

A Study on Development Trend of Tejgaon Industrial Area

Anutosh Das¹, Afsana Haque², Md. Abdus salam³ and Sk. Abu Taher⁴

Abstract

Development of Tejgaon was started during 1950s by Public Works Department (PWD) as an industrial area. The first Master Plan of Dhaka (1959) also supported industrial development in Tejgaon. Later in 1968, the then DIT (Dhaka Improvement Trust) planned Tejgaon as light industrial area. After liberation, Tejgaon became the major attraction for immense industrial activity to meet the ever increasing demand of growing population and found its location in the core of the city from the peripheral location as designated in 1959 master plan. Incessant changes in land uses have altered the physical characteristics of the area from the state as it was designed by Dhaka Improvement Trust (DIT) in 1968. Recently government of the People's Republic of Bangladesh has taken a decision to develop the area as a commercial cum residential hub. Therefore this research intends to explore development trend of Tejgaon industrial area mainly from land use perspective. Based on plot level data it studies existing land value, ownership pattern of 430 plots of Tejgaon industrial area. Structure type and height on these plots, floor wise space uses are also analyzed.

Development trend of the study area is investigated by means of information like growth of major land uses in the study area, change in land use pattern, structure type and structure height within the plots, change in ownership pattern and land value. This research can act as a base line study for future development plan related to the study area.

Keywords: Land use information, Land use change, Ownership pattern, Development trend, Development plan.

1. Introduction

Dhaka city has experienced significant urban growth during last fifty years. Land uses have undergone a massive unplanned development since the liberation war of Bangladesh in 1971. The rapid growth of population and increasing demand for better livelihood act as a major propelling force for this unplanned development. This resulted in outward expansion of Dhaka city toward its peripheral vicinity. Eventually Tejgaon become the major attraction for immense industrial activity to meet the ever increasing demand of growing population and finds its location in the core of the city from the peripheral location as designated in 1959 master plan of Dhaka city (Khan *et al*, 2005). Incessant changes in land uses have altered the physical characteristics of the area from the state as it was designed by Dhaka Improvement Trust (DIT) in 1968 (Oakil and Sharmeen, 2007). Such development eventually has created land use conflicts due to insufficient capacity in terms of emerging demand of goods for ever increasing population. Furthermore it has attracted different non-industrial uses like residential, commercial, office etc with a wider variation of people living and working there (RAJUK, 2004).

¹ Postgraduate student, Department of Urban and Regional Planning, Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh, E-mail: anutoshbuet@gmail.com

² Associate Professor, Department of Urban and Regional Planning, Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh, E-mail: afsanahaque@urp.buet.ac.bd; e_haque2@yahoo.com

³ Postgraduate student, Department of Urban and Regional Planning, Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh, E-mail: salam_buet@yahoo.com

⁴ Postgraduate student, Department of Urban and Regional Planning, Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh, E-mail: taher.buet@gmail.com

According to the latest Detailed Area Plan (DAP), gazetted in 2010, one of the major hindrances behind the improvement or expansion of Tejgaon industrial area is the constantly changing land use of this city core. The DAP suggests that industrial use may exist in the planned segment of the area with further subdivision of medium weight industrial plots and commercial use may be allowed in place of light industries with conversion fees. There is also an additional proposition that if possible then this industrial area should be relocated outside the boundary of Group-C area of the Detailed Area Plan (DAP) and the area should be kept as an extension of Kawran Bazar for future commercial cum office zone or a large scale open space cum recreation zone (RAJUK, 2004). The research work of Khan *et al* (2005) also supports the proposals made in the DAP as the commercial use of the study area had been increasing rapidly from 2000 whereas the industrial development had gradually declined thereby. The government of the People's Republic of Bangladesh has recently decided to turn the entire Tejgaon industrial area along with its major roads into a commercial as well as residential district through a comprehensive master plan (The Daily Star, 2014).

In contrast nowhere in the master plan of Dhaka city or DMDP structure plan, urban area plan or DAP there exists a single government policy or proposal to develop or plan residential use in Tejgaon industrial area. Rather the literature supports the emerging commercial use in the place of light industries in the study area (Khan *et al*, 2005). So in this circumstance this research aims to prepare an existing land use inventory and investigate the development trends of Tejgaon industrial area based on land use variables.

2. Literature Review

Industrial location plays an important role in shaping the pattern of economic development of an area. It also influences the trend and regional development of the area. Industrial location largely depends on factors like transport, labor, agglomeration and market (Losch, 1954). These factors can broadly be divided into two categories. They are physical and socio-economic factors (Khan, 1996). "Land in its natural and urban states is both an input to and a product of the planning process. It represents potential opportunity for social and economic mobility, urban change and growth pattern of an area" (Edward *et al*, 1995, pp. 196-197). According to Alphan (2003), change in land use can also shape the direction of development of an area. Under this condition as this research tries to investigate the change in land use pattern in Tejgaon Industrial area through different factors, literature from home and abroad amalgamate them as the basis of identifying the change in land use pattern of this area.

There exist a number of perspectives that must be recognized to prepare a complete land use information of an area. Among them location, area of the plot and ownership pattern are major identifying characteristics of land parcel. Building type, ground coverage, number of stories and floor area are for identifying the structural characteristics of the plot and existing use, number of units per floor etc. are some indicators of space use (Edward *et al*, 1995). Factor like structural heights indicates the commercial development (Oakil and Sharmeen, 2007) whereas change in land price of an area can bring change in the structural condition. In Japan, sites with utility services and higher land price are the major choice of the developers to develop residential apartment (Ministry of Land, Infrastructure and Transport, 2007). Ownership pattern can largely persuade the land price and structural height of an area and however the best method of evaluating land price of an area is to compare between the ownership pattern and the land price for each plot (Darin-Drabkin, 2013).

