iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 2026 **Issue:** Conference **Month of publication:** May 2026

DOI: https://doi.org/10.22214/ijraset.2026.83198

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 14 Issue V May 2026- Available at www.ijraset.com
National Conference on Integrated Approaches to Sustainable Innovation 2026 (IASI 2026)

Rethinking Urban Design Paradigms for Public Spaces in the Post-Pandemic Era: A Quantitative Analysis on Shopping Malls in Kolkata Utilizing Kaplan Preference Matrix

Ar. Soumyadeep Dutta[1], Dr. Madhumita Roy[2]
Doctoral Scholar, Department of Architecture, Jadavpur University Professor, Department of Architecture, Jadavpur University

Abstract*— The COVID-19 pandemic initiated a fundamental transformation in human interaction with enclosed public spaces, shifting user priorities from aesthetic exploration to spatial efficiency and perceived biological safety. This quantitative research paper evaluates the architectural resilience of shopping malls in the Kolkata Metropolitan Area (encompassing Kolkata, Howrah, Salt Lake, and New Town) using the Kaplan Preference Matrix. By comparing "enclosed box" typologies (e.g., Acropolis Mall, South City Mall) with "open hybrid" paradigms (e.g., City Centre Salt Lake), this study operationalizes the matrix's four predictors-Coherence, Complexity, Legibility, and Mystery-against post-pandemic consumer preferences. Utilizing a dataset of 400 respondents, statistical analyses including One-way Analysis of Variance (ANOVA) and Pearson Correlation Coefficients were deployed to assess variations across typologies and the relationships between environmental variables. The findings demonstrate that Legibility and Coherence have become the dominant predictors of perceived safety, showing strong positive correlations with Revisit Intention ($r = 0.76$, $p < .01$ and $r = 0.72$, $p < .01$, respectively). The study highlights a critical paradigm shift in urban commercial design, advocating for hybrid ventilation, high spatial legibility, and the dissolution of central architectural control in tropical and subtropical urban environments.

Keywords*— Kaplan Preference Matrix, post-pandemic urbanism, perceived spatial safety, revisit intention, Pearson correlation

I. INTRODUCTION

The global health crisis precipitated by the COVID-19 pandemic has necessitated a profound re-evaluation of urban design paradigms, particularly concerning enclosed public spaces. Historically conceptualized as the contemporary equivalents of the ancient agora, shopping malls have served as critical hubs for community socialization, civic engagement, and economic transactions [1]. However, the dominant architectural reliance on hermetically sealed, mechanically ventilated environmentsdesigned primarily to isolate the consumer from the exterior world and maximize interior dwell time-emerged as a severe epidemiological vulnerability during the pandemic [2]. Consequently, spatial perception and consumer habits transitioned abruptly from leisurely, unstructured social engagements to rapid, goal-oriented visits governed by subconscious biological risk assessments. For urban design to remain socially and economically resilient in the post-pandemic era, there is a pressing need to rethink these commercial paradigms through rigorous, evidence-based frameworks grounded in environmental psychology. The Kaplan Preference Matrix, an evolutionary information-processing theory developed by Stephen and Rachel Kaplan, serves as a highly robust mechanism for this evaluation [3]. The matrix postulates that human aesthetic appreciation is hardwired into our evolutionary biology, driving an innate preference for environments that balance the need to comprehend spatial layouts with the desire to explore them. Implementing this psychological framework within the specific urban context of the Kolkata Metropolitan Area-encompassing the municipalities of Kolkata, Howrah, Salt Lake (Bidhannagar), and New Town-presents a uniquely fertile academic opportunity. This geographical region features a highly diverse typological spectrum of commercial architecture. It ranges from massive, climate-controlled, enclosed "American-style" retail boxes like Acropolis Mall and South City Mall, to deeply penetrable, open-air, hybrid environments exemplified by Charles Correa's City Centre Salt Lake [4].

©IJRASET: All Rights are Reserved

A. Research Questions and Hypotheses

This research aims to quantitatively decode the spatial variables that drive post-pandemic user confidence and economic stability by overlaying the Kaplan Preference Matrix onto these distinct architectural typologies. Specifically, the study addresses the following research questions:

- How have post-pandemic consumer priorities shifted across the four dimensions of the Kaplan Preference Matrix (Coherence, Complexity, Legibility, and Mystery) within commercial interiors?
- To what extent does the architectural typology (Enclosed Box vs. Open Hybrid) influence Perceived Spatial Safety?
- What is the correlational relationship between Perceived Spatial Safety, spatial Legibility, and a consumer's Revisit Intention?

