

Residential Segregation of Religious Groups in India

IN human ecology, "segregation has traditionally been defined as the clustering or sorting out of land uses and population groups as resistance to the introduction of disharmonious type of land use or population group". (Breese, G., 1966 : 110-111). Residential segregation of population groups can occur with reference to several factors, among which racial and religious differences appear to be strong forces. The influence of racial factors in promoting residential segregation is well studied. But studies identifying religion as a dividing force in the residential pattern are few (Toney, M. B., 1973). Although residential isolation of the religious groups of India is not disputed, the extent and pattern of segregation has not been studied. It is known that any Indian village is dominated by a single sect indicating the prevalence of high segregation. A study of the distribution of the religious groups in the different States of India (Ramakumar, R., 1975) showed higher concentration of certain groups in particular States which could result in residential segregation. The figures of the Census Reports suggest that it is possible to expect this pattern at the district level also.

Against this background several questions can be posed - Does religious segregation exist in all the States of India to the same degree? Is the intensity of segregation same for all geographical regions? Will the predominance of a particular religious group within a State tend to isolate other groups? Are there changes in the pattern of residential segregation between 1961 and 1971?

Is there any indication of progressive desegregation consequent to modernising factors like urbanisation?

This paper attempts to analyse data on religious distribution available for the Census years 1961 and 1971 to provide answers to the above questions.

Measurement of Segregation

The index used by Karl Taeuber (Taeuber, K. and A. Taeuber, 1966) for his study of Negro-white segregation in the United States is used here. The index is defined as

$$S = \frac{1}{2} \sum | p_i - p'_i |$$

where p_z is the proportion of persons of a particular group in the z-th areal unit to its total in the State and p'_z is the proportion of the rest in the same unit, so that $\sum p_i = \sum p'_i = 1$. The index S is zero if all $p_i = p'_i$ i.e., when the distribution of the two groups is identical over all the areal units. The index can attain a maximum of 1, when the groups are so distributed that any unit contains only one of the two groups, i.e., when there is perfect segregation. (The index will range between 0 and 100, if percentage distribution is used.) The measure is an index of dissimilarity and so its values suggest the extent to which a particular group has to be redistributed so as to eliminate residential isolation.

Four religious groups are considered in this study. They are the Hindus, Muslims, Christians and the 'Rest' which consists of all the other minority religious groups. The grouping of all others as 'Rest' overcomes the problem of small groups which could bias the index. To facilitate the calculation of the index the four-group-situation is adapted as Hindu-non-Hindu segregation, Muslim-non-Muslim, etc.

There is no objective criterion by which one can classify a score value as high or as low. Values above 70 or 80 are considered as high when the areal units are small like city blocks or villages. But when the areal units are large population composition of the units approximates to the overall average, in which case, score values can be expected to be close to zero. Since districts, which invariably comprise of large areas, are the units of this study, values above 25 can arbitrarily be assumed as indicating high segregation. Values

below 10 percent can be considered as due to chance variation that may exist even when there is good intermixing of the groups.

Data

The published statistics of the Census of India, 1961 and 1971 [2, 3] on the distribution of religious groups of India, are used in this study. The smallest areal unit for which required data are available, is the district and so segregation scores for the States are calculated using population distribution at the district level.

Segregation Scores of Minorities

The aim of the study is to detect unevenness of distribution and so the size of a group need not concern us unduly unless it is less than a few thousands within a State. Such instances are few. However, in this section, we investigate the relationship between segregation score values (given in Table I) and the proportion of the group in the State, in order to ascertain whether or not the score values get exaggerated in the case of small groups. The correlation coefficients between the two variables for the four religious groups for 1961 and 1971 are presented in Table 2. Of the eight possible correlation coefficients, only three are statistically significant at 0.05 level of probability and one value is close to that level of significance. The correlation coefficients are not negative in all cases which should have been the case if smallness of size enhanced segregation. The results show that relatively small size of a group in a State need not necessarily mean an upward bias of the segregation index value.