3. Research Methodology and Data

The 500 acres of Tejgaon industrial area with around 430 plots is the study area of this research. The base map of the study area is collected from the research work of Khan *et al* (2005) and updated during field survey in April, 2015. The required data is collected both from primary and secondary sources by means of questionnaire survey, checklists and/or literature works subsequently. Primary data collection includes land use information of the plots and people's perception regarding development of the site. Secondary information includes preceding land use pattern, structure type and structure height of the study area. Data was collected on weekdays. Land use inventory of the study area includes information on characteristics of land parcel as plot size, ownership and market value of the plot. Detail information on existing structures including structure type, ground coverage, number of stories, number of units at each floor, area and use of each unit or floor were also incorporated in this inventory. The wide spread practice of creating land use information of an area includes these explanatory variables. Literatures also strongly support the use of these variables in the preparation of existing land use inventory of Tejgaon industrial area. For collecting land use information each of the 430 plots of the study area is surveyed through physical survey in April, 2015. Land ownership and market value of the plots were collected by surveying corresponding owner or the caretaker of the lands. Market value of the plots is verified by interviewing key informants as Ward Commissioner of this area. The secondary database primarily serves as an important basis for already studied information related to the research work. The study of Khan *et al* (2005) was acted as a key source of secondary database for this research. The required database was also collected from Dhaka City Corporation including land use information of Dhaka city in the period of 2009.

Most of the primary database was used to prepare land use profile of the study area. This profile helps to identify the scale of existing development pattern of the study area. Development trend of the study area is investigated by means of information like growth of major land uses as commercial and industrial one in the study area, change in land use pattern and structure height within the plots. These variables under consideration truly represent the trend of development of an area to a great extent. Appropriation of these variables for the exploration of development trend of an area is strongly supported by relevant literature works both in home and abroad. Different statistical tool were used for the analysis of the data including frequency distribution, trend line analysis, co-relation analysis and cross tabulation between relevant variables. Co- relation analysis is conducted to test the correlation among variables for further proper and scrutinized interpretation of analysis outcomes.

4. Results and Discussion

4.1. Tejgaon Industrial Area at a Glance

Tejgaon industrial area is a part of Tejgaon Thana which is located between 23°25' north latitudes and 90°25' east longitudes. This area is under ward number 24 of Dhaka North City Corporation. It is bounded by Mahakhali Gulshan Road on the north, Begunbari area on the South, Begunbari Khal On the East and Dhaka-Tongi rail line on the West (Banglapedia, 2015). It has a total population of around 14,6732 (BBS, 2011). The total area of the Tejgaon industrial area is about 500 acres along with nearly 430 plots in it. Area for each plot is about 1.16 acres (Khan *et al*, 2005).

4.2. Land Use Perspective

4.2.1. Existing Land Use Pattern of Tejgaon Industrial Area

The findings from the study of Foth and Dyke (2000) support that land use analysis is a means of broadly analyzing how land is being used and land use pattern based on area can analyze the impact of a land use in an area more exactly than the pattern based on plot distribution (Matisovs, 2011).

Existing land use pattern of Tejgaon industrial area is analyzed both by means of distribution of number of plots and total floor area occupied by different land use categories. The following table (Table 1) exhibits existing land use pattern of Tejgaon industrial area. The plots with a mix of different land uses are categorized as a single distinctive use based on the priority of a single use within the plot. If a distinctive land use within a plot exceeds at least fifty percent of total land use then the land uses of the plot is categorized as per that distinctive land use.

Table 1: Land use pattern of the study area

Land use category	Number of plots	Total occupied floor area (in acres)
Commercial	147	152
Industrial	141	209
Institutional	61	64
Residential	61	61
Service Category	20	14
Total	430	500

Source: Authors' Field Survey, 2015.

The analysis reveals that a significant proportion of existing land uses in Tejgaon industrial area are constituted by the industrial and commercial land use but the result is somehow incongruous in between land use pattern based on number of plots and total floor area occupied. The total number of commercial plot exceeds the number of industrial plot in this area. But the total plot area covered by the industrial land uses is higher than the commercial one. Commercial developments within this area are mainly encouraged by vertical expansion and thereby less plot area are occupied than the industrial one. As a result the impact of the industrial activities in Tejgaon industrial area is greater than those of commercial activities. Residential development in this area is still not prominent in this area.

Further detail categorization of land uses within each major land uses of the area as commercial, industrial, residential, institutional reveals that three major industrial land uses dominates the total industrial establishment within the study area namely chemical, pharmaceuticals, garments industries. Garment industries constitute the major share as there exists many bulky garment industries like Brothers garments, Urmi garments; Alam garments etc. Commercial developments are mainly vertical and less plot area is required than the industrial one. Major commercial activities of Tejgaon industrial area (TIA) consists of bank, automobile showroom, export oriented business, printing press, retail shop etc. Some major governmental printing press largely adds to the area covered by the commercial use. Recent development trend of Tejgaon encourages establishment of different types of export oriented business offices. Orion groups, Rangs groups, HNS group like all high class business groups' have established their corporate offices in Tejgaon industrial area. Most of

the residential land uses within the area is located adjacent to the Hatirjheel lake along Hatirjheel-Gulshan link road. The spatial distribution of different land uses within this area is exhibited in figure 1.

