A STUDY ON TREND ANALYSIS OF APARTMENT HOUSING BY PRIVATE DEVELOPERS IN DCC AREA

By

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Thesis approved as to Style and Content by

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Candidate's Declaration

I hereby declare that this thesis has been prepared in partial fulfillment of the requirements for Degree of Master of Urban and Regional Planning by Course and Thesis at the Bangladesh University of Engineering and Technology Dhaka and has not been submitted anywhere else for any other degree.

_____

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Dedicated to
My loving children

Khandaker Tajwar Elmaan

Khandaker Umaer Rushnaan

&

Khandaker Aleena Nawar

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ABSTRACT

The housing situation in Bangladesh has never been satisfactory. The tremendous presence of population in Dhaka, the capital city of Bangladesh, has created housing problem which is very difficult to solve. To accommodate the growing population, both public and private sector are involved in the housing market of Dhaka. In Bangladesh, large scale involvement of private developers in housing sector is a recent phenomenon, although such activities started sometime in 1964. According to Real Estate and Housing Association of Bangladesh (REHAB), at present, there are about 460 developers and at least 420 of them are based in Dhaka city. Over the period, apartment housing by private sector experienced many changes in various aspects such as location of apartment projects, apartment size, plot size, client group, price of apartments etc. Definitely some forces influence these changes and these are carefully considered by private developers, who are basically the decision makers in private sector housing in the city.

In this background, this research is an endeavor to study the trend of apartment housing by private developers in Dhaka. The main focuses of this research are: (i) to study the trend of location of apartment housing in Dhaka since 1990 (ii) to analyze the variation in size and price of apartments in the city (iii) to study the focuses responsible for such changes occurring in the apartment housing sector. Primarily 20 developers were selected on the basis of their experience and volume of works; around 1,000 apartment projects completed by these selected developers since 1990 have been taken as a representative sample for this research. Data on plot size, access road width, apartment size, etc. for the sample projects has been collected from them. To be logical statistically, additional 10 developers have been selected later and a questionnaire survey was mainly conducted on total 30 developers to explore the third focus of the research.

The study faced problems in collecting different information due to unwillingness of disclosing some data by the private developers. Moreover, most of the private developers do not feel necessary keeping record of the handed over projects. Economic perspective is not also covered in this research as it needs separate attention. Resident perspective is very important for understanding the factors behind the demand and supply situation which is considered to be embedded in developers view in this research, this issue needs more

attention. This research had to depend on the publications and seminar papers for the information particularly on price trend.

The study has shown the direction of growth and distribution of apartments in the city. The research has revealed various findings on location aspects such as decreasing plot size, width of access roads, development of smaller apartments, etc. The small plots have been found in unplanned areas which are below 3 kathas in area. Many of the apartment projects have been built in the roads having less than standard 6 metres width. The variation in size and price of apartment units in different location and time has been noticed from which some idea about change in the client group is understood. The driving forces behind such changes in apartment housing sector have been brought out from developers' perspectives. The main driving forces are unavailability of land, high land price, profit by the developers, affordability and increasing housing demand of middle income group, availability of housing loans, etc. A comprehensive understanding from this study of present trend would help the decision makers and planners to formulate policies to deal with the housing issue more cautiously.

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Abbreviation

BBS	Bangladesh Bureau of Statistics
DCC	Dhaka City Corporation
DMDP	Dhaka Metropolitan Development Plan
FAR	Floor Area Ratio
GIS	Geographical Information System
HBFC	House Building Finance Corporation
MGC	Maximum Ground Corporation
PDB	Power Development Board
RAJUK	Rajdhani Unnayan Kartripakkha (City Development Authority)
REHAB	Real Estate Housing Association of Bangladesh
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WASA	Water Supply and Sewerage Authority

Chapter 1: Introduction

1.1 Introduction

Bangladesh is one of the least urbanized countries in the world. Dhaka is the nucleus city of this country and has come to be known as one of the mega cities of the world. The city in 2001 had over 12 million people for the larger conurbation and 6 million people within the central city area (Islam, 2005). According to an Asian Development Bank study, the population of Dhaka city estimated in 1995 was 7.8 millions, ranked as 14th populous city in Asia. But now the mega city is stretching over an area of 1528 sq-km, with a population of 10.7 millions which is expected to rise to 25 millions in 2025 which will rank 4th in Asia. The area of Dhaka Mega city had expanded 17.88 times from its size in the year 1951, over the same time period population had increased 25.09 folds (Islam, 2005).

Urbanization is an outcome of both population growth and rural-urban migration. Dhaka is not an exception is this regard; the quick growth of population of this city has been caused by high rate of in-migration, territorial expansion and natural growth. Dhaka City refers to the area under the jurisdiction of Dhaka City Corporation (DCC). The city had an area of only 125 sq. mile in 1974, which has expanded to an area of about 155 sq. mile in 2008. Several attempts have been undertaken by government to ensure a planned development of this city. In all the development plans, DCC area was given special emphasis because of its immense importance as the core of business, administration and home of major share of population.

The land-man ratio in this country is the lowest and is shrinking at an alarming rate (UNEP, 2001). The rapid growth of population is thus concentrated in the major cities and towns, especially in Dhaka. Huge population in the city is creating demand on housing because it is one of the basic needs of the human being. The housing shortage was estimated in 1991 to be about 3.10 million units, composed of 2.15 million units in rural areas and 0.95 million units in urban areas. The annual population growth rate of the city is 4.34% and the average household size is 4.8 (BBS, 2001). So its generating the demand for 50,000 new houses annually. But average rate of production is only 20,000 units per year (Seraj & Arefin, 2003).

In the light of the prevailing high growth rate of population as well as increasing land value in Dhaka, at present it is quite impossible to buy a piece of land in the city to build a house independently, even for the people from upper income group. The increasing housing demands are being fulfilled essentially by multi-storied apartments, a greater percentage of which are being contributed by the private developers. Apartment projects by private developers are, at present, not only concentrated in the planned locations in the city, rather the development now extended to the unplanned areas too. In such a backdrop, this research is a study on analysis of trend of apartment housing by private developers in DCC area with an aim to discover the key forces behind the changes in this sector.

1.2 Present State of the Problem

The housing situation in Bangladesh has never been satisfactory. Dhaka, the capital city of Bangladesh has a current population of about 12.3 millions (BBS, 2007). Recent data on the population density of the city is 8,036 per sq-km (BBS, 2007). The estimated population of Dhaka City Corporation (DCC) area of 2004 is 8.0 millions and number of holdings exist in DCC area is 1,86,646 within 90 wards (DCC, N. D.). The over volume of population in the city has created housing problem which is very difficult to solve. To accommodate the growing population, both public and private sector are involved in the housing market of Dhaka. People from all socio-economic backgrounds in Dhaka are facing housing problem though the nature and intensity of the problem are different (Seraj and Alam, 1991).

In Bangladesh, large scale involvement of private developers in housing sector is a recent phenomenon, although such activities started sometime in 1964 (Alam, 2007). During 1970s there were fewer than five companies in Bangladesh engaged in this business, but in early 1980s, the apartment projects started flourishing (Jamil and Ahmad, 2006). According to Real Estate and Housing Association of Bangladesh (REHAB), at present, there are about 460 developers and at least 420 of them are based in Dhaka city (REHAB Directory, 2009). Since 1990 private developers handed over about 68,972 finished apartment units of which 7,541 were delivered in the year 2008 (Amin, 2008). Data on number of finished projects is unavailable for the last 20 years, but an idea on delivered projects by the developers can be found from Table-1.1.

Table-1.1: Number of Projects Delivered by REHAB Members (2005-2009)

Year	Number of Projects
2005	320
2006	380
2007	410
2008	370
2009	480
2005-2009	1960

Source: Seraj (Sheltech), 2010

According to some REHAB members and some experienced developers, most of these apartments were constructed by a very few number of private developers, which is not more than 20. Over the period, apartment housing by private sector experienced many changes in various aspects such as location of apartment projects, apartment size, plot size, client group, price of apartments etc. Definitely some forces influence these changes and these are carefully considered by the developers, who are basically decision makers in private sector housing in the city.

Based in the background, this research is an endeavor to study the trend of apartment housing by private developers in Dhaka since 1990. At the beginning, most of the private developers undertook apartment projects in the planned residential areas of Dhaka, but in the recent years many of those have been completed in the unplanned residential areas of the city where road width is narrow and the localities suffer from inadequate community facilities. Thus it would be interesting to investigate the changing trend of location of apartment housing. This research documents the changing trend of apartment projects from spatial and physical planning perspectives as well as the forces changing the location of apartments from planned to unplanned areas will be identified. In case of apartment size and price, change is also visible over the years. Both the developers and clients have contributed towards these changes. This research investigates the variation in client group found in this sector by exploring apartment size and price in different location and time. As private developers play an important role in decision making in apartment housing sector in the city and are better aware of the factors influencing the changes, this research focuses on the perception of developers regarding the choice of location for apartment projects and change in location and size during the last two decades.

1.3 Objectives of the Research

The purpose of this research is to study the driving forces occur the changes in the apartment housing sector by analyzing the trend of apartment projects regarding their location, size and price. This research has the following three objectives:

- To study the trend of location of apartment housing in Dhaka since 1990.
- To analyze the variation in size and price of apartments in the city.
- To study the forces responsible for the changes occurring in the apartment housing sector from developer's perspective.

Outcomes of the study:

The study on trend of apartment housing in Dhaka since 1990 has shown the direction of growth and distribution of apartments in the city. The variation in size and price in different location and time has also been understood from the analysis, which gave some idea about change in the client group as well as demand side. This study also gives some ideas about demands of the clients and the reasons behind these demands. The driving forces behind such change in development have been understood from developers' perspectives. To some extent, the impact of apartment housing on urban fabric has been realized. A comprehensive understanding from the study of present trend would help the decision makers and planners to formulate policies to deal with the housing issue more cautiously.

1.4 Methodology

Methodology describes the procedures to be followed for collection and analysis of the information and data conformation with research. After a long and critical observation of different problems of Dhaka city, one of the prime issues i.e. trend of apartment housing by private developers have been selected as the present research topic. Following research steps were applied to attain the objectives of this research and flow chart is given at page 5 (Fig-1.1).

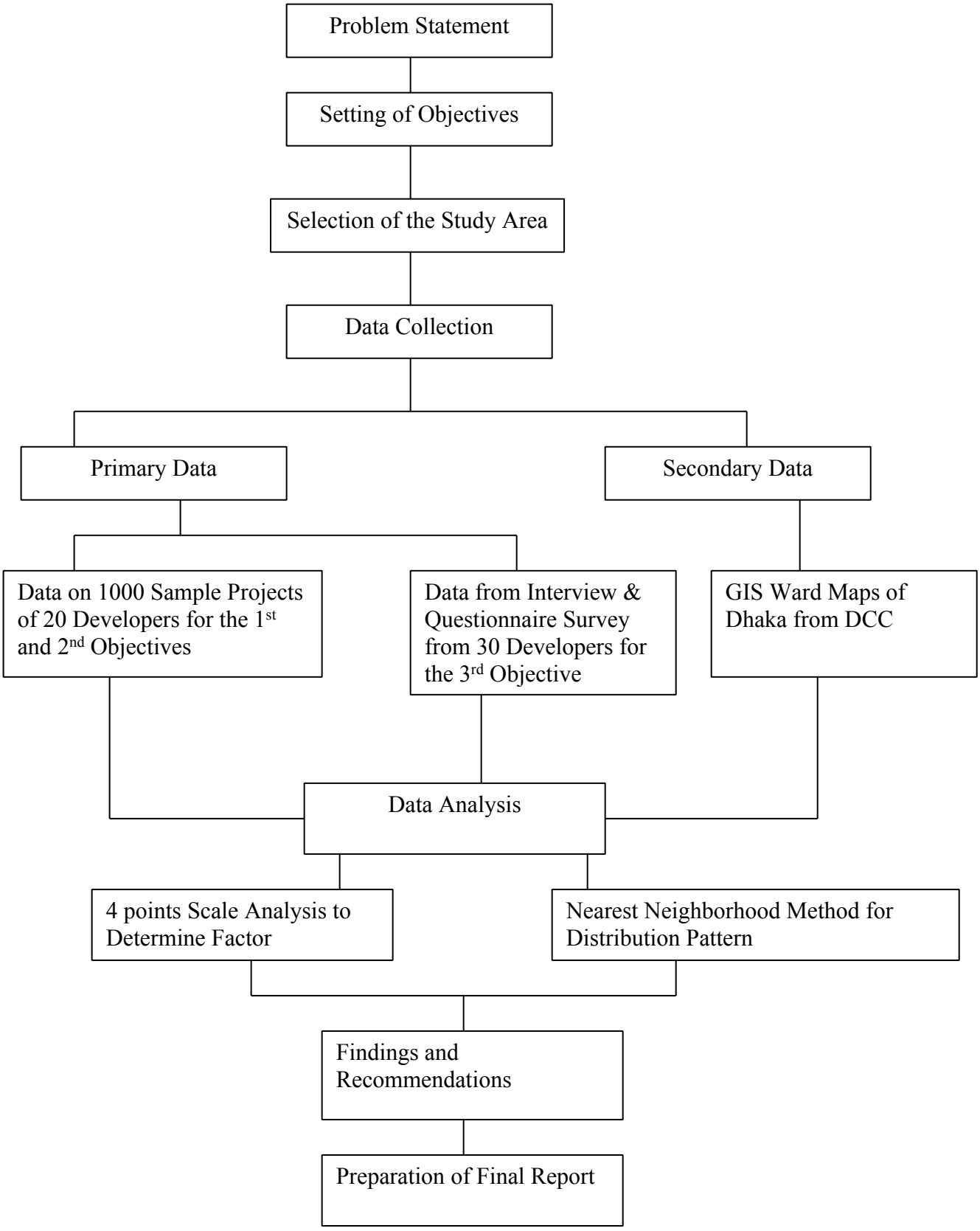


Fig-1.1: Flow Chart of Methodology

1.4.1 Literature Survey

An elaborate literature survey on the topic was carried out for better understanding and representation of the trend of apartments. Relevant literature which includes books, published or unpublished theses, seminar presentation, journals, reports, documents and office records of government, non-government and other sources were reviewed and analyzed.

Research papers of Kamaruzzaman and Ogura (N. D., 2006a, 2006b, and 2006c) have been studied extensively. One of their research study aims to validate the feasibility of high density walkup apartments in Dhaka (Kamaruzzaman and Ogura, N. D.). It urges with the principle that unless the general economy, technological state, affordability and life style of vast majority of the urban population are considered, high rise housing will not be a responsive housing scheme. The city dwellers of middle income group are considered for affordability analysis as the demand of housing concerns mostly the middle income group. It emphasized affordability by examining the issues from the viewpoint of living space, floor area ratio, height, density and cost. The rise in construction cost with the building height is prominent where construction is labor-intensive. The inclusion of the costs of developed land, render high rise housing solutions inaccessible even for households well above the median income. High-density walkup apartments are thus feasible as a sustainable alternative in Dhaka city.

Kim et al. aimed to quantify the extent to which transport and other factors impact on residential decisions using Oxfordshire, UK, as a case study (2005). It investigated the impacts of the current dwelling, household characteristics and alternative properties on the probability of moving. It also highlighted the trade-off between access, space and other attributes in residential location choice. Particular emphasis was placed on assessing the impact of transport and location-embedded amenities.

Another research was studied to gain a better understanding of the characteristics related to the environment of single-family houses in the greater Geneva area (Bender et al, 1997). The result of study showed that distance to a green area and quietness of the area are the two most important factors. Another finding was that the proximity of shopping centers and schools is not as important as in other countries.

Haque (2008) carried out a research from a realization of the need for effective and computationally easy and efficient tool for the land use planners at the city and land development authorities in generating and evaluating alternative feasible land use plans and decisions. An effort was made here to exercise on the interests of two major stakeholder groups: government planners and landowners/developers. This research formulated optimization objectives and useful constraints and tries to solve the models with a widely used heuristic approach called Genetic Algorithm. It highlighted the problems of Dhanmondi residential area, Dhaka which can be considered as a case study to reflect the land use planning problem of Bangladesh in the absence of detail area plan, even after a decade of the inception of DMDP.

Housing privatization had been one of the key features of reform during the 1980s and the 1990s in many countries. Chinese housing reform had attracted attention because of its distinctive features and there had been a number of commentaries on the general progress of urban housing reform policies. The paper of Wang and Murie (1999) aimed to provide an up-to-date account of commercial housing development. It examined the scale of investment during the early 1990s, the development process, quality and design standards, the commercial housing market and the management of residential estates. The conclusions drew attention to several important problems of commercial housing development including the lack of appropriate legislation and control, the mismatch of housing supply and affordability, and the underdeveloped nature of the urban housing market.

Through a case study of a private developer in India, this paper critically examined the policy advice of enabling markets and market-based actors to provide affordable housing in developing countries (Mukhija, 2004). In this case, after receiving private sector help, the developer stopped constructing housing for low-income groups. The paper argued for a more cautious, circumspect and varied approach because enabling strategies focused on market actors could produce highly uncertain outcomes. In addition, it emphasized that policy makers needed a better understanding of how the informal and formal sectors could overlap. Enabling informal developers could be even trickier because public support could reduce their flexibility and incentives, as well as impacting on the expectations and opportunities of the home buyers.

Lawrence(1995) in his paper proposed that housing quality ought to be considered in terms of economic, political and ecological dimensions in addition to traditional, architectural, technical and qualitative dimensions. The relative nature of these dimensions, and hence of housing quality, varies according to the societal context in which they occur. Consequently this paper suggested that more integrated studies of housing availability, affordability and quality in precise localities should replace the transposition of generalized concepts and normative criteria from one locality to others.

One paper of Pasha and Butt (1996) has applied a conventional framework of analysis of implicit markets to determine the characteristics of demand for housing attributes of quantity and quality in the urban areas of a large, low-income developing country like Pakistan. Income elasticities generally appear to be low, although somewhat higher for indicators of quality. Own-price elasticities are high while the cross-price effects with respect to different attribute prices reveal the high degree of substitutability among these attributes. Using a weighted factor score for measurement of housing quality and incorporation of the effect of changes in non-housing prices of demand for housing attributes, given the large magnitude of own-price effects and the negative impact of a rise in no-housing prices, it appears that in the face of slow growth in real incomes and double-digit inflation in Pakistan residential overcrowding conditions are likely to worsen over time.

In another paper according to Pasha and Lodhi (1994) the rate of household formation is one of the major demographic factors affecting the demand for housing. Understanding the process of household creation is essential, therefore, for the study of housing market behavior. This paper analyses the determinants of household formation in a large metropolitan city, Karachi in a low-income developing country, Pakistan by comparing the sample characteristics of nuclear households with those of ‘nuclei’ within joint households. Contrary to expectations, the results indicate the lack of influence of income and education. The primary impetus to the creation of new households is provided by new migrants, by working women and by the number of dependants.

A literature reviewed on public housing in Singapore (Eng and Kong, 1997) discussed the changes in the trend of public housing over the last three decades. Importance was given on quantity to solve housing need over the first two decades and then changes came to the quality to improve the housing in the third decade.

Jahan (2002) studied on the role of the state and private formal developers for housing provision in Dhaka. Rahman (1990) conducted a research on urban lower and middle-income housing investigating into their affordability and options. Jamil and Ahmad (2006) had a research on problems and prospects of housing for low income people in Bangladesh. Above outlined are some of the literatures so far reviewed for the purpose of this research.

1.4.2 Selection of Study Area

Dhaka City Corporation (DCC) area is selected as the study area, because the apartment development activities by private developers are mainly concentrated within this area.

1.4.3 Selection of sample

The list of private developers operating in Dhaka was collected from Real Estate Housing Association of Bangladesh (REHAB). From this list (Appendix-II), primarily 20 developers were selected on the basis of their experience and volume of works. List of selected developers mostly included those who have been involved in this sector since the beginning of the industry. REHAB officials and experienced developers were consulted regarding selection of the developers. The list of completed apartment projects of 20 selected developers since 1990 was prepared.

From the preliminary study, 1,021 finished apartment projects of 20 developers since 1990 were listed. Those 1,021 projects were thus taken as a representative sample for this research. To attain the third objective of the research additional 10 developers, that is, total 30 developers were selected for questionnaire survey. At least 30 is the minimum required sample size which has been proven statistically for any kind of survey purpose. The list of the selected developers is provided in the appendix -III.

1.4.4 Collection of Maps and Data

Base map of DCC area was collected from the Dhaka City Corporation. Relevant data on the list of finished apartment projects by selected sample of 20 developers since 1990 were collected from the offices of the developers. These data were on location, year of completion, apartment size, plot size, number of units per project, number of storey, access road width, distance from main road, etc. Price of apartments in different location of Dhaka in different time period was collected from different sources such as REHAB publications, seminar papers, reports, etc. Holding nos. of all finished apartment projects since 1990 by selected 20 developers were collected from the developers' offices to identify in the map.

1.4.5 Plotting of Location data

As evident from the objectives stated, this research is mainly based on data collected from the developers. To locate the apartment projects, collected holding nos. of the listed 1021 projects of 20 developers were used to plot in the GIS ward maps of DCC. The Nearest Neighborhood Method has been used to determine the distribution pattern of apartment projects in the city using GIS software.

Nearest Neighbor Analysis is a common procedure for determining the spatial arrangement of a pattern of points within a study area. The distance of each point to its "nearest neighbor" is measured and average nearest neighbor distance for all points is determined. The spacing within a point pattern can be analyzed by comparing this average distance to some expected average distance, such as that for a random distribution.

1.4.6 Questionnaire Survey

A questionnaire survey was carried out among the selected 30 developers to get detail information on various aspects on the present trend and changes occurring in the apartment housing sector. The survey was conducted by using pre-designed questionnaire mainly to attain the third objective of this research. Key personals of the 30 private apartment developers were interviewed to get information on factors influencing the present trend of development. Their views on future strategy of development were also explored through interview.

1.4.7 Data Analysis and Recommendation

The data obtained through literature survey, field survey, questionnaire survey, and interview were classified, tabulated and presented in the form of maps, tables and graphs using Excel, Arc/info, and Arc/view. A statistical analysis has been done to end up with meaningful results. A set of recommendations has been prepared in the light of the findings from processing and analyzing the collected data. Four points scale analysis is done for the third objective to rectify the rank of the recommendations by the developers. Four points scale analysis is a psychometric scale analysis commonly used in questionnaire survey. There are a few types of these like five points, seven point scales. Popularly these are known as Likert scale (Source: wikipedia) by the name of its inventor. These are most widely used in survey research and so famously the name established as rating scale.

1.5 Limitation of the Research

The aim of the study is to understand the trend of apartment housing and the key forces responsible for the changes occurring in this sector. Like other researches, this study also has few obvious constraints and limitations, which could not be totally overcome but tried to mitigate as far as possible with utmost sincerity. The study faced problems in collecting different information due to unwillingness of disclosing some data by the private developers. As a result, out of 1,021 projects by 20 selected developers, lowest 514 to highest 841 projects were available with data from different aspects for analysis. Moreover, most of the private developers do not feel necessary keeping record of the handed over projects. Economic perspective is not also covered in this research as it needs separate attention. Resident perspective is very important for understanding the factors behind the demand and supply equation. If the residents in a particular area are happy about the facilities of the location and apartment, demand of that location goes up and consequently price also goes up. The apartment builders use this knowledge of residents to fix their choice. Though this perspective is embedded in developers view, this issue needs more attention. This research had to depend on the publications and seminar papers for the information particularly on price trend.

1.6 Organization of the Chapters

In Chapter 1, an introduction of apartment housing, background and present state of the problem have been discussed. Based on the background, the research objectives have been stated and methodology to attain the objectives has also been discussed in the same chapter. This chapter also states how the thesis report has been organized.

In chapter 2, an overview of Dhaka city and its housing situation have been briefly discussed. This chapter has covered the population growth and density, urbanization and housing situation in Dhaka, housing access and affordability, land use and land value, and finally apartment development in Dhaka.

In chapter 3, trend of location aspects of apartment housing has been discussed. The location wise distribution of apartment housing has been shown by GIS analysis in DCC area. Physical planning aspects such as location, land size, access road, distance from main road, building height, number of units, etc. have been discussed in this chapter.

In chapter 4, variation of size and price of apartments in different location and time period have been discussed. Based on size and price, an idea on client group has been given in this chapter too.

In chapter 5, factors responsible for changes on apartment housing in Dhaka have been discussed. The views of 30 selected developers from questionnaire survey have been documented in this chapter.

In chapter 6, the summary, findings, recommendations and conclusions of the research have been included.

Chapter 3: Locational Trend of Apartment Housing

3.1 Introduction

To study the trend of apartment housing by private developers in Dhaka City Corporation (DCC) area, it was necessary to identify the exact location of the collected list of apartment projects since 1990 in the map. Distribution of apartment housing and their growth has been shown in this chapter. To understand the locational trend, various aspects of apartment housing from physical planning perspective that has been considered by the private developers for development such as plot size, width of access road, distance from major road, number of storied or height of building, number of apartment units per project, etc. has been discussed.

3.2 Location and Growth Pattern

On the basis of the collected holding numbers of apartment projects of 20 developers, exact location of the projects were identified in GIS map of DCC area. Among the listed 1,021 projects, 841 projects were found with holding numbers and year of completion. The overall temporal growth pattern can be observed from Table -3.1. The growth pattern of apartment projects in different prime locations is shown (Fig-3.1) and temporal growth of apartment housing is shown in 4 maps for 4 time periods of the last 20 years respectively (Fig- 3.6, 3.7, 3.8 and 3.9) in page-29.

From table 3.1, it can be seen that the number of projects in Dhaka city is increasing day by day; specially, in the last decade, i.e. 2000-2009, the growth was overwhelming. From field survey, it is revealed that 533 projects were taken in the last five years where 308 projects were taken in the previous 15 years by selected 20 developers.

Table-3.1: Temporal growth pattern of apartment projects by developers (1990-2009)

Year of project handover	Number of projects	% of total projects
1990-1994	15	1.78
1995-1999	106	12.60
2000-2004	187	22.24
2005-2009	533	63.38
Total	841	100.00

Source: Developers' office record, 2009

In table 3.1, last two decades are divided into four equal parts, i.e. parts of five years. Here, the picture of growth is more vivid. Over 63% of total projects were taken in the last five years. So, in summary it can be said that last five years was very congenial for development of apartment housing.

It is found that after every five years time there are some inclusion in locations but not as prime location for developing apartment housing in DCC area. It is very surprising that Uttara came into be developed with apartment housing by private developers in the third phase of time period divided in this research, but this area holds the maximum number of apartment buildings, that is, 195 apartment projects have been completed by selected 20 developers in the last 10 years. Uttara is the only one location after three densely apartment developed areas, Gulshan, Banani and Dhanmondi, that can be taken into account as a successful prime location by the developers (Fig-3.1).

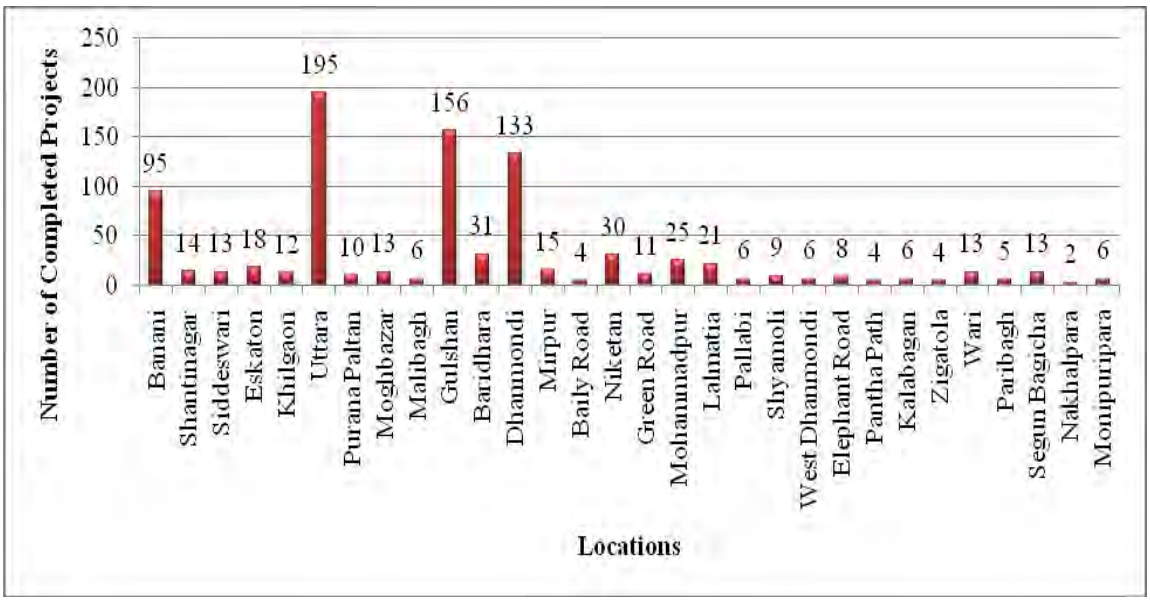


Fig-3.1 Growth of apartment projects in different locations by developers (1990-2009)

Most of the selected 884 completed apartments were built in some particular area like Dhanmondi, Gulshan, Banani and Uttara. From Fig-3.1, it can be seen that almost 75% of the 884 completed apartments built in those areas. Of these areas, Uttara has the most number of apartments (195 projects), Gulshan has the second most apartments (156 projects). 133 and 95 apartment projects were done in Dhanmondi and Banani area respectively. Other 25% apartments were built in other locations like Baridhara, Niketon, Mohammadpur, Eskaton, Lalmatia, etc.

Fig-3.2: Apartment at Shegun Bagicha 1994 Fig-3.3: Apartment at Boro Moghbazar 1997

Fig-3.4: Apartment at Eskaton Garden 2001 **Fig-3.5: Apartment at Boro Moghbazar 2006**

By analyzing 4 maps (Fig- 3.6, 3.7, 3.8 and 3.9), it is found that apartment housing development was first started to flourish in the areas of Siddesswari, Shegun Bagicha, Shantinagar, Eskaton and Monipurirara of Dhaka city in the early 90s. Then the location of apartment housing is shifted by the private developers towards Gulshan, Banani, Baridhara and Dhanmondi in the late 90s. At the beginning of the 21st century, the development started to grow towards the areas of Uttara, Niketon and Mirpur; and recently apartment housing has reached at Mohammadpur, Basundhara and even at Old Dhaka. But it is clearly understood from map that except for the first quarter of 20 years, Gulshan, Banani and Dhanmondi remain as the prime locations over the whole period.

3.2.1 Distribution Pattern of Apartments in DCC Area

To understand the spatial distribution pattern of apartments within the DCC area, a spatial analysis tool 'Nearest Neighborhood Method' was applied (Fig- 3.6, 3.7, 3.8 and 3.9).

For nearest neighborhood analysis, GIS ward maps of Dhaka City Corporation were used and for this purpose ArcGIS 9.2 software was used. In this analysis, the pattern of

housing in respect to a scale of "clustered to disperse" is discussed. From this analysis, the pattern of apartment housing in DCC area in the last two decades is revealed. Ratio between observed mean distance and expected mean distance is used every time. This ratio is the R-value and there is a standardized scale for R-value for identifying dispersed to clustered pattern of housing (Table-3.2).

