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Analysing the Role of the Perceptual Dimension in the Formation of the Urban Third Place

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Abstract

Urban third places such as parks, plazas, and cafés play a significant role in fostering social interaction, community engagement, and a sense of belonging in contemporary society, and this recognition is growing. Although the term third place has been the focus of considerable research for some time, investigating the psychological needs of users broadens the scope, adding a valuable dimension to the research. This study's perceptual dimension focuses particularly on an individual's perceptions of the built environment within the urban third place.

This paper explores how people perceive and experience these third places. Thus, the purpose of this study is to investigate how users' perceptions contribute to the formation of these spaces. The research begins by defining the term urban third space and examining its significance in the urban environment. A theoretical approach is used to interpret a perceptual dimension by analysing an individual's sense of place in relation to urban third places. A projective survey questionnaire is employed to further explore the concept. We decipher the qualitative observations of the survey using Nvivo, a software tool that supports both descriptive and inferential statistical inferences. The study considers the relationship between age and the diverse perceptual needs of users, making it easier to analyze the observations statistically.

The research examines the significance of associations, identifies dominant perceptions, and analyzes potential patterns across various age groups in the sample population. Statistical analysis of these observations offers insights to designers, planners, and policymakers in terms of prioritising users' experiences, needs, and preferences, i.e., sense of place, to accommodate the contemporary needs of the users in the practice of urban design at the human scale.

Keywords: Urban Third Place, Sense of Place, Perceptual Dimension, Human Dimension.

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1. INTRODUCTION

Analyzing the role of the perceptual dimension in shaping urban third places requires interpreting the observations at the human scale within the built environment. As Gehl (2010) notes, significant progress has been made at the city and neighbourhood levels, but much less attention has been given on an individual scale. In urban design, particularly in developing countries like India, the human dimension is often overlooked, highlighting the need for a deeper understanding of individual need at the micro level in relation to urban third places. This study addresses this gap by investigating users' perceptions of contemporary urban-built environments in urban cafés across India. It offers a theoretical contribution by uncovering user perspectives and introduces methodological innovation through the use of a qualitative survey questionnaire. This approach allows the exploration of concealed preferences and perceptions that may not emerge in quantitative surveys. The study's practical originality lies in establishing and analyzing the relationships between different user age groups and their varying perceptions and preferences. Additionally, the use of inferential statistics helps to concretize these observations.

1.1 What is "Third Place?"

Cities are experiencing rapid urbanization, which has significantly affected communities in various ways. In the context of architecture, this urbanization often neglects the importance of fostering healthy community life by creating informal urban gathering spaces. Cities have become uninhabitable as a result of a lack of consideration for human psychology (Gupta and Law 2023). These social places are essential in order to create a sense of community and social cohesion. Most residential areas in cities are designed to provide safety to end users. This focus has been instrumental in keeping people disconnected from each other. As a result, people are struggling against the anti-community character of urban cityscapes, which is the main cause of social isolation and a more privatized way of life.

In 1989, urban sociologist Ray Oldenburg identified this social issue and introduced the term "Third Place", referring to spaces that balance privatized home life and the mechanized workplace. He defined the "Home" as the first place where an individual leads their personal life, and the "Workplace" as a second place, where productive needs are met. A "Third Place" serves as an escape from both, offering individuals a space to celebrate life. Oldenburg defines the term as "The Third Place"—a comprehensive term for diverse public venues that regularly accommodate voluntary, casual, and eagerly awaited assemblies of people beyond the boundaries of their residences and workplaces

(Oldenburg 1989). The "Third Place" is nothing but an informal urban gathering place that encourages "Inclusive Sociability". The term emphasizes an urban approach that prioritizes people's needs. Designing a "Third Place" requires not only facilitating social interactions but also addressing occupants' social needs and incorporating a thoughtful human element into the space.

The term "Third Place" emerged to address need for social connections in community living. While the first and second places cater to specific aspects of human life, we anticipate a third place to fill the void of inclusive sociability for community members. Oldenburg (1989) argues, it is a place where discussion is the predominant activity and thus the primary vehicle for displaying and appreciating human personality and individuality. What people require is an opportunity to come together to relax, connect, and converse with each other. Despite all the modern material comforts, what truly matters to a human being is the community in which they live. Therefore, it is crucial to integrate a third place into urban design, providing a space for interaction, encouraging togetherness to foster social capital, and fostering a sense of community as a goal in a world characterized by mobility and rapid change. For a third place to be successful, it must be adaptable to socio-cultural and urban changes, with these changes being people-centric in order to have a positive impact on the community.