Of particular interest for us here are the Christians and the 'Rest' who form very small proportions in several States. Yet the correlation coefficients observed in all cases, except for the Christians in 1961, suggest that residential segregation is not affected to any significant degree by the size of the groups. A similar finding for the majority group—the Hindus—substantiates the above inference.

The most significant finding from Table 2 which helps to reject the nature of the bias suspected in the index is the statistically significant positive correlation noticed in the case of Muslims who form minority groups in many States. In fact the finding has brought out a different pattern of residence behaviour among the Muslims. Positive correlation between segregation and proportion

TABLE 1—SEGREGATION SCORES FOR THE DIFFERENT RELIGIOUS GROUPS OF THE STATES OF INDIA, 1961 AND 1971 AND THE DIFFERENCE IN THE VALUES WHERE COMPARABLE

<i>State</i>	<i>Year and Difference</i>	<i>Religious Groups</i>			
		<i>Hindus</i>	<i>Muslims</i>	<i>Christians</i>	<i>Rest</i>
(1)	(2)	(3)	(4)	(5)	(6)
Andhra Pradesh	1961	29.95	31.20	40.72	53.46
	1971	29.41	31.64	41.96	52.33
	Diff	-0.54	+0.44	+ 1.24	- 1.13
Assam	1961	36.57	41.01	62.11	74.37
	1961*	30.82	36.38	31.06	41.29
	1971	33.43	39.38	48.39	39.27
	Diff.	+ 2.61	+ 3.00	+ 17.33	-2.02
Bihar	1961	24.68	19.88	77.35	81.33
	1971	25.01	19.90	73.52	80.32
	Diff.	+0.33	+0.02	-3.83	-1.01
Gujarat	1961	17.55	17.28	45.60	32.34
	1971	16.91	16.31	43.91	30.16
	Diff.	-0.64	-0.97	-1.69	-2.18
Jammu and Kashmir	1961	70.36	69.05	58.56	57.49
	1971	71.20	69.52	53.05	52.11
	Diff.	+0.84	+ 0.47	-5.51	-5.38
Kerala	1961	17.09	37.40	39.04	36.54
	1971	19.71	35.91	37.06	43.08
	Diff.	+ 2.62	-1.49	-1.98	+6.54
Madhya Pradesh	1961	29.40	34.15	51.05	36.04
	1971	28.51	33.71	52.70	33.56
	Diff.	-0.89	-0.44	+ 1.65	-2.48
Tamil Nadu	1961	23.68	18.25	33.38	39.79
	1971	22.41	17.12	30.57	48.22
	Diff.	-1.27	-1.13	-2.81	+8.43
Maharashtra	1961	19.17	20.89	55.03	22.37
	1971	20.45	20.81	54.49	23.51
	Diff.	+ 1.28	-0.08	-0.54	+ 1.14

Table 1 (contd. on page 98)

Table 1 (contd. from page 97)

(1)	(2)	(3)	(4)	(5)	(6)
Mysore	1961	15.62	15.66	44.84	54.28
	1971	14.68	15.13	43.68	41.27
	Diff.	-0.94	-0.53	-1.16	-13.01
Orissa	1961	34.05	45.33	61.39	36.37
	1971	29.80	42.50	57.82	72.17
	Diff.	-4.25	-2.83	-3.57	+ 35.80
Rajasthan	1961	16.93	19.38	46.31	35.42
	1971	14.92	18.18	41.89	34.17
	Diff.	-2.01	-1.20	-4.42	-1.25
Uttar Pradesh	1961	26.96	26.88	44.83	55.23
	1971	26.29	26.31	38.59	57.33
	Diff.	-0.67	-0.57	-6.24	+ 2.10
West Bengal	1961	29.52	32.83	46.75	64.33
	1971	26.81	30.66	42.50	57.51
	Diff.	-2.71	-2.17	-4.25	-6.82
Nagaland	1961	44.97	46.48	45.14	41.68
	1971	32.23	29.53	32.08	36.12
	Diff.	-12.74	-16.95	-13.06	-5.56
Goa, Daman and Diu	1961	5.63	15.77	7.39	19.13
	1971	7.04	11.00	9.42	8.73
	Diff.	+ 1.41	-4.77	+ 2.03	-10.40
Himachal Pradesh**	1961	38.16	43.67	32.60	34.37
	1971	33.54	38.43	37.72	35.88
Punjab**	1961	46.98	61.04	57.06	49.82
	1971	22.43	51.24	50.25	22.55
Manipur	1971	58.81	30.02	76.25	25.06
Arunachal Pradesh	1971	26.48	27.86	27.62	26.70
Meghalaya	1971	1.63	44.19	10.04	5.06
Tripura	1971	19.59	11.26	47.65	48.27
Haryana	1971	28.38	59.20	27.94	41.93
Pondicherry	1971	19.28	42.45	5.39	7.91

