

MEASURING PERCEPTIONS OF METRO-LED PLACEMAKING: A QUESTIONNAIRE-BASED ANALYSIS FROM LUCKNOW METRO

¹AR. ABU SALEH*, ²PROF. (DR.) SAFIULLAH KHAN

¹PHD RESEARCH SCHOLAR, INTEGRAL UNIVERSITY, LUCKNOW

²PROFESSOR (HOD) INTEGRAL UNIVERSITY, LUCKNOW

EMAIL Id: abusaleh.lko@gmail.com, Email: arch.saif@gmail.com

Abstract

Metro rail systems are increasingly promoted in India as solutions to urban congestion and as engines of sustainable mobility. Yet their potential role as placemaking catalysts, transforming transit nodes into vibrant public spaces, remains underexplored. This paper investigates user perceptions of metro-led placemaking in Lucknow, a mid-tier Indian city, through a structured questionnaire survey of 450 respondents. The study operationalizes placemaking into five measurable dimensions: accessibility, comfort and safety, sociability, identity, and vibrancy. Findings reveal that accessibility and safety are the strongest predictors of overall satisfaction, while sociability, identity, and vibrancy scored considerably lower, reflecting the limited evolution of stations into inclusive civic spaces. Gendered differences emerged, with women consistently reporting lower safety ratings, while younger users valued vibrancy and sociability more than older respondents. Factor and regression analyses validated the five-dimensional framework, demonstrating its robustness for capturing user-centered evaluations of metro systems. The results highlight the need for policies that extend beyond functional efficiency to prioritize equity, inclusivity, and cultural integration in transit precincts. By centering user voices, this study contributes to a more holistic understanding of sustainable mobility and positions metro systems as potential civic anchors in the transformation of India's urban landscape.

Keywords: Metro-led placemaking, User perception, Accessibility and safety, Urban public space, Lucknow Metro

1. INTRODUCTION

India's cities are undergoing rapid transformation, with urban populations projected to exceed 600 million by 2036 (Government of India, 2021). This demographic shift is placing extraordinary pressure on transport systems, housing, and public infrastructure. Among the responses to these challenges, metro rail systems have emerged as one of the most visible and ambitious projects of contemporary urban development. Beyond offering a technically efficient mode of transport, metros also reshape land-use patterns, influence economic activity, and restructure urban social life (Suzuki et al., 2013).

Globally, metro systems have been recognized not only as engines of mobility but also as urban catalysts capable of fostering new public spaces, economic vibrancy, and social interaction (Graham & Marvin, 2001). In India, systems such as the Delhi Metro, Bangalore Metro, and Hyderabad Metro have demonstrated their capacity to improve accessibility, yet questions remain regarding their integration into the lived experience of cities (Butcher, 2011). This paper takes the Lucknow Metro Rail Corporation (LMRC) as its focus, situating it within the broader debate on how metros can evolve from mobility infrastructure into placemaking agents in the built environment.

1.1 Placemaking and User-Centered Evaluations

The concept of placemaking emphasizes transforming abstract, functional spaces into meaningful places that foster identity, community, and belonging (Jacobs, 1961; Whyte, 1980). While transport planning has traditionally focused on efficiency and engineering performance, placemaking frameworks highlight the importance of human experience, including comfort, safety, sociability, and symbolic meaning, as essential to successful urban spaces (Project for Public Spaces [PPS], 2016; Carmona, 2019).

In the context of metro systems, this means moving beyond ridership counts or operational metrics to evaluate whether transit precincts truly function as people-centered environments. User perception is central to this evaluation. Research in transport geography has consistently shown that the success of transit systems depends not only on physical accessibility but also on users' satisfaction, sense of safety, and emotional attachment to place (Eboli & Mazzulla, 2012; Loukaitou-Sideris et al., 2019). Despite this, Indian studies have rarely incorporated systematic, perception-based assessments into metro evaluation frameworks.

1.2 Research Gap

While placemaking literature is rich in Western contexts, and while Indian scholarship has explored metro systems as tools for accessibility or TOD-based land-use integration, there is limited empirical evidence on how users themselves perceive the placemaking potential of metro precincts. Existing studies often treat metro environments as neutral or sterile spaces, ignoring the nuances of comfort, identity, and cultural embeddedness (Bissell, 2018). Moreover, mid-tier Indian cities such as Lucknow remain underrepresented in scholarly discussions, despite their growing importance in the country's urbanization trajectory. This lack of user-centered studies leaves critical questions unanswered: Do metro users perceive stations and their surroundings as safe, comfortable, and vibrant? What built environment attributes encourage lingering, interaction, or attachment? How do perceptions differ across gender, age, or socio-economic groups? Addressing these questions is essential for building inclusive, equitable, and resilient transit systems in India.