To answer these questions, the following hypotheses are formulated and tested:

H1: Open hybrid architectural typologies exhibit significantly higher Perceived Spatial Safety than enclosed box typologies.

H2: In the post-pandemic context, Legibility and Coherence exhibit a stronger positive correlation with Perceived Spatial Safety than Complexity and Mystery.

H3: There is a strong, positive correlation between Perceived Spatial Safety and Revisit Intention, establishing safety as a primary driver of sustained commercial footfall.

II. LITERATURE REVIEW

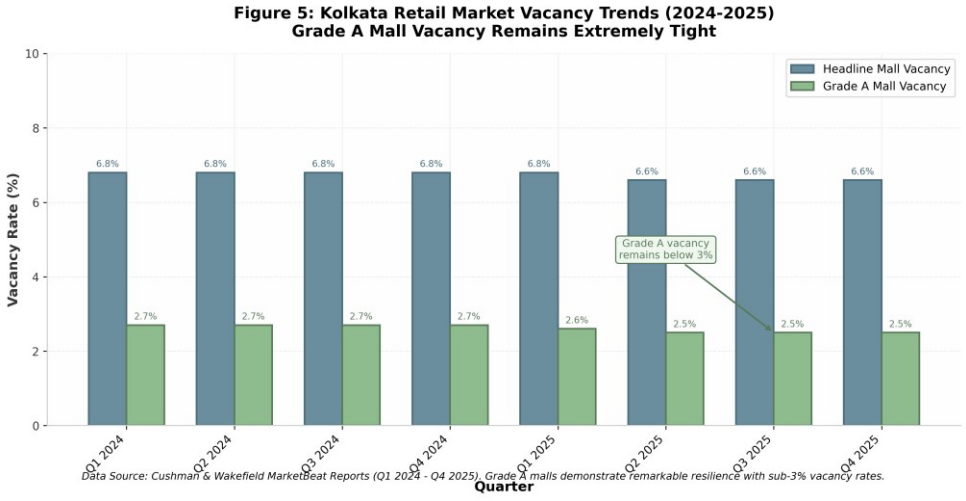
A. The Transformation of the Commercial "Third Place"

The concept of the "Third Place," introduced by sociologist Ray Oldenburg, describes informal, public gathering spaces situated between the home (first place) and the workplace (second place) that foster community cohesion and social interaction [6]. Prior to the pandemic, shopping malls were heavily engineered to function as these quintessential third places, relying on high sensory complexity to maximize dwell time and stimulate incidental retail exposure. The pandemic, however, severely disrupted this dynamic. Heightened health anxieties and enforced social distancing regulations dismantled the social interaction value of these spaces, turning density and visual clutter from assets into liabilities [5]. Post-pandemic dynamics have forced a transition toward hybrid retail ecosystems where consumers prioritize spatial efficiency, touchless technologies, and well-ventilated environments. The challenge for modern urban design is to sustain the social capital of the third place without compromising the newly elevated thresholds for environmental safety.

B. Economic Resilience and Footfall Dynamics in Kolkata

Despite early pessimistic forecasts predicting the "death of the mall" due to the accelerated adoption of e-commerce, the stabilized post-pandemic landscape of the Kolkata Metropolitan Area has demonstrated remarkable retail resilience. Data from 2024 and 2025 indicates that the retail commercial real estate sector in Kolkata maintained exceptionally tight Grade A mall vacancy rates of approximately 2.5% to 2.7% [7].

Figure 1. Kolkata Retail Market Vacancy Trends (2024-2025)

