Typo-morphological approach to explore public perception of spacio-physical attributes contributing to Urban Identity of Indian Commercial streets: Case of Sampige Road, Malleshwaram, Bengaluru

Sagar T S

Abstract— Streets are key urban elements which have unique spatial characteristics and lend Identity to the cityscape through functional, socio- cultural and psychological aspects. Urban commercial streets in India are examples of livable streets with complex activities and social interactions happening along the stretch. With the urban transformations due to various reasons there arises a threat of Physical Identity of these streets. It is important to look into retaining the existing identity of the streets and enhance the imageability through new interventions. The study aims to investigate one such urban commercial stretch in Bengaluru known as Smpige road which is a planned neighborhood in the Northwestern part of Bengaluru. This study highlights the changing public perception towards commercial building typologies across the stretch. The qualitative visual research methodology adopted brings out the spacio-physical attributes which have contributed to the Identity of Sampige road.

Index Terms— Urban Identity, Typo-morphology, Indian Streets, Visual research method

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1 INTRODUCTION

Urban Identity is a term populary used by urban design domain to define the characteristics of an urban space which makes it unique. Lynch (1960) defines Identity as a quality with which a user recognizes a place and which is determined with numerous characteristics or identifiable elements. Streets are one such unique urban element which people perceive once they step out of their individual buildings. Streets in Indina context are complex with multiple functions, temporality and vivid nature. Indian streets provide a physical setting for socio-economic activities and bring people together (Jacobs, 1993). These streets possess a physical environment and a social setting which is intangible to add quality and character. Rapoport (1977) adds that developing over a period of time, these streets become culture specific. Commercial streets create a unique sense of place by their function and temporal activities happening round the clock. Hence there is a need to critically understand the attributes of the physical environment which are contributing to the character of the street so as to retain them and transform in future carrying on the essence of the street. This will help to retain the unique Identity of the street developed over a priod of time in the users.

The research employs Typo-morphologica approach to study various typologies of commercial buildings acroos the selected case. Typo-morphology helps to systematically understand the characteristics of each urban element and its connection with each other providing the researcher with a clear understanding of the factors existing in the study area.

2. SAMPIGE ROAD, MALLESHWARAM

Yeshwantpur – Malleshwaram planning district (PD 6) is located in the core of BMA and predominantly consists of residential areas like Malleshwaram and Nandini layout; public –

semi public and areas under transportation/communication including Yeshwantpur Railway Station.(Revise master plan, BBMP, 2031). Malleshwaram is a planned neighbourhood during 1890s during the outbreak of Plague in Bangalore city. Sampige road, named after a flower called 'Sampige' is the main spine which connects the neighbourhood with the old city and to the northwestern parts of Bangalore. The street was developed to be a commercial strip to serve the neighbourhood.
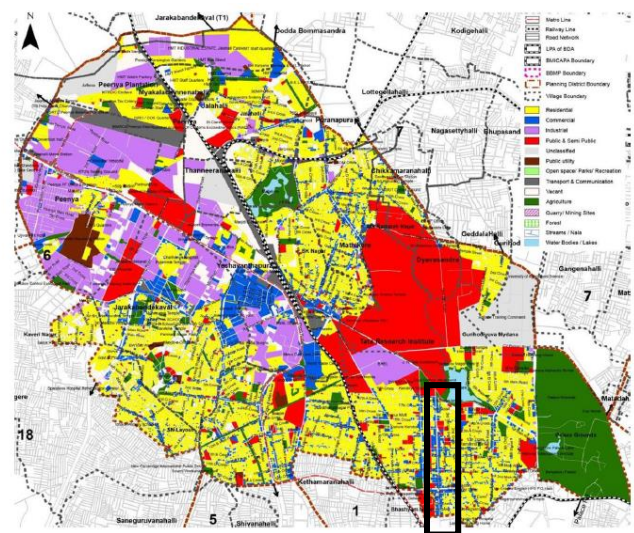

Fig 1: Land use plan of Malleshwaram (soruce- Bangalore Master plan, 2031)

Being part of one of the fast transforming neighbourhood of the city, Sampige road has undergone lot of transformations in its physical environment yet retains the character of a street

shopping stretch till today. People across Bangalore relate Sampige road as one the major shopping hub of Bangalore. The historicity, fast transforming nature and association of the people are the factors considered for chosing the case. Understanding various parameters and attributes which are contributing to the Identity of the street is important to conserve and promote the further developments. The analysis will throw light on the experience of the people along the street which need to be considered to improve the imageability of the street.
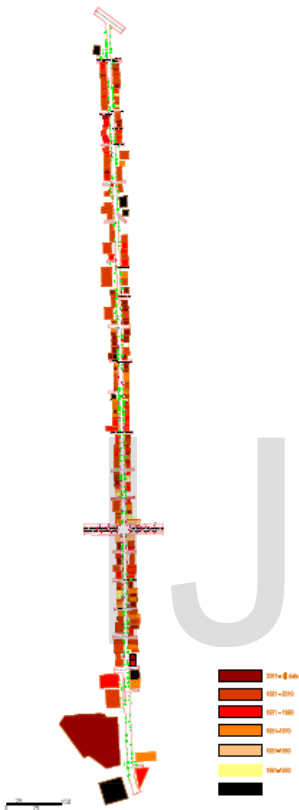

Fig2 - Building age map of Sampige road

Fig3- Photo of Sampige road(Source: author)

3. RESEARCH METHOD

The current study employs the following methodology to decipher the findings. First, the commercial and mixed use – commercial buildings were categorized and mapped based on the Building age (fig1)which gave the count of samples belonging to different sets. The buildings were divided into five sets based on building age.

