ASSESSMENT OF PUBLIC SPACE QUALITY OF DISTRICT CENTERS IN DELHI USING GOOD PUBLIC SPACE INDEX
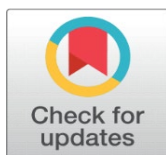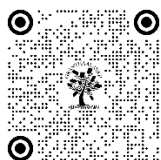
Simranpreet Kaur [1] ✉ iD, Pankaj Chhabra [2] ✉ iD

[1] Research Scholar, Department of Architecture, Guru Nanak Dev University, Amritsar, Punjab, India
[2] Assistant Professor, Department of Architecture, Guru Nanak Dev University, Amritsar, Punjab, India

ABSTRACT

Public Spaces are a representative image of a city and play a vital role in maintaining social quotient of its people. Social interactions are a part of human nature for healthy and happy lifestyle. These interactions can happen with anybody and everybody varying from person to person. District centers are a typology of public spaces conceived in a master plan as part of mandatory commercial quotient in a neighborhood. In Delhi, these district centers are fundamental for public gatherings as they possess active and passive commercial spaces, retail, offices, food outlets and much more. This research paper aims to examine the qualitative aspects of these district centers with respect to good public space index (GPSI) given by researcher Vikas Mehta via primary surveys and public interaction. The study is a part of bigger research problem of evaluating publicness of Indian public spaces. It covers key attributes of a public space and people's perception of it, followed by recommendations to enhance the value of urban public spaces.

Keywords: Quality Assessment, Good Public Space, District Centers, Delhi

1. INTRODUCTION

Cities are a mix of multiple utilities that help human in maneuvering through them, earning the living, recreating, and finally living in a peaceful neighborhood. Density of population and land use trigger the intensity of transportation network required in that area. This in turn defines the built space characteristics and the web of public activities subsequently involved. Humans are social animals. Social interactions at various levels are a basic human necessity, be it brother to brother interaction, husband to wife interaction, father to child interaction, or even

grandfather to his old friend talking about life and spirituality. An individual interacts at various levels. In the book, "The Great Good Place" Oldenburg (1989) Sociologist Ray Oldenburg defines such places where we socialize, interact, spend quality time, and build social relationships as "Third places". The quality of interaction and time span is dependent on various factors, the companion, ambience of the place, quality of amenities available there like food, drinks, toilets, etc., location of the place along with others. Stangor (2004)

In broader terms, human interactions happen at various levels; private, inner circle or public. These domestic and social interactions require a good quality space to occur. Carmona (2008). Urban public spaces need to be sufficient enough to cater safe social interactions for its users, especially post-Covid 2020 scenario. These spaces are made of some basic elements together creating a built environment. The most essential element of all is ease of accessibility Carmona (2008). More comfortable, safe, and easy the access is, it attracts more activities generating social integration. The factors influencing accessibility of a public space are; its physical design, vehicular traffic in the vicinity, environmental quality, aesthetic value of the space, and space for multiple activities and age groups (like interacting with acquaintances, walking, maneuvering and other forms of social interaction). Therefore, it is important that these public spaces emanate the best balance of all these elements to ensure the good quality public spaces in a city. Disproportionate ratio of any element may lead to underutilized space or even disturb the surroundings (e.g. traffic jams). As per Jan Gehl, the presence of these elements indicates quality urban public spaces in a city. Gehl (2010)

2. LITERATURE
2.1. DISTRICT CENTRE

The Wikipedia explanation of 'District Centre' incorporates a large assortment of spaces within the city. A large coterie of shops, clubbed with well-defined and quantified retail and non-retail facilities that collectively acts as a shopping complex is called as District Centre. The retail portion in a District Centre mostly emphasizes on food outlets, convenience goods, essential services in a neighborhood, and a broad range of goods' outlets. Conventionally, they are harbored/ bound by at least one superstore or supermarket. Non-retail commercial facilities mostly include banks, restaurants, cafes, launderettes, health care facilities, public library, and place of worship, offices, theatre, leisure facilities and buildings for community use Mathew Carmona (2003). It is not necessary that all the aforementioned amenities should be available, but a mix of uses as per user demand, area and population concentrations.

Delhi is an Indian city with exorbitant built characteristics, commonly categorized from Category A to H on the basis of level of amenities in the area. As per Master plan of Delhi 2021, a District Center is designed to serve 5 lakh populations whereas a community center serves about 1 lakh population in the neighborhood. This categorization is governed by the five-tier system of commercial areas of MPD 2021. These DC's and CCs are owned by Delhi Development Authority, the supreme development authority in Delhi NCR. They can either lease out the individual shops or the whole the whole unit depending upon the type of contract Tibbalds (2001). These district centers are a mix of active and passive commercial space, including government and private offices, retail shops, formal and informal vendors and food outlets. Parking, paved plaza, corridors, and other amenities are a part of the conceived layout plans. The footfall varies from location to location dependent on multiple other factors of public interaction Sauter (2008).