1.2 What is a Sense of place?

The term Sense of place deals broadly with the ways people associate themselves with the place. This interrelationship can be analyzed in various ways and at different scales, focussing on particular aspects of a particular discipline. Theorists in areas such as geography have studied the experience of place as a connection created between individuals and their environments through symbols and meanings in everyday life, whereas in humanistic geography it is more about the experiential process of unique characteristics of a particular place, as mentioned in Table 1. In other disciplines, such as environmental psychology and anthropology, theorists have focused on the attitudes of individuals towards spatial settings and place attachment towards the place, respectively. As a result of the complexity involved, due to various subjective interpretations and the diverse implications of the term Sense of place, the formulation of a common framework across all disciplines is not practical to implement. Table 1 outlines the existing meanings of the phrase Sense of place across various disciplines.

As the focus of the study is particularly on the perceptual dimension, it focuses on the processes involved in

the interactions between people and place. This viewpoint is supported by the interpretation of place by architectural psychologist, David Canter, who considers place to be the interplay of cognition, emotion, and action (behavior) organized around human agency (Garling 1992). Put simply, the concept of experiencing a place can be understood through three lenses: behavioural, emotional, and cognitive. It strengthens the overall purpose of the study to explore people's perceptions and experiences towards the urban third place. Canter further expresses that by adopting this framework, theoretical continuity and relevance can be attained in place-based constructs such as place dependence, place attachment, and place identity.

Within the theoretical framework of the study, the perceptual relationship between users and their surrounding place can be elaborated upon in three dimensions. 1. Behavioural dimension: How do users prefer to use the third place? 2. Emotional dimension: What are users' feelings towards a third place? 3. Cognitive dimension: How do users associate themselves with the third place?

2. MATERIALS AND METHODS

The primary purpose of this research paper is to explore people's perceptions and experiences of the urban third place through a qualitative study that analyzes the perceptual dimension. Projective approaches are based on the premise that when people meet a vague organized stimulus, their unconscious perspectives, desires, attitudes, wishes, and sentiments may emerge. Because there are no right or wrong answers, individuals are expected to project their unconscious thoughts into their responses, interpreting the confusing stimulus from their own perspective. (Donoghue 2000). This method allows respondents to express thoughts beyond rationality, providing researchers with insights that are more intuitive than those gathered through traditional questionnaires.

Thus, a selection of qualitative methods yields more realistic data for researchers, which can be measured statistically and used for practical implications in design practices. Based on the type of responses required, projective processes are divided into three categories: association, completion, and construction (Hofstede, A., van Hoof, J., Walenberg, N., & de Jong 2007). These techniques are selected and applied during the data collection process, based on the specific aims of the study.

Table 2 illustrates the different types of projective techniques and stimuli used in this study, along with the methodology for each technique.

2.1 Data collection:

This project conducts a preliminary pilot study, using a qualitative survey questionnaire as one of the data collection methods. The survey is conducted online, enabling rapid data collection at minimal cost compared to other survey methods. We distribute a survey questionnaire to eighty participants, dividing them into four age groups. We record the responses of twenty participants per group, with ten males and ten females in each, ensuring equal gender representation. Stratified random sampling is used based on age, with the following groups: Ages 56-75, Ages 41-55, Ages 26-40, and Ages 11-25. It ensures diversity by capturing differences in perceptions and usage patterns, taking into consideration the specifics of each group. Given the sample size, the study is exploratory in nature. However, the chosen sampling method may provide valuable insights for future investigations.

So, while the four groups collectively demonstrate diversity, each individual group exhibits uniformity within a given sample population. Since the research focuses on urban third places, cafés in urban areas of metropolitan cities such as Mumbai are designated as study sites. Ultimately, the study concentrates on the urban middle class, who frequently uses these cafés. Qualitative analysis is generally concerned with a deeper awareness of the individual in all its diversity (Charles C Ragin 1992). The online survey was created using Google Docs (www.docs.google.com). Cafés, regarded as urban third places, are being investigated through a total of twelve qualitative questions based on the previously mentioned projective techniques of association, completion, and construction. The survey includes the following examples of questions presented to users.

Association Technique (Word/Photo): Users are shown relevant images and words associated with them. Question: In which of the following circumstances would you prefer to spend time in a café? **Photo-Sort Technique:** Users are asked to sort related words with two images. Question: Associate the following words with one of the visuals provided below. **The Completion Technique (Sentence/Story)** instructs users to complete the sentence or story using the first word that comes to mind. Question: The best thing to enjoy in a café is... **Construction Technique: (Bubble Drawing):** Users are presented with a bubble drawing where one character asks a question of another character. Users are required to imagine themselves in the scenario and fill in the empty bubble with an appropriate answer. These techniques, therefore, help researchers gain more detailed insights into how people recognize cafés as an urban third place.

