

RETHINKING STREETS AS A POTENTIAL URBAN SCOPE

A case of densely packed neighbourhoods of Dhaka city

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Abstract: From the beginning of civilization, streets have been the interstitial spaces of cities and one of the predominant components of a community. In contemporary cities, streets have been transformed into typical thoroughfares though they represent the essence of their communities and generate intricate networks. Moreover, the 2030 Sustainable Development Goals (SDGs) emphasise building resilient and sustainable cities that ensure universal accessibility, safety, and adaptability. The primary objectives of this paper are to reevaluate streets as social hubs building trust among neighbours creating opportunities and analysing the scopes to incorporate them into the community development process as a gateway to initiate social interaction and participation in terms of establishing inclusive communities with liveable streets. As a reference, the Mirpur area, one of the densely populated areas of Dhaka city, is taken as a representation to address the problem and the research has been carried out with the assistance of Google Earth, field surveys, previous research works, interviews with community members and aimed to uphold the contribution of well-designed streets that can give authority to a community from all perspectives. However, the study substantiates the impact of streets on the social, economic life of the inhabitants and depicts how the streets hold the essence of dwellers and encourage participation through potential influence. According to the collected data and their analyses, it demonstrates that more than 50% of the inhabitants regardless gender gather spontaneously on the streets everyday for different purposes, which make streets a potential social and economic hub as well as a successful urban space with a lot of opportunities to upgrade urban life for the residents as a whole.

Keywords: *Community participation; Dhaka city; Liveable streets; Social Interaction; Urban scope*

1. Introduction

Streets are the key element of urban space defining its form and functions through which people can perceive a city and its inhabitants. It is often misunderstood as an ordinary two-dimensional space for vehicles to move from one place to another while in contrast, it is essentially a multi-dimensional platform to exhibit the core identity of its occupants as a community to the visitors. In particular, streets have been used to define the cultural, social, economic and political conditions of cities for centuries. For instance, Jane Jacob (1961) quoted, "Streets and their sidewalks, the main public places of a city, are its most vital organs. Think of a city, and what comes to mind? Its streets. If a city's streets look interesting, the city looks interesting; if they look dull, the city looks dull."

Due to the rapid growth of population and extension of urbanisation, cities across the world are expanding like an asphalt jungle with buildings tumbling upon each other and having no breathing space. To make room for this growing population, the quality of streets as space has been overlooked for the sake of motorised vehicular traffic and uncontrolled built forms. As a consequence, streets in contemporary cities have converted into unsafe, polluted, and apathetic thoroughfares which led to the absence of human-scale interactive environments and deteriorated the livability of the cities along with urban neighbourhoods. Entering the era of smart cities with rational solutions, Dhaka, the capital city of Bangladesh, is looking forward to offering a futuristic environment to its communities by ensuring social resilience and incorporating sustainable development goals. Unfortunately, the city fails to provide the basic requirements to empower the communities through social interaction and community participation owing to the swarming density and spontaneous growth of the population.

From the misconception of streets being a mere two-dimensional space detached from their inhabitants, this paper investigates the existing condition of the road networks in a highly dense area of Dhaka city and tries to manifest its impact on the people and contribute to community development. For study purposes, Mirpur 10 (Block A, B, C) is chosen as a representation of exceedingly populated areas of Dhaka city.

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Figure 1, Satellite image of Mirpur 10, Dhaka (Source: Google Earth images)

2. Literature Review

2.1 THE CONCEPT OF STREETS AS PUBLIC SPACE

In the history of cities, streets have been the spatial nexus of urban life, social interaction, and public performance that constitute the lifestyle of those. They are like multidimensional outdoor rooms consisting of surfaces and structures through which people can experience the essence of the city as well as, the inhabitants living there. However, these dynamic spaces support economic growth, cultural significance, environmental significance, and overall public health of a community since they contribute to defining the economic, cultural, social, and political function to a large extent. Considering previous records, successful urban development has been possible with the assistance of the well-planned physical layout of streets and their reciprocation with the users. As per UN-Habitat (2012), the lack of street connectivity escalates social exclusion and inequalities in many aspects of urban life. As an acknowledgement, the way streets in history were designed, planned, and connected shows how intricately they possessed the social and economic fabric of the settlements. With the changes over time, the gravity of streets as spaces has been forgotten to meet the needs of the sprawling population of the modern world, and, as a result, city dwellers nowadays lack the opportunity to experience the spirit of their cities. From the perspective of Allan Jacobs (1965) in his book “Great Streets”, the best streets should help build a community facilitating people to interact by encouraging participation and ensuring accessibility to all. At present, realising the existing problem and consequences, citizens from most cities of developed countries are reclaiming streets as public spaces.

