

THE QUETTA CITY SPATIAL BUSINESS INTENSITY PATTERN

Geography

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ABSTRACT

An indication of the rapid progression of urbanization across the globe, the spread of urbanization in Europe and Middle East is apparent, as are rising levels of urbanization in Africa and Asia, Pakistan has progressed appreciably, in 1901 only 9.8 percent Of total population lived in urban areas. It is estimated that 2025 A.D. the 60 percent of total population of the country will live in town and cities. As the urban places are playing very high role to business opportunities and progress, provide services, in socio-economic development of the region.

In fact the business intensity pattern of a city, its structure, functions, composition, spatial organization, the body of a character of the city, a city is business complex with large number of retail business that is its components and takes the advantage of a city location business, form, function and development. Among these retail businesses groups of business tend to concentrate and occupy the considerable part of the city space, where as other occupy low intensities areas.

INTRODUCTION

The city of Quetta as the capital of Balochistan province with 565137 urban dwellers in 1998, which will become the place of one million peoples in 2015 is situated at the height of 1676.4 meter from sea level, bowl shaped, 6 K.m. wide 20 Km (average) long valley bounded by mountains, growing relatively at higher rate (4.15 percent annually) than other urban settlements in the province. The urbanization processes in the region and its

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influence on Quetta being the seat of government, provide the facilities of higher order, improved living conditions, employment opportunities as compare to other urban centers of the province. The population of Quetta city according to the 1941 census was 64476 persons it was 6.97 percent increased between 1931-41 comprising of Quetta municipal area (7406773 sq. meter). In 1951 the population was 83892 persons which were 30.11 percent increased during the 10 years, where 37.33 percent increase show in 1955, but a significant growth in 1972 (48.19 percent) and (80.88 percent) in 1981 seems a very high increase in 10 years. Similarly the increase in area was 151 percent in 1975 and 8.29 percent again show a large expansion in municipal area. In 1998 the population of Quetta city including cantonment was reached to 565137 persons (97.79 percent increased, and as 19.49 percent more area was included in municipal limits in 1992, and 15039225 (sq. meters) 31.20 percent area was added in 1998 in the municipal corporation. On the basis of 50 years growth record of Quetta city, it is estimated that the number of urban dwellers will reach 2000000 in 2020. In order to present study “The Quetta City Spatial Business Intensity Pattern” can focus and became a most favored area or the city of more than two million dwellers comfort, planning and development.

METHODOLOGY

The analytical framework laid down, has been used the Geographical Information System (G.I.S.) techniques, methodological measures and analysis methods which range from collection of primary data of 14936 establishments from the field, Quetta Municipal Area (Q.M.C.) to classification, tabulation of data and the use of inferential statistics and mathematical model.

The present study aim to analyze the “The Quetta City Spatial Business Intensity Pattern” and which will provide the guideline to city structuring, growth, it's planning and development.

Data Collection.

Primary data of 14936 establishments were collected from the Quetta Municipal Corporation (Q.M.C.) area.

The city was divided into 494 business blocks on the basis of road and streets, and the base map of 1:2500 scales was used.

The data were analyzed through using the Geographical information System (G.I.S)

Software techniques and presented in the form of a map and tables.

The business intensity of the city devised and calculated from the following formula:

$$\text{Business Intensity Index (B11)} = \frac{\text{Area under Business Establishment in Block}}{\text{Ground Area of the Block}}$$

Business Intensity

The distribution of business activity in the city and its concentration pattern is represented through analysis of chief variable i.e., Area under Business Establishments, and the Business Intensity Index.

These analyses Tables 1, 2 and figure 1 serve to bring out internal variations with in an expanse of a homogeneous area in terms of its basic or essential quality i.e., the extent and intensity of retail business activity.

Further, the analyses furnish the lead to differentiation of intrinsic character of the city region in to what has been classically discriminated as the “Core” or “Hard core” and “Periphery” or the “Non-core” to contrast primarily with the major differences in the levels of concentration of business across the city region. While the two variable, viz: area under establishments and business intensity index are indicative of spatial variations and the degree of business intensity as a ratio of area under business to the total of area or total space with in the city blocks, the one variable, area under establishments are indicator of intensity in space- use by the business establishments with in the city limits. The later variable define the essential characteristics of the “hard core” which, when compared with other business centers of the city, must illuminate characteristically a much higher rate of use of “hard core” space than that found in other business centers of the city.