Aim of this research were to understand the qualitative aspect of public space in these District centers and to assess the relation of physical built environment to the quality of space generated. This research paper attempts to uncoil the people's needs in public spaces and its relation with built environment and surroundings Schmidt (2007). Taking Gehl's theory as base, it is assumed that the presence of outdoor activities indicate a good quality public space and helps in generating social interaction within people Gehl (2010). Therefore, the presence of such activities and events has been focused during primary surveys and observations. As per Masterplan of Delhi-2021, for every 5 lakh population, asdistrict centre is proposed. And Delhi has total 23 district centres spread across the city. District centres (DC) developed or in advanced stage sof development are: Nehru palce, Bikaji cama place, Managalam Place, Rajendra palce, janakpuri, Shivaji palce, Netaji subhash place, laxmi nagar, Saket,and jhandewalan. Other district centres in process of development are: Trans-Yamuna Area-Shahdara, Rohini-twin centre, Peeragarhi, Paschim vihar, Shalimar Bagh, Majnu ka Tila, Dilshad Garden, Dheerpur Extension, Mayur Vihar, Shastri park, Dwarka, Rohini-III, IV, V, and Narela. The analysis of all attributes is possible only in DC which are functional from long time, have high footfall and have gone through change with changing surroundings. Only Nehru Palce, Bikaji Cama, Rajendra Palce, Janakpuri, and Jhandewalan fulfill these conditions. Hence, any two out of these five could be studied further for the attributes.

2.2. GOOD PUBLIC SPACE INDEX (GPSI)

Quality public space augments a stage for diverse interactions, planned and unplanned meetings, public encounters, and meaningful discussions Siregar (2014). Public spaces that have ability to facilitate such social interactions have been characterized as essential counterpart to private lives by sociologist Ray Oldenburg Oldenburg (1989). This is considered essential to satisfy human need to relax, recreate and socialize in his regular home-office lifestyle.

Vikas Mehta Mehta (2014) has defined a framework to evaluate public space. According to him, a good quality public space should be physically and visually accessible, safe, open, and meaningful in its activities and design. This shall impart comfort, convenience, sense of control, sense of safety and pleasure while using the space or thinking cognitively about it. (Refer Figure 1).
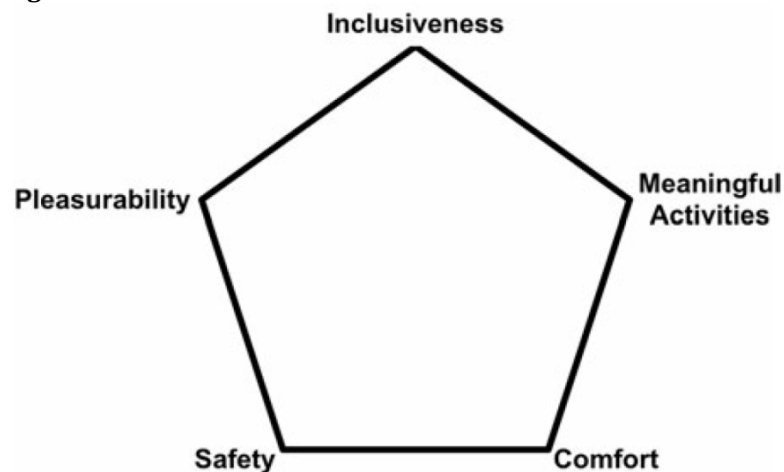
Figure 1

Figure 1 Dimensions of Public Space by Mehta (2007)

These five dimensions have been further defined by Mehta (2007) into multiple sub-categories, where each sub-category is given certain weightage. These indices are together adjudged in a public space and a scoring is done.

3. METHODOLOGY

Mehta (2007) Good public Space Index method has been utilized in addition to data from user experience mapping, behavioral mapping, and primary surveys. The sub-categories of all components have been analyzed with observations and primary surveys. Author Vikas Mehta developed a toolkit for to measure performance of public spaces in Indian context. None of the other authors were found to have developed the toolkit with respect to Indian complexities and social strata. Therefore, the study has been purely based on evaluating publicness of District Centres on the basis of attributes defined by him in the most relatable format.

Methodology followed for the detailed study was majorly primary surveys and general interaction with end users. The collected data from only two case studies was evaluated in correlation with several build environment components. Scoring was done for both selected sites in form of questionnaires and author's observations, during day and night on weekdays and weekends. Minimum 10 entries were taken for all times. Table 1 represents average rating for each attribute extracted from the answers received. The findings have been made a part of this research and respective recommendations have also been suggested in the conclusion.