2.2 ATTRIBUTES OF LIVEABLE STREETS REGARDING NEIGHBOURHOODS

Despite having no standardised definition of a liveable city or community, it is a primary condition for a space to be liveable for the well-being of a community. One of the comprehensive definitions regarding “Liveability” by Crowhurst Lennard and Lennard (1987) expressed that liveable cities pay heed to architecture, streetscape, and public space design which facilitate the lifestyle of city dwellers in the public domain and the heart of the city. Moreover, Donald Appleyard’s study identified seven indicators of street liveability which include the street as a sanctuary safe and secure; a nourishing environment; a community where communal life strives; a sense of community and belonging; a place to engage children; and distinctive identification for inhabitants of the city at large.

Since streets are rationally a multidimensional space conducting several functions, the primary attributes of liveable streets can be categorised into three types: physical, functional, and social attributes in terms of neighbourhood streets and alleys, considering the community purposes.

Table 1, Attributes of the liveable roads in the neighbourhood area

Physical Attributes	Functional Attributes	Social Attributes
Vehicles management Sidewalks Pedestrian zone Non-motorised vehicles lane Parking zone Crossing lane Facilities for physically challenged people Trees Shading facilities Signage	Universal accessibility Smooth movement Land use pattern Waste management Sufficient lighting	Safety Social interaction Community activities Comfort Relaxation

2.3 THE CORRELATION BETWEEN LIVABLE STREETS AND COMMUNITY PROSPERITY

Streets are the heart of the urban environment that influence people's everyday activities and ultimately represent the identity of the community as they serve the sense of belongingness beyond the home. Since ancient times, the street has offered an intricate public network to a city by developing a platform for social, economic, political, and communicating purposes for the locals comfortably and feasibly.

In 2012, UN-Habitat initiated a step to integrate streets into the five dimensions of urban prosperity and their critical findings showed that one of the primary reasons cities having CPI (City Prosperity Index) higher than 0.800 (compared to the maximum 1) enjoy high street connectivity as well as improved walkability. This initiative is a strategic policy to promote cities committed to a more comprehensive, people-centred, and sustainable impression of prosperity. As claimed by the report, the index illustrating composite street connectivity and components (CSCI) of Dhaka city lies below 0.400 which indicates poor street connectivity and performance. Under these circumstances, the neighbourhood streets and alleys are suggested as a probable solution for promoting non-motorised vehicles, pedestrianisation to limit traffic congestion, motorised transportation systems, and urban decarbonisation.

Based on Donald Appleyard's "Liveable Streets" (1982), the seminal study demonstrated that social interaction among people on the streets is inversely proportional to the amount of traffic and the analysis indicated that social activities might block traffic or increase criminal offences. In this regard, it is stated that the planning of local roads and alleys should focus more on social spaces in place of motorised vehicles since neighbourhood streets or alleys generate a sense of belongingness among dwellers in a deeper way.

2.4 DHAKA THROUGH ITS STREETS

Dhaka, the capital of Bangladesh, has transformed into the 11th largest mega city and the 10th most populous city in the world, that experienced tremendous growth and physical expansion over 20 to 30 times from 1951 to 2001, as stated by Habib et al. (2005). Urbanisation in this city is a booster of migration from suburban and rural areas which has turned the city into one of the overcrowded megacities. On top of that, the road network system has not been designed considering the futuristic requirements of present times, which results in a daunting task to upgrade the roads with modern sustainable plans. Consequently, the city has been witnessing hazardous physical growth and a proliferation of scattered development. In this complicated process, small communities have faced the greatest loss since people had enjoyed their long-lost tradition to initiate social interactions and communications on the streets from the first stage of urban life.

Several studies have been conducted to classify the roads under the DCC network. Recommendations of DUPT (2001) for the classification of roads as proposed in those studies are entailed below.