Table 1: Various Existing Interpretations of Sense of place

Theorist	Discipline	Definition	Key terms
Edward Relph (Relph 1976)	Phenomenology/ Geography	A feeling of place is an interconnection with a place that is achieved through the comprehension of Phenomenologist symbols and everyday actions. Individuals living in various locations can develop the feeling, which can then be enlarged over time.	Meaning, Intention, and Purpose
Fritz Steele (Steele 1981)	Psychology	Sense of place is the result of a complex mixture of physical, social, and personal factors.	Physical Surroundings, Social Context, and Personal Interpretations
Jorgensen & Stedman (Jorgensen, B. S., & Stedman 2001)	Environmental Psychology	Sense of place is an attitude towards a spatial setting.	Attitude, Place Constructs (Place Dependence, Place Identity, and Place Attachment)
David Canter (Canter, D 1991)	Architectural Psychology	Sense of place is about the confluence of cognition, emotion, and action organised around human agency.	Psychology and Human Behaviour
Creswell, T (Creswell, T In N. Thrift 2009)	Humanistic Geography	Sense of place describes different connotations that are individually attributed and socially formed.	Location, Locale, and Sense of Place (Attachment)
Scannel & Gifford (Scannell, L. 2010)	Environmental Psychology	Person-place bonding occurs through multifaceted, meaningful processes in place attachment.	Place Attachment: Person-Process-Place Organising Structure
Yi-Fu Tuan (Tuan 1977)	Humanistic Geography	People interpret the meaning of location through their sense of place, which is an experiencing process.	Experience
Altman & Low (Altman and Low 1992)	Anthropology	Place attachment is a symbolic bond formed by people and places that adds emotional and cultural significance to a specific setting.	Place Attachment
Hummon, D.M (Hummon, D.M In, I. Altman and M. Seta 1992)	Sociology	Personal orientation to a place encompasses an understanding of location and an individual's feelings about that place, which are integrated with the environment.	Community Attachment
Jackson, J.B (Jackson 1995)	Landscape Design	A sense of place is something we create for ourselves over time due to habit or custom. A sense of locality is aided by a perception of repeated happenings.	Evolution
Cross, J.E (Cross 2001)	Sociology	Topophilia is defined as "the affective bond that exists between people and a particular place or setting." Attachments differ in their intensity, subtlety, and mode of expression. Environmental responses could be visual, tactile, or emotional.	Topophilia
Lalli, M (Lalli 1992)	Environmental Psychology	Place identification as a cognitive process for representing the surroundings.	Place Identity

Table 2: Categories of Projective Methods

Sr. No.	Projective Technique	Type of Projective Technique	Type of Stimulus	Methodology
1	Association	Word Association	Verbal	A stimulus, such as a word, sentence, or image, is utilized to prompt the first word that comes to mind for the respondents. (Eldesouky, Pulido, and Mesias 2015).
		Photo Association	Verbal-Visual	
		Brand Personification	Verbal	This method asks respondents to assign personalities to brands and envision them as people. The goal is to extract both data and symbolic imagery connected with the companies (Maslow. H. Abraham, n.d.).
		Photo-Sort Technique	Verbal-Visual	This method involves presenting a sequence of photographs to respondents and asking them to categorize them based on their preferences (Mesías and Escribano 2018).
2	Completion	Sentence Completion	Verbal	In the sentence completion task, participants are given incomplete sentences and instructed to complete them with the first word or phrase that comes to mind (Eldesouky, Pulido, and Mesias 2015).
		Story Completion	Verbal	Respondents are given a section of a story focused on one topic and then asked to create their own conclusion (Mesías and Escribano 2018).
3	Construction	Bubble Drawing/ Cartoon Test	Verbal-Visual	In general, the method features humorous characters in an uncertain setting having a conversation about the subject under investigation. Test takers are asked to fill in an empty bubble to complete the conversation between the cartoon characters (Rook 1988).

Based on this survey, the observed patterns of users' perceptions and experiences are presented in Table 3. These include the most prevalent behavioral, cognitive, and emotional patterns noted.

2.2 Data analysis:

Responses from every individual are recorded in three subcategories: emotional, cognitive, and behavioural. Data analysis consists of two parts. The first part covers thematic coding obtained through qualitative observations, while the second part focuses on inferential statistics. Thematic coding helps to extract themes or patterns from text by analysing the word and sentence structure. A word cloud is a visual representation that highlights crucial words by displaying them in varying sizes and colors based on their frequencies. It is created by selecting the most frequently used terms (DePaolo and Wilkinson 2014). Creating a word cloud serves as an initial measure that helps researchers focus on key terms of the study that necessitate further examination. From Figure 1, we can observe the most frequently used words for the

Table 3: Observed Patterns of User' Perceptions from the Survey (Source: Author)

Behavioral Dimension	Comfort and relaxation
	Formal interaction
	Host of evolving needs
	Informal sociability and interaction
	Opportunity of celebration
	Personal space
Cognitive Dimension	Productive environment
	Lifestyle
Emotional Dimension	Sense of identity
	Nostalgia
	Sense of belonging
	Sense of privacy
	Sense of temporality
Sensory experience	

perceptions of users in the form of a word cloud. It gives a broad direction in which users perceive cafés. To gain more clarity, it is converted into a count and a weighted percentage of the most frequently encountered words, as shown in Table 4. This process is performed in Nvivo, a qualitative data analysis tool.



