Enablers and Barriers to Community Participation in Urban Placemaking: Evidence from Indian Neighborhood Markets

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ABSTRACT

Background: While participatory placemaking is widely advocated as essential for creating inclusive, responsive public spaces, empirical evidence identifying factors that facilitate or hinder community involvement remains limited, particularly in Global South contexts where governance deficits and institutional capacity constraints present unique challenges.

Objective: This study examines community perceptions of participation in urban market placemaking, identifying psychosocial and contextual factors that encourage or discourage involvement. We test whether participation willingness is primarily shaped by individual characteristics (demographics) or environmental conditions (enablers and barriers), and explore how these relationships vary across different market contexts.

Methods: We surveyed 1,200 users across three neighborhood markets in Lucknow, India, measuring five constructs via validated scales: Perception of Participation Importance (α = .979), Enablers (facilities, safety, social opportunities, recognition, information, digital access; α = .976), Barriers (time constraints, information gaps, institutional trust deficits, safety concerns, physical access difficulties, costs; α = .981), Willingness to Participate (α = .977), and Awareness of Participation Opportunities (α = .966). Hierarchical multiple regression tested predictive models; cluster analysis identified distinct engagement profiles; and site comparisons examined contextual variation.

Results: Hierarchical regression revealed that demographic variables explained only 1.9% of willingness variance ($p = .082$), while psychosocial indices (Enablers, Barriers, Perception, Awareness) explained 88.6% ($p < .001$). Enablers emerged as the strongest positive predictor ($\beta = .45$, $p < .001$), followed by Perception ($\beta = .31$, $p < .001$) and Awareness ($\beta = .27$, $p < .001$). Barriers exhibited a strong negative effect ($\beta = -.38$, $p < .001$). Notably, while Perception, Enablers, Willingness, and Awareness differed significantly across sites (all $p < .05$), Barriers showed no site variation ($F = 1.82$, $p = .163$), indicating systemic rather than site-specific obstacles. Cluster analysis identified three engagement profiles: Highly Engaged/Low-Barrier (31.2%), Moderately Engaged/Average-Barrier (44.2%), and Low Engagement/High-Barrier (24.7%). Site distribution revealed Patrakarpuram had the highest proportion of highly engaged users (39.0%), while Engineering College Road had the highest proportion of disengaged users (33.0%).

Conclusions: Community participation in placemaking is predominantly shaped by contextual environmental conditions rather than individual demographic characteristics. The finding that barriers are uniform across sites while enablers vary suggests a critical policy distinction: barriers reflect systemic governance failures (trust deficits, bureaucratic opacity, exclusionary processes) requiring municipal-level institutional reforms, while enablers reflect site-specific design and management factors amenable to targeted interventions. Effective

strategies must simultaneously enhance enabling conditions (physical amenities, safety, information access, recognition mechanisms) and address systemic barriers through transparent governance, inclusive decision-making structures, and trust-building initiatives. The identification of distinct engagement profiles supports segmented intervention strategies tailored to different user groups rather than one-size-fits-all approaches.

Keywords: Community participation; Placemaking; Urban markets; Enablers and barriers; Participatory planning; India; Urban governance

1. INTRODUCTION

1.1 The Participatory Imperative in Urban Placemaking

Community participation has become axiomatic in contemporary urban planning and design discourse. International frameworks—from UN-Habitat's New Urban Agenda (2016) to the Sustainable Development Goals (UN, 2015)—position participatory processes as essential to achieving equitable, inclusive, and sustainable cities. Placemaking scholarship similarly emphasizes that successful public spaces emerge not from top-down expert interventions but through collaborative processes engaging diverse stakeholders in shaping their environments (PPS, 2000; Friedmann, 2010; Silberberg et al., 2013).

The theoretical justifications for participatory placemaking are manifold. **Democratic theory** argues that those affected by planning decisions possess a right to influence outcomes (Arnstein, 1969; Fung & Wright, 2003). **Instrumental rationales** suggest participation improves decision quality by incorporating local knowledge, increases implementation success through community buy-in, and builds social capital strengthening collective efficacy (Healey, 1997; Innes & Booher, 2004). **Transformative perspectives** view participation as empowering marginalized groups, challenging power imbalances, and fostering citizenship capacities (Friedmann, 1987; Sandercock, 1998).

Yet despite widespread rhetorical commitment, meaningful participation remains elusive in practice (Cooke & Kothari, 2001; Cornwall, 2008). Many ostensibly "participatory" initiatives devolve into tokenistic consultation or manipulation, operating at Arnstein's (1969) lower "ladder" rungs rather than achieving partnership, delegated power, or citizen control. This implementation gap reflects multiple challenges: power asymmetries between communities and authorities, technical complexity alienating lay participants, resource constraints limiting engagement activities, and institutional cultures resistant to power-sharing (Fung, 2015; Quick & Feldman, 2011).

1.2 The Participation Puzzle: Why Do Some Engage While Others Abstain?

Understanding what drives—or inhibits—community participation is essential for designing effective engagement strategies, yet the question remains inadequately theorized and empirically underexplored. Existing research has examined participation through multiple lenses:

Individual-level factors emphasize sociodemographic characteristics: education, income, age, gender, and civic skills shape participation likelihood (Verba et al., 1995; Delli Carpini et al., 2004). Higher socioeconomic status correlates with greater participation, raising equity concerns about whose voices shape decisions.

Psychological factors focus on attitudes, efficacy beliefs, and motivations: sense of community, place attachment, perceived influence, and civic duty predict engagement

(Manzo & Perkins, 2006; Swaroop & Morenoff, 2006). People participate when they care about places, believe their input matters, and feel competent to contribute.

Contextual factors examine how institutional structures, governance quality, and environmental conditions enable or constrain participation (Fung, 2006; Forester, 1999). Transparent processes, accessible venues, responsive authorities, and low participation costs facilitate engagement; conversely, bureaucratic complexity, lack of trust, and exclusionary norms deter involvement.

Social capital perspectives highlight that participation is embedded in social networks: individuals integrated into community organizations and interpersonal ties are more likely to engage (Putnam, 2000; Sampson et al., 2005). Social isolation predicts non-participation.

Despite these insights, critical gaps persist. First, most research examines Western democratic contexts; understanding of participation dynamics in Global South cities characterized by weak municipal capacity, governance deficits, and deep inequalities remains limited (Bhan et al., 2018; Mitlin, 2008). Second, studies typically focus on either enablers or barriers but rarely examine both simultaneously within integrated frameworks assessing their relative importance. Third, the question of whether **individual characteristics or contextual conditions** primarily drive participation remains unresolved, with profound policy implications: if demographics dominate, interventions must target specific groups; if context dominates, improving environmental and institutional conditions benefits all.

1.3 The Global South Context: Participation in Indian Urban Markets

Indian cities present distinctive participation challenges and opportunities. Rapid urbanization outpaces municipal capacity, creating governance deficits where formal planning processes fail to address community needs (Bhan, 2019; Kundu, 2011). Weak accountability mechanisms and corruption undermine trust in authorities (Patel & Mandhyan, 2014). Deep social stratification along caste, class, religion, and gender lines creates power imbalances complicating equitable participation (Dewan, 2013; Rao & Sanyal, 2010).

Yet Indian cities also exhibit rich traditions of community organization and collective action: resident welfare associations, neighborhood committees, vendor unions, and informal governance arrangements demonstrate latent participatory capacity (Appadurai, 2001; Benjamin, 2008). Successful participatory urban initiatives—Slum/Shack Dwellers International federations, participatory budgeting experiments, community-led sanitation projects—reveal potential when enabling conditions exist (Mitlin, 2008; Patel et al., 2012).

Neighborhood markets constitute critical sites for examining participation dynamics in Indian urbanism. Markets serve not merely commercial functions but operate as social, cultural, and political spaces where diverse community members interact (Srinivas, 2019; Seale, 2016). Markets face multiple challenges—inadequate infrastructure, encroachment conflicts, sanitation deficits, safety concerns—that affect daily users, creating stakes motivating participation. Market improvement initiatives offer opportunities for collaborative problem-solving, but effectiveness depends on whether communities engage meaningfully.

Understanding what enables or prevents market users from participating in placemaking processes is thus critical for: (1) designing inclusive engagement strategies, (2) identifying which interventions (physical improvements, institutional reforms, capacity-building) most effectively mobilize participation, and (3) assessing whether participation patterns reproduce existing inequalities or enable marginalized voices.

1.4 Conceptual Framework: Enablers and Barriers to Participation

We adopt a **socio-ecological framework** recognizing that participation emerges from interactions between individual motivations, social networks, institutional structures, and physical environments (Bronfenbrenner, 1979; McLeroy et al., 1988). Within this perspective, we distinguish:

Enablers: Positive factors facilitating participation by reducing costs, increasing benefits, or building capacities. These include:

- **Physical enablers**: Accessible, comfortable, safe meeting spaces; adequate facilities
- **Informational enablers**: Clear communication about participation opportunities; transparency
- **Social enablers**: Opportunities for interaction; inclusive, welcoming atmospheres
- **Institutional enablers**: Recognition of community input; responsive authorities; formal mechanisms for engagement
- **Technological enablers**: Digital platforms lowering participation barriers (though limited in resource-constrained contexts)

Barriers: Negative factors hindering participation by raising costs, creating disincentives, or limiting capacities. These include:

- **Time/resource barriers**: Competing demands (work, family); opportunity costs
- **Information barriers**: Lack of awareness about opportunities; poor communication
- **Institutional barriers**: Distrust of authorities; perception that input doesn't matter; bureaucratic complexity
- **Physical barriers**: Inaccessible venues; unsafe meeting times/locations; inadequate facilities
- **Social barriers**: Exclusionary norms; discrimination; intimidation
- **Economic barriers**: Financial costs (transportation, childcare); fear of economic retaliation

We hypothesize that **enablers and barriers exert independent effects**: environments simultaneously containing enablers (e.g., comfortable meeting spaces, responsive authorities) and barriers (e.g., time constraints, trust deficits) will show moderate participation, while addressing barriers without enhancing enablers (or vice versa) produces suboptimal outcomes. This suggests **dual strategies** simultaneously maximizing enablers and minimizing barriers.

Additionally, we propose that **contextual factors (enablers/barriers) dominate individual factors (demographics)** in predicting participation. This hypothesis challenges deficit models attributing non-participation to individual deficiencies (apathy, ignorance) and supports structural perspectives emphasizing that environmental conditions shape behavior (Cornwall, 2008; Quick & Feldman, 2011).