The choice of two case studies selected for this research out of five possible locations has been made on the basis of availability of data and easy of conducting surveys. The sites are:

1) Nehru place,
2) BikajiCama Place

4. ANALYSIS
4.1. NEHRU PLACE

This District Centre was conceptualized in 1969, but came to functional stage in 1980s as a CBD (Commercial business district). Nehru place resides in the middle of residential neighbourhoods from all sides. This 38 hectares property located in the centre of South Delhi is accessible via both at grade vehicular route on two sides, 2 Delhi metro lines and 24 BRTS routes. The built area of this business district is approx. 5.8 lakh sqm, that's less than 2/3rd of the total covered space. Nearly, 1,30,000 visitors and 32,000 vehicles visit this place on daily basis. The layout has one large courtyard in the middle, surrounded by four storied buildings on all sides. Underground parking below the courtyard space is usually full, and is supported by additional surface parking provisions by SDMC.

4.2. BIKAJI CAMA PLACE

Designed by renowned architect Raj Rewal, one of the initial buildings of this complex got constructed in 1973. This business district is designed and developed into multiple levels, which makes it less accessible and confusing. Most of the shops in the core areas are lying empty because of lack of visual accessibility. All towers have their independent basement parking provisions. Though the central courtyard

portion was paved in 2005, the originally conceptualized Dholpur stone finishing on elevation is still embracing the aesthetics of the area. Spread across 16 hectares, this commercial center (CBD) has approximately 32% ground coverage with 4.6 lakh sqm. built commercial development. The buildings are mid-rise towers fringed around courtyards and large plazas.

Figure 1, Figure 2, Figure 3, Figure 4, Figure 5, Figure 6, Figure 7, Figure 8, Figure 9, Figure 10, Figure 11, Figure 12 elaborate the urban design analysis done for both case studies in the form of maps. These maps explain; site context and surroundings, pedestrian analysis (ped-shed), activities happening, availability of footpath, walkability analysis and a few reference pictures in sequential order for both Nehru place and Bikaji Cama place.
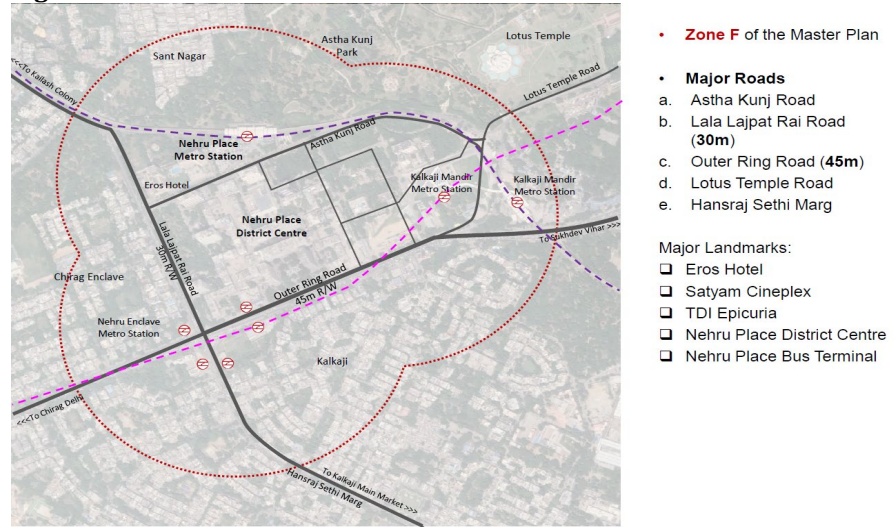
Figure 2

Figure 2 Nehru Place Context Plan.
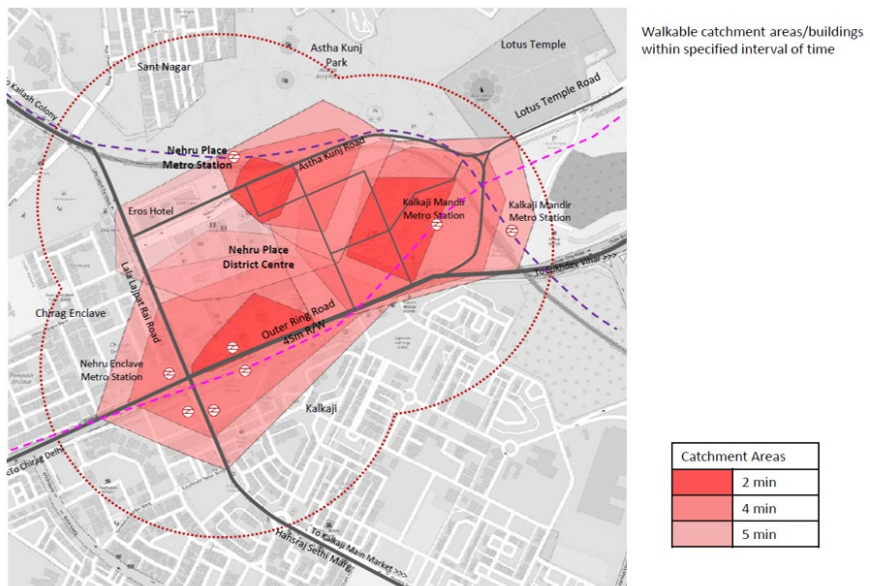**Source** UTTIPEC Report