Table-3.2: R-value in nearest neighborhood analysis

Pattern	**R-Values**
Perfectly dispersed	2.149
More Dispersed than Random	1.5
Random	1.0
More Clustered than Random	0.5
Perfectly Clustered	0.0

Source: Taylor, P.J. (1977)

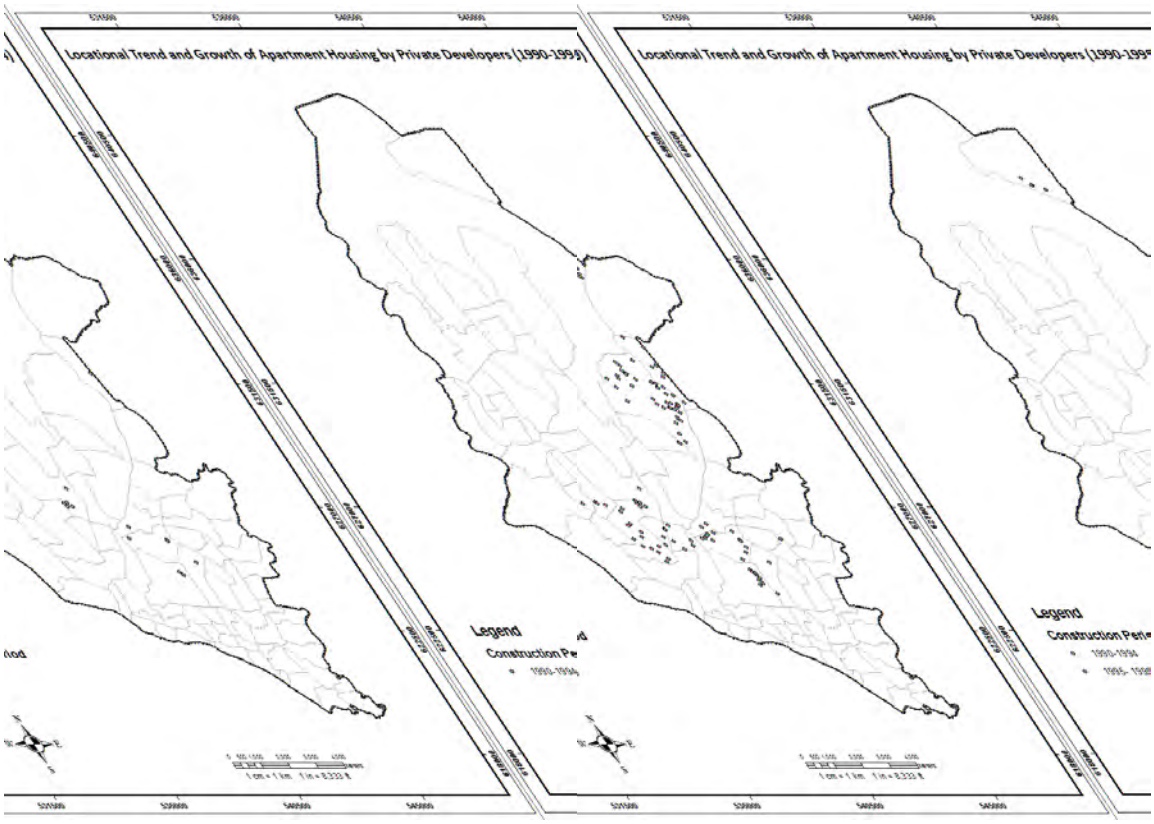


Figure 3.6 Locational Trend and Growth (1990-1994)

Figure 3.7 Locational Trend and Growth (1990-1999)

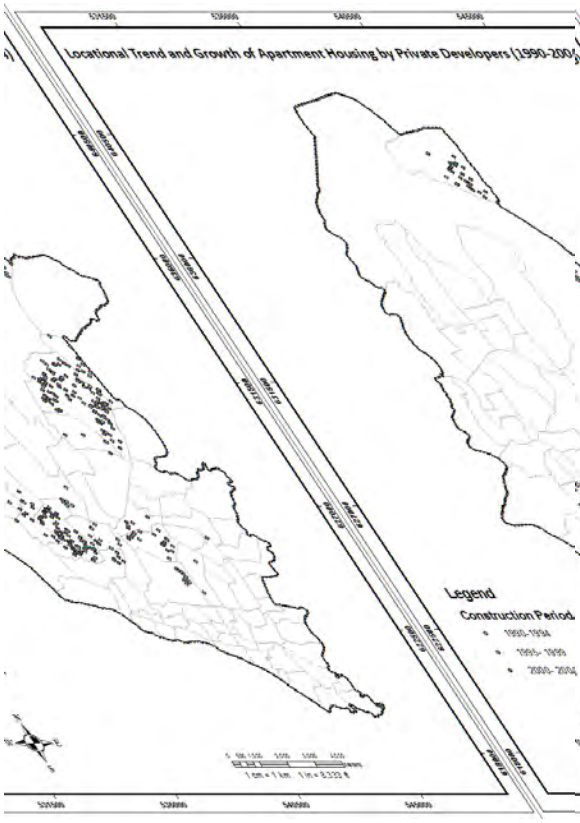


Figure 3.8 Locational Trend and Growth (1990-2004)

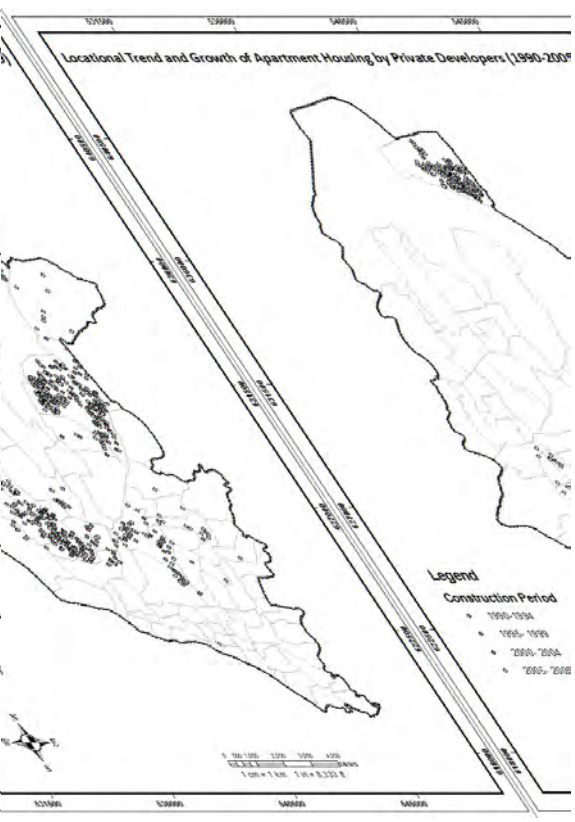


Figure 3.9 Locational Trend and Growth (1990-2009)

Figure (3.6-3.9) Locational Trend and Growth of Apartment Housing (1990-2009)

1990-1994

For 1990-1994, R-value was found to be 1.76 and the z-score was found to be 5.6 times standard deviation. As R-value for those years went beyond 1.5, it can be inferred that the model is perfectly dispersed at 99% confidence level. It means that at that time developers used to build apartments in different places across the DCC area such as Siddesswari, Shegun Bagicha, Shantinagar, Eskaton and Monipurirara.

1990-1999

For 1990-1999, 121 projects were plotted. R-value was found to be 0.43 and the z-score was found to be -11.92 times standard deviation. As R-value for those years went below 0.5, it can be inferred that the model is perfectly clustered at 99% confidence level. It means that at those time frame developers of DCC area, focused on areas like Gulshan, Banani, Baridhara and Dhanmondi to build apartments.

1990-2004

For 1990-2004, 308 projects were plotted. R-value was found to be 0.44 and the z-score was found to be -18.92 times standard deviation. As R-value for those years went below 0.5, it can be said that the model is perfectly clustered at 99% confidence level. It means that the developers of DCC area preferred newer places like Uttara, Niketon and Mirpur along with Gulshan, Banani, Baridhara and Dhanmondi to build apartment over the years.

1990-2009

For 1990-2009, out of total around 1000 projects, 841 projects were plotted. R-value was found to be 0.38 and the z-score was found to be -34.32 times standard deviation. As R-value for those years went below 0.5, it can be said that the model is perfectly clustered at 99% confidence level. So, from the following figure, it can be said that developers preferred some other new places like Mohammadpur, Basundhara and Old Dhaka keeping the previous trendy location of Dhanmondi, Gulshan and Banani to build apartments over the years.

3.2.2 Developers' Views in Location and Distribution of Apartment Projects

A questionnaire survey on 30 selected developers was conducted to have an idea of preferred locations for apartment housing for the last two decades. From these responses,

the preferred location by the developers is ranked according to their weighted scores as per the ranking procedure described in methodology. This ranking is done for 2000-2009, though their ranking in the previous decade is given in parallel. It is very noticeable that, developers preferred the same locations as the top six. So, it can be said that their preference for the best location did not change over time (Table-3.3). These locations are Gulshan, Dhanmondi, Banani, Uttara, Baridhara and Lalmatia.

Though, in the next positions there are few changes, such as places like Mohammadpur, Niketon, Khilgaon, Shamoli, Shahidbag, etc. got the preference of the developers in the last decade (2000-2009). And places like Shantinagar, Eskaton, Mirpur lost their appeal to the private developers in the last decade (Appendix-VII). It is actually because these places were filled up with apartments where Niketon, Khilgaon, Shamoli, Mohammadpur, Shahidbag etc. had many places left. So, it can be seen that, preference of the top ranked locations remained unchanged whereas preference for the later ones changed heavily.

Table-3.3: Preferred locations for apartment housing in DCC area

Rank for Preferred Location by the Developers		
	2000-2009	1990-1999
Gulshan	1	2
Dhanmondi	2	1
Banani	3	3
Uttara	4	5
Baridhara	5	6
Lalmatia	6	4
Mohammadpur	7	14
Niketon	8	29
Siddeswari	9	8
Khilgaon	10	46
West Dhanmondi	11	13
Firmgate	12	22
Paribagh	13	23
Bashundhara	14	28
Sukrabad	15	45
Wari	16	15
Shamoli	17	37
Elephant Road	18	17
Shahidbagh	19	38
Green Road	20	34

Source: Survey, 2010

From survey, the criteria in case of choice of location for apartment development were found for the last two decades. These criteria are ranked according to their respective weighted scores. The ranking of different criteria for the last two decades is given in Table-3.4. Among the criteria, proximity to children school is the most important one in the last two decades when choosing location for apartment building. As, traffic in Dhaka is very heavy, it seems normal. As communication in Dhaka is not easy from every point, so keeping that in mind the developers choose their location. This criterion remains as the second most important one in the last two decades.

Table-3.4: Criteria for choice of location for apartment housing by private developers

Ranking of Criteria for Choice of Location		
	2000-2009	**1990-1999**
Near children's school	1	1
Area with easy communication system	2	2
Area is secured	3	5
Near work place	4	3
Near open space/park/lake	5	8
Near market/bazaar/shopping centers	6	4
High class residential area	7	7
Area is not so congested	8	6

Source: Survey, 2010

A comparison can be brought in this matter. Criteria for choice of location for apartment housing from tenant's point of view was studied in a research (Nahrin, 09) which ended up with the same finding of "Near children school" being the first priority and the second preference went with "Near work place" and "Easy communication system".

Security is a big problem for the last few years in Dhaka City. Burglary, theft are a common event in this city. Some area of Dhaka city seems to be safer than other places. So, security of the particular area gained more importance in the last decade. In 1990-1999, customers were less sensitive about security, which is depicted in the ranking. Proximity to workplace, park, and market are the other criteria for choice of location for apartment housing.

Fig-3.10 shows the criteria for choosing location for apartment housing by the private developers for the last two decades, 1990-1999 and 2000-2009.

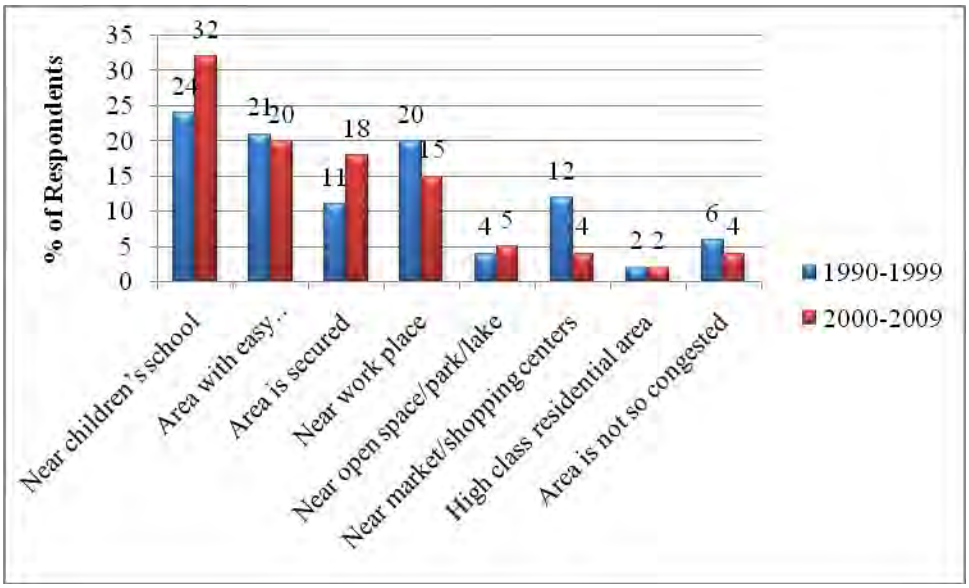


Fig-3.10: Criteria for choice of location for apartment housing (1990-2009)

3.3 Plot Size

According to the collected plot sizes of completed apartment projects, table 3.4 is prepared for the varied sizes of plot developed over the period. Among the listed 1021 projects, data on plot size was available for 514 projects only. An idea is found about the size of plot for apartment development by private developers (Table-3.5) and trend in last two decades (Table-3.6).

Table-3.5: Plot Size for Apartment Housing by Private Developers

Range of plot size (in katha)	Number of projects	% of total projects
2 katha or below 2 katha	0	-
Over 2 katha - 4 katha	13	2.53
Over 4 katha – 6 katha	81	15.76
Over 6 katha – 7 katha	20	3.89
Over 7 katha – 9 katha	65	12.64
Over 9 katha – 12 katha	120	23.35
Over 12 katha - 16 katha	73	14.20
Over 16 katha – 20 katha	88	17.12
Over 20 katha	54	10.51
Total	514	100.00

Source: Developers' office record, 2009

From the record it is seen from Table-3.5 and Fig-3.11 that, the developers prefer 9-12 kathas of plot mostly for apartment building. It can also be said that, they do not prefer small plots for building apartment. Almost, 80% of the projects were built on plot size of 7 katha or more. Building more than one unit in every floor of the apartment is one of the reasons of choosing plot like this. Another reason is the economies of scale. Apartment built on a relatively big plot has relatively lower cost per unit.

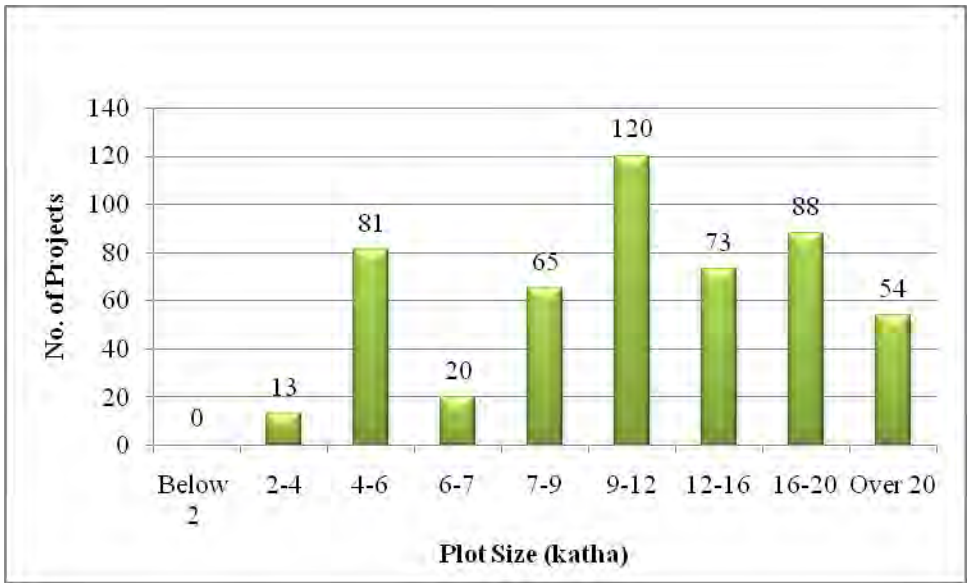


Figure-3.11: Choice of Plot Size for Apartment Housing by Private Developers

Table-3.6: Trend of Plot Size in last two Decades

Time Period	Number of projects considered	Maximum Plot Size found (in katha)	Minimum Plot Size found (in katha)	Average Plot Size (in katha)
1990-1994	33	81.318	4.5	19.19
1995-1999	81	68.97	4.0	15.72
2000-2004	149	34.48	4.0	11.39
2005-2009	251	59.774	2.0	12.28
Total number of project considered = 514				

Source: Developers' office record, 2009

As the vacant spaces of Dhaka City are disappearing, it is expected that the average plot size would decrease with time. It is also evident from the minimum plot size for building apartments, as apartment is built upon a 2.0 katha plot in the years 2005-2009 where in the previous 15 years minimum plot size was 4 katha. It is very surprising to see that there was a very big project which took more than 80 katha in 1990-1994. Another reason for diminishing the average plot size is splitting off land among the relatives and it is very troublesome to acquire the desired land from different owners. Fig-3.12 shows the trend of plot sizes over the years graphically.

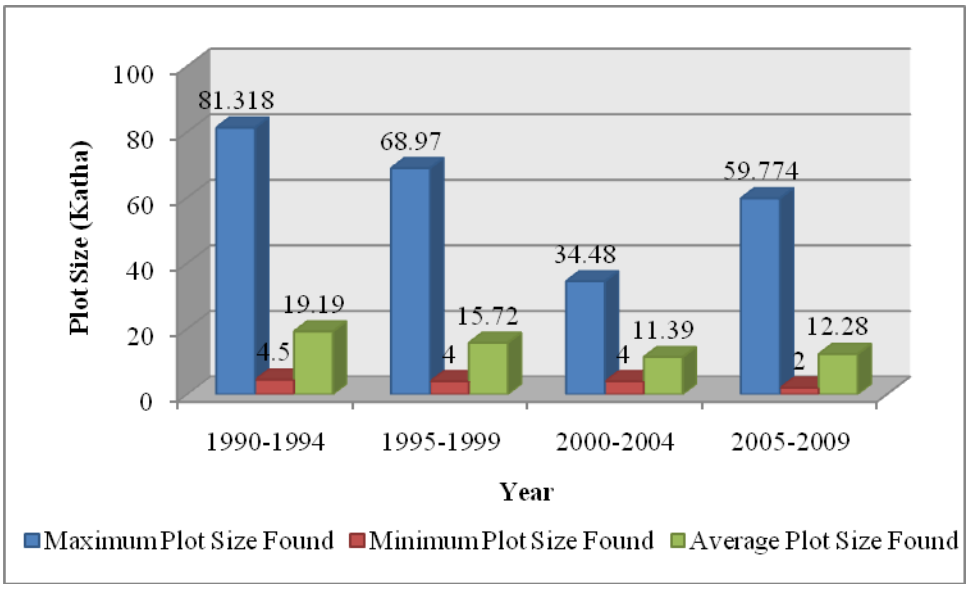


Fig-3.12: Trend of Plot Size in last two Decades

A questionnaire survey on 30 selected developers was conducted to have an idea of minimum and preferred plot size considered by them for apartment housing for the last two decades. It shows that the average minimum plot size was 6.5 kathas in the decade of 1990-1999 where it was 13.6 kathas in 2000-2009 (Table-3.7). The preferred plot size was 21.8 kathas in 1990-1999 where it was 23.2 kathas in 2000-2009. So, it is observed that, minimum plot size requirement got almost doubled where preferred plot size remained stable over the last two decades due to housing policy implications like FAR and other issues in Imarat Nirman Bidhimala, 2008.

Table-3.7: Minimum and Preferred plot size for apartment development

Time period	Average Minimum Plot size in katha	Average Preferred Plot size in katha
1990-1999	6.5	21.8
2000-2009	13.6	23.2

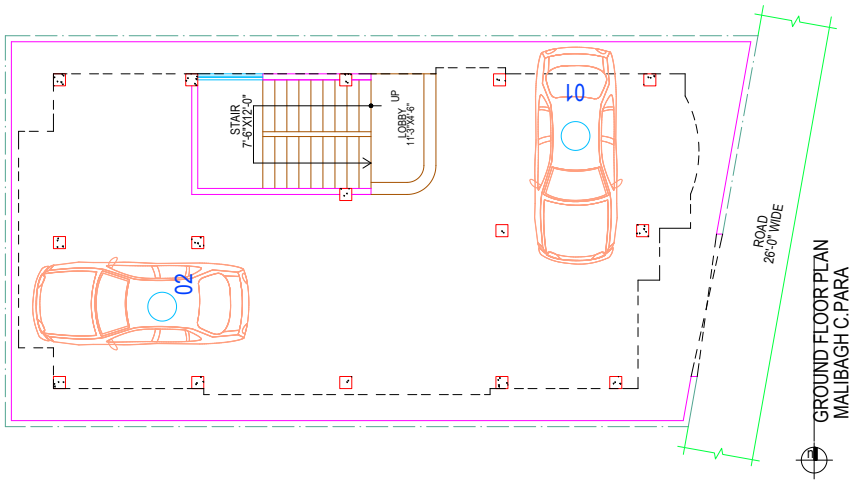
Source: Survey, 2010

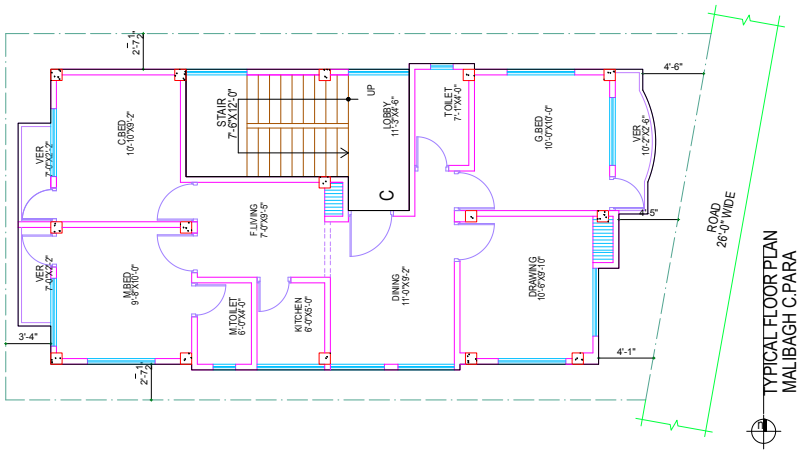
3.3.1 Case Studies of projects in different Plot Sizes

Two different types of plots have been taken as the case studies to have an idea about the variation of plot sizes and development of apartments on these types of plots in DCC area over the years. The big-sized plot of case study-1 (Fig-3.13) is located in Shantinagar, very near to Siddeswari, from where apartment housing started to flourish and was completed in 2005. The area of this plot is 59.774 kathas which is hard to find by developers in recent days. The project was built as 8-16-storied and consists of 180 units.

Figure-3.13: Case Study-1 Apartment Project in Big plot

The smallest-sized plot of case study-2 (Fig-3.14) is located in an unplanned area, Malibag and was completed in 2007. The area of this plot is only 2 kathas which is very unusual to take by developers. The project was built as 6-storied and consists of 6 units.





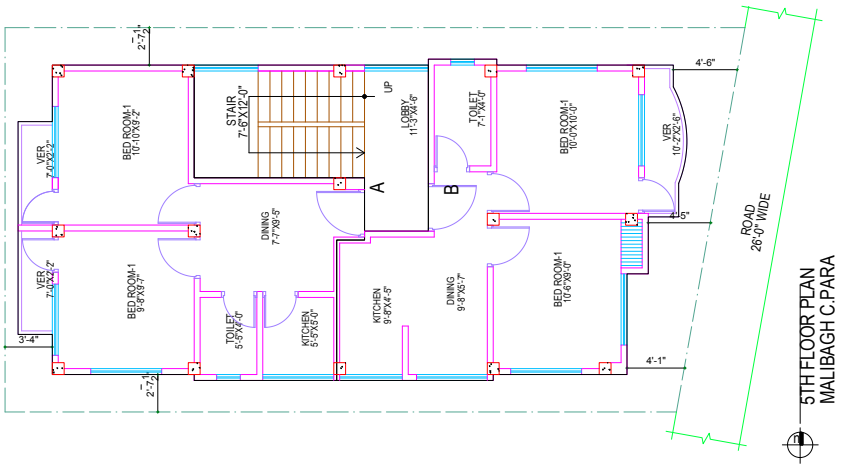


Figure-3.14: Case Study-2 Apartment Project in Small plot

Big plots have projects that consider the construction rule of covered area. But small plots have violations as we see the hanging verandahs in plans of case study-2 the setback space of the plot in fig 3.14.

3.4 Access Road

Widths of access road for 623 completed apartment projects are tabulated to understand the choice (Table-3.8) and trend of apartment housing development from accessibility context over the period (Table-3.9).

Table-3.8: Choice of Access Road Width

Access road width (meters)	Number of projects	% of total projects
Below 3 m	38	6.10
3 m to 3.99 m	36	5.78
4 m to 5.99 m	93	14.93
6 m to 8.99 m	148	23.76
9 m to 11.99 m	117	18.78
12 m to 17.99 m	161	25.84
18 m to 23.99 m	14	2.25
24 m and above	16	2.57
Total	623	100.00

Source: GIS Analysis (from Developer's office record of 2009), 2010

From fig-3.15, of the 623 projects, 70% projects had access road width of 6 meter to 18 meter. 191 projects had access road width of 12 meter or more. It comprised almost 30% of the total projects. So, it is observed that a good number of projects had a desirable access road width. In the contrary, over 10% of total projects had less than 4 meter width of access road.

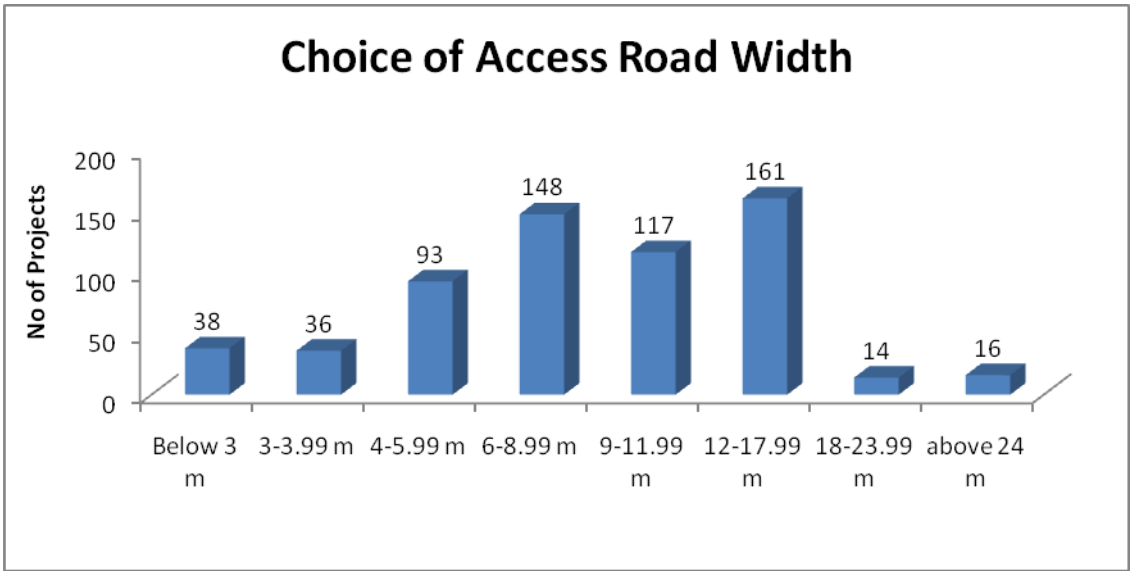


Figure-3.15: Choice of Access Road Width

In table-3.9, a trend analysis of access road width over the last two decades has been done. For this trend analysis, data of total 623 projects have been analyzed. For illustration, last twenty years has been divided into four parts. Maximum, minimum and average width of access road during those years is tabulated in table-3.9.

Table-3.9: Trend of Access Road Width

Time Period	Number of project considered	Maximum width of access road (in meter)	Minimum width of access road (in meter)	Average width of access road (in meter)
1990-1994	14	13.10	1.16	4.99
1995-1999	98	39.96	1.46	9.73
2000-2004	165	39.96	1.29	10.32
2005-2009	346	38.83	1.22	9.89
Total number of project found = 623				

Source: GIS Analysis (from Developer's office record of 2009), 2010

Fig-3.16: Access Road at Niketan

Fig-3.17: Narrow Access Road at Elephant Road

From table-3.9 and fig-3.18, it can be observed that average width of access road remained almost stable over the last fifteen years as a rule of minimum road width had been continuing during this period. Prior to that, the average width was about half of this figure trend which is below the standard. Maximum width was also stable for the last fifteen years. It is also surprising that minimum width of access road has not been increased or decreased in last two decades. Figure trend of minimum road width definitely shows the violation of developing projects in some locations which will be discussed along with the building construction rules and by-laws in this chapter.

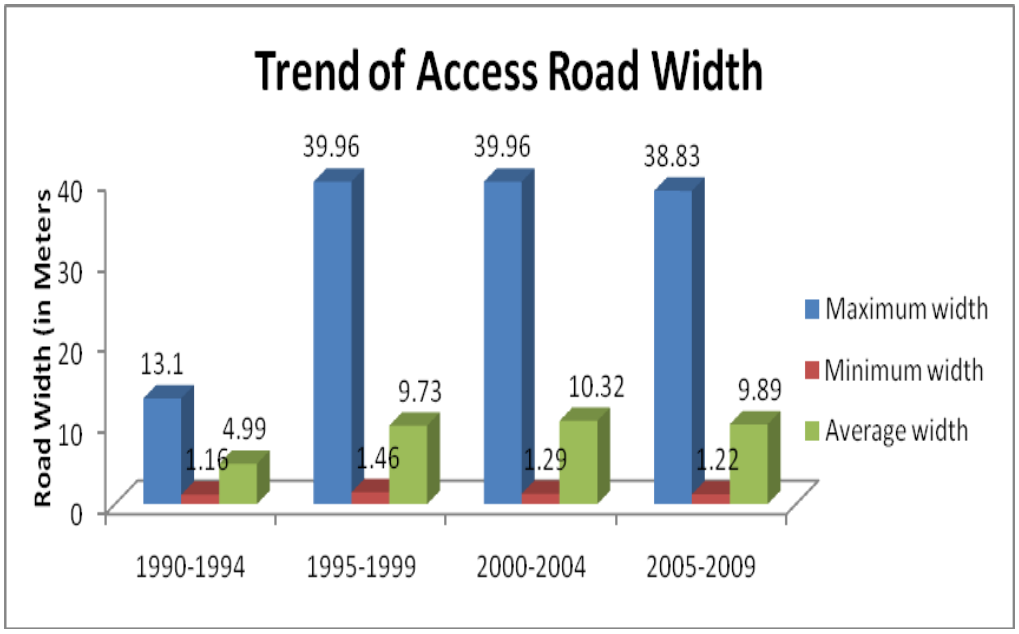


Fig-3.18: Trend of Access Road Width in last two Decades

A questionnaire survey on 30 selected developers was conducted to have an idea of minimum and preferred road width considered by them for apartment housing for the last two decades. It shows that both the minimum and preferred road width increased over time (Table-3.10). In 1990-1999 minimum road width was 5.7 meter where it was 7.1 meter in 2000-2009. Again, preferred road width by the developer was 9.2 in 1990-1999 where 14.5 in 2000-2009.

Table-3.10: Minimum and Preferred road width for apartment development

Time period	Average Minimum road width in meter	Average Preferred road width in meter
1990-1999	5.7 m	9.2 m
2000-2009	7.1 m	14.5 m

Source: Survey, 2010

According to Bidhimala 1986, 1996, 2006, 2007 and 2008, any building should be constructed at a distance of minimum 4.5m from the centre of the adjacent access road, or at a distance of 1.5m from the plot boundary adjacent to access road, whichever value is greater between these two is to be considered. From this rule, it can be easily calculated that the standard minimum width of access road throughout the whole period considered in this research is 6.00m.

Fig-3.19: Narrow Access Road at MonipuriparaFig

3.20: Standard Access Road at Dhanmondi

Again, as per Bidhimala 2008, 6.00 m is specified as the minimum width of access road for any residential construction. If any plot in narrow road is selected for developing project, the landowner/developer of that plot has to surrender half of the required width of land to make the road 6.00m wide. Therefore, it is clearly understood that 6.00m width of access road was the minimum requirement for building permit over last 20 years.

From the study, it can be observed that, many projects over the period were developed in narrow roads below standard width. In Fig- 3.21, number of projects having narrow access road width below 6 meter is shown. Out of total 1,021 projects, 623 projects were considered for investigating the violation of this rule, among which 167 projects were found with violation built by the developers in different locations.