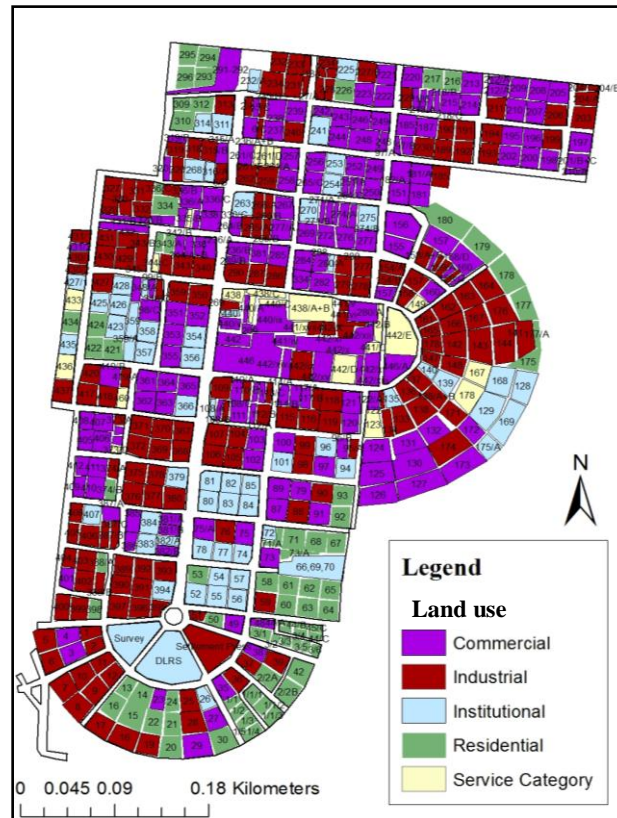


Figure 1: Existing land use pattern of Tejgaon Industrial Area

Source: Authors' Field Survey, 2015.

4.2.2. Existing Land Use information of Tejgaon Industrial Area

The descriptive statistical analysis of different variables associated with land uses provides a clear perception of existing land use information of the study area. Table 2 represents the descriptive statistics of the relevant variables representing existing characteristics of land parcel and structures within the study area.

Table 2: Descriptive Statistics of different variables associated with land use

List of variables	Minimum	Maximum	Mean	Std. Deviation
Size of the plot (Measurement Unit-Katha)	.50	200	20.40	19.62
Ground coverage (Measurement Unit-Katha)	.50	90	14.94	12.01
Number of stories	1.00	20.00	4.11	3.08365
Number of unit at each floor	1	8	1.88	1.01
Area of each unit (Measurement Unit- Katha)	.25	112.5	9.61	10.22

Source: Authors' Field Survey, 2015.

From the analysis it is found that there exists a large variation in size of the plot in the study area which varies between .5 katha to 200 katha. The average size of the plot is about twenty katha. Whereas average ground coverage of plots is about fifteen katha which implies that on an average about seventy percent space of any plot is utilized by the structures built on it. The distribution of plots on the basis of area along with its land uses is exhibited in Table 3.

Table 3: Relationship between plot size and land use of the plot in 2015

			Land use of the plot in 2015				
			Residential	Institutional	Commercial	Industrial	Service category
Plot size (measurement Unit-katha)	0-4	% within plot size	38.9%	11.1%	36.1%	11.1%	2.8%
	5-14		21.9%	15.9%	36.4%	20.5%	5.3%
	15-25		9.4%	10.4%	27.4%	44.3%	8.5%
	25-50		2.1%	14.4%	26.8%	51.5%	5.2%
	>50		0.0%	29.6%	18.5%	44.4%	7.4%

Source: Authors' Field Survey, 2015.

The analysis reveals that most of the average (around twenty katha) and over sized plots (greater than fifty katha) are occupied by the industrial land uses within the study area. The size of the plots with most of the commercial and residential land uses varies between zero to fourteen katha. The residential land uses within the study area mainly occupies small sized plots within the study area. Structure height within the study area varies between one storey to twenty stories and average heights of buildings are of four storied. The existing distribution of buildings on the basis of structure height is exhibited in Figure 2.

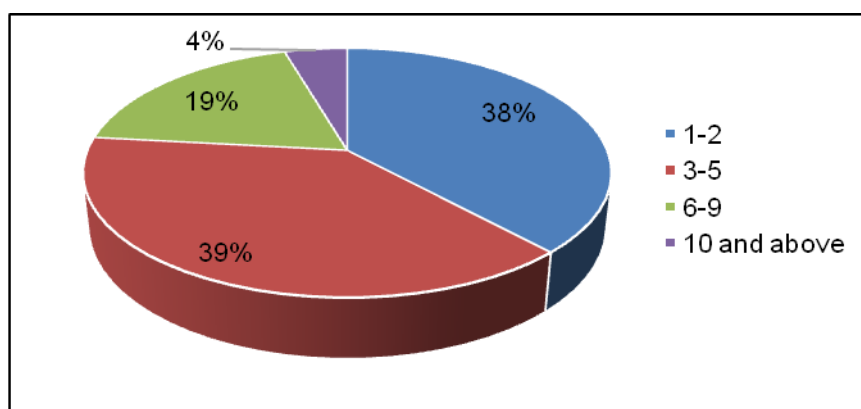


Figure 2: Distribution of existing building of different height (number of stories)

Source: Authors' Field Survey, 2015.

Most of the existing buildings in the study area are under five stories. There exist a few proportions of high rise buildings in the study area. The buildings with height of eleven stories or above are considered as high rise buildings as per the final draft of Bangladesh National Building Code (BNBC-2014) (The Financial Express, 2014). A further detail analysis of relationship between structure height and land use is shown in Table 4.

Table 4: Relationship between number of stories and land use of the plots in 2015

			Land use of the plot in 2015				
			Residential	Institutional	Commercial	Industrial	Service category
Number of stories	1-2	% within Number of stories	4.4%	12.6%	45.3%	31.4%	6.3%
	3-5		22.4%	18.6%	19.3%	32.3%	7.5%
	6-9		22.2%	11.1%	17.5%	44.4%	4.8%
	10 and above		1.7%	6.6%	11.6%	9.7%	0.0%

Source: Authors' Field Survey, 2015.

The crucial analysis of these variables demonstrates that most of the buildings commercial and industrial land uses within the study area are of high rise categories. The height of structures with residential, institutional and service category land uses mainly varies between single to nine stories.