Figure 3

Figure 3 Nehru Place Ped-Shed Analysis.
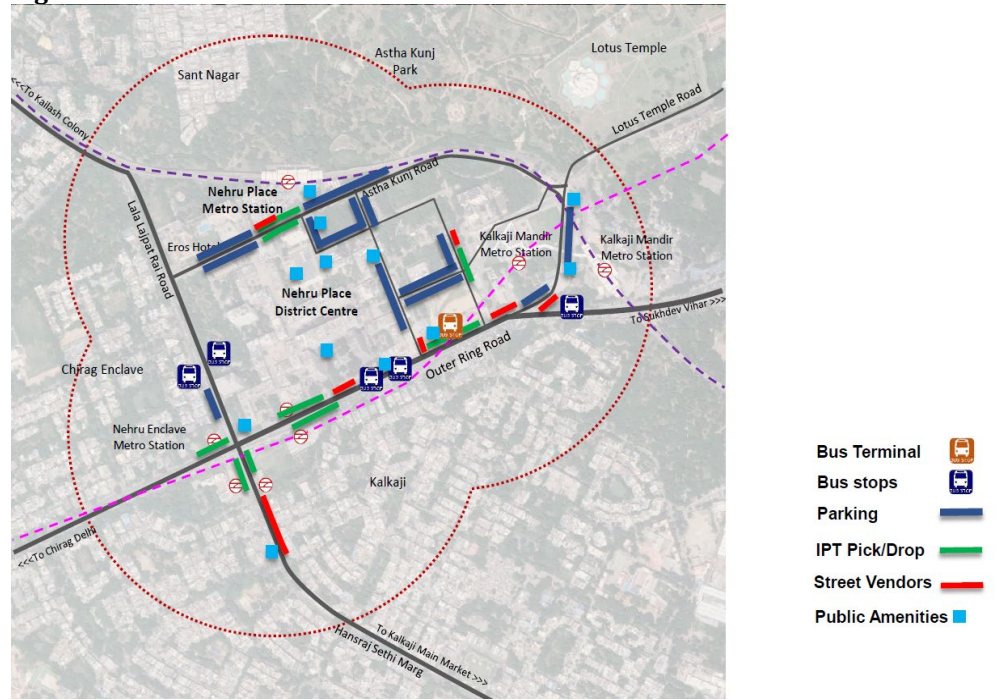**Source** UTTIPEC report

Figure 4

Figure 4 Nehru Place Activity Mapping.
Source UTTIPEC Report
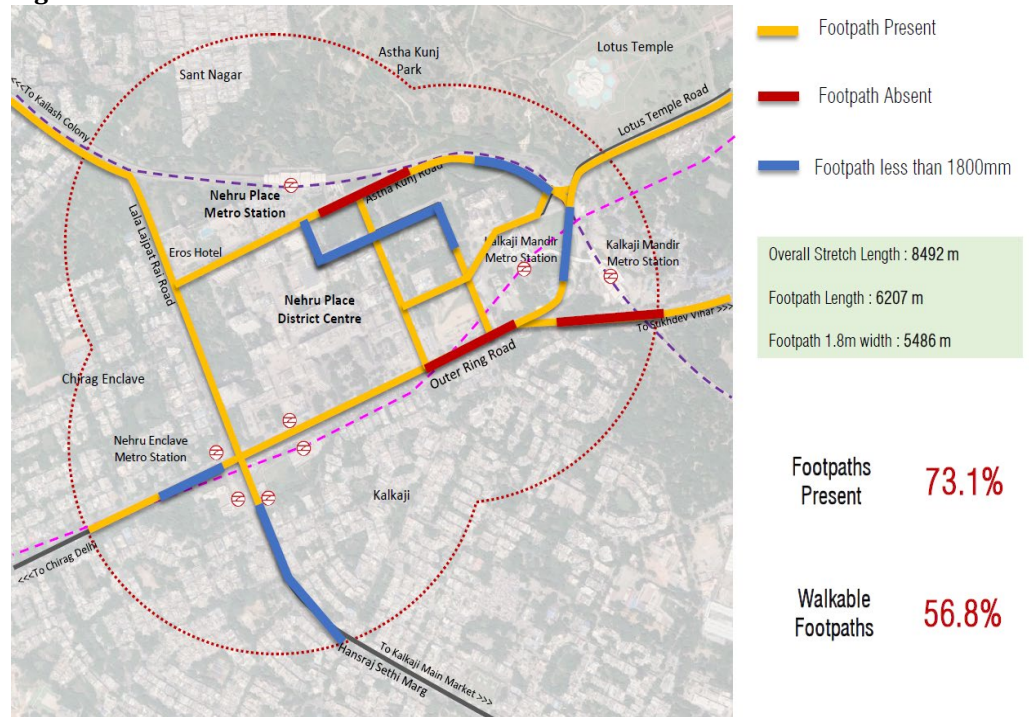
Figure 5

