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Spatio-Temporal Changes in Land Values Within Dhule City, Maharashtra

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Abstract

Urban land values in developing countries have changed dramatically over the last few decades. Although the major factors affecting land values could be similar in different cities, the strength at which they influence and shape land value patterns is always different in each city. Generally, the land values are several times higher and rapidly increases in urban areas than that in rural areas. However, the value do not increases with the same rate in different sectors of urban area. The phenomenon of urban land values play an important role in the lives of all people those desire to stay in the city. The present paper attempts to study spatio-temporal changes in land values within Dhule city during the period from 1991 to 2018. For the present study, the data have been obtained from both the primary and secondary sources. Analysis of changes in land values with increasing distance from the city centre reveals that in all the years the land values were very high near city centre and generally declined with increasing distance. However, the values do not decreases with same rate in all directions due to variations in urban landuses and changes in functional patterns.

Keywords: Spatio-Temporal, Land Values, City

INTRODUCTION

Land is an essential natural resource, both for the survival and prosperity of humanity and for the maintenance of all terrestrial ecosystems. Land is the foundation for all human activities. Man depends on land to fulfill his daily needs. From land we obtain food to eat, the shelter we need, the space to work and room to relax (Mba11yaki et al, 2016). Thus, we get many benefits from land in the form of food, shelter, and other daily needs of us. Therefore, land is the valuable resource for us. Land has a monetary cost. Land own by individuals or firms is considered as real estate. The values of land (real estate) changes from place to place and time to time.

Land value means the value acquired by the land. It can be defined as the monetary cost of the land. It can be the cost of undeveloped land of a built property but land value is primarily associated with a vacant plot. When discussing about value of built structure the term property value is more appropriate. The values of lands are greatly influenced by their location, accessibility, type of use, and the demand. The land values are highly dynamic in nature, because they change according to the changing land uses and also with the passage of time. There is great difference between land values in rural and urban areas. Land values are several times higher and rapidly increases in urban areas as compared to in rural areas. Moreover, land values do not increase with the same rate in different sectors of the urban area.

It is well known fact that land values are higher and rapidly increases in urban areas as compared to rural areas. Of course, there is great spatial variation in land values and growth rate. Normally land values are higher in central parts and less in outer parts.

"The concept of urban land values is as old as the cities themselves and the importance of this concept grew over time since the introduction of land as a commodity in the market. In practice, land values and especially urban land values pattern are more complex due to their intrinsic spatial patterns" (Ahamed, 1992). The values of the real estate have always continued to appreciate and more so during the war and post-war planning days. It has become one of the glaring phenomenons in urban planning. The process in general is intimately or even casually connected with the process of urbanization has been accelerated in the recent decades due to among many other factors, influx of rural population in quest of better urban living. Conditions at Dhule are in no way an exception to this general rule.

Land value is one of the most expressions of the economic utilization and functions of the land. Where the commercial activities are dominant the land value is highest and varies according to land uses as industrial, residential or vacant lands. The intensity of the commercial land use is high in central commercial area of the city, and decline with the increasing distance from the core to the periphery, similarly the land values are high in the central part of the town and generally decline as one goes away from center. (E. Swaminathan-1984). From various studies it is clear that there is need of better understanding of spatio-temporal land value patterns in developing cities. Therefore, in the present paper the spatio-temporal changes in land values within Dhule city has been analyzed.

STUDY AREA

Dhule city is the middle centre of Khandesh region of Maharashtra. It is headquarter of Dhule district. It is situated on the bank of the Panzara River, a tributary of Tapi River, at an elevation of 240 meters above the mean sea level. Total area occupied by corporation limits of Dhule city is about 46.46 sq.km, which is situated at the latitude of $20^0$54' north and longitude of $74^0$47' east. Dhule sits in a strategic position on the northwest corner of Deccan plateau.

Dhule municipal council was formed in 1860. On 30th June 2003 the council was converted in to a municipal corporation. Total 67 wards are comprises in Dhule Municipal Corporation. The city has many attractions such has Rajwade research center, Sarswati Pathshala, Dhule textile mill, Shivtirth, Garud library, Educational campus, Gurudwara, Ekveera temple etc. This has caused the development of the new housing societies. According to 2011 census the population of the city is 376093 of which male and female are 193854 and 182239 respectively. The sex ratio of Dhule city is 940 per 1000 males. In education section, total literates in Dhule city are 298693 of which 160511 are males while 138182 are females. Average literacy rate of Dhule city is 89.86 percent.

Dhule is one of the most important Junctions over NH-3 (Popularly known as Mumbai-Agra highway) and NH-6 (Surat Nagpur highway) and Road to Solapur from Dhule has recently been declared as national highway. Therefore, it is a popular stop for truckers. In the background is prehistoric Laling fort bear Dhule city. Dhule city has its own airport of Gondur village, nearby international airports are at Aurangabad (148km), Pune (340km) and Mumbai (350km). The main characteristic of the city is agricultural. There are traditional grain, vegetable and other agricultural products markets in the city. It is major commercial centre in north Maharashtra. There is an industrial area of MIDC in Avadhan village situated outside corporation limit. In MIDC area various types of industries are developing and beyond Mumbai-Agra highway north –east side of the city also various industries are established. Westward of the Dhule city small industries are growing from few decades.

AIMS AND OBJECTIVES

The main aim of the present study is to conduct geographical analysis of Dhule city. More emphasis is given on the analysis of urban growth and to study the impact of urbanization on landuse and land values. This has been achieved through following objectives.

1) To know the Geographical setting of the Dhule city.
2) To assess the spatio-temporal variations in land values.
3) To find out the relationship between functional importance and land values

DATABASE AND METHODOLOGY

The research work consisting following three major parts.

Literature Survey

The available literature on the above topic of research will be scanned from various libraries, research institutes, Journals and Internet.

Data Collection

For the present study, data has been collected from the primary and secondary sources for the period 1961 to 2011 for the micro level study the sample survey has been carried out. The data regarding population, settlement, industries, urban growth and related aspects has collected from the secondary sources such as district census handbooks, socio-economic reviews Municipal Corporation reports, land records, ward pattern, town planning department, sub-registers office and other related departments. The primary data also collected by field work through personal interviews and questionnaires.