- Primary roads
- Secondary roads
- Connector / Tertiary roads
- Local roads
- Non-Motorised Traffic (NMT) roads

In addition, the urban informal sector provides several significant urban services in Bangladesh, and the sector is playing an important role in the economic growth of the country (Halder, 2019). As claimed by UN-Habitat, there are almost 90000 street vendors in Dhaka city which plays a significant role in the economic development of our country though it is viewed as a major problem regarding traffic congestion. In contrast, the International Labour Organisation (2010) declared that Bangladesh has the highest percentage of employment engaged in informal sector among the South-Asian countries. To describe informal settlements in Greece, Potsiou Chryssy (2010) mentioned that the Albanian government considered the informal development as a drawback but later a law was passed by the parliament to support the legalisation process of informal development in order to introduce a solution of facilitating

the urban informal sector which is close to the concept of the report ‘Urban Planning for City Leaders’ by UN-Habitat (2013).

3. Objectives of the paper

The objective of this paper is to reevaluate the significance of streets as an urban space in modern cities as well as to assess the potentiality of their attachment to the community residing there with existing physical settings in order to evaluate how well-designed streets can boost community participation by creating an accessible and resilient platform. To summarise, it aims at incorporating local roads into a futuristic and sustainable community design.

4. Methodology

To conduct the study rationally, the Mirpur area, one of the densely populated residential areas of Dhaka city with no dedicated space for social interaction and community participation, is chosen for a thorough study. The methodological order involves different survey techniques; mapping with the assistance of Google Earth Pro, field survey, data collection from newspaper and scholarly articles featuring articles on these related fields, questionnaire survey, and one-to-one interviews with the community members. In short, the research has been conducted through four main steps mentioned below.

- Analysis of the existing street patterns and layout including interactive land use zones of the study area through field survey and Google Earth Pro.
- Comparative analysis of community participation focusing on existing social activities and interactions on the streets in terms of different contexts and time variation.
- Feedback of the community inhabitants regarding the impact of neighbourhood streets on their social and economic life through questionnaire surveys among which two questions were set on the basis of their observations of the present condition and six questions regarding their personal perception regarding existing condition.
- Lastly, the expectation of the community dwellers towards liveable streets and the existing condition of the area through one-to-one interviews help establish a constructive outcome in this paper.

5. Analysis and outcomes

5.1 EXISTING ROAD NETWORKS AND THEIR CONNECTION WITH THE LAND USE

Due to swarming density and spontaneous growth of population, most of the areas of Dhaka city have transformed into congested spaces and failed to fulfil the requirements of its inhabitants. The study area is located in Mirpur 10 (particularly block A, B, C), Dhaka which is one of the highly dense urban areas where buildings tumble upon one another with no breathing space. For instance, the total study area occupies 32.5-acre area while providing green space of 2.5 acre apart from only one small neighbourhood park and two playing fields which is 7.8% of the total area. On the other hand, the street network has been developed connecting the whole community in spite of having insufficient sidewalks, green space, parking zone, adequate lighting, and other infrastructure.

Table 2, Features of the existing roads in the study area

Road types	Primary Road	Secondary Road	Tertiary Road	Local Road	Non Motorised Traffic (NMT) Road
Road width	35-40 m	15-22 m	10-12.5 m	9 - 12 m	4.5 - 6 m
Footpath width	3.1 - 3.66 m	1.82 - 2.5	1.5 - 1.82 m	1.22 -1.82 m	No
Vehicles	Bus, truck, cars, motorcycle	Minibus, cars, pickup vans, motorcycles, rickshaws	Rickshaw, cars, motorcycles, pickup vans	Rickshaws, bicycle, cars, motorcycle	Bicycle
Land Use	Commercial building, hospital, educational institution, government institution, Mixed-use	Mixed-use building, commercial building	Mixed-use building	Residential building	Residential building
Lighting facility	Sufficient	Average	Average	Insufficient	Merely

From the table above, the existing conditions of infrastructure and lack of facilities can be presumed in terms of local and other non-motorised neighbourhood roads. According to the map below, most of the those are neighbourhood roads with a width of below 20 feet, which encourage the social activities and communal interaction among the inhabitants due to their distinct features of having most of the residential building and non-motorised passerby friendly vehicles. The interrelationship between the users and the adjacent infrastructure with facilities is distinctly visible by looking at the percentage of the users from diverse age groups in the pie chart given later.



Figure 2, Street hierarchy and significant infrastructures in land use map (Source: Author)

According to the field survey, it is evident that most of the streets of the survey area are local roads and alleys having width below 20 feet possessing maximum percentage and as a consequence, most of the people going from 10 to 50 years have active participation in social activities on the streets while the age group of 20-30 years possesses the maximum percentage of participation in this case according to the data showed in the pie chart below.