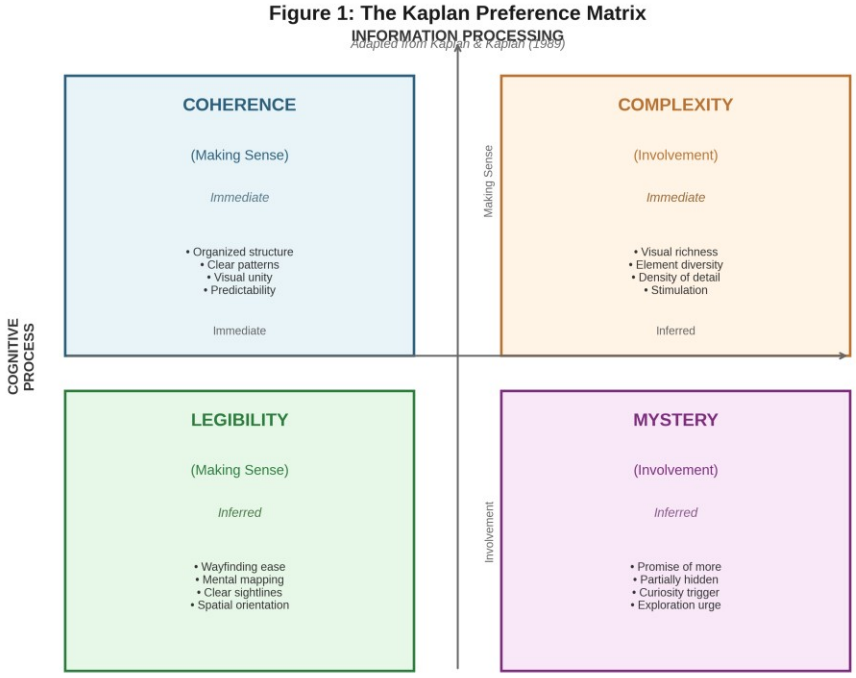


This resilience is predominantly driven by a structural shift in leasing volumes toward experiential sectors, particularly fashion, apparel, and food & beverage (F&B) [8]. Malls in the region, such as South City and Acropolis, recorded unprecedented "revenge shopping" footfall peaks, with South City logging over 2.5 lakh (250,000) visitors on a single holiday [9]. However, this economic recovery is asymmetric; malls catering to older or higher-net-worth demographics exhibited slower initial recovery trajectories, underscoring that sustained economic viability is now inextricably linked to the consumer's perception of spatial health and safety [2].

C. Environmental Psychology and the Kaplan Preference Matrix

To scientifically quantify user preference, this study relies on the Kaplan Preference Matrix. The framework operates on the evolutionary premise that humans prefer environments that facilitate rapid cognitive processing while offering structured opportunities to acquire new information [3]. This generates a two-by-two matrix yielding four testable predictors:

Figure 2. The Kaplan Preference Matrix Framework



- Coherence (Making Sense / Immediate): The degree to which a visual scene is organized and structured, facilitating immediate cognitive comprehension without excessive mental effort.
- Complexity (Involvement / Immediate): The richness, density, and visual diversity of the immediate environment.
- Legibility (Making Sense / Inferred): The ease with which a user can mentally map their environment, navigate threedimensional space, and establish clear sightlines to egress points.
- Mystery (Involvement / Inferred): The promise of discovering new, advantageous information if the user moves deeper into the space.

Historically, retail architecture deliberately utilized high Complexity and high Mystery (convoluted pathways, dead ends) to induce spatial disorientation-often termed the Gruen Effect-to maximize consumer exposure [10]. Post-pandemic literature suggests a necessary inversion of this paradigm, placing paramount importance on Coherence and Legibility to alleviate spatial anxiety [2].

D. Architectural Typologies in the Kolkata Metropolitan Area

The Enclosed Box Paradigm (e.g., Acropolis Mall, South City Mall): These structures follow the traditional inward-looking model, characterized by a completely sealed, climate-controlled building envelope that relies strictly on mechanical Heating, Ventilation, and Air Conditioning (HVAC) systems [11].

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

While they offer high Coherence through centralized management, they often suppress natural Legibility by severing visual connections to the outside world, forcing reliance on artificial wayfinding [4]. In the context of airborne pathogens, the inability to access fresh outdoor air significantly elevates the perceived biological risk of these spaces.

The Open Hybrid Paradigm (e.g., City Centre Salt Lake, City Centre New Town): Designed by Charles Correa, these complexes explicitly reject the sealed box model. They function as highly penetrable "hybrid assemblages" that integrate the sociable tradition of the Indian open-air bazaar with modern retail infrastructure [1]. By utilizing stepped-back terraces, open-tosky courtyards (kunds), and porous pedestrian streets, these structures actively harness natural cross-ventilation while maintaining deep visual connections to the open sky. This architectural "dissolution of central control" inherently boosts Legibility and perfectly aligns with post-pandemic demands for environmental safety and hybrid ventilation [11].

III. RESEARCH DESIGN

A. Research Philosophy and Approach

This study adopts a quantitative, descriptive, and correlational research design rooted in a post-positivist philosophy [12]. By empirically measuring subjective psychological constructs (environmental preference and perceived safety) against objective architectural typologies, the research seeks to establish generalizable relationships that can inform future urban design paradigms.