Behavioural dimension



Cognitive dimension



Emotional dimension

Figure 1: Word cloud (Source: Author)

As Limna (2023) claims, Nvivo is specifically designed for analyzing and categorising text-based data, enabling researchers to draw connections between codes or categories of information.

Table 4: Weighted percentage of keywords (Source: Author)

Behavioural dimension		
Word	Count	Weighted Percentage
Ambience	243	6.95 %
Friends	191	5.46 %
Old	136	3.89 %
Reunion	125	3.58 %
Meetings	93	2.66 %
Cognitive dimension		
Word	Count	Weighted Percentage
Ambience	116	14.34 %
Expensive	60	7.42 %
Coffee	37	4.57 %
Interior	36	4.45 %
Lifestyle	25	3.09 %
Emotional dimension		
Word	Count	Weighted Percentage
Friends	181	5.89 %
Old	159	5.18 %
Reunion	124	4.04 %
Ambience	123	4.00 %
Coffee	119	3.87 %

Based on the findings presented in Tables 3 and 4, it is evident that the identified keywords align with the patterns observed in user perceptions, as shown in Figure 2.

Thus, the process of thematic coding aids in organizing qualitative data, recognizing patterns, and interpreting them in a way that allows for quantification. This enables the determination of the significance of identified themes and provides a more comprehensive analysis. The second part, involving inferential statistics, is conducted in three stages, reflecting the interrelationship of users' perceptions of cafés as urban third places. All three stages form part of a single exploratory analysis process, beginning with broad conclusions (chi-square), progressing to numerical significance (ANOVA), and culminating in specific group comparisons (Tukey's HSD Post Hoc). Furthermore, correlation analysis is employed to examine the extent and direction of the association between age demographics and their responses. This multifaceted methodology ensures statistical rigor and clarity in the results.

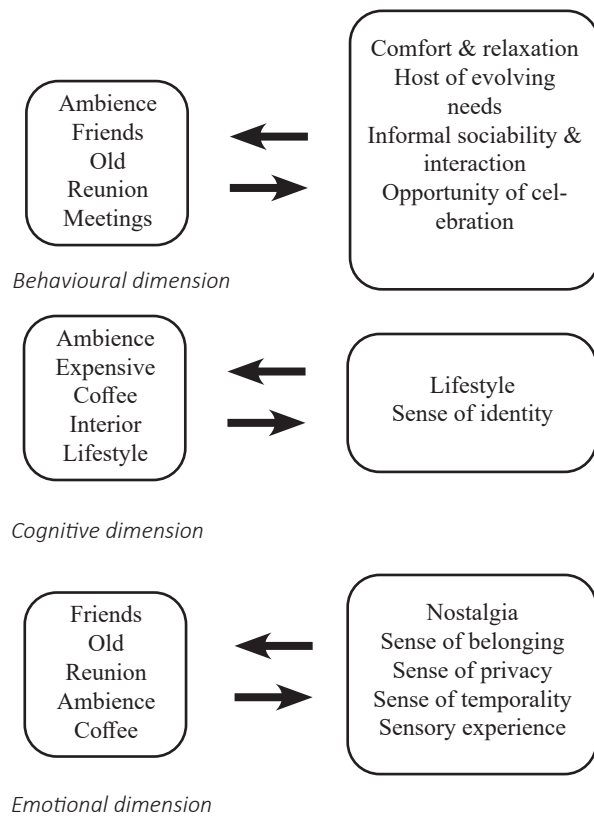


Figure 2: Perceptual relationship (Source: –Author)

Stage 1: Validating the Existence of a Statistically Significant Correlation Between the Sample Population and Emotional, Cognitive, and Behavioral

The level of measurement for human responses remains at the ratio level, whereas age groups are assessed at the interval level, with equal intervals maintained for convenience in statistical analysis. As stated in Table 5, the responses across all age groups are organized as counts. The chi-square test of independence is employed to collect data from a single sample group and subsequently examines the relationship between two variables within this sample (Nihan 2020). In this study, the test investigates whether the variables (age groups and response counts) are independent or related. This method is ideal for identifying associations between categorical variables and is used to assess the null and alternative hypotheses. In this study, the null hypothesis (H_0) that there is no statistically significant association between age and the responses of the sample population. The alternative hypothesis (H_1) asserts that a statistically significant association exists between age and the replies of the sample group.

chi-square formula is defined as:

$$\chi^2 = \sum [(O-E)^2 / (E)] \quad (1)$$

Where O represents the observed frequency and E represents the expected frequency. The degrees of freedom (d.f.) are calculated as n-1 where n is the number of items.