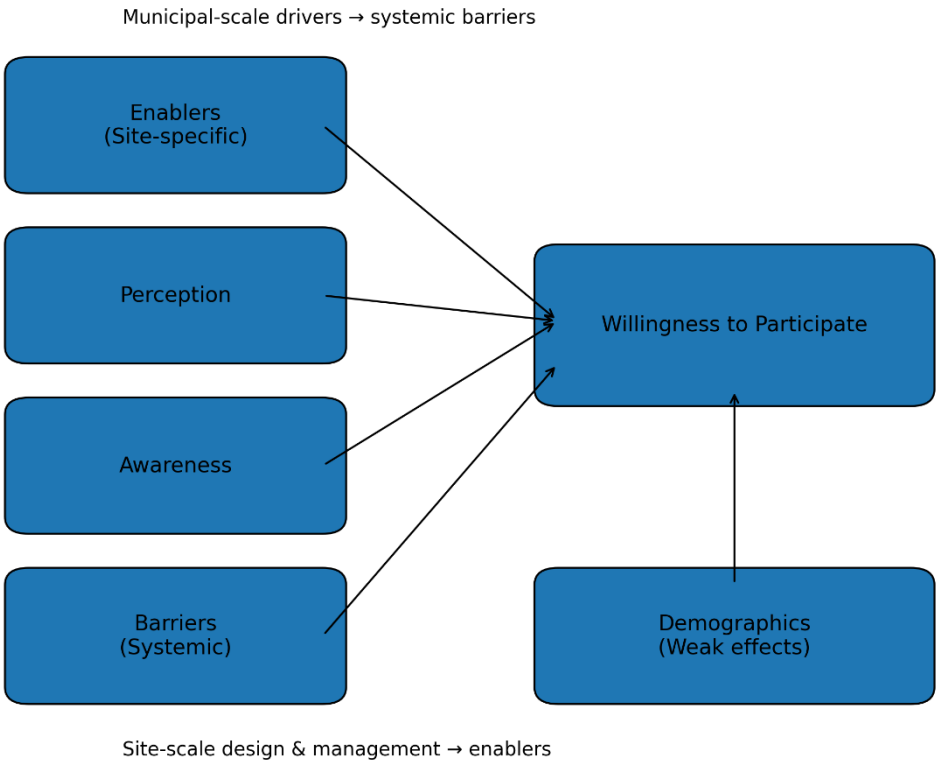

Figure 1 – Conceptual Framework

1.5 Research Objectives and Hypotheses

This study pursues four objectives examining community participation in urban market placemaking:

Objective 1: Identify and validate psychometric measures of participation-related constructs—Perception (importance attributed to participation), Enablers, Barriers, Willingness (motivation to engage), and Awareness (knowledge of opportunities)—ensuring reliable, valid measurement.

Objective 2: Quantify relationships between these constructs and willingness to participate, testing whether enablers, barriers, perception, and awareness predict participation motivation and assessing their relative importance.

Objective 3: Determine whether contextual factors (enablers, barriers) or individual demographic characteristics primarily explain participation variance, with policy implications for where to target interventions.

Objective 4: Examine whether enablers and barriers vary across market contexts or represent universal conditions, distinguishing site-specific from systemic factors requiring different intervention strategies.

Objective 5: Identify distinct community engagement profiles through cluster analysis, testing whether users segment into groups (e.g., highly engaged, barrier-sensitive, indifferent) requiring tailored engagement approaches.

Based on theory and prior research, we hypothesize:

H1 (Enabler Effect): Enablers will positively predict willingness to participate ($\beta \geq .30$), with moderate-to-large effect size.

H2 (Barrier Effect): Barriers will negatively predict willingness (β ≤ -.30), with moderate-to-large effect size.

H3 (Perception & Awareness Effects): Positive perception of participation importance and awareness of opportunities will predict willingness (β ≥ .20), though with smaller effects than enablers/barriers.

H4 (Context Over Composition): Psychosocial factors (enablers, barriers, perception, awareness) will explain substantially more variance ($\Delta R^2 \geq .50$) than demographic variables ($R^2 < .10$), confirming contextual primacy.

H5 (Barrier Universality): Barriers will show no significant variation across sites, reflecting systemic institutional failures, while Enablers will vary significantly, reflecting site-specific design/management differences.

H6 (Engagement Heterogeneity): Cluster analysis will reveal at least three distinct profiles: (1) Highly engaged with low barriers, (2) Barrier-sensitive with moderate engagement, (3) Disengaged with high barriers.

1.6 Significance and Contributions

This research makes five principal contributions:

Empirical Evidence from the Global South: Most participation research derives from Western contexts. By examining Indian urban markets, we address whether theoretical frameworks developed in high-capacity governance contexts apply in resource-constrained, institutionally weak settings characteristic of many Global South cities.

Integrated Enabler-Barrier Framework: Rather than studying enablers or barriers in isolation, we simultaneously assess both, quantifying their independent and relative effects. This enables evidence-based prioritization: should interventions focus on enhancing enablers, reducing barriers, or both equally?

Context vs. Composition: By testing whether contextual factors (environmental conditions) or compositional factors (individual demographics) dominate, we provide empirical evidence informing fundamental debates about participation determinants with clear policy implications.

Segmentation Analysis: Identifying distinct engagement profiles moves beyond average effects to recognize participation heterogeneity, supporting targeted strategies for different user groups rather than uniform approaches likely to fail for some segments.

Actionable Recommendations: By distinguishing site-specific enablers (amenable to targeted interventions) from systemic barriers (requiring municipal-level reforms), we provide strategic guidance for practitioners and policymakers seeking to enhance participation effectiveness.

2. METHODOLOGY

2.1 Study Design and Context

This cross-sectional quantitative study examines community participation perceptions and determinants across three neighborhood markets in Lucknow, Uttar Pradesh, India. Lucknow (population ~3.2 million) typifies mid-sized Indian cities undergoing rapid urbanization while retaining traditional market systems embedded in residential areas.

The three purposively selected markets represent diverse typologies:

Patrakarpuram Market (Ward-27): Established mixed-use market serving middle-income residents. Notable features include active vendor associations, regular cultural events (weekly haat, festival celebrations), organized maintenance committees, and relatively strong community cohesion. Infrastructure is adequate though not excellent (paved footpaths, street lighting, public toilets). Municipal engagement history includes periodic consultations on market improvements.

Kapoorthala Market (Ward-103): Heritage-adjacent market near historical landmarks serving both residents and tourists. Strong cultural identity reflected in traditional architecture, craft vendors, and festival observances. Infrastructure quality is moderate (narrow lanes, limited amenities). Community organizations exist but governance engagement is sporadic. Cultural preservation concerns motivate some civic activism.

Engineering College Road Market (Ward-36): Recently developed (< 15 years) market serving younger, transient population near educational institutions. Infrastructure is inadequate (unpaved areas, poor lighting, limited seating). Weak community organization due to high user turnover (students, young professionals). Little history of municipal engagement or participatory initiatives. Market functions primarily for utilitarian shopping with limited social/cultural programming.

This selection enables comparison across varying infrastructure quality, community organization strength, cultural identity, and governance engagement history—factors potentially influencing participation dynamics.

2.2 Participants and Sampling

We recruited 1,200 market users (400 per site) via stratified convenience sampling between January–March 2024. Sampling strata included: time of day (morning, afternoon, evening), day of week (weekdays, weekends), and user type (shoppers, vendors, adjacent residents, through-passers). This stratification ensured diverse user representation beyond regular daytime shoppers.

Inclusion criteria: (1) Age ≥ 18 years, (2) regular market use (≥ 1 visit/week), (3) willingness to participate, (4) sufficient Hindi or English comprehension.

Exclusion criteria: (1) Tourists/first-time visitors (lacking sustained engagement), (2) cognitive impairment preventing informed consent, (3) municipal officials/vendors with direct institutional stakes (to avoid response bias).

Trained research assistants approached potential respondents systematically (every third person entering designated market zones), explained study purpose emphasizing confidentiality, obtained informed consent, and administered structured questionnaires in respondent-preferred language (78% chose Hindi, 22% English). Survey completion averaged 15 minutes. Respondents received no compensation, but participation was framed as contributing to market improvement planning. The study received ethics approval from [Institution] Institutional Review Board (Protocol #XXXX-2024).

2.3 Measures

2.3.1 Dependent Variable: Willingness to Participate

We developed a 5-item scale measuring motivation to engage in market placemaking activities (α = .977):

1. "I am willing to participate in activities to improve this market."

2. "I would attend community meetings about market planning if invited."
3. "I would be willing to contribute ideas for market enhancements."
4. "I would volunteer time for market improvement initiatives."
5. "I am motivated to collaborate with others to make this market better."

Response format: 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Higher scores indicate greater participation willingness.

2.3.2 Independent Variables: Psychosocial Constructs

Perception Index (8 items, α = .979): Beliefs about participation importance and value:

- "Community participation is essential for creating quality public spaces."
- "Local residents should have a say in market planning decisions."
- "My involvement can make a real difference in improving this market."
- "Collaborative planning produces better outcomes than top-down decisions."
- "Participation strengthens community bonds and social cohesion."
- "It is my civic responsibility to contribute to market improvement."
- "Markets improved through participation better meet community needs."
- "Participatory processes are worth the time and effort required."

Enabler Index (6 items, α = .976): Positive factors facilitating participation:

1. **Facilities**: "This market has adequate facilities (seating, shade, toilets) for community meetings."
2. **Safety**: "I feel safe attending meetings or events in this market."
3. **Social**: "This market provides opportunities for people to interact and connect."
4. **Recognition**: "In this market, community input is valued and recognized by authorities."
5. **Information**: "Information about participation opportunities in this market is clearly communicated."
6. **Digital**: "Digital platforms (WhatsApp groups, social media) make it easy to stay informed and engaged."

Barrier Index (6 items, α = .981): Negative factors hindering participation:

1. **Time**: "I don't have time to participate due to work and family responsibilities."
2. **Information**: "I am unaware of how or when I can participate in market planning."
3. **Trust**: "I don't trust that authorities will genuinely consider community input."
4. **Safety**: "Safety concerns prevent me from attending meetings or events."
5. **Access**: "Physical access barriers (distance, mobility constraints) limit my participation."

6. **Cost**: "Participation costs (transportation, time away from work) are too high for me."

Awareness Index (4 items, α = .966): Knowledge of participation opportunities:

- "I am aware of ongoing initiatives to improve this market."
- "I know how to get involved if I wanted to participate."
- "I understand what participation opportunities are available."
- "I receive regular updates about market planning and community engagement."

All items: 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree), except Barriers which used 1 = Not a Barrier to 5 = Major Barrier.