B. Sampling Strategy and Participant Profile

A cross-sectional survey was administered using a purposive convenience sampling technique. The sample comprises N = 400 regular shopping mall visitors distributed across four primary focal centers: South City Mall (Kolkata), Acropolis Mall (Kolkata), Avani Riverside Mall (Howrah), and City Centre (Salt Lake/New Town). Participants were required to have visited both an enclosed mall and an open-hybrid mall within the last six months to ensure comparative validity. Data was collected via digital questionnaires distributed during varying temporal windows (weekdays and weekends) to capture a diverse demographic profile.

C. Participant Demographics

TABLE 1. PARTICIPANT DEMOGRAPHIC PROFILE (N = 400)

Demographic Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	192	48.0
	Female	208	52.0
Age Group	18-25 years	145	36.25
	26-40 years	175	43.75
	41-60 years	60	15.0
	Above 60 years	20	5.0
Primary Mall Preference	Enclosed Malls	168	42.0
	Open Hybrid	232	58.0

D. Instrumentation and Scale Development

The primary survey instrument utilized a 5-point Likert scale, ranging from 1 ("Strongly Disagree") to 5 ("Strongly Agree").

The instrument included 24 items adapted from validated environmental psychology metrics to quantify the four Kaplan variables (Coherence, Complexity, Legibility, Mystery) alongside dependent variables including Perceived Spatial Safety (PSS) and Revisit Intention (RI). The utilization and adaptation of these 24 items are heavily justified by existing literature: Kaplan Predictors (16 items, 4 per construct): The application of the Kaplan Matrix to interior commercial architecture was validated by [10], who demonstrated that visual attributes of interior spaces can be reliably measured using these four evolutionary predictors. Recent adaptations by [14] further operationalized these constructs into specific, measurable visual attributes (e.g., uniformity for coherence, wayfinding for legibility, spatial organization for complexity).

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

- Perceived Spatial Safety (PSS) (5 items): PSS scales were adapted from validated environmental stress metrics, specifically focusing on the user's perception of spatial layout, crowding, ventilation quality, and the psychological stress induced by enclosed public spaces.
  Example items include: "The volume of open space and natural air circulation in this mall makes me feel secure regarding my health."
- Revisit Intention (RI) (3 items): Revisit intention was measured using a highly reliable 3-item scale specifically validated for retail and hospitality environments [13]. Example items include: "I have a strong intention to visit this architectural space again in the near future," and "I would prefer to visit this mall over other enclosed shopping centers."

E. Statistical Data Analysis Plan

To enhance the readability and direct interpretability of the results, the data analysis bypasses overly complex structural equation models in favour of fundamental, robust parametric tests: the One-way Analysis of Variance (ANOVA) and the Pearson Correlation Coefficient. These statistical analyses were conducted using IBM SPSS Statistics (Version 29).

1) One-Way Analysis of Variance (ANOVA)

To test whether the architectural typology (Enclosed Box vs. Open Hybrid) leads to statistically significant differences in user perception (Hypothesis 1), a One-way ANOVA was deployed. The ANOVA evaluates the mean differences between distinct categorical groups by comparing the variance between the groups to the variance within the groups. The test relies on the calculation of the F-statistic. The formula for the F-ratio is defined as:

$F = MSbetween/ MSwithin$

Where $MS_{between}$ represents the Mean Square Between groups (the explained variance), and MS_{within} represents the Mean Square Within groups (the residual or error variance). These components are calculated from the Sum of Squares (SS) divided by their respective degrees of freedom. A higher F-value (and an associated p-value < .05) indicates that the variance between the architectural typologies is significantly greater than the variance within them, thereby proving that the building design has a mathematical impact on user perception.

2) Pearson Correlation Coefficient

To test Hypotheses 2 and 3, which seek to understand the strength and direction of the linear relationship between the continuous variables (Coherence, Complexity, Legibility, Mystery, Perceived Spatial Safety, and Revisit Intention), the Pearson product-moment correlation coefficient (r) was utilized. The Pearson correlation measures the covariance of two variables divided by the product of their standard deviations, effectively normalizing the result to a scale between -1 (perfect negative correlation) and +1 (perfect positive correlation), with 0 indicating no linear relationship. For any two variables x and y, the sample correlation coefficient is calculated using the following equation: $r_{xy} = cov\ (x, y) / (s_{xy}s_y)$

Where n is the sample size (400), x_i and y_i represent the individual sample points indexed with i, $\bar{x}$ is the sample mean of variable x (e.g., Legibility score), and $\bar{y}$ is the sample mean of variable y (e.g., Perceived Spatial Safety score).