Laboratory Work

For the statistical analysis various techniques and methods has been applied. Among the statistical techniques percentage, ratio, and indices, growth rate, etc and the computer techniques like Microsoft excel and auto cad, Illwiss, GIS has been applied. For the study of settlement CBD model has been used. Cartographic techniques have been used to prepare maps.

ANALYSIS OF LAND VALUES IN DHULE CITY

For the analysis of land values within Dhule city, the period from 1991 to 2018 is taken into consideration. For the present study the data are collected from primary as well as secondary sources. The values derived by government for transaction of land belonging to different zones are obtained from Town Planning and Stamp Collector Office, Dhule. The actual land values are collected by field survey through questionnaire and personal interviews of hundreds of property owners, estate brokers and concerned agencies. The obtained data for the year 1991, 2001, 2011 and 2018 have been reported in the table 6:1. With the help of this data the spatio-temporal variations in land values have been studied by different ways.

1) Spatial variations of land values within the Dhule city, during the year 1991, 2001, 2011 and 2018.
2) Temporal variations in land values.
3) Distance and direction-wise variations in land values.
4) Trends in land values.

To make the comparative study simple and easy, more stress is given on average land values. The government quoted and actual land values in different zones during different years are grouped into different classes and comprising zones in them are given in the form of tables. The spatial variations in land values within the study region are depicted with the help of figures. Distance wise average land values have been analyzed separately with the help of graphs. In addition, trend analysis is conducted.

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Table 6.1: Zone-wise Land Values (Rs./Sq. in Aurangabad City during the year 1991, 2001, 2011 and 2018

Zone no.	Land Values (Government Decided) (Source: Town Planning and Valuation Department, Dhule)												Zone no.	Land Values (Actual) (Source: Field Survey theough Questionnaire and Personal Interviews)											
	1991			2001			2011			2018				1991			2001			2011			2018		
	M	I	A	M	I	A	M	I	A	M	I	A		M	I	A	M	I	A	M	I	A	M	I	A
1	4	3	**3**	14	14	**14**	37	17	**27**	101	76	**89**	1	120	20	**70**	800	60	**430**	1400	300	**850**	2500	600	**1550**
2	11	7	**9**	46	19	**33**	177	88	**132**	441	204	**322**	2	400	50	**225**	800	60	**430**	1800	180	**990**	4000	650	**2325**
3	2	2	**2**	9	9	**9**	65	65	**65**	140	101	**121**	3	30	20	**25**	50	40	**45**	120	100	**110**	500	450	**475**
4	4	3	**3**	37	9	**23**	107	77	**92**	262	161	**211**	4	10	5	**8**	30	10	**20**	60	40	**50**	325	55	**190**
5	4	3	**3**	23	23	**23**	46	33	**39**	167	83	**125**	5	12	5	**9**	30	15	**23**	70	45	**58**	350	60	**205**
6	4	3	**3**	37	37	**37**	46	26	**36**	167	159	**163**	6	50	35	**43**	200	70	**135**	500	180	**340**	800	450	**625**
7	14	10	**12**	37	28	**33**	121	102	**112**	308	236	**272**	7	130	100	**115**	500	400	**450**	1100	900	**1000**	2500	2200	**2350**
8	17	11	**14**	56	33	**44**	251	125	**188**	623	279	**451**	8	120	20	**70**	800	60	**430**	1600	400	**1000**	2500	600	**1550**
9	11	8	**10**	33	23	**28**	177	107	**142**	441	236	**338**	9	400	150	**275**	1000	300	**650**	1550	800	**1175**	3000	1400	**2200**
10	17	11	**14**	46	33	**39**	251	144	**197**	624	311	**467**	10	400	80	**240**	900	250	**575**	1500	800	**1150**	2200	1400	**1800**
11	20	14	**17**	71	35	**53**	288	149	**218**	698	172	**435**	11	400	40	**220**	800	100	**450**	1600	750	**1175**	3000	1200	**2100**
12	28	20	**24**	105	53	**79**	288	158	**223**	701	365	**533**	12	250	90	**170**	800	400	**600**	1800	1150	**1475**	3000	1800	**2400**
13	20	14	**17**	53	37	**45**	344	149	**246**	851	337	**594**	13	600	100	**350**	1500	280	**890**	3500	780	**2140**	5000	1200	**3100**
14	42	33	**38**	108	84	**96**	279	242	**260**	691	552	**621**	14	1200	150	**675**	2000	550	**1275**	4200	850	**2525**	5000	1600	**3300**
15	28	20	**24**	84	53	**68**	362	270	**316**	885	599	**742**	15	800	150	**475**	1200	600	**900**	2500	1000	**1750**	4000	1400	**2700**
16	14	8	**11**	55	23	**39**	307	149	**228**	755	362	**558**	16	400	70	**235**	1000	150	**575**	1800	470	**1135**	2100	700	**1400**
17	17	14	**15**	44	35	**39**	116	81	**99**	441	172	**306**	17	60	40	**50**	100	80	**90**	300	250	**275**	600	550	**575**
18	56	33	**45**	135	80	**107**	381	242	**311**	859	507	**683**	18	150	70	**110**	500	250	**375**	950	700	**825**	1700	1150	**1425**
19	84	56	**70**	185	185	**185**	613	604	**609**	1386	1363	**1375**	19	1150	200	**675**	2000	500	**1250**	2500	600	**1550**	3200	950	**2075**
20	18	14	**16**	45	35	**40**	511	38	**275**	1052	112	**582**	20	40	25	**33**	100	40	**70**	300	100	**200**	900	600	**750**