A significance level of $\alpha = 0.05$ is commonly used as the standard in research design. However, given the nature of this research, a less rigorous significance level of $\alpha = 0.1$ is employed for the chi-square test. Several factors justify this decision: The study is an exploratory pilot study with a limited sample size, primarily aimed at assessing the feasibility of a larger investigation. The goal is to establish the direction for future research, making a less stringent significance level appropriate for preliminary findings. A more flexible interpretation of results is necessary at this early stage, as the consequences of Type I errors are less severe in this context. The research focuses on identifying patterns and trends that can inform more rigorous analyses, such as ANOVA, which inherently reduces the risk of Type I errors in subsequent stages.

Table 5 summarizes the responses of the sample population as counts.

From Table 6, if the value χ^2 is greater than the critical value, the data supports the alternative hypothesis. Conversely, if the value of χ^2 is less than the critical value, the data supports the null hypothesis. From Table 6, we can determine that at the significance level of $\alpha = 0.1$, the results indicate strong evidence for a statistically significant relationship between emotional and behavioural responses and age groups, thereby validating the alternative hypotheses. However, there is insufficient evidence to establish a statistically significant relationship between cognitive responses and age groups, which supports the null hypothesis.

Stage 2: Investigating which types of responses (emotional, cognitive, and behavioural) are the most prominent in the sample population. To support and complement the evidence found in the chi-square test, a more conventional statistical test is required to provide better clarity about the results. ANOVA (Analysis of Variance) is employed to examine the differences between the means of multiple groups, analyzing the significant responses within the sample population. Specifically, it is used to identify differences in the experimental group means (Sawyer 2009). For this research, the null hypothesis (H_0) posits that there are no significant responses within the sample population, while the alternative hypothesis (H_1) suggests that at least one statistically significant

Age Group/ Human Responses	Cognitive dimension	Emotional dimension	Behavioural dimension
11-25	60	214	286
26-40	56	207	267
41-55	51	194	261
56-75	49	159	225

Table 5: Observed responses (Source: Author)

Chi-Square Test of Independence for Cognitive Dimension					
Sr. No.	O	E	(O-E)	(O-E) ²	(O-E) ² / E
11-25	60	54	6	36	0.66
26-40	56	54	2	4	0.07
41-55	51	54	-3	9	0.16
56-75	49	54	-5	25	0.46
d.f (n-1)= (4-1)=3, Level of Significance- $\alpha = 0.1$					$\sum (O-E)^2 / E = 1.35$
Calculated Chi-Square Value $\chi^2 (1.35)$ is < Critical Value (6.251) from distribution table.					
Chi-Square Test of Independence for Emotional Dimension					
Sr. No.	O	E	(O-E)	(O-E) ²	(O-E) ² / E
11-25	214	193.5	20.5	420.25	1.9
26-40	207	193.5	13.5	182.25	0.88
41-55	194	193.5	0.5	0.25	0.001
56-75	159	193.5	-34.5	1190.25	6.1
d.f (n-1)= (4-1)=3, Level of Significance- $\alpha = 0.1$					$\sum (O-E)^2 / E = 8.881$
Calculated Chi-Square Value $\chi^2 (8.881)$ is > Critical Value (6.251) from distribution table.					
Chi-Square Test of Independence for Behavioural Dimension					
Sr. No.	O	E	(O-E)	(O-E) ²	(O-E) ² / E
11-25	286	259.75	26.25	689.06	2.65
26-40	267	259.75	7.25	52.56	0.20
41-55	261	259.75	1.25	1.562	0.006
56-75	225	259.75	-34.75	1207	4.64
d.f (n-1)= (4-1)=3, Level of Significance- $\alpha = 0.1$					$\sum (O-E)^2 / E = 7.496$
Calculated Chi-Square Value $\chi^2 (7.496)$ is > Critical Value (6.251) from distribution table.					

Table 6: Chi-Square Test of Independence (Significance Level: $\alpha=0.1$) (Source: Author)

response exists within the sample population. ANOVA is conducted using Microsoft Excel software.

From Table 7, we can observe that for the cognitive dimension, the p-value > 0.05, for emotional dimension; P-Value < 0.05 and for the behavioural dimension, the p-value < 0.05. Thus, the null hypothesis (H_0) is accepted for the cognitive dimension, while the alternative hypothesis (H_1) is accepted for the emotional and behavioural dimensions. This indicates that emotional and behavioural responses are the most significant

within the sample population. The variation associated with emotional and behavioural responses across age groups is real and not due to chance.