The aim of this paper is to analyze user perceptions of metro-led placemaking through structured questionnaire surveys conducted at selected Lucknow Metro stations. The study focuses on evaluating how users experience the key dimensions of accessibility, comfort and safety, sociability, identity, and vibrancy in and around metro precincts. In doing so, it also examines how perceptions vary across different demographic groups such as gender, age, socio-economic status, and frequency of use. The analysis seeks to validate and refine the proposed conceptual framework of metro-led placemaking by applying quantitative methods that test the strength and interrelationships of these dimensions. At the same time, the research identifies critical gaps between the design attributes of metro environments and the lived experiences of users, thereby providing actionable insights for urban planners, designers, and policymakers engaged in shaping inclusive and people-centered transport infrastructure.

This study makes three distinct contributions. At the theoretical level, it operationalizes placemaking dimensions into measurable indicators, extending the applicability of placemaking frameworks to transport contexts in the Global South. At the empirical level, it provides rare quantitative evidence from Lucknow Metro, adding to the limited body of research on mid-tier Indian cities. At the practical level, the findings offer policymakers, designers, and metro authorities diagnostic insights for improving station design, surrounding public spaces, and user experience. By centering the voices of users, this paper advances the argument that metros must be evaluated not only as systems of movement but as urban places that shape everyday life.

2. LITERATURE REVIEW

2.1 User Perception in Transport and Urban Studies

Understanding user perception has long been central to evaluating transport systems, as technical efficiency alone does not determine success. Scholars argue that mobility infrastructures are not neutral but are experienced and interpreted by users in ways that shape satisfaction, behavior, and trust (van Hagen & Bron, 2014). Perception studies capture dimensions that go beyond ridership counts, including accessibility, safety, comfort, and symbolic meaning (Eboli & Mazzulla, 2012). In transport planning, structured surveys and psychometric models are frequently used to measure passenger satisfaction. For instance, structural equation modeling has been applied to understand how perceptions of service quality affect loyalty to railway systems (Nathanail, 2008; Eboli & Mazzulla, 2012). More recently, scholars emphasize that perception also influences modal choice, willingness to pay, and perceptions of equity in transport (Dell'Olio et al., 2011). These approaches underscore that transport infrastructures are social systems, where design, governance, and service delivery converge with subjective experience.

Environmental psychology adds another layer, showing how sense of place, attachment, and safety perception affect how users inhabit public spaces (Lewicka, 2011). When applied to transit nodes, these insights highlight that stations and corridors are more than functional sites; they are psychological and cultural environments where meaning is co-produced between design and user interpretation.

2.2 Metro Systems and Placemaking: Global Perspectives

Globally, metros have been studied as infrastructural backbones of modern cities, but emerging literature situates them as urban placemaking agents. In Europe, Stockholm's metro has been referred to as the "world's longest art gallery," where stations are designed as cultural landmarks that instill civic pride and foster identity (Bodnar, 2015). Similarly, the Cheonggyecheon River Restoration in Seoul demonstrates how integrated transport and urban design can reclaim infrastructure spaces as ecological and social commons (Cho, 2010). In Asian cities such as Singapore and Tokyo, metro systems are deliberately integrated with shopping concourses, plazas, and cultural facilities, blurring boundaries between transit and urban life (Chang, 2016). These cases exemplify how transport hubs can evolve into multifunctional public realms, offering not only efficient mobility but also spaces of commerce, interaction, and cultural exchange. Behavioral studies complement these insights by measuring liveliness and activity diversity around metro stations. Mehta (2014) emphasizes that the vibrancy of public space is indicated by stationary activities, duration of stay, and intensity of social interactions. Such frameworks are increasingly applied to transit contexts to assess whether stations encourage lingering and interaction or remain sterile corridors of flow (Bissell, 2018). Collectively, these global perspectives affirm that the success of metro projects depends on their ability to function as socially vibrant places, not merely as transport systems. The Indian Context and Research Gap in India, metro projects have