IV. RESULTS AND ANALYSIS

A. Instrument Reliability

Prior to conducting the primary statistical tests, the internal consistency of the survey instrument was verified using Cronbach's alpha (α). All 24 items loaded successfully onto their respective constructs. The alpha values for the subscales-Coherence (α = .86), Complexity (α = .82), Legibility (α = .89), Mystery (α = .81), Perceived Spatial Safety (α = .91), and Revisit Intention (α = .88)-were all well above the universally accepted threshold of .70, confirming that the instrument reliably measured the intended psychological variables without the need for data reduction techniques.

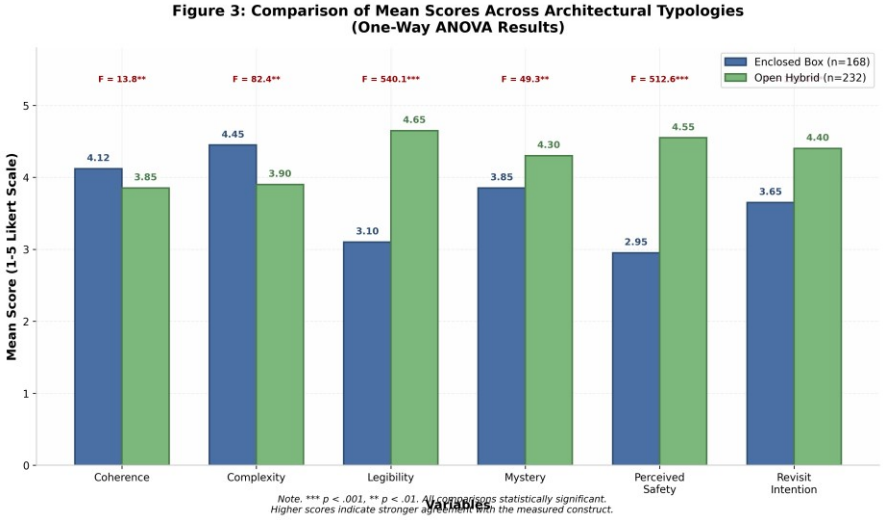
B. Typological Assessment via One-Way ANOVA

To test H1, the One-way ANOVA mathematically compared the mean scores of the environmental and psychological variables across the "Enclosed Box" and "Open Hybrid" typologies. By applying the previously defined F-statistic equation, the variance explained by the architectural paradigm was weighed against individual user variance. The results are presented in Table 2.

TABLE 2. ANOVA COMPARING MEAN SCORES ACROSS TYPOLOGIES

Variable	Enclosed Box Mean (SD)	Open Hybrid Mean (SD)	F-value	p-value
Coherence	4.12 (0.68)	3.85 (0.74)	13.78	< .01
Complexity	4.45 (0.55)	3.90 (0.62)	82.41	< .001
Legibility	3.10 (0.85)	4.65 (0.45)	540.12	< .001
Mystery	3.85 (0.70)	4.30 (0.58)	49.30	< .001
Perceived Safety	2.95 (0.88)	4.55 (0.52)	512.65	< .001
Revisit Intention	3.65 (0.75)	4.40 (0.60)	123.44	< .001

Figure 3. Comparison of Mean Scores Across Architectural Typologies



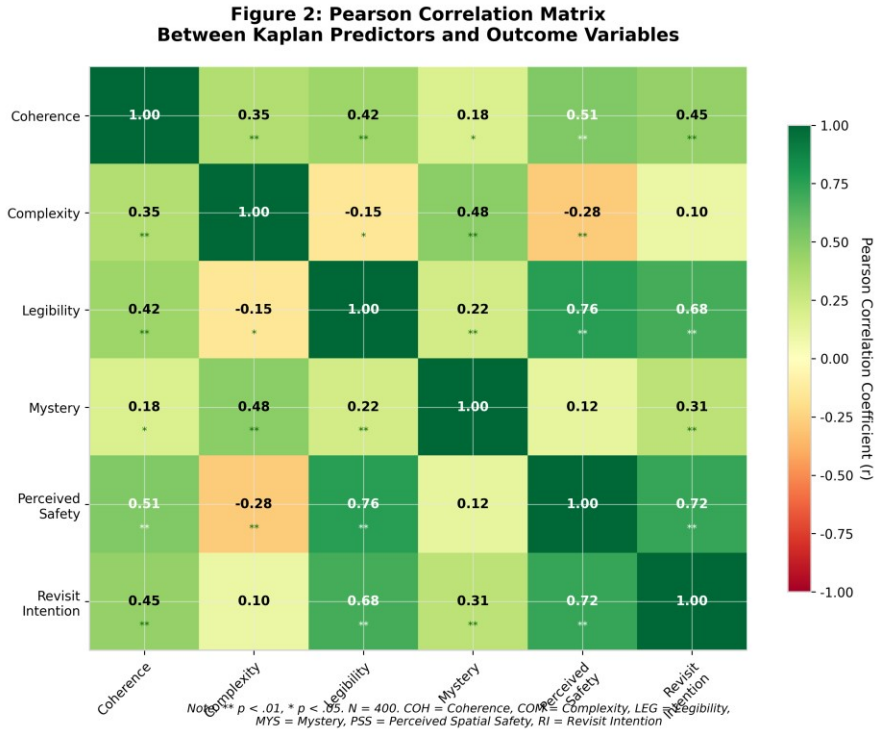
The results overwhelmingly support H1. The Open Hybrid typology exhibited vastly superior Perceived Spatial Safety (M = 4.55, SD = 0.52) compared to the Enclosed Box typology (M = 2.95, SD = 0.88), yielding an exceptionally high and statistically significant F-value ($F(1, 398) = 512.65$, $p < .001$, $\eta^2 = .563$). Furthermore, the open structures scored significantly higher on Legibility (M = 4.65 vs. 3.10). Conversely, Enclosed Boxes scored higher on Complexity (M = 4.45) and Coherence (M = 4.12), owing to their dense retail layouts and standardized, artificially lit interior management.