Abbreviation: M=Main Road; I=Interior Parts; A=Avarage

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	1991			2001			2011			2018				1991			2001			2011			2018		
	M	I	A	M	I	A	M	I	A	M	I	A		M	I	A	M	I	A	M	I	A	M	I	A
21	163	42	**102**	365	151	**258**	1162	818	**990**	2619	1687	**2153**	21	1150	150	**650**	2200	700	**1450**	4300	1500	**2900**	7400	2200	**4800**
22	28	20	**24**	126	48	**87**	465	186	**325**	1048	460	**754**	22	800	140	**470**	1500	500	**1000**	2800	1100	**1950**	4800	1200	**3000**
23	56	42	**49**	132	101	**117**	465	232	**349**	1048	523	**786**	23	50	10	**30**	250	20	**135**	600	450	**525**	3000	850	**1925**
24	93	56	**74**	210	34	**122**	511	325	**418**	1386	605	**995**	24	700	350	**525**	1200	750	**975**	1800	1650	**1725**	2000	1500	**1750**
25	8	6	**7**	37	26	**32**	595	139	**367**	1347	299	**823**	25	100	40	**70**	400	80	**240**	700	200	**450**	1000	800	**900**
26	8	4	**6**	23	23	**23**	116	93	**105**	266	203	**234**	26	25	20	**23**	800	200	**500**	1200	400	**800**	1500	700	**1100**
27	8	5	**7**	37	23	**30**	44	24	**34**	184	64	**124**	27	40	25	**33**	300	50	**175**	500	60	**280**	1500	600	**1050**
28	7	4	**6**	19	19	**19**	144	93	**118**	334	203	**268**	28	25	20	**23**	100	50	**75**	500	100	**300**	900	500	**700**
29	17	11	**14**	38	33	**35**	93	24	**59**	193	164	**178**	29	200	60	**130**	500	450	**475**	1000	550	**775**	1700	1300	**1500**
30	6	4	**5**	33	16	**24**	144	112	**128**	336	241	**288**	30	500	80	**290**	1250	550	**900**	2500	900	**1700**	5000	1400	**3200**
31	20	11	**16**	55	19	**37**	139	107	**123**	314	223	**269**	31	170	100	**135**	800	600	**700**	1300	1000	**1150**	2200	1500	**1850**
32	7	4	**6**	19	14	**16**	149	102	**125**	319	232	**276**	32	400	80	**240**	700	190	**445**	1000	350	**675**	1800	650	**1225**
33	7	5	**6**	55	19	**37**	93	51	**72**	212	112	**162**	33	400	125	**263**	900	350	**625**	2500	750	**1625**	3000	1000	**2000**
34	20	14	**17**	61	36	**49**	25	13	**19**	143	128	**136**	34	100	40	**70**	150	90	**120**	500	300	**400**	1000	550	**775**
35	24	17	**20**	79	44	**61**	149	72	**110**	337	164	**250**	35	200	70	**135**	700	300	**500**	900	700	**800**	2000	1000	**1500**
36	6	3	**4**	14	9	**12**	195	139	**167**	404	314	**359**	36	80	30	**55**	400	90	**245**	800	250	**525**	1500	950	**1225**
37	56	33	**45**	199	66	**132**	260	167	**214**	603	401	**502**	37	200	20	**110**	500	300	**400**	800	550	**675**	1200	900	**1050**
38	3	17	**10**	74	46	**60**	79	60	**70**	214	131	**172**	38	40	30	**35**	100	100	**100**	300	250	**275**	1000	950	**975**
39	54	32	**43**	194	68	**131**	836	437	**637**	1807	907	**1357**	39	250	150	**200**	700	300	**500**	1500	1200	**1350**	1800	1500	**1650**
40	14	8	**11**	72	48	**60**	325	232	**279**	701	466	**583**	40	250	50	**150**	800	200	**500**	1600	400	**1000**	7000	1000	**4000**

Abbreviation: M=Main Road; I=Interior Parts; A=Avarage

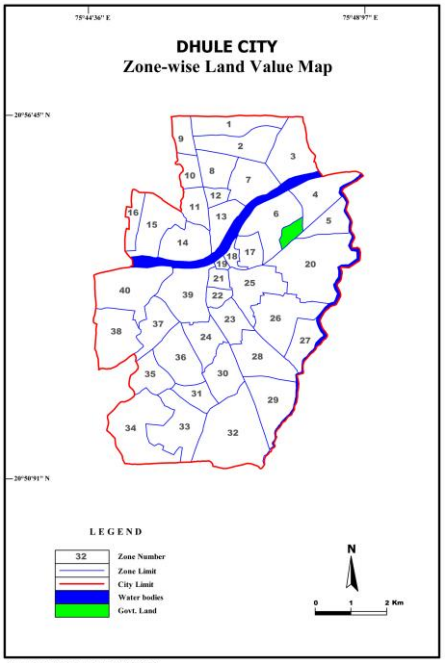


FIG. 6.1

Growth of Land Values in Dhule City (1991-2018)

To study the growth of land values in Dhule city as a whole, the period from 1991 to 2018 is taken in to consideration. The government quoted as well as actual land values at the main Road and interior parts in the different zones for the year 1991, 2001, 2011 and 2018 are given in the table 6.1. With the help of this table the average land values at main Roads and interior parts for the city as a whole are computed, from which the average land values in the city as whole during different years are calculated. Growth rates for different periods as well as for total period are also computed and reported in Table No. 6.2 and 6.3.

Table No.6.2

Growth of Government land values in Dhule city (1991 to 2018)

Sr. No.	Years	Average Land Value (Rs. / Sq. Ft.)			Growth Rate (%)		
		Main Road (M)	Interior Parts (I)	Average (A)	Main Road (M)	Interior Parts (I)	Average (A)
1	1991	25	16	21	**	**	**
2	2001	77	42	59	200.65	169.72	188.77
3	2011	269	157	213	251.03	272.09	258.52
4	2018	635	348	491	136.18	121.12	130.62
Percentage Change 1991 to 2018 =					2392.52	2119.16	2287.55

Source: Town planning and Valuation Department of Dhule

The analysis of government quoted land values reveals that in Dhule city the average land value was Rs. 21 per sq.ft. in 1991. By the year 2018 it increased up to Rs. 491 per sq.ft. (Table 6.2). From 1991 to 2001 the average land values increased by 188.77 percent with the annual growth rate of about 18.87 percent (Table 6.2). In the next decade that is from 2001 to 2011, the government decided land values increased by 258.52 percent and annual growth rate was 25.85 percent. In the last seven years (2011-2018) however, growth rate of land values decreased significantly. During this period the land values increased by 130.62 percent with the annual growth rate of 18.66 percent. During the total period under investigation (1991-2018), the government quoted land values increased by 2287.55 percent with the annual growth rate of 84.72 percent.

