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CONTRASTING CHARACTERISTICS OF PEDESTRIAN MOVEMENT SCENARIO IN THE PLANNED - POSH RESIDENTIAL AREA OF DHAKA: GULSHAN AS THE CASE

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ABSTRACT

Originally conceived and designed for the high income group of the society, the serene environment of Gulshan residential area of Dhaka has been gradually disrupted in course of time by the invasion of commercial functions. Land use restructuring has taken place in a speedy manner in this residential area through densification. As a result, lots of pedestrians are observed along the walkways of this area. But interestingly, the local residents are almost absent as pedestrians in the walkways of this residential area. In such a state question arises, what prevents the local residents from being pedestrians in their own residential area? In search to the answer of this question, this paper tries to investigate the pedestrian movement scenario of the Gulshan residential area. The aim of this research is to identify the reasons behind non-resident contrasting group of users as being pedestrians, whereas local residents being non-pedestrians.

KEYWORDS*: Pedestrian Movement, Planned-Posh Residential Area*

INTRODUCTION

Pedestrian movement is an important phenomenon in the walkways of Dhaka, the capital of Bangladesh. Planned-posh residential areas of the city are also included within this phenomenon. Dhaka, being the ninth largest and the fastest growing mega city of the world by population, experiences 62% of daily trips conducted by walking (Shumi, 2013).Throughout the city, mostly urban poor population makes their daily trips by walking as they have only few or no alternatives (Jonson et.al. 2005).

Gulshan, originally designed as planned-posh residential area of Dhaka, has recently been changing its character from fully residential to a mixture of residential and commercial area. Traffic congestion along with environmental degradation is emerging problems in this planned-posh residential area, which in turn is becoming the reason of discomfort for the residents, and eventually hampers the liveability of this area. In such a state, it is time to identify the existing situation of walkability in the Gulshan area and encourage walking as a means of transport for the local residents, which has positive implications towards solving many problems. Walkability needs to be enhanced in the planned residential areas of Dhaka, in order to create more liveable pedestrian environment, which will eventually lead to the liveability of the city.

OBJECTIVE

To identify the pedestrian movement scenario of the once planned-posh residential area of Dhaka and also to investigate the reasons behind non-resident users as being pedestrians, whereas local residents being non-pedestrians.

METHODOLOGY

There are of course several ways to describe and analyse pedestrian movement scenario. To understand the relationship between pedestrian movement, connectivity and land use of the planned residential area, an elaborate literature survey on this topic has been carried out for better understanding and representation of the problem. Field survey has been conducted to collect user's response through questionnaire survey. Existing land use pattern has been investigated to identify non-residential activities within the residential environment and its impact on the movement pattern of the pedestrians of the study (Gulshan) area.

