

University of Calcutta

CBCS Syllabus for
Undergraduate Courses in Geography
Semester IV

GEO-A-CC-4-09-P regional Planning and Development Lab 30 Marks



1.Delineation of formal regions by weighted index method

2.Delineation of functional regions by breaking point analysis

3.Measurement of inequality by location quotient

4.Measurement of regional disparity by Sopher Index

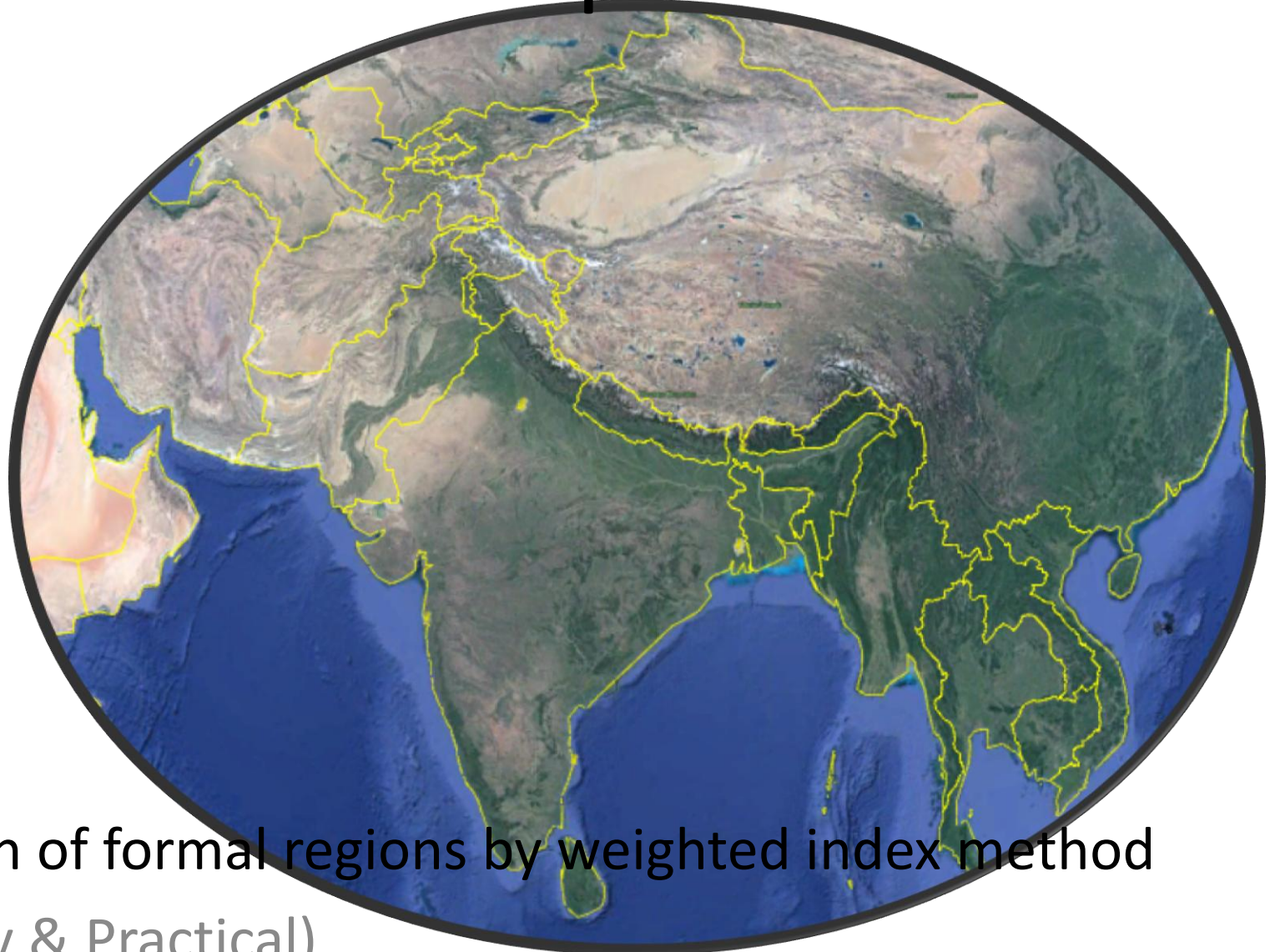
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Regional Planning and Development



Content:

1. Delineation of formal regions by weighted index method
(Both Theory & Practical)

Region & Planning Region

Definition of :

Region

- The term ***region*** is a tract of country or an area characterised in some way thereby implying that region is a spatial entity. **(Chamber's of twentieth century dictionary)**
- “ a region is a supra urban on the one hand, and a sub-area of the nation on the other. ” **(Richardson)**

Planning Region

- According to Keeble, a planning region is an area that is large enough to enable substantial changes in the distribution of population and employment to take place within its boundaries, yet which is small enough for its planning problems to be viewed as a whole.

Region & Its types

A) Regions in Regional Economics

- 1. Homogeneous , Uniform or **Formal regions**.
- 2. Nodal, polarized, heterogeneous, or **functional regions**.
- 3. Planning and Programming Regions.