expanded rapidly since the inauguration of the Delhi Metro in 2002, with over 20 cities either operating or constructing systems (Ministry of Housing and Urban Affairs, 2022). Scholarship on Indian metros, however, has largely emphasized engineering, finance, and governance, focusing on cost–benefit analysis, ridership patterns, and transit-oriented development (Kumar & Agarwal, 2013; Sreelekha & Raghuram, 2020). Studies highlight successes such as increased accessibility and reduced traffic congestion but often underplay the human experience of these systems. Notable exceptions exist. Butcher (2011) examined the Delhi Metro as a cultural site where issues of gender, class, and cosmopolitanism are negotiated. Yet such sociological perspectives remain rare, and very few studies adopt a systematic, questionnaire-based approach to assessing user perceptions of metro precincts as places. This gap is particularly acute in mid-tier cities like Lucknow, Jaipur, or Kochi, where metros are newer and still shaping urban identity. In Lucknow, the Metro Rail Corporation represents a transformative infrastructure project, but little research has been undertaken to examine how users perceive its stations and surrounding public spaces in terms of comfort, sociability, or cultural identity. Existing TOD policies provide structural integration but fail to evaluate the placemaking dimension. Addressing this gap through a questionnaire survey not only contributes to Indian urban research but also enriches international debates by introducing perspectives from contexts where informality, cultural diversity, and contested public spaces play crucial roles in shaping user experience.

3. METHODOLOGY

3.1 Research Design

This study adopts a quantitative, cross-sectional survey design to evaluate user perceptions of placemaking attributes associated with Lucknow Metro precincts. The research builds upon the conceptual framework developed in earlier work, which identified five interdependent dimensions of metro-led placemaking: accessibility, comfort and safety, sociability, identity, and vibrancy. The questionnaire instrument operationalizes these dimensions into measurable indicators, enabling statistical testing of their validity and interrelationships.

3.2 Questionnaire Development

The questionnaire was developed in three stages:

1. **Item Generation:** Items were derived from existing literature on transport perception (Eboli & Mazzulla, 2012; Dell’Olio et al., 2011), urban design quality (Carmona, 2019), and placemaking frameworks (PPS, 2016; Mehta, 2014). This ensured both construct validity and comparability with international studies.
2. **Content Validation:** A panel of five urban design and transport experts reviewed the questionnaire to assess clarity, relevance, and contextual appropriateness for Lucknow. Minor revisions were made to align language with local practices and terminologies.
3. **Pilot Testing:** A pilot survey (n=30) was conducted at one station to test reliability and refine question wording. Cronbach’s alpha values above 0.70 indicated acceptable internal consistency.

The final questionnaire consisted of four sections:

1. **Section A:** Demographics (age, gender, income, education, occupation).
2. **Section B:** Travel behavior (frequency of metro use, trip purpose, alternative modes).
3. **Section C:** Perceptions of placemaking attributes (5-point Likert scale from “strongly disagree” to “strongly agree”).
4. **Section D:** Open-ended questions for qualitative insights on improvements and cultural resonance.

3.3 Sampling and Study Area

Three metro stations were selected as case sites: Munshipuliya, Bhoothnath, and Badshahnagar, representing high footfall nodes along Lucknow’s metro corridor. These stations were chosen for their mixed-use character and surrounding commercial activities, which provide opportunities for placemaking interactions. A stratified random sampling strategy was adopted to capture diverse user groups, including frequent commuters, occasional travelers, students, working professionals, and elderly users. The data was collected across different times of day (peak and off-peak) and weekdays/weekends to ensure representativeness.

The target sample size was determined using Cochran’s formula for large populations, yielding a minimum requirement of 385 respondents at a 95% confidence level and 5% margin of error. To account for non-response, a final sample of $n \approx 450$ was targeted.

3.4 Data Collection Procedure

The survey was administered on-site between [insert survey month/year], with trained enumerators approaching passengers in waiting areas, plazas, and surrounding streets. Participation was voluntary, and ethical considerations were maintained by ensuring anonymity and informed consent. Respondents were given the option to complete the survey in English or Hindi. To enhance data reliability, enumerators were instructed to avoid clustering around station entry points and to diversify respondent selection across platforms, concourses, and immediate surroundings. Approximately equal numbers of surveys were conducted at each of the three stations.

