EAST WEST UNIVERSITY

Term paper

Title: A Report on Tejgaon

Course Code: ECO480

Course Title: Urban Economics

Submitted by

SI	Name	ID
01	Nafew Pradhan	2019-1-30-033
02	Aysha Zakir	2019-1-30-057
03	Tanvina Nahar Tanjum	2019-1-30-058

Submitted to

Dr. Biva Arani Mallik

Assistant Professor, Chairperson

Department of Economics

East West University

Objective

Tejgaon was designed as an industrial region in 1968 with the goal of significantly boosting national GDP and enhancing the state of the economy as a whole. The physical characteristics of this area have, however, gradually changed from the state in which it was designed by Dhaka Improvement Trust (DIT) in 1968 as a result of excessive pressure from the constantly expanding population and their increasing demand, as well as the absence and enforcement of proper land use control. This study offers detailed, up-to-date information on the area's current land use and development trend. This paper intends to explore development trend of Tejgaon area mainly from land use perspective. Based on plot level data it studies existing structure type and height on these plots, space uses are also analyzed.

Tejgaon area at a glance

Tejgaon (Bengali: তেজগাঁও) is a thana of Dhaka District in the Division of Dhaka, Bangladesh. It is located in the heart of Dhaka, the capital. The thana's boundaries were modified in 2006 when Tejgaon Industrial Region Thana was formed from the prior bigger area, and again in 2009 when Sher-e-Bangla Nagar Thana was formed. The prime minister's office is located in this prominent sector of Dhaka. It is flanked to the north by Mohakhali, to the east by Old Airport Road, to the south by Moghbazar-Malibagh, and to the west by Dhanmondi. Tejgaon Industrial Area, Kawran Bazar, Nakhalpara, Shaheen Bag, Arjat para, East Raja Bazar, West Raja Bazar, Tejturi Bazar, and Tejkunipara are all part of it.

Research Methodology and Data

The required data is collected from primary sources by means of questionnaire survey. Primary data collection includes land use information. Detail information on existing structures including Rent, Size of the plot (in Katha), No. of stories, Age - New, Old, Garage, Elevator, No. of each unit at each floor, Area of each unit of floor (in Sq Ft), Bedroom, Bathroom.

Our study area was two different areas in Tejgaon: 1) Along with the Station Road and 2) Nakhalpara. The purpose of the area separation is to see, is there any statistically difference between two areas even though they both are within Tejgaon. For the paper, we collected 100 sample data.

Different statistical tools were used for the analysis of the data including frequency distribution, cross tabulation between relevant variables. Graph analysis, Regression analysis is conducted to test the estimated relationship among variables for further proper and scrutinized interpretation of analysis outcomes.

Results and Discussions

Table 1: Sample distribution based on buildings age

	New	Old
Station Road	7	49
Nakhalpara	6	38

Here the buildings categorized as a NEW building if its age was in between 1 to 7 years or if the building age is more than 7 years than we categorized it as an OLD building. From the table Most of the buildings are old.