Figure 5 Nehru Place Footpath Availability.
Source UTTIPEC Report

Figure 6
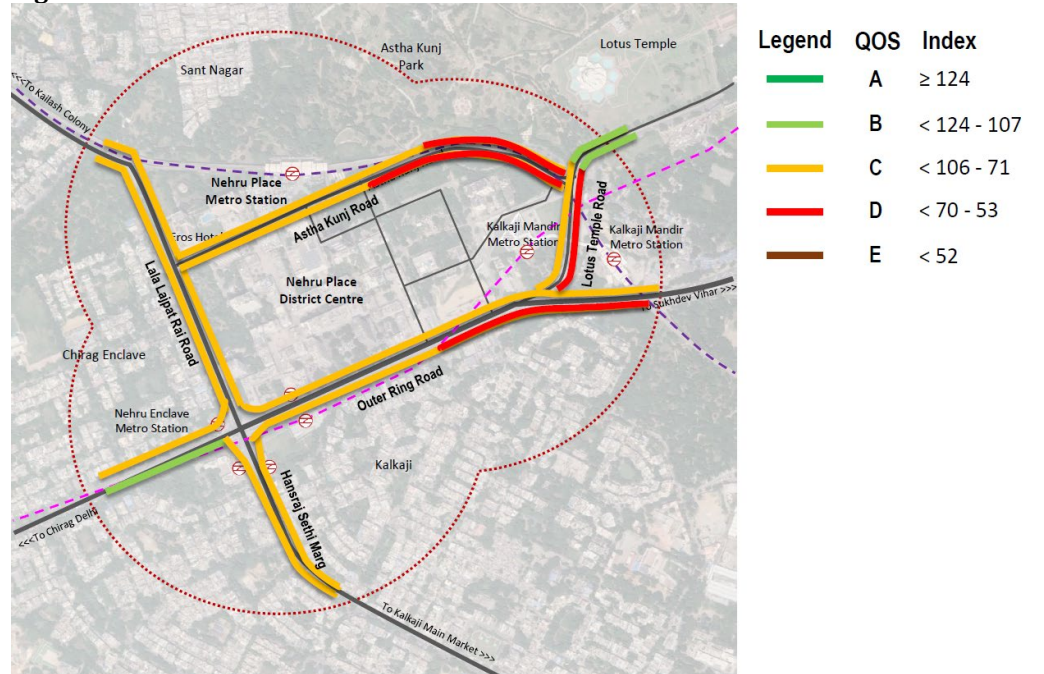
Figure 6 Nehru Place Walkability Index.
Source UTTIPEC Report

Figure 7

Figure 7 Images of Nehru Place

Figure 8
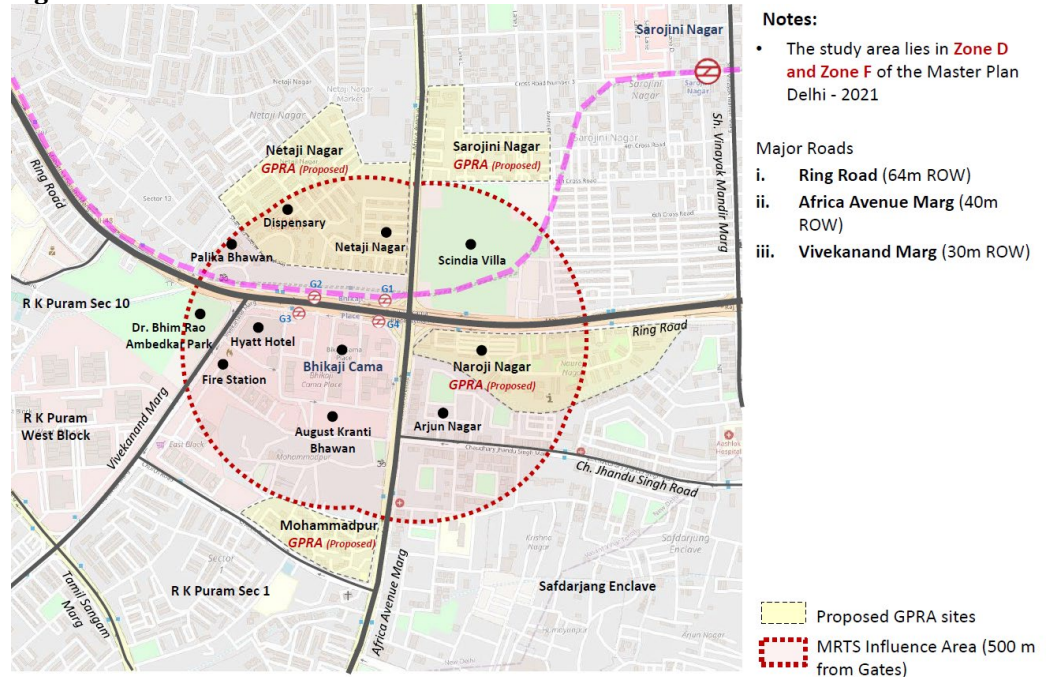
Figure 8 BikajiCama Context Plan.
Source UTTIPEC Report

