AN ANALYTICAL STUDY ON THE CHANGING FUNCTIONAL ECONOMIC BASE OF THE CLASS ONE CITIES IN INDIA

Dr. Daljit Singh Chhiller
Associate Professor, Dept. of Geography, Swami Shraddhanand College, University of Delhi, India.

Dr. Jagbir Singh Kadyan
Assistant Professor, Dept. of Commerce, Swami Shraddhanand College, University of Delhi, India.

Dr. Renu Gulia
Assistant Professor, Dept. of Commerce, Delhi College of Arts & Commerce, University of Delhi, India.

Abstract: Cities are growing with a rapid pace. These are centres of various types of activities. As a result there is large scale concentration of population either by natural increase or by migration. This leads to various socio-economic-infrastructural problems. To understand the various dimensions of these problems to make city smart it is required to understand the functional economic base of these cities. Functional economic base of cities indicates what are the main economic activities carried out in the cities and what type of people are residing in these cities. These economic base also changes with the changing time.

This research paper makes an serious attempt to understand the changing functional economic base of Indian cities using census of India data. The census of India has classified the population of each city into different industrial classes. At first level important functions of Indian cities are identified using Rafiullah's method of multifunction combinations. Then Asok Mitra's triangular method of functional classification is used to identify important functions in which the city specialises. An attempt has been also made to trace out the changes in the specialisation of function of the cities with time. Maps are prepared using open source GIS software QGIS.

Introduction

Classification is a means of organizing diverse information so that it might be more easily comprehended. Statistically it means to arrange the units of a variable into broad categories on the basis of similarities within the units and dissimilarity from the other units. By classifying we are able to summarize large number of units of a variable into a smaller number of categories. This summarization helps in understanding the inherent characteristics of the unit as a group and to compare these with other groups. So classification not only condenses and simplifies the data but also helps in highlighting the similarities and dissimilarities through comparison. These groups can be easily used for further analysis and presentation. On the basis of analysis future predictions can be made, strategies for development may be formulated. An attempt is made to identify the functional economic base of Indian cities using classification method.

1. Need of Classification of urban settlements:
Urban settlements, earlier less in number and distinct in characteristics were easily explorable. Many of these were essentially

based on single function such as administrative or market or educational. With the pace of rapid urbanization modern technology and shifting of production of non-farm produce from villages to urban centres, the number of urban centres increased manifold with multifunctional base. It is therefore, useful to classify these urban settlements into broad categories based of occupational characteristics of the work force. The behaviour of each category with reference to other urban attributes can then be compared with other categories. Classifications have been developed on the basis of site, city size and occupational categories often referred to as functional classifications. In this paper an attempt has been made to classify cities with a population of over a hundred thousand (class-I cities) on the basis of workers engaged in various occupation as per the standard industry group as defined by Census of India. A function indicated as specialised one, by a city may be considered as the functional economic base of that city. A city may have one or more functional economic base.

Classification of Urban Settlements or Places in India:

Towns and cities are too numerous and too varied in their characteristics to be understood without meaningful categorization. Such grouping has been attempted since very ancient times in India. In India cities and towns are very old. Cities were classified according to their politico-administrative status, port and trade functions and their role as defence outposts. (Ramachandran, 1998). But the number of towns and their functions were limited and the purpose of the exercise was also simply to highlight the main characteristics of the town. Now, the number of towns has increased manifold, the characteristics are not as simple as at that time and the purposes of the exercise are also more varied. Qazi Ahmed, classified cities of India in 1961 using 63 variables. Asok

Mitra (1973 and 1981) used triangular approach to classify the towns of India.