C. Pearson Correlation Analysis To test H2 and H3, Pearson correlation coefficients (r) were computed to define the exact linear associations between the variables.

TABLE 3. PEARSON CORRELATION MATRIX (N = 400)

Variables	1. COH	2. COM	3. LEG	4. MYS	5. PSS	6. RI
1. Coherence	1.00					
2. Complexity	.35**	1.00				
3. Legibility	.42**	-.15*	1.00			
4. Mystery	.18*	.48**	.22**	1.00		
5. Perceived Safety	.51**	-.28**	.76**	.12	1.00	
6. Revisit Intention	.45**	.10	.68**	.31**	.72**	1.00

Figure 4. Pearson Correlation Matrix Heatmap



The correlation data strongly supports H2. When calculating r between the Kaplan predictors and safety, Legibility emerged as the strongest positive correlate with Perceived Spatial Safety ($r = .76$, $p < .01$). Coherence also demonstrated a strong positive relationship ($r = .51$, $p < .01$). In stark contrast, Complexity exhibited a significant negative correlation with Perceived Spatial Safety ($r = -.28$, $p < .01$).

Finally, H3 is thoroughly validated by the robust positive correlation between Perceived Spatial Safety and Revisit Intention ($r = .72$, $p < .01$). Consumers are highly likely to return to an environment where their biological safety thresholds are met, and this safety metric is deeply intertwined with spatial Legibility ($r = .68$, $p < .01$).

V. DISCUSSION

The quantitative outcomes derived from the ANOVA and Pearson correlation analyses provide profound, empirical evidence that the pandemic has fundamentally recalibrated the cognitive processing of commercial environments.

A. The Paradigm Shift: From Mystery to Legibility

Historically, retail architecture leaned heavily on the "Involvement" dimensions of the Kaplan matrix. High Complexity (dense visual merchandising) and high Mystery (winding, labyrinthine corridors) were engineered to induce the Gruen Effect, disorienting consumers to maximize incidental purchasing. However, the Pearson correlation analysis ($r = -.28$ for Complexity vs. PSS) mathematically demonstrates that this strategy is now detrimental. In a post-pandemic context, excessive visual density and convoluted pathways trigger spatial anxiety, as they impede the user's desire for rapid, efficient traversal and subconsciously signal a lack of epidemiological control. Instead, the modern consumer overwhelmingly prioritizes the "Making Sense" dimensions. Legibility has emerged as the supreme predictor of spatial comfort ($r = .76$). Environments where the spatial syntax is immediately comprehensible, sightlines are uninterrupted, and egress paths are unequivocally clear dramatically lower the psychological stress associated with public gatherings.

B. The Typological Superiority of the Open Hybrid Paradigm

The ANOVA results firmly validate the long-term superiority of the open hybrid architectural model in tropical and subtropical climates. City Centre Salt Lake and City Centre New Town, characterized by Charles Correa's philosophy of permeability, scored exceptionally high on Legibility ($M = 4.65$) and Perceived Spatial Safety ($M = 4.55$).