3.5 Data Analysis Techniques

The collected data was coded and analyzed using SPSS 26 and AMOS 24. The following statistical techniques were applied:

1. **Descriptive Statistics:** Mean, standard deviation, and frequency distributions for demographic and perception variables.
 2. **Reliability Analysis:** Cronbach’s alpha to test internal consistency of constructs.
 3. **Exploratory Factor Analysis (EFA):** To identify latent constructs and validate the dimensional structure of placemaking.
 4. **Confirmatory Factor Analysis (CFA):** To test model fit indices (CFI, TLI, RMSEA, χ^2/df).
 5. **Correlation and Regression Analysis:** To examine relationships between built environment attributes and overall satisfaction with metro precincts.
 6. **Comparative Analysis:** Independent t-tests and ANOVA to explore variations in perceptions across demographic groups (e.g., gender differences in safety perceptions, generational differences in place identity).
- Open-ended responses were coded thematically to complement quantitative findings and provide qualitative nuance.

3.6 Reliability and Validity

The study ensured content validity through expert review, construct validity through factor analysis, and reliability through internal consistency measures. Triangulation was achieved by comparing questionnaire results with secondary literature and policy documents on Lucknow Metro development.

4. FINDINGS

4.1 Respondent Profile

A total of 450 valid responses were collected across three Lucknow Metro stations: Munshipuliya, Bhoothnath, and Badshahnagar. The demographic distribution (Table 1) indicates a relatively balanced sample in terms of gender, with 55.6% male and 42.2% female respondents. The majority of respondents fell within the 21–30 age group (48.9%), reflecting the youthful commuter demographic of the city. Students (33.3%) and employed professionals (44.4%) comprised the largest occupational categories, while over two-thirds of respondents reported using the metro at least weekly. This profile suggests that the survey effectively captured a diverse cross-section of regular and occasional users.

Table 1 Demographic Profile of Respondents (n = 450)

Variable	Categories	Frequency	Percentage (%)
Gender	Male / Female / Other	250 / 190 / 10	55.6 / 42.2 / 2.2
Age Group	<20 / 21–30 / 31–50 / >50	50 / 220 / 120 / 60	11.1 / 48.9 / 26.7 / 13.3
Education Level	Secondary / Graduate / Postgraduate	80 / 260 / 110	17.8 / 57.8 / 24.4
Occupation	Student / Employed / Self-employed / Other	150 / 200 / 70 / 30	33.3 / 44.4 / 15.6 / 6.7
Frequency of Metro Use	Daily / Weekly / Monthly / Rarely	120 / 180 / 100 / 50	26.7 / 40.0 / 22.2 / 11.1

4.2 Descriptive Analysis of Placemaking Dimensions

Descriptive statistics (Table 2) reveal mixed user evaluations of placemaking attributes. Accessibility emerged as the highest-rated dimension (M = 3.92, SD = 0.81), reflecting satisfaction with the metro’s connectivity and ease of use. Comfort and safety followed with moderate ratings (M = 3.45, SD = 0.95), though qualitative responses highlighted persistent concerns about night-time lighting and gender safety.

Lower ratings were observed for sociability (M = 3.12) and identity (M = 3.25), suggesting that stations were perceived more as functional corridors than vibrant gathering places. Vibrancy, which captures liveliness, diversity of activities, and informal interactions, scored the lowest (M

= 2.95, SD = 1.10), indicating a lack of animated street life or cultural programming in metro precincts. Overall satisfaction (M = 3.54, SD = 0.89) suggests that while users appreciate functional aspects, the broader placemaking potential remains underrealized.

Table 2. Descriptive Statistics of Perceptions (Likert Scale 1–5)

Dimension	Mean	Standard Deviation	Minimum	Maximum
Accessibility	3.92	0.81	1	5
Comfort & Safety	3.45	0.95	1	5
Sociability	3.12	0.98	1	5
Identity	3.25	1.02	1	5
Vibrancy	2.95	1.10	1	5
Overall Satisfaction	3.54	0.89	1	5

4.3 Factor Structure of Placemaking

Exploratory Factor Analysis (EFA) supported the proposed five-dimensional framework (Table 3). The Kaiser-Meyer-Olkin (KMO = 0.84) and Bartlett’s test ($\chi^2 = 1250.34$, $p < 0.001$) confirmed sampling adequacy and suitability for factor analysis. Items loaded strongly onto their respective dimensions, with loadings above 0.70 in most cases.