2. Methodologies available:

Classification of towns has a long history, before 1950's the basis was physical characteristics like site, location, and size and so on. During 1950's to 1960's functional classification was prominent. These were based on the economic activities, dominant functions like educational, cultural, or industrial etc. Functional classification is a type of classification of cities that recognizes that different cities have different dominant functions and based on the degree of dominance a city is included in a certain functional category. Functional classification is based on different types of economic activities in which the urban work force is involved. Urban settlements have been classified broadly on the basis of qualitative and quantitative approach. Although in both the classification physical, historical, social, economic or functional, and cultural characteristics are considered, it is the measurement and the degree of quantification which differs. In qualitative classification, often measurement of attributes is not attempted, but a group of characteristics are used to classify a settlement in other words it is more a descriptive classification. In quantitative methods, attributes which can be quantified or measured, are considered and statistical techniques are used. These statistical techniques help in grouping a large number of settlements into few broad categories. Quantitative method of functional analysis adopted by Harris (1943) is the most quoted. Another functional classification of cities using the degree of variation from the mean relative employment of that industrial category was developed by Nelson (1955). Alexanderson (1956) considered that the labour force of a city can be divided between the "city-forming" employment sector and the "city-serving" employment sector. According to him, the

functional class of a city would be based on city-forming employment, not total employment in a given industry group. These methods have their own advantages and limitations.

3. Methodology adopted:

It has been observed that classification of urban settlements into mono functional categories is far from reality as urban settlements are never mono functional. In fact, every town is basically a multi-functional unit and it is, therefore, necessary to take this basic fact into full account in a scientific functional classification on the basis of multi-functional character of towns (Rafiulla, 1965). Since, an urban settlement performs a large number of functions; it would be prudent to group the significant categories together. This approach would classify the urban settlements into one-function town, two-function town, three-function town and so on as long as the function is statistically significant. The formula evolved by Rafiullah may be algebraically expressed as :

$$\sigma = (\textstyle\sum Dp^2 - \sum Dn^2) / N^2$$

Where σ =   is the deviation;
Dp = is the positive difference from the median value of the theoretical-curve value of the combination,
Dn = is the negative difference from the median value of the theoretical-curve value of the combination,
 and N = is the number of functions in the combination.

The maximum positive value of σ defines the critical combination as shown below 41 is the maximum positive value, after that it starts declining. Therefore, Chiral is a three function town.

4. Source of data:

In the present paper, the 9 fold categorization of main workers adopted by the census of India is used.   All the nine categories have been included for the classification purpose, since in some of the census defined urban settlements the proportion of workers in the three primary activities is significant. The only source of data for such large information regarding the class I cities of India is the census of India. Since, the 2011 data is not available at the time of this exercise, an attempt is made to classify the cities on the basis of 1991 and 2001 data.   The nine census categories are:
I.   Cultivators;
II.   Agricultural labourers;
III.   Livestock, Forestry, Fishing, Hunting and Plantations, Orchards and Allied Activities;
IV.   Mining and Quarrying;
Va.   Manufacturing, Processing, Servicing and Repairs in Household Industry;
Vb.   Manufacturing, Processing, Servicing and Repairs in other than Household Industry;
        (Va and Vb are taken together for the classification)
VI. Construction;
VII. Trade and Commerce;
VIII. Transport, Storage and Communications;
IX.   Other Services
In the tables corresponding international numbers are assigned to the roman numbers.

5.   Selection of cities:

The 1991 census of India provides data at town, town outgrowth and urban agglomeration level. For the large cities urban agglomerations are taken as single unit and the outgrowths have been added to the smaller cities. In this way, more than 400 cities are merged into 305 cities (including urban agglomerations - Table 1) are selected for the purpose of classification of functional economic base. The 2001 census data is slightly in different format, so categories were merged to reach the 1991 data format. The 2001 census data pertaining to cities and their outgrowth have been again merged into 414 cities. The may be difference in number of cities from 1991 to 2001 due to reorganisation of states or due merging of nearby cities due to

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outgrowth. Delhi was treated as one city for │ 1991 but as separate 10 cities for 2001.

