A STUDY ON THE UNIQUE MOVEMENT PATTERN OF THE PEDESTRIANS IN BANANI RESIDENTIAL AREA OF DHAKA

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ABSTRACT

Banani, one of the planned and upscale residential areas of Dhaka, the capital of Bangladesh, possesses a unique feature in the context of pedestrian movement pattern within its jurisdiction. Initially designed and allocated for the high income group of the society, the tranquil environment of Banani residential area has progressively changed its appearance from fully residential area to a mixed use residential area, consisting of residential and commercial functions. Streamlining in land use has taken place in this residential area in a prompt fashion through densification. Resulting in heavy flow of commuters from surrounding areas within the path ways of this peaceful area. But remarkably, local residents are almost unseen as pedestrians in the pathways of the Banani residential area. This unique feature of pedestrian movement scenario in the pathways to the study area aroused interest in search for the reasons behind such phenomenon. Therefore, the objective of this research has been set and it may be said that, the main aim of this research is to study the unique features of the pedestrian movement consequence of the once planned upscale residential area (Banani) of Dhaka.

KEYWORDS: *Unique Movement Pattern, Pedestrian, Banani Residential Area*

INTRODUCTION: FOREWORD

The lively city Dhaka, the capital of Bangladesh remains vibrant with commuters in its pathways from dawn to dusk and beyond. Interestingly, most of the planned and upscale residential areas of the city are also included within this spectacle. 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).

Initially designed and allocated for the elites of the society, the tranquil environment of Banani residential area has recently been changing its character from fully residential to a mixture of residential and commercial area. This shift of dimension in functional clarity is the reason behind emerging environmental degradation along with traffic congestion and other noticeable problems in this once planned- upscale residential area of the city. This changing phenomenon affects the comfort zone of the local residents, and eventually hampers the liveability of this area. Within such context, pedestrian movement features might be useful criteria to be studied, in order to overcome this unpleasant situation, which may encourage local residents of Banani to use the walkways as pedestrians, as it has affirmative proposition towards

elucidating emerging problems of the study area. Such positive measures may lead to regain the original essence of the serene environment of the once planned - upscale residential area of the city with comfort.

METHOD

Pedestrian movement pattern may be studied following several methods. In this research, field survey has been conducted to collect user's response through questionnaire. Besides this, an elaborate literature survey on this topic has been carried out for better understanding and representation of the problem. Based on observation, literature review and questionnaire survey, criteria have been set to identify the pedestrian movement features of the study area; through studying the relationship between diversified land use pattern and mode of connection within the study area.

MODES OF CONNECTION

The modes of connection of Banani residential area with its surroundings are distinctive in their types. 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 two popular boat routes, which act as very cheap connecting route covering big distance for pedestrians through the adjacent lake of the Banani residential area, which connect the study area with its surroundings. These boat routes connect the study area with the surrounding Gulshan and Mohakhali area through Korail slum, located within the study area. The boat routes connecting the study area with its surroundings, work as low cost (boat trip tk. 2, one way) fast transportation system for pedestrians of low income group. A large group of pedestrians from surrounding areas of the study area use these boat trips as a part of their short cut (cheap and convenient connecting route covering big distance) walking route to reach their destinations in the study area or just to pass through it. Besides all these prominent routes, there exist a short cut walking route adjacent to Banani-Gulshan Lake (peripheral walkway in Banani area), used by a lot of non-resident pedestrians (mostly low income group).

Banani area is bounded by two Major or Primary Arterial roads, i.e. Dhaka-Mymensingh Road in the west and Progati Shoroni in the east. Kemal Ataturk Avenue (60' wide) and Banani road no. 11 (45' wide), across the Banani residential area in the east-west direction can be defined as the Secondary Arterial Road for the local area. Besides this, Banani road 1,2,4,6,10,12,14,18,23,27 works as the Collector Road for the study area; whereas, Banani road 5, 7, 17, 21 works as the Local Road of Banani residential area (Choudhury, 2016).

DIVERSIFIED LAND USE

After the establishment of planning authority DIT (Dhaka Improvement Trust) in 1956, Banani Residential Area was planned and designed as upscale residential area with a lower amount of community facilities. During its planning process all the necessary services were located along one road; as a result, residents of this locality had to travel to distant market in order to buy their daily or monthly necessities. Moreover, no detail area planning was ever made or executed in defining the site and other services for this residential neighbourhood. So gradually out of necessity, small scale commercial endeavours, such as grocery shops, laundries, stationary shops and pharmacies were building up in a scattered manner within the residential area (Zareen, 2009). Lack of no hard or fast planning rules from the concerned authorities even encouraged theses scattered developments. According to DMDP, "It is one of the prime planned residential areas of Dhaka. The zone is served by two commuter corridors and the large Banani and Gulshan lakes provide open space while also functioning as retention ponds. The area is gradually developing substantial commercial and institutional functions along the main roads" (DMDP, 1997 b).