Figure 9

Figure 9 BikajiCamaPed-Shed Analysis.
Source UTTIPEC Report

Figure 10

Activity mapping
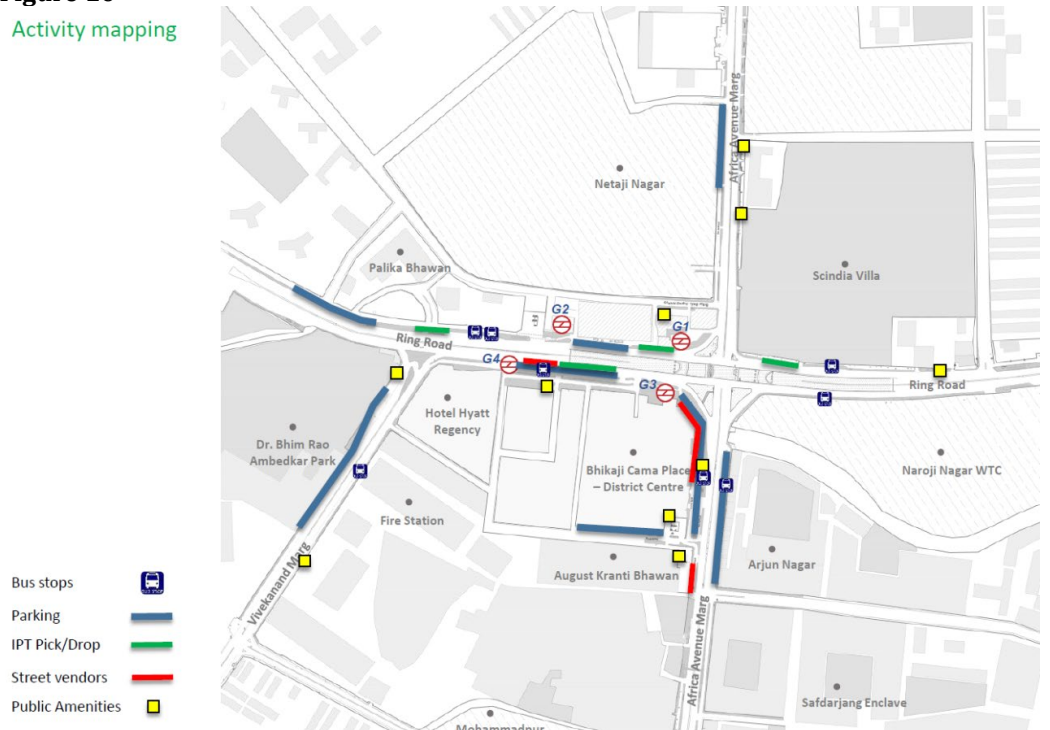
Figure 10 BikajiCama Activity Mapping.
Source UTTIPEC Report