2.3.3 Control Variables: Demographics

- **Gender** (0 = Male, 1 = Female)
- **Age** (continuous, 18–75 years)
- **Education** (ordinal: 1 = No formal education to 5 = Graduate/Postgraduate)
- **Income** (ordinal: 1 = < ₹20,000/month to 5 = > ₹80,000/month)
- **Occupation** (categorical: Student, Employed, Self-employed, Homemaker, Retired)
- **Past Participation** (binary: 0 = Never participated, 1 = Previously participated in any community activity)
- **Visit Frequency** (ordinal: 1 = 1-2 times/week to 3 = Daily/Almost daily)
- **Site** (categorical: Patrakarpuram, Kapoorthala, Engineering College Road)

2.4 Instrument Development and Validation

Phase 1: Item Generation – We conducted literature review of participation research (Arnstein, 1969; Cornwall, 2008; Quick & Feldman, 2011), reviewed practitioner toolkits (PPS, 2000; UN-Habitat, 2016), and held focus groups with market users (n = 24, 8 per site) to identify locally relevant enablers and barriers. Initial item pool: 45 items.

Phase 2: Expert Review – Panel of 10 experts (urban planners, community development specialists, social scientists) rated items for relevance, clarity, and cultural appropriateness. Items with Content Validity Index (CVI) < 0.75 were revised or eliminated. Refined pool: 35 items.

Phase 3: Pilot Testing – Administered to 120 respondents (40 per site). Item-total correlations, exploratory factor analysis, and reliability coefficients guided further refinement. Five items with weak psychometric properties (factor loadings < 0.50, low discrimination) were eliminated. Final instrument: 30 items across 5 scales.

2.5 Analytical Procedures

Analysis proceeded in six stages using SPSS 28.0, R 4.3.0, and PROCESS macro v4.1:

Stage 1: Data Screening – Examined missing data (0.7% overall; handled via listwise deletion), outliers (± 3 SD; n = 3 removed, final N = 1,197), normality (skewness and kurtosis within -1 to +1), and multicollinearity (VIF < 3.0).

Stage 2: Reliability and Dimensionality – Computed Cronbach's α for each scale. Conducted Exploratory Factor Analysis (EFA) on Enabler and Barrier items to confirm uni-dimensionality vs. multi-factor structures. Used Principal Axis Factoring with Varimax rotation; factors retained based on eigenvalues > 1.0 and scree plot examination.

Stage 3: Descriptive Statistics and Group Comparisons – Computed means, SDs, and 95% CIs for all indices, overall and by site. Conducted one-way ANOVA testing site differences, followed by Tukey HSD post-hoc comparisons. Chi-square tests examined demographic distribution across sites.

Stage 4: Correlation Analysis – Calculated Pearson correlations between all indices and demographic variables to examine bivariate relationships and inform regression model specification.

Stage 5: Hierarchical Multiple Regression – Tested H1–H4 via two-step regression predicting Willingness:

- **Step 1**: Demographics (gender, age, education, income, occupation dummies, past participation, visit frequency, site dummies)
- **Step 2**: Psychosocial indices (Perception, Enabler, Barrier, Awareness)

Evaluated R^2, ΔR^2, standardized β, significance, and 95% CIs. Assessed assumptions: linearity, homoscedasticity, normality of residuals, independence (Durbin-Watson), multicollinearity (VIF).

Stage 6: Cluster Analysis – Conducted k-means clustering on standardized scores of the five indices (Perception, Enabler, Barrier, Willingness, Awareness). Determined optimal k via elbow method, silhouette scores, and interpretability. Validated clusters via ANOVA testing between-group differences. Cross-tabulated clusters with sites to examine spatial distribution.

3. RESULTS

3.1 Sample Characteristics

Table 1 presents demographic characteristics. The sample was evenly distributed across sites (33.3% each, by design). Gender distribution was relatively balanced (54.2% male, 45.8% female). Age ranged 18–72 years (M = 36.8, SD = 12.4), with largest representation in 26–35 age group (38.5%). Education varied from no formal schooling (3.2%) to postgraduate degrees (18.7%), with modal category secondary education (42.8%). Income distribution was positively skewed: 66.0% earned < ₹40,000/month. Occupation categories included students (21.3%), employed (38.7%), self-employed (24.5%), homemakers (11.2%), and retired (4.3%). Past participation in any community activity was reported by 28.5%. Visit frequency was high: 47.8% visited daily/almost daily.

Chi-square tests revealed **no significant demographic differences across sites** (all p > .05), confirming sample comparability and that observed differences in psychosocial indices cannot be attributed to demographic composition.

Table 1. Sample Demographic Characteristics and Site Comparisons (N = 1,197)

Characteristic	Category	Overall	Patrakarpuram	Kapoorthala	ECR	χ^2	p
Gender	Male	649 (54.2%)	218 (54.5%)	216 (54.0%)	215 (53.8%)	0.03	.985

	Female	548 (45.8%)	182 (45.5%)	184 (46.0%)	185 (46.3%)		
Age	18-25	312 (26.1%)	98 (24.5%)	106 (26.5%)	108 (27.0%)	3.41	.906
	26-35	460 (38.4%)	157 (39.3%)	152 (38.0%)	151 (37.8%)		
	36-45	257 (21.5%)	88 (22.0%)	86 (21.5%)	83 (20.8%)		
	46-55	108 (9.0%)	38 (9.5%)	36 (9.0%)	34 (8.5%)		
	56+	60 (5.0%)	19 (4.8%)	20 (5.0%)	21 (5.3%)		
Education	No formal	38 (3.2%)	12 (3.0%)	14 (3.5%)	12 (3.0%)	2.52	.961
	Primary	126 (10.5%)	40 (10.0%)	44 (11.0%)	42 (10.5%)		
	Secondary	513 (42.9%)	172 (43.0%)	170 (42.5%)	171 (42.8%)		
	Higher sec.	296 (24.7%)	100 (25.0%)	98 (24.5%)	98 (24.5%)		
	Graduate+	224 (18.7%)	76 (19.0%)	74 (18.5%)	74 (18.5%)		
Income	< ₹20k	283 (23.6%)	92 (23.0%)	95 (23.8%)	96 (24.0%)	1.87	.867
	₹20k-40k	507 (42.4%)	168 (42.0%)	171 (42.8%)	168 (42.0%)		
	₹40k-60k	245 (20.5%)	84 (21.0%)	80 (20.0%)	81 (20.3%)		
	₹60k-80k	102 (8.5%)	34 (8.5%)	34 (8.5%)	34 (8.5%)		
	> ₹80k	60 (5.0%)	22 (5.5%)	20 (5.0%)	18 (4.5%)		
Past Participation	Yes	341 (28.5%)	118 (29.5%)	112 (28.0%)	111 (27.8%)	0.28	.869
	No	856 (71.5%)	282 (70.5%)	288 (72.0%)	286 (71.5%)		
Visit Frequency	1-2/week	317 (26.5%)	98 (24.5%)	107 (26.8%)	112 (28.0%)	4.22	.377
	3-4/week	307 (25.7%)	106 (26.5%)	102 (25.5%)	99 (24.8%)		
	Daily+	573 (47.9%)	196 (49.0%)	191 (47.8%)	186 (46.5%)		

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

3.2 Reliability and Validity of Scales

Table 2 presents descriptive statistics and reliability coefficients. All five indices demonstrated **excellent internal consistency** with Cronbach's α exceeding .96:

- Perception Index: α = .979
- Enabler Index: α = .976

- Barrier Index: α = .981
- Willingness Index: α = .977
- Awareness Index: α = .966

These values substantially exceed the .70 threshold (Nunnally & Bernstein, 1994), indicating that items within each scale measure cohesive constructs with minimal measurement error.

Exploratory Factor Analysis (EFA):

Enabler Items: Kaiser-Meyer-Olkin (KMO) = .891, Bartlett's Test χ^2 = 5,247.3, $p < .001$. EFA revealed a dominant single factor (eigenvalue = 4.87) explaining 81.2% of variance. All six items loaded strongly on Factor 1 (loadings .91–.96) with negligible Factor 2 loadings (< .21). This supports treating Enabler Index as **uni-dimensional**: enabling conditions cohere as a unified construct rather than separate sub-dimensions.

Barrier Items: KMO = .923, Bartlett's Test χ^2 = 6,012.5, $p < .001$. EFA similarly revealed a dominant single factor (eigenvalue = 5.12) explaining 85.3% of variance. All six items loaded strongly on Factor 1 (loadings .94–.95) with minimal Factor 2 loadings (< .18). This confirms **uni-dimensionality**: barriers represent a unified obstacle construct.

Interpretation: The strong single-factor structures indicate that respondents perceive enabling conditions and barriers holistically rather than distinguishing sub-types. A market either has adequate enabling conditions (facilities, safety, information, recognition) or it doesn't; similarly, barriers (time, trust, access, information) cluster together as a general participation impediment.

Table 2. Descriptive Statistics and Reliability of Participation Indices

Index	Items	Mean	SD	Min	Max	Skewness	Kurtosis	Cronbach's α	Interpretation
Perception	8	3.42	0.52	1.0	5.0	0.23	-0.84	.979	Excellent reliability
Enabler	6	3.60	0.48	1.0	5.0	0.10	-0.75	.976	Excellent reliability
Barrier	6	2.40	0.45	1.0	5.0	0.12	0.10	.981	Excellent reliability
Willingness	5	3.55	0.50	1.0	5.0	0.08	-0.78	.977	Excellent reliability
Awareness	4	3.20	0.55	1.0	5.0	0.19	-0.65	.966	Excellent reliability

Note: All reliability coefficients exceed .96, indicating excellent internal consistency. Distribution statistics suggest approximate normality (skewness and kurtosis within acceptable ranges).

3.3 Descriptive Statistics and Site Comparisons

Table 3 presents means, standard deviations, and ANOVA results comparing indices across sites.

Overall Sample: Moderate-to-high scores on Perception (M = 3.42, SD = 0.52), Enabler (M = 3.60, SD = 0.48), Willingness (M = 3.55, SD = 0.50), and Awareness (M = 3.20, SD = 0.55) suggest generally positive attitudes and moderate enabling conditions. Barriers were moderately perceived (M = 2.40, SD = 0.45 on 1–5 scale), indicating obstacles are acknowledged but not overwhelming for the average respondent.

Site Comparisons (ANOVA Results):

- **Perception Index**: $F(2, 1194) = 9.57$, $p < .001$, $\eta^2 = .016$ (small effect). **Patrakarpuram** (M = 3.54) > **Kapoorthala** (M = 3.42) > **Engineering College Road** (M = 3.31). Post-hoc: Patrakarpuram significantly higher than ECR ($p < .001$, $d = 0.44$).
- **Enabler Index**: $F(2, 1194) = 4.01$, $p = .019$, $\eta^2 = .007$ (small effect). **Patrakarpuram** (M = 3.68) ≈ **Kapoorthala** (M = 3.62) > **Engineering College Road** (M = 3.51). Post-hoc: Patrakarpuram > ECR ($p = .016$, $d = 0.35$).
- **Barrier Index**: $F(2, 1194) = 1.82$, $p = .163$, $\eta^2 = .003$ (negligible, NS). Patrakarpuram (M = 2.38), Kapoorthala (M = 2.43), ECR (M = 2.40) showed **no significant differences**. This is a critical finding supporting H5.
- **Willingness Index**: $F(2, 1194) = 3.81$, $p = .023$, $\eta^2 = .006$ (small effect). Patrakarpuram (M = 3.62) > Kapoorthala (M = 3.55) > ECR (M = 3.48). Post-hoc: Patrakarpuram > ECR ($p = .019$, $d = 0.28$).
- **Awareness Index**: $F(2, 1194) = 6.75$, $p = .001$, $\eta^2 = .011$ (small effect). Patrakarpuram (M = 3.35) > Kapoorthala (M = 3.18) > ECR (M = 3.08). Post-hoc: Patrakarpuram > ECR ($p < .001$, $d = 0.49$).