Table 1 : State-wise distribution of class I cities

States	Number of Class I Cities 1991	Number of Class I Cities 2001
Andhra Pradesh	32	45
Assam	4	4
Bihar	17	19
Gujarat	21	25
Haryana	11	20
Himachal Pradesh	1	1
Karnataka	21	28
Kerala	14	7
Madhya Pradesh	23	23
Maharashtra	27	40
Manipur	1	1
Meghalaya	1	1
Mizoram	1	1
Orissa	7	10
Punjab	10	13
Rajasthan	14	17
Tamil Nadu	32	26
Tripura	1	1
Uttar Pradesh	41	52
West Bengal	23	58
Chandigarh	1	1
Delhi	1	10
Pondicherry	1	2
Uttarakhand		3
Jharkhand		7
Jammu and Kashmir		2
Chhatisgarh		7
Total	**305**	**424**
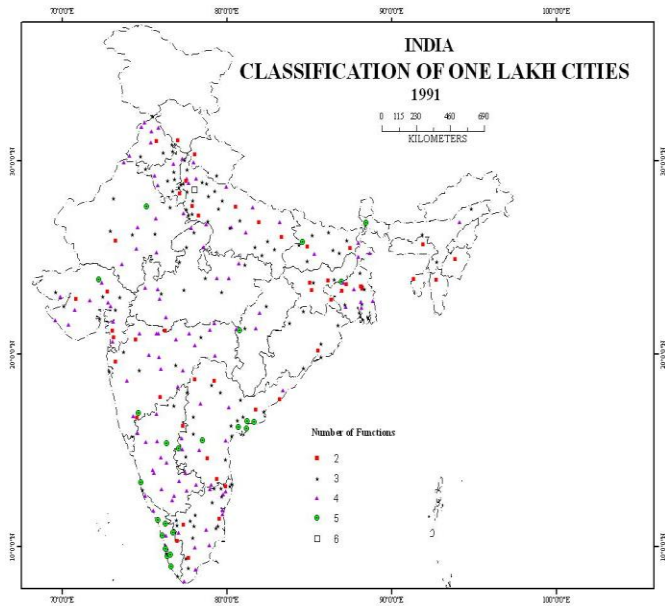
6. Classification of Class I cities:

On the basis of the results of the data processed, it has been observed that there was not a single mono functional city. This supports the fact that there is a need to classify urban settlements by grouping the significant functions. The results (Table 2 and Map 1) further show that the number of class I cities increased from two-functions (15.41%) to three-functions cities (39.01 %) and then first declines slowly from three-functions cities to four-functions cities (37.70%) and rapidly towards five-functions cities (7.54%) and six-functions cities (0.33%).

Table 2: Classification of Class I Cities, 1991

Number of functions in combination	Number of Class I Cities
Two-function	47
Three-function	119
Four-function	115
Five-function	23
Six-function	1
Total	**305**

7. The pattern of first-function shows that Other Services (48.20%) is the most significant first-function followed by Manufacturing (33.11 %) and Trade and Commerce (13.11%). A small proportion of cities show Mining and Quarrying (2.30%) and Agricultural Labourer (1.96%) as the first-function. The state-wise details about cities and their first-functions are given below (Table No. 3) :

Table No. 3 : State-wise Break up of Class I Cities according to first function

States/Function	IX	VIII	VII	VI	V	IV	III	II	I	Total
Andhra Pradesh	16	01	03		06	02		04		**32**
Assam	04									**04**
Bihar	11		01		03	02				**17**
Chandigarh	01									**01**
Delhi	01									**01**
Gujarat	06		01		14					**21**
Haryana	07		01		03					**11**
Himachal Pradesh	01									**01**
Karnataka	06		04		10			01		**21**
Kerala	05		03		05			01		**14**
Madhya Pradesh	13		01		08				01	**23**
Maharashtra	15		04		08					**27**
Manipur	01									**01**
Meghalaya	01									**01**
Mizoram	01									**01**
Orissa	06		01							**07**
Pondicherry	01									**01**
Punjab	05		03		02					**10**
Rajasthan	08		02		04					**14**
Tamil Nadu	06		06		18	01	01			**32**
Tripura	01									**01**
Uttar Pradesh	22		04		15					**41**
West Bengal	08	01	06		06	02				**23**
Total	**146**	**02**	**40**	**00**	**102**	**07**	**01**	**06**	**01**	**305**