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

Station road, Tejgaon

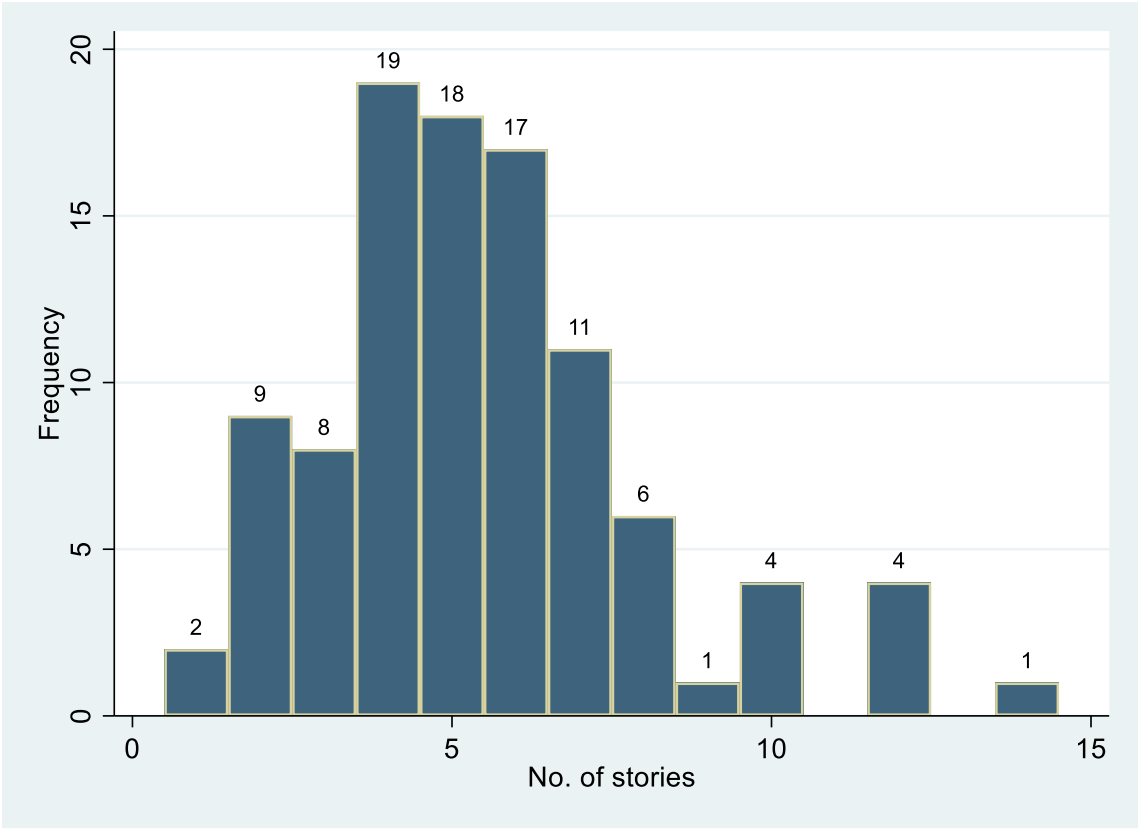
Stats	Rent	SqFt/Unit	Katha/Plot	NoOfStories	Unit/Floor
Mean	23375	852.8036	3.380357	5.517857	2.0714
Min	12000	320	1	1	1
Max	50000	2150	12	14	4
SD	7552.393	365.4583	2.757101	2.750148	.6544056

Nakhalpara, Tejgaon

Stats	Rent	SqFt/Unit	Katha/Plot	NoOfStories	Unit/Floor
Mean	18386.36	969.6818	4.129545	5.131818	2.25
Min	11500	500	1.5	2	1
Max	32000	1950	12	12	4
SD	4671.616	381.9227	2.030876	2.326768	.5756695

From the above two table we can conclude that the average value of rent is higher in Station Road than Nakhalpara. Average unit size is larger in Nakhalpara than station road also same for plot size. Nakhalpara's building used more land (plot) on average. Rent varies more along with the station road and SD is higher here

Frequency of existing building of different height



No. of Stories (Group)	Group %
1 - 3	19%
4 - 6	55%
7-9	17%
10-10+	9%

From the distribution we can see that 55% buildings are in between 4-6 stories.

Regression Analysis

[1]

From the patterns of building age and building height, we know that, new buildings height tends to be higher than the old building. We have a dataset and have related information so can our data predict or estimate the relationship between Building height and age? Does elevator have any relationship with no. of stories? To test the hypothesis, we run a regression and our regression equation looks like this:

$$\boldsymbol{NoOfStories}_{\boldsymbol{Predicted}} = \propto + \beta_1 \boldsymbol{Old} + \beta_2 \boldsymbol{Elavator} + error$$

After regression, we got the following results:

```
. reg NoOfStories Old Elavator

      Source |       SS           df       MS      Number of obs   =       100
-------------+----------------------------------   F(2, 97)        =     68.03
       Model |  378.854841         2  189.427421   Prob > F        =    0.0000
    Residual |  270.105159        97  2.78458927   R-squared       =    0.5838
-------------+----------------------------------   Adj R-squared   =    0.5752
       Total |      648.96        99  6.55515152   Root MSE        =    1.6687

------------------------------------------------------------------------------
 NoOfStories | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
         Old |  -2.642857   .6307127    -4.19   0.000    -3.894647   -1.391067
    Elavator |   2.724206   .4874157     5.59   0.000     1.756821    3.691592
       _cons |   6.990079   .6606613    10.58   0.000      5.67885    8.301309
------------------------------------------------------------------------------
```

Parameters estimates

Old - The coefficient for old building is -2.64. This means that If the building is old, we expect an approximately decrease in 2-3 no of stories. Which says that old buildings are on average 2-3 stories shorter than the new building

Elevator – The coefficient for elevator is 2.72. This means that if the building has an elevator, building height goes up by around 3 stories.