Based on the observational data and the land use survey (conducted by the Author in 2016), pedestrian vibrant 16 specific roads of Banani R/Ahave been identified; which are Banani road 1, 2, 4, 5, 6, 7, 8, 10, 11, 12, 14, 17, 18, 21, 23, 27. The land use surveyed 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 16 pedestrian vibrant roads of Banani residential area, we find that, among 665 plots, 525 plots are used for non-residential purpose and remaining 139 plots are used for residential purpose. Thus, 79% plots are used for non-residential, while 21% plots are used for residential purpose in the Banani residential area. Figure 1 shows the selected 16 pedestrian vibrant roads of Banani residential area and their corresponding land use pattern.

From Figure 1, we find that, non-residential activities are highly concentrated on the Dhaka-Mymensingh road, Kemal Ataturk Avenue and Road no.-11, which are the Arterial Roads of Banani R/A. Adjacent land use of these roads contain high-rise commercial buildings, banks, offices, educational institution, shopping centres, garments factory, café, restaurant, retail shops, etc. Apart from this, some Collector Roads, i.e. Road-1, Road-2, Road-4, Road-6, Road-10, Road-12, Road-18, Road-27 and some Local Roads i.e. Road-5, Road 7, Road-17, Road-21 are highly occupied by non-residential activities. Besides this, non-residential activities are observed in a scattered manner in several residential roads of the Banani area. The gradual invasion of non-residential activities into the residential environment changed the total residential character of Banani residential area.

Source: Land use survey by the Author, 2016.

**Figure 1: Land Use Map Showing Selected 16 Pedestrian Vibrant
Roads of Banani Residential Area.**

UNIQUE PATTERN OF PEDESTRIAN MOVEMENT

The walkways of the Banani residential area remain vibrant with pedestrians from early morning till night, due to the presence of diversified land use pattern. From field observation and land use survey it has been found that, pedestrian movement pattern of Banani Residential Area is rigorously influenced by the land use pattern and the location of the connecting transportation. From observation and pedestrian count, we find that, a lot of people walk in the walkways of the Banani residential area (Figure 3). From observation we find that, a number of roads in Banani (road 1, 2, 4, 5, 6, 7, 8, 10, 11, 12, 14, 17, 18, 21, 23 and 27) remain vibrant with frequent pedestrian movement(mostly non-resident pedestrians), while there are roads with hardly any pedestrian movement. And pedestrian movement pattern in Banani R/A basically follow the ranking order of road network of the study area except for a few exceptions (i.e. Banani road no. 5, Local Road).

Pedestrians seen in the Banani 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 2).

Source: Questionnaire survey by Author, 2016
Figure 2: Popular Mode of Transport used by the Pedestrians as Part of the Movement Route.

From questionnaire survey we find, diversified characteristics of pedestrian movement scenario in Banani 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 walk ability pattern of the pedestrians; for which, we find, huge amount of pedestrian movement in non-shaded rough walkways, whereas there exist smooth and shaded walkway with hardly any pedestrian movement.

Source: Field Survey, January 2016

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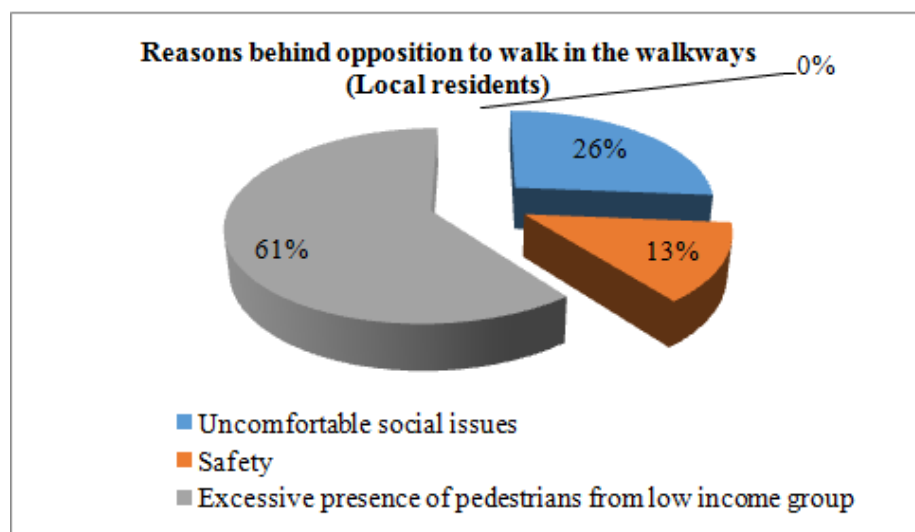

Figure 4: Pedestrian Movement Scenario in Banani R/A.