¹Adjusted to correspond to 1971 area.

**Not comparable areas.

of the group in the State suggests the tendency of Muslims to isolate themselves more in those States where they are in large numbers than in States where they are in smaller proportions.

TABLE 2—CORRELATION BETWEEN SEGREGATION SCORES AND THE PROPORTION OF THE GROUP IN THE STATE, 1961 AND 1971

<i>Year</i>	<i>No. of States</i>	<i>Hindus</i>	<i>Muslims</i>	<i>Christians</i>	<i>Rest</i>
1961	18	-0.522*	+0.462S	-0.471*	-0.002
1971	24	-0.165	+0.418*	-0.354	-0.362

•Statistically significant from zero at 5% level of probability.
 S5% significant value will be 0.468.

The suitability of the index to study religious segregation in India is, therefore, established.

Segregation in the States

The segregation values for the four religious groups in the various States of India in 1961 and in 1971 are presented in Table 1. Significantly high segregation values, wide variation among the States and religious groups and negligible differences in the index values between 1961 and 1971 are revealed. The areal units considered for the calculation of residential segregation are districts which being extensive in area, should ordinarily contain large sections of all groups. High segregation values for any group, therefore, clearly establish the concentration of that group within a few districts of the State. Accordingly, Hindus formed the least segregated group in 1961, followed by Muslims, Christians and the 'Rest' in that order. In 1971, the order changed only between Christians and the 'Rest'—the maximum segregated group being the Christians.

The Hindu-non-Hindu isolation, in 1961, was lowest in Goa (5.63) and highest in Jammu and Kashmir (70.36). In 1971, the situation remained more or less the same except that the lowest value was observed in the State of Meghalaya (1.63). The maximum value in Jammu and Kashmir, however, rose to 71.20. The Muslim-non-Muslim segregation was also the highest in Jammu and Kashmir both in 1961 and in 1971 (69.05 and 69.52). The lowest segregation score in the case of Muslims was observed in Mysore (15.66) in

1961 and in Goa (11.00) in 1971. Christian-non-Christian segregation remained highest in Bihar in 1961 (77.35) as well as in 1971 (73.52). In 1961, the lowest value was in Goa (7.39) and in 1971, Pondichery had only 5.39 per cent Christian segregation.

Segregation scores in the case of the 'Rest' cannot be interpreted as for other groups because it is a combination of several religious groups which are majority groups in certain States (like the Sikhs in the Punjab and an unspecified group in Arunachal Pradesh), while many others are insignificant groups often confined to a few districts of certain States. If the exceptions which are few, are overlooked, then the maximum segregation of the set of minority groups is found in Bihar in 1961 (81.33) and continues to be so in 1971 (80.32). The lowest value, in 1961, is in Goa (19.13) while in 1971, Meghalaya with a value of 5.06 becomes the State with the least segregation of the 'Rest'.

The wide variation in the segregation scores of the four religious groups in the different States of India shows that intermingling of religious groups is very limited in many States. (An analysis of variance test confirmed the statistical significance of the differences). It is surprising that in spite of being a distinctively majority community, Hindus have tended to cluster together into a few districts in many of the States. This segregation will ordinarily be viewed as resistance put up by them against the entry of other groups into their residential area. The same explanation holds for the Muslim-non-Muslim segregation, score being high in Jammu and Kashmir. But the high scores of Christians and the 'Rest' could be viewed as due to the difficulty they encounter in effecting entry into the districts where other religious groups dominate in size. The high segregation values noticed in the case of all religious groups studied here indicate that there has not been significant internal movement of population within most of the States. The age-old pattern of habitat appears to have been maintained.

