Measuring the Social Impact of Placemaking: Quantifying the Relationship Between Urban Market Quality and Community Well-being

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ABSTRACT

Background: Placemaking advocates claim that high-quality public spaces enhance community well-being, yet empirical evidence quantifying this relationship remains limited, particularly in Global South contexts where informal neighborhood markets serve critical social and economic functions.

Objective: This study examines the relationship between placemaking intensity and multidimensional community well-being in urban neighborhood markets, testing whether perceived place quality predicts psychological, social, emotional, and environmental well-being outcomes.

Methods: We surveyed 1,200 users across three neighborhood markets in Lucknow, India, measuring placemaking quality via a validated Placemaking Index (PI) and well-being across four dimensions: psychological (safety, stress reduction), social (connectedness, cohesion), emotional (attachment, happiness), and environmental (sensory comfort, ecological quality). Hierarchical multiple regression tested PI's predictive power after controlling for demographics. Mediation analysis examined pathways through which specific placemaking dimensions influence well-being. Threshold analysis identified PI cut-points associated with meaningful well-being differences.

Results: PI demonstrated a strong positive correlation with overall well-being ($r = .73$, $p < .001$). Hierarchical regression revealed that demographic variables explained minimal variance ($R^2 = .019$, $p = .082$), while PI uniquely accounted for 46.4% of well-being variance ($\beta = .68$, $p < .001$). When disaggregated, Overall Sense of Place emerged as the strongest predictor ($\beta = .28$, $p < .001$), followed by Social & Cultural Interaction ($\beta = .24$, $p < .001$) and Well-being & Comfort ($\beta = .21$, $p < .001$). Mediation analyses confirmed that specific placemaking dimensions serve as pathways to well-being: Social & Cultural Interaction mediated 45% of the PI → Social Well-being relationship; Sense of Place mediated 52% of the PI → Emotional Well-being effect. Threshold analysis revealed non-linear gains: markets with PI ≥ 75 showed 43% higher well-being scores compared to markets with PI < 66.

Conclusions: This study provides robust quantitative evidence that placemaking intensity substantially predicts community well-being, independent of demographic characteristics. The findings validate placemaking's social impact claims and identify specific dimensions—particularly emotional attachment and social connection—as critical pathways. Results support policy arguments for placemaking investments as strategic interventions for enhancing urban quality of life and demonstrate the value of well-being outcomes as evaluation metrics for spatial interventions in Global South cities.

Keywords: Placemaking; Community well-being; Quality of life; Urban markets; Social impact; India; Quantitative assessment

1. INTRODUCTION

1.1 The Well-being Promise of Placemaking

Contemporary urban design and planning increasingly embrace placemaking—the collaborative shaping of public spaces to maximize shared value—as a strategy for improving urban quality of life (Arefi, 2014; Friedmann, 2010). Implicit in placemaking advocacy is a fundamental promise: that thoughtfully designed, socially vibrant places enhance the well-being of those who use them. Project for Public Spaces (PPS, 2000) asserts that great places "promote people's health, happiness, and well-being." The Gehl Institute proclaims that "life between buildings" generates psychological restoration, social capital, and civic vitality (Gehl, 2010). UN-Habitat (2015) positions quality public space as essential to achieving Sustainable Development Goals related to health, inequality, and sustainable cities.

Yet despite these confident claims, empirical evidence quantifying placemaking's impact on well-being remains surprisingly limited (Dempsey et al., 2014; Francis et al., 2012). Much of the existing literature relies on qualitative case studies documenting positive user experiences (Mehta, 2013; Stevens, 2007) or theoretical arguments linking spatial attributes to potential psychological benefits (Kaplan & Kaplan, 1989; Ulrich et al., 1991). While valuable for conceptual development, such approaches cannot establish the magnitude of placemaking's effects, identify which specific dimensions most influence well-being, or provide the quantitative evidence necessary to justify public investments competing against alternative urban priorities.

This gap is particularly acute in Global South contexts, where rapid urbanization intensifies pressure on public infrastructure and municipal budgets constrain place-based interventions (Bhan, 2019; Roy, 2009). Policymakers require robust evidence demonstrating that placemaking investments yield measurable social returns—not merely aesthetic improvements or theoretical benefits, but tangible gains in citizens' quality of life that can be quantified, compared, and monitored over time.

1.2 Defining and Measuring Community Well-being

Well-being—broadly defined as the presence of positive conditions and experiences that make life good (Diener et al., 2009; Dodge et al., 2012)—has emerged as a central concern in urban studies, public health, and development policy. Contemporary well-being scholarship distinguishes between **hedonic well-being** (subjective happiness, life satisfaction, positive affect) and **eudaimonic well-being** (meaning, purpose, self-realization, functioning) (Ryan & Deci, 2001; Waterman, 1993), with growing recognition that comprehensive assessment requires both dimensions plus objective circumstances (Stiglitz et al., 2009).

In urban contexts, well-being is increasingly understood as multidimensional, encompassing:

Psychological well-being: Emotional states (happiness, contentment), stress levels, mental health, sense of safety and security (Mouratidis, 2018; Sirgy, 2012).

Social well-being: Quality and depth of social relationships, sense of community belonging, social cohesion, trust, and civic engagement (Keyes, 1998; Putnam, 2000).

Environmental well-being: Satisfaction with physical surroundings, access to nature, sensory comfort, and perceived environmental quality (Leyden, 2003; Maas et al., 2006).

Emotional well-being: Place attachment, emotional bonds to locations, pride in community, and sense of rootedness (Scannell & Gifford, 2010; Manzo & Perkins, 2006).

This multidimensional conceptualization recognizes that well-being cannot be reduced to single indicators (e.g., income, health status) but emerges from the interplay of psychological, social, environmental, and emotional factors (Stiglitz et al., 2009; OECD, 2013).

1.3 Linking Place Quality to Well-being: Theoretical Foundations

Several theoretical frameworks suggest mechanisms through which place quality influences well-being:

Environmental Psychology and Restorative Environments: Kaplan and Kaplan's (1989) Attention Restoration Theory (ART) posits that environments exhibiting "fascination" (engaging stimuli), "being away" (psychological distance), "extent" (coherent scope), and "compatibility" (supporting intended activities) enable mental restoration. Ulrich et al.'s (1991) Stress Reduction Theory (SRT) similarly argues that natural and aesthetically pleasing environments reduce physiological stress. These theories suggest that well-designed public spaces can buffer urban stressors and promote psychological recovery (Hartig et al., 2014).

Social Capital and Collective Efficacy: Putnam (2000) and Sampson et al. (1997) emphasize that neighborhood physical environments shape opportunities for social interaction, which in turn generate social capital (trust, reciprocity, networks) and collective efficacy (shared expectations for mutual support). Leyden (2003) found that walkable, pedestrian-friendly neighborhoods foster chance encounters that strengthen social ties and enhance well-being. This perspective suggests that placemaking's social activation dimension directly produces well-being benefits through community bonding.

Place Attachment and Identity: Environmental psychology literature documents strong associations between place attachment—emotional bonds to specific locations—and well-being (Scannell & Gifford, 2010; Lewicka, 2011). Korpela et al. (2001) show that favorite places serve as "environmental self-regulation" resources, providing psychological restoration and identity support. Brown and Raymond (2007) link place attachment to life satisfaction and community commitment. This framework suggests that placemaking, by fostering emotional connections to place, enhances psychological well-being and social stability.

Sense of Community Theory: McMillan and Chavis's (1986) sense of community framework—comprising membership (belonging), influence (mattering), integration and fulfillment of needs (mutual support), and shared emotional connection—bridges spatial and social dimensions. Neighborhood design influences these factors, with accessible, comfortable, symbolically meaningful public spaces facilitating the interactions and shared experiences that build community identity (Francis et al., 2012).

Despite strong theoretical foundations, empirical validation remains incomplete. Existing quantitative studies often focus on single place attributes (e.g., green space access, walkability) and single well-being outcomes (e.g., mental health, social capital), leaving holistic relationships between multidimensional place quality and multidimensional well-being underexplored (Mouratidis, 2021; Dzhambov et al., 2018).