CONNECTIVITY

The overall connectivity of Gulshan residential area with its surroundings is unique in its kind. As, this area has been connected with its surroundings through road network, which allows both vehicular and pedestrian movement, as well as waterways, through boat trips by low income group of pedestrians. There are four popular boat routes, which act as very cheap connecting route covering big distance for pedestrians through the adjacent lakes of the Gulshan residential area, which connect the study area with its surroundings (Fig. 1). Boat routes connect the study area with the surrounding Badda area through the landing spot at the edge of Gulshan Road no.123 and Road no.139. An interesting boat route connects Korail slum with the surrounding Gulshan area through the landing spot beneath the linking bridge of Gulshan area, adjacent to road no. 34 (of the study area). Another boat route connects the Korail slum area with the Link road between Gulshan circle-1 and Mohakhali. All these boat routes connecting the study area with its surroundings, work as low cost fast transportation system for pedestrians of low income group. Figure 1 shows the existing condition of boat routes (boat trip tk. 2, one way) used by a large group of pedestrians from surrounding areas of the study area as a part of their short cut (cheap and convenient connecting route covering big distance) walking route to reach the destinations in the study area or pass through it. Besides all these prominent routes, there exist a number of short cut walking routes adjacent to Gulshan Lake (peripheral walkways in Gulshan area), used by a lot of non-resident pedestrians (mostly low income group); which is shown in Figure 1 (red dotted walkways in the periphery of Gulshan area).
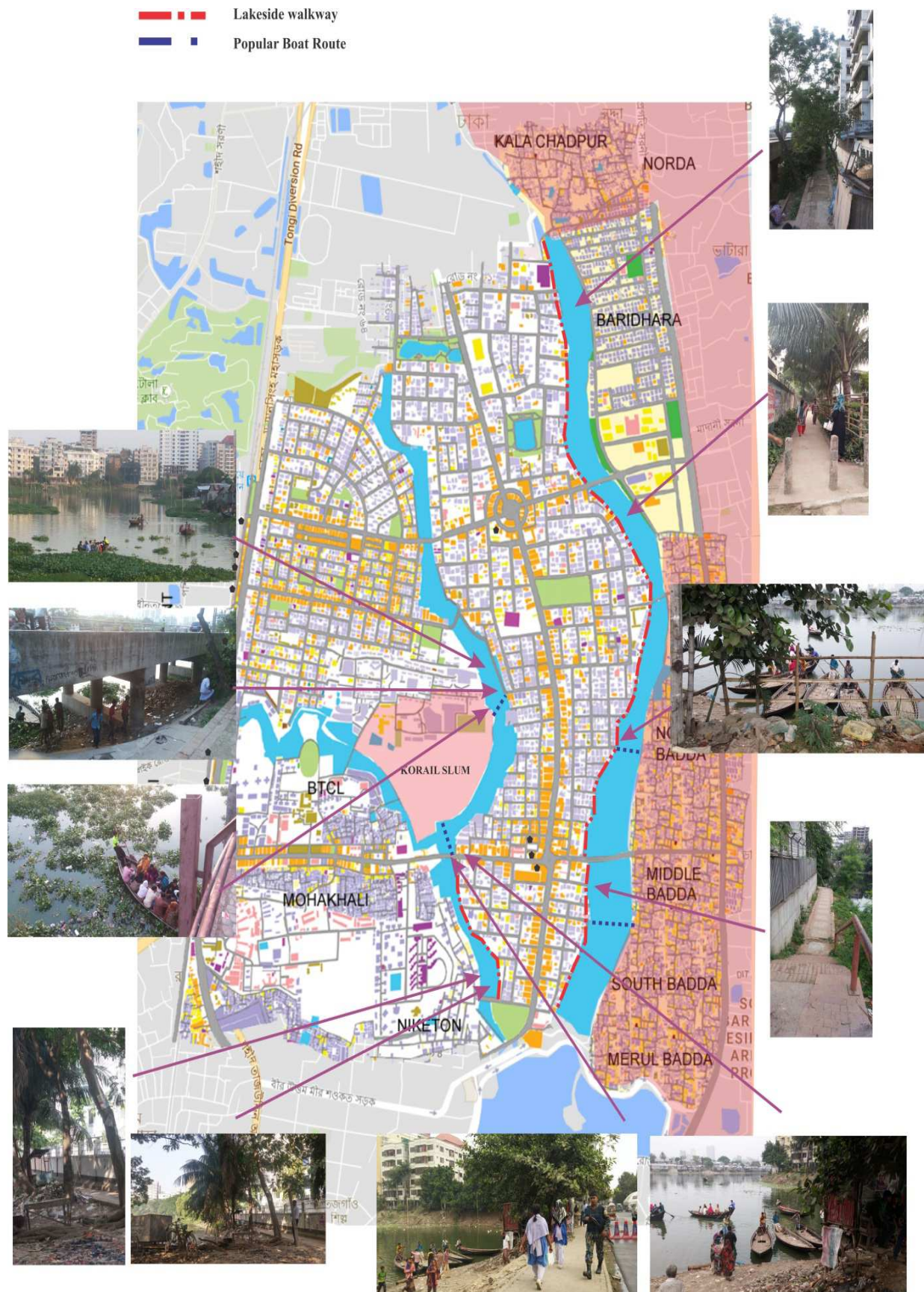
Source: Choudhury T.S., M. Arch Thesis, 2016

Figure 1: Boat Trips used at the Ease of Pedestrian Traffic Connecting the Study Area with Surroundings.