4.2.3. Existing Ownership Pattern and Relationship With Ownership of the Plots

The ownership pattern of Tejgaon industrial area is of paramount importance for effective analysis of trend of land use change in this area. Different literatures suggest that ownership pattern highly influence the variables that are indicators of development trends of an area. For the purpose of the study the ownership of different types of land uses in Tejgaon industrial area is categorized into four distinct classes namely "Private individual property", "Private group property", "Leasehold property" and "Government or khas land". This analysis helps to identify clearly the explicit ownership pattern of existing different land use categories of Tejgaon industrial area (Figure 3).

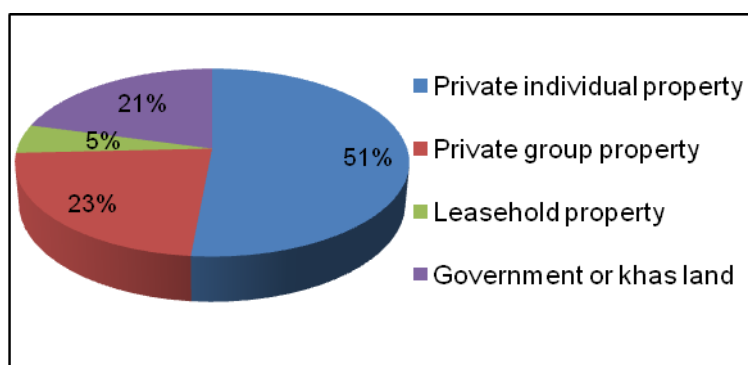


Figure 3: Existing ownership pattern of land in Tejgaon industrial area (on the basis of number of plot)

Department of Urban & Regional Planning
Source: Authors' Field Survey, 2015
Jahangirnagar University, Dhaka 1342, Bangladesh

From the analysis it is found that “Private individual property” constitutes significant proportion of the existing ownership of different land uses in this area (about 50 percent of the total ownership) whereas both “Private group property” and “Leasehold property” contributes approximately equal proportion. The share of “Leasehold property” is quite diminutive in this area. A further detail analysis regarding the existing land uses and the ownership of the corresponding plots of Tejgaon industrial area seeks to identify the crucial relationship between these two variables (Table 5).

Table 5: Relationship between Land use and Ownership of the plots in 2015

			Ownership of the plot in 2015			
			Private individual property	Private group property	Leasehold property	Govt. property or khas land
Land use of the plot in 2015	Residential	% within Land use of the plot in 2015	70.7%	6.9%	5.2%	17.2%
	Institutional		23.0%	8.2%	1.6%	67.2%
	Commercial		56.6%	27.1%	7.8%	8.5%
	Industrial		49.3%	36.1%	2.1%	12.5%
	Service category		16.7%	8.3%	37.5%	37.5%

Source: Authors' Field Survey, 2015.

The analysis reveals that most of the residential, commercial and industrial land uses of this area are under private ownership. Institutional land uses mainly falls under government ownership. In case of service category land uses both private owner and government ownership constitutes the equal proportion.

4.2.4. Land Price Distribution in Tejgaon Industrial Area

An important findings of the study of Darin-Drabkin (2013) is that land price can reveal a more exact pictures of existing development trends of an area. The price of the plots in Tejgaon industrial area varies between thirty lakh to ninety lakh BDT per katha unit. From the analysis of land price distribution in Tejgaon industrial area (Figure 4) it is found that most of the market price of land in Tejgaon industrial area varies between fifty four lakh to sixty five lakh BDT per katha and covers maximum proportion of Tejgaon industrial area.

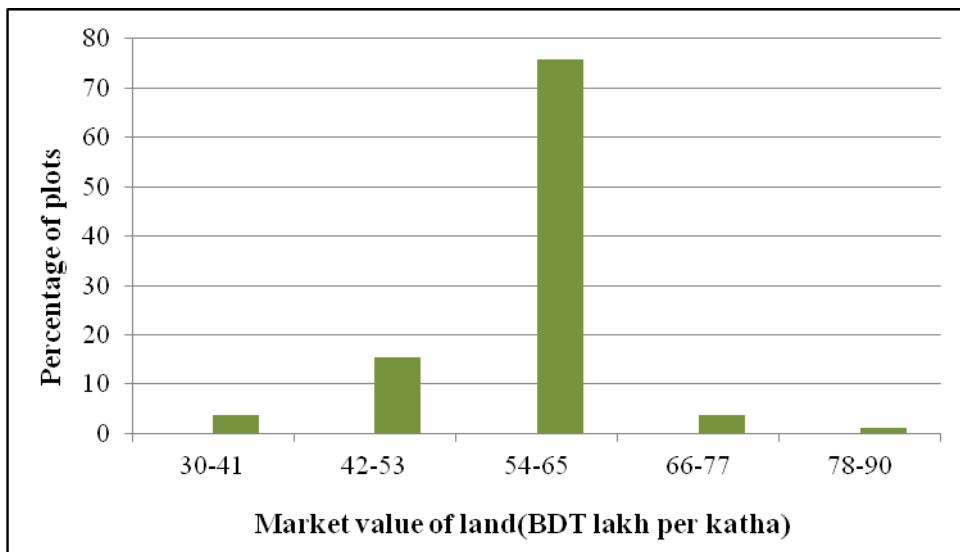


Figure 4: Distribution of plots according to land price in Tejgaon industrial Area

Source: Authors' Field Survey, 2015.

To analyze the spatial variation among different categories of market price of existing plots in Tejgaon industrial area, the price of the lands are exhibited in Figure 5. The highest priced plots in this area (mostly commercial and industrial plots) are situated at first row on both sides along Shaheed Tajuddin Ahmed Avenue which is a four lane major thoroughfare passing through the centre of Tejgaon industrial area. Better loading and unloading facility and good connectivity contribute largely to this high land price due to close proximity to this major thoroughfare.