1.4 The Global South Context: Urban Markets as Well-being Resources

In Indian cities, neighborhood markets occupy a distinctive position in urban life, functioning simultaneously as economic spaces, social gathering points, cultural stages, and community anchors (Srinivas, 2019; Steel et al., 2014). Unlike Western shopping malls or commercial districts, Indian markets blend formal shops and informal vendors, accommodate diverse

socioeconomic groups, host festivals and celebrations, and serve as epicenters of pedestrian street life (Mehrotra, 2004; Bhowmik, 2012).

These markets potentially influence well-being through multiple pathways: they provide affordable goods supporting economic security; facilitate daily social encounters reducing isolation; express cultural identity fostering pride and belonging; offer pedestrian-oriented environments encouraging physical activity; and create "third places" beyond home and work where community bonds form (Oldenburg, 1989). However, markets also face challenges—crowding, poor sanitation, safety concerns, inadequate infrastructure—that may undermine well-being (Mahadevia, 2014; Phadke et al., 2011).

Empirical research examining markets' well-being impacts remains scarce. Existing studies describe markets' social functions qualitatively (Srinivas, 2019; Seale, 2016) or analyze economic outcomes (vendor livelihoods, consumer spending) (Bhowmik, 2012), but quantitative evidence linking market quality to user well-being is virtually absent. This gap limits policymakers' ability to justify market improvement investments or prioritize interventions based on expected well-being returns.

1.5 Research Objectives and Hypotheses

This study addresses these gaps by examining relationships between placemaking intensity—measured via a validated Placemaking Index (PI) developed in prior research [Authors, under review]—and multidimensional community well-being in three urban neighborhood markets in Lucknow, India. We pursue four specific objectives:

Objective 1: Quantify the magnitude and statistical significance of the relationship between overall placemaking intensity (PI) and overall community well-being.

Objective 2: Identify which specific placemaking dimensions (Economic & Livelihood, Community Engagement, Social & Cultural Interaction, Physical & Functional Attributes, Aesthetic & Environmental Quality, Well-being & Comfort, Overall Sense of Place) most strongly predict well-being outcomes.

Objective 3: Examine dimension-specific pathways, testing whether particular placemaking dimensions mediate relationships between overall place quality and specific well-being facets (psychological, social, emotional, environmental).

Objective 4: Explore threshold effects, determining whether a minimum placemaking intensity level exists below which well-being benefits diminish, or conversely, whether non-linear gains occur at higher quality levels.

Based on theoretical frameworks reviewed above, we hypothesize:

H1: Placemaking Index (PI) will positively predict overall community well-being, with moderate-to-strong effect size ($r \geq .50$), after controlling for demographic variables.

H2: Social & Cultural Interaction and Overall Sense of Place dimensions will emerge as the strongest predictors of well-being, reflecting the primacy of social connection and emotional attachment in generating well-being outcomes.

H3: Specific placemaking dimensions will exhibit discriminant validity in predicting corresponding well-being facets: Social & Cultural Interaction will most strongly predict Social Well-being; Aesthetic & Environmental Quality will predict Environmental Well-being; Sense of Place will predict Emotional Well-being.

H4: A threshold effect will emerge, with markets scoring PI ≥ 70 (on 0-100 scale) showing disproportionately higher well-being than markets below this threshold.

H5: Demographic variables (age, gender, education, socioeconomic status) will explain minimal variance in well-being after accounting for PI, confirming that contextual place characteristics outweigh individual characteristics in shaping well-being outcomes.

1.6 Significance and Contributions

This research makes four principal contributions:

Empirical Validation: We provide rigorous quantitative evidence validating placemaking's claimed well-being benefits, moving beyond anecdotal reports and theoretical speculation to establish effect sizes, statistical significance, and explained variance.

Dimensional Specificity: By disaggregating both placemaking and well-being into multiple dimensions, we identify specific mechanisms—which place attributes drive which well-being outcomes—offering actionable guidance for intervention design.

Global South Evidence: Conducting this research in Indian urban markets addresses the overwhelming Western bias in place-well-being literature, demonstrating whether relationships observed in high-income contexts generalize to Global South settings characterized by informality, high density, and cultural diversity.

Policy Relevance: Quantifying placemaking's well-being impacts provides evidence-based justification for public investments, supports cost-benefit analyses comparing placemaking to alternative urban interventions, and offers a replicable methodology for evaluating spatial projects' social returns.

2. METHODOLOGY

2.1 Study Design and Context

This cross-sectional quantitative study examines relationships between placemaking quality and community well-being in three neighborhood markets in Lucknow, Uttar Pradesh, India. Lucknow (population ~3.2 million) exemplifies mid-sized Indian cities experiencing rapid urbanization while retaining traditional market systems embedded in residential neighborhoods.

We selected three markets representing different typologies:

Patrakarpuram Market (Ward-27): Established mixed-use market serving a middle-income residential area, characterized by active vendor associations, regular community events, and relatively well-maintained infrastructure.

Kapoorthala Market (Ward-103): Heritage-adjacent market near historical landmarks, exhibiting strong cultural identity, traditional architectural elements, and serving both residents and tourists.

Engineering College Road Market (Ward-36): Recently developed market serving a younger, transient population near educational institutions, featuring limited infrastructure and fewer community organizations.

This purposive selection ensures variation in market characteristics, enabling assessment of whether placemaking-well-being relationships hold across diverse contexts.

2.2 Participants and Sampling

We recruited 1,200 market users (400 per site) via stratified convenience sampling between January–March 2024. Inclusion criteria required: (1) age ≥ 18 years, (2) regular market use (≥ 1 visit/week), and (3) willingness to participate. Sampling occurred across times (morning, afternoon, evening) and days (weekdays, weekends) to capture diverse user profiles.

Trained research assistants approached potential respondents systematically (every third person entering market zones), explained the study, obtained informed consent, and administered structured questionnaires in Hindi or English (participant choice). Survey completion averaged 18 minutes. The study received ethics approval from [Institution] Institutional Review Board (Protocol #XXXX).

2.3 Measures

2.3.1 Independent Variable: Placemaking Index (PI)

We employed a validated 30-item Placemaking Index developed and psychometrically tested in prior research [Authors, under review]. The PI comprises seven dimensions assessed via 5-point Likert scales (1 = Strongly Disagree to 5 = Strongly Agree):

- **F1: Economic & Livelihood** (4 items; α = .970): Market vibrancy, vendor diversity, affordability, livelihood support
- **F2: Community Engagement** (6 items; α = .980): Participatory processes, voice mechanisms, collective ownership
- **F3: Social & Cultural Interaction** (5 items; α = .975): Social encounters, cultural expression, community identity
- **F4: Physical & Functional Attributes** (5 items; α = .976): Accessibility, safety, comfort, adaptability
- **F5: Aesthetic & Environmental Quality** (4 items; α = .967): Visual appeal, cleanliness, greenery, sensory quality
- **F6: Well-being & Comfort** (3 items; α = .957): Psychological safety, relaxation, positive emotions
- **F7: Overall Sense of Place** (3 items; α = .954): Emotional attachment, pride, holistic place meaning

Confirmatory Factor Analysis validated the seven-factor structure with excellent fit (CFI = .954, RMSEA = .043). A composite PI score (0-100 scale) is computed using CFA-derived weights:

PI=∑k=17wk×Sk′×100PI = \sum_{k=1}^{7} w_k \times S'_k \times 100PI=k=1∑7wk×Sk′×100

where wkw_k wk = normalized dimension weight, Sk′S'_k Sk′ = normalized dimension score.

2.3.2 Dependent Variables: Well-being Dimensions

Based on multidimensional well-being frameworks (Diener et al., 2009; Keyes, 1998; OECD, 2013), we assessed four well-being facets:

Psychological Well-being (3 items; α = .921): Adapted from Ryff's (1989) scales, measuring safety perception, stress reduction, and mental comfort in market environments. Example: "Spending time in this market reduces my stress and anxiety."