Tukey's Honestly Significant Difference (HSD) Post Hoc Test:

Since ANOVA indicates a statistically significant difference in emotional and behavioural responses, it is used to identify significant differences in group means. It helps extend beyond the ANOVA, deepening the

One Way ANOVA for Cognitive dimension						
Source of Variation	SS	df	MS	F	P- Value	F-Crit
Between Groups	8.5	3	2.833333	0.993693	0.40047	2.724944
Within Groups	216.7	76	2.851316			
Total	225.2	79				
One Way ANOVA for Emotional dimension						
Source of Variation	SS	df	MS	F	P- Value	F-Crit
Between Groups	89.65	3	29.88333	4.351664	0.006966	2.724944
Within Groups	521.9	76	6.867105			
Total	611.55	79				
One Way ANOVA for Behavioural dimension						
Source of Variation	SS	df	MS	F	P- Value	F-Crit
Between Groups	97.5375	3	32.5125	3.816434	0.013256	2.724944
Within Groups	647.45	76	8.519079			
Total		79				

Table 7: One-Way ANOVA for the Sample Population (Significance level $\alpha=0.05$) (Source: Author)

understanding of group relationships, and highlighting where the significant differences lie. In this research, the test is used to identify which age groups differ significantly in their perceptions of cafés. In other words, it shows which age groups have significantly different priorities, needs, opinions, and values about third place. It might help designers to prioritize their strategies in terms of implementing an inclusive approach in design. It is possible to use this test in situations where there are equal numbers of observers or respondents in each group (Armstrong and Hilton, 2010).

The Tukey's Criterion (T) is defined by:
 $T = Q \alpha (c, n-c) \sqrt{(MSE/ni)}$

Where:

α = Level of Significance (Here, $\alpha = 0.05$)
 c = Number of Columns
 n = Total Sample Size
 Q = Critical Value of Studentized Range Distribution
 MSE = Mean Square Error from ANOVA
 ni = Sample size of one particular group (assumed equal for all groups).
 By using this formula:

Value of Q = $Q_{0.05}(4, 76) = 3.715$ (From Studentized Range Distribution Table)
 MSE = 6.867 (From ANOVA for Emotion)
 n = Sample size of one group
 Post Hoc Test Values
 Post Hoc Test value for Emotional response:
 $= 3.715 \times \sqrt{(6.867 \div 20)} = 2.173$

Post Hoc Test value for Behavioural response:
 $= 3.715 \times \sqrt{(8.519 \div 20)} = 2.441$

If the calculated difference exceeds the specified value for each type of response, it is considered statistically significant. Conversely, if the difference is lower than the specified value, the difference is not statistically significant.

We Consider

x_1 = Average of 11–25
 x_2 = Average of 26–40
 x_3 = Average of 41–55
 x_4 = Average of 56–75

Table 8 demonstrates specific age group means that are statistically distinct: For emotional response, $|x_1 - x_4|$ and $|x_2 - x_4|$ are significantly different from each other. For behavioural response, $|x_2 - x_4|$ is significantly different. Tukey's HSD indicates that the average emotional responses recorded by younger age groups (11–25) and (26–40) differ statistically from those of the elder age group (56–75). This suggests that younger age groups may find certain aspects of the environment more emotionally appealing or engaging than older age groups. Similarly, for behavioural features, age groups (56–75) may prioritize aspects that age groups (11–25) and (26–40) do not prefer. Thus, the findings underscore the necessity of designing or modifying third places in a manner that is more conducive to the emotional and behavioural requirements of these age groups. The emotional or behavioural responses of

individuals to specific settings or stimuli are influenced by their age. Interventions or designs can be guided by this understanding to ensure inclusivity and appeal across age demographics.

Stage 3: To Explore the Patterns of Distributed Responses Across Sample Population Age Groups.

Correlation analysis is beneficial for identifying a statistical association between variables. It determines whether certain perceptions are more strongly or weakly associated with younger or older age groups providing age-specific insights. It is a number between -1 and 1 that describes the direction and strength of a link between variables. The sign of the coefficient indicates whether the variables move in the same or

comparing emotional versus. cognitive responses across age groups, the strongest correlation is observed in age group 26 to 40, indicating that emotional responses significantly influence cognitive responses in this group. In case of emotional versus. behavioural responses, the strongest relationship is observed in age group 41 to 55. In the case of cognitive versus. behavioural responses, moderate correlations are observed in the age groups of 11 to 25 and 26 to 40.

The weakest correlations across all responses are observed in the age group 56 to 75. In conclusion, younger and middle-aged groups (11–25, 26–40, and 41–55) exhibit stronger and more consistent relationships between emotional, cognitive, and behavioural responses, suggesting greater alignment of these attributes. In contrast, the older age group

Sr. No.	Tukey's HSD Value for Emotional Response = 2.173
1	$ x^1-x^2 = 10.35- 10.7 = 0.35 < 2.173$
2	$ x^2-x^3 = 10.7- 9.7 = 1 < 2.173$
3	$ x^3-x^4 = 9.7- 7.95 = 1.75 < 2.173$
4	$ x^1-x^4 = 10.35- 7.95 = 2.4 > 2.173$
5	$ x^1-x^3 = 10.35- 10.7 = 0.65 < 2.173$
6	$ x^2-x^4 = 10.35- 10.7 = 2.75 > 2.173$
Tukey's HSD Value for Behavioural Response = 2.441	
1	$ x^1-x^2 = 10.35- 10.7 = 0.35 < 2.441$
2	$ x^2-x^3 = 10.7- 9.7 = 1 < 2.441$
3	$ x^3-x^4 = 9.7- 7.95 = 1.75 < 2.441$
4	$ x^1-x^4 = 10.35- 7.95 = 2.4 > 2.441$
5	$ x^1-x^3 = 10.35- 10.7 = 0.65 < 2.441$
6	$ x^2-x^4 = 10.35- 10.7 = 2.75 > 2.441$