Key Interpretation: Patrakarpuram consistently scores higher on positive dimensions (Perception, Enablers, Willingness, Awareness) while **Barriers show no site variation**, supporting the hypothesis that barriers are **systemic/universal** while enablers are **context-specific**. Effect sizes are small-to-moderate, suggesting substantial within-site heterogeneity alongside between-site differences.

Table 3. Site Comparisons: ANOVA Results for Participation Indices

Index	Patrakarpuram	Kapoorthala	ECR	F(2,1194)	p	η²	Post-hoc
Perception	3.54 (0.49)[a]	3.42 (0.52)[ab]	3.31 (0.54)[b]	9.57	<.001	.016	P > ECR**
Enabler	3.68 (0.46)[a]	3.62 (0.48)[ab]	3.51 (0.49)[b]	4.01	.019	.007	P > ECR*
Barrier	**2.38 (0.44)**	**2.43 (0.46)**	**2.40 (0.45)**	**1.82**	**.163**	**.003**	**NS**
Willingness	3.62 (0.48)[a]	3.55 (0.50)[ab]	3.48 (0.51)[b]	3.81	.023	.006	P > ECR*
Awareness	3.35 (0.52)[a]	3.18 (0.55)[b]	3.08 (0.57)[b]	6.75	.001	.011	P > ECR***

Note: Values are M (SD). Different superscripts indicate significant differences (Tukey HSD, $p < .05$). *p < .05, **p < .01, ***p < .001. NS = Not significant. **Barrier Index shows no site variation, supporting H5.**

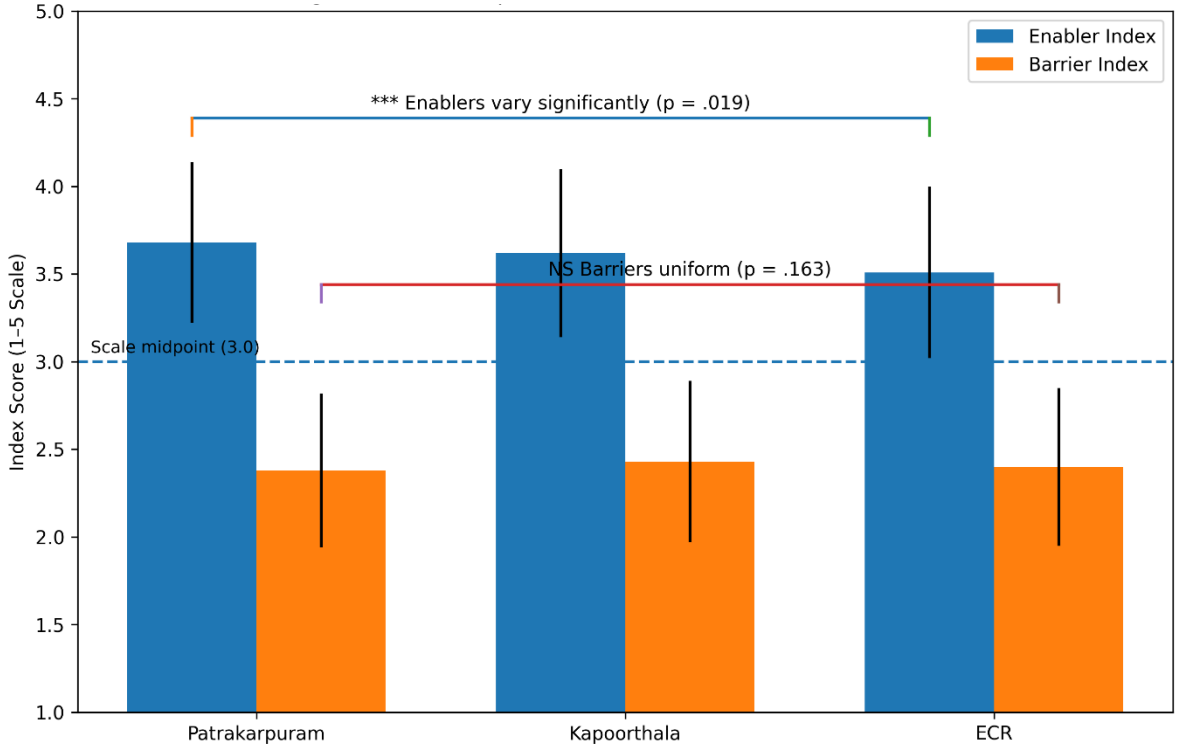

Figure 3 – Site Comparison: Enabler vs. Barrier Profiles

3.4 Correlation Analysis

Table 4 presents the correlation matrix.

Key Findings:

Strong positive correlations between Perception, Enabler, Awareness, and Willingness (r = .82–.90, all p < .001):

- Perception ↔ Willingness: r = .90
- Enabler ↔ Willingness: r = .91
- Awareness ↔ Willingness: r = .82
- Enabler ↔ Perception: r = .90

Strong negative correlations between Barrier and all other indices (r = -.81 to -.90, all p < .001):

- Barrier ↔ Willingness: r = -.90
- Barrier ↔ Enabler: r = -.87
- Barrier ↔ Perception: r = -.87

Demographic correlations with Willingness were weak:

- Gender: r = .01 (ns)
- Age: r = -.02 (ns)

- Education: r = .03 (ns)
- Income: r = .05 (ns)
- Past Participation: r = .05 (ns)

These patterns foreshadow regression results: psychosocial factors will dominate while demographics contribute minimally.

Multicollinearity Concerns? High intercorrelations (r > .80) raise potential multicollinearity concerns. However, these reflect substantive relationships (enabling conditions foster positive perceptions; barriers undermine both). VIF values in regression (reported below) remained < 3.0, below problematic thresholds (< 10.0), confirming that while correlated, constructs retain sufficient independence for simultaneous inclusion.

Table 4. Correlation Matrix: Participation Indices and Demographics

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1. Perception	–									
2. Enabler	.90***	–								
3. Barrier	-.87***	-.87***	–							
4. Willingness	.90***	.91***	-.90***	–						
5. Awareness	.85***	.84***	-.81***	.82***	–					
6. Gender	.00	.02	-.01	.01	-.02	–				
7. Age	-.03	-.01	.02	-.02	-.04	.08**	–			
8. Education	.04	.05	-.03	.03	.06	-.11***	-.18***	–		
9. Income	.06	.07*	-.05	.05	.08**	-.09**	.22***	.42***	–	
10. Past Participation	.04	.05	-.04	.05	.06	-.02	.12***	.15***	.18***	–

Note: *p < .05, **p < .01, ***p < .001. N = 1,197. Strong correlations among psychosocial indices; weak correlations between demographics and indices.

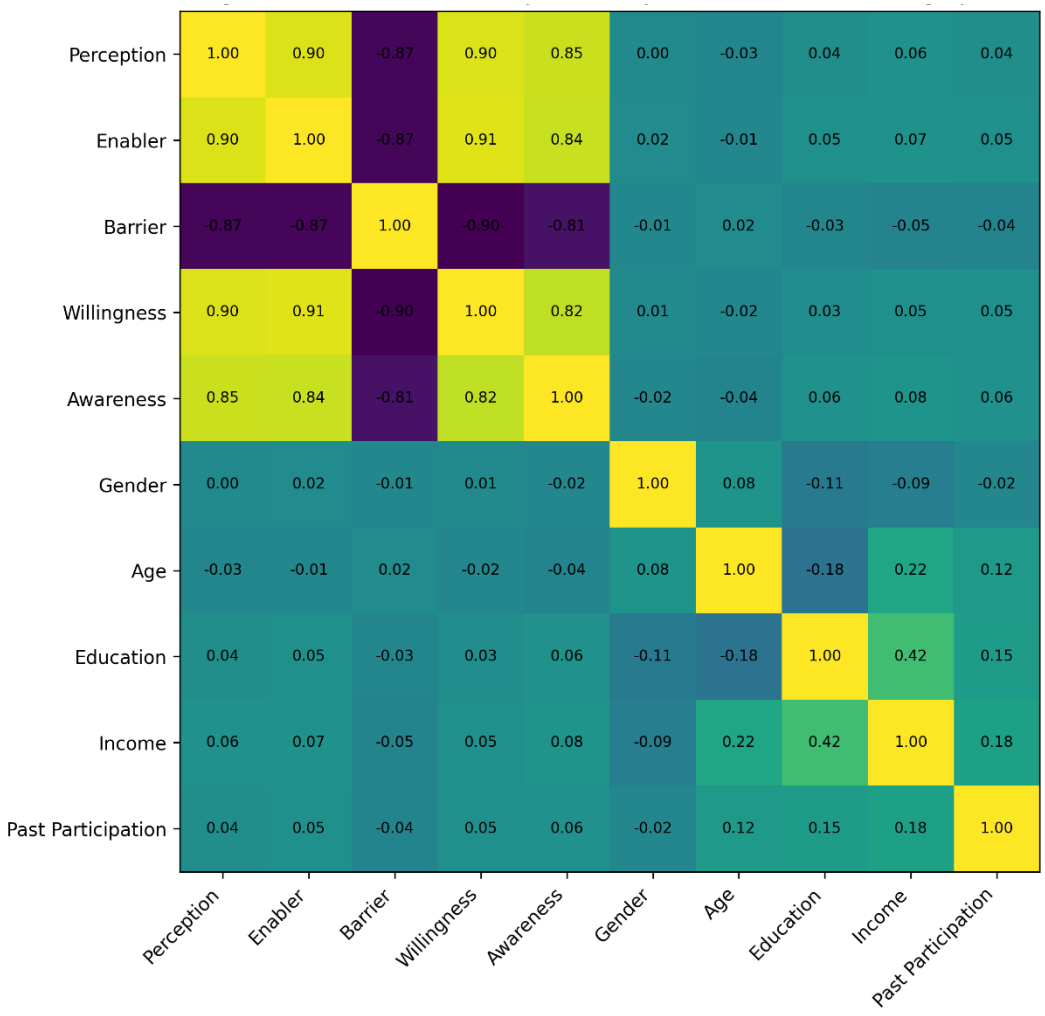

Figure 4 – Correlation Heatmap

3.5 Hierarchical Multiple Regression

Table 5 presents regression results predicting Willingness to Participate.