_cons – The average building height is 7 stories, when the building is new and has no elevator.

The coefficient seems very reasonable and support that what we have studied in the class.

Accuracy of the model

t and P>|t| - From the regression result we can see the t value is higher and if we compare it to each p-value to the alpha value which is equal to 0.05. Coefficient having p-values less than alpha is statistically significant. Here for every coefficient P-value < alpha-value. In this case we can reject the null hypothesis. So, all the coefficients are statistically significantly different from 0 because its p-value is definitely lower than 0.05.

F and Prob > F: Here the p-value is smaller than 0.05 means that the group of independent variables (Old building and Elevator) show statistically significant relationship with the dependent (No of stories) variable, or that the group of independent variables reliably predict the dependent variable.

R- Squared-Squared is the proportion of variance in the dependent variable which can be predicted from the independent variables. Here around 59% of the variance in No of Stories can be predicted from the variables Old and elevator. 41% variability in building height is unexplained by the independent variables. It indicates that there might be also other variables which can influence the building height.

Adjusted R-squared: It's also almost like R-square.

[2]

Previously we have studied in the class that the rent of houses varies across location. Our data was from two location and we have seen in descriptive statistics table that the mean rent value is higher in the station road than Nakhalpara. In this section we are going to predict or estimate the rent in terms of location, Unit size and Building age. For that our regression equation looks like this:

$$\boldsymbol{Rent_{Predicted}} = \propto + \beta_1 \boldsymbol{StationRoad} + \beta_2 \boldsymbol{SqFt} + \beta_3 \boldsymbol{Old} + error$$

After regression, we got the following results:

```
  Source |       SS           df       MS      Number of obs   =       100
-------------+----------------------------------   F(3, 96)        =    231.34
       Model |  4.1190e+09         3  1.3730e+09   Prob > F        =    0.0000
    Residual |   569757694        96  5934975.97   R-squared       =    0.8785
-------------+----------------------------------   Adj R-squared   =    0.8747
       Total |  4.6888e+09        99  47361212.1   Root MSE        =    2436.2

------------------------------------------------------------------------------
        Rent | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
 StationEoad |   4769.476   491.9819     9.69   0.000       3792.9    5746.053
        SqFt |   14.88555   .7108701    20.94   0.000     13.47448    16.29661
         Old |  -2793.965   756.9208    -3.69   0.000    -4296.441    -1291.49
       _cons |   6301.589   1157.862     5.44   0.000     4003.251    8599.927
------------------------------------------------------------------------------
```

StationRoad - If the houses are in station road, it will increase the expected rent by 4770 tk.

SqFt – Here the coefficient is 14.68 which means that 1 SqFt increase in Unit Size, we expect an approximately 14.88 TK increase in the Rent.

Old – If the building is old than the rent decreased by 2793 tk

Accuracy of the model

t and P>|t| - From the regression result we can see the t value is higher and if we compare it to each p-value to the alpha value which is equal to 0.05. Coefficient having p-values less than alpha is statistically significant. Here for every coefficient P-value < alpha-value. In this case we can reject the null hypothesis. So, all the coefficients are statistically significantly different from 0 because its p-value is definitely lower than 0.05.

F and Prob > F: Here the p-value is smaller than 0.05 means that the group of independent variables (Old building, Sq Ft, Station Road) show statistically significant relationship with the dependent (Rent) variable, or that the group of independent variables reliably predict the dependent variable.

R- Squared-Squared is the proportion of variance in the dependent variable which can be predicted from the independent variables. Here around 88% of the variance in No of Stories can be predicted from the variables Old and elevator. Only 12% variability in Rent remained unexplained by the independent variables. It indicates that there might be also other variables which can influence the Rent.

Adjusted R-squared: It's also almost like R-square.

So, our model also predicts or estimate that Rent varies across location and other factors also can impact the house rent like if building is old and unit size is smaller and others.