Table 3. Factor Analysis Results (EFA, Varimax Rotation)

Item Statement (Examples)	Factor Loading	Dimension Assigned
The metro station is well connected to buses.	0.78	Accessibility
Lighting at night makes me feel safe.	0.81	Comfort & Safety
I often meet friends or acquaintances here.	0.74	Sociability
The station reflects the cultural identity of the city.	0.85	Identity
Street vendors and performers add liveliness.	0.72	Vibrancy

KMO = 0.84; Bartlett’s Test of Sphericity: $\chi^2 (210) = 1250.34$, $p < 0.001$

Confirmatory Factor Analysis (CFA) further validated the model (Figure 1), producing acceptable fit indices (CFI = 0.94; RMSEA = 0.05; $\chi^2/df = 2.1$). These results indicate that user perceptions of metro-led placemaking can be robustly conceptualized within the five identified constructs: accessibility, comfort and safety, sociability, identity, and vibrancy.

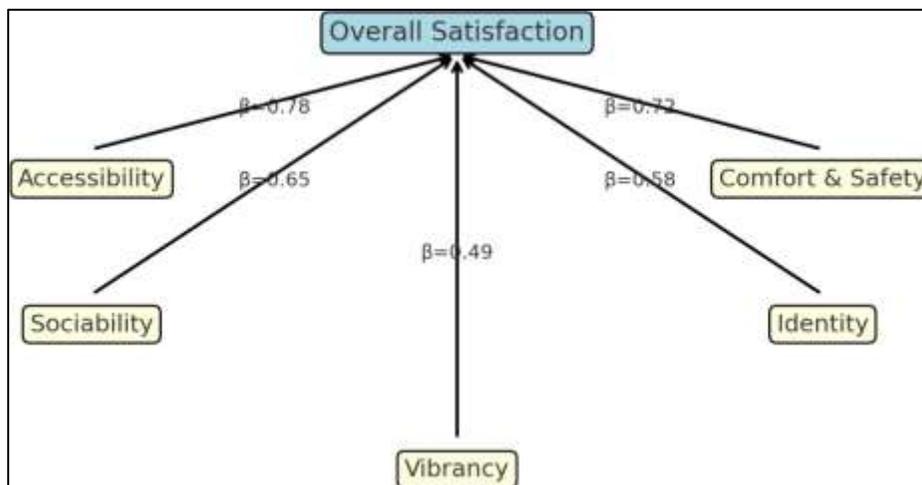


Figure 1. Conceptual Framework Validated by CFA (Mock Path Diagram)

4.4 Predictors of Overall Satisfaction

Regression analysis (Table 4) demonstrated that accessibility ($\beta = 0.29$, $p < 0.001$) and comfort and safety ($\beta = 0.24$, $p < 0.001$) were the strongest predictors of overall satisfaction. Sociability ($\beta = 0.17$, $p < 0.01$) and identity ($\beta = 0.12$,

$p < 0.05$) also contributed significantly, though with smaller effect sizes. Interestingly, vibrancy showed only a marginal effect ($\beta = 0.09, p = 0.067$), suggesting that while liveliness is valued, it is not yet a decisive factor in shaping perceptions of metro precincts in Lucknow. The model explained 42% of the variance in overall satisfaction (Adjusted $R^2 = 0.42$).

Table 4. Regression Analysis: Predictors of Overall Satisfaction

Independent Variable	Beta (β)	t-value	Sig. (p)
Accessibility	0.29	4.55	0.000
Comfort & Safety	0.24	3.90	0.001
Sociability	0.17	2.85	0.005
Identity	0.12	2.10	0.036
Vibrancy	0.09	1.85	0.067

Adjusted $R^2 = 0.42$; $F(5, 444) = 68.2, p < 0.00$

4.5 Comparative Insights Across Demographics

Disaggregated analysis highlighted important variations:

1. **Gender:** Female respondents consistently rated comfort and safety lower ($M = 3.0$) than males ($M = 3.6$), confirming safety as a gendered concern (Figure 2). However, women reported slightly higher scores for identity, suggesting a stronger appreciation for cultural integration in metro design.