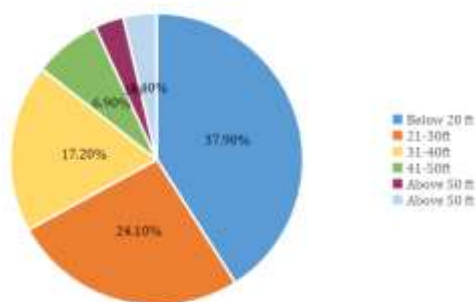


Figure 3, Percentage of neighbourhood roads of below 20 feet (Source: Author)

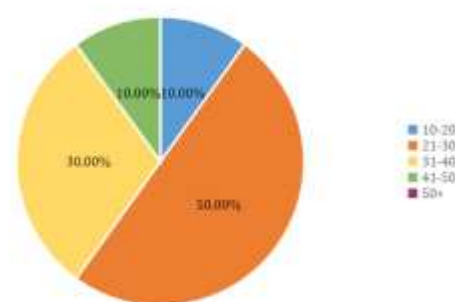


Figure 4, Percentage of age group using street as a community space (Source: Author)

5.2 EXISTING PUBLIC ACTIVITIES AND INTERACTIONS ON THE STREETS

As a consequence of rapid urban growth and high density, there is inadequacy of public space for the large number of community members in Mirpur area. People in Mirpur 10 (Block A, B and C) experience their urban life through the activities on the streets which meet up their social, economic, cultural and religious purposes. Due to space scarcity, people have been utilising their neighbourhood streets as a public space in a subconscious way from the very beginning and they successfully developed a social and economic hub integrating streets into their daily life. From the field survey, it is observed that residents spend most of their spare time after office hour on the streets presumably due to the scarcity of adequate open space in the neighbourhoods. Through the interviews with the dwellers, it is quite explicit that the public activities on the street or adjacent to the streets are undeniable and reasonable in terms of their needs. On the basis of these analyses, activities of the dwellers have been categorised into four different segments in terms of purposes and patterns.

Table 3, Features of the existing roads in the study area

Category of activities	Description
Economic	Mirpur 10 area (Block A and B) is very popular for its commercial activities as one of the biggest saree markets is situated here which contributes to the economy of this community at a wholesale scale by selling accessories, foods and other facilities to the customers. In addition, a large informal 'Hope market' has grown in block B which successfully has drawn attention to the people all over the city and has become an economic hub of the community. Besides, there are a lot of formal and informal sectors including kacha bazar, street food stalls, fish market, clothing shops and other product shops.

Social	In the case of social interaction, the pattern is quite different for males, females and children. Generally, gatherings of men happen in bazaars, outside mosques and small shops like teastalls, small hotels, grocery shops etc. On the other hand, women mostly gather in both permanent and temporary clothing stores as well as other retailing shops of toys, jewellery, cosmetics, food stalls etc. In particular, children and teenagers are seen on the school premises enjoying temporary food stalls and small shops after school time while they gather in the neighbourhood streets during the afternoon to play outdoor games.
Cultural	Inhabitants living here with various social, economic, educational backgrounds have made this area culturally too vibrant already. During festivals, people celebrate the event by occupying the school field for concerts and enjoying the local foods from the adjacent street food stalls.
Religious	In the study area, having Muslims 95.8% of the population (Bangladesh Bureau of Statistics, 2020), there are seven neighbourhood mosques which serve the community people (male members) and conduct prayers at a large scale during Jumu'ah (one of the most exalted Islamic rituals) each Friday that occupies the adjacent streets creating a large social gathering due to scarcity of space. Usually, people gather in the mosque premises after every prayer and engage in purchasing stuff from street vendors which generates an effective social gathering.

According to the table above, it proves that most of the major activities are directly or indirectly connected to the streets and its adjacent infrastructures such as sidewalks, mosques, schools, marketplace, sitting arrangements etc. Analysing these activities, the major activities provoking public gatherings can be identified, such as clothing stores, food spots, 'kaacha bazaar' and playing on the streets, and moreover, some of the temporary spots are influenced by those permanent marketplaces and stores. It is clearly visible that community residents in this zone are quite inclined towards their neighbourhood streets for their regular social, economic, cultural and religious activities, and modification in their urban morphology in terms of the streets pattern would affect their urban life in a distinct way. On the contrary, any modification or alternation in their streets layout in favour of their regular practices would boost their living pattern in a positive manner which might help them upgrade their urban life in a sustainable and futuristic approach.