Table 8: Mean Difference among pairs of age groups (Source- Author)

opposite directions, while the absolute value expresses the magnitude of the correlation. A greater absolute value indicates a stronger correlation. The greater the absolute value, the stronger the correlation. The strength of the relationship also known as the effect size can be interpreted based on the range of coefficient intervals and level of correlation. The correlation analysis in this study was conducted using Microsoft Excel Software.

Tables 9, 10, and 11 show patterns of emotional, cognitive, and behavioural responses in the form of pairwise correlations, illustrating both the direction and strength of relationships throughout the sample group. The confidence interval specifies the range of values within which the genuine correlation coefficient (r) is likely to fall, with a confidence level of 95 percent. When

(56–75) shows weaker alignments across all responses. This comparison underscores the nuanced interplay of responses across different age groups, highlighting patterns that can inform targeted interventions or designs for each demographic.

RESULTS AND DISCUSSION

The key findings of this research emphasise the interrelationship between users of third places and their perceptions of third places, where the age of an individual is considered to be one of the crucial factors. It determines the subjective preferences of an individual towards the formation of an urban third place, which are expressed in this study through emotional, cognitive, and behavioural factors. A few common viewpoints that

Age Group (11–25)	Column1 (Emotional)	Column2 (Cognitive)	Column3 (Behavioral)
Row1 (Emotional)	1		
Row2 (Cognitive)	0.498929231	1	
Row3 (Behavioural)	0.369012543	0.425447513	1
Age Group (26–40)	Column1 (Emotional)	Column2 (Cognitive)	Column3 (Behavioral)
Row1 (Emotional)	1		
Row2 (Cognitive)	0.633981249	1	
Row3 (Behavioural)	0.292091051	0.251903437	1
Age Group (41–55)	Column1 (Emotional)	Column2 (Cognitive)	Column3 (Behavioral)
Row1 (Emotional)	1		
Row2 (Cognitive)	0.600326118	1	
Row3 (Behavioural)	0.408398501	0.433609694	1
Age Group (56–75)	Column1 (Emotional)	Column2 (Cognitive)	Column3 (Behavioral)
Row1 (Emotional)	1		
Row2 (Cognitive)	0.473577705	1	
Row3 (Behavioural)	-0.072442256	-0.111489126	1

Table 9: Pearson's Correlation Coefficient of sample population (Source: Author)

Coefficient Interval	Correlation
0.199	Very Weak
0.20 – 0.399	Weak
0.40 – 0.599	Moderate
0.60 – 0.799	Strong
0.80 – 1.000	Very Strong

Table 10: Interpretation of Correlation Coefficient (Punchoojit 2022)

Emotional Response ↔ Cognitive Response		
	Correlation Coefficient	Correlation
Age Group (11–25)	0.498	Moderately Positive
Age Group (26–40)	0.633	Strongly Positive
Age Group (41–55)	0.600	Strongly Positive
Age Group (56–75)	0.473	Moderately Positive
Emotional Response ↔ Behavioural Response		
Age Group (11–25)	0.369	Weakly Positive
Age Group (26–40)	0.292	Weakly Positive
Age Group (41–55)	0.408	Moderately Positive
Age Group (56–75)	-0.072	Weakly Negative
Cognitive Response ↔ Behavioural Response		
Age Group (11–25)	0.425	Moderately Positive
Age Group (26–40)	0.251	Weakly Positive
Age Group (41–55)	0.433	Moderately Positive
Age Group (56–75)	-0.111	Weakly Negative

Table 11: Pattern of distributed responses (Source: Author)

they prefer are the ambience of the café, reunions with old friends or colleagues, informal meetings, reviving old memories, and enjoying the aroma of the coffee that aligns with behavioural and emotional dimensions.

Our data shows following patterns observed in the case of younger, middle-aged, and elder individuals in their behavioral, emotional, and cognitive responses.

Comfort and relaxation: Elderly individuals prefer to sit in more comfortable and calmer environments, but younger people may be more forgiving of less pleasant settings as long as the ambience is active and energetic.

Formal interactions: Older adults are more likely to use cafés for professional meetings or formal discussions, whereas younger individuals are less likely to do so.

Host of evolving needs: Younger users might require more access to technology (like charging stations) compared to older patrons who might prioritise different amenities. **Informal Sociability and Interactions:** Younger individuals may have a greater inclination towards informal social gatherings, whereas elderly adults may prefer smaller, more intimate social engagements.