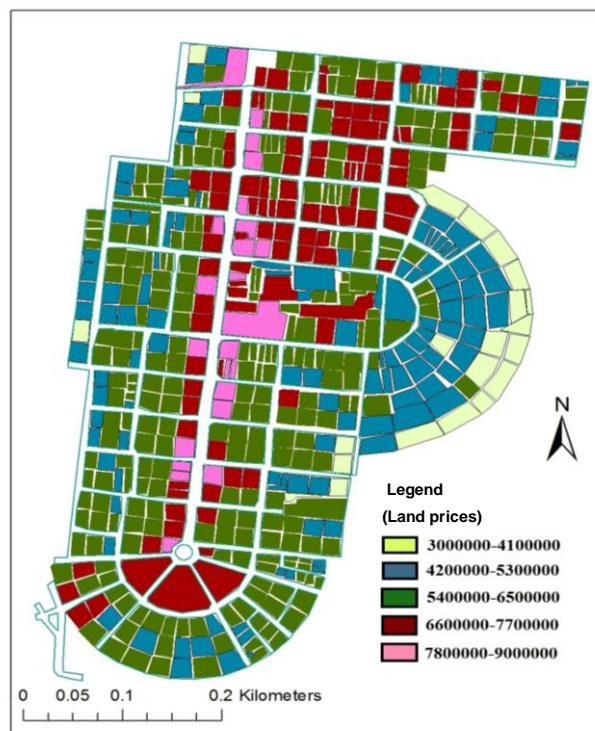


Figure 5: Map Showing Land price of Different Plot in 2015

Source: Authors' Field Survey, 2015.

The land acquisition process in this area deviated in actual scenario from as described in the "Acquisition and requisition of immovable properties ordinance, 1982". The price of plots near Hatirjheel at Kunipara and Begunbari area along Hatirjheel-Gulshan link road is lowest among all other plots in this area. The underlying reason is that formal transfer of ownership of land in this area is not allowed approximately since 2008 when the proposal for Hatirjheel development project was initiated. For this reason the previous market price of land in Kunipara and Begunbari area is considered as the current market price of land. Land price in this zone varies between thirty to fifty three lakh BDT per katha. The information of the land value collected from the word commissioner of Tejgaon industrial area also supports above information (Safi, 2015).

The critical analysis between land use and price of the plots in 2015 (Table 6) reveals that though major proportion of the unit prices (per katha) of plots with commercial, industrial, residential and service category land use category varies between fifty four to sixty five lakh taka, most of the highest price plots in the study area are occupied by commercial land use. The maximum proportion of minimum priced land (price varying between thirty to forty one lakh BDT per katha) of the study area is under residential land uses.

Table 6: Relation between Land use and price of the plot in 2015

			Land use of the plot in 2015				
			Residential	Institutional	Commercial	Industrial	Service category
Price of plot (In lakh BDT)	30-41	% within Price of plot	75.0%	0.0%	12.5%	12.5%	0.0%
	42-53		23.4%	10.9%	37.5%	23.4%	4.7%
	54-65		12.7%	15.8%	25.0%	39.6%	7.0%
	66-77		0.0%	18.8%	75.0%	6.2%	0.0%
	78-90		20.0%	20.0%	40.0%	20.0%	0.0%

Source: Authors' Field Survey, 2015.

4.3. Development Trend of Tejgaon Industrial Area

4.3.1. Growth of Industrial and Commercial Land Uses

In 1948, a typical industrial area is developed in the fallow land of Tejgaon in the jurisdiction of East Pakistan Planning Sub-Committee. The development trend of Tejgaon was mainly industrial and establishment of industries increased up to the period of 2005 (Figure 6). But the recent trend of industrial development is declining due to increased commercial development, relocation of heavy industries, strategies for reduction of pollution etc. As stated in DMDP, being close to the core of Dhaka city Tejgaon attracts numerous commercial activities in this area. Thus there exists an increasing trend of commercial activities and the rate of growth of commercial activities in this area greater than that of industrial one.

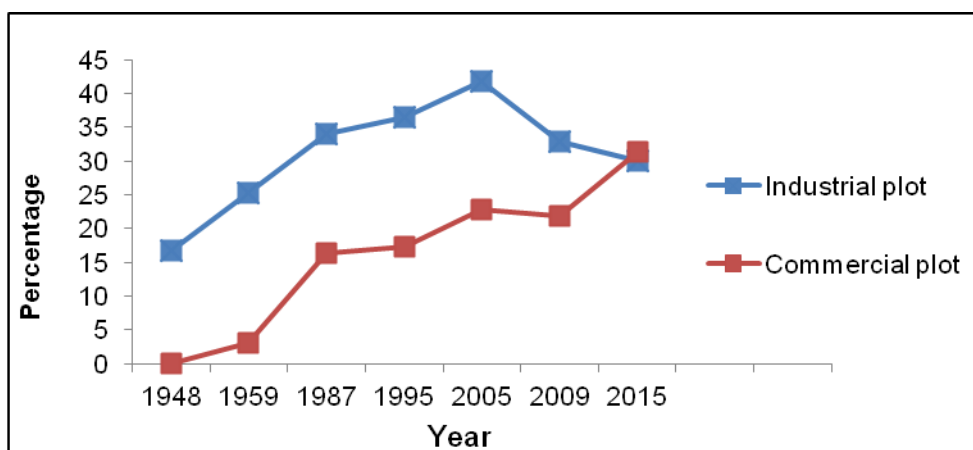


Figure 6: Growth of industrial and commercial land use in TIA

Source: Authors' Field Survey, 2015.