Number and Area of Business Establishments

The concentration pattern of commercial establishments is analyzed in table 1 and the accompanying map fig.1 which shows area under business establishments. A total of 14936 retail establishments covered 260105 sq.meters, in 494 business blocks adopted for enumeration.

Table 1 shows the number of blocks, number of establishments and area under establishments categorized into concentration levels or classes of blocks. It may be pointed out that the number of blocks under Colum 3 of the table suffers from limitations with respect to inter-category comparison on account of uneven block size, but this limitation is overcome when the numbers of establishments are compared block-wise, as the establishment’s size differences are not too wide to disallow meaningful comparison. However, when analyzing the table a reference is made to the number of block; it is done simply to give an indication of the extent of concentration

levels irrespective of the block size, as mainly it is the block or blocks which have been categorized.

TABLE: 1 * AREA UNDER BUSINESS ESTABLISHMENTS BY BLOCK CATEGORIES

BLOCK CATEGORY	CONCENTRATION LEVEL	NO OF BLOCKS	AREA OF BLOCKS **	PERCENTAGE OF BLOCK AREA	NO. OF ESTABLISHMENTS	PERCENTAGE OF ESTABLISHMENTS	AREA OF ESTABLISHMENTS (in sq. m.)	PERCENTAGE OF AREA OF ESTABLISHMENTS
I 401+	VERY HIGH	155	5705465	45.18	10428	69.81	197371	75.88
ii 301-400	HIGH	72	1994715	15.79	1754	11.74	27839	10.70
iii 201-300	MEDIUM	48	1633707	12.93	845	5.65	11237	4.32
iv 101-200	LOW	122	1874771	14.84	1376	9.21	17744	6.82
v -100	VERY LOW	97	1418272	11.23	533	3.56	5914	2.27
TOTAL	-----	494	12626930	100	14936	100	260105	100

*field data ** Area in sq.m.

It is inferred from table 1 that 69.81 percent of the total establishments occupying 75.88 percent of the total space used as business establishments of the city, fall in “very high concentration level” and are concentrated in 155 out of 494 blocks. It is obvious that such a high level of concentration, comparatively in a limited 45.18 percent of total blocks area of the city may be identified with the core or hard core of the city, which represent the highest degree of intensity. More over high concentration level category establishments made up 10.70 percent of the city establishments.

The degree of significant concentration level will however be represented by the aggregate of "very high" and "high concentrations level" establishments, which combine to demonstrate on impressive concentration to the extant of about 81.55 percent of city establishments with about 86.58 percent of area under total city retail business establishments.

It may noted that "medium concentration level" is not extensive as it cover 5.65 percent of the total establishments as compare with 12.77 percent in low and "very low” concentration classes. This low extensiveness in terms of percentages of the number of establishments is resulted due to the size and number of blocks in the category, which can further accentuated in respect of area under establishments, since low and very low concentration levels covered only 9.09 percent against 4.32 percent of establishments area under medium category. These three levels may indicate the spatial extent of non core areas of city region.

Figure 1 distinctly exhibits five areas of major concentration i.e., (i) The Liaquat bazaar area, (ii) The Peripheral region, of Liaquat bazaar and

Double road area, (iii) The Satellite Town and Pashtoonabad, (iv) Joint and Jail road area, (v) Sariab-Sabzal road area.

Out of 155 blocks showing very high concentration level, 96 belonged to the Laqat bazaar area alone. Similarly out of 72 blocks of high concentration level, again 21 placed in Liaquat bazaar area.

The extent of medium or low is for more limited in Liaquat bazaar area than Satellite Town, Pashtoonabad or on the Kanshi, Meccongy, Joint and Jail roads areas. This suggests the greater beneficial aspect and locational advantages of the Liaquat bazaar area for business activity and its expansion in comparison with other areas of the city.

The differences of area under establishments with in each block category may further highlight the details of otherwise much generalized or stretched concentration quality over a wide rage of area under establishments in each block.

