emphasized its role in trust-building, inclusive decision-making, and adaptive learning in governance settings. This conceptual model—referred to as the Mindfulness-Based Community Renewal (MBCR) framework—seeks to illuminate how mindful principles can permeate the psychological, relational, and procedural layers of sustainable and inclusive community transformation [27]. The model is composed of three core and interacting domains: mindful awareness, empathetic engagement, and reflective and inclusive decision-making (Figure 1).

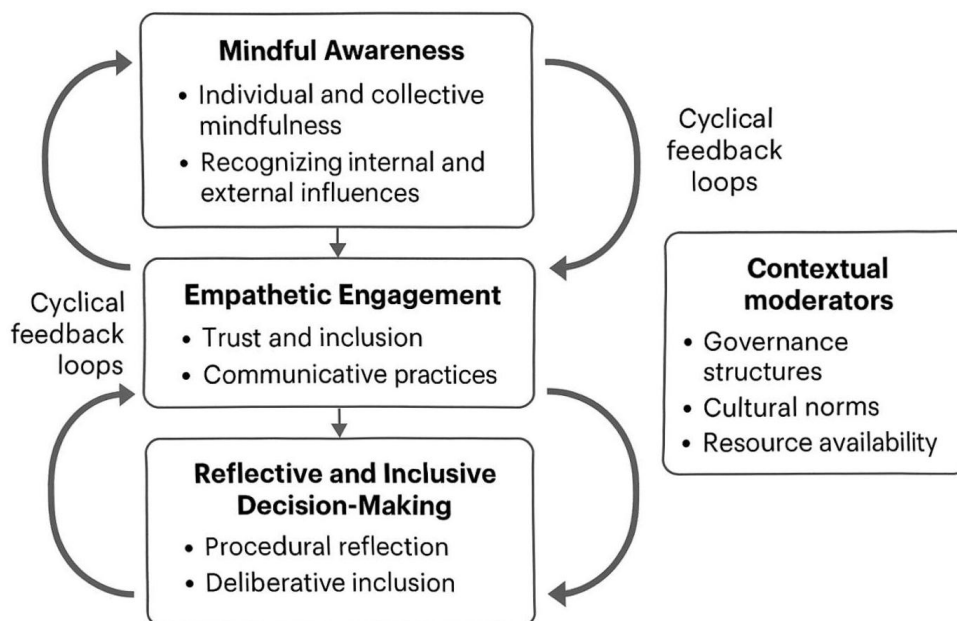


Figure 1: A Mindfulness-Based Model for Community Renewal.

### 3.2 Mindful Awareness as Foundational

Mindful awareness provides the essential foundation for all subsequent processes within community renewal.

**Individual Level:** Mindfulness manifests as the capacity for self-observation, emotional self-regulation, and purposeful attention to the present. This heightened awareness helps participants recognize and manage internal biases, emotional triggers, and automatic reactions that can otherwise limit effective engagement or reinforce social divisions. Such disruptions of automaticity—described as mindful "reperceiving"—create cognitive space for intention, curiosity, and openness. These micro-pauses allow individuals to respond reflectively rather than reactively in contentious or uncertain community contexts. Neuroscientific and behavioral research confirms that mindfulness enhances attention control, reduces reactivity, and supports greater tolerance for ambiguity.

**Collective Level:** As individuals practice mindfulness in group settings, a state of "collective mindfulness" may emerge [28]. This is characterized by a group-wide attentiveness to present dynamics, mutual respect, and openness to differing viewpoints. At this level, collective mindfulness functions as an emergent group capacity that enhances adaptability, readiness to address unforeseen challenges, and a shared climate of psychological safety. It also provides the conditions for early conflict detection and adaptive learning—key requirements for complex and evolving community renewal efforts.

### 3.3 Empathetic Engagement as the Connective Tissue

Empathetic engagement constitutes the relational dimension through which mindful awareness is translated into effective group action.