The distribution of States according to the segregation scores and the overall mean values are presented in Table 3. The frequency distribution shows that Hindu-non-Hindu segregation is generally lower than other types. Muslim segregation, though slightly higher than that of the Hindus, does not have a significantly different distribution. The distributions corresponding to the Christians and the 'Rest' are similar but are divergent from those of the Hindus and Muslims.

TABLE 3—DISTRIBUTION OF THE STATES ACCORDING TO THE
SEGREGATION SCORES OF THE FOUR RELIGIOUS GROUPS
IN 1961 AND 1971 AND THE MEAN VALUES

<i>Segregation Scores</i>	<i>Hindus</i>		<i>Muslims</i>		<i>Christians</i>		<i>Rest</i>	
	<i>1961</i>	<i>1971</i>	<i>1961</i>	<i>1971</i>	<i>1961</i>	<i>1971</i>	<i>1961</i>	<i>1971</i>
less than 10	1	2	—	—	1	2	—	3
10-19	5	6	6	7	—	1	1	—
20-29	6	11	2	4	—	2	1	4
30-39	3	3	4	7	3	5	7	6
40-49	2	—	4	3	7	7	2	5
50-59	—	1	—	2	4	5	4	4
60-69	—	—	2	1	2	—	1	—
70-79	1	1	—	—	1	2	1	1
80-89	—	—	—	—	—	—	1	1
Total	18	24	18	24	18	24	18	24
Mean score	29.29	26.21	33.11	31.76	45.61	41.02	45.80	38.47

The mean values given above show that residential segregation is not an insignificant feature of the human ecology of India. All the mean score values are above 25 percent and only in a very few cases the score is less than 10 percent. On the basis of the mean values it is possible to state that there is limited decrease in segregation between 1961 and 1971. The improvement towards desegregation is least in the case of Muslims and maximum in the case of 'Rest'. The results presented in Table 1 enable the comparison of the scores in the case of 16 States (including Assam where area of 1961 was adjusted to agree with 1971 area). It would appear that in 10 States, Hindu segregation scores have decreased. There are 12 States each in the case of Muslims and Christians and 11 States in the case of 'Rest', where some improvement in segregation is registered. But a closer study of the differences indicate that, in general, the improvements are only marginal except in the case of 'Rest-non-Rest' segregation in Mysore and Orissa. Nagaland is a notable exception. Here the improvement in the scores is seen for all the groups. The reasons for this can be understood only if investigation is made regarding the extent

to which the re-organisation of the North-eastern region of India has affected the distribution of population, which is beyond the scope of this paper.

Segregation within Taxonomical Groups

Distribution of the religious groups within the States of India are not identical. Ramakumar (1975) investigated these differences and grouped States that were similar in their religious composition. The taxonomical groups varied in their extent of dominance of the various religious groups. This grouping is useful to study the effect of dominance on segregation.

From the 1971 Census results 7 taxonomical groups were identified. The mean segregation scores for each of the taxonomical groups are given in Table 4. Group VII is not included because segregation score for Laccadives,

TABLE 4—MEAN SEGREGATION SCORES OF RELIGIOUS GROUPS WITHIN TAXONOMICAL GROUPS, 1971

<i>Taxonomical Groups</i>	<i>Hindus-</i>	<i>Muslims</i>	<i>Christians</i>	<i>Rest</i>
I. Orissa, Himachal Pradesh, Haryana, Maharashtra, Gujarat, Rajasthan Tripura, M. P.	24.01	30.05	45.51	39.96
II. Andhra Pradesh, Tamil Nadu Pondicherry	23.70	30.40	25.97	36.75
III. Bihar, Mysore, U. P., West Bengal, Assam	25.24	26.28	49.34	55.14
IV. Kerala, Manipur, Goa	28.52	25.64	40.91	25.62
V. Punjab, Arunachal Pradesh	24.46	39.55	38.94	24.63
VI. Meghalaya, Nagaland	16.93	36.86	21.06	20.59
VII. Jammu and Kashmir	71.20	69.52	53.07	52.11
All	26.21	31.76	41.02	38.47