Figure 11

Footpath Availability

Figure 11 BikajiCama Footpath Availability.
Source UTTIPEC Report

Figure 12
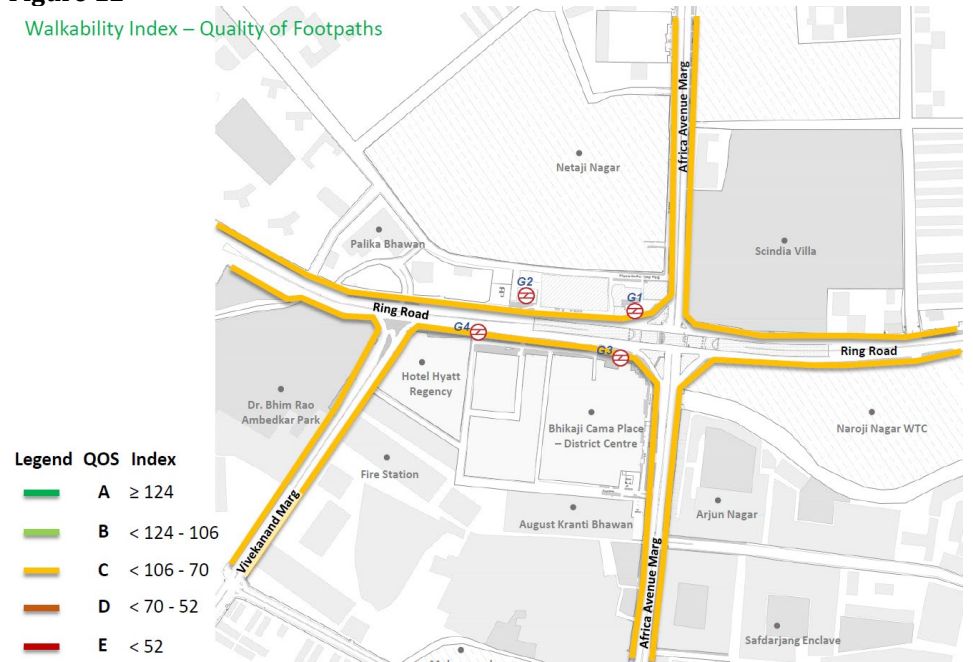
Figure 12 BikajiCama Walkability Index.
Source UTTIPEC Report

Figure 13

Figure 13 Images of BikajiCama Place

5. FINDINGS AND DISCUSSION

Refer Table 1 below for detailed evaluation of attributes of public space as explained in Vikas Mehta's Good Public Space Index (GPSI). The process of

qualitative measurement generated two values for GPSI (Good Public Space Index), i.e. 2.3 and 2.1 respectively for Nehru Place and BikajiCama place. The highest indices are for inclusivity dimension and the lowest on safety (6/30) and comfort (5/30). These values indicate that design and maintenance component of any space is the most important factor for a good public space. Though both of these District centers receive immense footfall, because of presence of multiple and diverse utilities, but people enjoy the space when we provide them feeling of safety and comfort. This can be achieved via outdoor lighting enhancement, providing shaded walkways in huge existing plazas, and increasing accessibility at the edges Kaur and Chhabra (2022). It was observed during questionnaire session that people are fond of visiting Nehru place more than Bikaji Cama, owing to the availability of more food outlets, presence of vendors and retail shops. Bikaji Cama place is perceived as less accessible space, due to multiple factors, a) presence of flyover that creates visual barricading of the main entrance, b) too many levels within the plaza, c) vendors restricted to rear access only, and d) less retail and more office complexes. Presence of service lane all around the Bikaji Cama complex ensures better safety of pedestrians and even provides buffer for car parking queue. Whereas in case of Nehru Place, huge traffic chaos was observed along with unsafe pedestrian crossings and deficiency of parking space with respect to the footfall observed every day.

Table 1

Table 1 Evaluation of Selected Sites on Vikas Mehta's GPSI Model					
Aspects of Public Space		**Variables**	**Weightage**	**Nehru Place Avg.**	**Bikaji Cama Place Avg.**
Inclusiveness	1	Presence of people of diverse ages	0.4	3	2
	2	Presence of people of diff. genders	0.4	2	2
	3	Presence of people of diverse classes	0.4	3	2
	4	Presence of people with diverse physical abilities	0.4	1	1
	5	Presence of people of diverse race	0.4	1	1
	6	Control of entrance, gates, fences, etc.	1.0	3	2
	7	Range of activities and behaviors	1.0	3	2
	8	Opening hours of public space	1.0	3	2
	9	Presence of signs to exclude certain people or behaviors	1.0	3	3
	10	Presence of surveillance and security cameras	1.0	2	2
	11	Perceived openness and accessibility	2.0	1	1
	12	Activity engagement	1.0	1	2
Total			**10**	**26/30**	**22/30**

Meaningful Activities	13	Presence of community places	2.0	3	3
	14	Range of activities and behaviors	1.0	3	2
	15	Space flexibility to adapt user needs	1.0	2	1
	16	Availability of food within and at edges	2.0	3	2
	17	Variety of businesses at edges	1.0	3	1
	18	Suitability of space layout to activity and behavior	2.0	2	1
	19	Usefulness of businesses and other uses	1.0	2	1
	Total		**10**	**18/30**	**11/30**
Comfort	20	Free of cost sitting places	2.0	1	2
	21	Seating provided by businesses	1.0	1	1
	22	Presence of other furniture and artifacts	1.0	1	1
	23	Climatic comfort of space/ shelter	2.0	0	0
	24	Design elements discouraging use of space	1.0	1	0
	25	Perceived Physical condition and maintenance	2.0	1	1
	26	Nuisance noise from traffic and others	1.0	0	1
	Total		**10**	**5/30**	**6/30**
Safety	27	Visual and physical connection and openness to adjacent spaces	1.0	1	0
	28	Physical condition and maintenance	1.0	1	2
	29	Lighting quality in space after dark	1.0	1	0
	30	Perceived safety from presence of cameras, guards, fences, etc.	1.0	2	1
	31	Perceived safety from crime during daytime	2.0	2	2
	32	Perceived safety from crime after dark	2.0	0	0
	33	Perceived safety from traffic	2.0	0	1
	Total		**10**	**7/30**	**6/30**
Pleasurability for plaza, street, etc.	34	Presence of memorable landscapes (imageability)	1.0	1	3