**Interpersonal Level:** At this tier, empathy involves deep, active listening, nonjudgmental acceptance, and authentic emotional resonance between community members. Mindfulness fosters empathetic concern by reducing self-centered cognition and increasing emotional attunement. These relational capacities allow participants to move beyond role-based or identity-based assumptions and interact as coequal contributors. Through this process, a foundational trust loop can be established—wherein empathy strengthens trust, and trust, in

turn, deepens willingness to empathize. This feedback mechanism is crucial for fostering inclusive participation and emotional safety in diverse communities.

**Group Level:** When embedded as collective norms, empathetic engagement creates dialogic spaces where participants feel valued and safe to express their perspectives. These spaces not only prevent miscommunication and relational disengagement, but also build “bridging social capital” (Putnam, 2000), allowing collaboration across demographic, political, or cultural lines. The institutionalization of empathetic norms—through facilitation, co-design, or community rituals—creates resilient group dynamics that can endure uncertainty and negotiate competing interests. This capacity is especially vital in renewal efforts marked by historical grievances or resource constraints.

### **3.4 Reflective and Inclusive Decision-Making as the Integrative Mechanism**

The culmination of mindful awareness and empathetic engagement is realized in the processes of reflective and inclusive decision-making.

**Procedural Reflection:** This aspect involves the intentional creation of pauses within group processes, allowing participants to critically examine assumptions, reflect on alternative courses of action, and anticipate the consequences of potential decisions. What Bächtiger call deliberative synchronization—the pacing of collective attention to ensure reflection—challenges the often reactive, efficiency-driven nature of community decision-making. These contemplative intervals can be structured as check-ins, facilitated silences, or narrative rounds, and serve to deepen metacognitive insight at the group level.

**Deliberative Inclusion:** Going further, effective models ensure that the deliberative process is transparent and equitable, facilitating the integration of marginalized voices and the co-construction of shared outcomes. Mindfulness supports this goal by reducing defensiveness, enhancing tolerance for complexity, and encouraging the inclusion of dissenting or historically excluded perspectives. These inclusive mechanisms increase legitimacy, improve responsiveness, and foster adaptive governance structures capable of sustaining transformation over time.

Importantly, the relationship among these dimensions is neither strictly linear nor static. Mindful awareness continuously nourishes empathetic engagement, while deep empathetic practices, in turn, reinforce collective mindfulness. Together, they create the conditions necessary for meaningful, reflective, and inclusive decision-making. This dynamic interplay produces recursive feedback loops which enable communities to build capacity over time. These loops foster learning, mutual reinforcement, and adaptive change, facilitating an evolving cycle of community development and relational repair.

These internal dynamics are invariably shaped by external contextual factors—including governance frameworks, cultural values, institutional norms, and resource availability—that can either facilitate or constrain the full realization of a mindfulness-based approach. Accordingly, the MBCR model is best understood as a dynamic, context-sensitive system, capable of adaptation across different urban and community settings. This integrative and multi-layered structure highlights the value of systematically embedding mindfulness at all stages and levels of community renewal, offering a robust theoretical basis for designing participatory, equitable, and resilient urban transformation processes.

## 4 Empirical Study: Operationalizing the Mindfulness-Based Model for Aging Residential Community Renewal

### 4.1 Context and Research Objectives

The empirical component of this research was conducted in Kangping Community, a mid-sized residential district in Caolu Town, Shanghai. Established in 2004 and covering approximately 67,600 square meters, Kangping Community is home to about 4,750 residents. Over the past two decades, the community has experienced significant demographic and infrastructural change. Its population is characterized by a predominance of elderly citizens and migrant workers, alongside a growing number of young families and white-collar employees. This demographic diversity mirrors broader trends in Shanghai's peri-urban neighborhoods but also introduces complex challenges for community renewal and social integration.