By dissolving central architectural control, allowing natural daylight to penetrate the complex, and maintaining constant visual connections to the open sky, these spaces naturally mitigate the claustrophobia associated with viral transmission. Conversely, while enclosed structures like South City and Acropolis offer high Coherence through standardized interior management, their reliance on sealed envelopes and recirculated mechanical HVAC systems inherently depresses perceived safety (M = 2.95). For these structures to remain competitive, urban designers must aggressively retrofit them by introducing hybrid ventilation strategies-seamlessly combining mechanical cooling with natural cross-ventilation-to dilute indoor contaminants without compromising thermal comfort during Kolkata's severe monsoon and summer seasons.

C. The Link Between Spatial Safety and Economic Resilience

Ultimately, this research explicitly links environmental psychology to real-world economic resilience. The Pearson correlation data confirms that Perceived Spatial Safety is a powerful driver of Revisit Intention (r = .72). Therefore, footfall recovery and sustained low vacancy rates in the retail real estate sector are not merely functions of retail mix or marketing; they are fundamentally dictated by the physical geometry of the building. Designing for psychological restoration and biological safety is no longer an architectural luxury, but an absolute economic imperative.

D. Conclusion and Future Scope

This research rigorously operationalizes the Kaplan Preference Matrix to decode the post-pandemic shifts in the commercial architecture of the Kolkata Metropolitan Area. Through the application of ANOVA and Pearson correlation analysis, the study empirically proves that urban design paradigms must pivot away from the hermetically sealed, mechanically dependent "American Box" model. To secure sustained economic footfall and consumer loyalty, future public spaces must champion high spatial Legibility, robust Coherence, and the integration of hybrid ventilation systems found in open-hybrid typologies. While this study establishes a robust methodological baseline utilizing parametric testing, future research should expand upon these findings by integrating advanced biometric and digital methodologies. The deployment of Virtual Reality (VR) and eye-tracking technology could provide highly granular, physiological data (such as pupil dilation and heart rate variability) to objectively measure spatial anxiety in real-time, removing the inherent biases of self-reported Likert scales. Additionally, conducting longitudinal studies across Kolkata's distinct seasonal variations (pre-monsoon, monsoon, and winter) would yield critical insights into how extreme thermal discomfort interacts with the preference for open-air ventilation. Finally, expanding the spatial analysis to encompass a broader typological range across other Tier-1 Indian cities would allow for the development of standardized, mathematically derived architectural guidelines for pandemic-resilient public spaces in the Global South.