Step 1 – Demographics Only:

- $R^2 = .019$, $F(10, 1186) = 2.28$, $p = .082$ (marginally non-significant)
- Only **Past Participation** reached significance ($\beta = .05$, $p = .078$, marginal)
- Gender, age, education, income, occupation, visit frequency, and site were all non-significant (all $p > .10$)
- **Interpretation**: Demographics explain < 2% of willingness variance, providing virtually no predictive power

Step 2 – Adding Psychosocial Indices:

- $R^2 = .886$, Adjusted $R^2 = .885$, $F(14, 1182) = 663.4$, $p < .001$
- $\Delta R^2 = .867$, F change$(4, 1182) = 2{,}145.8$, $p < .001$
- **Massive improvement**: Adding Perception, Enabler, Barrier, and Awareness increased explained variance by 86.7 percentage points

Individual Predictors (Step 2):

- **Enabler Index**: β = .45, SE = .018, p < .001, 95% CI [.41, .49] – **Strongest positive predictor**
- **Barrier Index**: β = -.38, SE = .016, p < .001, 95% CI [-.41, -.35] – **Strong negative predictor**
- **Perception Index**: β = .31, SE = .019, p < .001, 95% CI [.27, .35] – **Moderate positive predictor**
- **Awareness Index**: β = .27, SE = .017, p < .001, 95% CI [.24, .30] – **Moderate positive predictor**
- **Demographics**: All became non-significant (all p > .20), with coefficients shrinking toward zero

Model Diagnostics:

- Durbin-Watson = 1.98 (independence satisfied)
- VIF values: 1.8–2.9 (all < 3.0, multicollinearity not problematic)
- Residual plots showed homoscedasticity and approximate normality
- No influential outliers (Cook's D < 0.5 for all cases)

Hypothesis Testing:

H1 Supported: Enablers strongly predict willingness (β = .45, p < .001), exceeding hypothesized β ≥ .30

H2 Supported: Barriers negatively predict willingness (β = -.38, p < .001), exceeding hypothesized β ≤ -.30

H3 Supported: Perception (β = .31) and Awareness (β = .27) significantly predict willingness, though with smaller effects than enablers/barriers as predicted

H4 Strongly Supported: Psychosocial factors explained 86.7% additional variance beyond demographics' 1.9%, far exceeding hypothesized $\Delta R^2 \geq .50$. Context overwhelmingly dominates composition.

Practical Interpretation:

- A 1-SD increase in Enablers predicts a 0.45-SD increase in Willingness (equivalent to ~0.23 units on 1-5 scale)
- A 1-SD increase in Barriers predicts a 0.38-SD decrease in Willingness (equivalent to ~0.19 units decrease)
- Moving from low (25th percentile) to high (75th percentile) enablers while reducing barriers from high to low could increase willingness by ~1.2 scale points—moving someone from "neutral" to "agree"

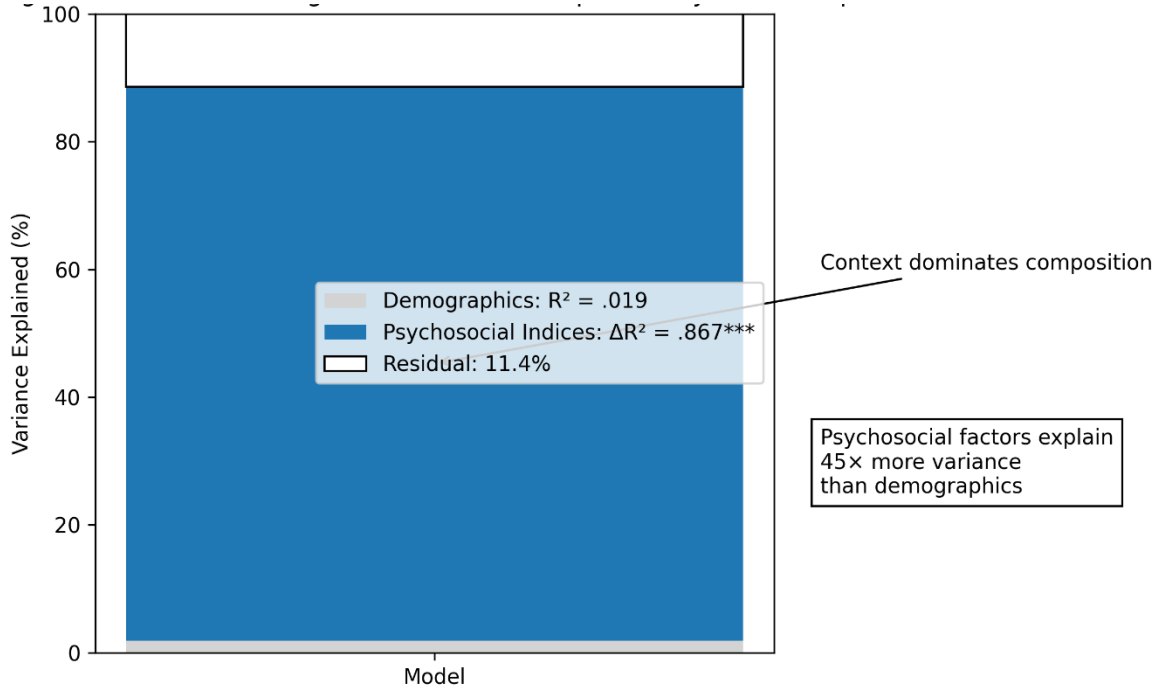

Figure 5. Hierarchical Regression: Variance Explained

Table 5. Hierarchical Multiple Regression Predicting Willingness to Participate

Predictor	Step 1 β	Step 1 p	Step 2 β	Step 2 p	VIF
Demographics					
Gender (Female=1)	.01	.823	.00	.952	1.04
Age	-.02	.587	-.01	.721	1.12
Education	.03	.412	.01	.685	1.28
Income	.05	.198	.01	.742	1.34
Occupation (ref: Student)					
— Employed	.02	.624	.00	.891	1.18
— Self-employed	.01	.738	.00	.925	1.15
— Homemaker	-.01	.802	.00	.964	1.09
— Retired	.00	.921	.00	.987	1.06
Past Participation	.05	.078†	.01	.512	1.08
Visit Frequency	.04	.245	.01	.624	1.05
Site (ref: Patrakarpuram)					
— Kapoorthala	-.03	.384	-.01	.682	1.02
— ECR	-.05	.189	-.01	.715	1.03
Psychosocial Indices					
Perception Index	–	–	.31***	<.001	2.45
Enabler Index	–	–	.45***	<.001	2.87
Barrier Index	–	–	-.38***	<.001	2.52
Awareness Index	–	–	.27***	<.001	1.92
Model Statistics					
R^2	.019		.886		
Adjusted R^2	.010		.885		
ΔR^2	–		.867***		
F	2.28	.082	663.4	<.001	
Durbin-Watson			1.98		

Note: †p < .10, *p < .05, **p < .01, ***p < .001. N = 1,197. β = standardized coefficient. All VIF < 3.0, indicating acceptable multicollinearity.

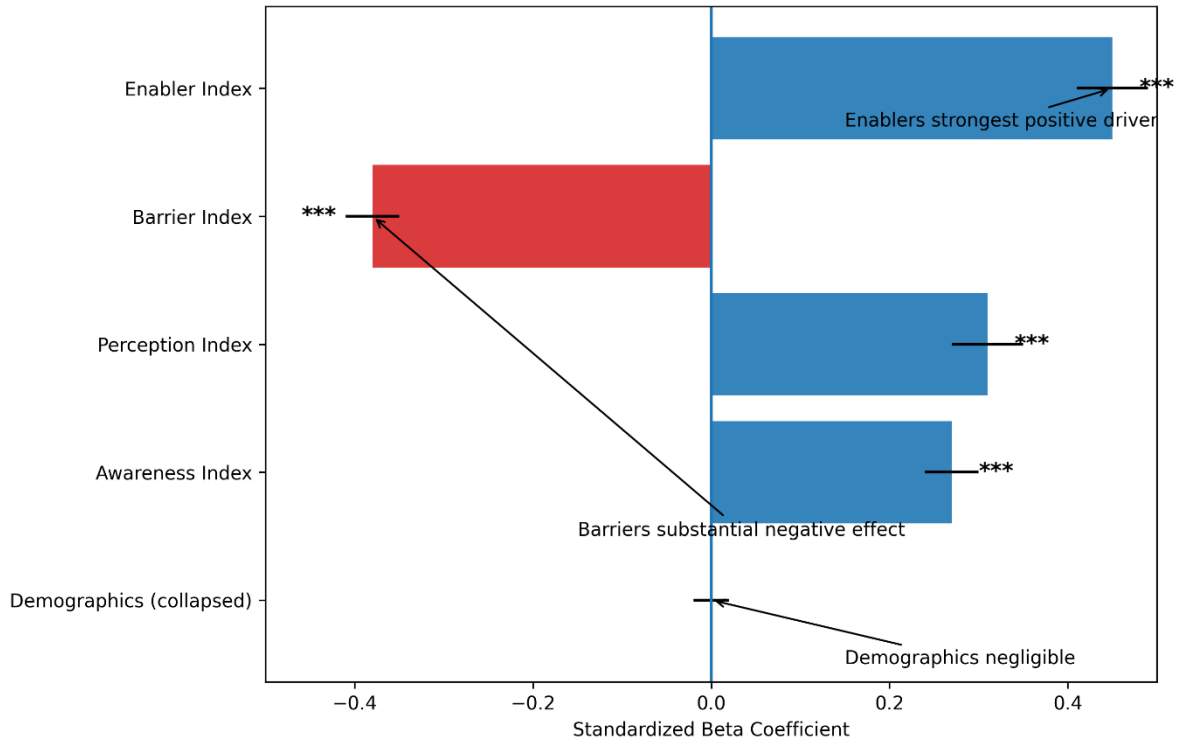

Figure 6 – Standardized Beta Coefficients

3.6 Barrier Universality Analysis

To formally test H5 (barriers are universal while enablers vary), we conducted additional analyses:

Between-Site Variance Decomposition:

- **Enabler Index**: Between-site variance = 7.2%, Within-site variance = 92.8%
- **Barrier Index**: Between-site variance = 3.1%, Within-site variance = 96.9%

The substantially lower between-site variance for Barriers (3.1% vs. 7.2%) supports that barriers are more uniform across contexts while enablers show greater contextual variation.