Physical decline is readily apparent throughout the neighborhood. Since its construction, there has been minimal investment in maintenance or upgrading [29, 30]. Green spaces have withered, public facilities—such as children's playgrounds and outdoor fitness equipment—are insufficient, and the overall visual landscape has become increasingly unattractive and functionally inadequate. These spatial deficiencies weaken residents' sense of belonging and shared identity, eroding both the appeal and practical utility of communal spaces. Social fragmentation further compounds these problems. Interactions among residents are infrequent and rarely extend beyond familial networks. Community governance remains weak; property management is widely perceived as disengaged, frequently neglecting necessary repairs and rarely organizing collective activities. This lack of active stewardship amplifies the cycles of physical and social decline, further undermining the collective capacity required for meaningful urban renewal. The community also faces a pronounced “not-in-my-backyard” effect. Recent deliberations over siting a new waste treatment station have encountered widespread resistance, with residents from every building opposing its placement near their homes. This has resulted in stalemate and heightened intergroup tensions. Meanwhile, strong demand exists for new or improved public amenities such as fitness equipment, but disputes over their location persist, with each group favoring sites closest to their own residences.

Grounded in the Mindfulness-Based Model for Community Renewal, this field experiment tests whether a structured mindfulness-infused intervention can improve residents' mindfulness, empathy, and sense of community. Specifically, we posit that enhancing mindful awareness and empathetic engagement will translate into stronger community cohesion. Three hypotheses were formulated (pre-post contrasts for the experimental versus control group):

H1: The mindfulness-based intervention will yield a significantly greater increase in self-reported mindfulness (MAAS) in the experimental group than in the control group.

H2: The experimental group will show a significantly larger gain in empathy (TEQ scores) than the control group, reflecting enhanced interpersonal understanding.

H3: Sense of community (SCI) will improve more in the intervention group than in the control group, indicating strengthened social cohesion.

These hypotheses align with theory that mindfulness training fosters emotional regulation and social attunement. The study thus aims to empirically evaluate these predicted effects of the MBCR intervention on key individual and collective outcomes.

### 4.2 Methodology

A quasi-experimental, mixed-methods design was employed. We recruited 50 Kangping residents (age  $\geq 18$ ) via community outreach; participants were randomly assigned (stratified by age and gender) to the mindfulness-intervention group ( $n = 25$ ) or a control group ( $n = 25$ ) that

attended standard participatory planning workshops. The groups were demographically comparable, with a mix of middle-aged and older adults and similar limited prior exposure to mindfulness practice. All participants provided written informed consent. The protocol was approved by the Shanghai Polytechnic University IRB, and all procedures adhered to ethical research standards.

The intervention consisted of four biweekly workshops over eight weeks (approximately three months), each lasting 2–3 hours. Sessions for the experimental group systematically targeted the MBCR model’s three dimensions. For example, Session 1 focused on Mindful Awareness, introducing guided practices (breathing exercises, body scans) to teach present-moment attention and emotion regulation. Session 2 emphasized Empathetic Engagement, using empathy maps, storytelling, and role-play to foster perspective-taking and active listening. Later sessions translated these skills into Reflective Decision-Making through structured group planning exercises with mindfulness-guided pauses. Participants received home practice assignments to reinforce learning. All materials were adapted to Kangping’s real micro-renewal issues to ensure relevance.

The control group attended four biweekly workshops of equal duration, focusing on conventional micro-renewal topics (e.g. infrastructure priorities) through standard participatory techniques (brainstorming, majority voting) but without any mindfulness or structured empathy training. This provided a realistic baseline to isolate the effect of the mindfulness component.

**Measures:** Data were collected via questionnaires immediately before the first workshop and after the final session. Mindfulness was measured using the 15-item Mindful Attention Awareness Scale (MAAS), empathy by the 16-item Toronto Empathy Questionnaire (TEQ), and community cohesion by the Sense of Community Index (SCI). The SCI captures belonging and social support in neighborhoods. The MAAS assesses attentional control and present-awareness. (All instruments have established reliability; validated Chinese versions were used.) In addition, demographic and background data (age, education, tenure) were recorded. All surveys were administered in Mandarin, with neutral assistance provided if needed. Attendance and fidelity were monitored, and participants could withdraw at any time.