4.3.2. Change in Land Use Pattern of Tejgaon Industrial Area

Change in land use pattern in Tejgaon industrial area between 2005 and 2015 has been exhibited by means of analysis of relationship between land uses of this area for the relevant two years under consideration (Table 7). Very diminutive or no variation is exhibited in the analysis findings of changing land use pattern by means of total number of plots or total floor area occupied by different land uses. This analysis has only been possible for the plots whose present holding number matches that of in 2005 year period (Khan *et al*, 2005). About 85 percent of the holding number of the present plots matches the holding numbers of the relevant plots of Tejgaon industrial area in 2005.

Table 7: Change in land use of the plots in TIA between 2005 and 2015

% within land use of the plot in 2005 = A			Land uses of the plot in 2015					
% within land use of the plot in 2015 = B			Residential	Institutional	Commercial	Industrial	Service category	
Land uses of the plot in 2005	Residential	A	35.0%	10.0%	30.0%	25.0%	0.0%	
		B	53.8%	11.1%	11.1%	9.4%	0.0%	
	Institutional	A	0.0%	29.4%	47.1%	17.6%	5.9%	
		B	0.0%	27.8%	14.8%	5.7%	16.7%	
	Commercial	A	7.7%	7.7%	61.5%	7.7%	15.4%	
		B	7.7%	5.6%	14.8%	1.9%	33.3v%	
	Industrial	A	5.4%	9.7%	34.4%	47.3%	3.2%	
		B	38.5%	50.0%	59.3%	83.0%	50.0%	
	Service category	A	0.0%	100.0%	0.0%	0.0%	0.0%	
		B	0.0%	5.6%	0.0%	0.0%	0.0%	
	Total			11.5%	10%	37.5%	36.8%	4.2%

Source: Khan *et al*, 2005; Authors' Field survey, 2015

From the analysis it is found that major changes has occurred in commercial and industrial land uses of the area between the 2005 and 2015 year period. In 2005, Industrial land use constituted major portion of the total land uses (64.6%). But in 2015 a massive change has been noticed in the land use of Tejgaon industrial area. At present commercial and industrial land uses constitute major portion of the area and approximately both contribute equal proportion. Most of the industrial and institutional land uses that existed in 2005 have been converted into commercial land uses by the period of 2015. A clear indication of this continuing trend of shift of industrial land uses to mainly commercial, residential and other uses for the last few decades is also exhibited in the study of Khan et al (2005). The study of Oakil and Sharmeen (2007) also identified that Tejgaon industrial area as a major industrial hub gradually losing its typical characteristics due to the unplanned development. Heavy industries were shifted and commercial activities were increased in last two decades. Most of the industrial plot is now being converted into commercial use.

Figure 7 and Figure 8 exhibit the land use pattern of Tejgaon industrial area in the year of 2005 and 2015 subsequently and hence a provide a basis for the analysis of the land use change in this area within 2005 to 2015 year period.

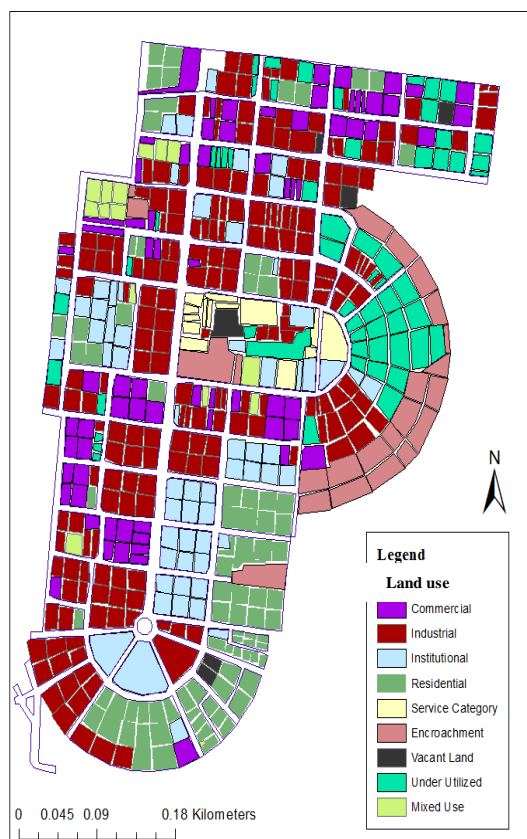


Figure 7: Land use map of TIA in 2005
Source: Khan *et al.*, 2005

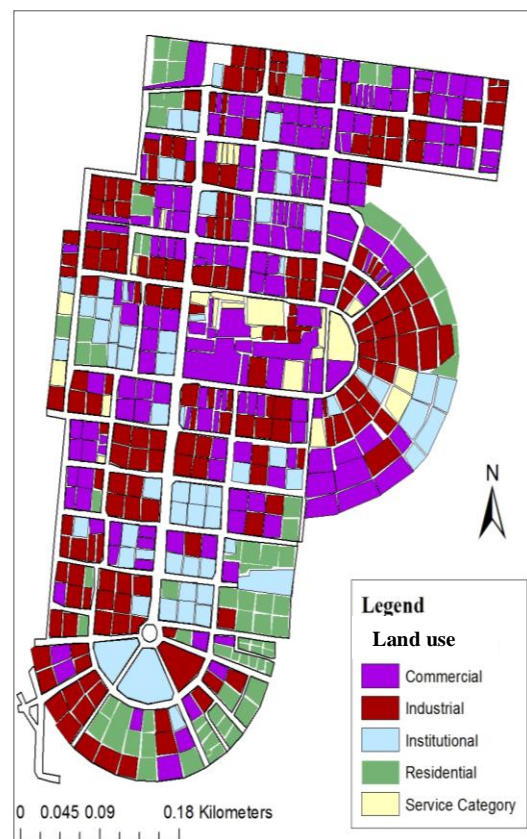


Figure 8: Land use map of TIA in 2015
Source: Authors' Field Survey, 2015

4.3.3. Change in Structure Height between 2009 and 2015

The analysis demonstrates that the proportion of high rise building has increased in the Tejgaon industrial area than that of in the period of 2009 (Figure 9). According to the final draft of Bangladesh National Building Code (BNBC-2014), the buildings with a height of eleven stories or more has been redefined as high-rise building against the previous consideration of buildings with a height of more than six stories as high-rise building in Bangladesh National Building Code (BNBC-2006) (The Financial Express, 2014; BNBC, 2006). In this research the existing buildings with height of eleven storeys' or more are termed as high rise buildings. For the buildings in 2009 the definition of high rise buildings as per Bangladesh National Building Code-2006 is considered.