Gulshan area is bounded by two Major or Primary Arterial roads, i.e. Dhaka-Mymensingh Road in the west and Progati Shoroni in the east. The main access road, running across the Gulshan residential area in the north-south direction, may be defined as the Secondary Arterial roadfor the local area, locally named as Gulshan Avenue (90'-100' wide). The study area is connected by two major Link roads; Link road connecting Gulshan Circle1 with Mohakhali in the west and Progati Sharani in the east (South Gulshan Avenue) and Link road connecting Gulshan Circle 2 with Progati Shorani in the east (North Gulshan Avenue). These roads work as major Link roads connecting the Primary arterial roads with the Secondary Arterial road. Besides these, there lies another Link road (adjacent road of Manarat University), that connects Gulshan Avenue with Progati Sharani. All the Link roads give access to different parts of the local area. Another type of road, which serve the purpose of collecting traffic from local area to secondary arterial, are identified as Collector road. A number of roads (Gulshan road 1, 9, 11, 23, 24, 34, 46, 91, 94, 98, 123, 138) act as Collector roads in Gulshan residential area. Some access road that provide access to individual plots or buildings, are known as Local road (Choudhury, 2016).

LAND USE PATTERN

Gulshan was developed in the early sixties as an upper class residential area for social elites and diplomats to meet the demand of the residential purpose of the city. However, in course of time the residential character of Gulshan has not been maintained properly. Gulshan is well connected with the rest of the city by two major arterial roads. The calm, quiet and organized residential character of Gulshan along with its efficient connectivity with the city attracted several private organizations, multinational companies and NGO to establish their offices here (Khan, 2008). As a result, the commercial activities started to grow significantly, which eventually alter the character of the residential area. According to Dhaka City Corporation (DCC) land use map 2005, there are about 33 foreign embassies and 35 famous Government and Non-Government offices, situated in Gulshan residential area. Apart from this, a lot of international and multinational organizations have established their headquarters in the Gulshan residential area.