In the very high concentration class, very wide range of area under business establishments of the block is noticeable, as the block with the largest area contained 10603 sq. meter under business establishments giving a staggering figure of 4.07 percent of the total area under city establishments. The block with smallest area under business establishments in the same category covered 401 sq.m. or 0.15 percent of they total area of city establishments. It is remarkable that under this category, four blocks with establishments area above 4000sqm. Contained about 9.51 percent of total area under retail establishments in city which come to about 11.73 percent of the total area under the establishments in the blocks falling in the very high concentration class. These blocks belonged to Auto spare parts markets on Double road, Beef / Shoes markets on Upper Kanshi road in Liaquat bazaar area, Bukhari center in Quandhari, bazaar of Liaquat bazaar area, Auto work, blanket and carpet markets on Double road area. No block had larger floor area under establishments than its ground area in the city.

Further 19 blocks recorded area under business establishments ranging 2001 Sq.m. to 4000 sq.m. from which 15 blocks are located in Liaquat bazaar area, as Hashmi market Regal Plaza, Baldia Plaza, Kanshi road Lunda bazaar, Malik Plaza, Auto parts and work block, Sartaj Complex, Sonehri market, Cut piece street and Dr. Bano road blocks Auto spare parts and work beyond M.A. Jinnah road block, Gourhatt Singh street, Curtain market on kanshi road block, Blanket market on Abdus Sattar road block, Auto part, street beyond M.A Jinnah road block, the latter four blocks of same category a block of Briach market on Sirki road, a block of Auto parts market on the double road area, and one each block located on Sabzal and

Faqeer Muhammad roads. Out of 47 blocks from 1001 to 2000 sq.m. category 31 blocks are again located in Liaquat bazaar area, i.e., Old bus stand block on circular road, cosmetics and electronics market block on Shah-re-Iqbal, Dry fruit street block, Motorcycle spare parts market block on Abdus Sattar road, Mutton and Beef market block on Art school road, Auto work and spare parts market block on Jamal-ud-din Afghani road, Cloth market block beyond Baldia plaza, Gourdatt Singh (sports goods) block, Zulfiqar market in Liaquat bazaar block, Mannan Chowk block, Quandhari bazaar whole sale block, Old bus stand (Auto work) block, Home appliance market street on circular road block, Shoes Market block on Liaquat bazaar road, two blocks of cloth whole sale on Jamalud-din-Aghani road, Electronics market in Qandhari bazaar block, Spinzer market block, Lalazar market block, London street Liaquat bazaar block, Shalimar market block, Khyber market block, Liaquat market block, Chorri Gulli block, Motti Ram road frame market block, a block of General merchant whole sale in Quandhari bazaar, Shoe market on Thanna road block, Shoes and Crockery market on Toughi road block, Hardware and Shawls/cap market in Surajganj bazaar block, Electronics market block on Abdus Sattar road, Medicine whole sale block on Dr. Bano road, Saraffa market block on Abdus Sattar road, an other block of shoes market on Thanna road, Junction market block on Prince road, Shoes market block of Mannan Chowk, Hardware market block in Surajganj bazaar. The former 16 blocks of same category were located as a General merchants block on Gawalmandi Chowk in the peripheral area of Liaquat bazaar region, a block on Sabzal road containing the Kabbray, again a block of General merchants located on lower Kanshi road, a block of Hardware on lower Sirki road, two blocks on lower Sariab road, one block had located on Meccongy road comprising the General merchants, one block of this category on the Lower Sabzal road and one on the middle Sariab road, both containing the general merchants, one block identified near the New bus stand of general merchants, one block of this category on Joint road beyond railways station, one block on the middle Sabzal road, a block of Old auto spare parts and work located near New bus stand, one block of similar concentration located in the Satellite town area. The remaining 424 blocks of the city, under the concentration from 1 to 1000, one hundred one blocks are again located in Liaquat bazaar area.

Distribution Pattern of Business Intensity

The business Intensity index (B11) is a ratio of area under business establishments in a block to the ground area of the block, owing to the effect of block area, which is the base of this measure, the distributions pattern of business intensity in term of degree and extent of concentration will appear to be less convergent, though not deviant from the pattern of business concentration demonstrated by area under business establishments, which is independent measure and used as such in the forgoing analysis (table 1) without reference to the area of block. However, B11 serves as a more representative indicator of use of the city space by business activities in particular and other associated and central location oriented enterprises in general.