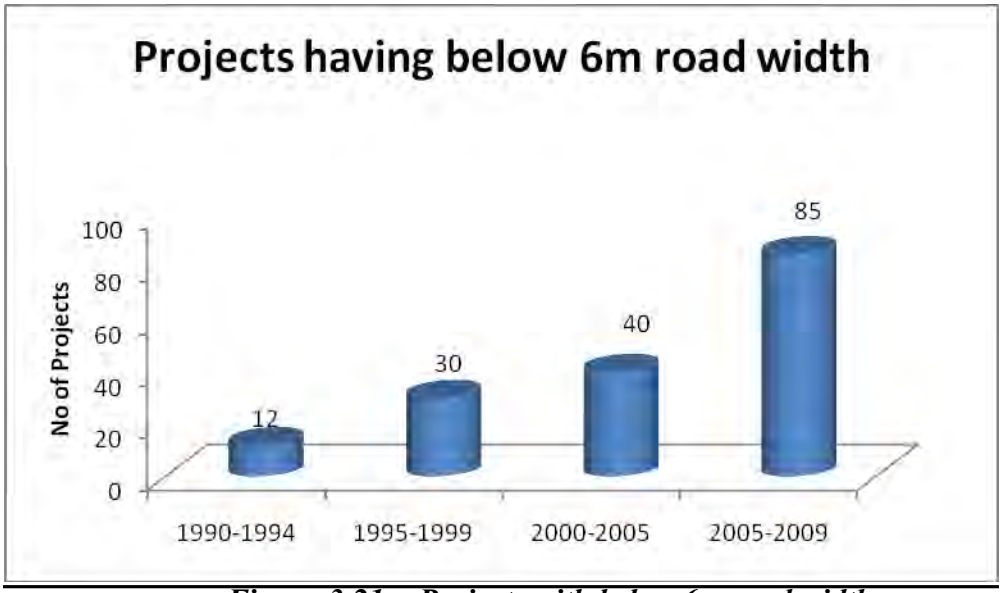


Figure-3.21: Projects with below 6m road width

Some of these locations are Siddeswari, Shantinagar, New Eskaton, Moghbazar, Malibagh, Elephant Road, even Dhanmoni and Gulshan too.

3.5 Distances to Major/Main Road

Approximate distances of the apartment projects from the nearest major road are noted and tabulated to understand the changes over the period (Table-3.11).

Table-3.11: Distance of apartment projects found to Main Road

Distance to main road	Number of projects	% of total projects
On main/major road	71	11.42
1m to 199 m	317	50.96
200 m to 399 m	153	24.59
400 m to 599 m	73	11.74
600 m and over	8	1.29
Total number of project found = 622		100.00

Source: GIS Analysis (from Developer's office record of 2009), 2010

Table-3.11 shows the proximity of the selected project from the main road. As people usually do not want to go too far from main road, this parameter is also very important. It is observed from the table that out of 622 selected projects 541 are very close to the main

road. From the chart (Fig-3.22) we see almost all the projects were located within 400 meters from the main road.

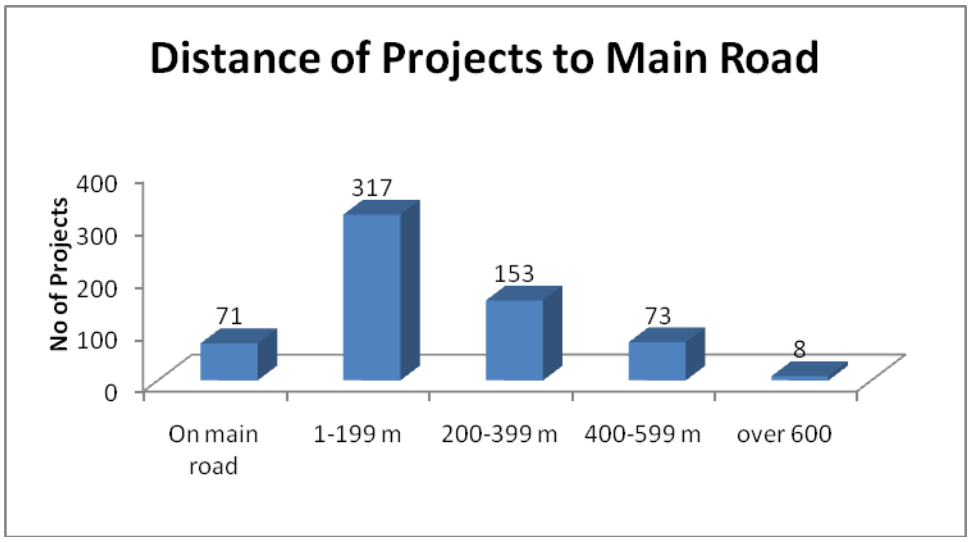


Figure-3.22: Distance of apartment projects found to Main Road

In table-3.12, a trend analysis of distance of apartment project from the main road over the last two decades has been done. For this trend analysis, total 622 projects have been found with distance to major road from GIS map. For illustration, last twenty years has been divided into four parts. Maximum, minimum and average distance during those years is tabulated in the table.

Table-3.12: Trend of Distance of apartment projects to Main Road

Time Period	Number of project considered	Maximum distance to main road (in meter)	Minimum distance to main road (in meter)	Average distance to main road (in meter)
1990-1994	14	476	0	208
1995-1999	101	556	0	185
2000-2004	165	666	0	198
2005-2009	342	826	0	194
Total number of project found = 622				

Source: GIS Analysis (from Developer's office record of 2009), 2010

From Table-3.12 and Fig-3.23, it can be observed that average distance from main road was relatively high in the years 1990-1994 as people want to have their apartment in secluded place. In the later years, the distance wavered within 200 meters. Because,

people do not want to go too far from the main road as they want to keep good transport and communication system in proximity. Though there are some projects on the main road, maximum of the projects were built at a distance from the main road. As the vacant places at desirable distance for building apartment are vanishing up quickly, maximum distance from main road is going upwards by every time frame.

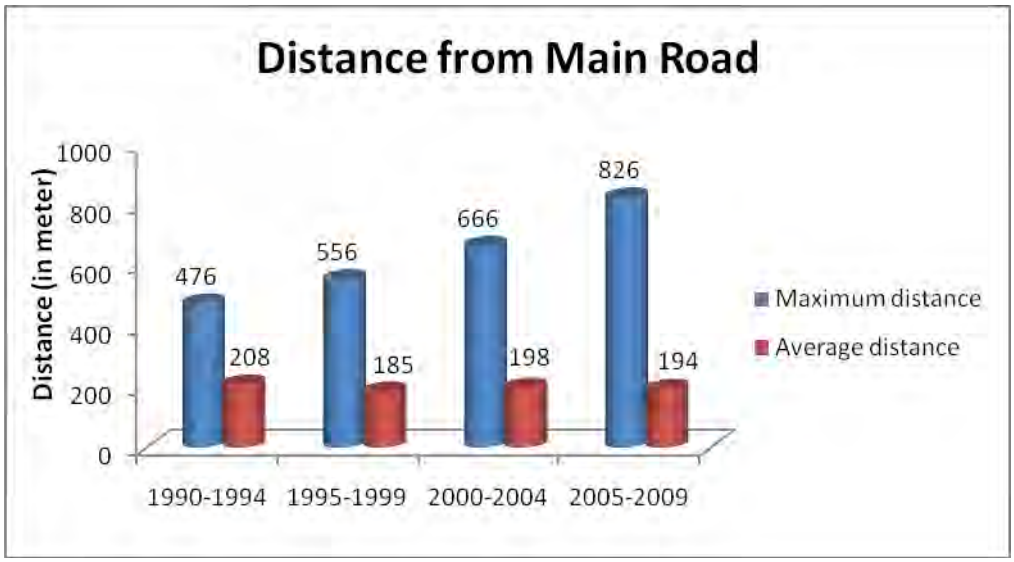


Fig-3.23: Trend of Distance of apartment projects to Main Road

Table-3.13: Average Plot Size, Road Width and Distance to Main Road (1990-2009)

Time Period	Average Plot Size (in katha)	Average width of access road(in meter)	Average distance to main road(in me
1990-1994	19.19	4.99	208
1995-1999	15.72	9.73	185
2000-2004	11.39	10.32	198
2005-2009	12.28	9.89	194

Table-3.13 shows that average plot size decreased over time, the reason behind could be division of big plots into smaller ones or big plots may already be developed by the previous developers. Average width of access road increased over time though many of the projects were found in the road having width of less than 6m. Implications of law may have influenced this increase.

3.6 Number of Storey of Projects

Number of stories of the apartment projects are taken from the developers and tabulated to understand the changes in height over the period. Among the listed 1,021 projects, 523 projects are found with their heights in number of storey.

Table-3.14: Choice in Number of Storey of Projects for Apartment Housing

Number of storey	Number of projects	% of total projects
Up to 6 storied	404	77.25
7 storied to 10 storied	66	12.62
10 storied to 15 storied	36	6.88
16 to 20 storied	13	2.49
Over 20 storied	4	0.76
Total	523	100.00

Source: Developers' office record, 2009

Of the considered 523 projects, maximum of them are 6 storied or below (Table-3.14). In percentage, over 77% of them have less than seven stories. Reason behind such choice was incurring restriction of building construction rules, higher cost when building high rise buildings, mass preference for low height building, ease in selling etc. From interview with developers, it is understood that this is not an aversion of developers to high rise building but the building construction rules and the height limitation by Civil Aviation Authority in different areas of the city are the main consideration.

From table 3.15 and fig 3.23, it can be seen that the average height of the apartment building were consistent over the years. For the last 20 years, average storey has been close to level 7, though the maximum number of storey of the building increased over time. To remain cost effective, the minimum height never gone below 5 storied.

Table-3.15: Trend in number of storey of Projects in last two Decades

Time Period	Number of project considered	Maximum Number of Storey	Minimum Number of Storey	Average Number of Storey
1990-1994	18	18	6	7.31
1995-1999	95	15	5	6.69
2000-2004	142	25	5	7.75
2005-2009	268	22	6	7.21
Total number of project considered = 523				

Source: Developers' office record, 2009

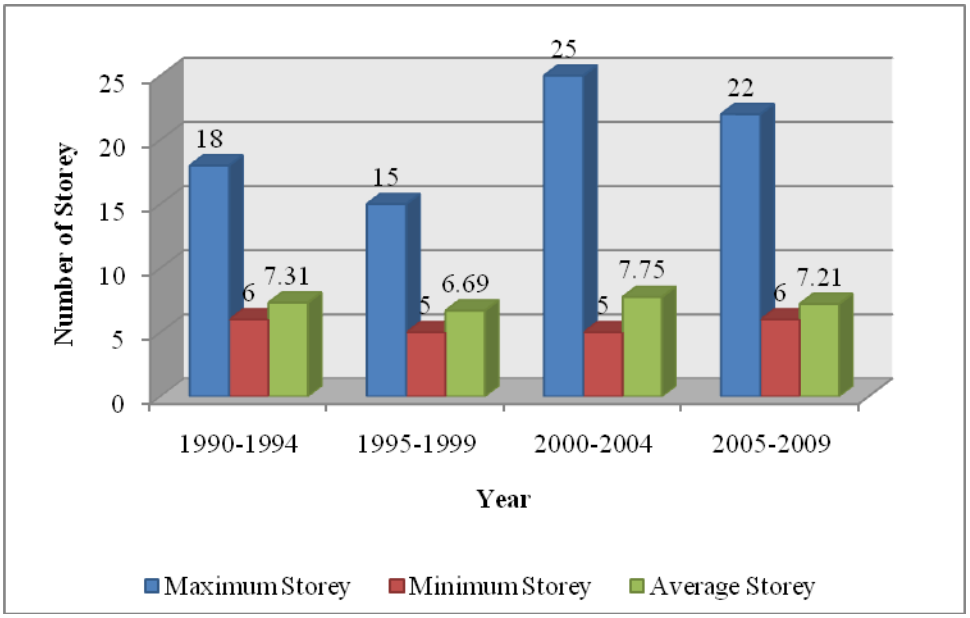


Fig-3.24: Trend in number of storey of Projects in last two Decades

Fig-3.24 shows the maximum, minimum and average number of storey of projects over the years. A very few of the tall apartment buildings are seen in Dhaka, some of which are standing on the narrow lanes (Fig-3.24 and 3.25) of Siddeswari, Shantinagar and Boro Moghbazar area without keeping proper open space.

Fig-3.24: High Rise Apartments in Narrow Access Road at Boro Moghbazar

Fig-3.25: High Rise Apartments in Narrow Access Road at Siddeswari

3.7 Number of Apartment Units

Number of units of the apartment projects are taken from the developers and tabulated to understand the changes in supply of apartments by private developers over the period (Table-3.16 and Fig-3.26). Among the listed 1021 projects, 516 projects are found with their number of apartment units.

Table-3.16: Number of apartment units per project in last two Decades

Number of apartment units per project	Number of projects	% of total projects
Up to 5 units	22	4.26
6 to 10	189	36.63
11 to 20	181	35.08
21 to 30	60	11.63
31 to 40	24	4.65
Over 40	40	7.75
Total number of project found = 516		

Source: Developers' office record, 2009

Though Dhaka City has a population of more than 15 million, the number of units in an apartment project is not very high. From the data of last twenty years, it can be inferred that, maximum of the apartment has six to twenty units. All the big cities and metros of the world have big apartment projects where the number of units is more than 100. From the pie chart, it is clear that almost 70% of the projects had less than 20 units of apartments. Only 8% of the projects had more than 40 apartment units.

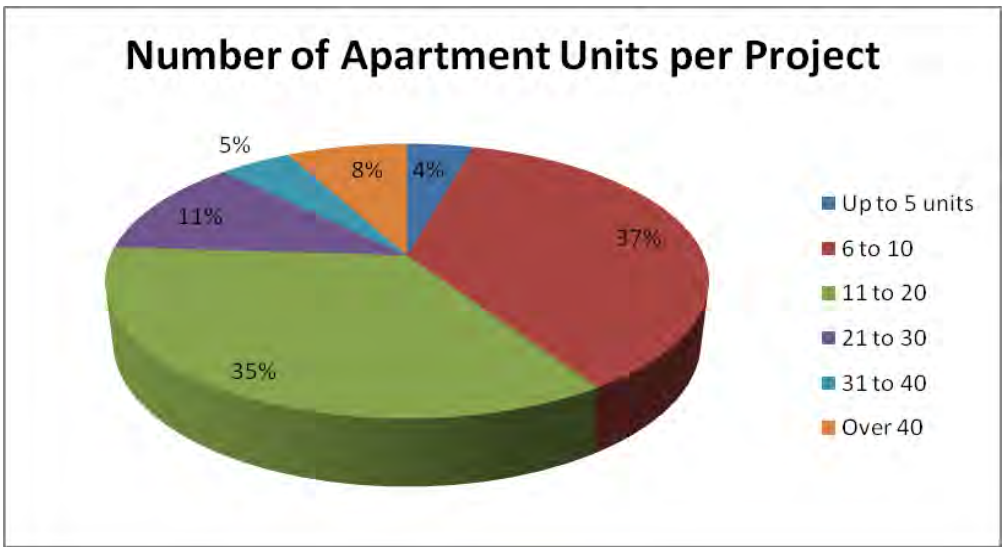


Figure-3.26: Number of apartment units per project in last two Decades

In the following table, a trend analysis of number of apartment units per project is done. This analysis is done on the last twenty years and these twenty years is divided into four terms. It is very surprising to notice that, the average number of units per project is going down year by year. Though the number of project was largest in the years of 2005-2009, the number of units was the smallest.

Table-3.17: Trend in number of apartment units per project in last two Decades

Time Period	Number of project considered	Maximum number of units per project	Minimum number of units per project	Average number of units per project
1990-1994	18	160	5	32
1995-1999	82	128	5	29
2000-2004	108	72	5	19
2005-2009	308	312	2	18
Total number of project found = 516				

Source: Developers' office record, 2009

From table 3.17 it can be seen that, there was a big project having more than 300 units of apartment in the years 2005-2009, whereas the maximum number of apartment units crossed one hundred over the period except 2000-2004. From fig-3.27, it can be easily seen that, the average number of units per project is going down quite heavily.

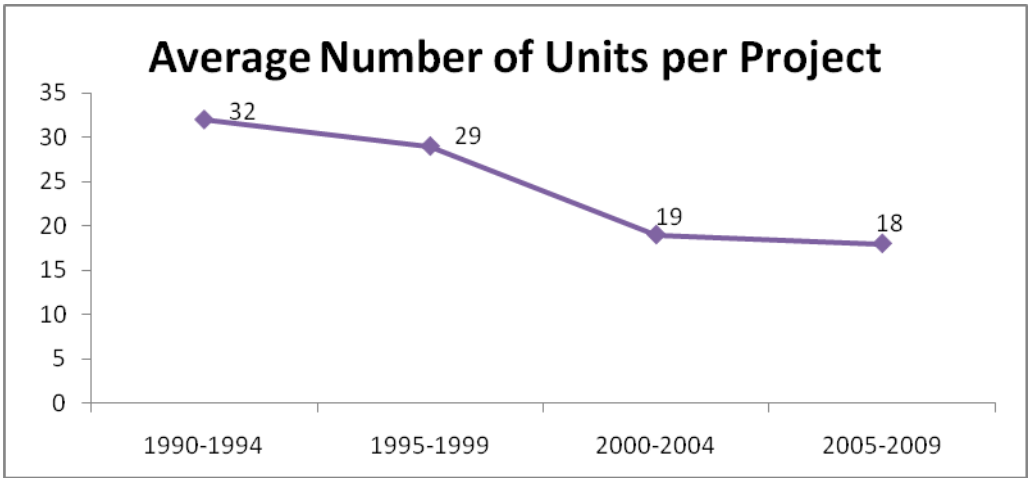


Fig-3.27: Trend in number of apartment units of projects in last two Decades

3.8 Conclusion

In this chapter, locational trend of apartment housing in Dhaka City Corporation area was discussed. For trend analysis, last two decades were chosen. It has been found that the developers prefer some particular areas when they build apartments. The common prime locations were Gulshan, Banani, Baridhara, Dhanmondi and Uttara, in addition other preferred places were Siddesswari, Shegun Bagicha, Shantinagar, Eskaton, Monipurirara Niketon, Mirpur, Mohammadpur, Basundhara and Old Dhaka. There are some criteria upon which they choose the location. The criteria were almost same over the years. The plot size for apartment development decreased over the time. The access road width increased over time but number of project developed in the roads below standard road width was found to be increased. Though Dhaka is a highly populated city, the units of apartment per project were decreasing over time. The developers of Dhaka had preference of choosing medium sized land for building apartment. Most of the apartment projects were built close to the main road over the last two decades. In this chapter, a clear picture of growth pattern as well as location aspects of apartment housing in different time period was discussed in detail.

Chapter 5: Factors Responsible for Changes in Apartment Housing Sector

5.1 Introduction

With the passage of time in Dhaka city the preferred location for apartment housing has shifted for various reasons. The most important reason is the increasing rate of living citizens. To give this increasing population apartment builders had to increase their preferences on location because two or three prime locations are not feasible enough to accommodate this ever increasing capital city population.

Apartment housing concept started from 1987. From that time the industry is always on change. Some concepts like prime locations, size of apartment units, price, locations, road preferences, and so on are always revolutionizing. Various reasons are there for this typical concept changes. In this chapter the factors has been focused which were affecting various concepts of this sector till date and been categorized based on the responses of the sample builders. All the results are from survey of 30 housing developers. Based on their preferences the factors are weighted on a 'Four points scale' and thus the factors been ranked on their importance. Appended part elaborately shows the approach.

5.2 Changes in Apartment Housing Sector

Housing sector has faced the changes on various thought. Prime locations of developers, shifting from broad road concepts to lesser road width, bigger to smaller plots, bigger to smaller apartment units, ever increasing rate of apartment price etc are the major changes with the flow of time. The reasons behind these changes are pin pointed by 30 sample developers of this study and are focused through this chapter.

5.2.1 Shifting of Prime Locations

At the beginning apartment housing was limited in Shantinagar, Siddeswari and Monipuripara, and then at the second phase major 3 locations of the city-Gulshan, Banani, Dhanmondi were the choice for the developers. These places are selected by the developers as the aristocrat place of the city. And then housing apartment sector boomed there. It was like that the price of those places were too much for the upper middle class to buy them and then to build house. Housing developers made it cheap and easier to

avail these locations for those people who could afford to buy an apartment but were unable to build a house there after buying a place.

But with the passage of time those places are soon filled with apartment buildings and the developers have to find other places to carry on their business. Though they had to move to rather cheap areas but their business was not brought to an end because of the increasing human flow to the capital and also the apartment concept was a rather easy solution for people than building houses.

Also the concept of apartment was a success to the middle income class and so not only the costly apartments were built by the developers but also cheap apartment buildings and locations became a target for them to grow on the business. Also scarcity of land, easy communications, shifting of commercial places, schools, hospitals etc are some notable factors for this location changes.

In Table- 5.1 all the factors stated by the 30 developers have been ranked on their given preferences by them. These are very much related to the housing location choice of the residents because developers' first consideration is the residents. They give preference to their customers in these issues which directly affect the sale. Because developers build apartments to sell and so residents choice on location is of most priority.

Table-5.1 Factors Responsible for Shifting of Prime Locations

Sl. No.	Factors	Rank
1.	Unavailability/Scarcity of land	1
2	Shifting of commercial, educational & healthcare facilities	2
3.	Demand	3
4.	Easy communication	3
5.	Old prime locations lack suitable place/land	4
6.	Near shopping centers and supermarkets	5
7.	Land price is very high	6
8.	Traffic jam & population density	7
9.	Schools are shifting locations	7
10.	Buying behavior of people is changing	7
11.	Affordability of buyer	7
12.	Development of new housing areas	8
13.	Land owner's share of apartments goes high with huge cash	9
14.	New business area is developing in different locations	10
15.	Lack of infrastructures & basic utility services	11
16.	Landowner's dependency on developer has much increased	12

Source: Survey, 2010

From the table, unavailability/scarcity of land was the major factor for the preference change on locations. This is the response of the sample developers. Then the shifting of commercial places, easy communication, demand, nearby shopping centers etc is notable.

5.2.2 Taking Apartment Projects in Lesser Road Width

At the very beginning, developers had chosen broad road by the apartment buildings. Because then the target was the upper middle and high class citizens mostly of whom own private transports. But after a time there was scarcity of these lands and demand for apartments were ever increasing. Centralized capital Dhaka is always in the center of the peoples' interest. Also the land price sky rocketed with time and so to meet the demand, developers moved to the available options they had. The price was reasonable for these places and also the apartment of these places was affordable to the bigger section of the citizens.

In table-5.2, all the factors are discussed and ranked by the responses of the developers. Again the scarcity of land stood out of all the factors as the leading reason for the developers' choice for being shifted to the lesser width road. No option was the second and land price came out to be the third reason for this change. Fourth is the most important for this change which is 'less expensive apartments can be developed', as this served the majority of the population, which is the middle class.

Table-5.2 Factors responsible for taking apartment projects in lesser road width

Sl. No.	Factors	Rank
1.	Unavailability/Scarcity of land	1
2.	When no option left	2
3.	Land price is very high	3
4.	Less expensive apartments can be developed	4
5.	Demand of people	5
6.	Strictly avoid lesser road width	6
7.	To reduce land owner's share of apartments and cash	7
8.	To reduce construction cost by using medium price material	8
9.	Landowners are interested	8
10.	Plots beside wider and important roads are mostly used for commercial purposes	9

Source: Survey, 2010

5.2.3 Taking Apartment Projects in Smaller Plots

Builders used to chose bigger plots as a standard size at the starting of this industry. Then sufficient land was available and as the sector just emerged, no one thought that the value of land would become very high with time. As the time went on all understood the value of this sector and the price of land increased rapidly. Now a days for an apartment building the land owner asks couple of times more than the original price of land. And as such the cost of land for the developers ran on high and so their approach of bigger plots shifted to smaller ones, because of two things, cost is less; and demand is high as smaller plots produce relatively cheap apartments.

Table-5.3 Factors Responsible for Taking Apartment Projects in Smaller Plots

Sl. No.	Factors	Rank
1.	New developers usually start their business with small plots	1
2.	Previous developers occupied the large size lands	2
3.	Unavailability of single big plot	2
4.	More profitable	3
5.	Division of ownership of big plots into small plots	4
6.	To increase number of projects	5
7.	Avoid small plots	6
8.	Land owner's demand goes beyond the capability of developers	7
9.	Still housing need is prevailing in the city	8
10.	Easy for construction	9

Source: Survey, 2010

From table-5.3, the response shows that new developers had to start with smaller plots as old ones had occupied the bigger plots. Also it is more profitable and division of ownership is much these days, which causes the bigger plots to become smalls. Some of the old developers still avoid smaller plots and others try it to increase project amount. Then comes the need of housing which is high and the ever rising demands of land owners.

5.2.4 Determining The Size of Apartment Units

The size of apartment units is an issue which is also changed from the past. At the first time bigger units were presented by the developers as, the target was the premium section of the rich society. With the passage of time the target market is being shifted and middle class are now the main customers of these apartment houses. So, smaller units are

introduced to the market now. Basically though there are provisions by the govt. for the size of apartment units. Minimum size is to be maintained.

Table-5.4 Factors determining size of apartment units

Sl. No.	Factors	Rank
1.	Location is an important factor	1
2.	Size of plot guides the size of apartment units	2
3.	Client group interested to buy apartments	3
4.	Provision for maximum usable/functional space	4
5.	Landowner's preference	5
6.	Adjustment of client's desire/choice	6
7.	Parking	7
8.	Provision for ample light and air circulation	8
9.	Provision for maximum utility and services	9

Source: Survey, 2010

Table 5.4, illustrates the factors affecting the size of apartment units. Response from the developers shows that location and size of the plot are two main reasons for affecting the size of plots. Then the customers demand and provision are the remaining major factors.

But though these are the factors of size, at present smaller units are built in the Dhaka city. Even on bigger plots the apartment housing may be situated but the units are small and most of the developers built these types of apartment houses. These buildings have several units in every floor. For faster sale and greater profitability developers are moving towards the smaller units. Also the customer base for smaller sized flats is more because middle income people can afford smaller units with relatively cheaper payment. And also they are spared from making a home which is very unlikely for them with a limited income.

Table-5.5 Factors responsible for developing smaller apartment units

Sl. No.	Factors	Rank
1.	Affordability of middle class group	1
2.	Increasing consumer/demand	2
3.	Nuclear family/ Smaller single families	3
4.	Smaller sizes of land	3
5.	Selling of smaller units is faster	4
6.	Easier to get housing loans from financial institutions	5
7.	Smaller units are profitable	6
8.	Maintenance is easy	7
9.	Change in lifestyle	8

Source: Survey, 2010

The response of the developers shows (table-5.5) the all important factor for the liking of smaller units is because of middle class people are greater in number which ensures fast sale of the units. Then the second vital factor is the demand. And then follows nuclear families, smaller plots, and fast selling. Also easier loan approach and life style are some notable factors here.

At present, smaller flats are entertained which are easier to sell and middle class people are affording them. Though some big builders still are fascinated to build large apartment units but it is in some fixed local areas which are a bit aristocrat and these apartments are for the richer portion of the society. These builders are few in number and also vast land is not available. Large units are built but in a very few.

Table-5.6 provides information of the 30 builders for the factors they think responsive for fewer number of large apartment units. The most influential factor is that the rich are very small in number and so building large units won't be a very profitable one. Because the customer base is small and the sale of these large apartments will be very slow to generate enough profit.

Table-5.6 Factors responsible for developing fewer number of large apartment units

Sl. No.	Factors	Rank
1.	A small number of rich people/consumer are there to buy apartments	1
2.	A small number of independent house owners are coming to buy apartments	2
3.	Increasing price disabling people to buy big apartments/ Price is beyond the availability of middle income group	3
4.	Smaller single families	4
5.	Less demand	5
6.	Number of large plots in aristocratic area is less	5
7.	Land owner's share of apartments and cash benefit go beyond the capability of developer	6
8.	Change in lifestyle	7
9.	Difficult to maintain	8
10.	Increasing cost of material	9

Source: Survey, 2010

Then the price is too high of these large units and also now a days nuclear family is preferred. So a small family doesn't require very large apartments. Also the big plots are very rare in posh areas at present. All are used or the owner won't sell them. Demand for

large flats is low. This is difficult to maintain properly and also cost of material is very high or increasing in an alarming way.

Now the size of apartment units is changing and recently it's more demanding for smaller rather than larger flats. Larger flats are not extinct but very few in number and in demand. With the pave of time developers' intention was mainly for profit and targeting that the theme has to be changed.

5.2.5 Determining Price of Apartment Units

At the very beginning when the apartment concept was just starting, the location for developers was mainly targeted to the rich areas. Those areas are costly and so the flats were mainly for the upper and upper-middle class of the society. But now a days, low priced flats are very demandable as the population is growing for the city and middle class is the majority of the population and also the housing need of them is greater than any class in the city.

Table-5.7 conceptualizes the factors which fixes the price of the apartment flats. First of all land price and then location is found to set the price for flats. Then comes construction cost, followed by facilities provided, marvelous architectural design. Then demand and also market trend are the last two factors to set up the price by the thought of the developers.

Table-5.7 Factors fixing the price of apartment units

Sl. No.	Factors	Rank
1.	Land price	1
2.	Location	2
3.	Construction/material cost	3
4.	Facilities/Amenities provided	4
5.	Marvelous architectural design and related renowned person	5
6.	Establishment cost of the developer	6
7.	Demand	7
8.	Trend of market price in respective area	8

Source: Survey, 2010

Though the indicators are there which makes the price of apartments but the price from the beginning is ever increasing. The price of the same locational area is increasing due to

three obvious reasons, inflation, increasing demand, and increasing land price. So the price of the apartments' is continuously increasing. The factors which enable the continuous rising of price by the thoughts of the developers' are focused in Table-5.8.

Table-5.8 Factors responsible for continuous increase in apartment price

Sl. No.	Factors	Rank
1.	Land price is high	1
2.	Due to centralization of Dhaka	2
3.	Increasing construction cost	3
4.	Increase in material cost	4
5.	Landowner's increasing demand in apartment share and cash benefit	5
6.	Scarcity of land	6
7.	Devaluation of money/ Increasing depreciation rate	7
8.	Increase in transportation cost	8
9.	Consumer demand is high	9

Source: Survey, 2010

Again the land price is the very first choice of them. Then comes the rising demand for Dhaka being the center of all citizens', for every purpose. Construction cost and material costs both increased since the beginning. And landowners' charge higher for their land as the land is getting scarce. And then comes the devaluation of money, transportation cost, and consumer demand.

Then comes the landowners' demand and scarcity of land and also the inflation of money.

5.3 Conclusion / Summary

With the passage of time, housing sector has gone through a lot of changes here and there. The changes aren't just incidents; these are influenced by various reasons or factors. In this chapter the reasons for the various changes of this industry was targeted to be found out from the developers' view point. The survey was conducted and results for various changes are shown through the chapter. The factors aren't too hard to understand and the changes happened were meant to happen. The ever increasing pressure of population in Dhaka and the scarcity of land are the two major factors through out the whole chapter. And these two influenced all the changes happened in this industry. At the last, to meet the ever increasing basic need of housing; this industry is trying to serve all classes of people by various changes through itself.

Chapter 6: Recommendation & Conclusion

6.1 Introduction

Housing is one of the major problems of Dhaka City. Population of Dhaka city is increasing rapidly and this problem is also getting aggregated day by day. Government made a very little contribution in this sector, whereas private developers came forward and became able to meet the demand of the elite class with an attempt to include the middle income group of the society. . Over the period, apartment housing by these developers experienced many changes in various aspects such as location of apartment projects, apartment size, plot size, client group, and price of apartments etc. The changes have driven by some forces which are explored in this research. Based on these research findings, this chapter tries to suggest some recommendations in general and particularly on the topics studied.

6.2 Findings and Recommendations

Location: The developers of Dhaka are always looking for some preferred location due to their locational advantage. Places like Gulshan, Dhanmondi, Banani and Uttara are found to have most of the apartments of the city. This trend should be changed to reduce pressure on selective places and the developers should focus on other areas also. A paper of Kamruzzaman and Ogura (N. D.) studied on the issue how a residential area of low density with low rise buildings has given rise to a dense development and proliferation of built structures. Unlike the findings from their research, it is found from this research that Gulshan Banani, Dhanmondi and Uttara are becoming dense with apartment housing though inclusion of new locations for development are taking place by the developers recently which should be continued. Density for each location in DCC area should be specified regarding this issue. A uniformly distributed housing development throughout the whole DCC area should be the objective for a balanced city.

The customers are very sensitive now-a-days about their choice, they also have preference. There are some factors identified in this study which attributes to their choices. Over the year this choices were stable except one or two. The customers now want to have more secured

place, good communication system in the proximity and less distance from their work place keeping the choice near school first. Therefore, schools, health facilities, shopping centers and other community facilities should not be concentrated in one place; rather these amenities and facilities should be dispersed along with ensuring easy communication system to distribute the apartment housing and population uniformly.

Plot size: A huge variation of plot size is observed over the years from 2.0 katha to 81.318 katha. But number of plots below 4 katha is very less as development in smaller plots involves more cost than larger ones and number of units are also limited. The average plot sizes remain from 12 to 20 katha over the whole period. As big size of land is now very scarce in Dhaka city, average land size for building apartment decreased over the years.

According to Imarat Nirman Bidhimala, 2008, big plots can be divided up to the lowest area of 5 katha in planned residential area which should be strictly implemented to stop splitting up plots into small pieces. Again, unification of small adjacent plots is possible to develop as a single big plot which should also be encouraged for apartment housing development. In unplanned areas too, introducing a uniformity of minimum plot size can be started by applying the unification law.