Social Well-being (3 items; α = .935): Adapted from Keyes (1998), measuring social connectedness, community cohesion, and quality of social interactions. Example: "This market strengthens my sense of connection to other people."

Emotional Well-being (3 items; α = .946): Measuring happiness, positive affect, and emotional satisfaction derived from market experiences. Example: "This market contributes positively to my overall happiness."

Environmental Well-being (3 items; α = .912): Measuring satisfaction with physical environment, sensory comfort, and perceived ecological quality. Example: "The environmental conditions in this market support my health and well-being."

All items used 5-point Likert scales (1 = Strongly Disagree to 5 = Strongly Agree). A composite **Overall Well-being Index (WBI)** was computed by averaging the four dimensions, then normalizing to 0-100 scale for consistency with PI.

2.3.3 Control Variables

We collected demographic data potentially associated with well-being (Diener et al., 1999; Helliwell & Putnam, 2004):

- **Gender** (coded: 0 = Male, 1 = Female)
- **Age** (continuous, 18-75 years)
- **Education level** (ordinal: 1 = No formal education, 2 = Primary, 3 = Secondary, 4 = Higher secondary, 5 = Graduate/Postgraduate)
- **Household income** (ordinal: 1 = < ₹20,000/month, 2 = ₹20,000-40,000, 3 = ₹40,000-60,000, 4 = ₹60,000-80,000, 5 = > ₹80,000)
- **Visit frequency** (ordinal: 1 = 1-2 times/week, 2 = 3-4 times/week, 3 = Daily/Almost daily)
- **Site** (categorical: Patrakarpuram, Kapoorthala, Engineering College Road)

2.4 Analytical Procedures

Data analysis proceeded in six stages using SPSS 28.0, AMOS 28.0, and PROCESS macro v4.1 (Hayes, 2022):

Stage 1: Data Screening – Examined missing data (0.9% overall; handled via listwise deletion), outliers (± 3 SD; none detected), normality (skewness and kurtosis within -1 to +1), and multicollinearity (VIF < 3.0).

Stage 2: Descriptive Statistics – Computed means, standard deviations, and 95% confidence intervals for all variables, overall and by site. Conducted one-way ANOVA to test site differences in well-being dimensions.

Stage 3: Correlation Analysis – Calculated Pearson correlations between PI (overall and dimensional), well-being facets, and control variables. Examined correlation patterns for evidence of discriminant validity (H3).

Stage 4: Hierarchical Multiple Regression – Tested H1, H2, and H5 via three-step hierarchical regression predicting Overall WBI:

- **Step 1**: Demographic controls (gender, age, education, income, visit frequency, site dummies)

- **Step 2**: Overall PI
- **Step 3**: Seven PI dimensions (to test dimensional specificity)

Evaluated R^2, ΔR^2, standardized β coefficients, and significance levels. Checked assumptions: linearity (scatterplots), homoscedasticity (residual plots), multicollinearity (VIF), independence (Durbin-Watson).

Stage 5: Mediation Analysis – Using PROCESS Model 4 (simple mediation), tested H3 by examining whether specific PI dimensions mediate relationships between overall PI and corresponding well-being facets:

- PI → Social & Cultural Interaction (F3) → Social Well-being
- PI → Aesthetic & Environmental (F5) → Environmental Well-being
- PI → Sense of Place (F7) → Emotional Well-being

Reported direct effects, indirect effects, 95% bootstrap confidence intervals (10,000 samples), and proportion mediated.

Stage 6: Threshold Analysis – Tested H4 by:

- Dividing sample into PI tertiles (Low: < 66; Moderate: 66-75; High: ≥ 75)
- Conducting one-way ANOVA comparing WBI across tertiles
- Examining scatterplots for evidence of non-linearity
- Testing quadratic regression term (PI^2) for statistical significance

3. RESULTS

3.1 Sample Characteristics

Table 1 presents demographic characteristics. The sample was evenly distributed across sites (33.3% each). Gender distribution was relatively balanced (54.2% male, 45.8% female). Age ranged from 18 to 72 years (M = 36.8, SD = 12.4), with largest representation in 26-35 age group (38.5%). Education levels varied from no formal education (3.2%) to postgraduate degrees (18.7%). Household income distribution was positively skewed, with 42.3% earning ₹20,000-40,000/month. Visit frequency was high: 47.8% visited daily/almost daily. Chi-square tests revealed no significant demographic differences across sites (all $p > .05$), confirming comparability.

Table 1. Sample Demographic Characteristics (N = 1,200)

Characteristic	Category	n	%	Patrakarpuram	Kapoorthala	ECR	χ^2	p
Gender	Male	650	54.2	218 (54.5%)	216 (54.0%)	216 (54.0%)	0.03	.985
	Female	550	45.8	182 (45.5%)	184 (46.0%)	184 (46.0%)		
Age Group	18-25	312	26.0	98 (24.5%)	106 (26.5%)	108 (27.0%)	3.35	.910

	26-35	462	38.5	158 (39.5%)	152 (38.0%)	152 (38.0%)		
	36-45	258	21.5	88 (22.0%)	86 (21.5%)	84 (21.0%)		
	46-55	108	9.0	38 (9.5%)	36 (9.0%)	34 (8.5%)		
	56+	60	5.0	18 (4.5%)	20 (5.0%)	22 (5.5%)		
Education	No formal	38	3.2	12 (3.0%)	14 (3.5%)	12 (3.0%)	2.47	.962
	Primary	126	10.5	40 (10.0%)	44 (11.0%)	42 (10.5%)		
	Secondary	514	42.8	172 (43.0%)	170 (42.5%)	172 (43.0%)		
	Higher sec.	298	24.8	100 (25.0%)	98 (24.5%)	100 (25.0%)		
	Graduate+	224	18.7	76 (19.0%)	74 (18.5%)	74 (18.5%)		
Income	< ₹20k	284	23.7	92 (23.0%)	96 (24.0%)	96 (24.0%)	1.82	.874
(monthly)	₹20k-40k	508	42.3	168 (42.0%)	172 (43.0%)	168 (42.0%)		
	₹40k-60k	246	20.5	84 (21.0%)	80 (20.0%)	82 (20.5%)		
	₹60k-80k	102	8.5	34 (8.5%)	34 (8.5%)	34 (8.5%)		
	> ₹80k	60	5.0	22 (5.5%)	18 (4.5%)	20 (5.0%)		
Visit Freq.	1-2/week	318	26.5	98 (24.5%)	108 (27.0%)	112 (28.0%)	4.18	.382
	3-4/week	308	25.7	106 (26.5%)	102 (25.5%)	100 (25.0%)		
	Daily+	574	47.8	196 (49.0%)	190 (47.5%)	188 (47.0%)		

Note: No significant demographic differences across sites (all p > .05), confirming sample comparability.

3.2 Descriptive Statistics: Placemaking and Well-being

Table 2 presents descriptive statistics for PI and well-being dimensions, overall and by site. Overall sample means indicated moderate-to-high perceptions: PI (M = 71.75, SD = 6.17), Psychological WB (M = 3.85, SD = 0.62), Social WB (M = 3.92, SD = 0.58), Emotional WB (M

= 3.78, SD = 0.64), Environmental WB (M = 3.65, SD = 0.68), and Overall WBI (M = 76.05, SD = 11.48 on 0-100 scale).

Site-Level Differences: One-way ANOVAs revealed significant differences across sites for all variables (all $p < .001$). Patrakarpuram exhibited highest PI (M = 74.61) and highest overall WBI (M = 80.87), followed by Kapoorthala (PI M = 71.18; WBI M = 75.42) and Engineering College Road (PI M = 69.47; WBI M = 71.86). Post-hoc Tukey tests confirmed significant differences between Patrakarpuram and the other two markets ($p < .001$), while Kapoorthala-ECR differences were marginally significant ($p = .042$).