8. An attempt is hereby made to find out the various first functions shown in combination with other functions (Table No. 4). It is very surprising to note that construction, although very important activity in the cities is not found as first function in any of the class I cities of India. More surprisingly, cultivation is the first function of only Morena city, livestock, forestry, fishing etc. are the first function of only Valparai city, and transport and communication is the first function of two cities - Kharagpur and Vijayawada. Morena city, a district headquarter of Madhya Pradesh situated few kilometres away from the western bank of Chambal river, is though a four-function city, but the first function is cultivation as it is situated on the fertile Behads(Ravines) of the Chambal river. The city of Valparai, a two-function city, situated in Coimbatore district of Tamil Nadu, on the hills of Western Ghats. The first function in this city is livestock, forestry, hunting and plantations but a police training school is also situated here. Majority of the population of Valparai is engaged in livestock, forestry and plantation activities as labourer. Kharagpur, a four-function city situated on Medinipur district of West Bengal, and Vijayawada situated in Krishna district of Andhra Pradesh shows Transport, Storage and Communication as first function. Kharagpur is

situated on N.H. 6 linking Calcutta, the capital city and port of West Bengal to the interiors of Orissa, Madhya Pradesh, northern and western states. Being situated near international airport and seaport of Calcutta and in mineral rich zone on a national highway, Transport, Storage and Communication is the most important economic activity. Vijayawada is situated on the crossing of N.H. 5 and N.H. 9 on the bank of Krishna river and acts as a break point to serve the long route traffic and surrounding rice producing areas. There are seven cities located in the mineral rich belts, these cities show mining and quarrying as the first function.

Table No. 4: Pattern of First Function

Category	Activity	No. of Cities	Name of Cities	District	State
I	Cultivators	01	Morena	Morena	Madhya Pradesh
II	Agricultural Labourer	06	Bhimavaram Guntakul Nandayal Gudivada Hospet Malappuram	West Godavari Anantpur Kurnool Krishna Bellary Malappuram	Andhra Pradesh Andhra Pradesh Andhra Pradesh Andhra Pradesh Karnataka Kerala
III	Livestock, Forestry, Fishing, Hunting and Plantations, Orchards and Allied Activities	01	Valaparai (Police Training School)	Coimbatoire	Tamil Nadu
IV	Mining and Quarrying	07	Raniganj Ondal Kathgudam Ramgundam Dhanbad Patratu Neyveli	Bardhman Bardhman Khammam Karimnagar Dhanbad Hazaribagh South Arcot	West Bengal West Bengal Andhra Pradesh Andhra Pradesh Jharkhand Jharkhand Tamil Nadu
V	Manufacturing, Processing, Servicing and Repair	101	Long list not listed		
VI	Construction	00			
VII	Trade and Commerce	40	Long list not listed		
VIII	Transport, Storage and Communications	02	Kharagpur Vijayawada	Medinipur Krishna	West Bengal Andhra Pradesh
IX	Other Services	147			
	Total	**305**			

9. Bi-functional Cities: When the important functions grouped together statistically it was found that the most observed combination is other services with trade and commerce (34.04%). Manufacturing, processing, servicing and repair combines with trade and commerce (29.78%) and with other services (19.15%). The combinations of functions are given in Table No.5. and the towns are shown in Map 2.

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Table No. 5: Distribution of Bi-functional Cities

First Function	Second Function	Number of Class I Cities
IX	VII	16
V	VII	14
V	IX	09
IV	IX	03
IX	V	02
III	V	01
VII	V	01
IV	VII	01
	Total	**52**