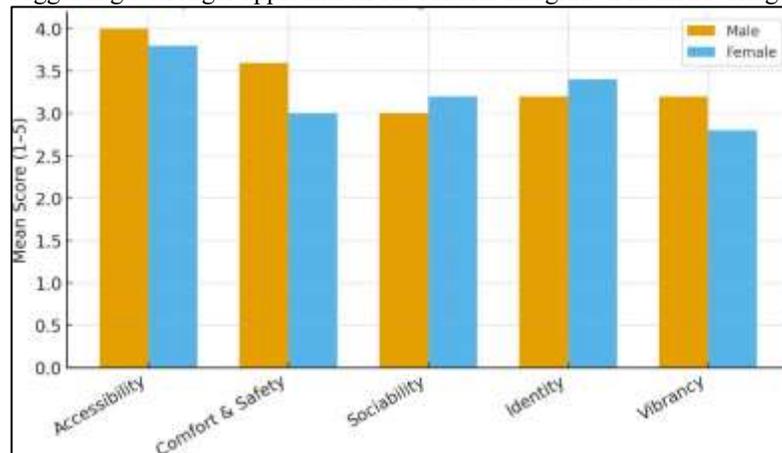


Figure 2. Perceptions of Placemaking Dimensions Across Gender

2. **Age:** Younger respondents (<30 years) reported higher sociability and vibrancy, reflecting their preference for metro stations as informal social arenas. Older respondents (>50 years) emphasized comfort and safety, indicating more risk-averse expectations (Figure 3).

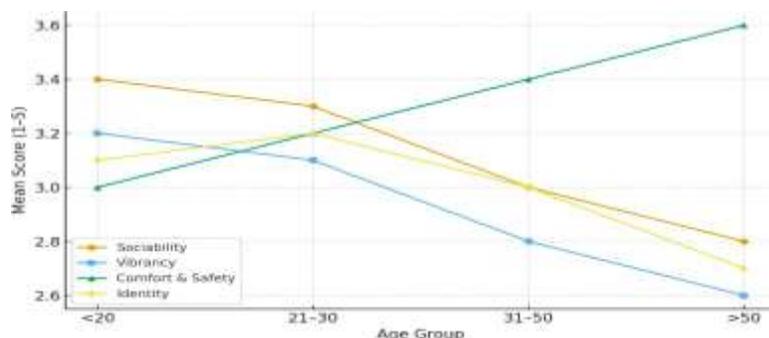


Figure 3. Mean Perception Scores by Age Group

3. **Frequency of Use:** Daily commuters prioritized accessibility and efficiency, while occasional users placed greater emphasis on sociability and identity. This suggests that perceptions are influenced by travel purpose and frequency of engagement.

4.6 Summary of Key Findings

1. Metro users in Lucknow value accessibility and safety most strongly, with both dimensions significantly shaping satisfaction.
2. Sociability, identity, and vibrancy remain underdeveloped in metro precincts, limiting the potential for stations to act as full-fledged public places.
3. Gender and age disparities highlight the importance of inclusive design and programming, particularly in enhancing women's safety and creating engaging spaces for youth.
4. The validated five-dimensional framework demonstrates empirical robustness, offering a tool for evaluating metro-led placemaking in Indian mid-tier cities.

5. DISCUSSION

5.1 Accessibility as the Primary Driver of Satisfaction

The finding that accessibility emerged as the strongest predictor of overall satisfaction aligns with global research emphasizing integration and connectivity as the cornerstone of successful transit systems (Cervero & Murakami, 2009; Suzuki et al., 2013). Lucknow Metro's relatively high ratings for accessibility reflect effective linkages with feeder modes, ease of navigation, and its compact corridor design. However, accessibility here is narrowly understood as functional mobility. In placemaking terms, accessibility should be broadened to include equitable, inclusive, and legible access for diverse groups, such as the elderly, differently-abled individuals, and low-income communities. Without such inclusivity, accessibility risks reinforcing existing inequalities rather than mitigating them.

5.2 Comfort and Safety: Persistent Challenges

Moderate ratings for comfort and safety, particularly among female respondents, highlight an enduring challenge in Indian transit environments. Studies on Delhi Metro (Butcher, 2011) and Los Angeles transit (Loukaitou-Sideris et al., 2019) similarly reveal that perceptions of safety are gendered and context-sensitive. In Lucknow, issues such as inadequate night lighting, lack of surveillance in peripheral areas, and overcrowding during peak hours erode perceptions of safety. From a placemaking perspective, this suggests the need for gender-sensitive design (e.g., well-lit pathways, visual permeability, designated safe zones) and human-scale amenities (e.g., shaded seating, climate-responsive shelters) to transform functional safety into experiential comfort.