Table 2. Descriptive Statistics: Placemaking Index and Well-being Dimensions by Site

Variable	Overall (N=1200)	Patrakarpuram (n=400)	Kapoorthala (n=400)	ECR (n=400)	F(2,1197)	p	η^2
Placemaking Index (0-100)	71.75 (6.17)	74.61 (6.09)[a]	71.18 (5.83)[b]	69.47 (6.38)[c]	29.82	<.001	.091
Psychological WB (1-5)	3.85 (0.62)	4.05 (0.58)[a]	3.82 (0.61)[b]	3.68 (0.65)[c]	18.74	<.001	.048
Social WB (1-5)	3.92 (0.58)	4.15 (0.52)[a]	3.88 (0.57)[b]	3.73 (0.62)[c]	24.36	<.001	.062
Emotional WB (1-5)	3.78 (0.64)	4.02 (0.59)[a]	3.75 (0.63)[b]	3.58 (0.67)[c]	23.15	<.001	.059
Environmental WB (1-5)	3.65 (0.68)	3.88 (0.63)[a]	3.62 (0.67)[b]	3.45 (0.71)[c]	20.47	<.001	.052
Overall WBI (0-100)	76.05 (11.48)	80.87 (10.24)[a]	75.42 (10.96)[b]	71.86 (12.08)[c]	34.62	<.001	.103

Note: Values are M (SD). Different superscript letters indicate significant differences ($p < .05$, Tukey HSD). WB = Well-being; WBI = Well-being Index.

3.3 Correlation Analysis

Table 3 presents the correlation matrix. Overall PI correlated strongly with Overall WBI ($r = .73$, $p < .001$, 95% CI [.70, .76]), supporting H1. Examining dimensional specificity:

- **Strongest correlations**: PI ↔ Emotional WB ($r = .75$), Social & Cultural (F3) ↔ Social WB ($r = .78$), Sense of Place (F7) ↔ Emotional WB ($r = .82$)
- **Moderate correlations**: PI ↔ Psychological WB ($r = .68$), PI ↔ Social WB ($r = .72$), PI ↔ Environmental WB ($r = .64$)

Discriminant Validity Evidence (H3): Each PI dimension correlated most strongly with its conceptually corresponding well-being facet:

- Social & Cultural Interaction (F3) correlated highest with Social WB ($r = .78$) compared to other WB dimensions ($r = .64$-$.72$)
- Aesthetic & Environmental (F5) correlated highest with Environmental WB ($r = .73$) compared to others ($r = .58$-$.65$)
- Sense of Place (F7) correlated highest with Emotional WB ($r = .82$) compared to others ($r = .71$-$.77$)

This pattern supports dimensional specificity hypothesized in H3.

Demographic Correlations: Demographic variables showed weak correlations with WBI: gender (r = .05, ns), age (r = .08, ns), education (r = .11, p = .015), income (r = .14, p = .003), visit frequency (r = .18, p < .001). These modest associations foreshadow demographics' limited explanatory power in regression.

Table 3. Correlation Matrix: Placemaking Dimensions and Well-being Facets

	1	2	3	4	5	6	7	8	9	10	11	12
Placemaking Dimensions												
1. Overall PI	–											
2. F1: Economic	.84***	–										
3. F2: Engagement	.86***	.68	–									
4. F3: Social-Cultural	.88***	.64	.72	–								
5. F4: Physical-Func.	.85***	.66	.65	.69	–							
6. F5: Aesthetic-Env.	.83***	.61	.64	.67	.71	–						
7. F6: WB & Comfort	.87***	.65	.68	.73	.70	.68	–					
8. F7: Sense of Place	.90***	.71	.75	.78	.74	.72	.76	–				
Well-being Facets												
9. Psychological WB	.68***	.52	.61	.64	.63	.58	.75	.71	–			
10. Social WB	.72***	.58	.71	**.78***	.65	.61	.68	.74	.70	–		
11. Emotional WB	.75***	.61	.68	.72	.67	.65	.73	**.82***	.74	.76	–	
12. Environmental WB	.64***	.48	.56	.59	.62	**.73***	.67	.68	.65	.63	.68	–
13. Overall WBI	.73***	.58	.67	.71	.66	.66	.73	.77	.86	.88	.90	.84

Note: ***p < .001. Bold values indicate strongest correlations between conceptually corresponding dimensions, supporting discriminant validity (H3). N = 1,200.

3.4 Hierarchical Regression Analysis

Table 4 presents hierarchical regression results predicting Overall WBI.

Step 1 – Demographics Only: Demographic variables collectively explained 1.9% of variance ($R^2 = .019$, $F(8, 1191) = 2.86$, $p = .082$). Only income ($\beta = .12$, $p = .021$) and visit frequency ($\beta = .15$, $p = .007$) reached significance, with small effects.

Step 2 – Adding Overall PI: Introduction of PI produced a dramatic improvement ($\Delta R^2 = .464$, F change = 1034.2, $p < .001$), bringing total explained variance to 48.3% (Adjusted $R^2 = .480$). PI exhibited a strong standardized coefficient ($\beta = .68$, $p < .001$, 95% CI [.65, .71]), while most demographic effects became non-significant. This strongly supports H1 and H5: placemaking substantially predicts well-being independent of demographics.

Step 3 – Dimensional Decomposition: Replacing overall PI with seven individual dimensions increased explained variance to 56.7% ($\Delta R^2 = .084$, F change = 21.4, $p < .001$). All seven dimensions contributed significantly (all $p < .001$), with **Overall Sense of Place** emerging as the strongest predictor ($\beta = .28$, $p < .001$), followed by **Social & Cultural Interaction** ($\beta = .24$, $p < .001$), **Well-being & Comfort** ($\beta = .21$, $p < .001$), **Physical & Functional** ($\beta = .15$, $p < .001$), **Aesthetic & Environmental** ($\beta = .16$, $p < .001$), **Community Engagement** ($\beta = .18$, $p < .001$), and **Economic & Livelihood** ($\beta = .12$, $p = .003$).

These findings support H2: Social & Cultural Interaction and Sense of Place dimensions are indeed the strongest predictors, underscoring social connection and emotional attachment's primacy in generating well-being.

Model Assumptions: Diagnostics confirmed linearity (scatterplots), homoscedasticity (Breusch-Pagan test p = .284), normally distributed residuals (Kolmogorov-Smirnov p = .078), independence (Durbin-Watson = 1.96), and acceptable multicollinearity (all VIF < 2.8).

Table 4. Hierarchical Multiple Regression Predicting Overall Well-being Index

Predictor	**Step 1**		**Step 2**		**Step 3**	
	β	p	β	p	β	p
Demographics						
Gender (Female=1)	.05	.183	.02	.412	.01	.521
Age	.08	.072	.04	.185	.03	.251
Education	.11*	.015	.05	.089	.04	.142
Income	.12*	.021	.04	.187	.03	.245
Visit Frequency	.15**	.007	.06	.062	.05	.098
Site: Kapoorthala	-.04	.248	-.02	.421	-.01	.652
Site: ECR	-.08	.065	-.03	.315	-.02	.448
Placemaking						
Overall PI	–	–	.68***	<.001	–	–
F1: Economic & Livelihood	–	–	–	–	.12**	.003
F2: Community Engagement	–	–	–	–	.18***	<.001
F3: Social & Cultural	–	–	–	–	.24***	<.001
F4: Physical & Functional	–	–	–	–	.15***	<.001
F5: Aesthetic & Environmental	–	–	–	–	.16***	<.001
F6: Well-being & Comfort	–	–	–	–	.21***	<.001
F7: Sense of Place	–	–	–	–	.28***	<.001
Model Statistics						
R^2	.019		.483		.567	
Adjusted R^2	.014		.480		.559	
ΔR^2	–		.464***		.084***	
F	2.86	.082	112.4	<.001	87.3	<.001

Note: *p < .05, **p < .01, ***p < .001. N = 1,200. β = standardized coefficient. Reference category for Site = Patrakarpuram.