Based on the observational data and the recent land use survey (conducted by the Author for her M.Arch. thesis), pedestrian vibrant 17 specific roads of Gulshan R/Amay be identified; which are, Gulshan Avenue, North Gulshan Avenue, South Gulshan Avenue, and Gulshan road 1, 9, 11, 23, 24, 34, 46, 91, 94, 98, 106, 113, 123, 138. The land use survey adjacent these roads shows the presence of retail shops, shopping centres, beauty parlours, doctor's chamber, café, restaurant, offices, university, other educational facilities, banks, corporate headquarters, garments factory, residence etc. From land use survey, adjacent to the 17 pedestrian vibrant roads of Gulshan residential area, we find that, among 845 plots, 668 plots are used for non-residential purpose and remaining 177 plots are used for residential purpose. Thus, 79% plots are used for non-residential while 21% plots for residential purpose in the Gulshan residential area. Figure 2shows the selected 17 pedestrian vibrant roads of Gulshan residential area and their corresponding land use pattern.
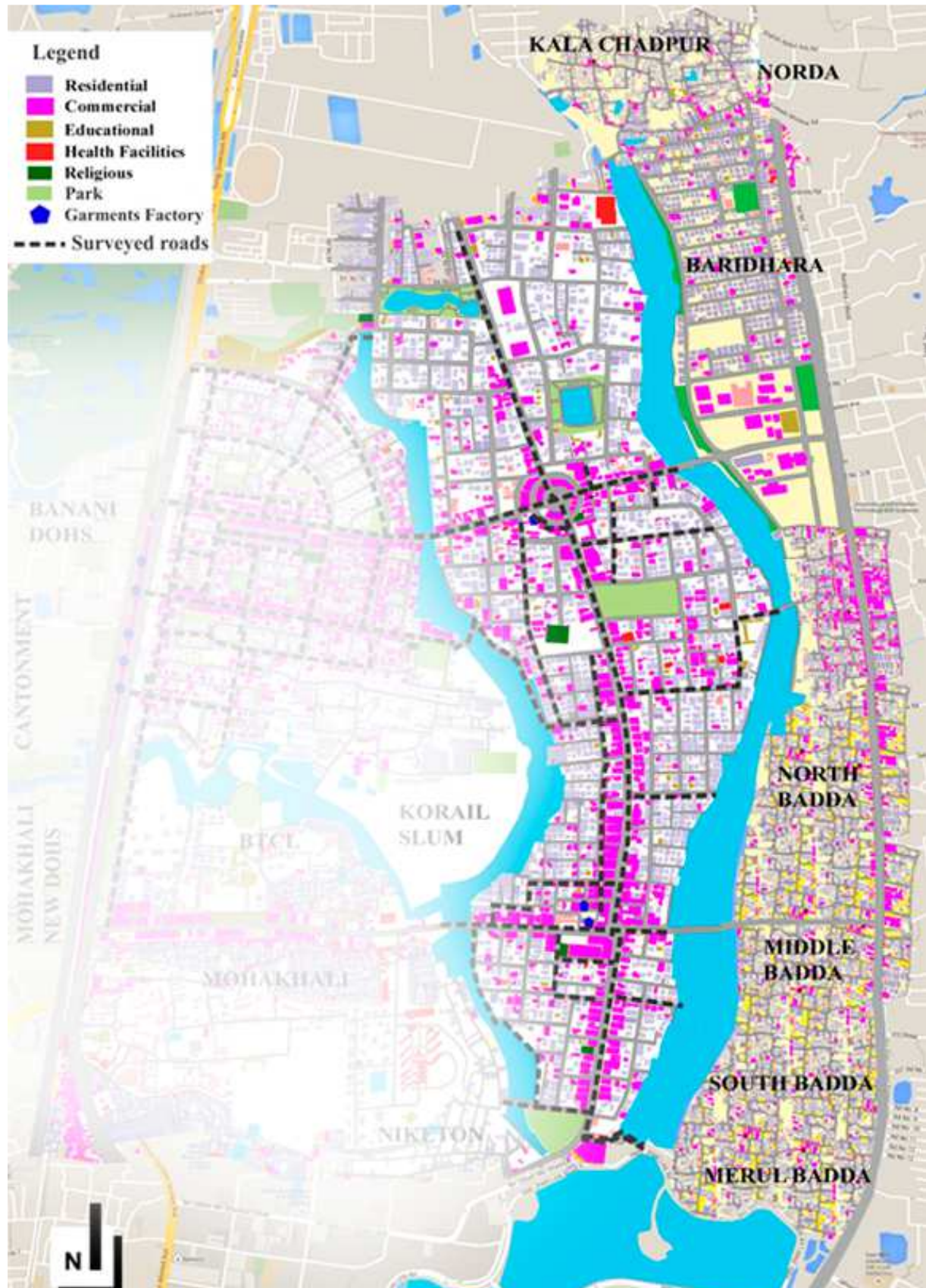
Source: Land use survey by the Author, 2016

Figure 2: Land Use Map Showing Selected 17 Pedestrian Vibrant Roads of Gulshan Residential Area.

From land use survey adjacent to 17 specific roads of Gulshan R/A and overall field observation it is evident that, most of the residential buildings are located at the inner part of Gulshan area with good access and link to the Secondary Arterial Road (Gulshan Avenue) of the study area. Most of the commercial activities, markets, shopping centre, garments factory, recreational facilities and service-oriented offices are located along the main access crossing along north-south and east-west of the area (Figure 2). This means, the Secondary Arterial Road (Gulshan Avenue) and the Link Roads (North Gulshan Avenue and South Gulshan Avenue) are invaded by non-residential activities. Besides this, there are a significant numbers of educational institutions, small scale commercial activities, including hotel and restaurants, community facilities, recreational facilities, different types of service facilities etc. found along the residential used buildings on the Collector and Access Roads, which depict a mixed nature of urban fabric within the once planned residential area – Gulshan.

MOVEMENT PATTERN OF THE PEDESTRIANS

From movement observation and pedestrian count, it has been found that, the walkways of the Gulshan area remain vibrant with pedestrians from early morning till night, due to the presence of diversified land use pattern.