### 4.3 Data Analysis

Quantitative outcomes were analyzed using SPSS v.26. Repeated-measures ANOVAs tested the effect of Time (pre vs. post) and Group (experimental vs. control) on each measure, focusing on the Group×Time interaction as evidence of intervention impact. The  $\alpha$  level was set at 0.05. Descriptive statistics (means  $\pm$  SD) were computed for all variables. Paired t-tests examined within-group pre-post changes and independent t-tests compared change scores between groups. Effect sizes (partial  $\eta^2$  for ANOVAs, Cohen’s  $d$  or  $\eta^2$  for t-tests) were computed to gauge practical significance.

Qualitative feedback (session notes and post-intervention reflections) was analyzed thematically. Two researchers conducted inductive coding using NVivo, guided by the MBCR model (coding for mindful awareness, empathy, cohesion, conflict resolution, etc.). Coding discrepancies were resolved by consensus, and triangulated with facilitator observations. This mixed-methods approach ensured a robust evaluation of both measurable outcomes and participant experiences.

Repeated measures ANOVA was conducted to test the effects of time (before and after) and group (experimental and control) on each measurement. The F-values for group, time, and their interactions were calculated as follows:

$$F = \frac{MS_{\text{effect}}}{MSE} \quad (1)$$

where,  $MS_{\text{effect}}$  is the mean square of the effect (group, time, or interaction), and  $MSE$  is the mean square error.

Use the following formula to calculate the size of the effect (partially  $\eta^2$ ) to measure its practical significance:

$$\eta_p^2 = \frac{SS_{\text{effect}}}{SS_{\text{effect}} + SSE} \quad (2)$$

where,  $SS_{\text{effect}}$  is the sum of the squares of the effects of interest.

Perform paired t-test on the changes within the group before and after using the following formula:

$$t = \frac{\bar{D}}{s_D / \sqrt{n}} \quad (3)$$

where,  $\bar{D}$  is the average difference in scores before and after the test.

The independent t-test uses the following formula to compare the change scores between groups:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}} \quad (4)$$

where,  $\bar{X}_1$  and  $\bar{X}_2$  are the average change scores of the experimental group and the control group are respectively.

#### 4.4 Results

As summarized in Table 1, baseline scores on MAAS, TEQ, and SCI did not differ significantly between groups. After the intervention, the experimental group showed noticeable gains in empathy (TEQ) and community cohesion (SCI), whereas the control group's scores remained essentially unchanged. Mindfulness (MAAS) increased modestly in both groups. Repeated-measures ANOVA revealed a significant Group×Time interaction for TEQ ( $F(1,48)=6.72$ ,  $p=0.012$ ,  $\eta_p^2=0.12$ ) and for SCI ( $F(1,48)=15.62$ ,  $p<0.001$ ,  $\eta_p^2=0.25$ ), indicating that the experimental group's improvements exceeded those of the control. The interaction for MAAS was not significant ( $F(1,48)=3.84$ ,  $p=0.056$ ,  $\eta_p^2=0.07$ ), reflecting only a weak trend (see Figure 1). (No significant main effect of Group was found on any measure; time effects were confounded by the interaction results.) In summary, Hypotheses 2 and 3 were supported (TEQ and SCI increased in the treatment group), whereas Hypothesis 1 (MAAS) was not clearly supported.

Table 1: Pre- and post-intervention means ( $\pm$ SD) on MAAS, TEQ, and SCI for each group.

Measure	Group	Pre (Mean $\pm$ SD)	Post (Mean $\pm$ SD)	Change ( $\Delta$ )	F(1,48)	p	Partial $\eta^2$
<b>Mindfulness (MAAS)</b>	Experimental	48.9 $\pm$ 6.7	53.0 $\pm$ 6.5	+4.1	3.84	0.056	0.07
	Control	50.7 $\pm$ 6.9	50.5 $\pm$ 5.3	-0.2			
<b>Empathy (TEQ)</b>	Experimental	40.3 $\pm$ 5.2	42.3 $\pm$ 5.1	+2.0	6.72	0.012	0.12
	Control	40.7 $\pm$ 4.3	41.1 $\pm$ 4.7	+0.4			
<b>Sense of Community (SCI)</b>	Experimental	31.6 $\pm$ 4.6	33.8 $\pm$ 4.4	+2.2	15.62	<0.001	0.25
	Control	31.9 $\pm$ 4.6	31.3 $\pm$ 6.9	-0.6			