INDIA
TWO FUNCTION ONE LAKH CITIES
1991
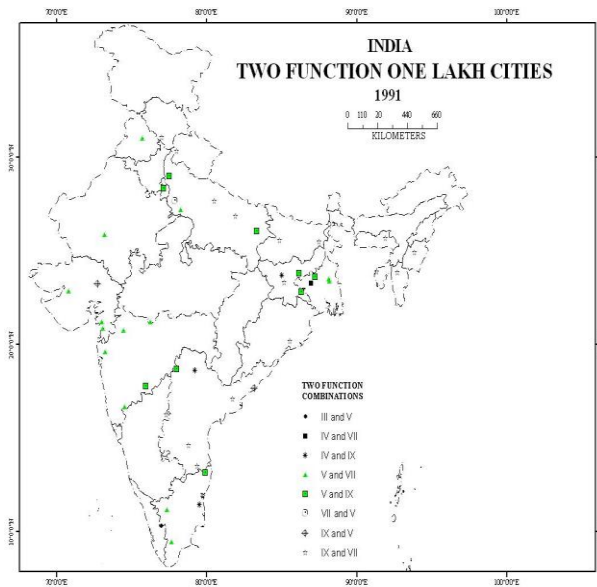
10. Tri-Functional Cities: Out of 305 class I cities, 119 show three function combinations. The largest share of 39.49% (Table No. 6) is of the other services with trade and commerce and manufacturing. Manufacturing with trade and commerce and other services (14.28.%) is the second combination in order of the share. Manufacturing combined with other services and transport, storage and communication shows 11.76% which is equal to the other services combination with manufacturing and trade and commerce. Distribution of cities with three dominant functions are shown in Map 3.

Table 6: Distribution of Tri-functional Cities

First Function	Second Function	Third Function	Number of Class I Cities
IX	VII	V	47
V	VII	IX	17
V	IX	VII	14
IX	V	VII	14
VII	IX	V	07
IX	VII	VIII	05
VII	V	IX	03
V	II	VII	02
IV	IX	VII	02
IX	VII	III	01
IX	VII	II	01
IX	VII	I	01
IX	IV	VII	01
IX	II	VII	01
IX	II	I	01
VIII	IX	VII	01
VII	IX	VII	01
	Total		**119**

13. Four-Functions Cities: A significant number of class I cities (33..11) (Table No. 7) shows four functions combinations. The largest combination (21.73%) is of other services with trade and commerce, manufacturing, transport, storage and communications Table 7). Besides the above there are 23 towns with five dominant functions and one with six dominant functions.

Table No. 7: Pattern Cities with Four Dominant Functions

First Function	Second Function	Third Function	Fourth Function	No. of Class I Cities
IX	VII	V	VIII	25
V	VII	IX	VIII	15
V	IX	VII	VIII	12
IX	V	VII	VIII	11
VII	IX	V	VIII	06
VII	V	IX	VIII	05
IX	VII	V	II	04
VII	V	IX	II	03
IX	VII	V	VI	03
V	IX	VII	VI	02
V	II	VII	IX	02
V	VII	IX	II	02
VII	IX	V	II	02
IX	VII	VIII	V	02
IX	VIII	V	VII	02
IX	V	VII	II	01
I	IX	VII	V	01
II	VIII	VII	IX	01
IV	VII	IX	V	01
V	IV	IX	VII	01
V	VII	IX	I	01
V	VIII	VII	IX	01
V	VII	IX	I	01

V	IX	VII	IV	01
VII	V	IX	VI	01
VII	IX	V	I	01
VII	IX	V	VI	01
VIII	IX	VII	V	01
IX	V	VII	VI	01
IX	VII	I	V	01
IX	VII	III	V	01
IX	VII	V	I	02
IX	VII	V	IV	01
			Total	**115**

14. Asok Mitra's Classification: Asok Mitras functional classification involves grouping of seven census categories of workers (excluding the first two) into three broad groups to have major functional types :

a. Manufacturing : includes workers of III, IV, V and VI
b. Trade and Transport : includes workers of VII and VIII
c. Service : includes workers of IX

On the basis of these three broad groups of towns were classified as:
A. Manufacturing Towns – If the proportion of workers in group A is more than the proportion of workers of groups B and C taken together.

B. Trade and Transport Towns –
If the proportion of workers in group B is more than the proportion of workers of groups A and C taken together.
C. Service Towns –
If the proportion of workers in group C is more than the proportion of workers of groups A and B taken together.