From findings of the field survey (through pedestrian count and questionnaire survey), it is evident that, throughout the study area (Banani residential area) mostly non-residents (93%) and a very few amount of local residents (7%) walk in the walkways. Due to some 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. Basically, pedestrian movement pattern of Banani residential area follow the land use pattern and location of the connecting transport mode (as, non-resident people are the majority of the pedestrians, who walk basically as a part of their total movement route). Even, the limited number of local pedestrians (Local residents) seen in the walkways of the study area walk mainly to reach the nearby transport hub or to avoid traffic congestion or due to unavailability of their personal vehicle at that specific time (Figure 5). Again, from questionnaire survey it has been found that, usually the local residents do not prefer to walk in the walkways of the study area due to uncomfortable social issues, lack of safety and excessive presence of pedestrians from low income group (Figure 6).
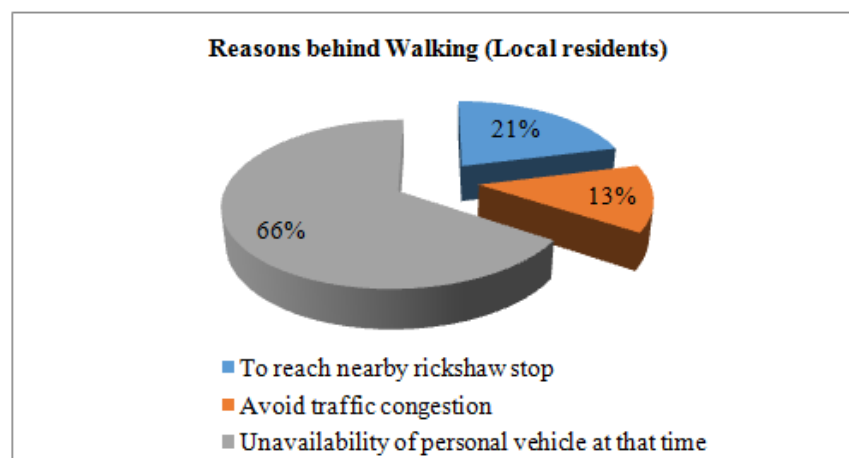
Source: Questionnaire Survey by Author

Figure 5: Reasons Behind Walking (Local Residents) in the Gulshan-Banani R/A.

Source: Questionnaire Survey by Author, 2016

Figure 6: Reasons Behind Opposition to Walk (Local Residents) in the Gulshan-Banani R/A.

Pedestrian movement pattern in Banani R/A is distinctive in its type. Most of the pedestrians seen to walk on the walkways of the Banani 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 Banani 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 Banani residential area; rather they are satisfied. While, local pedestrians (local residents) are more concerned about the social issues rather than physical condition of walkways in the Banani residential area. As a result, we find diversified characteristics of pedestrian movement scenario within the study area (Banani 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 mainly by the non-resident pedestrians), whereas there are smooth and shaded walkways with no pedestrians at all. Basically, Pedestrian movement in Banani R/A follow the land use pattern and location of the connecting transportation mode of the city grid.

PEDESTRIAN MOVEMENT ASSOCIATION WITH LAND USE

There is a strong association between the movement pattern and land use in the Banani residential area. In recent years, with the growth of the city grid, the road network of Banani residential area generated greater accessibility along the Secondary Arterial Roads (Kemal Ataturk Avenue and Banani Road 11) of the study area and transformed the land use pattern there. Gradually the land use adjacent to the Collector Roads of the Banani 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 Banani residential area. As a result, the walkways adjacent to the Secondary Arterial Roads, Link Roads, Collector Roads and a few Local Roads of the Banani residential area are found with high rate of pedestrian movement. Thus, pedestrian movement pattern of Banani Residential Area is rigorously influenced by the land use pattern.

CONCLUSIONS

Pedestrian movement scenario in Banani R/A is significantly different from most of the planned residential areas of the city. Hence, it is important to encourage local residents as being pedestrian in this once planned-upscale residential area of Dhaka, in order to ensure live ability of this area. Findings of this research 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 walk able perspective. This study, therefore, has greater potential to contribute to urban design strategies for future development of walkways in the planned residential areas of the city.

SALUTATION

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