Table No.6.3 - Growth of Actual land values in Dhule city (1991 to 2018)

Sr. No.	Years	Average Land Value (Rs. /Sq. Ft.)			Growth Rate (%)		
		Main Road (M)	Interior Parts (I)	Average (A)	Main Road (M)	Interior Parts (I)	Average (A)
1	1991	310	75	193	**	**	**
2	2001	734	252	493	136.74	235.05	155.94
3	2011	1406	576	991	91.59	128.61	101.05
4	2018	2462	1002	1732	75.07	73.78	74.69
Percentage Change 1991 to 2018 =					694.03	1231.06	798.91

Source: Field Survey

Table 6.3 indicates that the average actual land value on main Roads of the city was Rs. 310 per sq.ft. in the year 1991. It increased significantly up to Rs. 2462 per sq.ft. by the year 2018 (Table 6.3). At the same time in interior parts the average value increased from Rs. 75 per sq.ft. in 1991 to Rs.1002 per sq.ft.. The average land value for city as a whole increased from Rs. 193 per sq. ft. in 1991 to Rs. 1,732 per sq. ft. in 2018.

During the first decade of investigation period i.e. from 1991 to 2001 the average land value increased by 155.04 percent (annual growth rate 15.50 percent). It is interesting to note that the annual growth rate of actual land value was less than the annual growth rate of government decided land values. In the next ten years that is from 2001 to 2011 the actual land values increased by 101.05 percent (annual growth rate 10.10 percent). During this period also annual growth rate of actual land values was lower than the government decided land values. In the last seven years (2011-2018), actual land values increased by about 74.69 percent.

In the total 27 years period (1991 - 2018) the actual average land values in Dhule city increased by 798.91 percent with the annual growth rate of 29.58 percent. These values are significantly low than the growth in government decided land values.

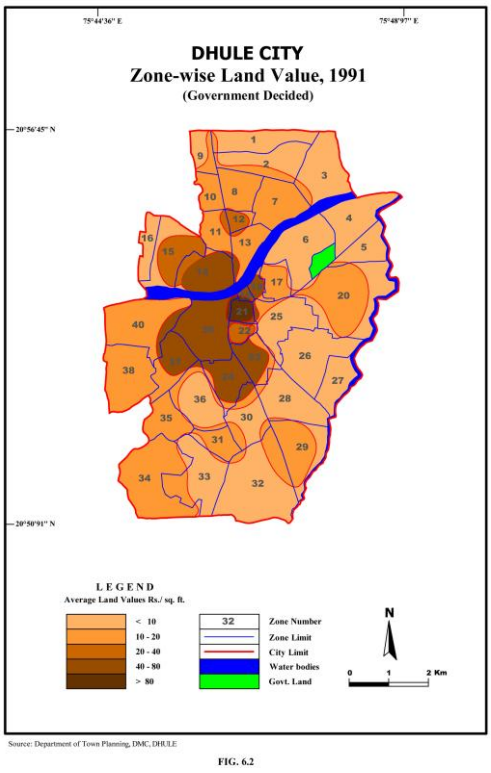
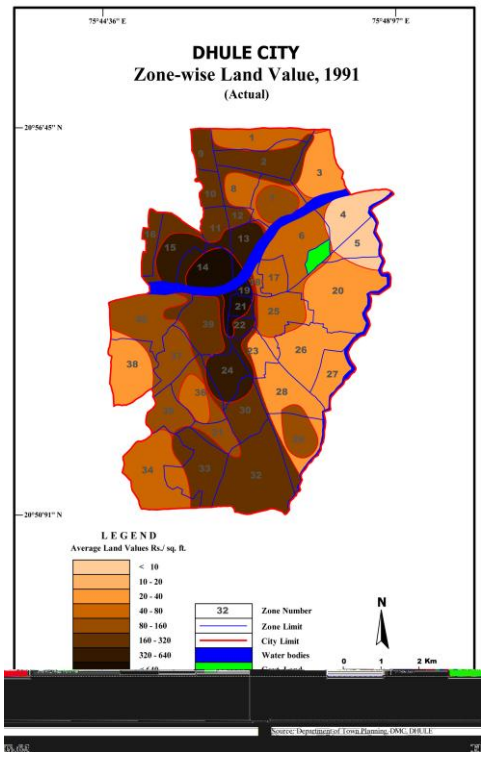
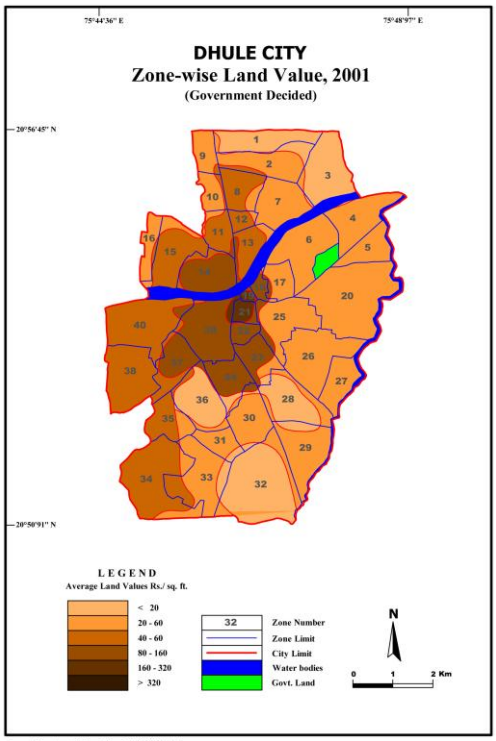