Opportunity for celebration: Younger individuals may have a preference for livelier and more interactive parties, while elderly patrons may prefer more subdued and elegant celebrations.

Personal space: Older adults might value more privacy and space, while younger people might be more comfortable in close, communal settings. The significant chi-square test results highlight the importance of understanding how different age groups interact with and value various behavioural dimensions in urban third places. In the same way, we can explain emotional dimensions.

Nostalgia: Elderly individuals may experience stronger feelings of nostalgia, potentially due to their prior encounters in similar settings, whereas younger individuals may not possess the same level of nostalgic associations. **Sense of Belonging:** Younger individuals may actively seek out environments that foster a sense of community or align with current trends, whereas older folks may prioritise a sense of belonging that is rooted in familiarity and established routines.

Sense of privacy: Older adults might place a higher value on privacy, seeking quieter, more secluded areas, while younger people might be more comfortable in open, social settings.

Sense of temporality: Elderly customers may appreciate a feeling of permanence and stability in the setting, whereas younger individuals may be more open to or

drawn to temporary, constantly evolving surroundings.

Sensory experience: Younger individuals may have a greater sensitivity to dynamic and stimulating surroundings, whereas older folks may have a preference for gentler and calming sensory stimuli.

Thus, a multi-layered approach to data analysis enhances the credibility of this pilot study and provides a more focused path for practical implementation and future investigations. It demonstrates that various age groups possess distinct perceptual needs, which they expect to be fulfilled in the creation of an urban third place. It reflects that age of an individual plays a crucial role in forming subjective perceptions of urban third places (Hummon, D.M In, I. Altman and M. Setha, 1992). Given that age is the primary variable, participants in this research represent a diverse range of backgrounds, including students, freelancers, professionals, and retired individuals. As a result, socio-economic background and occupation or profession may be considered secondary variables.

CONCLUSION

This study highlights the patterns of perceptual associations that users subconsciously form about the urban third place. From the results, we can conclude that the emotions or feelings of individuals towards the third place, such as nostalgia, sense of belonging, privacy, temporality, and sensory experience, are appreciated by all age groups. Similarly, behavioural patterns or activities performed in the third place, such as opportunities for comfort and relaxation, sociability, interaction, and celebration, are highly favored across all age groups. To emphasize the significance of age in designing urban third places, designers should consider that the emotional needs of generations in the 56 to 75 age group are significantly different from those of younger generations, 11 to 25 and 26 to 40. These emotional needs may vary in terms of a sense of belonging, privacy, sensory experience, and nostalgia. A similar distinction can be observed in behavioral patterns, with generations 26 to 40 and 56 to 75 preferring to engage in different activities or the same activities in different ways. This may include a desire for personal space or the need to accommodate the evolving requirements of users. As a result, designers can align their design priorities and processes with the requirements and preferences of users by considering these observations. In other words, designers, planners, and policymakers may sensibly incorporate the following insights in the design process of urban third places to fulfil the contemporary needs of users:

The design of urban third places, such as cafés, might need to consider offering different zones or seating

arrangements to cater to the comfort needs of diverse age groups.

To design places that cater specifically to formal interactions, such as private rooms or quiet areas.

To create designated work-friendly areas to cater to the productivity needs of different age groups.

To create inclusive environments that cater to both community-building activities and spaces that feel familiar and comforting.

To have a wider appeal across all age groups, it is important to strike a balance between stable components, such as reliable service and familiar aesthetics, and more dynamic features, such as temporary places facilitating exhibitions and seasonal decorations.

Designing a sensory-rich environment that can be customized to accommodate various preferences has the potential to enhance the overall attractiveness of the place. Thus, we can certainly say that age significantly determines the way urban third places are being utilized by various age groups for various purposes.

This indirectly highlights the changing socio-spatial needs of contemporary urban society. The practical implications of the perceptual dimension influence the way users want to use third spaces, their feelings towards these spaces, and how they associate themselves with them. The key findings of the research direct us towards preliminary preferences and perceptions of users that can be explored in more detail from a spatial perspective. The impact of age on perception underscores the need to integrate inclusive social interaction in the development of an urban third place. Overall, the study provides broad insights into the way an urban third place needs to be re-imagined to fulfil contemporary needs. A geographical focus may be considered the main limitation of this study. This research considers only those cafés located in the urban pockets of metropolitan cities of India, which might limit the generalizability of the findings to other smaller cities in India. Additionally, as the nature of this research is exploratory and in its initial phase, the data collection method may allow for limited conclusions, providing guidelines for further studies in greater detail. To mitigate this limitation, further studies may concentrate on the same issue through projective interviews and case studies, followed by quantitative methods, thereby facilitating methodological triangulation. A study by Carter et al. (2014) demonstrates that use of multiple methods in qualitative research substantially authenticates the outcomes. This leads to a holistic perspective, reducing bias and producing results that are more actionable. This approach is particularly beneficial

in this study, where subjective aspects of perceptions and experiences are explored.

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