Business intensity implies that, which higher business intensities, the area of establishments in block categories increases while the percentage of block area which presents percentage of the city space correspondingly decreases.

As shown by table 2 in terms of B11 distribution, the higher order class explicitly demonstrates a remarkable

ABLE: 2* BUSINESS INTENSITY INDEX

BLOCK CATEGORY	CONCENTRATION CLASS	NO OF BLOCKS	AREA OF ESTABLISHMENTS IN Sq. meter	PERCENTAGE OF AREA OF ESTABLISHMENTS	AREA OF BLOCKS (sq..meter)	PERCENTAGE OF AREA OF BLOCKS
0.0401 +	VARY HIGH	194	163756	62.95	1241779	9.83
0.0400 0.0301-	HIGH	45	13825	5.31	419134	3.31
0.0300 0.0201-	MEDIUM	71	30096	11.57	1221879	9.67
0.0200 0.0101-	LOW	93	27421	10.54	1886052	14.93
-0.1	VERY LOW	91	25007	9.61	7858086	62.23
Total	-	494	260105	100	12626930	100

*Field data

Concentration pattern, that much more than half of the city space falling only under very high concentration class, which about 62.95 percent

of the area under establishments of the total establishments of the city space. The high concentration class covered relatively low percentage of establishments 5.31 percent of total city establishments, also in a very limited 3.31 percent of blocks area, which mostly covered the peripheral areas of the very high concentration class. These classes together covered about 69 percent of the total area under city establishments in only 14.14 percent of the city space.

It obvious that the degree of concentration as shown by these two categories stand in sharp relief to the area under the rest of the categories. These two classes may represent or contain the nucleus or 'core' of the city region. Both the extent and morphology of the core will, however, be subject to determination by close examination of the spatial pattern of B11 in close relation or correspondence with, other variables and their spatial pattern with in the city expanse.

Intensities categorized as medium extended over a large area, i.e., 1221879 Sq. meter or 9.67 percent of the city space and this class covered about 12 percent of area under business establishments as compare to high category. The spatial extent of this class implied that business intensities were quite appreciable which in term of block area embraced a considerable spatial extensiveness to the city space.

Intensities decrease in areas under low and very low B11 concentration categories as shown by the differences of area under business establishments between the medium, low and very low B11 categories. These areas may clearly fall in the non-core or extra-nucleus region of the city.

Intra categories differences of intensity with in the very high concentration level and its spatial distribution may be examined so as define its extent and location, since this category has in its fold what may ultimately be distinguished as the hard core, which is identified in term of maximum concentration of business activities or highest level of business intensity. One hundred and ninety four blocks with B11 ranging from 0.0401 to 0.9079 fell in this category. Of these eighty four blocks situated in the Liaquat bazaar only, that showed intensity (0.1.39 to 0.9079). Their intensities implies a considerable concentration with small size of establishments in form of markets or in some cases from ground floor to upper floors which were used as good own or store, only one block Dawood Cloth Centre, where upper floors were used as multi-story catering establishments recorded 1.14 percent of the total city establishments space, a number of blocks showed, very high intensity due to the smaller sizes of block or total area of the blocks in this class. The very high concentration category blocks showed a discontinuous distribution as these occupied five separate locations along an axis of roads of

this area, these five main areas were identified (a) The Liaquat bazaar (Baldia plaza, Cut piece Street, Shabnaum market, Hashmi market, Sonehri market, Zulfiqar market and lower Meccongy road area),(b) Lower Kanshi road and meet market area,(c) Mission road area ,(d) M.A Jinnah road, Qandhari bazaar area and Circular road area

In the Liaquat bazaar there were thirteen out of eighty four blocks falling under this category. These blocks belonged to Motorcycle spare parts market, Cut pieces (cloth) street, Shabnaum market (cosmetics), Saraffa bazaar (Jewellers market), Hashmi market, Sonehri market,

Liaquat market block, Zulfiqar market, Malik plaza, Baldia plaza, Chorri Gaulli block, Muhammad Ali market block and Cassette market block.