Distance and commuting cost from the CBD

The distance from Tejgaon to CBD(Motijheel) is 5.3 KM. The bus fare from Tejgaon to CBD (Motijheel) is 30TK, Uber private car fare is 300-350tk, Moto(bike) fare is 100-120TK, CNG fare is 120-220 TK.

Facilities

Economy:

Tejgaon has become one of Dhaka's key business areas. Pan Pacific Hotel Sonargaon, Bangladesh's first five-star establishment, is located in Kawran Bazar, Tejgaon. This is where the Daily Prothom Alo, Daily Star (Bangladesh), The Independent, and several other publications have their main offices. Additionally, Tejgaon is home to the offices and studios for the television networks Ekushey Television, NTV, ATN Bangla, Boishakhi TV, Channel I, and Channel 1. Here is also where Ahsanullah University of Science and Technology's main campus is located. The Trading Corporation of Bangladesh's corporate office is located in Tejgaon.

Airport:

Before the new Hazrat Shahjalal International Airport was given the name Zia International Airport, Tejgaon Airport in Tejgaon served as the nation's only international airport. Beginning in 1943, the first light fighter of the Royal Indian Air Force made a landing on Tejgaon's runway that was still under construction. Tejgaon was placed under the command of the Bangladesh Air Force and Bangladesh Army in 1981, following the transfer of commercial flights to the brand-new Hazrat Shahjalal International Airport.

Restaurants:

The Star Hotel and Restaurant, Marine Restaurant, Park Town, Yan-Ji Chinese Restaurant, Hiramon Kabab Ghar, Ciao Bistro and Aromaz at Hotel Pan Pacific Shonargaon, Domino's Pizza and Salt Grill Restaurant in Bashundhara City, among many more, are just a few of the well-known

eateries in Tejgaon. There are bars in Tejgaon, including the Balcony Bar at the Hotel Pan Pacific Shonargaon and the Hotel Red Button.

EDUCATION:

Many academic institutions, including the schools such,

- Tejgaon Government High School
- Tejgaon Government Girls High School
- Tejgaon Model High School Tejgaon Adarsha School & College
- B G Press High School Government Science High School
- Tejgaon Farm Government Primary School
- Matrisneho School Shaheed Monu Miah Govt. High School
- Tejgaon Catholic Primary School
- Dhaka Ideal College
- Tejgaon Purba Nakhalpara Urban Slum Ananda School
- Nakhalpara Hossain Ali High School
- New Ananda English School (NAES)
- সৃষ্টি টিউটোরিয়্যাল হোম
- Bottomly home girl's high school
- Saint Margaret's International School
- Uttoron Preparatory School
- Civil Aviation School And College
- Islamia Government Primary School
- Syedur Rahman Memorial School

Colleges:

- Holy Cross College Tejgaon College
- Dhaka Ideal College
- Tejgaon Government Science College
- Tejgaon Mohila College Department of Statistics, tejgaon college

- Tejgaon Adarsha School & College College Building
- Dhaka Oriental College Ideal Commerce College
- BAF Shaheen College Dhaka Bangladesh
- Textile Engineering College (BTEC) Biochemistry and Molecular Biology Department,
- Tejgaon College Civil Aviation School And College
- Universal professional & vocational College,
- TOEIC Eminence College

University:

- University of Asia Pacific | UAP
- Dhaka International University World University of Bangladesh
- Sonargaon University
- Hamdard Public College University
- Women's Federation College City University

have grown up around the area over the past 50 years. These are just a few of the most well-known institutions Also located in Tejgoan is the National Institute of Ear, Nose, and Throat (ENT).

HOSPITALS:

There are various types of hospitals across the Tejgoan area. Such as,

♣ National Institute of ENT, Tejgaon

♣ Paribarik Shastho Clinic, Tejgaon

♣ Square Hospital Ltd., Tejgaon

♣ Shapla Hospital, Tejgaon

♣ Life line Urology Center and General Hospital, Tejgaon

♣ Al-Razi Hospital, Tejgaon

♣ Samorita Hospital Ltd., Tejgaon

- ♣ Christian Medical Hospital, Tejgaon
- ♣ Padma Nursing Home, Tejgaon
- ♣ Aysha Memorial Specialised Hospital Pvt.Ltd, Tejgaon
- ♣ Ad-Din Medical College Hospital, Tejgaon