Figure 5, Views of street activities in Mirpur area (Source: Author)

The photos above show the active interaction spots of the study area including permanent and temporary market place, adjacent food courts, permanent food spots etc, and clearly explain how the community participation changes with time. It can be observed that the magnitude of interactions and participation change over time and it intensifies during night due to the busy schedule of serviceholder people of the community as well as the city dwellers as a whole. To compare the existing active spots regarding the time, the bar chart below illustrates that percentages of active gatherings spots caused by four different reasons which rises above 75% from 4:00 pm to 9:00 pm while observing and comparing the data for 12 hours a day.

Further analysis proves that most of the neighbourhood streets and alleyways are occupied by rickshaws, a non-motorised environment friendly vehicle and the participation in street activities are almost the same regardless of gender.

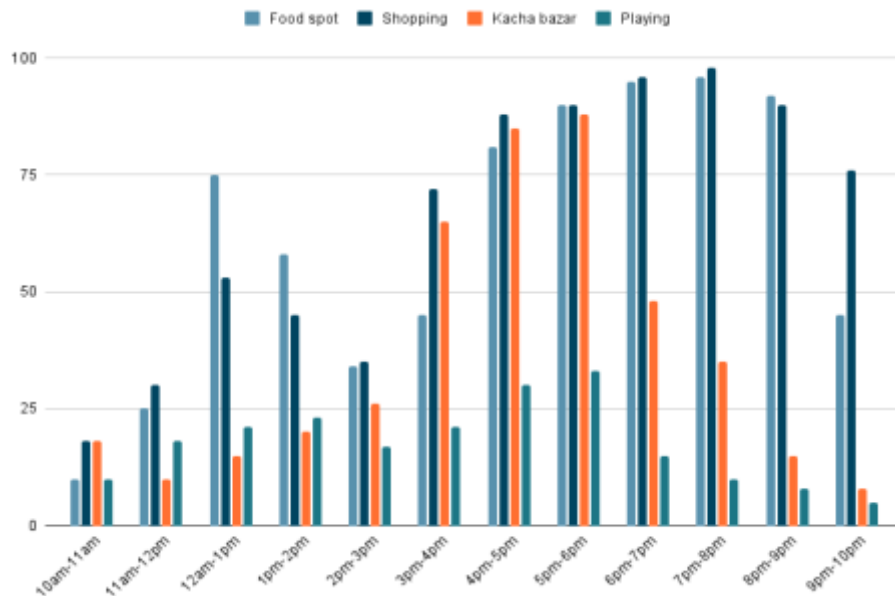


Figure 6, Intensity and changes of social activities on the streets with time (Source: Author)

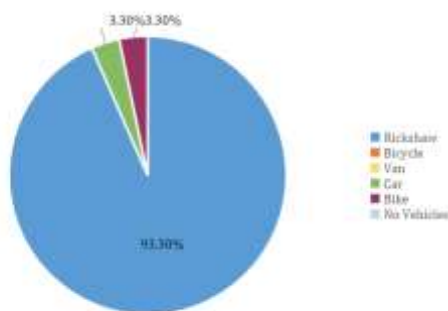


Figure 7, Rickshaw occupies most of the neighbourhood streets (Source: Author)

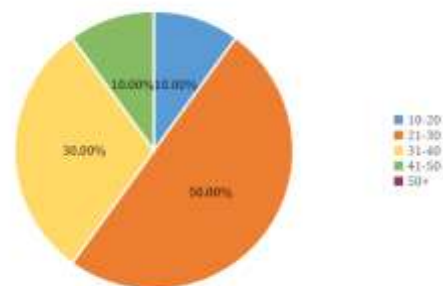


Figure 8, Both men and women gather spontaneously on the streets (Source: Author)

5.3 FEEDBACK FROM THE RESPONDENTS

On the basis of the questionnaire survey and interviews with the community dwellers, the observation and opinion of the respondents have been collected to understand their perspective and expectation for their communal life in relation with the street liveability as well as their urban life. In accordance with the responses, there can be found out a few observations regarding the issue from the users end as well as some opinions on how land use and infrastructure adjacent to the roads may initiate interaction and consequently a large gathering of locals. They have also shared their thoughts regarding the impact of promoting interaction on the streets which may affect the environment negatively and also added some of their expectations which may satisfy their needs as permanent inhabitants.