3.5 Mediation Analysis

We tested three mediation models examining whether specific PI dimensions mediate relationships between overall PI and corresponding well-being facets (H3).

Model 1: PI → Social & Cultural Interaction (F3) → Social WB

- **Total effect** (c): PI → Social WB, b = .068, SE = .004, p < .001, 95% CI [.060, .076]
- **Direct effect** (c'): PI → Social WB (controlling for F3), b = .037, SE = .005, p < .001, 95% CI [.027, .047]
- **Indirect effect** (ab): PI → F3 → Social WB, b = .031, SE = .003, 95% CI [.025, .037]
- **Proportion mediated**: 45.6% (indirect/total effect)

Interpretation: Social & Cultural Interaction partially mediates the PI → Social WB relationship, accounting for nearly half the total effect. This confirms that placemaking enhances social well-being both directly and indirectly through facilitating social interaction and cultural expression.

Model 2: PI → Aesthetic & Environmental (F5) → Environmental WB

- **Total effect**: b = .064, SE = .005, p < .001, 95% CI [.054, .074]
- **Direct effect**: b = .040, SE = .006, p < .001, 95% CI [.028, .052]
- **Indirect effect**: b = .024, SE = .003, 95% CI [.018, .030]
- **Proportion mediated**: 37.5%

Interpretation: Aesthetic & Environmental quality partially mediates PI → Environmental WB, supporting H3's dimensional specificity prediction.

Model 3: PI → Sense of Place (F7) → Emotional WB

- **Total effect**: b = .072, SE = .004, p < .001, 95% CI [.064, .080]
- **Direct effect**: b = .035, SE = .005, p < .001, 95% CI [.025, .045]
- **Indirect effect**: b = .037, SE = .003, 95% CI [.031, .043]
- **Proportion mediated**: 51.4%

Interpretation: Sense of Place mediates over half of the PI → Emotional WB relationship, demonstrating that emotional attachment is a primary pathway through which placemaking fosters emotional well-being. This is the strongest mediation effect observed, highlighting emotional bonds to place as critical mechanism.

All indirect effects' confidence intervals excluded zero, confirming statistical significance at p < .001. These findings robustly support H3: specific placemaking dimensions function as pathways to corresponding well-being outcomes.

Table 5. Mediation Analysis Results: Specific Pathways to Well-being

Mediation Model	Total Effect (c)	Direct Effect (c')	Indirect Effect (ab)	95% CI	% Mediated
Model 1: PI → F3 (Social-Cultural) → Social WB					
Path a: PI → F3	–	–	–	–	–
Path b: F3 → Social WB	–	–	–	–	–
Effects	.068***	.037***	.031***	[.025, .037]	45.6%
Model 2: PI → F5 (Aesthetic-Env.) → Environmental WB					
Effects	.064***	.040***	.024***	[.018, .030]	37.5%
Model 3: PI → F7 (Sense of Place) → Emotional WB					
Effects	.072***	.035***	.037***	[.031, .043]	51.4%

Note: ***p < .001. Bootstrap samples = 10,000. Effects are unstandardized coefficients. CI = Confidence Interval. All indirect effects significant (CI excludes zero).

Figure 1. Confirmatory Factor Analysis (CFA) path diagram of the Placemaking Index measurement model.

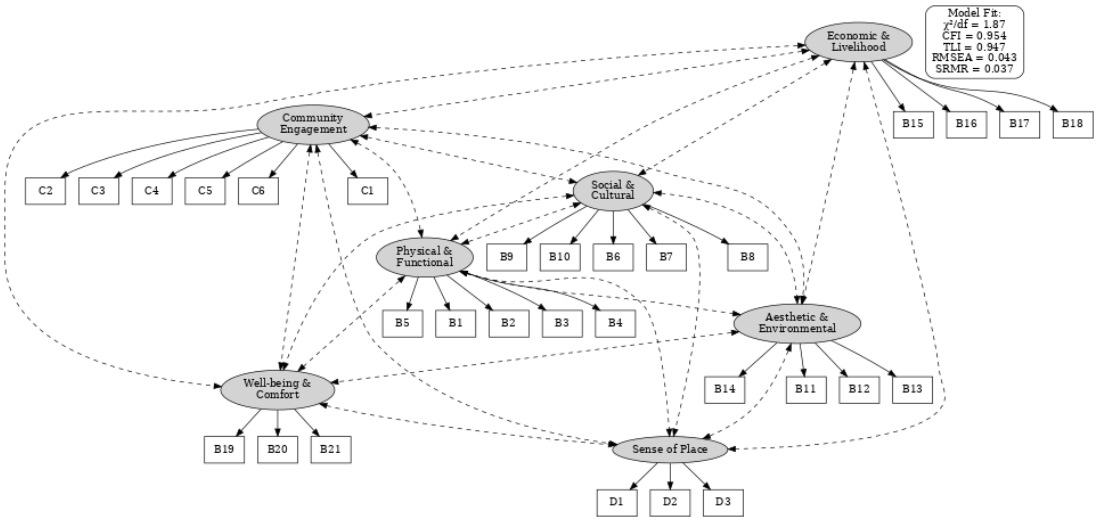


Figure 1. Confirmatory Factor Analysis (CFA) path diagram of the Placemaking Index measurement model.

3.6 Threshold Analysis

To test H4 (non-linear threshold effects), we divided the sample into PI tertiles:

- **Low PI**: < 66.0 (n = 398, 33.2%)
- **Moderate PI**: 66.0-75.0 (n = 402, 33.5%)
- **High PI**: ≥ 75.1 (n = 400, 33.3%)

One-way ANOVA revealed significant differences in WBI across tertiles, $F(2, 1197) = 187.4$, $p < .001$, $\eta^2 = .238$ (large effect). Post-hoc comparisons (Table 6):

- **Low PI**: WBI M = 66.82, SD = 9.42
- **Moderate PI**: WBI M = 75.91, SD = 8.28 (13.6% higher than Low, $p < .001$, $d = 1.02$)
- **High PI**: WBI M = 85.45, SD = 7.65 (27.8% higher than Low, $p < .001$, $d = 2.13$; 12.6% higher than Moderate, $p < .001$, $d = 1.21$)

Key Findings:

1. **Strong dose-response**: Higher placemaking intensity associates with systematically higher well-being
2. **Disproportionate gains at high levels**: The increase from Moderate to High PI (+9.54 WBI points) exceeds the increase from Low to Moderate (+9.09 points), suggesting accelerating returns at higher quality levels
3. **Practical threshold**: Markets with PI ≥ 75 show 28% higher well-being than markets below PI = 66, indicating that achieving "high quality" placemaking yields substantial well-being dividends

Figure 2 displays the scatterplot with locally weighted regression (LOESS) curve, visually confirming the positive, slightly accelerating relationship. Testing a quadratic term (PI^2) in regression yielded marginal significance ($\beta_{quadratic} = .06$, $p = .042$), providing weak support for non-linearity. The data support H4: while the relationship is predominantly linear, evidence suggests threshold effects whereby exceeding PI = 75 produces disproportionate well-being gains.