The majority of the apartments found from the year 1990 to 2007 were built without following the rule of covering two third of plot area and smaller size plots tended to have incompliance extremely to have more floor space and units. Again comparing Bidhimala 2008, most of the projects are non-compliant with the FAR rule. Projects should be properly checked to stop violation in implementation stage.

Access road width: For residential development, 6 meters width of access road is taken as the minimum standard from the very beginning till now. But out of 623 projects, 167 have narrower access road width; that is, 26.81% of the apartment projects over the last two decades are found with widths below 6 meters from the study. All over the period, below 1.5m width narrow lanes are found for developing projects which is impossible to have motorized vehicular access.

As per previous rules like Bidhimala 1986, 1996 and 2006, any building should be constructed at a distance of minimum 4.5m from the centre of the adjacent access road, or at a distance of 1.5m from the plot boundary adjacent to access road, whichever value is greater between these two is to be considered. According to Imarat Nirman Bidhimala 2008, narrow roads below standard are to be expanded up to minimum 6 meters width by acquiring part of land from two opposite landowners facing the road before any new construction begins. Surrendering land of landowners before development in narrow roads to increase road width is a significant amendment and this should be strictly enforced. This will help to reduce traffic congestion, enhance easy communication system and bring openness, safety and security in the city.

Distance to major road: From the trend, it is seen that developers try to stay closer to the main road for taking apartment project over the whole period. Once minimum 6 meters width of access road is followed by all and everywhere in the city, distance to major road will have less significance for the development of apartment housing. All roads are to be spacious according to the minimum standard to overcome the constraint of bigger distance to major road. The rule of standard access road width should be strictly enforced for this case too.

Building height: The major concern is lack of tall and high rise apartment projects in Dhaka city. Over the years 77% of projects are found as six-storied from the study which fails to meet the demand of increasing housing need. A very few of the tall apartment buildings are seen in Dhaka, some of which are standing on the narrow lanes of Siddeswari, Shantinagar and Boro Moghbazar area without keeping proper open space. As a megacity, Dhaka needs many high rise apartment buildings keeping 50% open space to accommodate its ever-growing population in a healthy environment. Building permit for high-rise apartment building should be checked properly by verifying the existing access road width too. Government authority should be more stringent regarding this issue.

Number of units: The study found the average number of units per project is decreasing. Decision on number of units are mainly dependent on how big the plot is and what height the building be permitted. So, big plots developing with high rise apartments can increase the number of units per project and contribute to solve the housing need of people in Dhaka. As

developing more units in small plots creates imbalanced density, adjacent small plots are to be encouraged for unification to increase number of units by giving some benefits to the smaller land owners. Regarding density, Bidhimala should be revised specifying dwelling per acre (DU/Acre) for each location in DCC area.

Apartment size: Trend analysis shows that minimum size of apartments is decreasing; the lowest figure found is 465 sq-ft. The maximum number of apartment is found for 1000-2000 sq-ft size range. So it is revealed that developers started to develop smaller sizes of apartment units which give a sign of bringing the middle income group customer into apartment housing sector. This trend should be continued. Smaller size apartments should be to be encouraged to be developed for middle income group of people by adopting some techniques like low interest rate for housing loans. An important finding on violation of Bidhimala is that out of 317 projects completed within the year 2007, 212 projects crossed the allowable two third plot area as covered area. As the rule of FAR started to be enacted since 2006, careful inspection should be made on projects during construction period to stop the violation of using excess FAR.

Apartment price: Apartment price is going high. As the land price in Dhaka city is very high, the private developers should choose those areas where land price is low. So, in that case the developers can also reduce per sq-ft price of apartment. Construction of high rise building with smaller size apartments for middle class people can accommodate a good number of people in a single piece of land and thus price per sq-ft gets lower.

6.3 Some General Recommendations

Though this study focused on trend analysis of apartment housing in Dhaka City, some general problems have been found regarding this issue. These problems are responsible for the present housing environment in Dhaka city. To solve these problems, some recommendations are given as follows:

- The spatial distribution of apartment projects are found as dispersed for only first five years of study period and clustered for the last 15 years. Appropriate planning

should be done to make the distribution dispersed for a uniform density all over Dhaka city.

- Housing rules and by-laws for access road should be strictly enforced for widening the narrow roads which will help to reduce traffic congestion and to enhance easy communication system in the city.
- Maximum ground coverage should be checked carefully during approval of construction as well as inspection should be done during construction period to stop violation of exceeding allowable covered area or FAR and thus regain a healthy environment in the city.
- Advantages of applying FAR cannot be obtained properly if density of dwelling units per acre is not restricted in residential areas, because higher number of smaller apartments will increase the density of an area. So, housing rules for density should be checked and amended.
- Provisions of areas for high-rise, low-rise, permanent and semi-permanent structures should be made in the Master Plan of Dhaka city. Expensive central city areas should be reserved for high rise developments. In this way the concerned authorities can provide higher capacity infra-structure at an optimum cost.
- Only private or only public sector cannot solve housing problem alone. It must be done by both in public and private sector and they should conform to the development of physical and social infrastructures like roads, electricity, water-supply, sewerage, gas, telephone and the like.
- Apartments built by the private developers are very costly and the low middle class and poor people cannot afford it. So, special schemes for housing the urban

poor and destitute by constructing low cost core housing with provision for upgrading on self-help basis should be adopted.

- As the private sector investments are meant for profitability, this sector should be encouraged to cater for the upper middle and upper income groups. It will help them to redeem their high cost in building such apartments.
- Walk-up row housing and tenement blocks should be developed both in the private and public sectors to house the lower income groups.
- One of the barrier in owning a house or apartment in Bangladesh is poor credit facility. As buying a house is a very big investment, it is very hard to manage it at a time. Moreover, interest of credit is very high. Although housing loans are available for purchasing small size of apartments now, credit for housing development for individuals and institutions should be modified to increase the housing stock.
- Since, Dhaka cannot be expanded anymore; focus should be given on tall and high rise buildings to accommodate more people in less space. For this reason, national and municipal policies for high rise development should be formulated.
- To check the mushroom growth of real-estate companies there should be arrangements for scrutinizing the technical, financial and institutional capabilities of prospective companies.

6.4 Conclusion

The population of Dhaka is increasing leaps and bounds and land, especially buildable land, is becoming scarce. Personally construction of house is not feasible. So for this reason, people are interested to buy apartment from developers. The real estate sector is playing a vital role to solve the housing problem. The developers prefer some particular areas when they build apartments. The common prime locations were Gulshan, Banani, Baridhara,

Dhanmondi and Uttara, in addition other preferred places were Siddesswari, Shegun Bagicha, Shantinagar, Eskaton, Monipurirara Niketon, Mirpur, Mohammadpur, Basundhara and Old Dhaka. There are some criteria upon which they choose the location. The criteria were almost same over the years. The plot size for apartment development decreased over the time. The access road width increased over time but number of project developed in the roads below

standard road width was found to be increased. Plot size influenced much for determining apartment sizes such as smaller plots resulted into developing of smaller apartments, but bigger plots had the option of developing both smaller and bigger apartments considering the width of access roads. Violation of allowable covered area was found immensely. Apartment price is going high with the increasing land value day by day. This study has brought out the driving forces responsible for the changes in the apartment housing sector stated by the developers. The important factors that have mainly been pointed out are unavailability of land, high land price, affordability of middle income group, shifting location of educational, heath and commercial facilities and presence of many new developers. The recommendations mentioned in this chapter are from the research findings that will provide a guideline for positive changes towards making a planned, balanced and livable city.

Chapter 2: Overview of Dhaka City and its Housing Situation

2.1 Introduction

Bangladesh is one of the most densely populated countries of the world with a huge population. To give shelter to this people Bangladesh has already surrendered nearly 25% of its land (Milan, 2006). With the current 30 million urban populations, the share of urban land is about 2 percent of all lands and nearly 10 percent of land under settlements (BBS, 2007). In this chapter, urbanization in Dhaka, land value, housing situation, affordability etc will be described to have clear understanding about the driving forces of real estate business in Dhaka City Corporation area in the last two decades.

2.2 Dhaka: A Megacity

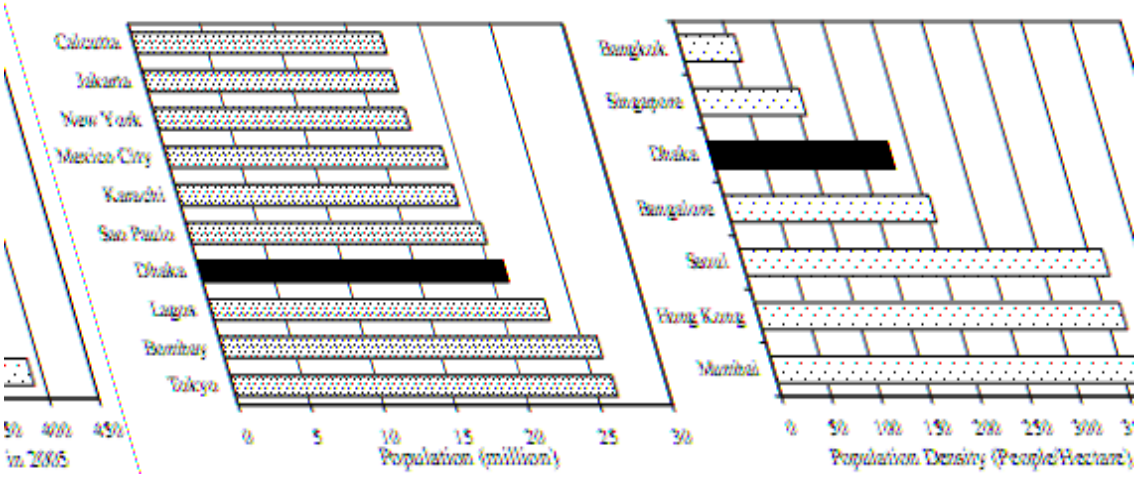
Dhaka, the capital of Bangladesh, is one of the fastest growing megacities in the world. The city, its municipalities and adjoining urban areas, account for about 34% of the total urban population of Bangladesh (BBS, 2001). The expansion of the job market and consequent large-scale rural-urban migration played a significant role in the escalation of the cities population. Presently, Dhaka Metropolitan Development Plan Area (DMDP) has a population of over 12.5 million having an area of 1,464 sq. km. Private sector housing is one of the fastest growing sectors in the economy of Bangladesh and it concentrates its activities mostly in Dhaka.

From the private housing sector government earns about Tk 27,000 crore every year, still many of the leading and promising companies facing tremendous hard to survive because of dual policy of Rajuk (Khan, 2009). More than hundred linkage industries of this sector and 1.25 crore manpower are directly or indirectly involved in the sector. Understanding between government and private sector is most significant to save the housing industry. The contribution of private sector housing is more than 80 per cent for the present infrastructural development of Dhaka City (Khan, 2009). The conversion of Dhaka from an ordinary town to a metropolis is manifest in the transformation of the nuclear house into high rise apartments. Inadequate supply of developed land and high construction costs are the major constraints in most new formal sector residential

construction in Dhaka. The issue of efficient utilization of residential land for urban housing development has always been central to urban planning. This is particularly so considering the fact that the utilization of residential land vis a vis appropriate housing type has exposed the plight of the urban majority of middle class dwellers in Dhaka.

2.3 Population Growth

The UN International Economic and Social Affairs Department identified Dhaka as a mega city in 1987. With a population of only 2,068,353 in 1974, the city's population increased to 3,440,147 in 1981 and more than tripled to 6,487,459 in 1991 due primarily to rural urban migration (BBS, 2001). According to the 2001 census, the population of Dhaka mega city was 9,912,908 with an annual growth rate of nearly 4.33% (BBS, 2001). The population of Dhaka City Corporation (DCC) in 2001 census was 5,378,000 (BBS, 2003, p. 96).



Source: Kamruzzaman and Ogura, 2006b

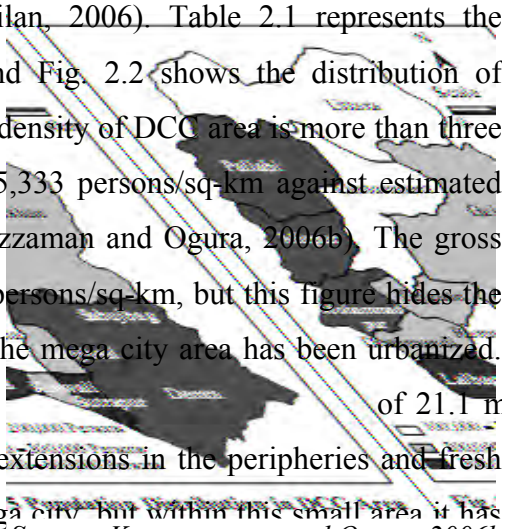
Fig-2.1: Estimated Population and Density of Some Megacities of the world

The projections for city populations (Fig.2.1) illustrate that by 2015, the urban agglomeration of Tokyo will be the most populous followed by Bombay, Lagos and

Dhaka (21.1 million) (UN, 1999). At the same time Dhaka has the one of the leading built-up density among the Asian cities (Fig. 2.1). This projection will have substantial impact on housing plans of DCC area. Increase of population will lure the developers to build more housing projects but there will be little or no place to develop at that time.

2.4 Population Density

Population density of Dhaka mega city was found to be 4,795 persons/sq-km in 1991 and approximately 8573 persons/sq-km in 2004 (Milan, 2006). Table 2.1 represents the timeline of population density in Dhaka city and Fig. 2.2 shows the distribution of population in DCC area. However, the population density of DCC area is more than three times of the mega city area, as in 1991 it was 15,333 persons/sq-km against estimated present density of 18,055 persons/sq. km (Kamruzzaman and Ogura, 2006b). The gross population density in the mega city area is 8,573 persons/sq-km, but this figure hides the reality to a large extent. Less than 40 percent of the mega city area has been urbanized. By 2015, Dhaka's projected population of 21.1 in metropolitan area as a result of urban migration, extensions in the peripheries and fresh urbanization. DCC comprises only 24% of the mega city but within this small area it has to accommodate a population of nearly 6 million commuters. The population of Dhaka City Corporation (DCC) in 2001 census was 5,378,000 (BBS, 2003, p. 96).



Source: Kamruzzaman and Ogura, 2006b

Fig-2.2: Some dense areas of Dhaka City

2.5 Urbanization in Dhaka City

Urbanization helps saving land for settlements. This is because of the possibility of higher density. As of today 30 million urban population are squeezed on about 3,370 square kilometers (1,300 square miles) of land in the country giving a gross density of 8,870 persons per square kilometer (23,000 persons per square mile) as opposed to about 700 persons per square kilometer (1,800 persons per square mile) in rural areas. Thus the urban density is more than 12 times than that of the rural density. But urban population will be more than double in the next 20 years and the trend would continue. By the year 2040 Bangladesh would possibly have half of its population (of 200 million or so) in urban areas that would amount to 100 million people in urban areas (Milan, 2006).

Due to various factors, including absence of an urbanization policy or a human settlement policy, urban growth and urban development in Bangladesh is basically Dhaka oriented. Already 30% of the urban population of the country is concentrated in Dhaka Megacity region. The trend is continuing or becoming more entrenched (Seraj and Alam, 1991).

In future there would obviously be a need for higher density of population in both rural and urban areas, more so in urban areas. Density can be increased both horizontally (by more compact arrangement) or vertically through multi-storied development.

2.6 Housing Situation in Dhaka

Housing conditions of Dhaka City vary greatly between high and low-income groups as well as by area. In a research of Jamil and Ahmed (2006), it was shown that the gap is obvious between luxurious high income apartments/houses which exist in high-income areas such as Gulshan, Baridhara, Dhanmandi, Uttara areas and poorly constructed temporary housing (Jhupri) with extremely small floor space, very densely located on the lands prone to flood disasters. About 30% of the slum dwellers live in Jhupri, 24% in Chhai, 13% in Tong, 30% in Tin-shed, 2.5% in Semi-pucca and 0.5% in Pucca type of structure (Jamil and Ahmed, 2006). Housing requirements in Dhaka is 218,000 units including dissolution of backlog until 2001 and replacement, wherein the requirements of urban poor are 140,000 units, which share almost two-thirds of the total requirements. In terms of tenure, 54% of the households are on private rental basis while 31% are owned. Only 1.2% is on social housing (Jamil and Ahmed, 2006).

It can be pointed out that people from all socio-economic backgrounds in Dhaka are facing housing problem of one type or another. While the urban destitute need rehabilitation, the slum dwellers need slum upgrading. The low-income families are in need of low cost flats or plots and the middle and upper income families are complaining that the cost of a decent plot or a decent flat is going beyond their means. The solution to the problems of these different groups is also different and mainly lies in the hand of the policy makers and the government.

In recent years there has been a new trend of housing development mainly in the private sector. A new type of residential development has come on the scene, which can be

broadly termed as apartment development. In most of the cases an individual or a company constructs one or more buildings comprising of several apartments, which are later sold to individual purchasers. This has prompted many individual entrepreneurs to develop apartment buildings resulting in an increased number of real estate companies in the city. There has been considerable criticism regarding apartment development as well as real estate development in Dhaka City in recent years. While many of these criticisms are valid, others are distorted based on misconceptions and/or inaccurate information.

2.7 Housing Access and Affordability

The rapid growth of city population has led to a phenomenal increase in housing demand in the city. The housing market of the city consists of five tenure groups – owner occupied, private rental, rent free, squatters and slums. Physically, housing has extended from makeshift arrangement and permanent houses. Dhaka City has a very high proportion of poor population (65%) and as such affordability of housing is significantly affected by the income distribution. The access of poor to housing is constrained by high land and material prices (Rahman, 1990). Planners and decision makers have tried to evolve different strategies to solve housing problem, but even the cheapest formally designed housing remains beyond the affordability of over 80% of households in Bangladesh (Jahan, 2002). The affordability indices of Dhaka City imply that the govt. has to play the role of both provider and facilitator/enabler for different income groups. As most of the people of DCC area are from poor to middle income group, they cannot afford big apartments due to high price. But due to high rent of apartments in DCC area, people want to have their own house, which is increasing the demand of small apartments. So, affordability plays a big role in apartment development in DCC area.

2.8 Land Use, Land Use Economy and Land Value

The trend towards construction of tall buildings in Dhaka is very much connected with the very high price of land in the main commercial and business districts. Since land value is very high in inner city areas, population density should be increased by adoption of multi-storied construction. In less developed areas, where commercial value is less, tall

buildings are virtually non-existent. The overall picture of the land-use type in Dhaka shows that only 39% of the total land of the capital is in urban use, while 61% has rural or semi-rural use (Milan, 2006). High-rise buildings are constructed to ensure economic use of land in areas where land is scarce and its cost is high. Individual plot holders can save a lot of land by going for multi-story buildings. However, the savings in a given sector of land depend on the gross densities in number of dwellings per acre including the land required for common amenities like parks, playground, schools, shops, road etc.

Dhaka has experienced an unprecedented increase in land value since the early seventies. In the past decade Dhaka has mainly developed along the two main axes towards the north of Dhaka. Due to huge increase in the population of Dhaka, the pressure on land for residential use has been very high. Since the sixties until today RAJUK has provided less than ten thousand plots at subsidized rate mainly for the middle and upper income groups (Asia Pulse, 2008).

The value of land in Dhaka City, mainly in the central area, has increased at a rate much higher than the increase in cost of living in Dhaka. The price of high-class residential land has increased exponentially during the period 1975-2007. In Table 2.1 historical land prices are converted into value of 2007 by adjusting the land prices by inflation rate. Here inflation adjusted value for land over the years for some areas of DCC is given and the original value and inflation rates are shown in Appendix-V.

For example, land price for Baridhara in 1975 was 25,000 taka which is 3, 57,000 taka in inflation adjusted value in 2007. If observed carefully, it can be seen that the land prices has gone up several times than inflation adjusted values. So, it can be said that inflation is not only responsible for this type of hike in the price. It is well known that supply of land is limited in DCC area due to scarcity of land as it has little or no scope to grow further. On the other hand demand is increasing day by day due to continuous increase of population in Dhaka City. As a result, the price of land is going up without any pattern.

Residential land values in prime locations of Dhaka range between US$ 350 and $1430 per square meter which is too high compared to other cities in developed countries (Kamruzzaman and Ogura, 2006b). For example, areas in the US where land prices exceed $60 per sq-ft are rare (Hoek-Smit, 1998). In Fig -2.3 increase of land value for

selected areas is shown. In this figure, actual value is used. For every place, the growth is of same kind, hyper growth in last few years.

Table-2.1: Continuous Increase in Land Values (inflation adjusted) (unit Tk/Katha)

Area	1975	1990	2000	2007
Baridhara	3,57,000	14,80,000	33,85,000	90,00,000
Gulshan	3,57,000	1,479,893	2,978,827	8,000,000
Banani	3,57,000	1,479,893	2,708,024	8,000,000
Mahakhali	3,57,000	1,479,893	2,437,222	8,000,000
Dhanmondi	3,57,000	1,479,893	2,978,827	9,500,000
Lalmatia	2,86,000	1,479,893	2,437,222	6,000,000
Azimpur	2,50,000	1,479,893	2,166,419	3,500,000
Mohammadpur	3,57,000	1,233,244	1,624,815	4,000,000
Shantinagar	2,86,000	1,233,244	2,031,018	6,000,000
DOHS	2,86,000	1,233,244	2,166,419	6,000,000
Shaymoly	2,50,000	739,947	1,354,012	3,000,000
Uttara	2,86,000	739,947	1,354,012	3,500,000
Cantonment	2,86,000	986,596	1,354,012	3,000,000
Kamalapur	2,86,000	986,596	1,083,210	2,500,000
Gandaria	1,42,000	986,596	947,809	2,000,000
Basabo	4,14,000	739,947	1,083,210	2,000,000
Kalyanpur	2,50,000	739,947	1,083,210	2,000,000
Mirpur	142,816	739,947	947,809	2,000,000
Badda	57,127	493,298	812,408	2,000,000
Goran	57,127	493,298	812,408	1,800,000
Demra	57,127	493,298	812,408	1,500,000
Motijheel	714,082	2,959,786	4,739,042	11,000,000
Karwan Bazar	592,688	2,466,488	33,85,000	8,000,000

Source: Calculated by researcher

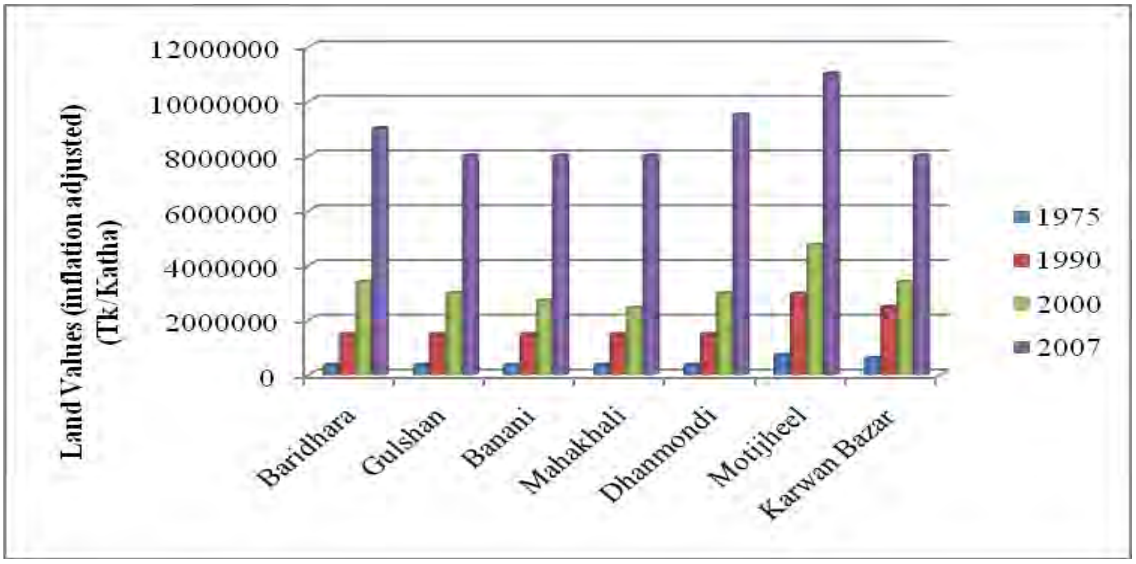


Fig-2.3: Land Value (Inflation adjusted) over the Years

The big real estate companies are mainly responsible for the high price of land in the central area because they pay a much higher price for a good piece of land. It is argued that due to this reason middle and upper middle class families are being unable to buy land in Dhaka.

But, real estate companies are just one among several reasons for the rise in price as the value of urban land is actually determined and fixed through competition in a complex economic process. Besides, there are other factors, which influence urban land value. These are social values, customs and others. Among the other factors some are- lack of investment opportunity in other sectors of economy, rapid urbanization and consequent scarcity of urban land, uncontrolled land market, lack of comprehensive land policy, inappropriate taxation policy, political instability, high rate of inflation etc.

Since land value is very high in inner city areas, increasing multi-storied construction will increase the density. Many parcels of inner city land are under utilized or vacant, which should be put to proper use for balanced growth. However, in the context of Dhaka it is

envisaged that in the future high-rise construction will increase both for commercial buildings and residential development.

2.9 Apartment/Real Estate Development in Dhaka City

Three decades back the city dwellers were reluctant to live in flats while ten years back some one would have thought twice before buying an apartment/flat. But in the last couple of years people have shown an increased interest in owning apartments. As mentioned earlier the main reason is economic due to increased land cost as well as construction cost. There are also other reasons such as reluctance of individuals to spend time and energy in house construction, increased awareness of apartment living, and western influence. As a result apartment-owning is becoming increasingly popular. Moreover the absentee i.e. the wage earners in Middle East and other countries are also a major contributing factor towards the increasing demand for apartments. As a result of increased demand, many apartment builders have appeared in the market in recent years. Twenty years ago there were fewer than five companies in Bangladesh engaged in developing apartments while today there are more than 450 developers. It may be mentioned here that in 1988 there were less than 20 such developers in Dhaka. At present there are 420 such developers working in Dhaka City who are members of REHAB. But there are many other companies/individuals engaged in such development in smaller scale and selling apartments to friends and relatives only.

Apartment development has a number of plus points regarding solving housing problems of the city. But at the same time it has certain demerits. Broadly there are two types of apartments are now being built in Dhaka. Firstly, up to G+ 5 story walk up apartments, which are usually RCC frame structure with average fittings and fixtures (e.g. in-situ mosaic, concealed wiring with local fittings, best quality BISF sanitary ware etc.). The second types of development are those apartments in high-rise buildings of more than six stories. But the present trend in Dhaka City is 12-20 stories. (Zahur, 2008).

In reality mainly middle and upper income families can purchase both walks up and high rise apartments. Lower middle and lower income groups can not buy such expensive flats. In many apartment complex certain services (mainly recreational and community space,

open area) are lacking. Problems associated with water supply, fire fighting and fire escape (mainly in high rise apartments), and inadequacy of lift are notable (Rahman, 2001).

It is sometimes argued that high rise building prevents social contact with other neighbors, which can lead to socio-psychological problem. Besides all these criticisms, the apartment builders have many problems like planning problems, design problems and construction problems. Developers often feels the lacking of a separate directorate of Real Estate, which interlinks all the concerned agencies, related to house construction such as RAJUK, Dhaka Municipal Corporation, WASA, PDB, Titas and House Building Finance Corporation (HBFC).

2.10 Housing Policy and Strategies of Different Authorities

Housing is one of the basic need of human being and equally important as food and clothing. Housing provides shelter, protection, security and ownership. There exists a tremendous shortage of housing in both urban and rural areas in Bangladesh. The government concerns about housing situation and considers this as a part of human habitat, culture and economic improvement. National Housing Policy of Bangladesh was first enacted in 1993 as a result of summons to all governments in a conference of United Nations Environment and Improvement at Rio D Janeiro in 1992. In 1999, this policy (Jatiyo Grihayan Neeti, 1999) was further amended which has the following objectives as follows:

- To ensure availability of housing provision for all groups of people in society and to accelerate house building especially for lower and middle income groups of urban and rural area. Socially neglected, rootless and houseless people are given priority in this case.
- To ensure land/plots in convenient locations according to affordability of lower and middle income group of people.
- To invent appropriately required measure/technique for decreasing the tendency of developing slums unauthorized construction and occupation of unhygienic

accommodation; and to relocate, and if possible, to upgrade already developed housing of such types.

- To rehabilitate the affected houses caused by natural calamity and fire.
- To use personal savings and other assets and establish appropriate financial institutions for easier housing provision.
- To implement housing programs effectively prioritizing the use of locally available materials and techniques and to increase production of forest resources used in construction works such as wood, bamboo, fencing fibers. To invent and improve alternative durable materials based on locally available raw materials.
- To adopt organizational and legal framework for providing housing smoothly.
- To improve characteristics, qualitative standard and environment of overall existing housing areas.
- To amend housing policy in different time with an aim to fulfill the ever-increasing housing demand of the country and to solve the problem by inventing new techniques.
- To keep construction cost and house rent to a minimum level by adopting extensive practical and experimental programs for solving housing problem.
- To keep the revenue on asset at a acceptable level so that people are motivated for housing.

For Dhaka city, there is regulation about access road, plot size, building height etc. This regulation is known as Dhaka Mohanagar Imarat Nirman Bidhimala. The latest amendment was done in 2008. In this Bidhimala, it is said that, unification of more than one plot is possible and can be considered as a single big plot and division of one plot into two or more plots is possible by keeping accessibility for each of the divided plots. For building permit, minimum access road width should be 6.00 m. Applicable FAR, MGC and adjacent road width for different size of plots are also given in the Bidhimala. Furthermore, building height restriction is imposed by Civil Aviation Authority.

Another regulation in this regard is the Bangladesh National Building Code (BNBC), 2006 which also specified the Plot size and Means of Access for development of apartments. It is specified that the minimum size of residential plot shall be 65 Sq-m.

Common private road or family road serving not more than four plots shall be at least 2.5 m wide. Open space requirements and height and area limitations of buildings on such plots shall be decided in view of the nearest public road. Common private road or family road serving more than four plots shall be at least 3.5 m wide. Notwithstanding any other requirement for front open space, a residential building may be permitted to be constructed at a minimum distance of 1.5 m from the front property line of such plots.

2.10 Summary

Fast growing mega city, Dhaka, has high population growth and density. Urbanization is concentrating mainly in the capital for which housing problem is more serious. In this chapter, some problems and prospects of apartment housing in Dhaka City have been described. From the discussion, it can be seen that the affordability of people is now is an issue and this issue is creating demand for less costly and smaller size apartments. But, in the other hand land price is increasing exponentially every year which prevents the developers to develop apartments in lower price. So, the development of low price apartments is not getting the boost.