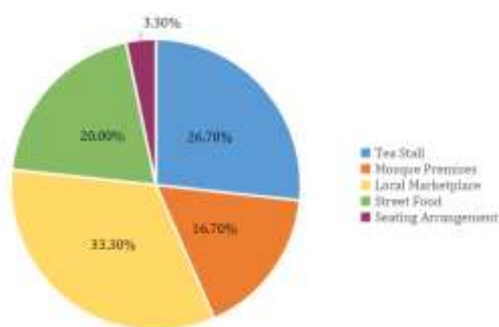


Figure 9, Reasons playing role behind social gathering on the streets (Source: Author)

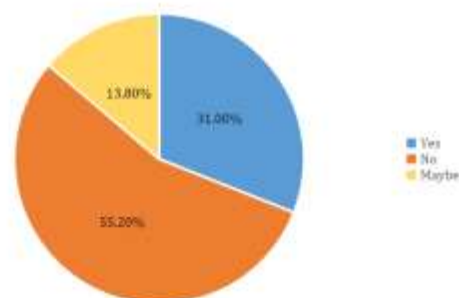


Figure 10, Neighbourhood roads are not physically challenged user friendly (Source: Author)

On the grounds of the analysis of these responses, it is observed that neighbourhood roads are not user friendly due to inadequate infrastructure such as wide sidewalks, shaded zones, sitting arrangements for elderly people and

wheelchair-bound people. Again, social gatherings of both men and women are generated mostly by local markets, street food spots and tea stalls as per their observation.

Table 4, Features of the existing roads in the study area

Perception of the inhabitants	Strongly agree	Agree	Neutral	Disagree	Totally disagree
Trees as drivers of interaction	16	32	6	2	2
Crime intensifies	14	26	8	10	0
Requirements for physically challenged people	20	32	2	4	2
Approval of social performance	12	16	14	8	10

From the questionnaire survey, data regarding opinion of the inhabitants has been collected to understand the perception and expectation of them in terms of social activities on the neighbourhood roads and alleys.

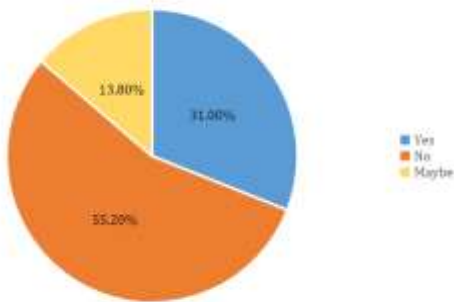


Figure 11, Trees in neighbourhood roads would increase interaction (Source: Author)

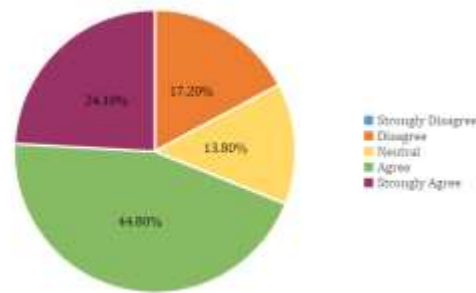


Figure 12, Social interaction might increase crimes in the society (Source: Author)

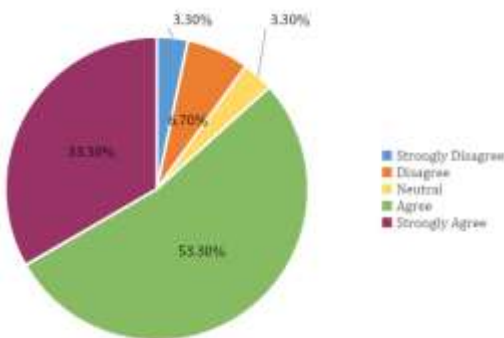


Figure 13, Streets should be universally accessible and user-friendly (Source: Author)

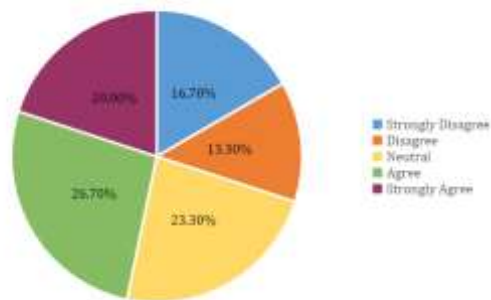


Figure 14, Streets may encourage social performance (Source: Author)