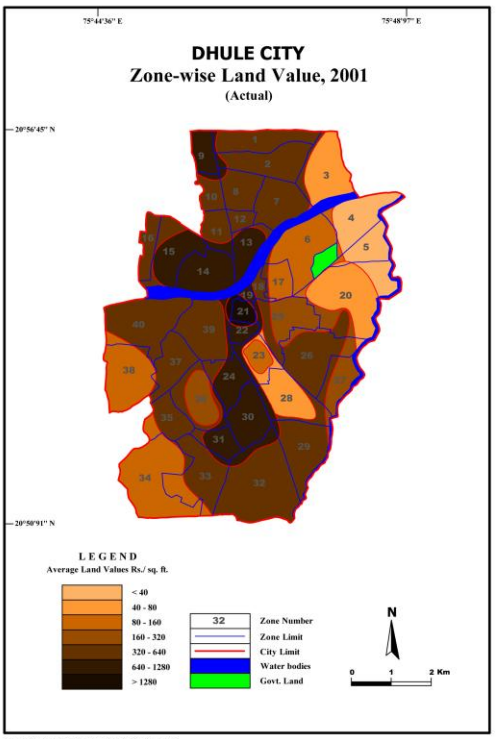
FIG. 6.2





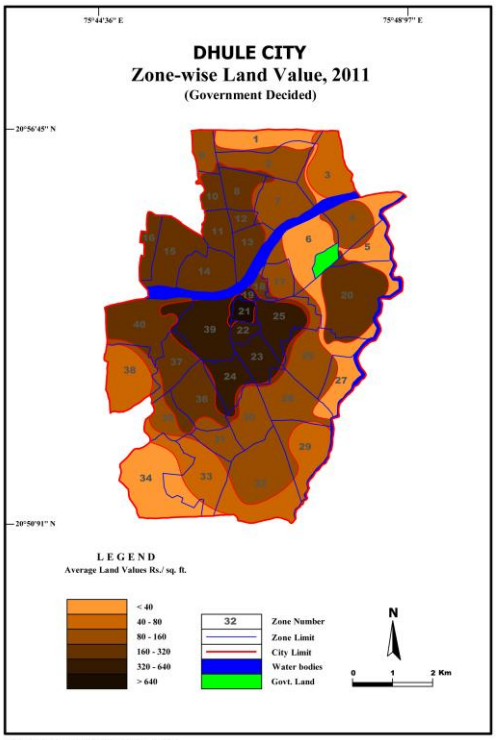
Source: Department of Town Planning, DMC, DHULE

FIG. 6.4



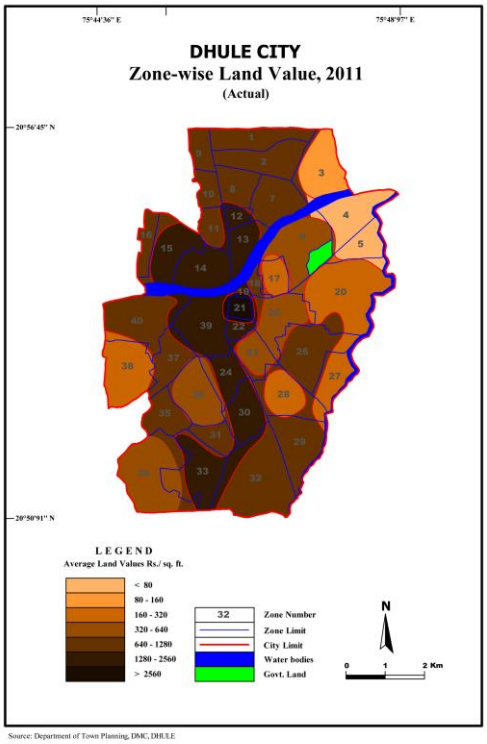
Source: Department of Town Planning, DMC, DHULE

FIG. 6.5



Source: Department of Town Planning, DMC, DHULE

FIG. 6.6



Source: Department of Town Planning, DMC, DHULE

FIG. 6.7

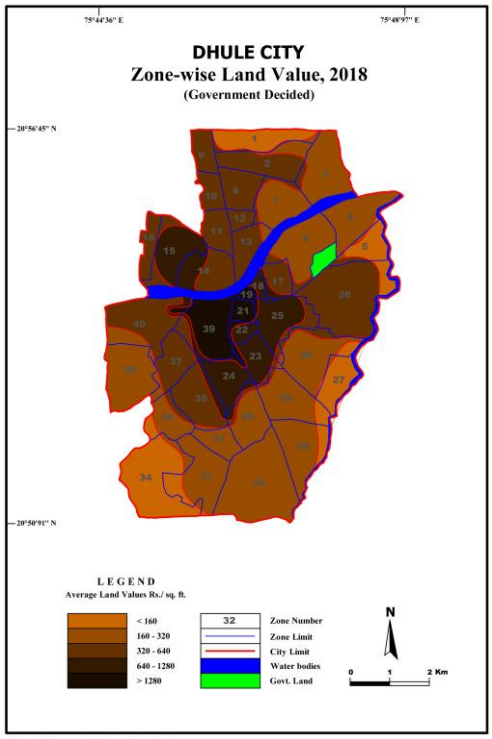


FIG. 6.8

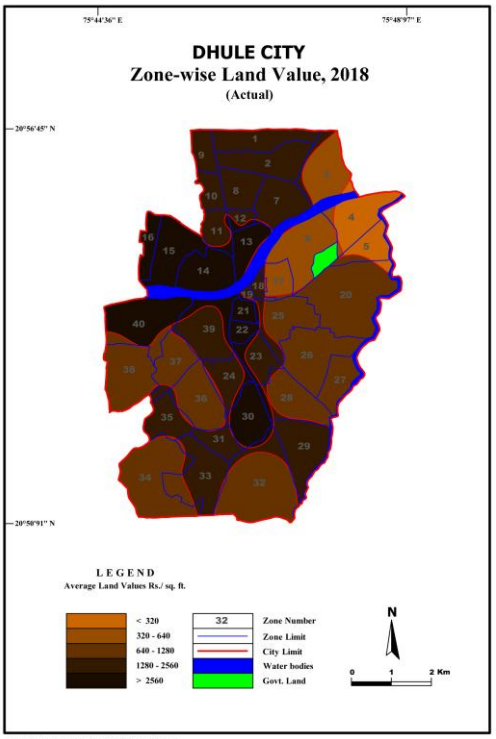


FIG. 6.9

CHANGES IN LAND VALUES WITH INCREASING DISTANCE FROM CENTRE TOWARDS PERIPHERY

City is a relatively large, dense and permanent settlement of socially heterogeneous individuals. Urban settlements go through new attractions with the passage of time and for these attractions city spread from center to periphery. Distance is one of the most influencing factors on land values. The relationship between distance and land values is studied with the tables and graphs. In order to understand how distance plays an important role in influencing land values, graphs were prepared showing land values against distance from the city center for the years 1991, 2001, 2011 and 2018. In addition, for all the years trend analysis is conducted with the help of graphs showing trends in land values with respect to distance from the city centre.

The government quoted average land values and actual average land values at different distances from the city during different years are mentioned in the table 6.12 and 6.13 respectively. The graphs prepared with the help of these tables showing variations in average land values decided by government and actual average land values with increasing distance are depicted in figure No. 6.10 and 6.12 respectively and trend analysis for government and actual land values depicted in figure No. 6.11 and 6.13. Some of the important features pointed out from the tables, graphs and trend analyses are given below.