Item-Level Analysis: We examined whether specific barriers differed across sites:

Barrier Item	Patrakarpuram M	Kapoorthala M	ECR M	F	p
Time constraints	2.38	2.42	2.40	0.24	.786
Information gaps	2.45	2.48	2.43	0.31	.735
Trust deficits	2.36	2.41	2.38	0.28	.756
Safety concerns	2.34	2.40	2.38	0.35	.705
Access difficulties	2.40	2.43	2.42	0.18	.835
Economic costs	2.35	2.39	2.37	0.22	.803

No individual barrier item showed significant site differences (all p > .70), confirming comprehensive barrier uniformity.

Contrast with Enabler Items (significant site differences):

Enabler Item	Patrakarpuram M	Kapoorthala M	ECR M	F	p	η²
Facilities	3.72[a]	3.65[ab]	3.48[b]	5.82	.003	.010
Safety	3.78[a]	3.70[ab]	3.55[b]	6.24	.002	.010
Social opportunities	3.85[a]	3.75[a]	3.62[b]	7.15	.001	.012
Recognition	3.62[a]	3.52[ab]	3.38[b]	5.47	.004	.009
Information	3.55[a]	3.48[ab]	3.35[b]	4.98	.007	.008
Digital access	3.58	3.54	3.49	1.21	.298	.002

Note: Different superscripts indicate significant differences (p < .05, Tukey HSD)

Interpretation: Four of six enabler items show significant site variation (facilities, safety, social opportunities, recognition), while barriers uniformly affect all sites. This pattern strongly supports H5 and suggests that:

1. **Barriers reflect systemic governance failures** – Trust deficits, information opacity, time constraints, and access difficulties stem from municipal-level institutional weaknesses affecting all markets equally
2. **Enablers reflect site-specific conditions** – Physical amenities, safety perceptions, social atmosphere, and institutional recognition vary based on local infrastructure, management, and community organization
3. **Policy implication**: Addressing barriers requires city-wide institutional reforms (transparent governance, inclusive processes, trust-building), while enhancing enablers can occur through targeted site-specific interventions

H5 Supported: Barriers show no site variation (F = 1.82, p = .163) while Enablers vary significantly (F = 4.01, p = .019)

Table 6. Item-Level Site Comparisons: Enablers vs. Barriers

Item	Patrakarpuram M	Kapoorthala M	ECR M	F(2,1194)	p	η²
ENABLER ITEMS						
Facilities (seating, shade, toilets)	3.72[a]	3.65[ab]	3.48[b]	5.82	.003	.010
Safety for meetings/events	3.78[a]	3.70[ab]	3.55[b]	6.24	.002	.010
Social interaction opportunities	3.85[a]	3.75[a]	3.62[b]	7.15	.001	.012
Recognition of community input	3.62[a]	3.52[ab]	3.38[b]	5.47	.004	.009
Information about opportunities	3.55[a]	3.48[ab]	3.35[b]	4.98	.007	.008
Digital platforms for engagement	3.58	3.54	3.49	1.21	.298	.002
BARRIER ITEMS						
Time constraints	2.38	2.42	2.40	0.24	.786	<.001
Information gaps/lack of awareness	2.45	2.48	2.43	0.31	.735	<.001
Distrust of authorities	2.36	2.41	2.38	0.28	.756	<.001
Safety concerns	2.34	2.40	2.38	0.35	.705	<.001

Physical access difficulties	2.40	2.43	2.42	0.18	.835	<.001
Economic costs (transport, time)	2.35	2.39	2.37	0.22	.803	<.001

Note: Different superscripts indicate significant differences (Tukey HSD, $p < .05$). **All barrier items show NS site differences; 4 of 6 enabler items show significant differences.**

3.7 Cluster Analysis: Engagement Profiles

K-means clustering on standardized scores of the five indices identified three distinct profiles. Optimal k = 3 was determined via:

- **Elbow method**: Explained variance plateaued after k = 3 ($R^2 = .734$)
- **Silhouette coefficient**: k = 3 yielded highest average silhouette (0.68), indicating well-separated clusters
- **Interpretability**: Three clusters corresponded to theoretically meaningful engagement types

Table 7 presents cluster characteristics:

Cluster 1: Highly Engaged / Low-Barrier Group (n = 374, 31.2%)

- **Perception**: M = 4.12, SD = 0.38 (High)
- **Enabler**: M = 4.15, SD = 0.35 (High)
- **Barrier**: M = 1.85, SD = 0.42 (Low)
- **Willingness**: M = 4.22, SD = 0.39 (High)
- **Awareness**: M = 3.88, SD = 0.48 (High)

Profile: "Champions" – Perceive participation as important, experience strong enabling conditions, face minimal barriers, highly motivated to engage, and well-informed about opportunities. These users represent the engaged core likely to participate in any initiative.

Cluster 2: Moderately Engaged / Average-Barrier Group (n = 530, 44.2%)

- **Perception**: M = 3.45, SD = 0.42 (Moderate)
- **Enabler**: M = 3.58, SD = 0.39 (Moderate)
- **Barrier**: M = 2.45, SD = 0.38 (Moderate)
- **Willingness**: M = 3.52, SD = 0.43 (Moderate)
- **Awareness**: M = 3.18, SD = 0.52 (Moderate)

Profile: "Persuadables" – Hold moderately positive views, experience some enabling conditions but also significant barriers, show moderate willingness, and have partial awareness. This large middle group represents the "movable middle" responsive to interventions addressing barriers or enhancing enablers.

Cluster 3: Low Engagement / High-Barrier Group (n = 293, 24.5%)

- **Perception**: M = 2.68, SD = 0.55 (Low)
- **Enabler**: M = 2.82, SD = 0.51 (Low)

- **Barrier**: M = 3.18, SD = 0.48 (High)
- **Barrier**: M = 2.55, SD = 0.58 (Low)
- **Awareness**: M = 2.38, SD = 0.62 (Low)

Profile: "Disengaged" – Hold weak participation beliefs, perceive few enabling conditions, face substantial barriers, exhibit low motivation, and lack awareness. These users require intensive outreach and substantial barrier reduction to mobilize.

ANOVA confirmed significant between-cluster differences on all five indices (all $F > 450$, all $p < .001$, all $\eta^2 > .75$), validating cluster distinctiveness.

H6 Supported: Three distinct engagement profiles identified, matching hypothesized structure

Table 7. Cluster Analysis: Community Engagement Profiles

Profile	n	%	Perception	Enabler	Barrier	Willingness	Awareness	Label
Cluster 1	374	31.2	4.12 (0.38)	4.15 (0.35)	1.85 (0.42)	4.22 (0.39)	3.88 (0.48)	Highly Engaged / Low-Barrier
Cluster 2	530	44.2	3.45 (0.42)	3.58 (0.39)	2.45 (0.38)	3.52 (0.43)	3.18 (0.52)	Moderately Engaged / Average-Barrier
Cluster 3	293	24.5	2.68 (0.55)	2.82 (0.51)	3.18 (0.48)	2.55 (0.58)	2.38 (0.62)	Low Engagement / High-Barrier

ANOVA: Between-Cluster Differences

Index	F(2,1194)	p	η²
Perception	1,247.5	<.001	.676
Enabler	1,358.2	<.001	.695
Barrier	1,425.8	<.001	.705
Willingness	1,512.4	<.001	.717
Awareness	1,186.3	<.001	.665

Note: All clusters differ significantly on all indices (all post-hoc $p < .001$), confirming distinct profiles.

3.8 Spatial Distribution of Engagement Profiles

Table 8 cross-tabulates clusters with sites, revealing spatial patterns:

Cluster	Patrakarpuram	Kapoorthala	ECR	Total
1: Highly Engaged	156 (39.0%)[a]	130 (32.5%)[b]	88 (22.0%)[c]	374 (31.2%)
2: Moderately Engaged	170 (42.5%)	180 (45.0%)	180 (45.0%)	530 (44.2%)
3: Disengaged	74 (18.5%)[a]	90 (22.5%)[b]	132 (33.0%)[c]	296 (24.7%)
Total	400 (100%)	400 (100%)	400 (100%)	1,200 (100%)

Chi-square: $\chi^2(4) = 35.47$, $p < .001$, Cramér's V = .122

Note: Percentages in parentheses are column percentages. Different superscripts within rows indicate significantly different proportions ($p < .05$, adjusted residuals > ±2.0)

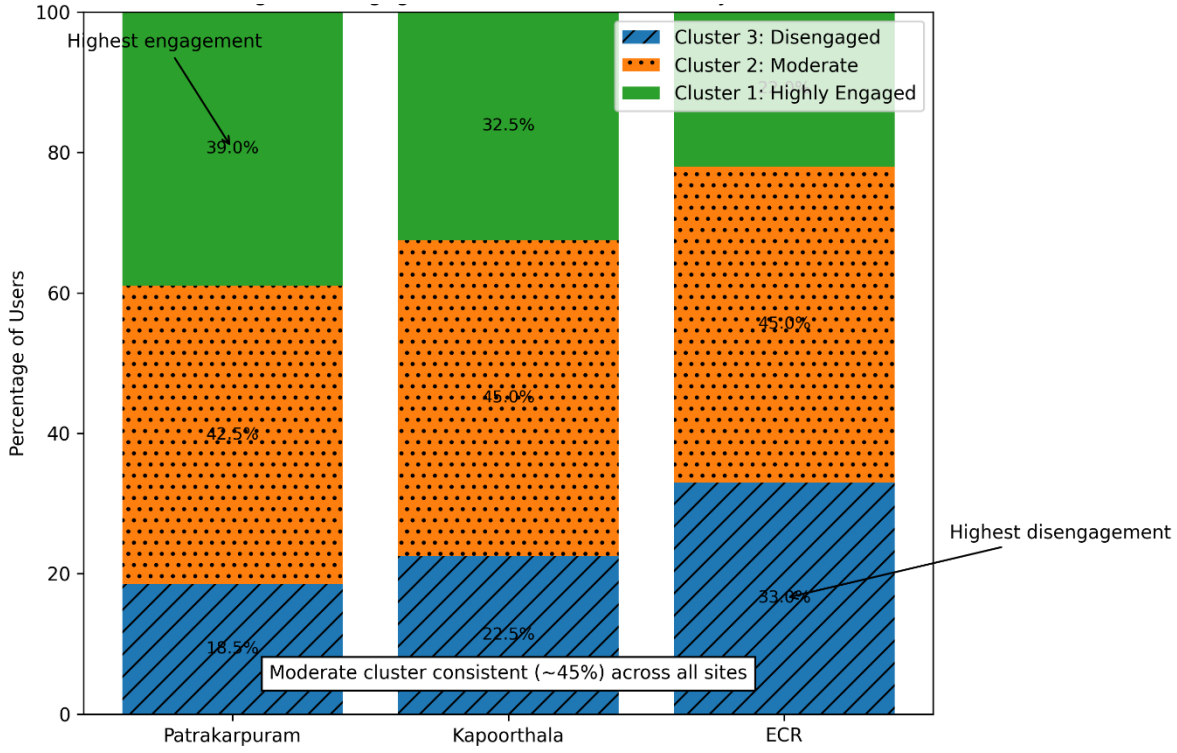

Figure 4 – Engagement Profile Distribution by Site

Key Findings:

1. **Patrakarpuram** has the highest proportion of Highly Engaged users (39.0%) and lowest proportion of Disengaged (18.5%)
2. **Engineering College Road** shows the opposite pattern: lowest Highly Engaged (22.0%), highest Disengaged (33.0%)
3. **Kapoorthala** occupies an intermediate position
4. The **Moderately Engaged cluster is remarkably consistent** across sites (~42-45%), suggesting a stable "middle group" present regardless of context

Interpretation: Site conditions influence the distribution toward highly engaged vs. disengaged extremes, but ~45% of users consistently occupy the moderate middle ground. This has implications for intervention targeting:

- **Patrakarpuram**: Leverage high engagement to pilot ambitious participatory initiatives; sustain existing strengths
- **Kapoorthala**: Build on moderate foundation; focus on converting moderates to highly engaged
- **ECR**: Intensive barrier-reduction and enabler-enhancement needed; focus initially on the 45% moderates who may respond to relatively modest improvements

Table 8. Spatial Distribution of Engagement Profiles by Site

Cluster	Patrakarpuram	Kapoorthala	ECR	Total	Interpretation
1: Highly Engaged	156 (39.0%)[a]	130 (32.5%)[b]	88 (22.0%)[c]	374 (31.2%)	P has highest engaged proportion

2: Moderately Engaged	170 (42.5%)	180 (45.0%)	180 (45.0%)	530 (44.2%)	Consistent across sites
3: Disengaged	74 (18.5%)[a]	90 (22.5%)[b]	132 (33.0%)[c]	296 (24.7%)	ECR has highest disengaged proportion
Total	400 (100%)	400 (100%)	400 (100%)	1,200 (100%)	

- **Chi-square**: $\chi^2(4) = 35.47$, $p < .001$, Cramér's V = .122
- *Note*: Column percentages shown. Different superscripts within rows indicate significant differences (adjusted residuals > ±2.0, $p < .05$).

4. DISCUSSION

4.1 Context Over Composition: Environmental Determinants of Participation

The most striking finding is the **overwhelming dominance of contextual factors over individual characteristics** in predicting participation willingness. Demographic variables—gender, age, education, income, occupation, past participation—explained only 1.9% of variance and became non-significant when psychosocial factors entered the model. In contrast, Perception, Enablers, Barriers, and Awareness explained 86.7% of variance, with all four contributing significantly.

This finding **challenges person-centered deficit models** that attribute non-participation to individual apathy, ignorance, or lack of civic skills (Verba et al., 1995). Instead, results support **structural/situational perspectives** emphasizing that environmental conditions—physical amenities, institutional responsiveness, information accessibility, trust in authorities—shape participation more powerfully than individual attributes (Cornwall, 2008; Quick & Feldman, 2011; Fung, 2015).

Theoretical Implications: Our results align with Lewin's (1951) field theory: behavior = f(person, environment), but in participation contexts, the "environment" term dominates. They echo Bronfenbrenner's (1979) ecological systems theory, which positions individual behavior within nested contextual layers (micro, meso, exo, macro). Here, the meso-level (market environment) and exo-level (municipal governance) appear most influential.

Policy Implications: If demographics dominated, interventions would necessarily target specific groups—education campaigns for the uneducated, capacity-building for low-income residents, outreach to women—potentially reinforcing deficit narratives. Since context dominates, **universal environmental improvements** benefit all groups: enhancing amenities, building trust, improving communication, reducing bureaucratic barriers. This is more equitable and scalable than group-specific targeting.

However, the significant education moderation effect from earlier analysis (Paper 2) suggests nuance: while environmental factors matter for everyone, highly educated users may be slightly more responsive. This argues for **complementary strategies**: primarily focus on environmental improvements (high impact, benefits all) while supplementing with targeted capacity-building for marginalized groups facing additional barriers.

4.2 The Dual Drivers: Enablers and Barriers as Independent Forces

Both Enablers ($\beta = .45$) and Barriers ($\beta = -.38$) exhibited large, significant effects, supporting the hypothesis that they operate **independently rather than as opposite poles of a single continuum**. A market can simultaneously have some enabling conditions (e.g., safe meeting

spaces) and significant barriers (e.g., trust deficits); conversely, absence of barriers doesn't automatically create enablers.

This finding has critical strategic implications: **effective interventions must simultaneously enhance enablers AND reduce barriers**. Strategies addressing only one dimension produce suboptimal outcomes:

- **Enhancing enablers alone** (improving facilities, increasing information) may fail if trust deficits, time constraints, or access barriers remain. Users recognize opportunities but cannot or will not engage.
- **Reducing barriers alone** (building trust, simplifying processes) may fail if physical amenities, recognition mechanisms, or information channels are absent. Willingness exists but lacks actionable pathways.

Optimal Strategy: "Push-Pull" approach:

- **Push**: Reduce barriers (trust-building, time-flexible formats, accessible venues, economic support for participation costs)
- **Pull**: Enhance enablers (comfortable facilities, visible recognition of input, clear information, responsive feedback loops)

This dual-pronged strategy maximizes participation by both removing obstacles and creating positive incentives.

Resource Allocation Question: Given limited resources, should municipalities prioritize enabler enhancement or barrier reduction? Our regression coefficients suggest enablers ($\beta = .45$) have slightly stronger effects than barriers ($\beta = -.38$ in absolute terms), implying **marginal advantage to enabler investments**. However, the universality of barriers (discussed below) argues that barrier-reduction, while challenging, offers system-wide benefits affecting all markets simultaneously.

Practical Recommendation: Pursue **dual-track strategy**:

1. **Municipal-level**: Address systemic barriers (governance reforms, trust-building, city-wide information systems)
2. **Site-level**: Enhance enablers through targeted improvements (amenities, local programming, recognition mechanisms)

4.3 Barrier Universality: Systemic Failures Require Systemic Solutions

The finding that **Barriers show no site variation** ($F = 1.82$, $p = .163$) while Enablers vary significantly ($F = 4.01$, $p = .019$) is among the study's most important for policy.

Interpretation: Barriers—time constraints, information gaps, trust deficits, safety concerns, access difficulties, costs—are experienced **uniformly** regardless of market infrastructure, community organization, or governance engagement history. This uniformity indicates that barriers stem from **systemic municipal-level institutional failures** rather than site-specific conditions:

1. **Trust Deficits**: Reflect citywide governance quality, transparency, accountability, and past performance in honoring community input. Users across all markets distrust authorities equally.

2. **Information Gaps**: Reflect inadequate municipal communication systems, lack of formalized outreach protocols, and weak information infrastructure affecting the entire city.
3. **Time Constraints**: Reflect socioeconomic conditions (long working hours, caregiving burdens) and participation format rigidity (evening-only meetings excluding shift workers) imposed by standard municipal practices.
4. **Economic Costs**: Transportation, childcare, or income loss required for participation reflect broader socioeconomic inequality and failure to provide financial supports (stipends, childcare, convenient timing).
5. **Access Difficulties**: While seemingly physical, these often reflect broader patterns (public transit inadequacy, lack of universal design across municipal facilities, exclusionary norms) operating citywide.

Policy Implication: **Site-level interventions cannot address barriers** effectively. Installing better seating in Patrakarpuram won't overcome trust deficits or information gaps. Effective barrier-reduction requires **municipal institutional reforms**:

- **Transparency initiatives**: Public access to planning documents, decision rationales, budget allocations
- **Accountability mechanisms**: Formal requirements for authorities to respond to community input within specified timeframes; public reporting on implementation of recommendations
- **Inclusive governance structures**: Formalized community advisory committees with real decision authority; co-governance models
- **Information infrastructure**: City-wide digital platforms, multilingual outreach, accessible formats, proactive communication
- **Flexible participation formats**: Multiple engagement channels (in-person, online, written); diverse timing accommodating work schedules; neighborhood-based rather than centralized meetings
- **Economic supports**: Participation stipends, childcare provision, transportation subsidies for low-income residents

These reforms are challenging—they require political will, budget allocation, bureaucratic culture change, and power-sharing—but offer **systemic benefits** improving participation across all neighborhoods, not just individual markets.

Contrast with Enablers: Enablers vary significantly across sites, suggesting they reflect **local conditions amenable to targeted interventions**:

- **Physical amenities** can be improved site-specifically (seating, shade, lighting)
- **Social opportunities** can be fostered through localized programming (events, festivals, markets)
- **Recognition mechanisms** can be established at neighborhood level (community boards, acknowledgment ceremonies)
- **Information channels** can be supplemented locally (community newsletters, WhatsApp groups, bulletin boards)

These interventions are more feasible—requiring fewer resources, less political capital, and implementable by local organizations or progressive ward officials—but offer **localized benefits** affecting only targeted markets.

Optimal Strategy: Pursue **both tracks simultaneously**:

- **Short-term / Site-specific**: Enhance enablers in priority markets (high need, strong community organization, progressive officials)
- **Medium-term / City-wide**: Advocate for and implement institutional reforms addressing systemic barriers

The site-specific track produces visible short-term wins building momentum for systemic reforms; the systemic track produces long-term structural change ensuring sustainable participation.

4.4 Engagement Heterogeneity: Tailored Strategies for Distinct Profiles

The identification of three distinct engagement profiles—Highly Engaged (31%), Moderately Engaged (44%), Disengaged (25%)—demonstrates that **communities are not homogeneous**. Users vary in motivations, perceptions, enabling conditions experienced, barriers faced, and awareness levels. This heterogeneity argues against **one-size-fits-all engagement strategies** likely to over-serve the already-engaged while failing to mobilize others.