In addition, some of the deep down expectations and assumptions of the respondents have been detected through one-to-one interviews which are illustrated with pie charts below. According to their observation, adequate street lightning could ensure their safety during night time since they tend to engage in communal activities mostly after 6pm after their office hour and the social interaction among neighbourhood people have become the source of income for local entrepreneurs. As active community participants, some anticipate that incorporating a few facilities such as sitting arrangements, ramps, green space etc. into neighbourhood street design could increase the use and opportunity of streets which might turn the unsuitable streets including dead urban spaces liveable for the community members as well as a successful urban space and a platform to elevate their social life.

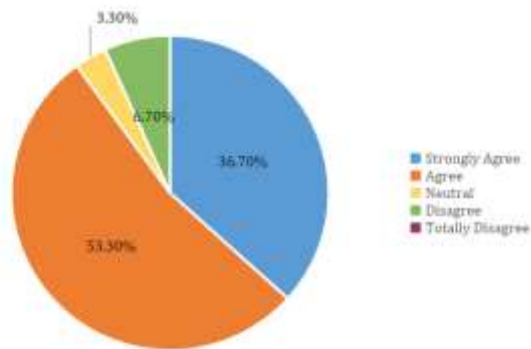


Figure 15, Street lighting can facilitate community participation during night (Source: Author)

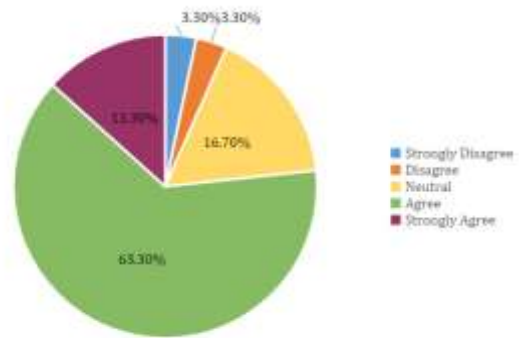


Figure 16, Sitting arrangement on the streets can increase interaction (Source: Author)

6. Recommendations

The analysis and interpretation discussed in this paper have come up with a few reflective suggestions. These thoughts are mentioned below.

- Streets should be acknowledged as a multidimensional space and adopted as a social platform for community participation and interactive activities.
- The concept of livability should be incorporated and implemented in the urban neighbourhoods during the policy-making phase and planning process of street design, in order to ensure a healthy social as well as urban life amid all the social crisis rising nowadays.
- Universal accessibility and adaptability should be ensured by incorporating ramps, wide footpath, green space to include elderly community members or users with special needs in community activities in order to establish social equality as well as sustainability.
- Legalisation of informal social and economic setups on the neighbourhood streets should be taken into consideration in order to accommodate these sectors in more suitable urban spaces in a sustainable way.
- Streets should have adequate physical infrastructures such as sitting arrangements, shading devices, adequate lighting facilities to initiate interaction ensuring safety during night, and to establish user-friendly urban space for the inhabitants.

7. Conclusion

The interconnectivity and spatial quality of neighbourhood streets have an immense impact on the growth of its community. Streets designed as social hubs offer a prominent opportunity to extract the potentiality and express the identification of a community regardless of age, gender, socio-economic status, etc. On the contrary, vehicular roads having too many social interactions and activities may interrupt the urban transportation system and gradually cause crimes in some cases. The design should balance the requirements of vehicular traffic and social space in a sustainable and resilient way. Over time, the perception of streets as a space has changed, and inhabitants from developed cities are reclaiming their long-lost liveable streets to reincarnate their urban communities.

In summary, streets are not any ordinary thoroughfares between spaces, despite a multidimensional network bearing the identity of an entire community. However, this paper conveys the issue that well-planned road networks and alleyways with user-friendly facilities can enhance community participation which is a prerequisite of community empowerment and futuristic development of urban life. Understanding the significance of incorporating streets into design decisions and policy-making processes in terms of urban life offers a flexible approach to building communities in a sustainable and resilient manner. As a whole, this paper comes up with a statement that streets should be considered as a urban space with a lot of opportunities for the residents of densely packed areas to upgrade their present exhausted condition from urban monotonous life confined within concrete walls to a sustainable futuristic urban life.

8. Acknowledgements

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