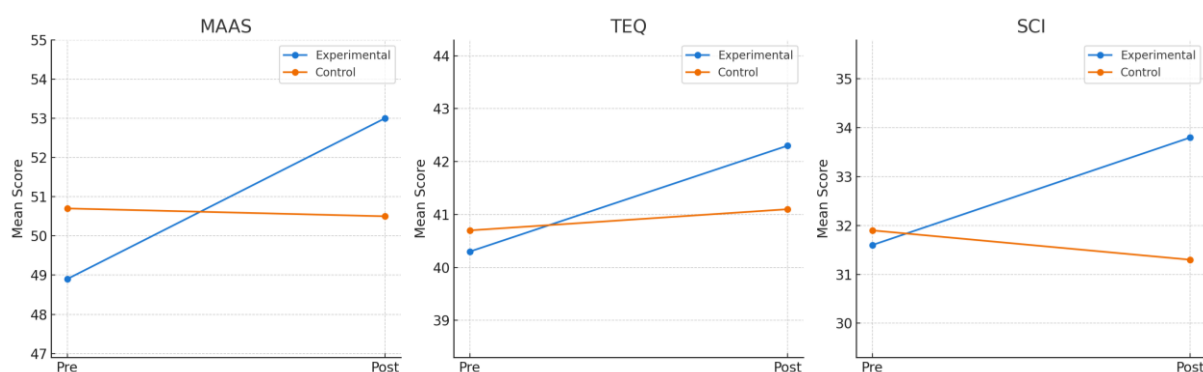


Figure 2: Interaction between time and group for each measure. (Pre- and Post-Intervention).

### 4.5 Interpretation and Implications

The results partially support the MBCR theoretical model (Figure2). The significant gains in empathy (TEQ) and community cohesion (SCI) in the experimental group are consistent with the proposed mechanisms: mindfulness practice appears to foster empathetic engagement and strengthen social trust, in line with prior work. That is, by practicing attentive awareness, residents became more attuned to others’ perspectives, generating “bridging” social capital. These changes likely underpin the observed rise in SCI, suggesting that the intervention succeeded in building a shared identity and collective commitment. Such outcomes echo findings from other mindfulness trainings, where empathy improved markedly.

In contrast, mindfulness scores (MAAS) showed only a marginal change. This pattern—stronger social effects than self-reported mindfulness—has been noted elsewhere. It is possible that the group workshops enhanced insight and relational skills more than what the MAAS captured, or that a longer practice period is needed to shift dispositional mindfulness. Importantly, the results still support core MBCR principles: even without a large MAAS increase, community-level processes (empathy and deliberation) were activated, consistent with the theory that mindful pauses enable deliberative decision-making.

Practically, these findings have meaningful implications for community renewal. The MBCR intervention appears to mitigate the participation fatigue in Kangping by breaking cycles of conflict and disengagement. Residents in the experimental workshops reported feeling heard and respected, and we observed more inclusive dialogue – outcomes aligned with the model’s goal of reflective, inclusive governance. The enhanced SCI score suggests that the community’s “update dilemma” of poor collective efficacy was at least partly overcome through shared mindfulness and empathy exercises. In essence, embedding mindful practices into participatory planning helped transform adversarial interactions into cooperative ones.

In sum, the positive effects on TEQ and SCI provide empirical support for the MBCR framework's relational mechanisms. They suggest that integrating mindfulness into urban renewal processes can yield measurable gains in social cohesion and adaptive collaboration. This offers actionable insights for planners and practitioners: mindfulness-based workshops may serve as a promising tool to reignite engagement and trust in aging communities, thereby enhancing the sustainability and inclusiveness of renewal initiatives. These findings contribute to theory by linking individual awareness practices with concrete community outcomes, and open a new avenue for “human-centered” urban transformation grounded in well-established mindfulness research.