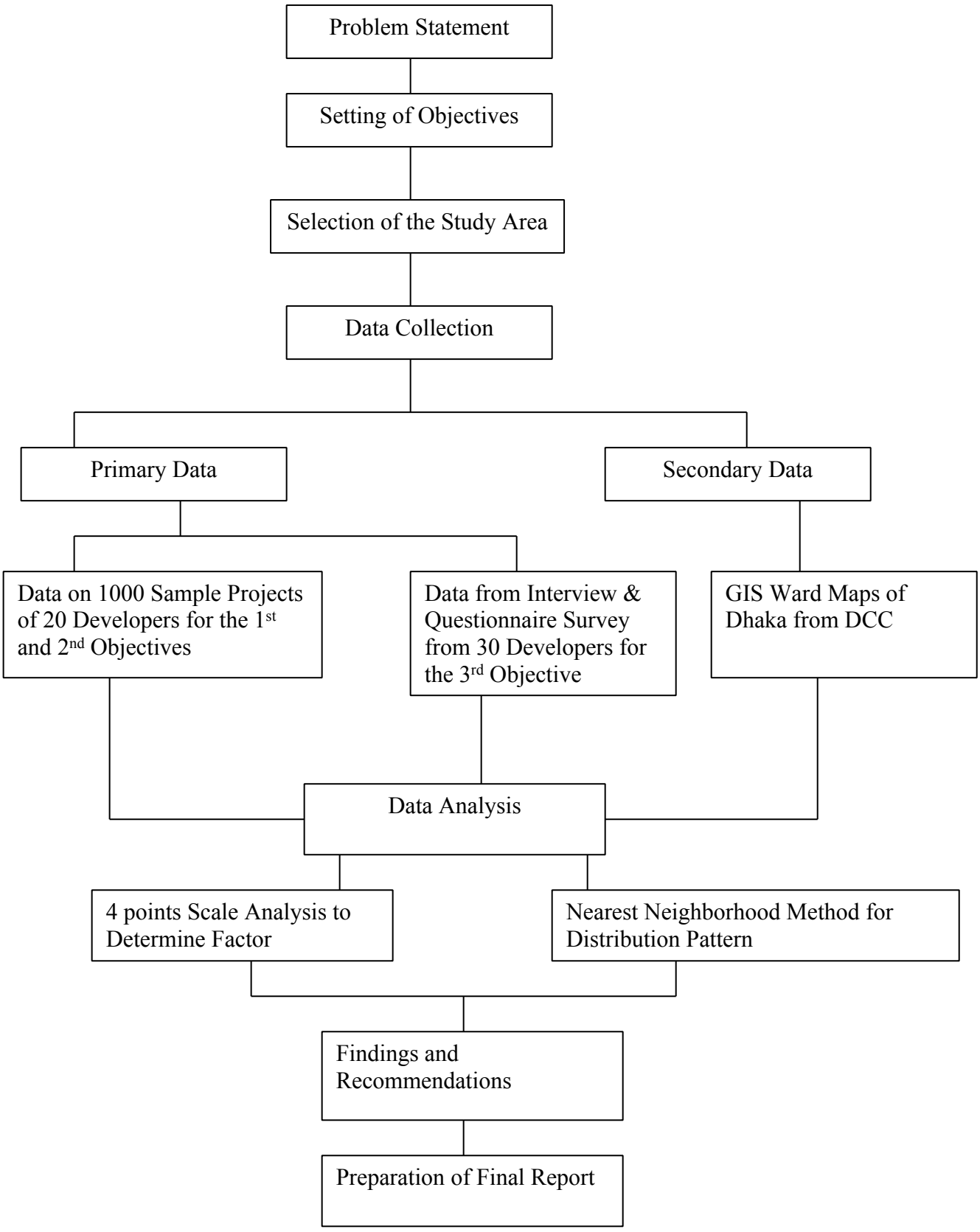


Fig-1.1: Flow Chart of Methodology

Appendix-III

List of Developers selected for Data Collection in Dhaka

Sl. no.	Name	Year of Inception
1	Eastern Housing Ltd.	1964
2	The Structural Engineers Ltd.	1983
3	Property Development Ltd.	
4	Building Technology & Ideas Ltd.	1984
5	Sheltech (Pvt.) Ltd	1988
6	Borak Real Estate	1991
7	KASHBA Housing Ltd.	1993
8	Advanced Development Technologies Ltd.	1994
9	Suvastu Development Ltd.	
10	Building for Future Ltd.	
11	Bay Developments Ltd.	1995
12	Urban Design & Development Ltd.	
13	Navana Real Estate Ltd.	1996
14	Rangs Properties Ltd.	
15	Rupayan Real Estate Ltd.	1998
16	Sky View Foundation Ltd.	
17	Asset Developments & Holdings Ltd.	1999
18	Anwar Landmark Ltd.	2001
19	Building Development & Design Ltd.	2002
20	Assurance Developments Ltd.	2003

List of Developers interviewed in Dhaka

Sl. no.	Name
1	Eastern Housing Ltd.
2	The Structural Engineers Ltd.
3	Property Development Ltd.
4	Building Technology & Ideas Ltd.
5	Sheltech (Pvt.) Ltd
6	Borak Real Estate
7	KASHBA Housing Ltd.
8	Advanced Development Technologies Ltd.
9	Suvastu Development Ltd.
10	Building for Future Ltd.
11	Bay Developments Ltd.
12	Urban Design & Development Ltd.
13	Navana Real Estate Ltd.
14	Rangs Properties Ltd.
15	Rupayan Real Estate Ltd.
16	Sky View Foundation Ltd.

17 Asset Developments & Holdings Ltd.
18 Anwar Landmark Ltd.
19 Building Development & Design Ltd.
20 Assurance Developments Ltd.
21 Concord Real Estate Ltd.
22 Ventura Ltd.
23 Transparent Holdings Ltd.
24 Circle Properties Ltd.
25 Horizon Properties Ltd.
26 Mega Builders Ltd.
27 Amin Mohammad Foundation Ltd.
28 SD Properties Ltd.
29 ANZ Properties Ltd.
30 Nandan Kanon Housing Ltd.

Appendix-II

List of Developers in Dhaka from REHAB

Sl. No.	Name	Year of Inception
1	Karnaphuli Works Ltd.	1954
2	Eastern Housing Ltd.	1964
3	BEXIMCO	1972
4	The Civil Engineers Ltd.	1977
5	Techno Builders (Pvt.) Ltd.	1978
6	The Structural Engineers Ltd.	1983
7	Property Development Ltd.	
8	Building Technology & Ideas Ltd.	1984
9	Latif Real Estate Ltd.	1986
10	Siza Development Company Ltd.	
11	East West Property Development (Pvt.) Ltd.	1987
12	ABC Real Estate Ltd.	1988
13	Altamira Homes	
14	Oriental Real Estate Ltd.	
15	Sheltech (Pvt.) Ltd	
16	Agrani Apartment Ltd.	1989
17	City Axix Ltd.	
18	Concord Condominium Ltd.	
19	Confidence Builders Ltd.	
20	North South Property Development Ltd.	
21	Alam's Real Estate Ltd.	1990
22	Bashati Consortium Ltd.	
23	Hamid Real Estate & Construction Ltd.	
24	Hassan and Associates Ltd.	
25	Metro Makers & Developers Ltd.	
26	Borak Real Estate	1991
27	Urban Property Development Company (Pvt.) Ltd.	
28	Arcadia Property Development Ltd.	1992
29	Shamsul Alamin Real Estate Ltd.	
30	Amin Mohammad Foundation	1993
31	Dhaka Shelter Ltd.	
32	Goodwill Properties Ltd.	
33	HBS Associates (Pvt.) Ltd.	
34	KASHBA Housing Ltd.	
35	Living Stone Ltd.	
36	SS Builders & Developers Ltd.	
37	Advanced Development Technologies Ltd.	1994
38	Concord Architects & Interior Decor Ltd.	
39	Suvastu Development Ltd.	
40	Building for Future Ltd.	
41	Avenue Builders Ltd.	1995
42	Bay Developments Ltd.	
43	Bistaar Upodeshta Ltd.	
44	Charuta Homes Ltd.	

45	Corolla Properties Ltd.	
46	Crescent Holdings Ltd.	
47	Family Development & Design Ltd.	
48	Mamsons International Ltd.	
49	Neer Ltd.	
50	Ridge Park Holdings Ltd.	
51	S. A. Khaleque Property Development Ltd.	
52	Shagufta N M Housing Ltd.	
53	Silicon Housing Ltd.	
54	South Breeze Housing Ltd.	
55	Urban Design & Development Ltd.	
56	KS Engineering & Technology Ltd.	
57	Advanced Development Consultants Ltd.	1996
58	Banani Property Development Ltd.	
59	DDC Abashan Ltd.	
60	Development Entrepreneurs Ltd.	
61	KEARI Ltd.	
62	Living Plus Ltd.	
63	Marz Engineers &Builders Ltd.	
64	Navana Real Estate Ltd.	
65	Neptune Properties	
66	Praasad Nirman Ltd.	
67	Rangs Properties Ltd.	
68	Realta Homes & Apartments Ltd.	
69	Shahjahan & Group	
70	Tani Construction Ltd.	
71	Tropical Homes Ltd.	
72	Western Developers Ltd.	
73	Zoha Properties Ltd.	
74	Concord Real Estate & Building Products Ltd.	1997
75	Lovely Housing Ltd.	
76	Northern Foundation Builder & Developer	
77	Palli Properties Pvt. Ltd.	
78	Shahjalal Property Ltd.	
79	Shajan Housing Ltd.	
80	Shaptak Gihayan Ltd.	
81	The Man & Company Ltd.	
82	Total Real Estate Ltd.	
83	Ajanta Properties Ltd.	1998
84	Apartment Design & Development Ltd.	
85	Century Realty Ltd.	
86	Concord Lands Ltd.	
87	Ena Properties	
88	M. A. Wahab & Sons (Real Estate) Ltd.	
89	Mega Builders Ltd.	
90	Momen Real Estate Ltd.	
91	Multiplan Ltd.	

92	Parvin Properties & Technologies Ltd.	
93	Resources Housing Ltd.	
94	Rupayan Real Estate Ltd.	
95	Sharif Real Estate Ltd.	
96	Sharif Housing Company Ltd.	
97	Shatabdi Housing Ltd.	
98	Sheltech Towers & Apts. (Pvt.) Ltd.	
99	Silicon Properties	
100	Sky View Foundation Ltd.	
101	Sky touch Apartments Ltd.	
102	Sumona Private Ltd.	
103	Zeno Valley Model Town Pvt. Ltd.	
104	Asset Developments & Holdings Ltd.	1999
105	Chaya Developer (Pvt.) Ltd.	
106	Concord Real Estate & Development Ltd.	
107	Darul Makan Housing Ltd.	
108	Design & Dwelling Ltd.	
109	Gomati Housing Ltd.	
110	Habitat Builders Ltd.	
111	Hivertech Ltd.	
112	Ideal Home Builders Ltd.	
113	Index Construction Ltd.	
114	Jamuna Builders Ltd.	
115	Japan Garden City Ltd.	
116	Jib Constructions Ltd.	
117	Labaid Properties Ltd.	
118	Nandan Kanon Housing Ltd.	
119	Rupayan Housing Estate Ltd.	
120	Sara Real Estate Construction Ltd.	
121	Sarah Property Development Ltd.	
122	Tamanna Real Estate Ltd.	
123	Al.-Hassan Developers Ltd.	2000
124	Amin Mohammad Lands Developments Ltd.	
125	Artisan Apartments Ltd.	
126	Bangladesh Development Company Ltd.	
127	Hyperion Properties Ltd.	
128	ICAB Housing Company (Pvt.)Ltd.	
129	Kusholi Nirmata Ltd.	
130	N. N. Housing	
131	Paradise Development & Construction Ltd.	
132	Radiant Property (Pvt.) Ltd.	
133	Remco (Pvt.) Ltd.	
134	Abed Holdings Ltd.	2001
135	Al-Haj Mostafa Hakim Housing & Real Estate Ltd.	
136	Anwar Landmark Ltd.	
137	Arcon Ltd.	
138	Bashgreho Builders Ltd.	
139	Debonair Properties Ltd.	

140	Grand Properties	
141	Imperial Development & Holdings Ltd.	
142	Imperial Real Estate Ltd.	
143	Index Builders Ltd.	
144	Intimate Home Builders Ltd.	
145	MTC Properties Ltd.	
146	Mutual Property	
147	Nagar Homes	
148	Nest Real Estate Ltd.	
149	Popular Properties Development Ltd.	
150	ANZ Properties Ltd.	2002
151	Asha Properties Ltd.	
152	Building Development & Design Ltd.	
153	Capita Land Development Ltd.	
154	Domino Builders Ltd.	
155	Foresight Developments Concern Ltd.	
156	Gawsia Developers Ltd.	
157	Genetic Ltd.	
158	Ionic Builders Ltd.	
159	RAMS Holdings Ltd.	
160	Roof Development (Pvt.) Ltd.	
161	Royal Properties (Pvt.) Ltd.	
162	Aangina Construction Ltd.	2003
163	Alliance Properties Ltd.	
164	Arena Properties Ltd.	
165	Assort Housing & Engineering Ltd.	
166	Assurance Developments Ltd.	
167	Atlantic Developments Ltd.	
168	Avalon Developments Ltd.	
169	Biswas Builders Ltd.	
170	Cimco Developer (Pvt.) Ltd.	
171	Configure Engineers & Construction Co. Ltd.	
172	Darul Islam Housing Ltd.	
173	Earth Holdings (Pvt.) Ltd.	
174	Everest Holdings & Technologies Ltd.	
175	Family Living Ltd.	
176	Gold Hunt Development Co.	
177	Gold Wing Builders Ltd.	
178	Golden Nest Holdings Ltd.	
179	Great Walls Land Properties Ltd.	
180	Hossain Real Estate Ltd.	
181	Imperial Consultants & Development Ltd.	
182	Jahan Properties	
183	Khan Builders & Development Ltd.	
184	Mark Realtors Ltd.	
185	Musafir Properties Ltd.	
186	Nirapad Real Estate & Development Ltd.	
187	Noboudoy Housing Ltd.	

188	Northern Real Estate Ltd.	
189	Orchard Consultants Ltd.	
190	Orchard Developers & Construction Ltd.	
191	Organ Developments Ltd.	
192	R.P. Construction (Pvt.) Ltd.	
193	Reliance Development Associates Ltd.	
194	Sagufta City Developers Ltd.	
195	Sahara City Housing	
196	Saikat Technologies Ltd.	
197	Square Homes Ltd.	
198	Subashati Properties Ltd.	
199	Tanin Kunja Housing Prokalpa	
200	The Royal Estate (Pvt.) Ltd.	
201	Union Development Technologies Ltd.	
202	Uro-tech Development Ltd.	
203	Wonderland Housing Ltd.	
204	Alien Properties	2004
205	Amicus Properties & Developments Ltd.	
206	Amin & Momin Developments Ltd.	
207	Angan Structural Development & Engineers	
208	Badhan Builders Ltd.	
209	Bestway Foundation Ltd.	
210	Cemex Properties Ltd.	
211	City Technology Ltd.	
212	Con Coms (Pvt.) Ltd.	
213	Delight Development Ltd.	
214	Dakhina Real Estate Ltd.	
215	Dishari Real Estate & Development Co. Ltd.	
216	Dominage Developments & Holdings Ltd.	
217	Fare Builders Ltd.	
218	G.K. Builders	
219	GBB Properties Ltd.	
220	Glorious Lands and Developments Ltd.	
221	Green Leaf Property Management Ltd.	
222	Haji Gafur Land Developers Ltd.	
223	Homeland Real Estate Ltd.	
224	Index Development Ltd.	
225	Luxury Housing Ltd.	
226	MG Properties Ltd.	
227	Nagar Builders	
228	Neptune Land Development Ltd.	
229	RAMS Development Ltd.	
230	Royal Housing Ltd.	
231	Rupali GardenGrihayan Ltd.	
232	SD Properties Ltd.	
233	Sanctity Constructions Ltd.	
234	Shanta Properties Ltd.	
235	Sierra Properties (Pvt.) Ltd.	

236	Sikder Foundation Ltd.	
237	Skyline Builders Ltd.	
238	Spring Field Developments Ltd.	
239	Sanctity Developers Ltd.	
240	Theme Engineers Ltd.	
241	Uttaran Structural Designers Ltd.	
242	Ventura Properties Ltd.	
243	Vertex Builders Ltd.	
244	Victory Homes Ltd.	
245	A Abash Moon Bangladesh	2005
246	A1 Housing Ltd	
247	Abdul Monem Developments Ltd.	
248	Amader Bari Ltd.	
249	Anamika Corporation Ltd.	
250	Anirban Holdings Ltd.	
251	Artisan Technological Service Ltd.	
252	Ashiyan Lands Development Ltd.	
253	Atlanta Housing Ltd.	
254	Bangladesh Real Estate Ltd.	
255	Bhulua Royal City (Pvt.) Ltd.	
256	Bio Properties Ltd.	
257	Britannia Properties Ltd.	
258	Central Builders & Architects Ltd.	
259	Circle Holdings Ltd.	
260	Comprehensive Holdings	
261	Coronet Builders Ltd.	
262	Criterion Developers Ltd.	
263	Dalan Kotha Ltd.	
264	Eminent Properties (Pvt.) Ltd.	
265	Falcon Homes Ltd.	
266	First Security Construction Ltd.	
267	Friends Builders Ltd.	
268	Friends Developers Ltd.	
269	Good Luck Real Estates Ltd.	
270	Hatil Holdings Ltd.	
271	Home Tech Construction Ltd.	
272	Impulse Properties Ltd.	
273	Ingress Developments & Design Ltd.	
274	Intraco Properties	
275	Joytun Developers Ltd.	
276	Kapotakkha Properties & Builders Ltd.	
277	Karigar Holdings Ltd.	
278	Manama Developments	
279	Mass Developers & Holdings Ltd.	
280	Mens Builders Ltd.	
281	Metro Homes	
282	Mission Energy & Properties Ltd.	
283	Mohona Developments Ltd.	

284	Moon Light Development Ltd.	
285	Nebedita Properties Ltd.	
286	Nibash Properties Ltd.	
287	Partex Builders Ltd.	
288	Renaissance Development Ltd.	
289	Roots Builders Ltd.	
290	Sarker Builders & Developers Ltd.	
291	Spectra Properties Ltd.	
292	Summit Properties Ltd.	
293	Tahmid Foundation Ltd.	
294	The Bengal One Creation Ltd.	
295	Township Housing Co. Ltd.	
296	Tulip Properties Ltd.	
297	Unique Properties	
298	Update Builders Ltd.	
299	Vertex Housing Ltd.	
300	Victory Real Estate & Construction	
301	Vision Homes Ltd.	
302	3-i Builders Ltd.	2006
303	Access Holdings Ltd.	
304	Akankha Developers Ltd.	
305	Al-Amin Development Ltd.	
306	Alifia Properties Ltd.	
307	Amit Housing Ltd.	
308	Ana Holdings Ltd.	
309	Arma Real Estate Ltd.	
310	Basic Real Estate Ltd.	
311	BDDL Natundhara Housing Ltd.	
312	Capital Living Ltd.	
313	Casero Design & Developments Ltd.	
314	Circle Properties	
315	Comfort Living Ltd.	
316	Configure Housing Ltd.	
317	Cosmopolitan Homes Ltd.	
318	Diamond Valley Homes Ltd.	
319	Doric Developments Ltd.	
320	Dynasty Developments Ltd.	
321	Ekushe Homes	
322	Elite Properties Ltd.	
323	Greeho Nirman Builders Ltd.	
324	Greho Noksha Holdings Ltd.	
325	Hallmark Developer Ltd.	
326	Homescape Ltd.	
327	Hyperion Builders Ltd.	
328	Ideal Real Estate Ltd.	
329	Imagine developments	
330	Kheya Properties Ltd.	
331	Kingdom Builders Ltd.	

332	Kounik Properties Ltd.	
333	Lucid Developer Ltd.	
334	MNH Real Estate Ltd.	
335	Mak Estate Developments Ltd.	
336	Makers Real Estate Ltd.	
337	Medini Builders Ltd.	
338	Meghna Real Estate Ltd.	
339	Memorial Holding Ltd.	
340	Mir Real Estate Ltd.	
341	Multiplan Development Ltd.	
342	Navid Builders Ltd.	
343	North South Housing (Pvt.) Ltd.	
344	Palolic Developers Ltd.	
345	Paramount Properties Ltd.	
346	Prince Properties Ltd.	
347	Protik Developers Ltd	
348	Rainbow Developments & Constructions	
349	Reliance Holdings Ltd.	
350	Roots Properties Ltd.	
351	Saba Properties Ltd.	
352	Samadhan Properties Ltd.	
353	Samata Properties Ltd.	
354	Seraglio Development (Pvt.) Ltd.	
355	Shahjalal Technology & Developments Ltd.	
356	Share & Care Developers Ltd.	
357	Sheen Engineers Ltd.	
358	Solid Development Ltd.	
359	Subsoil Properties Ltd.	
360	Swiss Nest Developments Ltd.	
361	TAS Homes	
362	Unique Design & Developments	
363	Unique Holdings & Technologies Ltd.	
364	Utopia Realty Ltd.	
365	Anwar Real Estate (Pvt.) Ltd.	2007
366	Basic Builders Ltd.	
367	Bastu Pronayon Developments Ltd.	
368	Citadel Properties Ltd.	
369	Domicile Design & Builders Ltd.	
370	Glory Real Estate Ltd.	
371	Holy Alliance Housing Ltd.	
372	Irving Properties	
373	MBK Builders Ltd.	
374	Quantum Properties Ltd.	
375	R.R. Builders Ltd.	
376	Ruhama Properties Ltd.	
377	Shuchana Development Ltd.	
378	Synbol Holdings Ltd.	
379	The Elegant Engineers Ltd.	

380	True Builders Ltd.	
381	Uttaran Properties Ltd.	
382	Zaman Properties Ltd.	
383	Development 2000 Ltd.	2008
384	Home n joy Holdings Ltd.	
385	Mission Developers Ltd.	
386	Rasa Construction & Development Ltd.	
387	Shahjalal Land & Apartment Co. Ltd.	
388	Shotodol Property Development Ltd.	
389	Southern Properties	
390	Ana Corp. (BD) Ltd.	2009
391	Babuli Construction and Consultants (Pvt.) Ltd.	
392	Choice Development Ltd.	
393	Contemplus Ltd.	
394	Essence Property Ltd.	
395	Genuine Developments Ltd.	
396	H. I. Technology & Properties Ltd.	
397	Hirajheel Property Development Co. Ltd.	
398	Home Stone Ltd.	
399	Jets Development Ltd.	
400	Luminous Builders Ltd.	
401	Marks Holdings Ltd.	
402	Mihi International	
403	Mohammadi Homes Ltd.	
404	MRN Apartments & Builders Ltd.	
405	Nasim Real Estate Ltd.	
406	Newton One Capita Ltd.	
407	Pacific Real Estate Ltd.	
408	Perfect Holdings Ltd.	
409	Priyanka Trading Ltd.	
410	Rahat Realty Ltd.	
411	Residentia Properties Ltd.	
412	Resources Developer Ltd.	
413	RSA Real Estate (Pvt.) Ltd.	
414	Sabbir Real Estate (Pvt.) Ltd.	
415	Safe Property Development & Consultant Ltd.	
416	Style Real Estate Ltd.	
417	Sumona Landmark & Technologies Ltd.	
418	Swadesh Properties Ltd.	
419	Technopool Builders Ltd.	
420	Trust Dwelling Ltd.	

Appendix-I

Survey on 'Trend Analysis of Apartment Housing by Private Developers in DCC Area'

This survey is part of a research undertaken at Department of Urban and Regional Planning, BUET, Dhaka. All information collected will be utilized for academic purpose only; and will be kept confidential. Your cooperation in this regard would be much appreciated. Thanking you in anticipation.

Case no: ----------
Name of the Developer: ----------
Address: ----------
Respondent's name: ----------
Respondent's designation: ----------

Please write in the blank space and give your preferences with numbers 1, 2, 3…

1. Which locations did you prefer for apartment development over the years? Give your preferences.

Location	1990-1999	2000-2009
Gulshan		
Banani		
Dhanmondi		
Uttara		
Mohammadpur		
Niketon		
Lalmatia		
Mirpur		
Baridhara		
Siddeswari		
Shantinagar		
Segunbagicha		
Wari		
Khilgaon		
Eskaton		
Naya Paltan		
Kamalapur		
Bijoynagar		
Purana Paltan		
Moghbazar		
Malibag		
Moghbazar		
RK Mission Road		
Siddique Bazar		
Baily Road		
Green Road		
Arambag		
Pallabi		
Shamoli		
West Dhanmondi		
Badda		
Bashabo		
Rampura		

Elephant Road		
Pantha Path		
Kalabagan		
Tollabagh		
Zigatola		
Lalbagh		
Azimpur		
Tejgaon		
Kakrail		
Firmgate		
Paribagh		
Shahidbagh		
Momenbagh		
Topkhana Road		
Circuit House Road		
Free School Street		
Nakhalpara		
Indira Road		
Dilu Road		
Monipuripara		
Nawabpur Road		
Shantibagh		
Central Road		
Kallyanpur		
Shahjadpur		
Swamibagh		
Bashundhara		
Gulbagh		
Mohakhali		
Laxmibazar		
Gandaria		
Sukrabad		

2. What were the criteria you consider in case of choice of location for apartment development over the period? Please mention according to your preferences.

Criteria		1990-1999	2000-2009
Near work place			
Near children school			
Area with easy communication system			
Near market/bazaar/shopping centers			
Area is secured			
Area is not so congested			
Near open space/park/lake			
Specify if others			

3. Why is apartment housing development shifting from some prime locations to other prime locations every five years? Please mention at least three reasons.

a. ----------
b. ----------
c. ----------

d. ----------

4. What was the minimum and preferred road width considered by you for apartment development in the last two decades?

Time period	Minimum road width in meter	Preferred road width in meter
1990-1999		
2000-2009		

5. Why are some of the developers still taking apartment projects in roads having lesser width? Please mention at least three reasons.

a. ----------
b. ----------
c. ----------
d. ----------

6. What was the minimum and preferred plot size considered by you for apartment development in the last two decades?

Time period	Minimum plot size(in Katha)	Preferred plot size(in Katha)
1990-1999		
2000-2009		

7. Why are you developing apartment projects now-a-days in smaller plots than before? Please mention at least three reasons.

a. ----------
b. ----------
c. ----------
d. ----------

8. What are the factors you consider to determine the size of apartment units? Please mention at least three factors according to importance.

a. ----------
b. ----------
c. ----------
d. ----------

9. What are the reasons now-a-days of developing smaller sizes of apartment units (below 1000 sq-ft) than before? Please mention at least three reasons.

a. ----------
b. ----------
c. ----------
d. ----------

10. What are the reasons now-a-days of developing few larger sizes of apartment units (4500 sq-ft and above) than before? Please mention at least three reasons.

a. ----------
b. ----------
c. ----------
d. ----------

11. What are the preferred minimum and preferred maximum size of apartment unit in sq-ft considered by you in the last two decades?

Time period	Preferred Minimum apartment size in sq-ft	Preferred maximum apartment size in sq-ft
1990-1999		
2000-2009		

12. What are the criteria to fix the price of apartment unit? Please mention at least three factors according to importance.

a. ----------
b. ----------
c. ----------
d. ----------

13. What are the reasons of continuous increase in apartment price per sq-ft? Please mention at least three reasons.

a. ----------
b. ----------
c. ----------
d. ----------

14. Please mention the present of apartment unit per Sq-ft for the following locations.

Location	Price range of apartment units in Sq-ft
Gulshan	
Banani	
Dhanmondi	
Uttara	
Mohammadpur	
Niketon	
Lalmatia	
Mirpur	
Baridhara	
Siddeswari	
Shantinagar	
Segunbagicha	
Wari	
Khilgaon	
Eskaton	
Naya Paltan	
Kamalapur	
Bijoynagar	
Purana Paltan	
Moghbazar	
Malibag	
Moghbazar	
RK Mission Road	
Siddique Bazar	
Baily Road	
Green Road	

Arambag	
Pallabi	
Shamoli	
West Dhanmondi	
Badda	
Bashabo	
Rampura	
Elephant Road	
Pantha Path	
Kalabagan	
Tollabagh	
Zigatola	
Lalbagh	
Azimpur	
Tejgaon	
Kakrail	
Firmgate	
Paribagh	
Shahidbagh	
Momenbagh	
Topkhana Road	
Circuit House Road	
Free School Street	
Nakhalpara	
Indira Road	
Dilu Road	
Monipuripara	
Nawabpur Road	
Shantibagh	
Central Road	
Kallyanpur	
Shahjadpur	
Swamibagh	
Bashundhara	
Gulbagh	
Mohakhali	
Laxmibazar	
Gandaria	
Sukrabad	

15. How can you reduce the apartment price? Do you have any suggestion?

a. ----------
b. ----------
c. ----------
d. ----------

Appendix-IV

List of Apartment Projects in Dhaka Collected from 20 Developers (1990-2009)

Sl. No.	List of projects by Developer & Address	
1) Eastern Housing Ltd. = 83 projects		
1	41, Eskaton Garden	1
2	116,Shegunbagicha	2
3	10/A, Circuit House	3
4	70/1, Indira Road	4
5	10, Paribag, Dhaka	5
6	82/1, Central Lane, Kakrail	6
7	35, Shegunbagicha	7
8	27, Purana Paltan	8
9	88, Shantinagar	9
10	6, Boro Maghbazar	10
11	9, Shegunbagicha	11
12	39/6A, Dhanmondi R/A	12
13	13/51, Gulshan	13
14	1B/79, Gulshan	14
15	1C/79, Gulshan	15
16	3/C, Purana Paltan	16
17	17/A, Mymensingh Road, Paribag	17
18	69/K, Baridhara	18
19	31, Topkhana Road	19
20	32B/18, Banani	20
21	311, Elephant Road	21
22	119, Baily Road (6, Nawratan Colony)	22
23	74/8A, Dhanmondi R/A	23
24	210/19, West Dhanmondi	24
25	92, Boro Moghbazar	25
26	Banasree Apartment Project	26
27	62. Kalabagan Lake Circus	27
28	73, Green Road	28
29	198, Shantibagh	29
30	70 &71, Siddeswari	30
31	30, 40, Shantinagar	31
32	46, Siddeswari	32
33	36, Pioneer Road	33
34	146, Baily Road	34
35	3/2, Shegunbagicha	35
36	25, Purana Paltan	36
37	15/1, Topkhana Road	37
38	8/5, Aurangazeb Road, Mohammadpur	38
39	98/1, Boro Moghbazar	39
40	330F/28, Dhanmondi R/A	40
41	98, New Eskaton Road	41

42	46/7F, Banani	42
43	98, Boro Moghbazar	43
44	81, Baridhara	44
45	56/21B, Banani	45
46	22/7A, Banani	46
47	12/A, Eskaton Garden	47
48	75, Indira Road	48
49	12/35, Gulshan	49
50	16/1-2, Shegunbagicha	50
51	2, Shegunbagicha	51
52	C/64, Niketan	52
53	50/1, Dhanmondi	53
54	46/4A, Dhanmondi	54
55	Plot-35 & 37, Road-24, Block-C, Gulshan	55
56	Plot-9, Road-23A, Block-B, Banani	56
57	106, Central Road	57
58	140/A, Niketan	58
59	CWN (B) 34, Gulshan	59
60	50/2, Dhanmondi	60
61	B/3, Niketan	61
62	A/47, Niketan	62
63	41/3-4,Purana Paltan	63
64	26/B, Topkhana Road	64
65	20, New Eskaton Road	65
66	9, Kabi Jasimuddin Road	66
67	53, Purana Paltan	67
68	2/A, Eskaton Garden	68
69	8 & 9, Shantinagar	69
70	21, Siddeswari Lane	70
71	79, Shegunbagicha	71
72	30, Circuit House Road	72
73	3/A, Purana Paltan	73
74	24/A, Topkhana Road	74
75	121, West Nakhalpara	75
76	28/6, New Eskaton	76
77	7, Shegunbagicha	77
78	2/6, Block-D, Lalmatia	78
79	7, Boro Moghbazar	79
80	110/D, Niketan	80
81	47, New Eskaton Road	81
82	76/8A, Dhanmondi R/A	82
83	741, Satmasjid Road	83
2) Advanced Development Tecnologies Ltd.=76		
84	Plot-28, Road-11, Sector-11, Uttara	1
85	Plot-3, Road-68, Gulshan-2	2
86	Plot-23/B, Road-104, Gulshan-2	3
87	Plot-8, Road-9, Sector-1, Uttara	4
88	Plot-15/D, Road-93, Gulshan-2	5

89	Plot-12, Road-4, Sector-3, Uttara	6
90	Plot-22, Road-10, Block-SW(A) Gulshan	7
91	Plot-1/B, Road-123, Block-CES(F) Gulshan-1	8
92	Plot-1/A, Road-79, Block-NW (D) Gulshan-2	9
93	Plot-23, Road-6, Park Road, Baridhara	10
94	Plot-24, Road-1, Block-K, Baridhara	11
95	Plot-12, Block-K, Dutabash Road, Baridhara	12
96	Plot-24, Road-5, Dhanmondi R/A	13
97	Plot-10, Road-32/A, Sector-7, Uttara	14
98	Plot-20, Road-79, Block-NE(H) Gulshan	15
99	20, Eskaton Garden	16
100	Plot-9 (Heritage), Road-59, Block-NW(D) Gulshan-2	17
101	Plot-9 (Regalia), Road-59, Block-NW(D) Gulshan-2	18
102	44, RK Mission Road	19
103	Plot-12/A, Road-2, Block-SW(E) Gulshan	20
104	Plot-63, Road-5A, Dhanmondi R/A	21
105	Plot-25/D, Lake Drive, Sector-7, Uttara	22
106	Plot-40, Road-10A, Dhanmondi R/A	23
107	169, Dr. Kudrat-E-Khuda Road	24
108	Plot-8, Road-8, Sector-3, Uttara	25
109	Plot-30, Road-16, Block-B, Banani	26
110	Plot-9, Road-14, Sector-1, Uttara	27
111	Plot-74, Road-21, Block-B, Banani	28
112	Plot-26, Road-2, Sector-3, Uttara	29
113	Plot-11/A, Road-96, Block-CEN(A) Gulshan-2	30
114	Plot-8/B, Road-90, Block-NE(N) Gulshan-2	31
115	Plot-3, Road-14/C, Sector-4, Uttara	32
116	Plot-12, Road-112, Gulshan	33
117	Plot-12, Road-14, Sector-1, Uttara	34
118	Plot-22, Road-118, Block-CES(C) Gulshan-1	35
119	Plot-2, Road-96, Block-CEN(B) Gulshan	36
120	Plot-41, Road-5 Dhanmondi R/A	37
121	46, Park Road, Baridhara	38
122	Plot-14, Road-3, Block-K, Baridhara	39
123	Plot-7/B, Road-86, Block-NE(N) Gulshan-2	40
124	Plot-12, Road-3, Sector-7, Uttara	41
125	Plot-13, Road-1 Dhanmondi R/A	42
126	Plot-3, Road-62, Block-NW(C) Gulshan-2	43
127	Plot-23, Road-31, Sector-7, Uttara	44
128	Plot-54, Road-6/A, Dhanmondi R/A	45
129	Plot-30, Road-115, Block-CEN(H) Gulshan	46
130	Plot-8, Road-12, Dhanmondi R/A	47
131	109, Siddique Bazar	48
132	Plot-32, Road-63, Gulshan-2	49
133	Plot-2, Road-34, Block-CWS(B) Gulshan-2	50
134	Plot-64, Road-18, Block-A, Banani	51
135	70, Park Road, Baridhara	52
136	98, Park Road, Baridhara	53