Table No. 6.12 Distance-wise Avarage Land Values in Dhule City 1991-2018 (Govt. Decided)

Directions		Distance in Km									
	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5
1991	102	41	33	32	25	13	12	10	7	2	1
2001	258	121	89	80	70	45	41	38	34	15	7
2011	990	518	368	278	234	154	135	108	53	28	14
2018	2153	1144	829	651	546	355	312	257	145	75	32

Source: Computed by Author

Table No. 6.13 Distance-wise Avarage Land Values in Dhule City 1991-2018 (Actual)

Directions		Distance in Km									
	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5
1991	650	370	201	245	191	90	87	116	101	68	53
2001	1450	780	471	563	504	314	331	287	331	216	125
2011	2900	1438	1143	1164	933	652	637	654	717	507	325
2018	4800	2000	1878	2075	1747	1484	1661	1293	1246	751	400

Source: Computed by Author

1) It is clear from the table 6.12 and 6.13 and also from the figure No. 6.10 and 6.12 that in all the years the average land values (government as well as actual) were high at centre of Dhule city and they decreased with increasing distance.
2) In 1991 the government decided land values speedily decreased up to 0.5 km and then they decreased slowly up to 2 km and thereafter they remained almost constant. At that time most of the commercial activities were concentrated in core city area. More or less similar situation is observed in the year 2001.
3) During the year 2011 and 2018 the government decided land values decreased sharply up to 1 km and then they decreased slowly up to 4 km and beyond this limit they remained constant.
4) While analyzing average actual land values it is found that in all the years the land values decreased sharply up to 0.5 km. It is interesting to note that in all the years the land values slightly increased after 1 km distance up to 1.5 km. Then they slightly decreased or remained almost constant with slight fluctuations. Beyond 4 km distance the values again decreased.
5) In 2011 and 2018 land values further grown. Both the values decided by the government and actual land values were more up to a distance of 4 km as compared to the year 1991 and 2001. Of course, the values continued to be decreased with increasing distance from the city center. The values either remain constant or decreased slightly beyond the limit of 4 km.
6) It is observed that in the year 2018, the actual land values decreased sharply up to 0.5 km distance, and then they increased gradually up to 1.5 km. From this limit the values slightly decreased up to 2.5 km and again increased up to 3 km distance. Thereafter, the land values either remained constant or decreased.
7) Trend analysis conducted for both the government decided (Figure 6.11) and actual land values (Figure 6.13) also indicate that generally the land values decreases with increasing distance from the centre of city.
8) Thus, the graphs and trend analysis helps to prove the hypothesis that land values decline with increasing distance from city centre.