## 5 Discussion

### 5.1 Theoretical Contributions and Innovation

This study offers several noteworthy theoretical contributions to the emerging field of mindfulness-based approaches in community renewal. First, it provides empirical evidence that supports the MBCR (Mindfulness-Based Community Renewal) framework as a multidimensional model integrating psychological, relational, and procedural components of engagement. While prior research has established the benefits of mindfulness in clinical and organizational contexts, few studies have systematically tested how mindfulness can be adapted to urban micro-renewal environments characterized by entrenched social fragmentation and participatory fatigue. By demonstrating significant improvements in empathy and sense of community, this research extends the theoretical understanding of mindfulness as not merely an individual self-regulatory practice but as a socially embedded mechanism that can foster bridging social capital (Putnam, 2000) and collaborative capacity.

Second, the findings highlight a nuanced dynamic among the MER framework's three core mechanisms—Mindful Awareness, Empathetic Engagement, and Reflective and Inclusive Decision-Making. Specifically, while mindfulness scores (MAAS) exhibited only a marginal increase, empathy (TEQ) and sense of community (SCI) improved significantly in the intervention group. This divergence suggests that in community-based interventions, affective and relational pathways may respond more rapidly to short-term training than dispositional awareness itself. Such results lend support to a “social-emotional primacy hypothesis,” wherein early shifts in interpersonal empathy create the conditions for later consolidation of deeper cognitive mindfulness. This perspective enriches the theoretical debate on whether mindfulness operates primarily through individual attentional processes or through relational attunement and affective resonance.

Third, the study introduces an innovative methodological adaptation of mindfulness to participatory planning. Unlike traditional MBSR protocols designed for stress reduction, the MBCR intervention integrated structured reflective pauses and dialogic empathy exercises directly into decision-making simulations. This hybrid design operationalizes the recursive feedback loops posited by the framework—where mindful awareness fosters empathetic engagement, which in turn enables more inclusive deliberation. Such integration demonstrates that mindfulness is not an ancillary wellness practice but can function as a transformative procedural scaffold in community renewal processes. This contribution offers a novel conceptual and practical pathway for bridging the gap between individual psychological change and collective governance outcomes, which remains a persistent challenge in participatory planning literature. Collectively, these contributions advance the understanding of how mindfulness can be systematically embedded in urban policy and planning. The study provides an empirically grounded model that positions mindfulness as a dynamic, context-sensitive

approach capable of enhancing both social cohesion and collaborative problem-solving in complex community settings.

## **5.2 Practical Implications for Urban Policy and Planning**

The findings of this study offer meaningful implications for urban policy, community governance, and participatory planning practices. Most notably, the MBCR intervention demonstrates that embedding mindfulness and empathy-focused training within participatory processes can serve as a low-cost, high-impact strategy to enhance the quality of community engagement. In contexts marked by participatory fatigue, NIMBY attitudes, or fragmented social trust—as seen in the Kangping community—conventional planning tools often fail to generate authentic dialogue or shared ownership of renewal projects. By contrast, this study shows that integrating structured reflective pauses, guided empathy exercises, and inclusive deliberation practices can transform adversarial interactions into cooperative problem-solving, thereby fostering collective agency.

From a policy perspective, the MBCR model offers a scalable framework for designing participatory programs that move beyond tokenistic consultation. Urban renewal and micro-renewal initiatives, especially in rapidly aging or socially diverse neighborhoods, could incorporate MBCR elements into standard planning procedures. For example, municipal governments and planning agencies could train community facilitators in basic mindfulness and dialogic facilitation techniques as part of their standard toolkit. This would not only improve the procedural fairness of participatory processes but also cultivate the conditions for bridging social capital and sustained collaboration. The model's adaptability makes it suitable for integration into existing policy frameworks without necessitating large-scale structural reforms or budgetary overhauls.

Furthermore, the study's findings suggest that urban planning policies should account for the emotional and relational dimensions of community governance. Traditional planning paradigms often emphasize technical efficiency, regulatory compliance, and material outcomes, with limited attention to the affective experiences of residents. The MBCR intervention highlights how mindful and empathetic practices can support psychological safety, reduce defensive postures, and promote constructive engagement. Policymakers and planners might therefore consider embedding emotional literacy, perspective-taking, and reflective capacity as core competencies in participatory design. In doing so, urban policy can better address the underlying social dynamics that often hinder successful renewal, such as mistrust, exclusion, or conflict aversion.