Figure 3 shows the overall pedestrian movement pattern within the Gulshan residential area based on field observation. From field observation and land use survey it has been found that, pedestrian movement pattern of Gulshan Residential Area is rigorously influenced by the land use pattern and the location of the connecting transportation. From observation and pedestrian count (Figure 4) we find that, a lot of people walk in the walkways of the Gulshan residential area. Some of the roads in the study area are vibrant with lots of pedestrian (mostly non-resident pedestrians) movements while there are roads with hardly any pedestrian movement. From observation we find that, Gulshan Avenue, North Gulshan Avenue, South Gulshan Avenue, anda number of roads in Gulshan (road 1, 9, 11, 23, 24, 34, 46, 91, 98, 106, 113, 123 and 138) remain vibrant with pedestrian movement. And pedestrian movement pattern in Gulshan R/A basically follow the ranking order of road network of the study area**.**
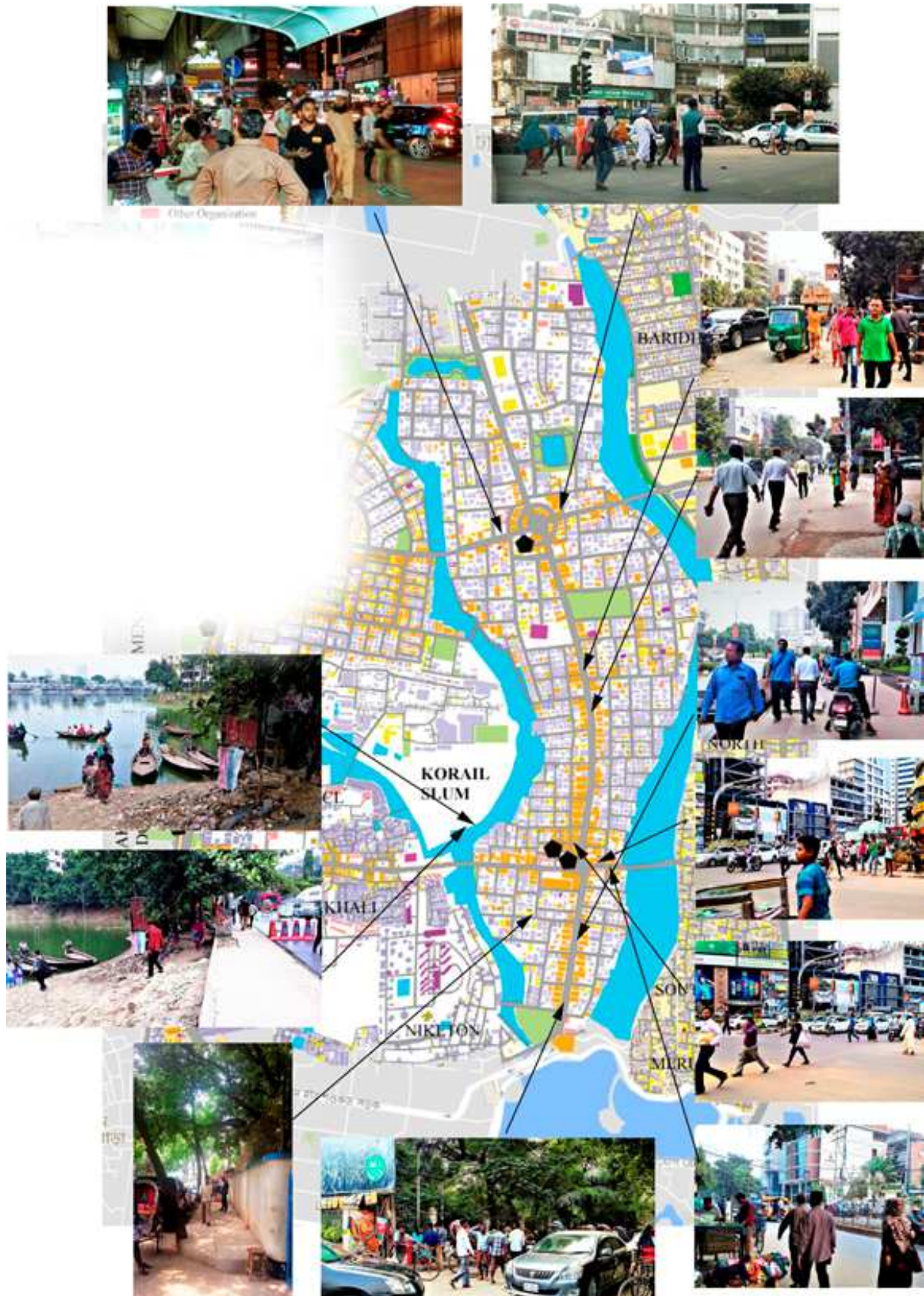
Pedestrian seen in the Gulshan residential area often use a number of connecting mode of transport to reach their destination or to come to the study area from their origin. From questionnaire survey we find that, within the commuting route, 40% of the pedestrians use bus, 18% use rickshaw, 16% use boat trip, 7% use tempo, 1% use CNG auto rickshaw; while 18% people do not use any other mode, rather they only walk, for conveyance.