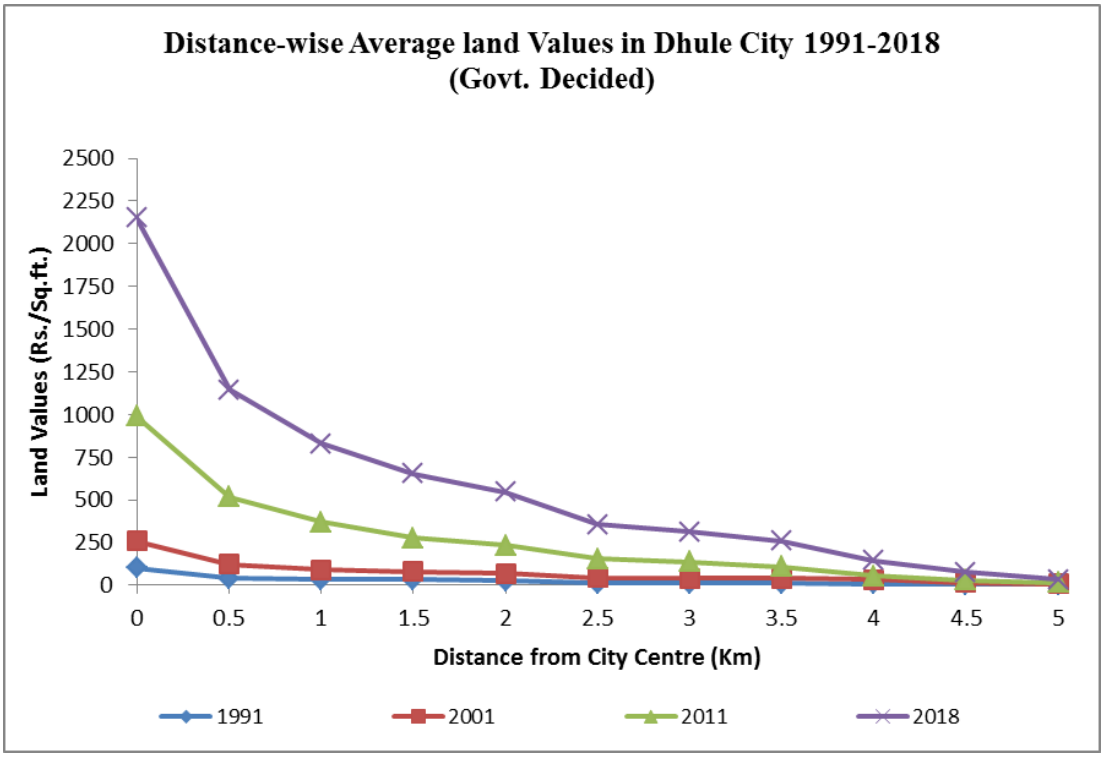


Figure 6.10

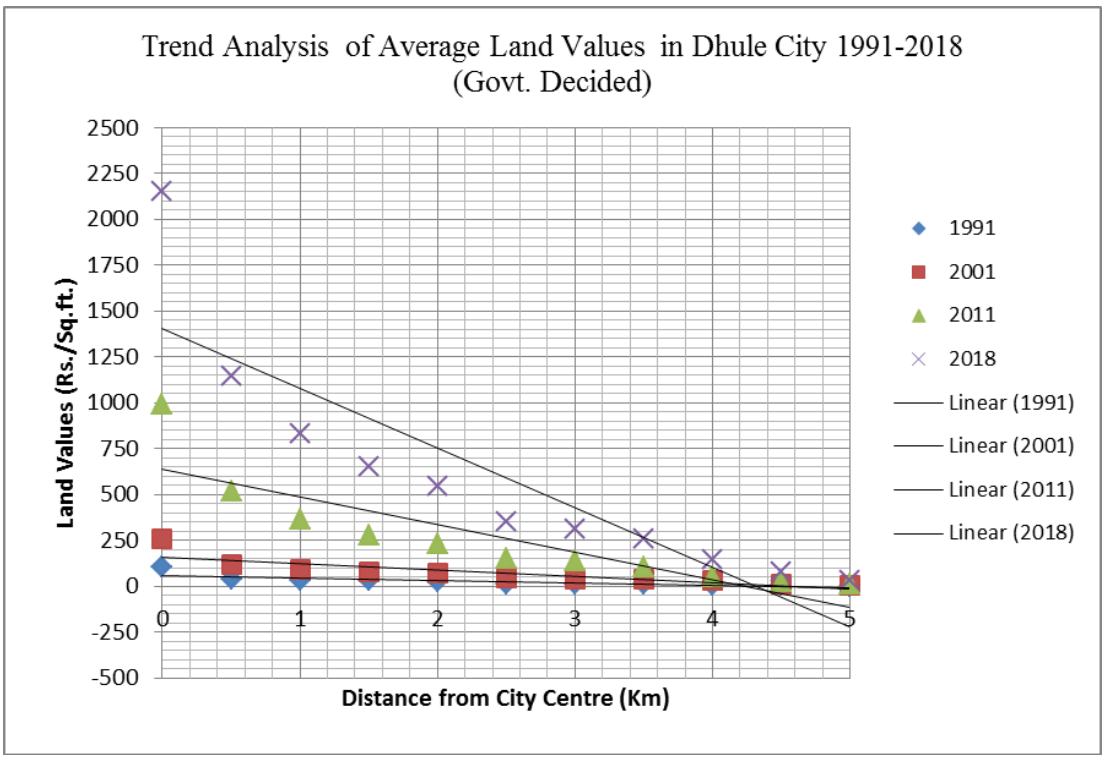


Figure 6.11

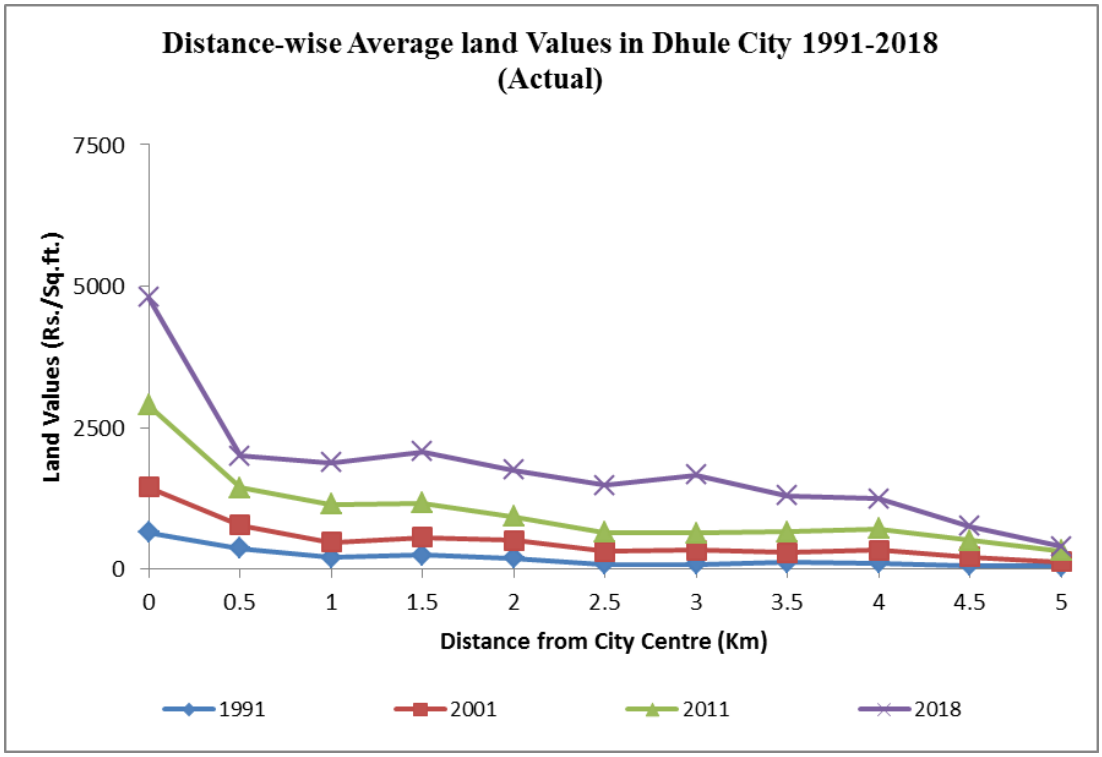


Figure 6.12

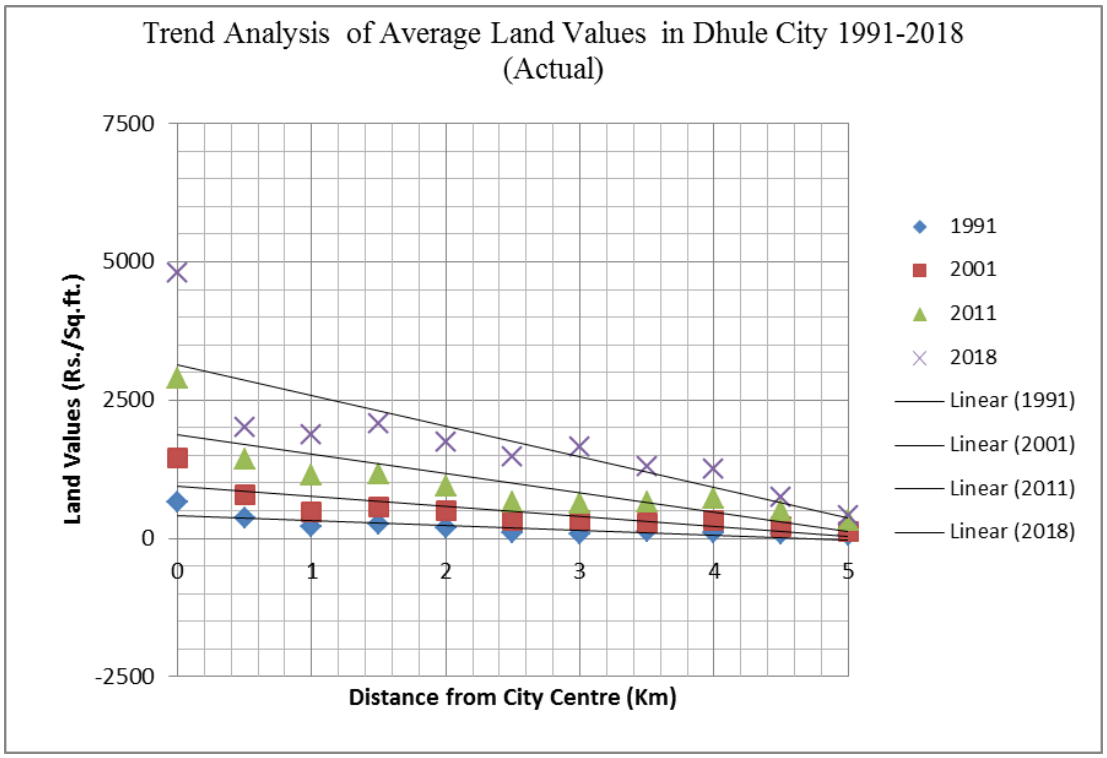


Figure 6.13

VARIATIONS IN LAND VALUES FROM CENTRE TO DIFFERENT DIRECTIONS

Generally the land values decreases with increasing distance from the centre of city. But, they do not decrease with the same rate in all directions because of variations in urban landuse and changes in functional pattern. Therefore, it is essential to study the direction-wise variations in the land values. The direction-wise variations in land values during different years within Dhule city are studied with the help tables, graphs and trend analysis about Dhule city.

In the present study the zone No. 21 which can be recognizes as central Business District (CBD) is considered as a city centre. Because, it has recorded highest land values in all the years.

It is noteworthy to mention that the extension of the city from the central place is not same to all directions. Extension of Dhule city in directions is given in Table No. 6.13. It is observed that the Dhule city is extended up to 5 km towards south direction, whereas in northwest direction it is extended only up to 2 km. To the north and north east direction it is extended up to 4.5 km, while in south east and south west directions the expansion of city is up to 4 km. In west direction, Dhule is extended up to 3 km from the city centre.

Table No. 6.14 Extension of Dhule city from the Central Place.

Sr. No.	Direction	Distance from centre in km.
1	North (N)	4.5
2	North-East (NE)	4.5
3	East (E)	3.5
4	South-East (SE)	4
5	South (S)	5
6	South-West (SW)	4
7	West (W)	3
8	North-West (NW)	2

Source: Computed by Author

CONCLUSION

- To assess the spatio-temporal changes in land values, the period from 1991 to 2018 is taken into consideration. The city area is divided into 40 zones for the purpose of land transactions. The values derived by government for transaction of land belonging to different zones are obtained from Town Planning and Stamp Collector Office, Dhule. The actual land values are collected by field survey through questionnaire and personal interviews of hundreds of property owners, estate brokers and concerned agencies.
- From the analysis of data it is clear that in Dhule city, the government decided average land value increased from Rs. 21 per sq ft in 1991 to Rs. 491 per sq ft in 2018. At the same time the average actual land value for city as a whole increased from Rs. 193 per sq ft in 1991 to Rs. 1,732 per sq ft in 2018.
- In 1991, the government decided land values ranged in Dhule city from Rs. 2 per sq ft for interior parts of zone No. 3 to Rs. 163 per sq ft for main Roads of zone No.21. While actual land values range in Dhule city from 5 rupees per sq ft for internal parts of zone No. 4 and 5 to Rs. 1200 per sq ft for main Roads of zone No.14.