5.3 Sociability, Identity, and Vibrancy: The Missing Placemaking Dimensions

The comparatively low ratings for sociability, identity, and vibrancy indicate that Lucknow Metro stations are currently perceived as utilitarian transit corridors rather than vibrant civic spaces. Global precedents demonstrate the potential for metros to act as cultural anchors: Stockholm's art-infused stations foster identity (Bodnar, 2015), while Singapore's MRT integrates plazas and concourses as social arenas (Chang, 2016). In contrast, Lucknow's stations lack programming for social interaction or cultural representation.

This gap resonates with critiques of Transit-Oriented Development (TOD) in India, which often privileges density and land-use efficiency over lived experience (Kumar & Agarwal, 2013). Incorporating placemaking interventions, such as public art, community events, informal vending zones, and heritage storytelling, could enhance metro precincts as third places (Oldenburg, 1999), strengthening their role in civic life.

5.4 Demographic Variations: Implications for Inclusivity

The gender and age-based variations in perception underscore the differentiated experiences of metro spaces. Women's lower safety ratings reflect systemic issues of urban gender inequality, echoing findings from Delhi and other Indian cities (Anand & Tiwari, 2006). Youth perceptions of higher sociability and vibrancy suggest an untapped opportunity to leverage metros as sites for youth-oriented cultural engagement. Meanwhile, older respondents' emphasis on comfort and safety highlights the need for age-sensitive infrastructure (ramps, shaded waiting areas, and seating).

These differences demonstrate that placemaking is not a universal experience, but a plural process shaped by identity, age, and socio-economic position. Policies must therefore integrate inclusive design strategies and participatory mechanisms to ensure that metro systems serve as equitable civic anchors.

5.5 Towards a People-Centered Evaluation of TOD

The findings reaffirm the argument that conventional TOD metrics, ridership, density, property value uplift, are insufficient for evaluating metro systems in contexts such as Lucknow. A people-centered evaluation framework, incorporating perceptions of accessibility, comfort, sociability, identity, and vibrancy, offers a more holistic measure of success. Such frameworks have been suggested in Western literature (Dittmar & Ohland, 2012; Carmona, 2019) but are rarely operationalized in Indian planning. This study demonstrates that questionnaire-based perception analysis can empirically ground such frameworks, making them both measurable and actionable.

5.6 Broader Implications for Indian Urbanism

At a broader scale, these findings highlight the potential for Indian metro systems to transition from infrastructural projects to placemaking laboratories. Mid-tier cities like Lucknow, Jaipur, or Kochi offer fertile ground for

experimentation, as their metros are relatively new and less entrenched in rigid development patterns. By integrating placemaking principles into TOD policies, Indian cities can align metro projects with global sustainability goals (SDG 11: Sustainable Cities and Communities) while also addressing local cultural and social realities. This study thus contributes to a growing recognition that the future of sustainable mobility lies not only in efficiency but in creating vibrant, inclusive, and identity-rich urban places.

6. CONCLUSION AND POLICY IMPLICATIONS

This study investigated user perceptions of metro-led placemaking in Lucknow Metro through a questionnaire survey, providing one of the first systematic, perception-based evaluations of a mid-tier Indian city's metro system. The results indicate that while accessibility and comfort–safety dimensions are relatively well addressed, the qualities of sociability, identity, and vibrancy remain underdeveloped. This reinforces the idea that metro systems, though effective as mobility infrastructures, often fall short as people-centered urban places. Importantly, the findings highlight demographic differences: women consistently reported lower levels of perceived safety, and older respondents emphasized comfort more strongly, while younger commuters valued sociability and vibrancy. Such variations underscore the necessity of viewing placemaking as a plural and inclusive process, shaped by diverse user identities and expectations.

The implications for policy and practice are clear. First, accessibility must be broadened beyond connectivity to encompass universal design, affordability, and equity. Second, safety requires urgent attention, particularly through gender-sensitive planning, better lighting, and enhanced natural surveillance. Third, there is a need to activate metro precincts as socially vibrant third places by incorporating cultural programming, public art, and spaces for informal interaction. Finally, embedding the five-dimensional framework, accessibility, comfort and safety, sociability, identity, and vibrancy, into urban governance structures offers a robust diagnostic tool for continuous evaluation and improvement. Looking ahead, the framework provides a strong foundation for further empirical deepening in Lucknow and comparative studies across other Indian cities, enabling planners and policymakers to reimagine metros as civic anchors of inclusive, resilient, and culturally grounded urban futures.

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