On the Kanshi road axis comprised the Meat market block, Lunda bazaar block, Beef market and Shoes market blocks.

The Mission road area blocks of this very high concentration class are consisted Hard ware market block, Shoes market block, Trunk market bazaar block, Shawls/Cap street block and Surajganj bazaar blocks.

The M.A Jinnah Road and Qandhari Bazaar blocks are comprising Bukahri Market (money changers) block, Russian Galli (Electronics market block), Grocery market block, Shoes market & General merchants whole sale market block, Medicine / whole sale market block, Shoes market block, Electric and Hardware market block, Cassette and Garment street block, Fateh Khan market block, Regal Plaza and Sartaj complex blocks.

The Circular road area blocks were belonged to Trunk market bazaar block, Kabbary bazaar, Shoes Market Street block, Hardware market block, Grocery market block, and Electric market blocks. Some of the blocks of Circular road, Mission road and M.A Jinnah road areas belonged to the whole sale business and are not presented the true picture of the retail trade.

From the above analysis of spatial distribution of the very high concentration level, it is concluded that spatial pattern of the city core is marked by multiple-nuclearity and it is distinctly star–nuclear divided as it is in five discontinuous and distant locations.

The high concentration category embraced roughly 4 percent of the total city area and 6 percent of the area under establishments' shows the distribution pattern of medium category blocks whose location with respect to high order concentration blocks are noteworthy. In Liaquat bazaar area and double road new bus stand areas, most of the high category blocks are either sandwiched between or closely boarder on the very high or medium concentration categories, signifying a position or situation as an attractive locale for business growth and intensification in the immediate future. The following blocks may be cited as falling in this category Gawalmandi Chowk

block, Patel road Chowk block (Grocery) three blocks consisted furniture and wood work are located on the both sides of upper Prince and Meccongy roads Chowk, Fateh Khan market block on M.A Jinnah road, Bilal market (New bus stand) Shoes market (Pashtoonabload) Grocery market (Pashtoonabad), and Lunda Bazaar (Kansi road)

The High category blocks mostly comprised the grocery, located in the peripheral area of very high concentration class in the medium concentration class in a ring shape, contiguous with the medium concentration category of blocks and hence also they denote an area for further intensification or assimilation to medium concentration category.

As shown in figure1 there are existed three areas or city segments of quite discernible extend which had medium, low and very low B11 categories. These were mainly again located in the peripheral areas of very high and high classes and on the axis of thoroughfare or along the both sides of intra and inter city roads segment occupied 31.72 percent of the establishments area of the city and which is less than half of the very high concentration category. On the basis of low business intensities these areas may be termed as weak or low profile zone. One of these very low profile areas were bounded by Sariab-Sabzal roads, are laying in the west of the city. These medium low and very low classes are further located in to three areas of the city

- (a) Most of the blocks shown the medium intensity in table 2 are located in Satellite town and Pashtoonabad, the areas which laying in the south-east of the very high or core area of the city, consisted the mixed retail establishments.
- (b) The Kansi and Meccongy roads extended from Liaquat bazaar or city hard core area toward east direction, covered mostly by blocks of low and medium intensities:
- (c) Joint and Jail road areas clearly occupied by the blocks with low intensity concentration category, the area is in the west of railway station and further west bounded by Sabzal road which, comprised the very low intensity blocks of the city space.

CONCLUSION

Quetta city comparatively has three different retail business intensities areas as are High, Medium and Low.

The high intensity retail area as Liaquat bazaar, Suraj Ganj bazaar, Quandhari bazaar Archarand Cicular roads or business Components

playing an important role and has a very strong impact on the business pattern of city growth, structure, planning and development

The medium intensity or the peripheral region and other areas of this category/intensity class is a highly important for city center expansion in particular and city future growth and development in general.

Certainly the last three categories as medium, low and very low or low retail business intensity class with its mixed retail business, those are located in all the areas or business categories, is an indication of space opportunity for future city growth and development.

The retail business analysis resulting, that the limited area of Quetta city which bounded all sides by mountains and its location at active Chaman-Naushki Seismic fault, both horizontal and vertical development, severe water scarcity constraints, the city of Quetta need a highly technical management planning and development in future to safety and the comfort of 1.5 million dwellers.

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