Figure 4 shows the Overall diversified character of Pedestrian movement scenario of Gulshan residential area, where people walk in order to reach the nearby transportation hub (landing spot of popular boat routes and other vehicular stoppage), walk frequently through the commercial belt during day and night, walk through the roads (both in presence and absence of proper walkway) mostly due to land use preference. Again, the physical features of the walkways in the study area do not matter much on the walkability pattern of the pedestrians; for which, we find, huge amount of pedestrian movement in non-shaded rough walkways (Figure 4), whereas there exist smooth and shaded walkway with hardly any pedestrian movement (Figure 5).
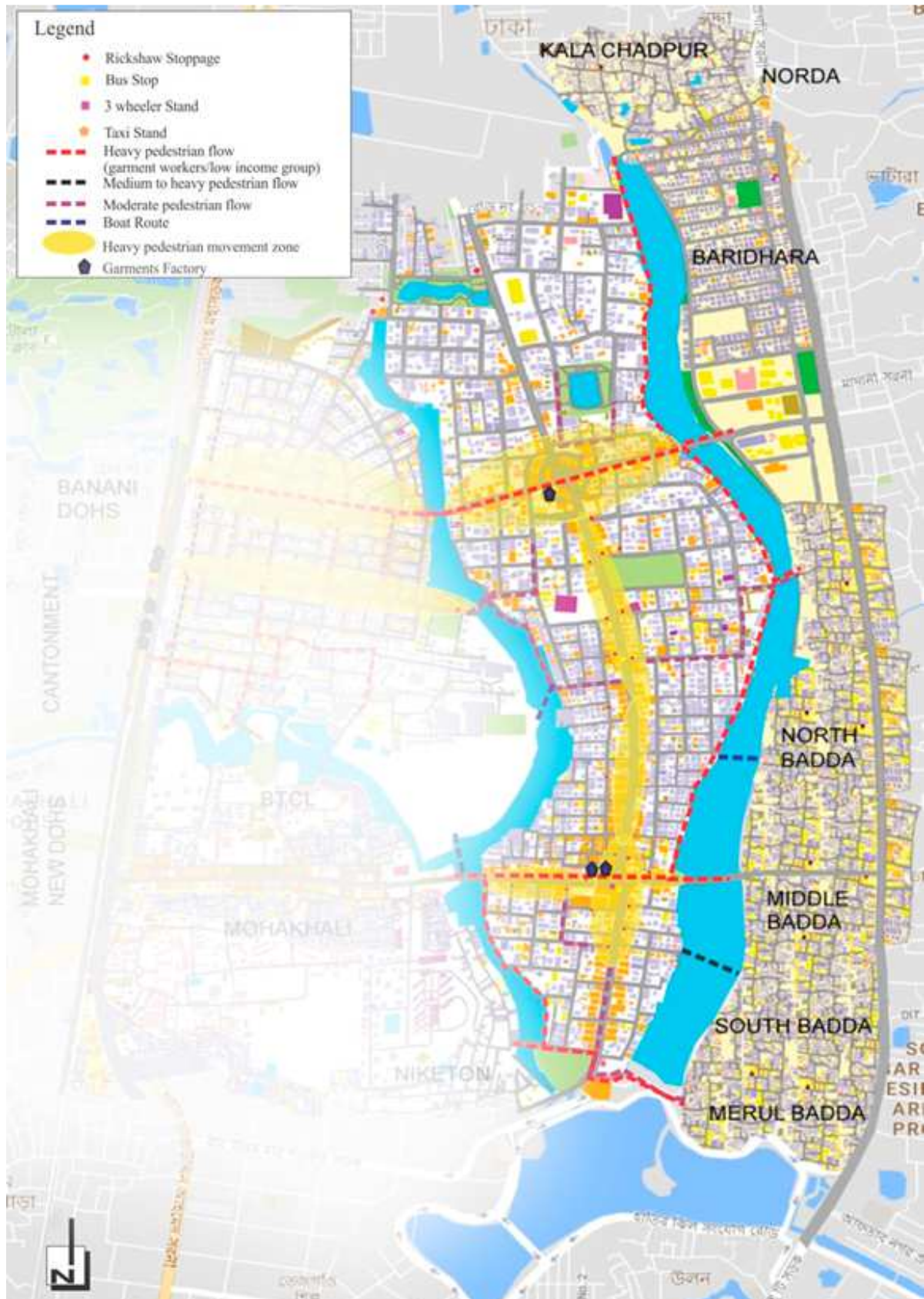
Source: Field Survey, January 2016