The degree of specialisation in each of the three above groups was identified by using Triangular method (Figure 1). The percentages of workers in these three groups are plotted on an equilateral triangle as a point, where the perpendiculars drawn to each of the three sides of the triangle are directly proportional to the percentage of workers in each of the three groups. The point at which the three perpendiculars meet (incentre of the equilateral triangle), is the point where the proportion of workers in all the three groups is equal (1/3rd). Since, the proportion of workers is equal, a city located near the incentre has no functional specialisation. The degree of specialisation, increases as the city is located farther away from the incentre and near the base or the vertices. Three circles were drawn by Asok Mitra at a distance of 6 and 2/3rd, 11 and 2/3rd and 16 and 2/3rd units from the incentre to differentiate four levels of specialisation. The four degrees of specialisation identified by Asok Mitra are:

Table No. 10. Asok Mitra's Classification as reported by Prof. R.Ramachandran
Degree of Specialisation*

Function	FHD	FMD	PFA	PFHA	Total
Manufacturing	19	30	12	30	91
Trade and Transport	22	36	21	8	87
Services	8	15	12	6	41
TOTAL	49	81	45	44	219

*Degree of Specialisaiton: FHD - Function Highly Diversified; FMD - Function Moderately Diversifies;
PFA - Predominant Function Accentuated; PFHA - Predominant Function Highly Accentuated.

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15. Comparative Statement of Asok Mitra's Classification and the Present Classification : The 305 class I cities taken in the present study, are further classified on the basis of degree of specialisation using the triangular method as used by Asok Mitra (Table No.11)

Table No. 11. Comparative Statement of Classification of Class I Cities:

Degree	FHD	FMD	PFA	PFHA	Total
Asok Mitra's	49	81	45	44	219
1991	101	106	39	59	305
2001	183	120	55	64	422

If all the four categories are taken into consideration, it is observed that the largest proportion of cities is in manufacturing followed by Trade and Transport and the service Cities in 1981. In 1991, the largest proportion of cities is in Trade and Transport and the Manufacturing Cities proportion has gone to second place. The position of service cities remained same at third place (Table No. 12). The relative position of cities and specialization changed again in 2001 and manufacturing cities took the leading position. When we analysed the cities with highly accentuated function, it is observed that the manufacturing cities number is continuously increasing, trade and transport cities number is declining and number of service cities first increased more than double and then declined slightly.

Table No. 12. Comparative Statement of Classification of Class I Cities with Degree of Specialisaiton*

Function		FHD		FMD		PFA		PFHA		Total	
		A.M.*	1981	A.M.*	1981	A.M.*	1981	A.M.*	1981	A.M.*	1981
		P.C.*	1991	P.C.*	1991	P.C.*	1991	P.C.*	1991	P.C.*	1991
		P.C.*	2001	P.C.*	2001	P.C.*	2001	P.C.*	2001	P.C.*	2001
Manufacturing	1981		19		30		12		30		91
	1991		29 55		37		13 30		40		119
	2001				37				49		171
Trade and Transport	1981		22		36		21		8		87
	1991		55		51 53		16 14		4 2		126
	2001		87								156
Services	1981		8		15		12		6		41
	1991		17		18		10 11		15		60 95
	2001		41		30				13		
TOTAL	1981		49		81		45		44		219
	1991		101		106		39 55		59		305
	2001		183		120				64		422