Finally, these practical insights contribute to a growing body of scholarship advocating for human-centered urban governance. The MBCR approach aligns with emerging calls for inclusive, adaptive, and relationally grounded models of planning that prioritize not only the “what” of urban transformation but the “how.” By demonstrating that mindfulness can serve as an enabling condition for such models, this study provides both a theoretical rationale and an operational template for future policy innovation.

## **5.3 Limitations and Directions for Future Research**

While the study provides promising evidence supporting the MBCR framework, several limitations warrant careful consideration. First, the relatively modest sample size (N=50) constrains the generalizability of the findings. Although the sample reflected the demographic diversity of the Kangping community, the results may not be representative of other socio-cultural contexts or larger urban populations. Future studies employing larger, multi-site samples across varied regions would help confirm whether the observed effects are robust and scalable.

Second, the intervention duration—four workshops over eight weeks—may have been insufficient to produce substantial changes in dispositional mindfulness, as reflected in the only marginal gains on the MAAS. Prior mindfulness research suggests that more intensive practice (e.g., daily training over several months) is typically required to reliably shift habitual attentional patterns and self-regulation capacities. Extended interventions or hybrid designs combining in-person workshops with guided self-practice modules could yield deeper transformations in individual awareness and more enduring effects on community dynamics.

Third, this study relied exclusively on self-report measures to assess outcomes. While validated instruments such as the MAAS, TEQ, and SCI offer reliable insights, they are subject to social desirability and recall bias. Future research should incorporate multimethod assessments, including behavioral observations of participation quality, third-party ratings of empathy and inclusiveness, and perhaps physiological indicators of stress or attentional engagement. Such triangulation would strengthen the validity of conclusions and illuminate more nuanced pathways linking mindfulness practices to social outcomes.

Finally, the lack of a follow-up assessment limits understanding of the intervention's sustainability. It remains unclear whether improvements in empathy and sense of community persist over time or fade once the structured training ends. Longitudinal studies with follow-ups at 3, 6, or 12 months would provide important evidence about the durability of effects and any delayed impacts on mindfulness or community cohesion.

Building on these considerations, future research should also explore how MBCR interventions interact with contextual variables—such as leadership structures, prior conflict histories, or the availability of physical spaces conducive to reflection and dialogue. Comparative studies across different types of communities (e.g., rural villages, high-density urban districts) would help refine and adapt the framework. Additionally, there is scope for investigating how digital delivery methods (e.g., online mindfulness modules) could complement face-to-face training to expand reach and accessibility.

## 6 Conclusion

This study examined the effects of a mindfulness-based intervention on residents' awareness, empathy, and sense of community in an urban renewal context. The findings partially supported the proposed framework, showing significant improvements in empathy and perceived community cohesion, while increases in mindfulness were modest. These results suggest that incorporating mindfulness practices into participatory planning may enhance relational trust and engagement among community members. However, the study has several limitations, including a small sample size, reliance on self-reported measures, and the short duration of the intervention. Future research should consider larger samples, longer follow-up periods, and additional objective indicators to verify and extend these findings. Overall, the study provides preliminary evidence that mindfulness-based approaches can contribute to more inclusive and resilient community renewal processes.

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## **Institutional Review Board Statement**

The study was conducted according to the guidelines of the Declaration of Helsinki, and approved by the Ethics Committee of Shanghai Polytechnic University (IRB No.20241222B01/22 December 2024).

## **Informed Consent Statement**

Informed consent was obtained from all subjects involved in the study.

## **Data Availability Statement**

Not applicable. The data are not publicly available due to privacy restrictions. Please contact the first author.

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The authors thank all the participants in this study. The participants in the psychology experiment understood the purpose and content of the experiment and participated in the experiment with voluntary consent. Participants could discontinue their participation in the experiment at any time without penalty.

## **Conflicts of Interest**

The authors declare no conflicts of interest.

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