137	Plot-2A, Road-4, Sector-7, Uttara	54
138	Plot-5, Road-126, Block-CES(D) Gulshan	55
139	Plot-7/B, Road-103, Block-CEN(F) Gulshan-2	56
140	Plot-151, Road-2, Block-A, Mirpur	57
141	Plot-33 (Cinderella), Road-12/A, Dhanmondi R/A	58
142	Plot-33 (Silver Lake Romance), Road-12/A, Dhanmondi R/A	59
143	Plot-1, Road-78, Gulshan-2	60
144	Plot-8, Road-121, Block-CES(C), Gulshan-2	61
145	Plot-11/A, Road-13, Dhanmondi R/A	62
146	Plot-9 (Sunny Dale), Road-11, Block-SW(A) Gulshan-1	63
147	Plot-9 (Legend), Road-11, Block-SW(A) Gulshan-1	64
148	Plot-5, Road-104, Block-CEN(G), Gulshan-2	65
149	Plot-11, Road-33, Block-CWS(B), Gulshan	66
150	Plot-7, Road-51, Block-NW(G), Gulshan-2	67
151	Plot-10, Road-15, Sector-1, Uttara	68
152	Plot-55, Road-12/A, Dhanmondi R/A	69
153	Plot-NE (K) 7A, Gulshan Avenue	70
154	Plot-4/B, Road-50, Block-NW(G) Gulshan	71
155	Plot-19, Road-102, Block-CEN(D) Gulshan-2	72
156	Plot-15/B, Block-SW(A) Gulshan	73
157	Plot-NE (K) 10A-2, Gulshan Avenue	74
158	Plot-7/A, Road-86, Block-NE(N), Gulshan-2	75
159	Plot-64, Road-18, Block-A, Banani	76
3) Suvastu Development Ltd.=24		
160	Plot-22/C, Road-105, Gulshan	1
161	Plot-5/7, Block-A, Lalmatia	2
162	Plot-15, Road-6, Sector-6, Uttara	3
163	Plot-12, Road-6, Block-C, Banani	4
164	Plot-9, Road-15, Dhanmondi R/A	5
165	51, 51/A, 52, Green Road	6
166	316/1, Boro Moghbazar	7
167	Plot-37, Road-4, Dhanmondi R/A	8
168	Plot-2/1, Block-C, Lalmatia	9
169	Plot-28, Road-2, Dhanmondi R/A	10
170	Plot-23, Road-6, Dhanmondi R/A	11
171	Plot-67, Road-17, Block-C, Banani	12
172	Plot-12, Road-14B, Sector-4, Uttara	13
173	Plot-3/9, Block-A, Lalmatia	14
174	Plot-D/44, Niketan	15
175	Plot-36, Road-14A, Dhanmondi R/A	16
176	Plot-1/10, Block-C, Lalmatia	17
177	Plot-41, Road-9/A, Dhanmondi R/A	18
178	Plot-1/4, Block-F, Lalmatia	19
179	Plot-4/4, Block-C, Lalmatia	20
180	Plot-5, Road-15, Dhanmondi R/A	21
181	60, Green Road	22
182	Plot-19, Road-15, Dhanmondi R/A	23
183	73, Shegunbagicha	24

4) Building Technologies & Ideas Ltd.=84		
184	Plot-23, Road-6, Block-C, Baridhara	1
185	Plot-22, Park Road, Baridhara	2
186	Plot-23, Road-1, Block-K, Baridhara	3
187	Plot-14, Road-10, Block-K, Baridhara	4
188	Plot-45, Road-35, Block-CWN(A), Gulshan	5
189	Plot-11/B, Road-94, Block-CEN(A), Gulshan	6
190	Plot-19, Road-68/A, Gulshan	7
191	Plot-1/13, Block- B, Lalmatia	8
192	4/2, New Circular Road, Malibag	9
193	Plot-8/B, Road-2, Block-SW(F), Gulshan	10
194	Plot-17/B, Road-35, Block-CWN(A), Gulshan	11
195	Plot-11/B, Road-15, Dhanmondi R/A	12
196	Plot-21, Road-104, Block-CEN(E), Gulshan	13
197	86, Indira Road, Firm Gate	14
198	Plot-14, Road-116, Block-CES(A), Gulshan	15
199	6/1, Eskaton Garden Road	16
200	Plot-61, Road-15/A, Dhanmondi R/A	17
201	Plot-35, Road-4, Block- A, Gulshan	18
202	Plot-6, Road-104, Gulshan	19
203	Plot-15, Road-7, Gulshan	20
204	Plot-9, Road-29, Gulshan	21
205	Plot-63, Road-25A, Banani	22
206	Plot-27, Road-130, Gulshan	23
207	Plot-1/B, Road-2, Gulshan	24
208	Plot-39, Road-7, Block-F, Banani	25
209	9/20, Iqbal Road, Mohammadpur	26
210	1, South Kallyanpur	27
211	Plot-27/A, Road-18, Sector-3, Uttara	28
212	Plot-E 4, Niketan	29
213	101, Shantinagar	30
214	Plot-49, Road-1/A, Block-I, Banani	31
215	Plot-29, Road-6, Block-C, Banani	32
216	162, Shantinagar	33
217	Plot-28/D, Road-18 & 19, Sector-7, Uttara	34
218	Plot-35, Road-114, Gulshan	35
219	Plot-43/A, Road-116, Gulshan	36
220	Plot-21, Road-1, Block-I, Banani	37
221	Plot-41, Road-11, Sector-6, Uttara	38
222	Plot-G/ 43, Niketan	39
223	Plot-62, Road-21, Block-B, Banani	40
224	Plot-7, Road-27, Block-J, Banani	41
225	Plot-1/A, Road-123/126, Gulshan	42
226	Plot-1/B, Road-126, Gulshan	43
227	Plot-133, Road-4, West Nakhalpara	44
228	Plot-7/A, Road-136, Gulshan	45
229	9, Hare Street, Wari	46
230	301, Shwadhinata Sarani, Badda	47

231	Plot-5, Road-2, Sector-10, Uttara	48
232	Plot-47, Road-13, Sector-13, Uttara	49
233	Plot-57, Road-8 & 13, Block-D, Banani	50
234	302, Boro Moghbazar	51
235	Plot-37, Road-9B, Sector-5, Uttara	52
236	Plot-5, Road-2E, Block-J, Baridhara	53
237	Plot-4, Road-10, Sector-3, Uttara	54
238	Plot-22, Road-120, Gulshan	55
239	Plot-13/B, Road-59 & 60, NW(D), Gulshan	56
240	Plot-11, Road-19, Sector-11, Uttara	57
241	Plot-25, Road-15, Sector-13, Uttara	58
242	591/594, Kallyanpur	59
243	69, Swamibag	60
244	Plot-24, Road-130, Gulshan	61
245	Plot-8, Road-8A, Sector-10, Uttara	62
246	Plot-7, Road-104, CEN(G), Gulshan	63
247	Plot-3, Road-12, Sector-10, Uttara	64
248	Plot-15, Road-11, Block-K, Baridhara	65
249	Plot-30, Road-9C, Sector-5, Uttara	66
250	Plot-37, Road-11, Sector-10, Uttara	67
251	Plot-3, Road-20, Sector-7, Uttara	68
252	Plot-12, Road-8, Block-J, Baridhara	69
253	37 Ka, Middle Paikpara, Mirpur	70
254	Plot-21, Road-1, Dhanmondi R/A	71
255	Plot-4, Road-2D, Block-J, Baridhara	72
256	Plot-21/11, Block-B, Babar Road, Mohammadpur	73
257	Plot-20/25, Block-B, Babar Road, Mohammadpur	74
258	Plot-9, Road-117, Gulshan-2	75
259	Plot-17, Road-2, Sector-5, Uttara	76
260	Plot-42, Road-1/A, Block-I, Banani	77
261	Plot-4, Road-18, Block-A, Banani	78
262	Plot-10, Road-1/A, Sector-13, Uttara	79
263	Plot-61, Road-12/A, Dhanmondi R/A	80
264	Plot-NW(D), 13/A, Road-60, Gulshan	81
265	Plot-NW(K), 10B, Road-50, Gulshan	82
266	227, Outer Circular Road, Moghbazar	83
267	Plot-35 & 36, Block-J, Pallabi, Mirpur	84
5) Assurance Developments Ltd.=43		
268	Plot-18, Road-79, North Gulshan	1
269	Plot-3/A, Road-74, North Gulshan	2
270	Plot-27, Road-36, Gulshan	3
271	5/12, Block-B, Lalmatia	4
272	Plot-4, Road-20, Sector-7, Uttara	5
273	25, North Road, Dhanmondi	6
274	Plot-21, Road-28, Dhanmondi R/A	7
275	Plot-8, Road-9, Dhanmondi R/A	8
276	Plot-58, Road-16, Block-A, Banani	9
277	65, North Road, Dhanmondi	10

278	Plot-21, Road-16, Sector-3, Uttara	11
279	Plot-25, Road-9A, Dhanmondi R/A	12
280	Plot-25, Road-6, Sector-3, Uttara	13
281	Plot-4, Road-59, North Gulshan	14
282	Plot-59, Road-28, Gulshan	15
283	5/7, Block-B, Lalmatia	16
284	Plot-24, Road-14, Sector-4, Uttara	17
285	688, Boro Moghbazar	18
286	63/3, Katasur, Mohammadpur	19
287	Plot-10, Road-2, Block-A, Banani	20
288	Plot-74, Road-17, Block-E, Banani	21
289	Plot-30, Road-8, Sector-3, Uttara	22
290	Plot-33, Road-18, Sector-7, Uttara	23
291	Plot-71, Road-16, Block-A, Banani	24
292	Plot-15, Road-1, Dhanmondi R/A	25
293	Plot-52, Road-11A, Dhanmondi R/A	26
294	59/B, Niketan	27
295	Plot-99, Road-2, Block-A, Niketan	28
296	Plot-43, Road-8, Dhanmondi R/A	29
297	Plot-25, Road-7/D, Sector-9, Uttara	30
298	Plot-16, Road-6, Sector-1, Uttara	31
299	Plot-58 Road-11, Sector-6, Uttara	32
300	Plot-8, Road-2, Sector-11, Uttara	33
301	18/11, Pallabi, Mirpur	34
302	Plot-45, Road-13, Sector-3, Uttara	35
303	Plot-39, Road-4, Sector-4, Uttara	36
304	42, Rankin Street, Wari	37
305	Plot-2C, Block-E, Mirpur	38
306	Plot-6, Road-8, Block-C, Sector-6, Mirpur	39
307	Plot-8, Road-2E, Block-J, Baridhara	40
308	Plot-71, Shah Makdum Avenue, Sector-12, Uttara	41
309	Plot-23, Block-G, Niketan	42
310	Plot-26, Road-3, Dhanmondi R/A	43
6) Structural Engineers Ltd.=58		
311	28, Green Road	1
312	Plot-127, Road-9A, Dhanmondi R/A	2
313	3/8, Block-G, Lalmatia	3
314	Plot-8, Road-29, Pallabi	4
315	273/1, Elephant Road	5
316	Plot-51, Block-B, Niketan	6
317	Plot-5, Road-29, Pallabi	7
318	25/12, Block-C, Tajmahal Road, Mohammadpur	8
319	Plot-71, Block-B, Niketan	9
320	29, Pantha Path, Dhanmondi	10
321	3/1, Asad Avenue, Mohammadpur	11
322	Plot-7, Road-29, Gulshan-1	12
323	70/1, 2nd Lane Kalabagan	13
324	28, Green Road, Green Corner	14

325	276, Elephant Road	15
326	Plot-33, Road-13, Sector-3, Uttara	16
327	18/2, Tallabag	17
328	Plot-2 & 4, Block-B, Niketan	18
329	90, 2nd Lane Kalabagan	19
330	5/6, Sir Syed Road, Mohammadpur	20
331	Blubell, Road-12A, Dhanmondi R/A	21
332	173, Elephant Road	22
333	Plot-43, Road-7, Block-F, Banani	23
334	8/5, Block-B, Lalmatia	24
335	63, Purana Paltan Lane	25
336	168/C, Green Road	26
337	168/1, Green Road	27
338	63/A-B, Green Road	28
339	Plot-46, Road-10A, Dhanmondi R/A	29
340	41/A & 41/2, Zigatola	30
341	Plot-322, Road-8A, West Dhanmondi	31
342	84, Lake Circus, Kalabagan	32
343	Plot-40, Road-21, Block-B, Banani	33
344	Plot-122, Road-9A, Dhanmondi R/A	34
345	6/1, Block-F, Lalmatia	35
346	Ananya, Iqbal Road, Mohammadpur	36
347	Plot-140, Road-13, Block-E, Banani	37
348	Plot-55/L, Road-9A, Dhanmondi	38
349	Plot-97, Block-C, Niketan	39
350	Plot-93, Block-C, Niketan	40
351	Plot-18, Road-2, Sector-6, Uttara	41
352	Plot-50, Road-15A, Dhanmondi R/A	42
353	77, Indira Road, Tejgaon	43
354	320, Elephant Road	44
355	Plot-21, Road-16, Block-B, Banani	45
356	Plot-14, Road-9, Block-G, Banani	46
357	9/8, Iqbal Road, Mohammadpur	47
358	62 & 63, Borobagh, Section-2, Mirpur	48
359	6/9, Sheikh Shaheb Bazar, Azimpur	49
360	Plot-12, Road-15, Block-D, Banani	50
361	12, Joynag Road, Lalbagh, Bakshi Bazar	51
362	Plot-35, Road-27, Sector-7, Uttara	52
363	Plot-51, Road-35, Gulshan-2	53
364	Plot-86, Road-8A, Dhanmondi R/A	54
365	4/1, Block-D, Lalmatia	55
366	Plot-1, Block-D, Niketan	56
367	4 (Tower-1), Shegunbagicha	57
368	4 (Tower-2), Shegunbagicha	58
7) Urban Design & Development LTD. = 68		
369	Plot-1, Road-15, Dhanmondi R/A	1
370	142, Green Road	2
371	Plot-58/A, Road-7A, Dhanmondi R/A	3

372	Plot-32, Road-28, Dhanmondi R/A	4
373	Plot-56, Road-7A, Dhanmondi R/A	5
374	Plot-45, Road-4A, Dhanmondi R/A	6
375	3, Nayem Road, Dhanmondi R/A	7
376	Plot-25, Road-4, Dhanmondi R/A	8
377	Plot-61, Road-24, Gulshan-1	9
378	11/B, Nayem Road, Dhanmondi R/A	10
379	Plot-45, Road-4A, Dhanmondi R/A	11
380	Plot-46/1, Road-5, Dhanmondi R/A	12
381	Plot-5, Road-121, Block-C, Gulshan-1	13
382	Plot-68, Road-26, Gulshan-1	14
383	Plot-67, Road-6A, Dhanmondi R/A	15
384	Plot-49, Road-6A, Dhanmondi R/A	16
385	Plot-29/A, Road-1, Dhanmondi R/A	17
386	Plot-48, Road-6A, Dhanmondi R/A	18
387	Plot-48/A, Road-6A, Dhanmondi R/A	19
388	Plot-27, Road-8, Dhanmondi R/A	20
389	Plot-54/A, Road-3A, Dhanmondi R/A	21
390	Plot-75, Road-11A, Dhanmondi R/A	22
391	Plot-29, Road-8, Dhanmondi R/A	23
392	Plot-28, Road-9A, Dhanmondi R/A	24
393	Plot-48, Road-4A, Dhanmondi R/A	25
394	Plot-29, Road-27, Dhanmondi R/A	26
395	2/6, Block-D, Lalmatia	27
396	Plot-35, Road-4, Dhanmondi R/A	28
397	Plot-24, Road-4, Dhanmondi R/A	29
398	401, New Eskaton Road	30
399	Plot-47, Road-6A, Dhanmondi R/A	31
400	Plot-28/B, Road-27, Dhanmondi R/A	32
401	Plot-45, Road-3A, Dhanmondi R/A	33
402	Plot-52, Road-27, Dhanmondi R/A	34
403	Plot-38, Road-4A, Dhanmondi R/A	35
404	57, Satmasjid Road, Dhanmondi R/A	36
405	Plot-42, Road-13A, Dhanmondi R/A	37
406	Plot-19, Road-13, Dhanmondi R/A	38
407	Plot-19, Road-9/A, Dhanmondi R/A	39
408	Plot-19, Road-3, Dhanmondi R/A	40
409	Plot-68, Road-11/A, Dhanmondi R/A	41
410	Plot-21, Road-4, Dhanmondi R/A	42
411	Plot-69, Road-7/A, Dhanmondi R/A	43
412	Plot-42, Road-20, Sector-3, Uttara	44
413	66, Zigatola	45
414	94, Purana Paltan	46
415	Plot-13, Road-13/A, Dhanmondi R/A	47
416	Plot-6, Road-19, Sector-14, Uttara	48
417	Plot-75/A, Road-12/A, Dhanmondi R/A	49
418	Plot-72, Road-9/A, Dhanmondi R/A	50
419	Plot-13, Road-27, Dhanmondi R/A	51

420	Plot-76, Road-12/A, Dhanmondi R/A	52
421	68/Ka/1, Zigatola	53
422	Plot-70, Road-8/A, Dhanmondi R/A	54
423	Plot-45/A, Road-3/A, Dhanmondi R/A	55
424	Plot-17, Road-28, Dhanmondi R/A	56
425	Plot-89, Road-9/A, Dhanmondi R/A	57
426	Plot-7, Road-3, Dhanmondi R/A	58
427	Plot-69, Road-11/A, Dhanmondi R/A	59
428	Plot-32, Road-16, Block-B, Banani	60
429	Plot-77, Road-7/A, Dhanmondi R/A	61
430	Plot-82, Road-9/A, Dhanmondi R/A	62
431	Plot-5, Road-26, Sector-7, Uttara	63
432	Plot-2, Road-104, Block-CEN(E) Gulshan	64
433	Plot-42, Road-25, Block-A, Banani	65
434	1/13, Humayun Road, Block-B, Mohammadpur	66
435	Urban Centre Point, New Eskaton Road	67
436	Plot-21, Road-6, Block-C, Banani	68
8) Kashba Housing Ltd.=12		
437	Plot-5/2, Road-4, Dhanmondi R/A	1
438	17, Elephant Road	2
439	73, Elephant Road	3
440	74, Elephant Road	4
441	310, Elephant Road	5
442	16, Elephant Road	6
443	53, Green Road	7
444	49, Dilu Road, New Eskaton	8
445	Plot-2, Road-4, Sector-7, Uttara	9
446	Plot-16, Road-16, Sector-4, Uttara	10
447	5/5, Monipuripara	11
448	Plot-27/A, Road-5, Dhanmondi R/A	12
9) Rangs Properties Ltd.=37		
449	Plot-15, Road-5, Sector-1, Uttara	1
450	Plot-14, Road-15, Dhanmondi R/A	2
451	Plot-9, Road-11, Sector-6, Uttara	3
452	Plot-21, Road-121, Gulshan	4
453	108, Kazi Office Lane, Boro Moghbazar	5
454	63B, Siddeswari	6
455	Plot-19/2, Road-28, Dhanmondi R/A	7
456	20, 21, 22, Green Road	8
457	37, New Eskaton Road	9
458	65 & 66, Siddeswari Road	10
459	Plot-360, Road-15, Gulshan-1	11
460	Plot-12, Road-135, Block-SE(B), Gulshan-1	12
461	Plot-57, Lake Drive Road, Sector-7, Uttara	13
462	8/1, Block-B, Lalmatia	14
463	9, Gopikishan Lane, Wari	15
464	Plot-1, Road-140, Block-SE(G), Gulshan-1	16
465	Plot-34, Lake Drive Road, Sector-7, Uttara	17

466	3/13, Block-E, Lalmatia	18
467	Plot-1, Road-77, Gulshan-2	19
468	Plot-81, Road-23, Block-B, Banani	20
469	Plot-4/A, Road-139, Gulshan-1	21
470	Plot-15, Road-8, Sector-7, Uttara	22
471	Plot-4, Road-30, Sector-7, Uttara	23
472	Plot-14, Road-2, Sector-13, Uttara	24
473	Plot-19, Road-13, Sector-4, Uttara	25
474	Plot-7, Road-116, Block-CES(A), Gulshan-1	26
475	Plot-25, Road-35, Gulshan	27
476	Plot-38, Road-2, Block-B, Niketan	28
477	Plot-38, Shah Makdum Avenue, Sector-13, Uttara	29
478	Plot-10, Road-20, Sector-11, Uttara	30
479	Plot-36, Shah Makdum Avenue, Sector-13, Uttara	31
480	Plot-115, 117 & 119, Road-9, Block-C, Niketan	32
481	129, New Eskaton Road	33
482	9/2, Sir Syed Road, Mohammadpur	34
483	7/2, Block-A, Lalmatia	35
484	Plot-3 & 5 (Essence-1), Road-11, Sector-10, Uttara	36
485	Plot-3 & 5 (Essence-2), Road-11, Sector-10, Uttara	37
10) Anwar Landmark Ltd.=13		
486	Plot# 7-8, Nawabpur Road	1
487	Plot# 46/2/C, Zigatola, Dhanmondi	2
488	17, Hossain Housing Society, Shyamoli	3
489	275, Gulbagh Road, Gulbagh	4
490	Plot# 30, Road#10, Sector -3, Uttara	5
491	Plot# 46, Road#12, Sector -4, Uttara	6
492	7, Mymensing Road, Paribagh	7
493	79 (Arulano), Siddheswari Road	8
494	79 (Arunima), Siddheswari Road	9
495	78, Siddheswari Road	10
496	25, Mitali Raod, Wet Dhanmondi	11
497	24, Mitali Raod, West Dhanmondi	12
498	Plot # 40, Road # 02, Sector-10, Uttara	13
11) Borak Real Estate Ltd.=15		
499	Plot-19, Road-7, Baridhara	1
500	Plot-20, Road-9, Block-G, Banani	2
501	Plot-38, Road-63, Gulshan-2	3
502	14, Park Road, Baridhara	4
503	Plot-18, Road-7/C, Sector-9, Uttara	5
504	71,72 Elephant Road, Eskaton	6
505	Plot-36, Road-63, Gulshan-2	7
506	Plot-39, Sector-7, Lake Drive Road, Uttara	8
507	Plot-16, Road-33, Gulshan	9
508	117 Kazi Nazrul Islam Avenue, Eskaton	10
509	Plot-20, Road-7/C, Sector-9, Uttara	11
510	12, Kumartoli, Islampur	12
511	20, U. N. Road, Baridhara	13

512	66, Park Road, Baridhara	14
513	30, U. N. Road, Baridhara	15
12) Sky View Foundation Ltd.=22		
514	Block – K, Road – 20, House – 31, Banani.	1
515	19, Naya Paltan	2
516	76, Naya Paltan	3
517	90, Naya Paltan	4
518	23, Kabi Jashim Uddin Road,Kamlapur	5
519	63, Shantinagar	6
520	129, Shantinagar	7
521	128, Shantinagar	8
522	77/1,79,79/1, Shantinagar	9
523	99, Shantinagar	10
524	165, Shantinagar	11
525	63/1, Shantinagar	12
526	23, Siddhewari Road	13
527	31, 31/A, New Eskaton Road	14
528	346/C, Khilgaon	15
529	1044, Malibag Chowdhury Para	16
530	Sector-7, Road-18, plot-109Uttara	17
531	45, Bijoy Nagar	18
532	190/B Khilgaon Chowdhury Para	19
533	37, Purana Paltan	20
534	546, Noyatola,Moghbazar	21
535	1124/A, Khilgaon	22
13) Navana Real Estate Ltd.=48		
536	9, Bailey Road	1
537	House # 29, Road # 17, Block # E, Banani	2
538	Plot # 57, Road # 11, Block # E, Banani	3
539	House # 19, Road # 6, Block # C, Banani	4
540	House # 23, Road # 20, Block # K, Banani	5
541	Plot # 17, Road # 8, Block # K, Baridhara	6
542	Plot # 39, Block # A, Bashundhara	7
543	Plot # 60, Central Road, Dhaka	8
544	House # 6, Road # 12 (New), Dhanmondi R/A	9
545	House # 69/A, Road # 15/A(New), Dhanmondi R/A	10
546	House # 43, Road # 9/A (New), Dhanmondi R/A	11
547	257/1, Elephant Road	12
548	41, New Eskaton	13
549	131, Jahanara Garden, Green Road	14
550	Plot # 12, Road # 118, Block # CES (B), Gulshan	15
551	Plot # 11, Road # 14, Gulshan-1	16
552	Plot # 45, Gulshan South Avenue, Gulshan Circle -1	17
553	Plot # 10, Road # 118, Block # CES (B), Gulshan - 2	18
554	Plot # 31, Road # 36, Gulshan	19
555	42/A, K. M. Das Lane, Hathkhola	20
556	Plot # 36 (Cherry), Navana Garden, Kallyanpur	21
557	Plot # 36 (Daffodil), Navana Garden, Kallyanpur	22

558	Plot # 36 (Lily), Navana Garden, Kallyanpur	23
559	Plot # 36 (Lotus), Navana Garden, Kallyanpur	24
560	Plot # 36 (Rose), Navana Garden, Kallyanpur	25
561	Plot # 36 (Tulip), Navana Garden, Kallyanpur	26
562	Plot # 8, Road # 5, Block # A, Section # 6, Mirpur	27
563	Plot # 115, Boro Maghbazar, Ramna	28
564	1/4,Shahjahan Road, Block # C, Mohammadpur	29
565	Plot # 809, Road # 3, Baitual Aman Housing Society, Mohammadpur	30
566	Plot # 37, Block # E, Niketan	31
567	A/1, A/3, Niketan	32
568	Plot # 13, Block-A, Niketan, Gulshan	33
569	Plot # 109, Road # 5, Block # B, Niketan, Gulshan	34
570	Plot # 25, Block # B, Niketon, Gulshan	35
571	Plot # 76, Segunbagicha	36
572	72, Segun Bagicha	37
573	2/3, Shukrabad	38
574	Plot # 3, Road # 2, Sector # 3, Uttara	39
575	Plot # 26, Ala-Ul-Avenue, Sector # 06, Uttara	40
576	Plot # 4, Road # 11, Sector # 4, Uttara	41
577	Plot # 9, Road # 6, Sector # 7, Uttara	42
578	Plot # 40/A, Road # 7, Sector # 3, Uttara	43
579	Plot # 1, Road # 20, Sector # 7, Uttara	44
580	Plot # 49, Road # 6, Sector # 4, Uttara	45
581	Plot # 10, Road # 10, Sector # 1, Uttara	46
582	Plot # 6, Road # 19, Sector # 12, Uttara	47
583	11/3, Hare Street, Wari	48
14) Property Development Ltd.=22		
584	7, R K Mission Road	1
585	1, NaoratanColony	2
586	52, New Eskaton	3
587	Rd # 8, Dhanmondi R/A	4
588	12, R K Mission Road	5
589	17/1/A, Eskaton Garden	6
590	4, East Testury Bazar	7
591	1/A, East Testury Bazar	8
592	66, Central Road	9
593	1/6, Eskaton Garden	10
594	Rd # 64/A, Gulshan-1	11
595	Rd #66, H # 18, Gulshan	12
596	Rd # 10/A, Dhanmondi	13
597	2, Lake Circus	14
598	85/1, R K Mission Road	15
599	H # 7, Rd # 10, DRA	16
600	15/A, Lake Circus	17
601	42/A, Segunbagicha	18
602	Rd # 121, Gulshan	19
603	H # 17, Rd # 34, Sector-2, Uttara	20

604	116, Segunbagicha	21
605	Sector-10, Rd-12, Plot-2, Uttara	22
15) Asset Holdings Ltd.=210		
606	Plot 5, Road 3, Dhanmondi	1
607	Plot 26, Road 34, Sector 7, Uttara	2
608	Plot 1A, Road 5, Block I, Banani	3
609	Plot 44, Road 4A, Dhanmondi	4
610	Plot 3, Road 21, Sector 7, Uttara	5
611	22A Monipuripara	6
612	Plot 31, Road 12A, Dhanmondi	7
613	Plot 31, Road 7D, Sector 9, Uttara	8
614	98 Gulshan Avenue	9
615	Plot 55, Road 28, Gulshan	10
616	Plot 73, Road 8A, Dhanmondi	11
617	Plot 3, Road 10, Dhanmondi	12
618	Plot 60, Road 8, Block C, Banani	13
619	Plot 14, Road 19A, Banani	14
620	Plot 33A, Road 12A, Dhanmondi	15
621	Plot 3/19, Iqbal Road, Mohamadpur	16
622	Plot 10/1, Road 12, Dhanmondi	17
623	Plot F23, Road 4, Banani	18
624	Plot 18, Road 126, Gulshan	19
625	Plot 500 (Old), Road 8, Dhanmondi	20
626	Plot 80, Road 5, Block F, Banani	21
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773	Plot 8, Road 9, Sector 4, Uttara	168
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810	Plot 8, Road 7, Sector 4, Uttara	205
811	1/6, Block D, Lalmatia	206
812	Plot 9, Road 23, Block B, Banani	207
813	Plot 4, Road 3C, Sector 9, Uttara	208
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818	Easel Dream-3,Plot-17,R-3/A,S-5,Uttara	3
819	Easel Dream-4,Plot-13,R-2/A,S-5,Uttara	4
820	P-18-R-14,S-5,Uttara	5
821	P-17,R-128,Gulshan	6
822	P-19,R-121,Gulshan	7
823	P-16,R-108,Gulshan	8
824	P-11,B-A,Niketon	9
825	P-10,B-E,Niketon	10
826	P-18,R-14,S-5,Uttara	11
827	P-40,R-13,S-13,Uttara	12
828	P-30,R-4,S-13,Uttara	13
829	P-16,R-4,S-13,Uttara	14
830	P-17,R-3/A,S-5,Uttara	15
831	P-99,R-37,Gulshan	16
832	P-73,B-B,Niketon.	17
833	P-3/9,B-C,Niketon	18
834	P-345,B-D,Bashundhara	19
835	H-115,Dilu Road,Moghbazar	20
836	190/A,Kazi office Lane,Moghbazar	21
837	13 Segunbagicha	22
838	11 Rankin Street,Wari	23

839	H-19,R-5,Dhanmondi	24
840	H-368,Shen Para, Parbata,Mirpur	25
841	P-63,Laxmi Bazar	26
17) Building For Future Ltd.=31		
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844	Plot-26, Road-34, Gulshan	3
845	Plot-51, Road-5, Sector-13, Uttara	4
846	Plot-CWS 38(B), Road-25, Gulshan	5
847	67, Tejkunipara, Firm Gate	6
848	Plot-117B, Road-7, Sector-4, Uttara	7
849	Plot-74 (B), Road-127, Gulshan	8
850	2, Momenbagh	9
851	Plot-47, Road-7, Block-G, Banani	10
852	76, 76/1, Pantha Path	11
853	Plot-NE(I) 8-B, Road-75, Gulshan	12
854	Plot-48, Road-18, Sector-3, Uttara	13
855	17, Larmini Street, Wari	14
856	Plot-5F & 7F, Road-13, Sector-3, Uttara	15
857	1, Bonogram Lane, Wari	16
858	19, Ware Street, Wari	17
859	16, Larmini Street, Wari	18
860	17/11, Rankin Street, Wari	19
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863	Plot-7, Road-6, Sector-10, Uttara	22
864	117, Boro Moghbazar	23
865	104, Kakrail Road	24
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867	3, RK Mission Road	26
868	Plot-45, Road-12, Sector-4, Uttara	27
869	47, Green Road	28
870	3/3, Block-D, Lalmatia	29
871	Plot-40, Road-7, Sector-3, Uttara	30
872	Plot-SW(E) 9A, Road-6, Gulshan	31
18) Bay Development Ltd.=10		
873	Plot 10, Road 128 Gulshan Plot 5, Road 56, Gulshan	1
874	Plot 51, Road 5, Dhanmondi	2
875	Plot 5, Road 87, Gulshan	3
876	Plot 27, Road 5, Dhanmondi	4
877	Plot 4, Road 118, Gulshan	5
878	Plot 20, Road 107, Gulshan	6
879	Plot 47, Road 5, Dhanmondi	7
880	Plot 6, Road 104, Gulshan	8
881	Road 32, Plot 22, Gulshan	9
882	Road 10, Plot 19, Baridhara	10

19) Sheltech Pvt. Ltd.=96		
883	117, DIT Road, Malibagh	1
884	54/C, Inner Circular Road, Shantinagar	2
885	153,1, Malibagh Bazar Road	3
886	5/2, Block-B, Lalmatia	4
887	Plot-9, Road-12, Dhanmondi	5
888	154/1, Monipuripara, Tejgaon	6
889	42/3/A, Indira Road	7
890	Plot-1, Road-113/A, Gulshan	8
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892	Plot-5, Sheltech Mollika Housing Society, Pallabi, Mirpur	10
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895	5/8, Block-B, Lalmatia	13
896	Plot-39, Road-36 & 37, Gulshan	14
897	Plot-3, Road-3, Sector-4, Uttara	15
898	55, Lake Circus, West Pantha Path, Kalabagan	16
899	Plot-93, Suhrawardi Avenue, Block-K, Baridhara	17
900	Plot -5, Road -16, Gulshan	18
901	Plot -21, Road -24, Block-CWS (A) Gulshan	19
902	Plot-66 (N), Road-9/A, Dhanmondi	20
903	Plot-19/4, Road-15, Dhanmondi	21
904	Plot-10, Road-7, Sector-3, Uttara	22
905	Plot-10, Road -8, Block –C, Section-6, Mirpur	23
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907	210, New Elephant Road	25
908	Plot-92, Road-23, Block-A, Banani	26
909	148, Green Road	27
910	Plot-30, Road-20, Block-K, Banani	28
911	Plot-2, Road-4, Sector-10, Uttara	29
912	Plot-40, Road-13/A, Dhanmondi	30
913	Plot-79, Road-16, Block-A, Banani	31
914	7, Siddeswari Road	32
915	155, Monipuripara, Tejgaon	33
916	Plot-1, Road-4, Sector-3, Uttara	34
917	Plot-7/A, Road-33, Sector-7, Uttara	35
918	Plot -11/B, Road -51 & 54, Block-NW(G) Gulshan	36
919	Plot-7/A, Road-13, Sector-3, Uttara	37
920	Plot -13, Road -33, Block-CWS(B) Gulshan	38
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922	Plot-23, Road-16, Sector-4, Uttara	40
923	8/4, Aurangzeb Road, Block-A, Mohammadpur	41
924	Plot-1, Road-27 & 28, Block-K, Banani	42
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930	Plot-233, Club Road, Senpara Parbata, Mirpur	48
931	Plot -9, Road -33, Block-CWS(B) Gulshan-2	49
932	Plot-1, Road-18, Sector-3, Uttara	50
933	Plot-81, Road-3, Block-F, Banani	51
934	83, Lake Circus, Kalabagan	52
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977	Plot-29, Road-13, Sector-3, Uttara	95

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980	Plot-63, Lake Drive Road, Sector-7, Uttara	2
981	Plot-51/D, Road-13/B, Sector-3, Uttara	3
982	A-29, Niketan	4
983	A-43, Niketan	5
984	A-41/1, Niketan	6
985	476/D, DIT Road, Malibag	7
986	204/B, Khilgaon	8
987	506/C, Khilgaon	9
988	84/B, Khilgaon	10
989	481/C, Khilgaon	11
990	208, Fakirapool, Arambagh	12
991	44/B, Katasur, Mohammadpur	13
992	173/D, Road-4, Mohammadpur	14
993	3 & 4, Block-C, Pallabi	15
994	1/8, Block-G, Lalmatia	16
995	259/B, Khilgaon	17
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Chapter 4: Size and Price in Apartment Housing

3.1 Introduction

In this chapter, trend in size and price in the apartment housing sector are brought up to light to judge the movement of pricing along the time. There are variations in sizes of apartments in the same location. Over the period and around the locations of study area, it thus definitely shows a big variety in size of apartments since 1990. Price is a very sensitive issue, which is mainly found from the secondary sources like REHAB publications, REHAB fair 2010, and advertisements in the daily newspapers.