Multiple sorting technique – A Focussed group survey of 64 respondents were given set of 75 images of Sampige road. They were asked to pick and sort best three images which represent the characteristics of buildings of that period. Later the occurrence was counted and the image was selected for the Questionnaire.

Visual appraisal – A questionnaire survey with a set of same Questions are asked for different building samples. The respondents will have to answer on a scalar basis as to how well the object is appropriate for the question being asked.

Adjective rating scale – This technique is very similar to bipolar ordinal scale survey in which two opposite adjectives describing the variable are listed and the respondent will have to rate the object to likert scale of 5. This technique was employed to get overall rating on the character of Sampige road.

The study is based on a qualitative assessment survey of physical attributes and urban design qualities of the street which contribute to the character of the street.

Urban theorists such as Lynch (1960), Jacobs (1961). Alexander et a (1977), Krier(1979), Clemente et al. (2005) and Ewing and Handy (2209) haveextensively listed the physical attributes and urban qualities of streets which contribute to the character of the street. Physical features of the street include, land use, grouping, building heights, street wall, openings of the buildings, frontages, landscape, street furnitures, informal activity, volume of pedestrians, side walks, pavements and others. Ewing and Handy (2009) have listed fifty one perceptual qualities of the streets which contribute to the street character and out of which five main important attributes are validated in their study. These urban design qualities are enclosure, human scale, transparency, linkage and complexity.

4. ANALYSIS & FINDINGS

A questionnaire survey was conducted on field for a period of three weeks at different times of the day and at different nodes across the stretch of the street to ensure variety of samples. 353 total valid samples were collected consisting of 70% male and 30% female, out of which 13% between 16 to 20 years age, 56% between 21-40 years, 26% between 41-60 and 5% above 60 years. Out of the samples surveyed, 16% of them were either residents of the locality of visit the place for work on a daily basis, 11% visit frequently as a thoroughfare or for work, 26% visit theplace for recreation and shopping, 33% visit rarely for recreation purposes and 14% visit the place very rarely and some of them were from other cities as well.

49% of the respondents' visit the street for commercial activity and 17% of them for recreation, 18% of them work in the locality and others use the street as a transit point.

Table 1 shows the results of adjective rating analysis done for the overll character of the street. The bipolar adjectives used in the study were Simple- Complex, Monotonous- Variety, Repelling- Inviting, Ugly- Beautiful, Unexciting- Exciting, Unpleasant- pleasant, Boring- Interesting and Dislike – Like. The respondents were rate their experience of the street on a five rating scale. The results below show that the street experience is dominating with variety, pleasantness, interest and hence people like to visit the street. The slightly low rating was obtained with respect to complexity, inviting, beautiful and exciting characteristics of the street. Further, the questionnaire prompted the respondents in detail with set of questions to find out the attributes which are contributing for such an experience.

Table 1- Adjective rating scale analysis
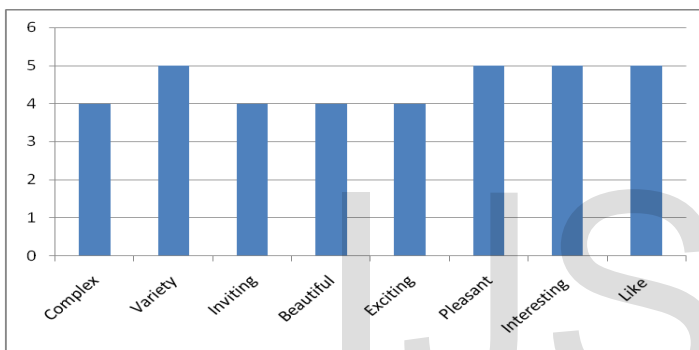
The five sets of questionnaire corresponding to buildings built during five different periods of time 1890-1950, 1951-9170, 1971-1990, 1991-2010 and 2010 till date. The results obtained from the respondents were recorded and mean and standard deviation was recorded. The mean values obtained from each set are later compared with other sets to study the differences and qualities of the set of buildings.

Human Scale - Ewing and Handy (2009) state that Human scale refers to a size, texture and articulation of physical elements that match the size and proportions of humans and correspond to the wlaking speed. Alexander et al. (1977) states that any building over four storeys tall is out of human scale. Several authors suggest that the width of buildings v/s height of the building suggests the human scale. The survey states that there is a gradual rise in the sense of human scale as we look into the morphology of buildings along Malleshwaram Street. The older buildings were single storey and the newer typologies are four to five floors high. The survey result also strengthens the opinion.