The proportion of high rise buildings in comparison to other buildings was larger in 2009 than that of in 2015. With continuous rapid development there exists a rising trend of high rise building in Tejgaon industrial area. The basic reason behind this is that the location of the Tejgaon industrial area at the core of Dhaka city accompanied with city scale better connectivity and accessibility. Increasing trend of commercial development in the area also contribute greatly in this regard.

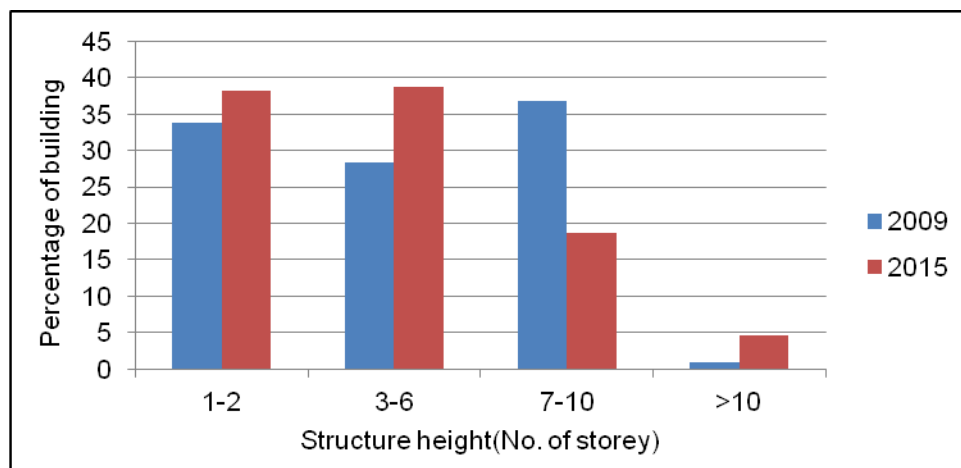


Figure 9: Change in structure height in Tejgaon Industrial area

Source: Authors' Field Survey ,2015

4.3.4. People's perception regarding development of the site

From the analysis (Figure 10 and Figure 11) of awareness of people of Tejgaon industrial area regarding the recent government decision of changing the present state of the area into a commercial cum residential hub it is found that most of the people are not aware and informed about this decision. Most of the people who are informed of the decision have known this by means of newspaper or information from other people. This reveals that newspaper and mass media have performed an effective role in disseminating this government decision among people. Social media also contributes to this process of information dissemination among local people.

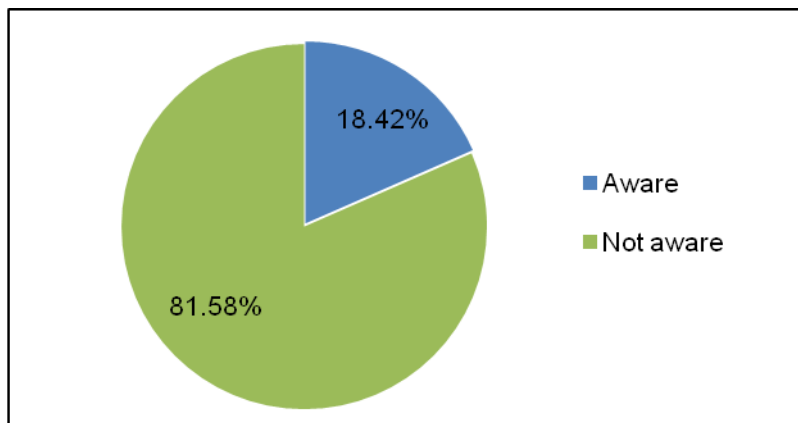


Figure 10: Awareness of the people about the recent government decision
Source: Authors' Field Survey ,2015

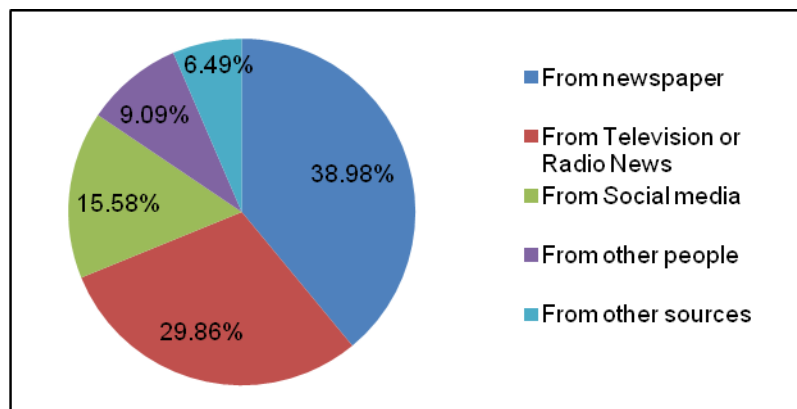


Figure 11: How the aware people informed about the decision
Source: Authors' Field Survey, 2015

5. Major Findings of the Study

The recent development trend of Tejgaon industrial area exhibits a rigorous shift from intensive industrial development to growing commercial establishment followed by a subsequent mixed use development. There exists an emerging trend of commercial uses in the place of industrial activity and the rate of growth of commercial activities in this area greater than that of industrial one. A little or no variation is observed in the proportion of residential and service category land uses in this area.