which is the only State other than Jammu and Kashmir in the group, could not be calculated for lack of data. Further we have seen earlier that Jammu and Kashmir stands out as an exception with regard to residential segregation. In all other groups we find that Hindu segregation is low, whatever be the religious composition of the groups. Group IV consists of the States of Kerala,

Manipur and Goa which have nearly 60 percent of their population as Hindus and about 20 to 30 percent as Christians. Yet, in this group segregation scores are high for Hindus and Christians and low for Muslims and the 'Rest'. In the dominated groups I, II and III, Muslim segregation scores are below the national average, Group V consists of States where Christians and Muslims are in majority. In this group Muslims and Christians are segregated more and Hindus, the least. The above comparison makes it clear that there does not exist any definite pattern in the differences, like for example, Muslims being segregated more in the Hindu dominated group of States than in those where other religious groups are larger in size. In sum, it would appear that particular religious composition of States has not considerably influenced segregation in one direction or other. This finding is similar to the one we had when proportion of the religious groups in a State was compared with the corresponding segregation scores.

Segregation within Geographical Regions

Whether or not, residential segregation differs from one geographical region to another is further investigated. In Table 5, the mean segregation scores within the geographical regions are presented. Six regions namely, South, West, Central, North, East and North-East are identified. The differences in segre-

TABLE 5—MEAN SEGREGATION SCORES OF RELIGIOUS GROUPS WITHIN GEOGRAPHICAL REGIONS, 1971

<i>Regions</i>	<i>Hindus</i>	<i>Muslims</i>	<i>Christians</i>	<i>Rest</i>
<i>South</i> (Andhra Pradesh, Tamil Nadu, Pondicherry, Mysore, Kerala, Goa)	18.75	25.54	28.01	33.59
<i>West</i> (Gujarat, Rajasthan, Haryana, Punjab)	20.66	36.23	40.99	32.20
<i>Central</i> (Maharashtra, Madhya Pradesh)	24.48	27.26	53.60	28.54
<i>North</i> (Uttar Pradesh, Himachal Pradesh—excluding J. & K.)	29.92	32.37	38.16	46.61
<i>East</i> (Bihar, West Bengal, Orissa)	27.21	31.02	57.95	70.00
<i>North East</i> (Tripura, Manipur, Assam, Nagaland, Meghalaya, Arunachal P.)	28.69	30.37	40.34	30.08
<i>*North</i> (including J. & K.)	43.68	44.75	43.12	48.44

gation scores are statistically significant (according to analysis of variance test) among the regions with Southern region having the least and the Eastern and Northern Regions having the highest values. Segregation scores of Hindus, Muslims and Christians are least in the South. Hindu segregation is the highest in the North even when Jammu and Kashmir is excluded. Muslim segregation scores are highest when Jammu and Kashmir is included and without that State, the West has the high score average. Christians and the 'Rest' are segregated to a maximum in the East. In general, as well as religion-wise, segregation is less in the Southern States. Surprisingly, the North-eastern Region where high segregation should have prevailed due to poor communication facilities, has in fact, lower values than in some other regions of India that are better developed. Whether the inter-regional differences noticed are due to the varying levels of economic development, educational attainment or modernisation needs separate investigation.