3.2 Size of Apartment Units

Sizes of apartment units of the projects have been taken from the developers and tabulated to understand the change over the period (Table-4.1). Among the listed 1,021 projects, 710 projects are found with their sizes of apartment units. Being completed in the different time these projects are all of variable sizes and prices. Years are categorized in four parts taking five years in a group to suggest the change in each five years.

From (Table-4.1), it is evident that the average size of the flats in Gulshan area have not changed that much. That means the developers in this area maintained the heritage of developing luxury apartments which are of 2,600 sq-ft on average. Other than this area most areas shown a different trend, like Banani on 1995-1999 had flats of average 2,400 sq-ft and then in 2000-2004 its average size reduced to 1350 sq-ft and in 2005-2009 its average size is around 2000 sq-ft. That means the average size declined in the period of 2000-2004 and again rose in 2005-2009. Most of the area shows this trend. Like Dhanmondi, Shantinagar, Segunbagicha, Eskaton, Purana Paltan, Monipuripara etc. Some places show the opposite trend like Elephant road, Dhanmondi, West Dhanmondi etc. Flat size of these areas was higher in 2000-2004 periods.

And for places like Uttara, Baridhara, Kalabagan etc. the average size for flats are increasing. These places are of great demand to the rich families now-a-days because of the land scarcity in Gulshan and Dhanmondi area. Also the price is still reasonable in these area compared to Gulshan.

Table-4.1: Variation of Average Size of Apartment Units in sq-ft in Different Locations and Time

Location	**1990-1994**	**1995-1999**	**2000-2004**	**2005-2009**
Gulshan		2638	2510	2681
Banani		2398	1332	1976
Dhanmondi	1320	1772	2120	1812
Uttara		1200	1481	1559
Mohammadpur			1780	
Niketon				1522
Lalmatia				1797
Mirpur				1937
Baridhara		2407	2674	2890
Siddeswari	1275			1621
Shantinagar	1800	1038	1625	1550
Segunbagicha	1330	1258	1293	1437
Wari			1800	
Khilgaon				1096
Eskaton	1839	1765	1262	1665
Testury bazar		883	1400	
New Circular Road		1350		
Purana Paltan	1468	1461		1338
Moghbazar			1555	2470
Malibag		1150		
RK Mission Road		725	1105	
Siddique Bazar				
Baily Road		1418	1970	
Green Road		1443		
Shamoli				1028
West Dhanmondi			1525	1256
Bashabo				1143
Rampura				905
Elephant Road		1137	1570	1308
Kalabagan		1135	1521	1570
Tollabagh				
Zigatola				1238
Kakrail	1362	1368		
Firmgate/ Indira Road		1183		1345
Paribagh		1780		
Topkhana Road		1299		
Circuit House Road		1235		
Nakhalpara		1150		
Monipuripara			1280	1315
Nawabpur Road				600
Central Road			1400	
Gulbagh				1110
Average size	1484	1443	1642	1544

Source: Developers' office record, 2009

Thus the size of apartments is different in different areas. Various factors influenced these sizes. Factors will be explained in the fifth chapter of this report.

Size of the flats is directly related with the plot or land size. Table-4.2 shows the average size of apartments on respective land areas. Apartment size depends on lots of factors. But especially on the land size and which area is it in. Because in rich areas flat sizes are usually big and in moderate areas developers concern is to sell them quick and for selling it quick they target the middle class family which is the bigger segment of the market. Middle income families are eager to buy flat in their range because with their income it is not feasible enough to buy a land and build their own home. That's why moderate flats are around 1200-1700 sq-ft of which the prices are in the range of middle class families. In the following tables, plot size is shown in katha and apartment size in square feet which is industry norm.

Table-4.2: Variation of Apartment Size with plot Size

Range of plot size (in katha)	Number of projects found	Range of apartment size in sq-ft	Average apartment size in sq-ft
2 katha or below 2 katha	-	-	-
Over 2 katha - 4 katha	7	1023-2050	1316
Over 4 katha – 6 katha	212	1105-2875	1724
Over 6 katha – 7 katha	15	1600-1820	1647
Over 7 katha – 9 katha	61	1020-4130	1787
Over 9 katha – 12 katha	102	1000-3091	1815
Over 12 katha - 16 katha	42	1015-3580	2621
Over 16 katha – 20 katha	73	1225-3100	2517
Over 20 katha	9	1142-2450	1813
Total number of project found = 521			

Source: Developers' office record, 2009

From fig-4.1 the average apartment size of the developers is shown along the plot or land size. Biggest average is shown between over 12 katha to 20 katha.

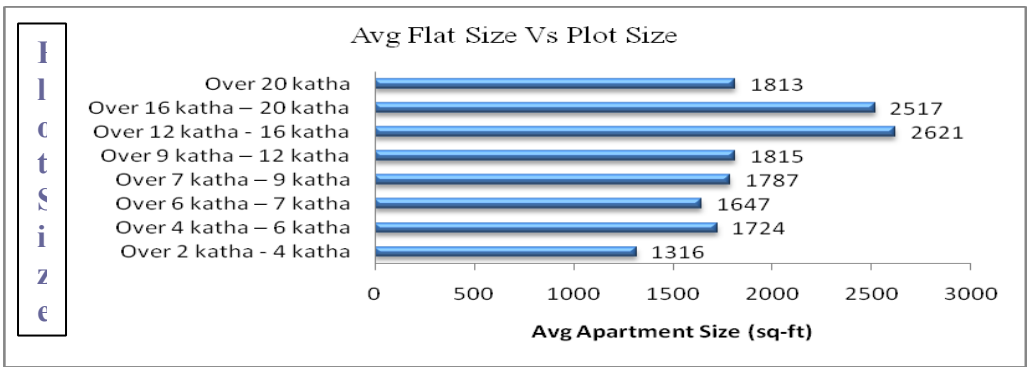

Fig-4.1: Avg. Flat Size Vs Plot Size

To analyze the relationship between plot size and apartment size, scatter gram analysis is done for four different time periods. Time periods are 1990-1994, 1995-1999, 2000-2004 and 2005-2009.

From the fig-4.2 it can be seen that majority of the apartment build in that period was on up to 20 katha. The apartment size was also ranged between 1000 to 2000 square feet. It can be said that the developers at that time were quite intent to build medium sized apartments. From scatter gram, the trend of points is from lower left to upper right which shows the direction of association is positive and the line summarizing the points creates a positive slope that results in a positive correlation between plot size and apartment size in the period 1990-1994.

From the fig-4.3 it can be seen that majority of the apartment build in that period was on up to 20 katha plots. But the apartment size varied drastically. On same 20 katha plot apartment size varied from 1200 to 4000 square feet. So it can be said that the preference of developers in land size was same as the previous time period but they started to build large apartment in this time period. From scatter gram, the trend of points is from upper left to lower right which shows the direction of association is negative and the line summarizing the points creates a negative slope that results in a negative or inverse correlation between plot size and apartment size in the period 1995-1999.

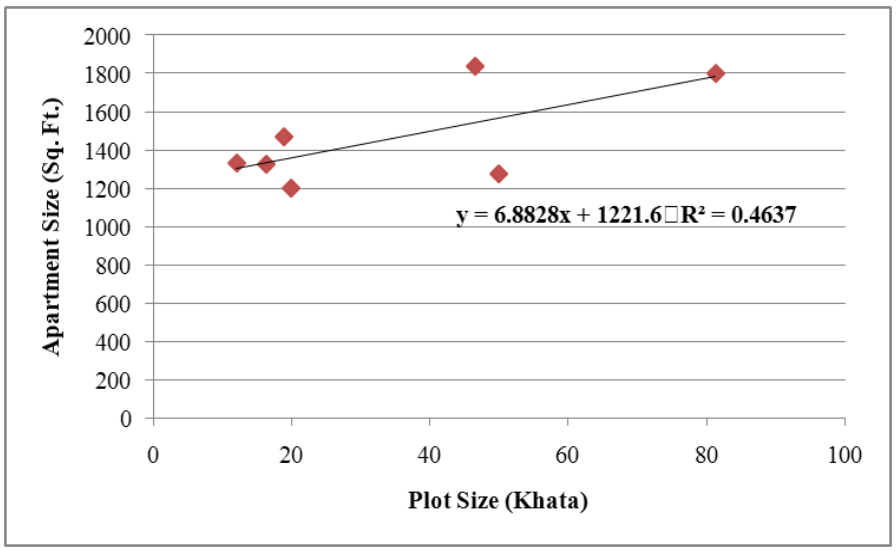

Fig-4.2: Scatter Gram showing Correlation between Plot Size and Apartment Size (1990-1994)

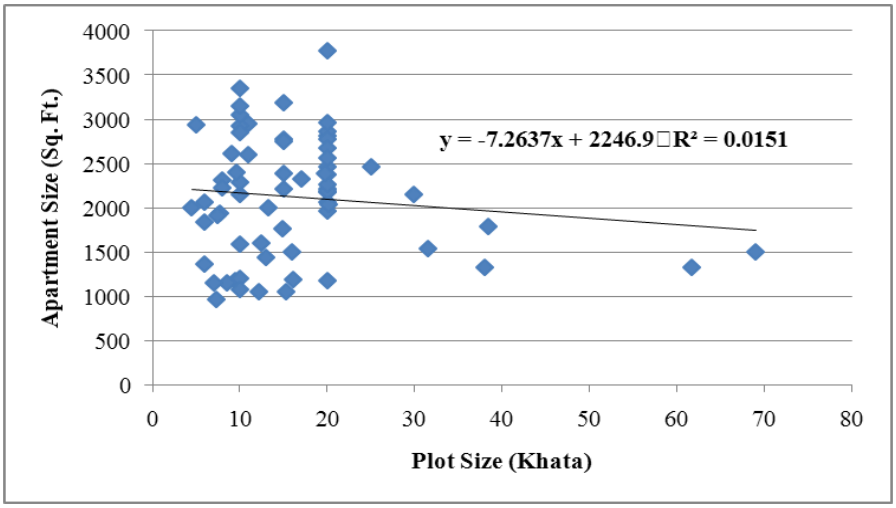

Fig-4.3: Scatter Gram showing Correlation between Plot Size and Apartment Size (1995-1999)

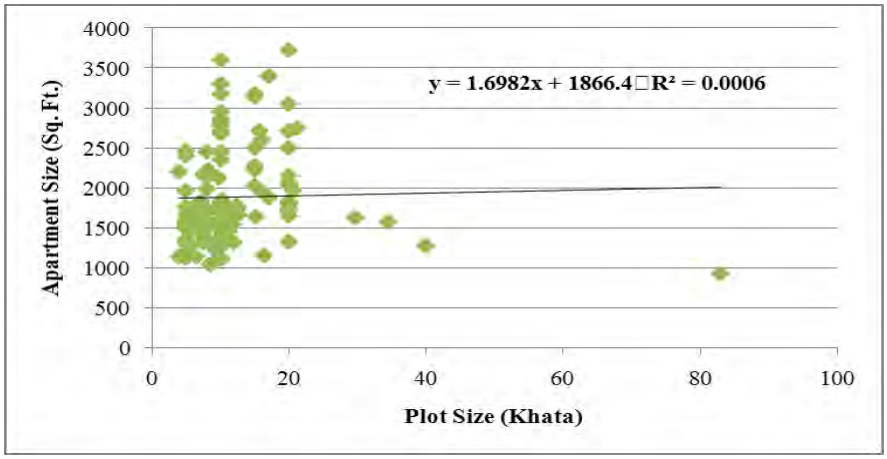

Fig-4.4: Scatter Gram showing Correlation between Plot Size and Apartment Size (2000-2004)

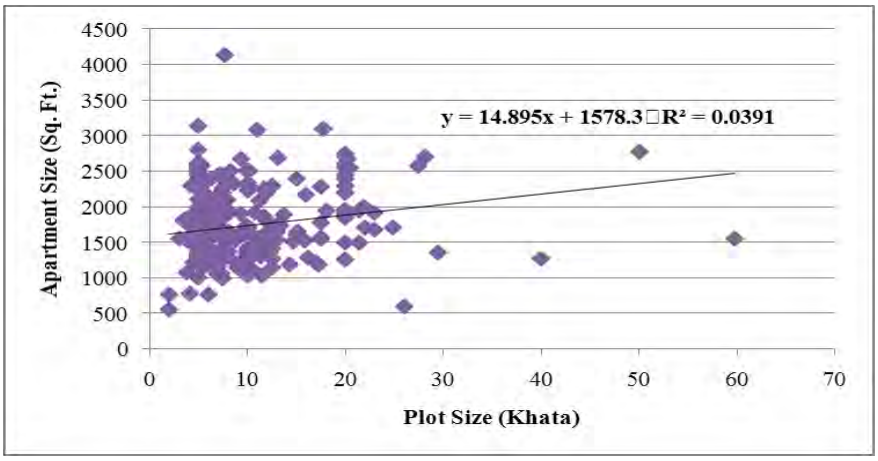

Fig-4.5: Scatter Gram showing Correlation between Plot Size and Apartment Size (2005-2009)

From the fig-4.4 it can be seen that up to 20 katha is the developers' preferred size for building apartments in between 2000-2004. But the apartment size dense more closely in the range of 1000 to 2000 square feet. Although there were some large apartments built in that period, the stated range was preferred by the developers. From scatter gram, the trend of points is from lower left to upper right which shows the direction of association is positive and the line summarizing the points creates a positive slope that results in a positive correlation between plot size and apartment size in the period 2000-2004.

From the fig-4.5 it can be seen that up to 20 katha is the developers' preferred size for building apartments in between 2000-2004 and also in 2005-2009. And the apartment size range now from 1000 to 3000 square feet. From scatter gram, the trend of points is from lower left to upper right which shows the direction of association is positive and the line summarizing the points creates a positive slope that results in a positive correlation between plot size and apartment size in the period 2005-2009. In summary the choice of land size was almost constant for the last two decades but apartment size varied with the time periods.

From scatter gram analysis (Fig-4.2, 4.3 4.4 and 4.5), it has been found that there is no strong relationship between plot size and apartment size over the years.

One important relationship between plot size and apartment size can be understood from the covered floor area. Before the amendment of Imarat Nirman Bidhimala, 2006, allowable covered floor area was determined by the standard of covering two third of plot area. Table 4.3 shows the number of projects exceeding this rule. Data found from only those completed projects between the years 1990 and 2007 has been considered as a minimum two years time is required to complete a project by the developers in Dhaka. Rest of the projects of 2008 and 2009 are assumed to follow the rule of FAR (Floor Area Ratio) of Bidhimala 2006, 2007 and 2008. Thus it is logical to exclude the projects completed by following Bidhimala, 2006 and further amendments.

Table-4.3: Number of Projects exceeding Allowable Covered Area before Bidhimala 2006

Plot Area in Katha	Average of Allowable Covered Area before 2006 in Sq-ft (2/3 of plot area)	Average of Applied Covered Area before 2006 in Sq-ft	Number of Projects considered	Number of Projects Exceeding Allowable Covered Area before 2006
2 and below	960	772	1	0
Over 2 – 3	1200	-	-	-
Over 3 – 4	2195	2116	3	2
Over 4 – 5	2371	2677	49	44
Over 5 – 6	2619	2693	31	22
Over 6 – 7	3203	3303	14	11
Over 7 – 8	2216	2125	34	24
Over 8 – 9	4305	4666	10	9
Over 9 – 10	4729	4747	45	28
Over10 – 12	5278	5559	26	18
Over12 – 14	6074	6178	13	8
Over14 – 16	7289	7421	18	8
Over16 – 18	8165	7550	13	7
Over18 – 20	9581	10165	36	25
Over 20	18098	13021	24	6
Total Number of Projects Exceeding Allowable Covered Area before 2006			317	212

From Table 4.3, it is revealed that out of 317 projects, 212 projects had exceeded the two third limit of plot area. The average of covered area applied on plots of 2 kathas and below, 3-4 kathas and 16-18 kathas has not crossed allowable covered area; again 5-6 kathas, 7-8 kathas, 9-10 kathas are much closer to the allowable covered area though crossed the allowable limit. Other ranges of plots show noticeable violation.

Another important aspect in the relationship between plot size and apartment size can be understood from the floor area ratio. The Floor Area Ratio (FAR) is the ratio of the total floor area of building on a particular plot to the area of the plot. As a formula:

Floor Area Ratio = (Total covered area on all floors of the building) / (Area of the plot)
Thus, a FAR of 2.0 would indicate that the total floor area of a building is two times the area of the plot on which it is constructed, as would be found in a multi-storied building. Though the projects under Bidhimala 2008 have not yet been completed during this research, nevertheless it would be an important finding to know the status of the previous apartment projects with respect to the latest rule. Table 4.4 shows this status as per 2008 regulation about FAR in DCC area.

Table-4.4: Number of Projects exceeding Allowable FAR as per Bidhimala 2008

Plot Area in Sq-m	**Allowable FAR (as per Bidhimala 2008)**	**Applied FAR in Survey Sample by Developers**	**Number of Projects found from Survey Sample**	**Number of Projects Exceeding Allowable FAR**
134 or below	3.15	2.19	2	0
Over 134 – 201	3.35	-	-	-
Over 201 – 268	3.50	5.22	11	10
Over 268 – 335	3.50	4.68	112	94
Over 335 – 402	3.75	4.13	68	23
Over 402 – 469	3.75	4.26	27	12
Over 469 – 535	4.00	4.29	53	24
Over 535 – 603	4.00	4.4	16	8
Over 603 – 670	4.25	4.86	62	26
Over 670 – 804	4.50	4.90	37	14
Over 804 – 938	4.75	5.15	26	12
Over 938 – 1072	5.00	3.96	25	2
Over 1072 – 1206	5.25	5.53	15	7
Over 1206 – 1340	5.25	4.15	51	5
Over 1340	5.50	5.42	34	10
Total Number of Projects exceeding Allowable FAR as per Bidhimala 2008			539	247

Table 4.4 shows a comparison between the specified FAR by Imarat Nirman Bidhimala 2008 and average FAR of the surveyed apartment complexes. From the table it is clear

that, majority of the 539 projects were built without complying the rule of FAR. For example, out of 112 samples within the range of 268-335 square meter plots, 94 found out

to be non-compliant. In 201-268 square meter range the number of non compliant project is over 90%. As FAR increase with size of plot, the number of non compliance is relatively lower in the bigger plots. It can be observed from the table that, non-compliance ratio is under 50% in the bigger plots. Among the ranges with significant samples, lowest number of non compliance is found at the range of 1206-1340.

The table 4.5 shows the variation of apartment size with respect to the access road width. This factor "access road width" has no direct relation with the apartment size or with plot size. That is because developers look for bigger piece of land any where they can manage. But this factor makes it difficult to sell flats to upper middle class and upper class with small road width because these status holders definitely possess cars and also more than one each family. That is a shear difficulty for these families and so developers tend to go for big apartments with medium road width.

Table-4.5: Variation of Apartment size with Access Road Width

Access road width (in meters)	Number of projects found	Range of apartment size in sq-ft	Average apartment size in sq-ft
Below 3 m	15	1075 - 2470	1427
3 m to 3.99 m	18	1825 - 1975	1690
4 m to 5.99 m	49	[illegible]	1431
6 m to 8.99 m	198	1105 - 2200	1737
9 m to 11.99 m	67	1335 - 2440	2103
12 m to 17.99 m	179	1460 - 1725	1663
18 m to 23.99 m	4	1750 - 1820	1795
24 m and above	3	1125 - 1800	1722
Total number of project found = 533			

Source: Developers' office record, 2009

From table 4.5 it is crystal that biggest apartments are mostly with the 9m-12m road access. Why not more road accesses have the biggest flats? Because this is the standard road width in residential areas and the aristocrat areas maintain this width. Other than these are mainly the main roads and on these locations flats are actually above the market places and here the middle income peoples are very much keen to have flats because they

mostly travel on buses. And rich families avoid these market places apartments which makes the developers to go for mid size apartments along the main road housings.

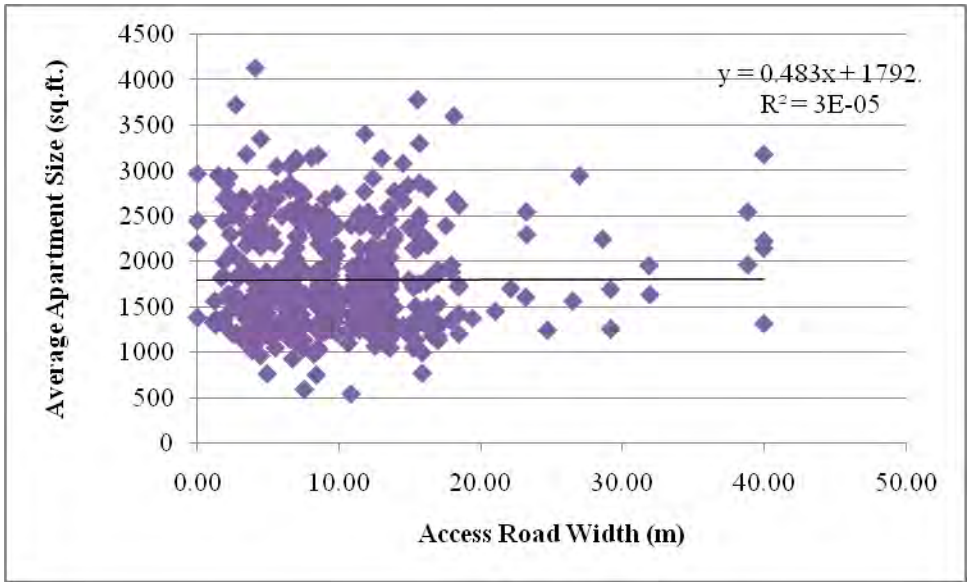

Fig-4.6: Scatter Gram showing Correlation between Access Road Width and Apartment Size (1990-2009)

Fig-4.6 is a scatter gram showing correlation between access road width and apartment size in last 20 years. Most of the large and small size apartments are found in both, narrow and wider roads. So no strong relationship has been found between two variables.

3.3 Trend of Apartment Size Since 1990

Last two decades show the growth of housing sector because this sector started just two decades back. Interestingly from table-4.6 it is evident that the maximum size of an apartment and minimum size of an apartment rose to their respective highest peak. That means the maximum size increased and minimum size decreased. The average showed a slight improvement but very little.

Table-4.6: Trend of apartment sizes in last two Decades

Time Period	Number of project	Maximum Size of apartment unit	Minimum Size of apartment unit	Average Size of apartment unit

	considered	(in sq-ft)	(in sq-ft)	(in sq-ft)
1990-1994	15	2440	1000	1570
1995-1999	86	4500	725	1692
2000-2004	169	4540	827	1967
2005-2009	440	6700	465	1772
Total number of project found = 710				

Source: Developers' office record, 2009

Maximum size rose to about three times in the last two decades and minimum size halved. But the average is not much of a change. Which means the number of medium and small flats rose higher than bigger apartments. This is because of the increasing demand from the middle class people. And developers' projects rose rapidly with the time. The figure 4.7 shows the graphical representation of the above table which shows how with time the size has changed in the housing industry.

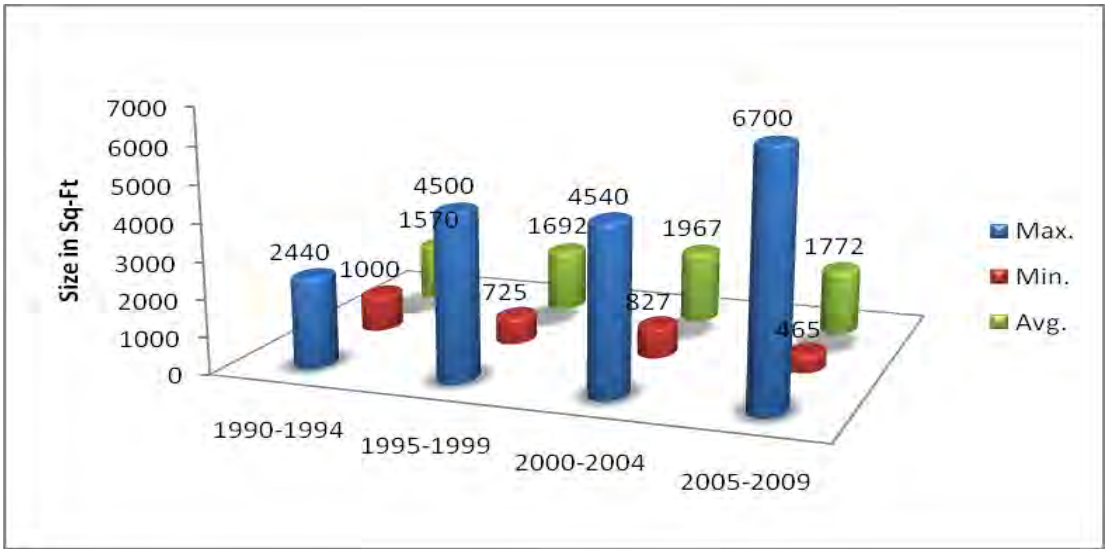

Fig-4.7: Trend of apartment sizes in last two Decades

As far, the discussion was that trend of apartment size with the last two decades. Now let's see the trend of projects with the size ranges. The data on apartment sizes from 20 selected developers were classified into four groups of different size ranges according to five years time period (Table-4.7). It is found that size of 1001-2000 sq-ft apartments were mostly developed for the last 20 years. The size ranging from 2001 to 3000 sq-ft is in the second position over this period. Larger apartment units were extensively developed from the year around 2000 whereas smaller size units came into apartment housing market only five years ago.

Table-4.7: Number of Projects According to Size Ranges

Size range in Sq-ft	1990-1994	1995-1999	2000-2004	2005-2009
400-1000	1	6	3	22
1001-2000	13	58	102	294
2001-3000	1	20	46	107
Above 3000	0	2	18	17
Total number of project found = 710				

Source: Developers' office record, 2009

From the figure-4.8, it is evident that 1001-2000 sq-ft range got the most projects for the developers. Starting from 1990 to the year of 1999, this range of apartment was increasing steadily, but after 2004 the number increased rapidly and sharply.

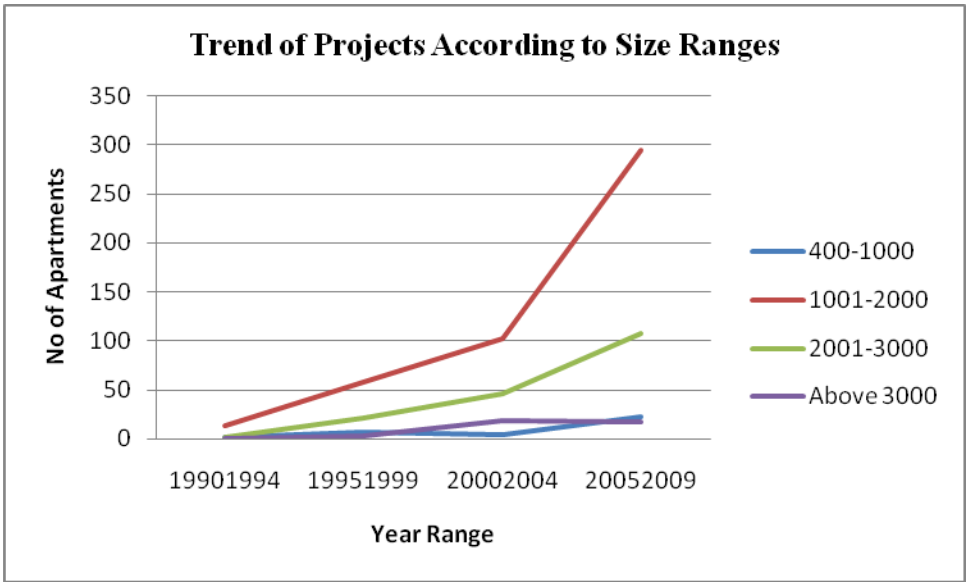

Fig-4.8: Number of Projects According to Size Ranges

A questionnaire survey on 30 selected developers was conducted to have an idea of preferred minimum and preferred maximum size of apartment unit during the last two decades. It (table-4.8) shows that the average of minimum size preferred at nineties is 1550 sq-ft and maximum is 4000 sq-ft. And in the twenty-first century the choice is not much different for preferred maximum. Choice of sizes decreased to 1300 sq-ft as preferred minimum because the project increased and a big percentage of customers from middle income group entered into the housing market to have a fixed living place and apartments are easy to buy than to build a house. One of the findings on the middle income group of apartment buyers can be mentioned in this respect, 78.2% of upper-middle income class and 77.6% of middle-middle income class of people classify 1000-2000 sq-ft as their preferred apartment space (Zahur, 2008).