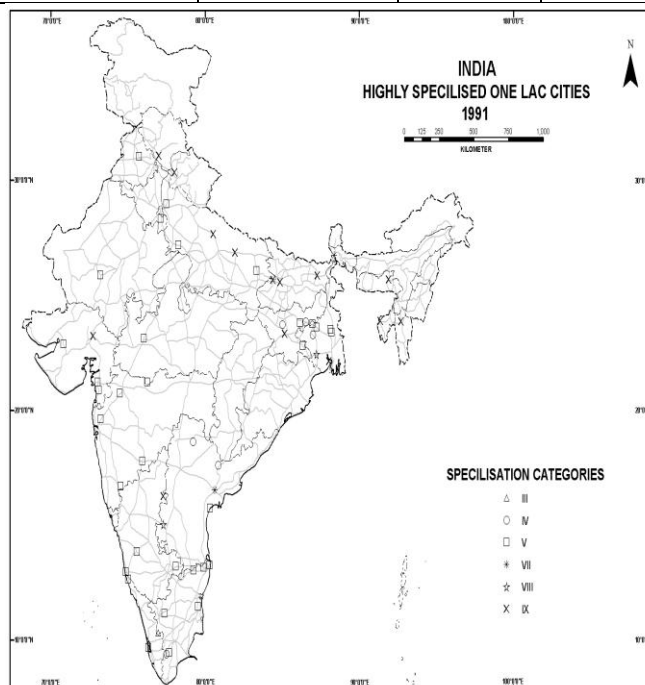| A.M.* =Asok Mitra's	P.C.*= Present Classification

16. Cities with Predominant Function Highly Accentuated were further analysed to find out the specialised function within that group. If the proportion of workers in V is more than the total workers in III and IV taken together, the city is specialised in V (manufacturing other than household industry). If the proportion of workers in IV is more than the total workers in III and V taken together, the city is specialised in IV (household industry). If the proportion of workers in III is more than the total workers in IV and V taken together, the city is specialised in III(table 13).

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Table No 13: List of specialised cities as per their functional economic base

S.No.	Name of City	STATE/UT	POPULATION	COMBI	FUNCTIONS	CENSUS
						Category of
		Specialisation in	Trade and	Transport		Specialisation
1	Guntakal	Andhra Pradesh	107592	4	2879	VIII
2	Vijayawada	Andhra Pradesh	708316	3	897	VII
3	Kharagpur	West Bengal	177989	4	8975	VIII
4	Siliguri	West Bengal	216950	3	798	VII
		Specialisation in	Manufacturing			
5	Chiral	Andhra Pradesh	108467	3	527	V
6	Kothagudam	Andhra Pradesh	102137	3	497	IV
7	Ramagundam	Andhra Pradesh	214384	2	49	IV
8	Bokaro Steel City	Bihar	333683	2	59	V
9	Dhanbad	Bihar	151789	3	497	IV
10	Jamshedpur	Bihar	478950	2	59	V
11	Patratu	Bihar	109822	2	49	IV
12	Morvi	Gujarat	120117	2	57	V
13	Navsari	Gujarat	144249	2	57	V
14	Surat	Gujarat	1505872	2	57	V
15	Faridabad	Haryana	617717	2	59	V
16	Bhadravati	Karnataka	149257	4	5279	V
17	Kolar	Karnataka	156746	4	5497	V
18	Mangalore	Karnataka	281161	3	579	V
19	Cherthala	Kerala	132883	3	579	V
20	Kanhangad	Kerala	118214	4	5279	
21	Burhanpur	Madhya Pradesh	172710	2	57	V
22	Dewas	Madhya Pradesh	164364	3	597	V
23	Bhiwandi	Maharashtra	379070	2	57	V
24	Ichalkarnji	Maharashtra	214950	2	57	V
25	Malegaon	Maharashtra	342595	2	57	V
26	Solapur	Maharashtra	620846	2	59	V
27	Ludhiana	Punjab	1042740	2	57	V
28	Pali	Rajasthan	136842	2	57	V
S.No.	Name of City	STATE/UT	POPULATION	COMBI	FUNCTIONS	CENSUS
						Category of
		Specialisation in	Trade and	Transport		Specialisation
32	Rajapalaiyam	Tamil Nadu	114202	3	527	IV
33	Sivakasi	Tamil Nadu	102175	2	57	V
34	Tiruppur	Tamil Nadu	235661	2	57	V
35	Tiruvottiyur	Tamil Nadu	168642	3	597	V
36	Valparai	Tamil Nadu	106523	2	35	III
37	Firozabad	Uttar Pradesh	261584	2	57	V