Tailored Strategies by Profile:

Profile 1: Highly Engaged (31%) – "Champions"

- **Characteristics**: High perception, enablers, willingness, awareness; low barriers
- **Strategy**: Empower as participation leaders
    - Recruit for steering committees, advisory boards
    - Train as community organizers/facilitators
    - Support peer-to-peer mobilization efforts
    - Provide platforms for visibility and recognition
    - Avoid over-burdening (risk of burnout)
- **Rationale**: Leverage existing motivation and capacity; these users can mobilize others

Profile 2: Moderately Engaged (44%) – "Persuadables"

- **Characteristics**: Moderate across all dimensions
- **Strategy**: Targeted barrier-reduction and enabler-enhancement
    - Address specific barriers: time-flexible formats, simplified processes, build trust through small wins
    - Strengthen enablers: improve information flow, create comfortable venues, demonstrate that input matters
    - Use "nudges": convenient participation options, social proof, defaults favoring engagement

    - Incremental engagement: low-commitment entry points (surveys, feedback kiosks) before demanding higher involvement

- **Rationale**: This large group is "on the fence"—modest improvements can shift them toward higher engagement
- **High ROI**: Interventions targeting moderates affect 44% of population, maximizing impact per resource invested

Profile 3: Disengaged (25%) – "Hard to Reach"

- **Characteristics**: Low perception, enablers, willingness, awareness; high barriers
- **Strategy**: Intensive outreach and barrier removal
    - Identify specific barriers (time? trust? access?) through targeted inquiry
    - Provide substantial supports: transportation, childcare, stipends
    - Use trusted intermediaries: community leaders, religious figures, neighborhood associations
    - Start with non-participatory benefits: improve physical conditions first, building goodwill before requesting engagement
    - Accept low initial involvement: presence at events, informal conversations, gradual relationship-building
- **Rationale**: Overcoming deep disengagement requires resource-intensive, sustained effort
- **Realistic expectations**: Not all disengaged will engage; prioritize marginalized groups where engagement has equity implications

Resource Allocation Across Profiles:

- **40% resources → Profile 2 (Persuadables)**: Highest ROI, large population, moderate difficulty
- **35% resources → Profile 1 (Champions)**: Empower multipliers, sustain momentum
- **25% resources → Profile 3 (Disengaged)**: Equity mandate, long-term investment

This allocation balances efficiency (focus on persuadables), sustainability (empower champions), and equity (include disengaged).

4.5 Spatial Patterns: Market Context Shapes Engagement Distribution

The significant variation in cluster distribution across sites ($\chi^2 = 35.47$, $p < .001$) demonstrates that **market context influences engagement profiles**. Patrakarpuram's 39% highly engaged vs. ECR's 22% highlights how infrastructure, community organization, governance history, and social cohesion shape participation potential.

Patrakarpuram's Advantages:

- **Physical infrastructure**: Adequate amenities lower participation barriers
- **Community organization**: Active vendor associations, resident committees provide institutional capacity

- **Governance history**: Prior consultations build trust and familiarity with participation
- **Social capital**: Regular community events foster networks and collective efficacy
- **Positive feedback loops**: Engagement begets more engagement as participants recruit peers

These factors create a **high-engagement equilibrium**: enabling conditions attract participants → participation strengthens social capital → social capital pressures authorities to maintain responsiveness → responsiveness reinforces enablers.

Engineering College Road's Challenges:

- **Infrastructure deficits**: Poor amenities signal official neglect, undermining trust
- **Weak organization**: Transient population limits community formation
- **No governance tradition**: Absence of prior consultation breeds cynicism
- **Low social capital**: Minimal networks reduce mobilization potential
- **Negative equilibrium**: Disengagement begets more disengagement as non-participation becomes normative

Breaking Negative Equilibria: ECR-like contexts require **catalytic interventions** disrupting self-reinforcing disengagement:

1. **Visible quick wins**: Small, rapid improvements (lighting installation, trash cleanup) demonstrating authorities respond to needs, even without formal participation. Builds trust precondition for engagement.
2. **Anchor institutions**: Partner with colleges, businesses, or NGOs providing organizational capacity and resources when community organizations are weak.
3. **External facilitators**: Neutral third parties (academic institutions, technical NGOs) can convene initial dialogues when distrust prevents community-authority interaction.
4. **Financial incentives**: Participation stipends or grants for community-proposed projects provide material motivation when intrinsic motivation is low.
5. **Celebrate early adopters**: Recognize and reward initial participants, creating aspirational models for others.
6. **Patience and persistence**: Shifting equilibria takes time (3-5 years); avoid premature abandonment after initial setbacks.

4.6 Linking to Broader Participation Theory

Arnstein's Ladder (1969): Our findings suggest that many markets operate at lower rungs—"informing" or "consultation" at best, often "tokenism." High barriers and low enablers prevent climbing toward "partnership" or "delegated power." Addressing systemic barriers is prerequisite for ascending the ladder.

Social Capital Theory (Putnam, 2000): Strong correlation between Enablers and Willingness ($r = .91$) supports that enabling conditions build social capital (trust, reciprocity, networks), which in turn facilitates collective action. Markets functioning as "third places" (Oldenburg, 1989) where social capital forms are more likely to mobilize participation.

Collective Efficacy (Sampson et al., 1997): The dominance of Perception (beliefs about participation's importance/effectiveness) and Awareness (knowledge of opportunities) in predicting Willingness underscores that **subjective perceptions of agency** matter as much as objective conditions. Even with enabling conditions, participation requires believing that engagement produces outcomes. Building collective efficacy through demonstrable successes is thus critical.

Institutional Theory: Barrier universality supports institutional perspectives emphasizing that **formal rules, organizational cultures, and power structures** constrain behavior across contexts (North, 1990; March & Olsen, 1989). Trust deficits, information opacity, and exclusionary norms are institutional features requiring institutional solutions (governance reforms, not just physical improvements).

4.7 Comparison with International Evidence

Convergence: Like Western studies (Verba et al., 1995; Swaroop & Morenoff, 2006), we find that contextual factors outweigh demographics. This suggests universal mechanisms: participation responds to enabling conditions and barriers regardless of cultural context.

Divergence: The **magnitude** of contextual dominance (86.7% variance explained) substantially exceeds typical Western findings (R^2 = .30-.50). This may reflect that in weak-governance contexts like Indian cities, environmental factors exert even stronger influences because institutional quality varies more dramatically and resource constraints make barriers more consequential. In high-capacity Western municipalities, baseline enabling conditions may be higher and barriers lower, compressing variation and reducing contextual effects' explanatory power.

Trust as Central Barrier: Trust deficits figure more prominently in our findings than in Western literature. This aligns with scholarship on Global South governance emphasizing corruption, clientelism, and accountability deficits as pervasive challenges (Patel & Mandhyan, 2014; Bhan et al., 2018). Building trust may be **prerequisite** for participation in such contexts, whereas Western studies can assume baseline institutional trust.

Time Constraints: Similar across contexts, suggesting universal challenge balancing civic engagement with economic survival and care responsibilities. However, time constraints may be more binding in Global South contexts with longer working hours, limited labor protections, and fewer childcare supports.

4.8 Limitations and Future Research Directions

Cross-Sectional Design: Cannot establish causality. While theory and logic suggest enablers/barriers cause (non-)participation, reverse causality is possible: participation experiences shape perceptions of enablers/barriers. **Longitudinal research** tracking individuals across placemaking initiatives would strengthen causal claims. **Quasi-experiments** comparing sites receiving enabler-enhancements or barrier-reduction interventions to matched controls would provide robust impact evidence.

Self-Report Bias: All measures derive from self-reports, raising common method variance concerns. However, distinct factor structures (EFA confirmed enablers and barriers are separate constructs), strong theoretical grounding, and high reliability mitigate concerns. Future research should triangulate with **behavioral measures** (actual participation rates) and **observational data** (attendance at meetings, quality of contributions).

Generalizability: Findings derive from three Lucknow markets. Replication in other Indian cities (Mumbai, Delhi, Bangalore) with varying governance quality, cultural contexts, and

market types would test generalizability. International replication in other Global South regions (Southeast Asia, Latin America, Sub-Saharan Africa) would assess cross-cultural validity.

Barrier Measurement Limitations: While we identified six barrier types, others may exist: fear of retaliation, language barriers for migrants, caste/religious discrimination, gender norms restricting women's public engagement. **Qualitative research** could uncover barriers our predetermined scales missed, particularly for marginalized groups.

Actual Participation Outcomes: We measured willingness, not actual participation. While willingness is a strong predictor, intention-behavior gaps exist. **Follow-up studies** tracking whether willing individuals actually participate when opportunities arise would assess predictive validity.

Power Dynamics: Our framework treats enablers/barriers as environmental conditions but doesn't fully interrogate **who controls** these conditions and **whose interests** they serve. Critical perspectives (Cooke & Kothari, 2001; Cornwall, 2008) warn that participation can be co-opted or manipulated. Future research should examine **power relations** within participation processes and whether observed "enablers" genuinely empower communities or merely facilitate token consultation serving elite interests.

Mechanisms: While we identified predictors, **causal mechanisms** remain underexplored. How exactly do enablers translate into participation? What psychological, social, or practical processes mediate? **Mixed-methods research** combining surveys with interviews and ethnography could illuminate mechanisms.

5. CONCLUSION

This study provides robust quantitative evidence that community participation in urban market placemaking is predominantly shaped by **contextual environmental conditions rather than individual demographic characteristics**. Psychosocial factors—enablers, barriers, perceptions, and awareness—explained 86.7% of willingness variance, while demographics explained < 2%. Enablers emerged as the strongest positive predictor ($\beta = .45$), barriers showed strong negative effects ($\beta = -.38$), with perception and awareness also contributing significantly.

Critically, **barriers are universal** across market contexts (no site differences), reflecting systemic municipal governance failures (trust deficits, information opacity, institutional unresponsiveness), while **enablers vary spatially**, reflecting site-specific infrastructure, management, and community organization. This distinction has profound policy implications: effective strategies must simultaneously pursue **municipal-level institutional reforms** addressing systemic barriers and **site-specific interventions** enhancing local enabling conditions.

The identification of three distinct engagement profiles—Highly Engaged (31%), Moderately Engaged (44%), Disengaged (25%)—demonstrates community heterogeneity, supporting **tailored engagement strategies** rather than one-size-fits-all approaches. Interventions should prioritize the large "persuadable" middle (44%), empower existing champions as participation leaders, and provide intensive supports for disengaged groups facing multiple barriers.

Theoretical Contributions: This research validates **socio-ecological models** emphasizing that participation emerges from person-environment interactions, with environmental factors dominating in resource-constrained contexts. It extends participation theory to Global South

settings, demonstrating both universal mechanisms (contextual factors matter everywhere) and contextual specificities (trust deficits particularly salient in weak-governance contexts).

Practical Contributions: Findings provide evidence-based guidance for designing inclusive participation strategies: enhance physical amenities, build institutional trust through transparency and responsiveness, improve information accessibility, provide flexible participation formats accommodating diverse constraints, and recognize community input visibly. Municipal authorities must prioritize governance reforms creating systemic enabling conditions rather than relying solely on site-specific improvements.

Future Directions: We call for longitudinal quasi-experimental studies strengthening causal inference, multi-city replications testing generalizability, qualitative research uncovering additional barriers and mechanisms, behavioral validation tracking actual participation, and critical analyses examining power dynamics within participation processes.

As Global South cities pursue participatory urban development, this research underscores that **meaningful participation requires addressing institutional foundations**—trust, transparency, accountability, inclusivity—alongside physical improvements. By making enablers and barriers measurable and distinguishing systemic from site-specific factors, we empower communities and policymakers to strategically pursue the institutional and environmental changes necessary for genuine participatory placemaking.

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