35	Sense of enclosure	1.0	1	2
36	Permeability of building facades on street front	1.0	1	1
37	Personalization of buildings on street front	1.0	2	2
38	Articulation in architectural features on street front	1.0	1	3
39	Density of elements on sidewalk providing sensory complexity	1.0	3	2
40	Variety of elements on sidewalk	1.0	2	2
41	Perceived attractiveness of space	2.0	1	3
42	Perceived interestingness of space	1.0	2	2
Total		**10**	**14/30**	**20/30**
Grand Total			**71/150**	**65/150**

Note: All variables have been measured on weekdays and weekends with minimum ten observations spread throughout the day. The ratings are a part of primary surveys, questionnaire/ interview and author's subjective observations.

6. CONCLUSION

Following conclusions summarize the research:

- GPSI (Good public space index) is a comprehensive index for measuring quality of public spaces in context to spaces for outdoor activities.
- Safety and comfort are the most important factors behind the success and quality of a space. Any kind of lag in them can de-popularize the space Andi Muhammad Ichsan Djainuddina (2019).
- Vehicular traffic and good public environment are inversely proportional to each other. More the traffic, less conducive environment it generates, and lesser the traffic, more footfall is attracted to create ambient public space Kaur and Chhabra (2022).
- Maintenance of the space is one major factor influencing the footfall and attractiveness of an outdoor public space. Clean and hygienic spaces that support pedestrian activities are psychologically more attractive and render conducive environment.

The above stated conclusions can be treated as general specifications for success of a quality outdoor public space. These conclusions augment tour research to following recommendations for a good public space:

- A specific methodology needs to be developed for measuring qualitative aspect of a public space. Sole dependence on observations can lead to much subjective results and may blemish the objectivity of the research. A more elaborated social science methodology with detailed valuation of built environment quality is suggested.

- Privatization within public space needs to be redressed at macro and micro level. Policy level implications and design guidelines need to be issued for paid and unpaid services within public spaces. The old theoretical frameworks distinctively segregating public and private scenarios need modifications from 21st century usage pattern.

- GPSI by Vikas Mehta is a virtuous tool for measurement of quality of outdoor public spaces, except that it lacks the components of urban level aesthetics and sense of place. A more comprehensive method in measuring qualitative components of outdoor public spaces is suggested.

CONFLICT OF INTERESTS

None.

ACKNOWLEDGMENTS

REFERENCES

Andi Muhammad Ichsan Djainuddina, A. H. (2019). The Visitors' Perception Toward the Comfort of Social Interaction in Public Space. EPI International Journal of Engineering, 2, 149-156. https://doi.org/10.25042/epi-ije.082019.10.

Gehl, J. (2010). Cities for People. Washington, Covelo, London : Island Press.

M. Carmona, S. M. (2008). Public Space: The Management Dimension. London and New York: Routledge, Taylor and Francis Group. https://doi.org/10.4324/9780203927229.

Mathew Carmona, T. h. (2003). Public Places, Urban Spaces: Dimensions of Urban Design. London : Architectural Press.

Mehta, V. (2007). A Toolkit for Performance Measures of Public Space. 43rd ISOCARP Congress.

Mehta, V. (2014). Evaluating Public Sapce. Journal of Urban Design, 53-88. https://doi.org/10.1080/13574809.2013.854698.

Oldenburg, R. (1989). The Great Good Place. New York, US : Da Capo Press.

Sauter, H. (2008). Liveable Streets and Social Inclusion. Urban Design International, 67-69. https://doi.org/10.1057/udi.2008.15.

Schmidt, J. N. (2007). Toward a Methodology for measuring security and publicly accessible spaces. Journal of the American Planning Association, 73. https://doi.org/10.1080/01944360708977978.

Kaur, S., and Chhabra, P. (2022). Applicability of the Star Model on Indian Neighborhood: Case of Malviya Nagar, South Delhi. ECS Transactions, 107(1), 11017–11028. https://doi.org/10.1149/10701.11017ecst.

Siregar, J. P. (2014). Assessment Of Public Space Quality Using Good Public. Procedia - Social and Behavioral Sciences, 10-17. https://doi.org/10.1016/j.sbspro.2014.07.318.

Stangor, C. (2004). Social Groups in Action and Interaction. New York: Psychology Press. https://doi.org/10.4324/9780203338667.

Tibbalds, F. (2001). Making People Friendly Towns. London and New York : Spon Press.