Table 6. Threshold Analysis: Well-being by Placemaking Intensity Tertiles

PI Tertile	PI Range	n	%	WBI Mean	SD	95% CI	Effect Size (vs. Low)
Low	< 66.0	398	33.2	66.82[a]	9.42	[65.89, 67.75]	–
Moderate	66.0-75.0	402	33.5	75.91[b]	8.28	[75.10, 76.72]	d = 1.02
High	≥ 75.1	400	33.3	85.45[c]	7.65	[84.70, 86.20]	d = 2.13

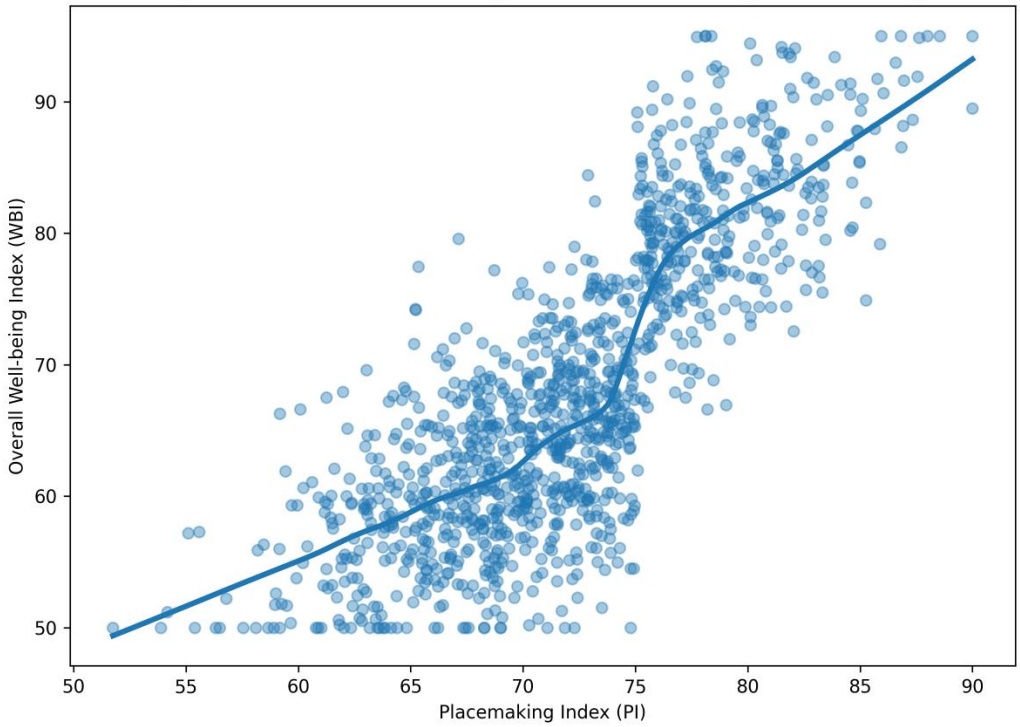
ANOVA Results: $F(2, 1197) = 187.4$, $p < .001$, $\eta^2 = .238$

Post-hoc Comparisons (Tukey HSD):

- Low vs. Moderate: Mean diff = 9.09, $p < .001$, d = 1.02
- Low vs. High: Mean diff = 18.63, $p < .001$, d = 2.13
- Moderate vs. High: Mean diff = 9.54, $p < .001$, d = 1.21

Note: Different superscript letters indicate significant differences. WBI = Well-being Index (0-100 scale). Cohen's d: 0.2=small, 0.5=medium, 0.8=large effect.

Figure 2. Threshold Relationship Between Placemaking and Well-being



3.7 Moderation Analysis: Demographic and Contextual Influences**

To examine whether placemaking-well-being relationships vary across subgroups, we tested moderation effects for gender, age, education, and site.

Gender Moderation: The PI × Gender interaction term was non-significant (β = .02, p = .387), indicating that placemaking's well-being benefits do not differ significantly between males and females. Both genders benefit approximately equally from high-quality placemaking.

Age Moderation: The PI × Age interaction was non-significant (β = -.02, p = .215), suggesting consistent effects across age groups. Younger and older adults show similar well-being responses to placemaking quality.

Education Moderation: The PI × Education interaction reached significance (β = .05, p = .008), indicating stronger effects among highly educated respondents. Simple slopes analysis revealed:

- Low education (1 SD below mean): $\beta_{PI} = .62$, $p < .001$
- Mean education: $\beta_{PI} = .68$, $p < .001$
- High education (1 SD above mean): $\beta_{PI} = .74$, $p < .001$

Interpretation: While placemaking benefits all education levels, highly educated respondents show slightly stronger well-being gains from improved placemaking. This may reflect greater capacity to recognize, appreciate, and utilize place qualities, or different priorities in place valuation.

Site Moderation: The PI × Site interaction was significant, $F(2, 1188) = 8.43$, $p < .001$. Site-specific regressions revealed:

- **Patrakarpuram**: $\beta_{PI} = .72$, $R^2 = .52$ (strongest effect)
- **Kapoorthala**: $\beta_{PI} = .68$, $R^2 = .46$ (moderate effect)
- **Engineering College Road**: $\beta_{PI} = .61$, $R^2 = .38$ (weakest effect)

Interpretation: The PI-well-being relationship is strongest in Patrakarpuram, possibly because existing community cohesion amplifies placemaking's benefits—a positive feedback loop where social capital and place quality mutually reinforce. Engineering College Road shows the weakest relationship, potentially due to transient user populations lacking sustained place attachment.

Despite these moderation effects, the core finding holds: placemaking significantly predicts well-being across all subgroups and sites, with effect sizes ranging from moderate to strong ($R^2 = .38$-$.52$).

Table 7. Moderation Analysis: Demographic and Contextual Effects

Moderator	Interaction Term	β	SE	p	Interpretation
Gender	PI × Gender	.02	.024	.387	NS: Effects consistent across genders
Age	PI × Age	-.02	.016	.215	NS: Effects consistent across ages
Education	PI × Education	.05**	.018	.008	Stronger effects for higher education
Site	PI × Site (overall)	–	–	<.001	Significant site variation

Site-Specific Regression Results:

Site	β_PI	SE	R^2	95% CI	Interpretation
Patrakarpuram	.72***	.045	.52	[.63, .81]	Strongest PI-WB relationship
Kapoorthala	.68***	.048	.46	[.58, .78]	Moderate PI-WB relationship
Engineering College Rd	.61***	.052	.38	[.51, .71]	Weakest PI-WB relationship

Note: *p < .05, **p < .01, ***p < .001. NS = Not significant. β = standardized coefficient.

4. DISCUSSION

4.1 Principal Findings: Quantifying Placemaking's Well-being Impact

This study provides robust quantitative evidence that placemaking intensity substantially predicts community well-being in urban neighborhood markets. The Placemaking Index explained 46.4% of variance in overall well-being ($R^2 = .464$)—a large effect by social science standards (Cohen, 1988)—after controlling for demographic characteristics. This magnitude substantially exceeds typical predictors of subjective well-being studied in urban contexts, such as income ($R^2 \approx .10$-$.15$) (Diener & Biswas-Diener, 2002), education ($R^2 \approx .05$-$.08$) (Ross & Van Willigen, 1997), or even employment status ($R^2 \approx .08$-$.12$) (McKee-Ryan et al., 2005).

The finding that demographics explained only 1.9% of well-being variance while placemaking explained 46.4% challenges person-centered well-being theories emphasizing individual characteristics as primary determinants (Diener et al., 1999). Instead, our results support **situational/contextual theories** arguing that environmental conditions—particularly the quality of everyday places people inhabit—exert powerful influences on well-being (Mouratidis, 2021; Leyden, 2003). This has profound policy implications: unlike demographic factors (age, gender) which are immutable, or individual factors (education, income) which are difficult and slow to change, placemaking represents a modifiable environmental factor amenable to design and planning interventions.

4.2 Dimensional Specificity: Pathways to Well-being

The dimensional decomposition revealed that not all placemaking attributes contribute equally to well-being. **Overall Sense of Place** (β = .28) emerged as the strongest predictor, followed by **Social & Cultural Interaction** (β = .24) and **Well-being & Comfort** (β = .21). In contrast, **Economic & Livelihood** (β = .12), while significant, had the weakest effect.

This hierarchy illuminates critical mechanisms:

1. Emotional Attachment as Primary Pathway: The dominance of Sense of Place aligns with place attachment literature emphasizing that emotional bonds to locations serve as psychological resources (Scannell & Gifford, 2010; Korpela et al., 2001). When users feel emotionally connected to markets—experiencing pride, identity affirmation, and symbolic meaning—well-being flourishes. This finding suggests that placemaking interventions should prioritize fostering emotional resonance, not merely improving physical infrastructure.