Table-4.8: Average of Preferred Minimum and Preferred Maximum size of apartment unit

Time period	Average of Preferred Minimum Apartment size in sq-ft	Average of Preferred Maximum Apartment size in sq-ft
1990-1999	1550	4000
2000-2009	1350	4000

Source: Survey, 2010

3.4 Price of Apartment

Price is subject to change and with the passage of time its value declines in a country like Bangladesh. So with inflation price of every commodity will keep on rising. Housing sector also is not out of this situation. From the Sheltech Pvt. Ltd. the price of various areas being collected and tabulated below. Table 4.9 shows the increase in price from the last decade to date.

Though price will increase but it was tried to evaluate about the pattern of increase. Sheltech mostly covers the posh areas and so the most demandable places being considered for this test. The top six areas are tested graphically.

Table-4.9: Location wise Trend of Apartment Price in taka per sq-ft

Area/Year	1990	1995	2000	2003	2006	2007	2008	2010
Dhanmondi	2150	2200	2400	3000	4500	5500	6200	6750
Gulshan	2115	2080	2450	2500	4400	6200	7000	9000
Banani	1750	1950	2200	2500	4000	5100	5600	6500
Baridhara	1850	1950	2150	2250	4200	5900	6500	8000
Lalmatia	1800	1950	2400	2500	3400	4500	5200	5500
Uttara	1650	1750	2000	2100	2700	3200	4000	4750
Mirpur	1250	1300	1500	1600	2500	3000	3300	3300
Shantinagar	1850	1900	2200	2250	2700	3200	3800	4750
Siddeswari	1450	1800	2250	2550	2750	3200	3900	4750
Malibag	1600	1850	2250	2300	2400	2800	3000	3650
Mohammadpur	1450	1600	1800	2000	3300	4200	4500	4750
Shamoli	1350	1500	1600	1900	2800	3000	3200	3250
Kalabagan	1800	2000	2250	2400	2900	3500	3800	4250
Monipuripara	1850	2000	2250	2300	2600	3700	4000	3750
Green Road	1600	1700	2000	2050	2700	3200	3800	3750
Elephant Road	1600	1800	2200	2350	2800	3500	3900	4000
Segunbagicha	1450	1550	1900	2200	2900	3500	4000	4250

Source: Sheltech (Pvt.) Limited, 2008 and Questionnaire Survey to Developer, 2010

From table-4.9 a line graph (fig.-4.9) is generated which suggest that from 1990 up to 2003 the price was a bit stable. It increased but in a very small amount. But after that the rapid increase occurred and the price increased drastically. The economic environment of

the country must have affected this sector and also the two main reasons or factors caused this change. One, is the scarcity of land got high in these areas and two, the demand for apartment houses went high also. As the time passed the available lands decreased because people increased but the land with time remained same.
Comparing fig-4.9 with fig 2.3, it is clearly understood that the scarcity of land increased the price of land too high all of a sudden around 2001 and so the price of completed apartments also rose with a steep slope within 2 to 3 years time in those locations.

The concept of building own house was changed in this busiest time and people are now depended on the concept of apartment houses. People are now relying on the developers to build their future home and thus it is easier for them to have a future home. No one needs to buy any land which is very hazardous in Bangladesh and also no one needs to wait for their retirement life to build a home. Also local mastaans are one of the best reasons to avoid buying land and building house. These mastaans charge money for such buildings, where apartment buying is free from the bad influence of these mastaans.

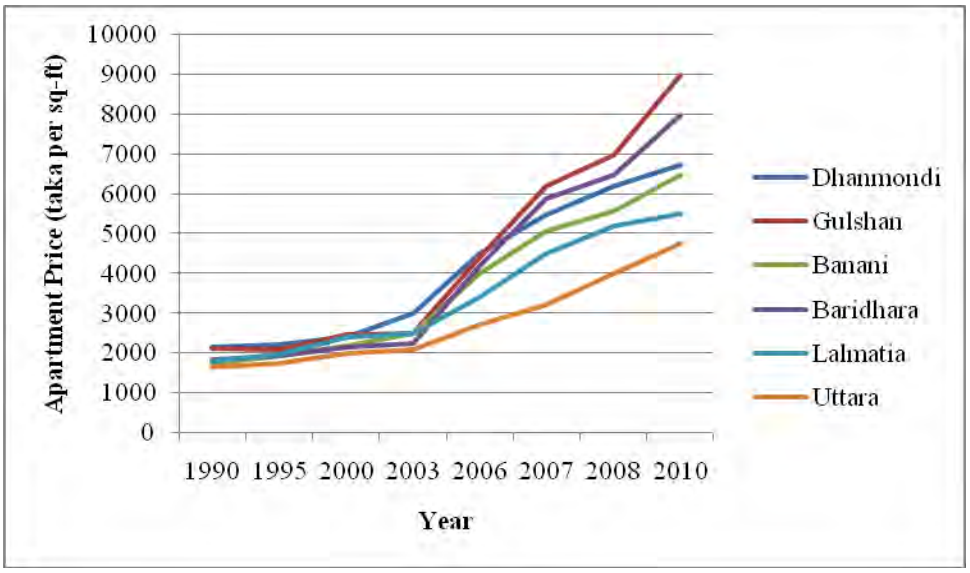

Fig-4.9: Price Change Trends (per sq-ft) in some prime locations since 1990

Different area provides different price range for apartment houses. Appendix-VI shows the average price range of the various places in DCC. Location wise apartment price varies in different reasons. Locational value, owners's demand, facility, school-college, commercial places etc. define values for flats in different areas.

Price is of great concern and as such the differences in various places and various times is acceptable. But there are some factors which are responsible for this change. The general factors affecting price will be explained in the next chapter while in this chapter developers responded on the facts of price change in the last two decades only in Bangladesh. Most reasons may sound general but these reasons stated in table-4.10 are responsible for the shift in flat price in Dhaka city.

Table-4.10: Factors fixing the price of apartment units

Sl. No.	Factors	Rank
1	Location	1
2	Land price/Land acquisition	2
3	Construction/material cost	2
4	Land owner's requirement and demand	3
5	Demand for Living Space	4
6	Facilities/Amenities provided	5
7	Size of apartment	6
8	Cost involved and anticipated profit target from project	7
9	Standard/ quality of product used for construction	8
10	Selling price of competitors	8
11	Establishment cost of the developer	9
12	Trend of market price in respective area	10

Source: Survey, 2010

First of all location was the reason of this drastical change in apartment price. From the very beginning the rich areas were being targeted by developers for better profit but then after a decade land in those areas got very scarce. And then the price increased with the demand for those lands and owners started charging very high to the developers. And thus the price of flats got affected right away. And that's why land price is in the second spot of the list. Also land owner's demand is in third place because the lands got scarce in targeted areas.

Then demand, size, material cost, market trend, competition, material quality, etc. come. These had the impact on the price change of the apartment housing sector for the last two decades.

Apartment prices should be controlled or this will impact badly on the economy of the country. This will impact also on price hike through out the country and also make the

general people suffer a lot. The table-4.11 below states the suggestions from the developers and based on their choice the suggestions being ranked to bring out the most important ones.

Table-4.11 Suggestions from Developers for Reducing Apartment Price

Sl. No.	Suggestions	Rank
1	Making satellite towns in the periphery of Dhaka	1
2	Decreasing land price	2
3	Reducing price of construction material	3
4	Controlling landowner's demand in apartment share and cash benefit	4
5	Decentralization of Dhaka (making parallel towns not satellite)	5
6	Specific policy by government	6
7	City is to be extended	7
8	Making big projects with all facilities and amenities	7
9	Lowering registration fee	8
10	Lowering transport cost	8
11	Increasing supply of construction materials	9
12	Decreasing financial cost	10
13	Making new posh/diplomatic zone like Baridhara	10

Source: Survey, 2010

Mostly developers suggested developing satellite towns on the periphery of Dhaka city which will reduce the scarcity of land and thus land price a great deal, which is the second concern itself. And the third concern is the higher demand of owners, will also be minimized if the first proposal is accepted. Then comes the decentralization of DCC which is must and also will impact great to control the land price.

Table-4.11 shows that developers concern is mostly the top five suggestions they made. These are related to each other and implementing the top one will create an impact on the major five concerns and thus affect the price positively.

4.5 Case Studies of Different Sizes of Apartments

Three different types of apartments have been taken as case studies to have an idea about the variation of apartment sizes and their prices in DCC area over the years. The big-sized apartment project of case study-1 (Fig-4.10) is located in a planned and high class residential area, which was developed for high income group with a swimming pool and courtyard facility at ground floor. Case study-2 (Fig-4.11) was developed for higher-

middle income group as medium-sized apartments in a planned residential area and case study-3 (Fig-4.12) as small-sized apartments has been developed for middle-middle income group in an unplanned area recently.

Case Study-1

Year of Completion	: 1999
Location	: Gulshan
Land Area	: 20 Katha
Access Road Width	: 18.29 metres
Distance to Main Road	: 500 metres
Height of Apartment Project	: 6-storied
No. of Apartment Units	: 15
Area of Apartment Units	: 3780 Sq-ft
Price of Apartment per Sq-ft	: 3750-4000 BDT/Sq-ft in 1999

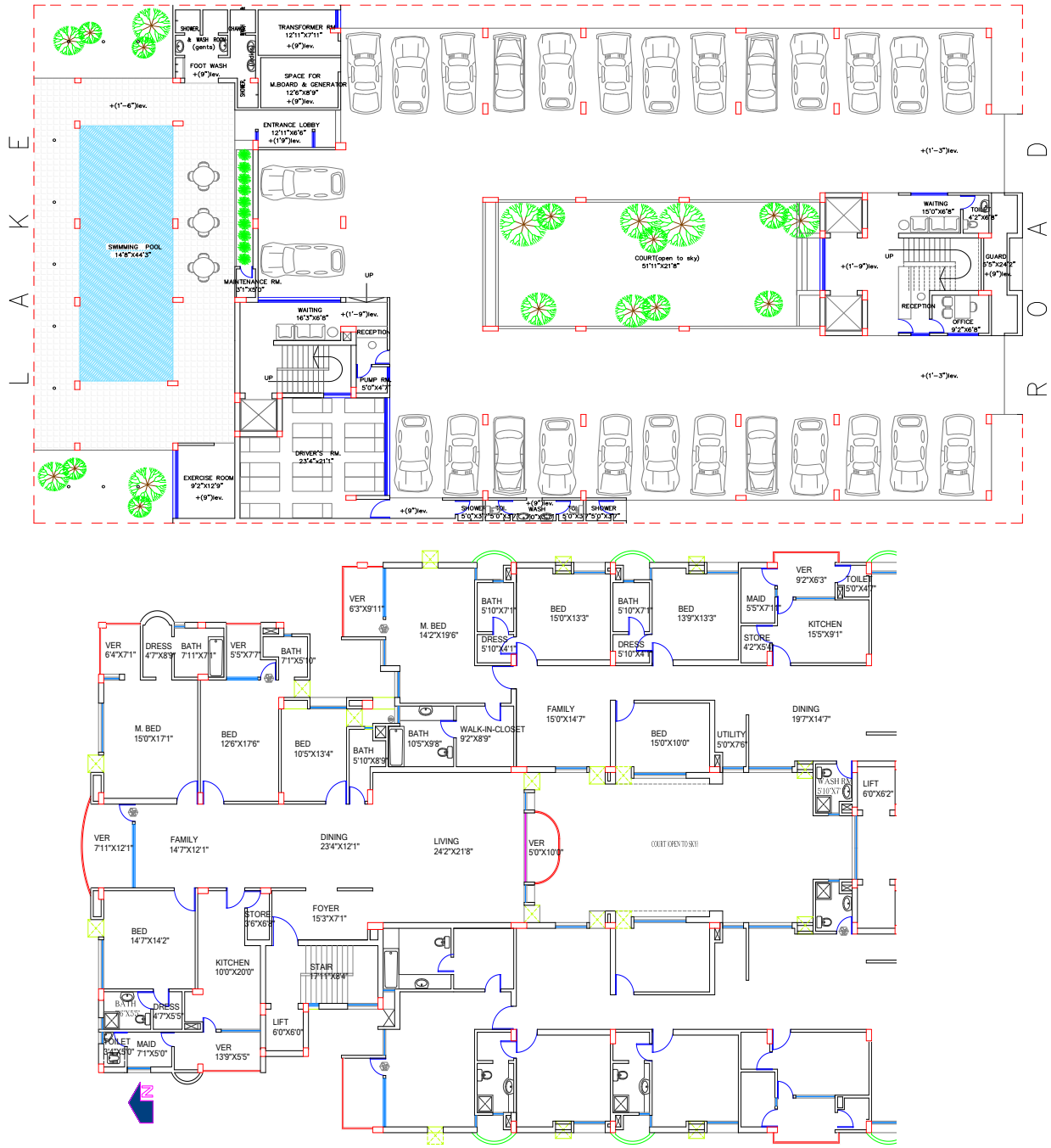

Fig-4.10: Case Study-1 (Ground & Typical Floor Plan)

Case study-2

Year of Completion	:	2000
Location	:	Uttara
Land Area	:	8.375 Katha
Access Road Width	:	9.14 metres
Distance to Main Road	:	100 metres
Height of Apartment Project	:	6-storied
No. of Apartment Units	:	15
Area of Apartment Units	:	1470 Sq-ft in 2000
Price of Apartment per Sq-ft	:	1345-1600 BDT/Sq-ft

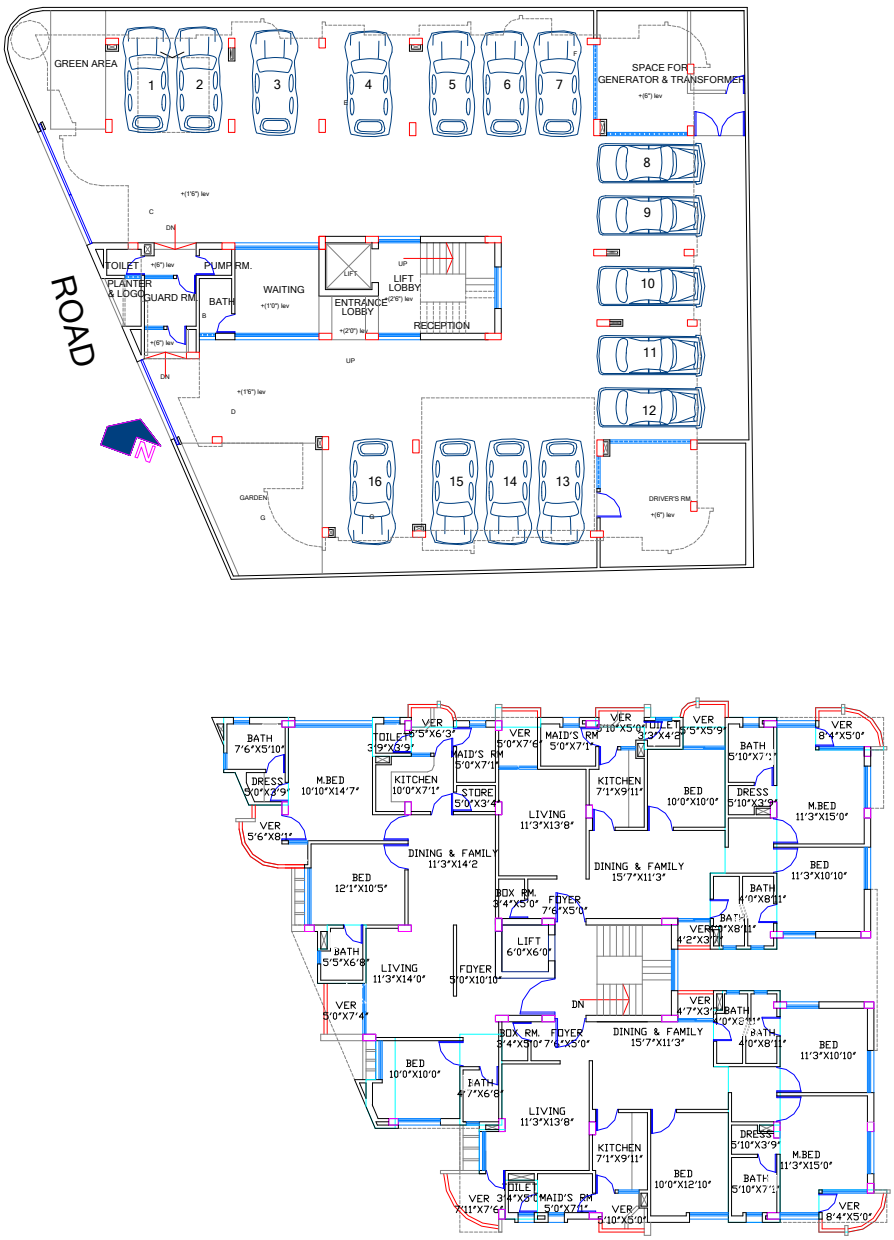

Fig-4.11: Case Study-2 (Ground & Typical Floor Plan)

Case study-3

Year of Completion	:	2009
Location	:	Malibagh
Land Area	:	8.25 Katha
Access Road Width	:	12.19 metres
Distance to Main Road	:	500 metres
Height of Apartment Project	:	9-storied
No. of Apartment Units	:	48
Area of Apartment Units	:	975 Sq-ft
Price of Apartment per Sq-ft	:	3000-3200 BDT/Sq-ft

Fig-4.12: Case Study-3 (Ground & Typical Floor Plan)

4.6 Conclusion

This chapter focused on the size and price changes through out the last two decades. The size found for apartments varied over the years from 1000 to 4000 sq-ft. Plot size influenced much for determining apartment sizes such as smaller plots resulted into developing of smaller apartments, but bigger plots had the option of developing both smaller and bigger apartments considering the width of access roads. Three case studies

has been given to understand about three different types of apartments regarding their location, plot size, access road width, distance to main road, number of apartment units, building height, apartment size and price. Apartment price high is going with the increasing land value day by day. At the end it should be said that price is of great concern in this sector and it also affects other sectors simultaneously with a great impact on the economy of the country. These price hikes enable poor people to go off track and start criminal work. The suggestions to keep it down should be implemented as early as possible. And government should take necessary steps fast as well as implement the national housing policy to reduce it before it pushes the life of people in more jeopardy.

Appendix-VII

4 point Scale Analysis to Determine Factor of Importance

Table-4.1 Factors responsible for shifting of prime locations

Sl. No.	Factors	Preference of respondents (choice)	Weight upon Choice (value)	Rank
1.	Land price is very high	1,2,3,2,2,2	18	6
2.	Unavailability/Scarcity of land	3,1,1,1,1,1,1,3,1,2,2,2,3,3	45	1
3.	Buying behavior of people is changing	2, 3,3,1,1	15	7
4.	Affordability of buyer	3, 2,2,4,1,4,4	15	7
5.	Landowner's dependency on developer has much increased	4,3,4,2	7	12
6.	Land owner's share of apartments goes high with huge cash	2,2,3,4,1	13	9
7.	Traffic jam & population density	1,2,4,4,1,3	15	7
8.	Schools are shifting locations	2,3,1,2,2	15	7
9.	New business area is developing in different locations	3,2,4,2,3	11	10
10.	Lack of infrastructures & basic utility services	4,3,4,1	8	11
11.	Shifting of commercial, educational & healthcare facilities	1,2,2,2,2,1,3,3,3,4,4,4,4,4 ,4	32	2
12.	Old prime locations lack suitable place/land	2,2,1,1,1,3,3,4,4	24	4
13.	Development of new housing areas	3,2,3,2,3,3	14	8
14.	Demand	1,3,4,1,1,1,2,3,4	25	3
15.	Easy communication	1,3,4,1,1,2,3,4,4,4,4,4	25	3
16.	Near shopping centers and supermarkets	3,3,4,1,1,2,3,3,4,4	22	5

Scale: For value (choice 1= 4, choice 2= 3, choice 3=2, and choice 4=1)
Source: Survey, 2010

Table-4.2 Factors responsible for taking apartment projects in lesser road width

Sl. No.	Factors	Preference of respondents	Weight upon Choice (value)	Rank
1.	Land price is very high	2,2,1,1,1,2,2,2,2,2,4,4,4,4,4,4	39	3
2.	Unavailability/Scarcity of land	1,1,1,1,1,1,1,1,1,1,1,1,1,2,2,2,2	64	1

3.	Landowners are interested	3,2,2,2	11	8
4.	To reduce land owner's share of apartments and cash	2,2,3,3,3,4,4,4,4	16	7
5.	To reduce construction cost by using medium price material	3,3,3,4,4,4,4,4	11	8
6.	When no option left/New developers starts there	1,1,1,1,1,1,1,3,2,2,2,2,4,4,4,4,4,4,4,4	50	2
7.	Less expensive apartments can be developed	2,2,2,3,3,3,3,3,3,3,3,3,3,3,3,4,4,4	36	4
8.	Plots beside wider and important roads are mostly used for commercial use	3,3,3,4	7	9
9.	Strictly avoid lesser road width	1,1,2,2, 3,3,4,4,	20	6
10.	Demand of people	1,1,2,2,2,3,3,2,2,3,3,4	32	5

Scale: For value (choice 1= 4, choice 2= 3, choice 3=2, and choice 4=1)
Source: Survey, 2010

Table-4.3 Factors responsible for taking apartment projects in smaller plots

Sl. No.	Factors	Preference of respondents	Weight upon Choice (value)	Rank
1.	Previous developers occupied the large size lands	1,1,1,1,1,1,2,2,2,3,3,3,4	40	2
2.	Still housing need is prevailing in the city	2,2,2,2,4,4	14	8
3.	Land owner's demand goes beyond the capability of developers	3,2,3,3,4,4,4,4	15	7
4.	New developers usually start their business with small plots	1,1,1,1,1,1,1,2,2,2,2,2,2,2,2,2,2,2	62	1
5.	Division of ownership of big plots into small plots	1,1,1,1,2,2,2,3,3,3,4,4,4	34	4
6.	More profitable	2,1,1,1,1,2,2,3,3,3,3,3,4,4	37	3
7.	Easy for construction	3,4	3	9
8.	Unavailability of single big plot	1,1,1,1,1,2,2,2,2,3,3,3,4,4	40	2
9.	To increase number of projects	2,1,1,3,3,3,3,3,3,3,4	26	5
10.	Avoid small plots	1,1,3,3,3,4,4	16	6

Scale: For value (choice 1= 4, choice 2= 3, choice 3=2, and choice 4=1)
Source: Survey, 2010

Table-4.4 Factors determining size of apartment units

Sl. No.	Factors	Preference of respondents	Weight upon Choice (value)	Rank
1.	Size of plot guides the size of apartment units	2,1,2,3,3,1,1,1,1,1,1,1,2	45	2
2.	Location is an important factor	2,3,1,1,1,1,1,1,1,1,2,2,2	46	1
3.	Client group interested to buy apartments	1,3,1,2,3,2,1,1,1,1,2,2,2	43	3
4.	Adjustment of client's desire/choice	3,4,2,2,3,3,3,3,3,3,3,3,4	26	6
5.	Provision for maximum usable/functional space	1,1,1,1,1,2,2,2,2,2,2,3,3	42	4
6.	Provision for ample light and air circulation	2,2,2,3,3,4,4,4,4,4,4,4,4	21	8
7.	Provision for maximum utility and services	3,2,2,3,3,4,4,4,4,4,4,4,4	20	9
8.	Parking	2,2,2,2,3,3,3,4,4,4,4,4,4	24	7
9.	Landowner's preference	4,1,1,1,2,2,3,3,3,3,3,3,3	33	5

Scale: For value (choice 1= 4, choice 2= 3, choice 3=2, and choice 4=1)
Source: Survey, 2010

Table-4.5 Factors responsible for developing smaller apartment units

Sl. No.	Factors	Preference of respondents	Weight upon Choice (value)	Rank
1.	Affordability of middle class group	2,1,1,3,1,2,1,1,1,2,2,2,2	46	1
2.	Maintenance is easy	2,4,3,2,3,4,4	13	7
3.	Nuclear family/ Smaller single families	3,3,1,1,1,1,1,1,1,1,2,2,3	44	3
4.	Smaller sizes of land	1,4,2,1,1,1,1,1,1,1,2,2,3	44	3
5.	Selling of smaller units is faster	3,2,2,2,2,2,2,2,2,3,3,3,3	34	4
6.	Smaller units are profitable	4,2,3,3,3,3,3,4,4,4	17	6
7.	Change in lifestyle	2,3,4,4,4,4,4	10	8
8.	Easier to get housing loans from financial institutions	4,2,2,2,2,3,4,4,4	18	5
9.	Increasing consumer/demand	3,1,1,1,1,1,1,1,1,2,2,2,3	45	2

Scale: For value (choice 1= 4, choice 2= 3, choice 3=2, and choice 4=1)
Source: Survey, 2010

Table-4.6 Factors responsible for developing fewer number of large apartment units

Sl. No.	Factors	Preference of respondents	Weight upon Choice (value)	Rank
1.	A small number of rich people/consumer are there to buy apartments	1,1,1,1,1,1,2,2,2,1,1,2,2	47	1
2.	A small number of independent house owners are coming to buy apartments	2,1,1,1,1,2,2,1,1,1,2,2,2	46	2
3.	Increasing price disabling people to buy big apartments/ Price is beyond the availability of middle income group	1,2,3,1,1,1,1,1,2,2,2,2,4	42	3
4.	Number of large plots in aristocratic area is less	2,3,1,1,1,1,2,3,3,4,4,4	31	5
5.	Land owner's share of apartments and cash benefit go beyond the capability of developer	3,2,3,3,3,3,3,4,4,4	18	6
6.	Change in lifestyle	1,4,3,3,4,4,4	12	7
7.	Smaller single families	2,1,1,1,1,2,2,2,2,2,4,4,4	37	4
8.	Difficult to maintain	4,3,3,3,3,4,4	11	8
9.	Increasing cost of material	2,4,4	5	9
10.	Less demand	1,2,2,2,2,3,3,3,3,3,3,3,4	31	5

Scale: For value (choice 1= 4, choice 2= 3, choice 3=2, and choice 4=1)
Source: Survey, 2010

Table-4.7 Factors fixing the price of apartment units

Sl. No.	Factors	Preference of respondents	Weight upon Choice (value)	Rank
1.	Land price	1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,2,2,2,2,2,2,2,2,2,2,2,2,2,	107	1
2.	Construction/material cost	2,2,2,2, 3,3,3,3,3,3,3,3,3,3,3,3,3,3,3,3,3,3,3,3,3,3,3,3,3	64	3
3.	Establishment cost of the developer	3,4,4,4,4	6	6
4.	Marvelous	3,3,4,4,4,4,4,4,4,4,4,4,4	15	5

	and related renowned person			
5.	Location	1,3,1,1,1,1,1,1,1,1,1,1,1,1,2,2,2,2,2,2,2,2,2,2,2,2,	87	2
6.	Facilities/Amenities provided	3,2,3,3,4,4,4,4,4,4,4	16	4
7.	Demand	3,4,4,4	5	7
8.	Trend of market price in respective area	3,4	3	8

Scale: For value (choice 1= 4, choice 2= 3, choice 3=2, and choice 4=1)
Source: Survey, 2010

Table-4.8 Factors responsible for continuous increase in apartment price

Sl. No.	Factors	Preference of respondents	Weight upon Choice (value)	Rank
1.	Land price is high	1,1,1,1,1,1,1,1,1,1,1,1,1,2,2,2,2,2,2,3,3,3,3,3	80	1
2.	Due to centralization of Dhaka	1,1,1,1,1,2,2,2,2,2,2,2,2,2,2,3,3,3,3,3	60	2
3.	Increasing construction cost	3,2,2,2,1,1,1,2,3,3,3,3,3,3,3,3,3	42	3
4.	Landowner's increasing demand in apartment share and cash benefit	2,3,1,1,2,2,2,3,3,3,3,4,4,4	33	5
5.	Increase in material cost	1,2,1,1,1,2,3,3,3,4,4,4,4,4,4,4,4	37	4
6.	Increase in transportation cost	2,4,4,4,4	7	8
7.	Devaluation of money/ Increasing depreciation rate	3,2,1,4,4,4,4,4	14	7
8.	Scarcity of land	4,1,1,2,2,4,4,4,4,4,4	21	6
9.	Consumer demand is high	3,4,4,4	5	9

Scale: For value (choice 1= 4, choice 2= 3, choice 3=2, and choice 4=1)
Source: Survey, 2010

Appendix-VI

Location wise price range of Apartment units in 2010

Location	Price range of apartment units in Sq-ft
Gulshan	6000 – 12000
Banani	5000 – 8000
Dhanmondi	5500 – 8000
Uttara	4000 – 5500
Mohammadpur	4000 – 5500
Niketon	5000 – 8000
Lalmatia	4500 – 6500
Mirpur	3000 – 3600
Baridhara	6000 – 10000
Siddeswari	4000 – 4500
Shantinagar	4000 – 4500
Segunbagicha	4000 – 4500
Wari	3500 – 4500
Khilgaon	2800 – 3500
Eskaton	4000 – 4500
Naya Paltan	3500 – 4000
Kamalapur	2800 – 3500
Purana Paltan	3500 – 4000
Moghbazar	3500 – 3800
Malibag	3500 – 3800
Baily Road	4200 – 4800
Green Road	3500 – 4000
Pallabi	3000 – 3500
Shamoli	3000 – 3500
West Dhanmondi	5500 – 8000
Badda	2500 – 3000
Rampura	3000 – 3800
Elephant Road	3500 – 4500
Pantha Path	4000 – 4500
Kalabagan	4000 – 4500
Lalbagh	2500 – 3000
Azimpur	3200 – 3800
Kakrail	4000 – 4500
Paribagh	4000 – 4800
Indira Road	3500 – 4000
Monipuripara	3500 – 4000
Shantibagh	4000 – 4500
Central Road	4000 – 4500
Kallyanpur	3000 – 3500
Shahjadpur	3000 – 3800
Mohakhali	4500 – 6000
Gandaria	2500 – 2800
Sukrabad	4000 – 4500

Source: Questionnaire survey to the Developer, 2010

APPENDIX-V

Original Land Values in Different Locations (1975-2007)
(unit Tk/Katha)

Area	1975	1990	2000	2007
Baridhara	25,000	600,000	2,500,000	9,000,000
Gulshan	25,000	600,000	2,200,000	8,000,000
Banani	25,000	600,000	2,000,000	8,000,000
Mahakhali	25,000	600,000	1,800,000	8,000,000
Dhanmondi	25,000	600,000	2,200,000	9,500,000
Lalmatia	20,000	600,000	1,800,000	6,000,000
Azimpur	17,500	600,000	1,600,000	3,500,000
Mohammadpur	25,000	500,000	1,200,000	4,000,000
Shantinagar	20,000	500,000	1,500,000	6,000,000
DOHS	20,000	500,000	1,600,000	6,000,000
Shaymoly	17,500	300,000	1,000,000	3,000,000
Uttara	20,000	300,000	1,000,000	3,500,000
Cantonment	20,000	400,000	1,000,000	3,000,000
Kamalapur	17,500	400,000	800,000	2,500,000
Gandaria	10,000	400,000	700,000	2,000,000
Basabo	2,000	300,000	800,000	2,000,000
Kalyanpur	17,500	300,000	800,000	2,000,000
Mirpur	10,000	300,000	700,000	2,000,000
Badda	4,000	200,000	600,000	2,000,000
Goran	4,000	200,000	600,000	1,800,000
Demra	4,000	200,000	600,000	1,500,000
Motijheel	50,000	1,200,000	3,500,000	11,000,000
Karwan Bazar	41,500	1,000,000	2,500,000	8,000,000

Source: Swapnil Abasan 2008

Inflation Rate Used for Calculation

Year	Inflation Rate	Year	Inflation Rate	Year	Inflation Rate
1975	67.17	1986	9.95	1997	2.52
1976	-8.36	1987	10.35	1998	6.99
1977	2.42	1988	11.42	1999	8.91
1978	12.62	1989	8	2000	3.41
1979	8.24	1990	9.3	2001	1.58
1980	18.46	1991	8.31	2002	2.36
1981	12.54	1992	4.56	2003	5.14
1982	16.29	1993	2.73	2004	5.6
1983	9.93	1994	3.28	2005	6
1984	9.67	1995	8.87	2006	7
1985	10.94	1996	6.65	2007	7.2

Source: Ahmed and Islam, 2006 & Ahmed and Mortaza, 2005