Inter-Group Correlations

It is not the purpose of this paper to relate residential segregation with religious tolerance. But it would be appropriate to answer the natural question as to whether the high segregation of a particular group tends to promote isolation of other groups. The question can be answered through a study of the inter-correlations between the segregation scores of different religious groups. The correlation coefficients are presented in Table 6. From the table

TABLE 6—INTER CORRELATIONS OF THE SEGREGATION SCORES OF THE FOUR RELIGIOUS GROUPS 1961 AND 1971

	1971 (<i>n</i> = 18)			1971 (<i>n</i> = 24)		
	<i>Muslims</i>	<i>Christians</i>	<i>Rest</i>	<i>Muslims</i>	<i>Christians</i>	<i>Rest</i>
Hindus	0.910	0.458	0.367	0.506	0.541	0.319
Muslims		0.253	0.203		-0.034	-0.005
Christians			0.595			0.571

it is evident that high segregation scores of Hindus are associated with high scores of Muslims and of Christians but not significantly with the 'Rest'. On the other hand Muslim segregation scores do not show any significant relationship with those of Christians and the 'Rest'. But Christian segregation is positively related with the 'Rest'. This latter phenomenon could be due to the

fact that there are only a few States where both Christians and the 'Rest' form significant proportions together. The significant inter-correlations clearly establish that mutual isolation among the religious groups is a common feature of the residence pattern.

Segregation and Urbanisation

It was shown earlier that there has not been any significant improvement in segregation between 1961 and 1971 which is an indication of the persistence of the age-old habitat formation. It is not easy to identify all the causes of religious segregation. Apart from the several historical reasons, there could be many socio-economic, demographic and cultural dimensions to the phenomena. The explanation that there has not been strong motivating forces to generate substantial volume of internal migration is trivial, but indicates the kind of action to be taken to bring about religious desegregation. Economic development and consequent urbanisation are driving forces that not only create population mobility but also brings about social and cultural changes, that can reduce the importance of religion. In what follows we shall investigate the concomitant relation urbanisation has with segregation.

The correlations between segregation scores and the level of urbanisation (measured as that proportion of a religious group which resides in urban areas) are given in Table 7. All the correlations except one, are found to be statis-

TABLE 7—CORRELATION BETWEEN SEGREGATION SCORES AND LEVEL OF URBANISATION OF RELIGIOUS GROUPS

<i>Year</i>	<i>No. of States</i>	<i>Hindus</i>	<i>Muslims</i>	<i>Christians</i>	<i>Rest</i>
1961	18	0.031	-0.448	-0.028	-0.470
1971	24	-0.205	-0.390	-0.184	-0.299

tically not different from zero at 0.05 level of probability, making it difficult to arrive at any definite conclusion on the impact of urbanisation on residential segregation. The negative direction of the coefficients, however, seem to support the hypothesis that greater urbanisation reduces segregation. The low values of the correlation coefficients could be due to the low levels of urba-

nisation and the practically negligible variation observed from State to State for all the religious groups.

Conclusion

This paper suggests that residential segregation at a considerably high level exists within the States of India—some States coming close to perfect segregation. Though it is well known that villages of India are examples of residential concentrations of single sects, it was not known before that even districts were dominated by single communities. This kind of segregation at the district level within a State could create several administrative problems especially when it comes to welfare allocation.

Further it appears that religious groups tend to isolate themselves mutually, suggesting a certain degree of intolerance. There is a tendency for the major communities to resist the entry of minorities into their midst. The Muslims have exhibited this tendency in a stronger measure wherever they were in large numbers. But an encouraging aspect of residential segregation was that minorities were not segregated due to the smallness of their numbers although the majority communities appear to have dominated over the smaller groups in the choice of the residential areas.

Classification of States by religious composition did not exhibit any pattern of segregated living. Regional classification, however, differentiated the States: the Southern States showing the least segregation. The limited changes in the level of segregation over the decade, 1961 to 1971, indicated that age-old pattern of habitat has not been changing as rapidly as it should. Also, urbanisation does not have a significant impact on segregation, perhaps, because of the low levels of urbanisation itself. But the results suggest that increase in urbanisation would tend to reduce residential segregation.

Evidently, residential segregation of the religious groups is a feature of the human settlement in India. The kind of segregation observed could be detrimental to the aims of a secular State. If the present state of segregation continues inter-religious rivalry may persist for a long period. Urgent measures to generate mobility of population from district to district, therefore appear to be more important than movement from State to State.

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