B) Regions in Multi-level planning

- 1. Macro region
- 2. State region/ Micro region
- 3. Micro region

C) Regions in in the 'stages-of-development' analysis

- 1. Developed Region
- 2. Backward and Depressed Region (Vestigial regions also)
- 3. Neutral and Intermediate Regions.

D) Regions as per the activity status analysis

- 1. Mineral regions
- 2. Manufacturing regions
- 3. Urban and or Congested regions

Formal Regions

Formal or uniform region is a region in which the internal variation of specified criteria (economic, cultural, physical features etc.) is appreciably less than the variation between the region and other areas.

$$\text{i.e., } \frac{\text{External Variation (Between region)}}{\text{Internal Variation (Within region)}} = \text{Minimum}$$

Uniform regions are non overlapping and completely exhaust the space available.

Methods employed for Delineation of formal regions

In identifying formal regions, we consider homogeneity or uniformity on the basis of certain criteria. For example, the economic criterion considers the per capita income level of a formal region. Let us assume that, p and q are two regions with per capita incomes X_p and X_q respectively.

The most simple method is to classify p and q in the same region if $X_p = X_q$. Or, p and q can be considered in the same region if $X_p - X_q$ is small. So, we consider certain definite limits for this purpose such that if $X_p - X_q$ is less than the limit, p and q are included in the same region; if $X_p - X_q$ exceeds the prescribed limit, p and q fall in different regions. The difference between X_p and X_q can be tested to show whether it is significant or not.

If more than one feature is taken into consideration, the following methods are employed:

- **(a) The fixed index method:** Under the fixed index method, a common characteristic feature is chosen, i.e., per capita income, percentage of literacy, etc.
- **(b) The variable index method:** Under the variable index method, variable weights are attached to highlight different levels of activities in different regions.
- **(c) The cluster method:** The cluster method is employed to identify homogenous regions. The clusters are mapped with the help of mapping techniques whereas inter-related variables are mapped with the help of superimposed techniques. The composite ranking of areas is used when the variables are too many and have weak relations. Economists and geographers such as Ashok Mitra, Schwartzberg, M.J. Hagood and M.N. Pal popularised different methods to delineate regions.

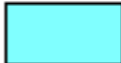




Fixed Index Method:

Under the fixed index method, a number of characteristics common to regions are chosen. (E.g. population, density, per capita income, unemployment, rate of industrialization) An arbitrary weight is given to each index and a single weighted mean is obtained for each region, then contiguous regions with similar indices are grouped together in order to minimize the variance within the group.

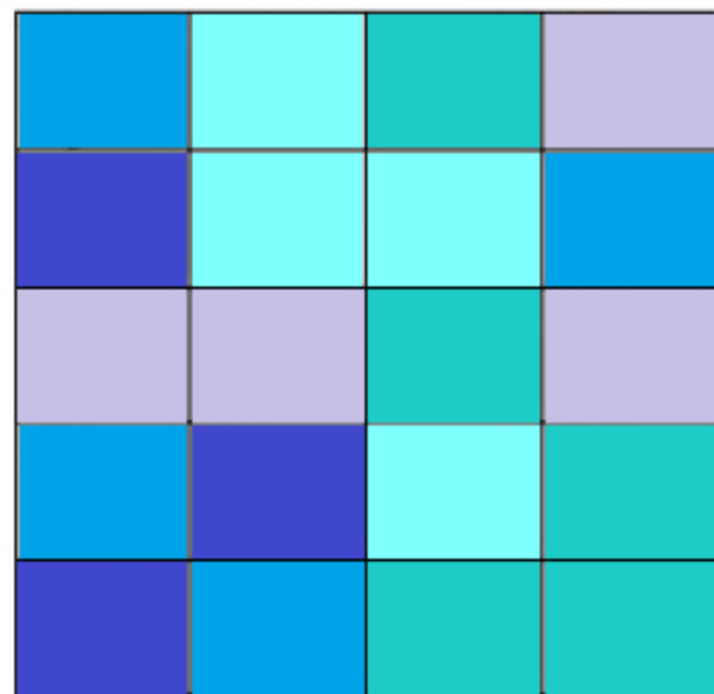
Boudeville outlined it in simple manner. After considering the variables of study area with different localities, weight is given as per the degree of variable to each locality.

Localities with weighted criteria are categorized based on a statistical variation test. Up to the considerable limit like +1 or -1 standard deviation, localities with similar deviation can be grouped into a single region. Please see the example -

a 3800	b 600	c 1800	d 2300
e 4600	f 950	g 756	h 3200
i 2600	j 2100	k 1500	l 2000
m 3100	n 4600	o 300	p 1600
q 4100	r 3300	s 1100	t 1229

Classes		
	= <1000	b, f, g, o
	=1000 - 2000	c, k, p, s, t
	=2000 - 3000	d, i, j, l
	=3000 - 4000	a, h, m, r
	=>4000	e, n, q

Population of Regions		
a) 3800	h) 3200	o) 300
b) 600	l) 2600	p) 1600
c) 1800	j) 2100	q) 4100
d) 2300	k) 1500	r) 3300
e) 4600	l) 2000	s) 1100
f) 950	m) 3100	t) 1229
g) 756	n) 4600	



Delineation of formal regions by weighted index method as per Boudeville