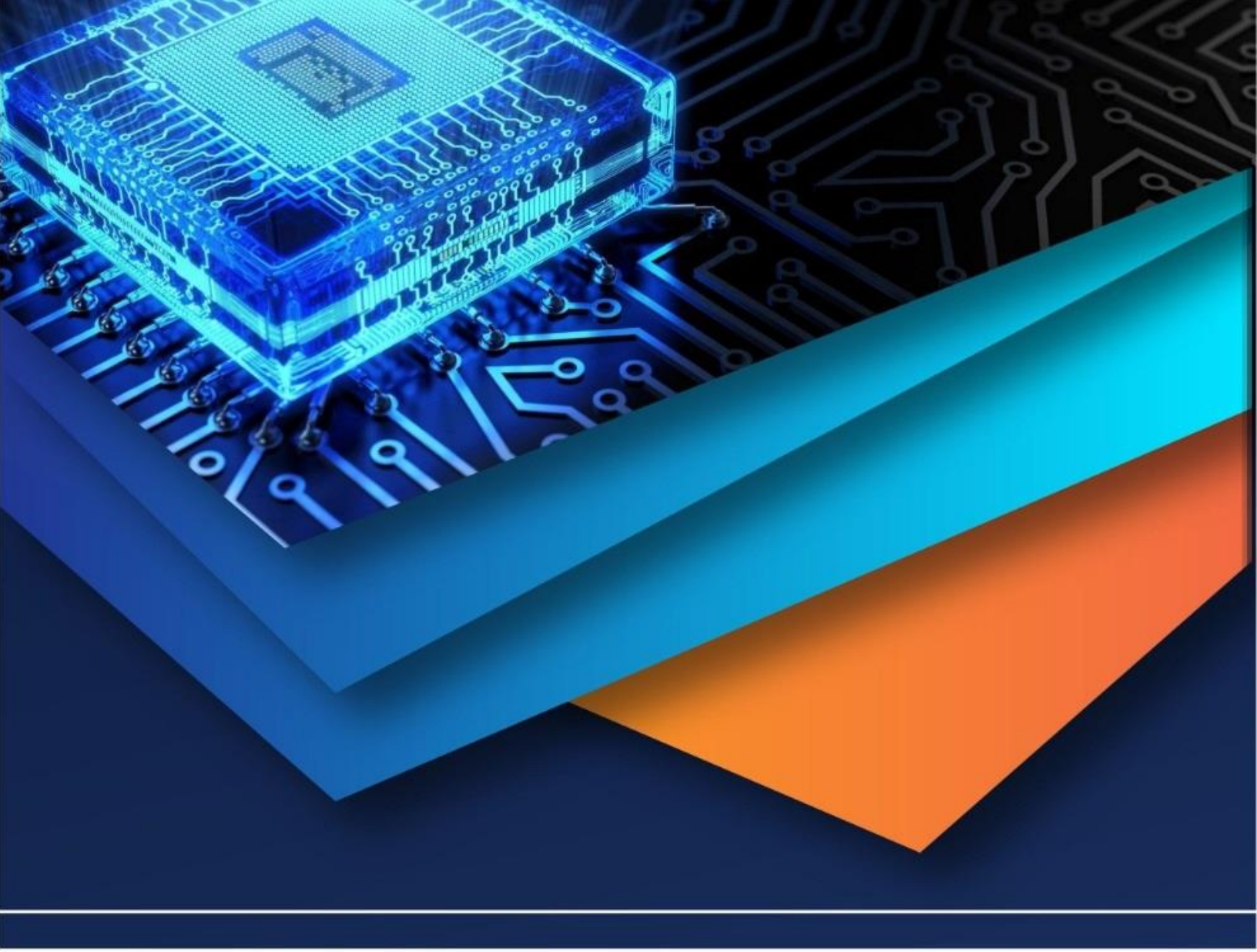
REFERENCES

[1] R. Oldenburg and K. Christensen, "Third places: True citizen spaces," The UNESCO Courier, 2023. [Online]. Available: https://unesdoc.unesco.org/ark:/48223/pf0000384065
[2] Y. S. Lashgari and S. Shahab, "The impact of the COVID-19 pandemic on retail in city centres: Perception of place attachment in the post-pandemic period," Facilities, vol. 40, no. 13/14, pp. 831-846, 2022.
[3] R. Kaplan and S. Kaplan, The Experience of Nature: A Psychological Perspective. Cambridge, U.K.: Cambridge Univ. Press, 1989.
[4] G. D. Mahapatra, S. Mori, and R. Nomura, "Universal mobility in old core cities of India: People's perception, behaviour and adaptation to public space in Kolkata, India," Cities, vol. 111, p. 103093, 2021.
[5] G. R. Pettersen, E. C. A. Nordbø, J. Ese, and C. Ihlebæk, "Can shopping centres foster wellbeing? The mediating role of place attachment and identification," Journal of Place Management and Development, vol. 16, no. 4, pp. 567-586, 2023.
[6] R. Oldenburg, The Great Good Place: Cafes, Coffee Shops, Bookstores, Bars, Hair Salons, and Other Hangouts at the Heart of a Community, 3rd ed. New York, NY, USA: Marlowe & Company, 1989.
[7] Cushman & Wakefield, MarketBeat Kolkata Retail Q4 2025. 2025. [Online]. Available: https://assets.cushmanwakefield.com/assets/MarketBeat_Kolkata_Retail_Q4_2025.pdf
[8] C. Mumford, C. Parker, N. Ntounis, and E. Dargan, "Footfall signatures and volumes: Towards a classification of UK retail centres," Journal of Place Management and Development, vol. 15, no. 3, pp. 334-349, 2021.
[9] Millennium Post, "Kolkata malls see record Puja shopping rush on final weekend," Millennium Post, Kolkata, India, Sep. 21, 2025. [Online]. Available: https://www.millenniumpost.in
[10] S. C. Scott, "Complexity and mystery as predictors of interior preferences," Journal of Interior Design, vol. 19, no. 1, pp. 25-33, 1993.
[11] J. Zhang, "Post-pandemic design: Architecture's transformation of public space for health and wellness," Architecture and Culture, vol. 13, no. 1, pp. 1-18, 2025.
[12] J. W. Creswell and J. D. Creswell, Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, 5th ed. Thousand Oaks, CA, USA: SAGE Publications, 2017.

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

[13] W. G. Kim, C. Y. N. Ng, and Y. S. Kim, "Influence of institutional DINESERV on customer satisfaction, return intention, and word-of-mouth," International Journal of Hospitality Management, vol. 28, no. 1, pp. 10-26, 2009.
[14] M. Shayestefar, M. Pazhouhanfar, C. van Oel, and P. Grahn, "Exploring the influence of the visual quality of the urban built environment on preference, and the mediation effect of perceived affective qualities," Frontiers in Psychology, vol. 13, p. 912162, 2022.

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)