- Old Mumbai-Agra Road from Gandhi statue to Panch Kandil area can be identified as a city center from which the land values decreases in all directions. It is mostly spread in zone No.19 and 21. City center area has recorded high values in all the years.

- During the period 1991 to 2001, the government decided land values increased with low to moderate rate in all the zones, but actual land values increased significantly in many zones.
- During the year 2001, the government decided land values ranged from Rs.9 per sq. ft. in interior parts of zone No.3, 4 and 36 to Rs.365 per sq. ft. on main Roads of zone No.21. The average land values ranged from Rs.9 per sq. ft. in zone No.3 to Rs.258 per sq. ft. in zone No.21.
- From 1991 to 2001 i.e. in ten years period, the actual land values increased significantly in all parts of the city due to inflation and other factors. But, the increase in land values was not similar everywhere.
- In 2011, the government derived land values in Dhule city ranged from only Rs. 13 per sq. ft. in the interior parts of zone No.34 to Rs.1162 per sq. ft. on the main Road sites of zone 21 and average land values ranged from Rs. 19 per sq. ft. in zone No. 34 to Rs. 990 per sq. ft. in zone No. 21.
- As compared to government decided land values the actual land values increased on a large scale. But in ten years period 2001 to 2011, actual land values became more than double whereas government land values increased by at least three times in almost zones.
- During the year 2011, actual land values ranged in Dhule city from Rs.40 per sq ft for the internal parts of the zone No.4 to Rs.4300 per sq ft on the main Road of the zone No. 21. With the average actual land values ranged from Rs.50 per sq ft of zone No.4 to Rs.2900 per sq ft of zone No.21.
- In 2011, highest actual land values were recorded on the main Road of Agra Road in zone No.21 followed by zone No.14, 13 and 22. Rapid growth rate of actual land values has been recorded in zone No. 28, 34, 17 and 23. On the other hand low land values are recorded in zone No.4, 5 and 27.
- While studying the changes in land values with increasing distance from the city centre it is observed that in all the years the average land values (government as well as actual) were high at centre of Dhule city and generally declined with increasing distance.
- In all the years the average actual land values decreased sharply up to 0.5 km. The land values slightly increased after 1 km distance up to 1.5 km. Then they slightly decreased or remained almost constant with slight fluctuations. Beyond 4 km distance the values again decreased.
- While studying variations in land values from centre towards different directions, it is found that the values do not decreases with same rate in all directions. Due to variations in urban land use and changes in functional patterns.
- The graphs and trend analysis helps to prove the hypothesis that land values decline with increasing distance from city centre.

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