A significant change is also observed in prospect of ownership pattern of land of this area. At present private property constitutes about half of the different land uses in this area and the share of "Leasehold property" is quite diminutive in this area. Most of the residential, commercial and industrial land uses of this area are under private ownership. A significant portion of industrial land uses are also group property.

The price of the plots in Tejgaon industrial area varies between a wide range and the average price of land is quite high in this area comparing to other areas of Dhaka city. Most of the highest price plots in the study area are occupied by commercial land use. The maximum proportion of minimum priced land (price varying between thirty to forty one lakh BDT per katha) is under residential land uses.

With continuous rapid development there exists a rising trend of high rise building in Tejgaon industrial area because of its location in the core of Dhaka city. There also exists a large variation in size of the plots in the study area. As land price is considerably high in this area, major portion of a plot is utilized by the structures built on it. The residential land uses within the study area mainly occupies small sized plots. Most of the average (around twenty katha) and over sized plots (greater than fifty katha) are occupied by the industrial land uses within the study area. Furthermore most of the people of this area are not aware and informed about the government decision of changing the present state of the area into a commercial cum residential hub.

6. Conclusion

Tejgaon was planned as an industrial area in 1968 to have a great contribution to the national GDP and thus improving the overall national economy. But gradually due to excessive pressure of ever growing population and their increasing demand, absence and enforcement of proper land use control the physical characteristics of this area has changed a lot from the state as it was designed by Dhaka Improvement trust (DIT) in 1968 . As a consequence the location of such an industrial area is quite not justifiable in the core of Dhaka city which as indicated in the DMDP Detail Area Plan (gazetted in 2010).

Again the study recognized a growing trend of commercial activities in Tejgaon industrial area. At present private property constitutes major share of different land uses in this area. The study of Darin-Drabkin (2013) suggests that land price varies depending on the ownership pattern of the area. If the share of private property in any area exceeds the other one, sometime it is found difficult to incorporate the private sectors in any sort of development planning decision and implementation. As a consequence the major share of private property in the study area can create further obstructions related to any kind of government policy implication connected with this area unless and until strict development control is followed to the land use practice of this area. In the absence of proper development control, the growing trend of commercial development may furthermore results in such development which may deteriorate and more unlikely to collapse the entire cityscape.

This research provides a detail updated information of existing land use and present development trend of this area. Incorporating these information this research can act as a major base line study for future development plan related to the study area and can be very helpful for further policy implications. Furthermore based on study findings the introduction and enforcement of strict development control in context of any existing and further development initiative associated with Tejgaon industrial area to fabricate a better and more livable cityscape can highly be recommended.

7. References

- Alphan, H., Turkey, J. (2003), Land-Use Change and Urbanization of Adana., *Wiley Inter Science* 14, pp. 575–586.
- Banglapedia. (2015) *Tejgaon Industrial Area*. Available at: http://en.banglapedia.org/index.php?title=Tejgaon_Industrial_Area_Thana [Accessed 10 April 2015].
- BBS. (2011) *Population & Housing Census 2011*. Available at: <http://www.bbs.gov.bd/PageWebMenuContent.aspx?MenuKey=337> [Accessed 01 September 2015].

- Bangladesh National Building Code (BNBC-2006). Available at:http://pwd.gov.bd/document/library/BNBC.pdf_2006.pdf [Accessed 7 may 2015].
- Drabkin, H.D. (2013) Land Policy and Urban Growth. *Urban and Regional Planning Series*, 16 (1).
- Edward J. K., David R. G. and Chapin, F.S. (1995) *Urban Land Use Planning(Fourth edition)* University of Illinois Press, Urbana and Chicago.
- Foth and Dyke, V. (2000) Town of Clover land Comprehensive Land Use Plan. Available at: <http://co.vilas.wi.us/landuse/cl-land.pdf> [Accessed 10 April 2015].
- Khan, B. M., Islam, R. M. and Jahan,I.(2005) *Changing land use pattern of Tejgaon industrial area and its impact on surrounding areas* Unpublished BURP thesis, Department of Urban and Regional Planning, Bangladesh University of Engineering and Technology.
- Khan, M.A.R. (1996) *Factors Influencing the Location and Growth of Light Engineering industries in Dhaka City.*unpublished Master's thesis, Department of Urban and Regional Planning, BUET, Dhaka, Bangladesh.
- Losch, A (1956), *Economics of Location*, Yale University Press, New Haven.
- Matisovs, I. (2011) Urban Development Trends In The Latgale Region At The Beginning Of The 21st Century, The 8th International Scientific and Practical Conference Proceedings, 1 (3) , pp.130-138.
- Ministry of Land, Infrastructure and Transport, Japan (2007) *White Paper on Land and Real Property 2007*. Available at: http://tochi.mlit.go.jp/h19_hakusho/chapter1_sec1/setsu_1-1_eng.html [Accessed 7 may 2015].
- Oakil, A.T.M and Sharmeen, F. (2007) Commercialization of Tejgaon Industrial Area, Dhaka: An Environmental Evaluation. *Journal of Environmental Science*, 5 (9), pp. 81-94.
- RAJUK. (2004) *Preparation of Detailed Area Plan (DAP) for DMDP Area: Group-C,RAJUK*. Available at: www.rajukdhaka.gov.bd/rajuk/image/dap/groupC/Chapters_c.pdf [Accessed 23 February 2015].
- Safi, S. (2015) “ward commissioner of Tejgaon industrial area” personal communication at Dhaka.
- The Daily Star. (2014) *Tejgaon to become industrial-commercial-residential area*, published on September 20,2014. Available at:<http://www.thedailystar.net/tejgaon-to-become-industrial-commercial-residential-area-40760> [Accessed 10 November, 2014].
- The Financial Express. (2014) *Final draft of BNBC redefines high-rise from 11th storey*, published on November 10, 2014, Available at:<http://www.thefinancialexpress-bd.com/2014/11/10/65212> [Accessed 20 November, 2014].