Enclosure – Jacobs (1993) says that people react favourably to fixed boundaries as something safe, defined and memorable- an invitation to enter a place special enough to warrant boundaries. In an urban setting, enclosure is formed by lining the street with unbroken building fronts of roughly equal heights. The buildings become the walls of the outdoor room, the street and sidewalks become the floor and if the buildings are roughly equal height, the sky projects as an invisible ceiling (Ewing and Handy 2009). The analysis shows that the respondents have rated all set of buildings equally good in terms of enclosure. Presence of rows of trees, height of the buildings being lesser than four floors, have all contributed to the sense of enclosure of the street.

Transparency – Jcobs (1993) states that streets with many entry ways contribute to the perception of human activity beyond the street, while those blank walls and garages suggest that people are far away. Ewing and Handy (2009) say that transparency is most critical at the street level, because this is where the greatest interaction occurs between indoors and outdoors. They suggest that both being able to see into buildings and having human activity along the street contribute to the perception of transparency. This attribute finds a different stature with respect to different set of buildings. The buildings belonging to 1990-2010 exhibit higher level of transparency compared to the other ones and the threat is that the level has gone down in the recent buildings. The latter had split levels, more openings and connection to the ground floor and side walk. Few building samples developed after 2010are less connected to the street through more setbacks, lesser connection to the ground, lower levels allotted for parking alone and so on.

Table 2 – Comparitive analysis of urban design qualities
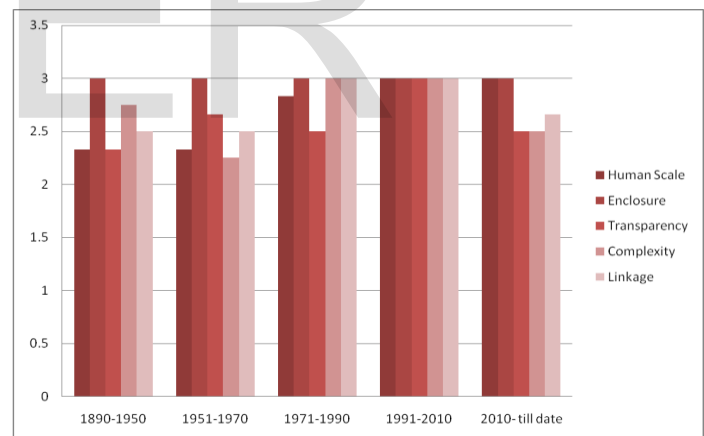
Complexity – Amos Rapoport (1990) explains that complexity is related to the number noticeable differences to which a viewer is exposed per unit time. Streets high in complesxity provide many interesting things to look at: building details, signs, people, surfaces, changing light patterns and movement, signs of habitation. Complexity of a street depends on the variety of the physical environment, specifically the numbers and types of buildings, architectural diversity and ornamentation, landscape elements, street furniture, informal vending, signage and human activity (Ewing and Handy 2009). It can be noticed that the buildings show a gradual rise in the level of complexity till 2010 and there is slight fall in the graph for the recent buildings. The reasons are lesser transparent facades, lesser interaction with the street and also absence of street activity.

Linkage – Linkage in urban design qualitative terms refers to connection between building to building, building to street, building to street activity. The buildings developed between 1970 - 2010 both categories are believed to be more linked to the street. The older buildings have moderate connection but also are less complex in form and height compared to the recent ones and hence they may be rated low. The recent developments show lesser rating again in terms of linkages.

Data Reliability – The reliability test (table 3) results state a croncha's alpha value > 0.8 which is higher than the minimum required value and hece it can be considered as significant. In addition Kaiser- Meyer-Olkin sampling adequacy test (table 4)was carried out and the result showed a value of 0.639 which is higher than 0.5 and hence acceptable.

Table 3- Reliability Test

SET	Croanbach Alpha
1	0.896
2	0.884
3	0.857
4	0.882
5	0.871

Table 4 - KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.639
Bartlett's Test of Sphericity	Approx. Chi-Square	580.277
	df	91
	Sig.	.000

5. CONCLUSION

The study brings out the peoples perception of physical attributes contributing to the Identity of Sampige road, Malleshwaram. The study further can investigate into the qualities of these physical attributes which are contributing to the identity of the street. The survey also states that the buildings built during 2010- till date are showing lesser user association which is a threat to the street identity. Hence the study highlights the successful urban building and street pattern which have been strongly associated with the user experience of the street. The further study can be carried out to quantitative measure the physical attributes and compare the result with the qualitative survey results obtained. Apart from these observations the survey also brought out that cleanliness and ease of walking across the street also is deteriorating and urgent attention towards that need to be given. Public amenities like toilets, bus stops, drinking water kiosks, ample number of dust bins, street furntures were lacking in great number which was mentioned by the respondents. Since, Sampige road has high Identity quotient and street experience designers can enhance by providing these facilities. The building regulations need to be revised to consider the visual aspects which are contributing to the street character.

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