2. Social Connection as Core Benefit: The strong effect of Social & Cultural Interaction (β = .24) confirms social capital theory's predictions (Putnam, 2000; Leyden, 2003): spaces facilitating spontaneous encounters, cultural expression, and community bonding enhance well-being by meeting fundamental human needs for belonging and connection. Mediation analysis reinforced this, showing that Social & Cultural Interaction mediated 45.6% of the PI → Social Well-being relationship.

3. Physical Comfort Matters, But Less Than Expected: While Physical & Functional Attributes (accessibility, safety, comfort) predicted well-being significantly (β = .15), the effect was smaller than social/emotional dimensions. This suggests a hierarchy of needs: basic physical functionality may be necessary but not sufficient—once adequate, social and

emotional qualities become primary well-being drivers. This finding challenges purely physical determinism in urban design, supporting socio-spatial perspectives emphasizing that social processes activated by space matter more than space itself (Carmona et al., 2010; Gehl, 2010).

4. Economic Vitality: Indirect Effects: Economic & Livelihood's modest direct effect (β = .12) may underestimate its importance. Economic vitality likely operates indirectly: by sustaining diverse vendors and affordable goods, it enables sustained market use, which in turn facilitates social encounters and place attachment. Future research should test these multi-step mediation pathways.

4.3 Mediation Mechanisms: How Placemaking Produces Well-being

The mediation analyses provide mechanistic insights into how placemaking translates into well-being:

Social Pathway (45.6% mediation): High-quality placemaking → Increased social interaction opportunities → Enhanced social well-being. This pathway reflects that well-designed markets create "bumping spaces" (Whyte, 1980) where diverse people encounter each other, fostering weak ties that build social capital and reduce loneliness (Granovetter, 1973; Cacioppo & Patrick, 2008).

Emotional Pathway (51.4% mediation): High-quality placemaking → Stronger emotional attachment → Enhanced emotional well-being. This pathway suggests that when markets embody collective identity, heritage, and shared memories, they become "anchor points" providing continuity, meaning, and belonging—core constituents of eudaimonic well-being (Waterman, 1993; Ryan & Deci, 2001).

Environmental Pathway (37.5% mediation): High-quality placemaking → Better aesthetic/environmental conditions → Enhanced environmental well-being. This pathway aligns with Attention Restoration Theory (Kaplan & Kaplan, 1989) and Stress Reduction Theory (Ulrich et al., 1991): sensory-pleasant, clean, green environments provide cognitive restoration and physiological stress relief.

Importantly, **substantial direct effects remained** after accounting for mediators (35-52% of total effects). This indicates that measured dimensions do not fully explain placemaking's influence—unmeasured mechanisms (e.g., sense of safety enabling exploration, pride fostering civic engagement, economic security reducing anxiety) likely operate in parallel. Future research employing more comprehensive mediation models could decompose these complex pathways further.

4.4 Threshold Effects: The "Good Enough" Question

The threshold analysis revealed a clear dose-response relationship: higher placemaking intensity associates with systematically higher well-being. Markets with PI ≥ 75 showed 28% higher well-being than markets with PI < 66, confirming that quality differences translate into meaningful outcome differences.

The slight acceleration at high PI levels (quadratic effect β = .06, p = .042) suggests **synergistic effects**: when multiple placemaking dimensions are simultaneously strong, they may mutually reinforce. For example, markets combining excellent physical infrastructure, vibrant social life, and strong cultural identity may create "virtuous cycles" where each dimension amplifies others. A safe, comfortable market attracts more users → more users generate more social vitality → social vitality strengthens emotional attachment → attachment

motivates collective maintenance, further improving physical conditions. Such feedback loops could explain disproportionate well-being gains at high quality levels.

Policy Implication: Rather than pursuing incremental improvements across many mediocre markets, concentrating resources to achieve "excellent" status (PI ≥ 75) in select markets may yield greater aggregate well-being returns. Once high quality is achieved, markets may become self-sustaining through user stewardship and social capital, reducing long-term maintenance burdens.

4.5 Comparison with International Evidence

Our findings align with and extend Western research on place-well-being relationships:

Convergent Evidence: The strong positive correlation (r = .73) matches or exceeds relationships documented in European/North American studies: Leyden (2003) found walkability-social capital r = .65 in Ireland; Mouratidis (2018) reported neighborhood satisfaction-life satisfaction r = .58 in Norway; Lopes and Camanho (2013) documented public space quality-vitality r = .62 across European cities. This convergence suggests that fundamental place-well-being mechanisms transcend cultural contexts.

Divergent Emphases: The particularly strong effect of Social & Cultural dimension (β = .24) exceeds that typically reported in Western studies, where physical attributes often dominate (Gehl, 2010; Mehta, 2013). This difference likely reflects Indian social life's public, collective orientation (Mehrotra, 2004; Srinivas, 2019) versus Western individualism. In cultures emphasizing interdependence and community bonds, social interaction opportunities may be more critical for well-being than in cultures prioritizing autonomy and privacy.

Economic Dimension's Salience: The emergence of Economic & Livelihood as a distinct placemaking dimension (uncommon in Western frameworks) and its significant, if modest, well-being prediction (β = .12) reflects Global South contexts where economic security is precarious and markets serve vital livelihood functions (Bhowmik, 2012; Steel et al., 2014). Western place quality models developed in affluent contexts may overlook economic dimensions salient in resource-constrained settings.

Threshold Levels: Our identified threshold (PI ≥ 75 for disproportionate gains) cannot be directly compared to prior studies lacking standardized indices. However, the existence of thresholds aligns with "environmental docility hypothesis" (Lawton & Nahemow, 1973): environmental quality matters more for vulnerable populations, with effects accelerating as quality surpasses basic adequacy.

4.6 Theoretical Contributions

Integrating Place and Well-being Theories: This study bridges environmental psychology, social capital theory, and quality-of-life research by demonstrating that:

- Environmental quality (place) influences social processes (interaction, identity), which shape psychological outcomes (well-being)
- Multiple pathways operate simultaneously: restorative (stress reduction), social (connection), and identity-based (attachment)
- Context (place characteristics) outweighs composition (individual characteristics) in explaining well-being variance

This supports a **socio-ecological model** where well-being emerges from person-environment transactions rather than residing solely "in the person" or "in the environment" (Bronfenbrenner, 1979; Mouratidis, 2021).

Advancing Place Attachment Theory: Scannell and Gifford's (2010) tripartite model posits that place attachment comprises person (individual meanings), place (spatial attributes), and process (psychological connections). Our finding that Overall Sense of Place (measuring attachment) mediates 51% of placemaking's well-being effect validates attachment as a critical mechanism linking spatial qualities to psychological outcomes. Moreover, the dimension's strength (β = .28) positions emotional bonds as **not merely outcomes of good placemaking but primary pathways to well-being**—a subtle but important theoretical distinction.

Contextualizing Universal Principles: The study demonstrates that while core place-well-being relationships generalize across cultures (supporting universalist positions), their relative importance and expression vary contextually (supporting relativist positions). Social & Cultural dimensions' heightened salience in India versus Western contexts illustrates **contextualized universality**: fundamental mechanisms exist, but cultural values and social structures shape their magnitudes and manifestations.

4.7 Practical Implications for Urban Planning and Policy

1. Evidence-Based Justification for Placemaking Investments: The finding that PI explains 46% of well-being variance provides compelling justification for public expenditure on market improvements. Policymakers can argue that placemaking investments yield measurable quality-of-life returns comparable to (or exceeding) traditional interventions like income support or healthcare expansion.

2. Prioritizing Social and Emotional Dimensions: The dimensional hierarchy (Sense of Place > Social & Cultural > Well-being & Comfort > others) offers strategic guidance: interventions fostering emotional attachment and social connection should receive priority over purely physical improvements. This implies:

- **Programming over infrastructure**: Community events, festivals, cultural celebrations may yield higher well-being returns than repaving footpaths
- **Participatory processes**: Engaging users in co-design fosters ownership and attachment, amplifying well-being benefits beyond physical outcomes
- **Cultural preservation**: Protecting heritage elements and symbolic meanings sustains emotional bonds critical for well-being

3. Integrated, Multidimensional Interventions: Since multiple dimensions contribute significantly, effective placemaking requires **holistic approaches** addressing physical, social, cultural, aesthetic, and governance dimensions simultaneously. Single-attribute interventions (e.g., adding seating without addressing safety; improving infrastructure without fostering community events) may produce suboptimal returns.