Figure 3: Pedestrian Movement and Transport Availability in Gulshan R/A.

Source: Field Survey by Author, 2016

Figure 4: Overall Pedestrian Movement Scenario in Gulshan R/A.

Source: Questionnaire Survey, 2016

Figure 5: Walkways without Pedestrian Movement in Gulshan Residential Area.

Pedestrian movement pattern in Gulshan-Banani R/A is unique in its kind. From field survey it is evident that, local people are almost absent as pedestrians (only 7% local pedestrians) while people from various parts of the city are found as pedestrians (93% non-resident pedestrians) in Gulshan residential area. Most of the pedestrians seen to walk on the walkways of the Gulshan R/A come from surrounding areas i.e. Shahzadpur, Badda, Kalachadpur, Norda and Hatirjheel area in order to reach the land uses in the study area. Apart from this, a huge amount of people coming from different parts of the city (Khilgaon, Rampura, Malibag, Mirpur, Shaymoly, Mohammadpur, Lalmatia, Uttara, Tongi etc.) through public transport are observed to walk within the walkways of the Gulshan residential area to reach their destination (specific land use). From, field survey, it has been found that, non-residential pedestrians are not very much concerned about the physical condition of the walkways of the Gulshan residential area; rather they are satisfied. While, local pedestrians (local residents) are more concerned about some social issues rather than physical condition of walkways in the Gulshan residential area. And due to the social issues, local residents do not prefer to walk on the walkways of the study area; instead, they prefer to go to nearby park or gym on car for physical fitness. As a result, we find diversified characteristics of pedestrian movement scenario within the study area (Gulshan residential area), where a lot of people walk in a number of the roads (being shortest route but sometimes in absence of proper walkways, used by the non-resident pedestrians), whereas there are smooth and shaded walkways with no pedestrians at all. Basically, Pedestrian movement in Gulshan R/A follow the land use pattern and location of the connecting transportation mode of the city grid.

RELATIONSHIP BETWEEN PEDESTRIAN MOVEMENT AND LAND USE

There is a strong relationship between the movement pattern and land use in the Gulshan residential area. In recent years, with the growth of the city grid, the road network of Gulshan residential area generated greater accessibility along the Secondary Arterial Road (Gulshan Avenue) and Link Roads (South Gulshan Avenue, North Gulshan Avenue) of the study area and transformed the land use pattern there. Gradually the land uses adjacent to the Collector Roads of the Gulshan residential area also became invaded with non-residential activities. The transformation of land use from residential to non-residential use attracts movement from surrounding areas, which eventually enhanced the overall pedestrian movement in the Gulshan residential area. As a result, the walkways adjacent the Secondary Arterial Roads, Link Roads, Collector Roads and a few Local Roads of the Gulshan residential area are observed with high rate of pedestrian movement. Thus, pedestrian movement pattern of Gulshan Residential Area is rigorously influenced by the land use pattern.

CONCLUSIONS

Pedestrian movement pattern in Gulshan R/A is unique in its kind. Therefore, it is important to encourage pedestrian movement in this planned-posh residential area of Dhaka, in order to limit the consequences of excessive automobile movement to ensure liveability in the study area. This study has greater potential to contribute to urban design strategies for future development of walkways in the planned residential areas of the city. Findings of this research, therefore, may become an important tool to achieve the objectives of sustainability by creating walking friendly urban network, incorporating the planned residential segments of the city while designing the new urban areas from pedestrian friendly walkable perspective.

ACKNOWLEDGEMENT

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