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38	Maunath Bhanjan	Uttar Pradesh	136697	2	59	V
39	Modinagar	Uttar Pradesh	101660	2	59	V
40	Asansol	West Bengal	262188	5	57948	V
41	Durgapur	West Bengal	425836	2	59	V
42	Nabadwip	West Bengal	125037	2	57	V
43	Ondal	West Bengal	211670	2	47	IV
44	Santipur	West Bengal	109956	2	57	V
		Specialisation in	Services			
45	Arrah	Bihar	157082	3	973	IX
46	Katihar	Bihar	154367	2	97	IX
47	Patna	Bihar	956417	2	97	IX
48	Purnia	Bihar	114912	3	927	IX
49	Ranchi	Bihar	599306	2	97	IX
50	Gandhinagar	Gujarat	123359	2	95	IX
51	Shimla	Himachal Pradesh	102186	2	97	IX
52	Raichur	Karnataka	170577	2	97	IX
53	Shillong	Meghalaya	131719	2	97	IX
54	Aizawl	Mizoram	155240	2	97	IX
55	Agartala	Tripura	157358	2	97	IX
56	Dehradun	Uttar Pradesh	270159	2	97	IX
57	Faizabad	Uttar Pradesh	124437	2	97	IX
58	Sitapur	Uttar Pradesh	121842	2	97	IX
59	Haldia	West Bengal	100347	3	921	IX

INDIA
HIGHLY SPECILISED ONE LAC CITIES
1991

SPECILISATION CATEGORIES
△ III
○ IV
□ V
✳ VII
☆ VIII
✕ IX

17. Conclusions: The present paper attempts to identify the functional economic base of class I cities of India (1991 and 2001) using Rafiullah's method and specialization using Asok Mitra's triangulation method. On the basis of the exercise the following observations may highlighted :

i) Since none of the class I city is mono-functional it becomes important to classify the cities/towns taking various functions in combination. This would lead to bi-functional, tri-functional cities and so on.

ii) It has been observed that the number of tri-functional cities is more than bi-functional cities, but thereafter, the number declines rapidly with increase in the number of function.

iii) The majority of the class I cities are three or four-functional cities.

iv) It shows that cities are no more mono functional settlements but with the advancement of technology and concentration of population the number of functions increased.

v) The pattern of first function shows that other services are the most significant function followed by manufacturing and trade and commerce.

vi) It shows that the concept of manufacturing and trade and commerce cities is not so visible now. The tertiary activities (other services) are more important in cities than the above two functions.

vii) A small proportion of cities show primary activity as first function including cultivation, Mining and Quarrying and Agricultural Labourer.

viii) It shows that though cultivation and mining and quarrying are non-urban functions, but found at first place in the urban centres. It indicates that these functions need to be included while understanding the functions of cities.

ix) It is very surprising to note that construction is not found as first function in any of the class I city of India. Construction, though considered as secondary activity, the workers engaged in construction may not necessarily be living in the city. Moreover, construction takes place in a city slowly and gradually with the growth of the city.

x) In almost $1/5^{th}$ of the class I cities the predominant function is highly accentuated in 1991, which slightly decreased to $1/7^{th}$ in 2001, so these are called highly specialised class I cities. Two-thirds of these highly specialised cities are manufacturing, one-fourth is services and a very small proportion specialised in trade and transport in 1991. The proportion of highly specialised manufacturing cities increased to more than $3/4^{th}$ in 2001, while the proportion of service cities has slightly declined. This indicates more and more cities in India are specializing in manufacturing as functional economic base.

xi) The specialisation is shown in the initial stages of the cities, as and when the city grows the participation of workforce in other activities also increases slowly and cities become multi-functional.

xii) This is pertinent to mention here, that the traditional method of identifying the function or economic base by using the work force of the city is no more applicable in the modern age of commuting. It has been observed that a large proportion of workers are engaged in different economic activity in a city, but since there are not residents but commuters, they will be accounted in their city of residence. In such condition the real economic base of the function may not be highlighted. We need to take note of the economic activities carried out in a city and the workers engaged in these activities, irrespective of whether they are residents of not. Then only the real picture will emerge.

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