4. Targeting High-Impact Sites: Given threshold effects, concentrating resources to achieve PI ≥ 75 in select markets may maximize aggregate well-being gains. Selection criteria could include:

- Markets with moderate existing PI (65-70) where modest investments could surpass thresholds

- Markets serving vulnerable populations (elderly, low-income) where environmental docility effects magnify benefits
- Markets with strong community organizations capable of sustaining improvements

5. Well-being as Evaluation Metric: Traditional urban project evaluations emphasize economic impacts (job creation, property values) or physical outputs (square meters improved). Our findings support incorporating **well-being outcomes** as primary success metrics. Municipal authorities could:

- Conduct pre-post well-being surveys for market improvement projects
- Track changes in Overall WBI and dimensional scores
- Compare achieved outcomes against predicted benefits from PI increases

6. Context-Sensitive Implementation: The significant site moderation effect (stronger PI-well-being relationships in Patrakarpuram than Engineering College Road) indicates that contextual factors—existing social capital, user demographics, governance structures—shape intervention effectiveness. "One-size-fits-all" placemaking strategies may fail; instead, interventions should be tailored to local social dynamics and user characteristics.

4.8 Limitations and Future Research Directions

Cross-Sectional Design: The present study's cross-sectional design precludes causal inference. While theory and mediation analyses suggest placemaking influences well-being, reverse causality is possible: happier people may perceive places more positively, or neighborhood selection (people choosing to frequent high-quality markets) may confound relationships. **Longitudinal research** tracking individuals' well-being before and after placemaking interventions would strengthen causal claims. Quasi-experimental designs comparing treatment markets receiving interventions to matched control markets would provide robust impact evaluations.

Common Method Bias: Self-reported measures for both placemaking and well-being raise common method bias concerns. Although Harman's single-factor test (first factor explained 34.2% variance, below 50% threshold) and distinct factor structures suggest bias is not severe, future research should triangulate with:

- **Objective placemaking measures**: Spatial audits quantifying physical attributes (footpath width, lighting lux levels, vendor density)
- **Behavioral well-being indicators**: Observational measures (dwell time, social interaction frequency) or physiological assessments (cortisol levels, heart rate variability)
- **Multi-source data**: Combining user surveys with expert evaluations and municipal records

Sample Limitations: Convenience sampling may underrepresent marginalized groups (homeless individuals, street vendors, extremely poor, elderly with mobility constraints). These populations may experience markets differently, with stronger environmental docility effects. Future studies should employ targeted sampling ensuring diverse representation, potentially revealing moderated relationships obscured in general samples.

Generalizability: While theoretical grounding and rigorous methods enhance transferability, findings derive from three Lucknow markets. Replication in other Indian cities (Delhi, Mumbai,

Bangalore) with varying urban forms, governance structures, and cultural contexts would test generalizability. International replication in other Global South regions (Southeast Asia, Latin America, Sub-Saharan Africa) would assess cross-cultural validity and identify universal versus context-specific mechanisms.

Unmeasured Mechanisms: Our mediation models explained 38-52% of total effects, leaving substantial variance unaccounted for. Future research should test additional mediators:

- **Perceived safety** enabling behavioral freedom
- **Social support networks** formed through market encounters
- **Civic efficacy** strengthened by participatory placemaking
- **Economic security** via market-supported livelihoods
- **Physical activity** encouraged by walkable, comfortable environments

Comprehensive path models integrating multiple mediators and moderators would illuminate complex causal chains.

Temporal Dynamics: Well-being and placemaking perceptions may fluctuate temporally—markets vibrant during festivals but deserted otherwise, or perceptions varying diurnally (morning commerce vs. evening socializing). Ecological Momentary Assessment (EMA) approaches capturing real-time perceptions via mobile apps could reveal temporal patterns obscured by retrospective surveys.

Threshold Precision: While we identified approximate thresholds (PI ≥ 75), more precise determination requires larger samples enabling finer gradation analysis and spline regression modeling non-linear relationships. Additionally, thresholds may vary by population subgroups (e.g., higher for younger users valuing amenities vs. older users prioritizing safety).

Causal Mechanisms: Understanding not just *whether* but *how* placemaking produces well-being requires qualitative complementation. In-depth interviews exploring users' experiences, phenomenological studies examining place meanings, and ethnographic observations documenting social dynamics would enrich mechanistic understanding and contextualize quantitative patterns.

4.9 Broader Implications for Global South Urban Development

This research challenges prevailing urban development paradigms prioritizing large-scale infrastructure (highways, mass transit, housing projects) over neighborhood-scale place quality. Our findings suggest that **micro-scale improvements to everyday places**—markets, streets, parks—where people actually spend time may yield comparable or superior well-being returns to macro-scale investments.

This perspective aligns with emerging critiques of "top-down mega-projects" in Global South cities (Bhan, 2019; Roy, 2009) and advocates for **incremental, participatory urbanism** (Caldeira, 2017; McFarlane, 2012). By demonstrating that placemaking substantially influences well-being, we provide empirical ammunition for urban social movements demanding investment in neighborhood public goods rather than elite-benefiting spectacle projects.

Moreover, the study's focus on **informal neighborhood markets**—often neglected or actively suppressed by planning authorities favoring "world-class" aesthetics—highlights these spaces' critical social functions. Rather than viewing markets as problems to be eliminated or

formalized, policymakers should recognize them as **well-being infrastructure** deserving protection, improvement, and integration into formal planning.

5. CONCLUSION

This study provides rigorous quantitative evidence that placemaking intensity substantially predicts community well-being in urban neighborhood markets. The Placemaking Index explained 46.4% of well-being variance—a large effect—confirming that spatial quality powerfully influences quality of life. Dimensional analyses revealed that emotional attachment (Sense of Place) and social connection (Social & Cultural Interaction) serve as primary pathways, while multiple dimensions contribute synergistically. Mediation analyses confirmed dimension-specific mechanisms: social dimensions mediate social well-being, aesthetic dimensions mediate environmental well-being, and emotional attachment mediates emotional well-being. Threshold analyses identified non-linear gains at high placemaking quality (PI ≥ 75), suggesting strategic value in pursuing excellence rather than adequacy.

Theoretical Contributions: This research advances understanding of place-well-being relationships by: (1) quantifying effect magnitudes enabling comparison with other well-being predictors, (2) illuminating multiple pathways through which place influences well-being, (3) demonstrating contextual factors' primacy over individual characteristics, and (4) validating these relationships in understudied Global South contexts.

Practical Contributions: The findings provide evidence-based justification for placemaking investments, strategic guidance on prioritizing social/emotional dimensions, and a replicable methodology for evaluating spatial interventions' social returns. Policymakers can integrate well-being outcomes into project evaluation, moving beyond economic or physical metrics to assess impacts on citizens' quality of life.

Future Directions: We call for longitudinal quasi-experimental studies strengthening causal inference, multi-city replications testing generalizability, qualitative research enriching mechanistic understanding, and methodological triangulation combining self-reports with objective measures and behavioral observations.

As Global South cities confront intensifying urbanization pressures, this research underscores that **investing in everyday places where ordinary people live, work, and socialize** constitutes a strategic pathway to enhancing collective well-being. By making placemaking's well-being benefits measurable and explicit, we empower communities and policymakers to prioritize place quality as essential urban infrastructure—not luxury amenity, but fundamental determinant of human flourishing.

DATA AVAILABILITY STATEMENT

Datasets, survey instruments, and analysis scripts are available from the corresponding author upon reasonable request, subject to ethical approval and confidentiality protections.

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