RETAIL TRADE IN A DISPERSED CITY

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Introduction

Early work in the field of central place theory by Christaller (1933) suggested an idealized pattern of urban settlements regularly spaced in a nested hierarchy and surrounded by hexagonal tributary areas. Since that time, many other students have demonstrated the existence of a hierarchy in various parts of Europe and North America. More recently, Berry and Garrison (1958b) have shown that the concept of a threshold and the range of a good can be used to liberate theory from assumptions about even distribution of population and purchasing power over uniform topography.

It does not necessarily follow, however, that an urban hierarchy always exists. It may be, for example, that as accessibility increases, the normal hierarchy collapses and is replaced by some modified pattern. Alternatively, the hierarchy may not have an opportunity in which to develop.

Purpose

The politically discrete cities of southern Illinois have been previously referred to as a dispersed city by Beimfohr (1953), although the urbanized areas are separated in some cases by tracts of agricultural land. It is the purpose of this paper to present some aspects of the retail trade of the area and to test the hypothesis that the area functions as a single city, rather than as a number of discrete cities. From this it will be inferred that spatial propinquity is a factor tending to prevent the emergence of hierarchical patterns. The study will also try to cast some light on the nature of dispersed urban agglomerations with respect to retail trade, and to suggest a way in which these may be expected to differ from strongly nucleated urban areas.

Definitions

On the basis of traffic flow and population density the area was delimited along county lines, and includes Perry, Franklin, Jackson, and Williamson counties (Fig. 1). Within these counties lies the urban core, which is composed of 14 major centers ranging in population size from more than 11,000 to less than 2,000 persons. It is these centers which would normally be expected to be arranged in a hierarchy, but, as will be seen shortly, they are not so arranged.

Beyond this urban core lies a less densely populated area, forming a situation which is taken to correspond to that of a city surrounded by its metropolitan county area. The structure of this city (as defined in Fig. 1) includes 14 major retail shopping centers located in the scattered urban centers, none of which is clearly dominant over the remainder. One important distinction between this city and another city of comparable size is therefore immediately apparent. There is no equivalent of a "downtown" shopping district.

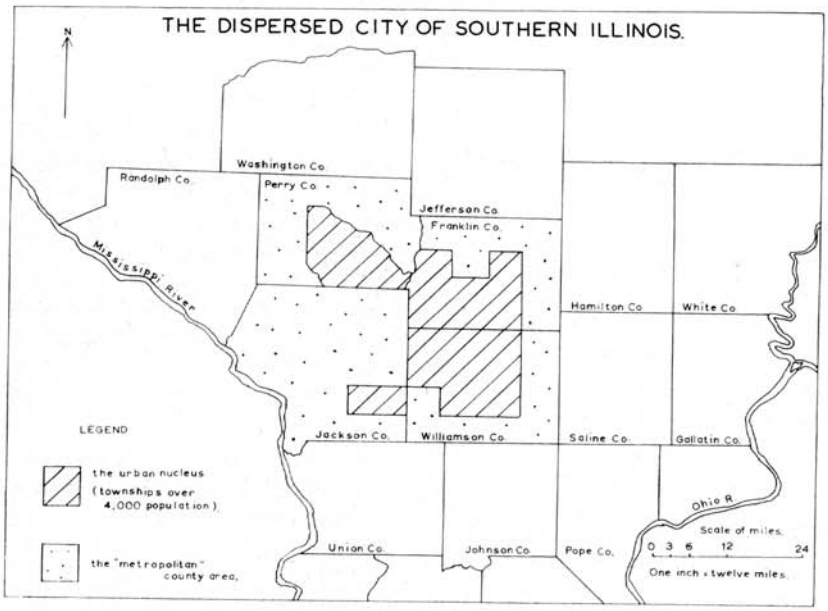

Figure 1.

The Rank-Size Rule

The unity of the dispersed city of southern Illinois is indicated by application of the Zipf rank-size rule, which has been shown to be generally valid for areas within the United States (for example, the state of Washington), as well as for the whole country. When the dispersed city of southern Illinois is placed in the rank-size curve for Illinois, a closer approximation to the ideal curve results.

Retail Trade per Capita

On the basis of previously formulated central place theory, it is known that smaller cities attract more trade from beyond their own limits, in relation to their size, than is the case in larger cities. This is one aspect of the variation of the basic-nonbasic ratio. It is to be expected therefore that, if the dispersed city of southern Illinois operates as a single city, it will have a relatively low value of retail trade per capita in common with cities of its size class. Data collected for 1955 (Sales Management) for the 30 cities in the United States of most similar size to the total population of the dispersed city, 157,000, (the 15 next smaller and the 15 next larger) demonstrate that in fact the dispersed city has an even lower value of retail trade per capita than all except three of those cities, and that it falls just within two standard deviations below the mean of their distribution.

As a confirmation of this information, the dispersed city was compared with five other cities, also created synthetically, this time by the cumu-

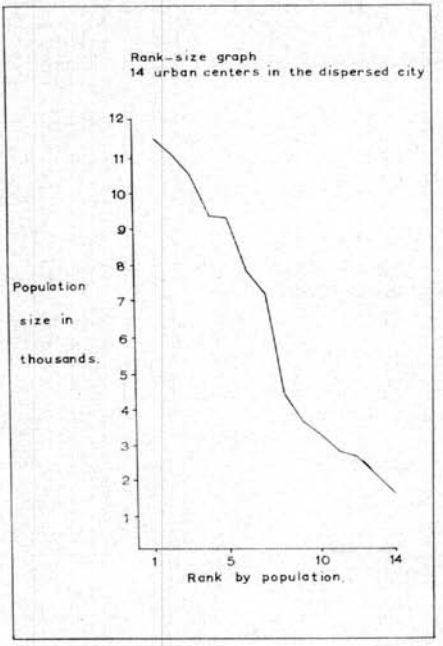

Figure 2.

lation of repetitive random samples from all cities in each synthetic city. The values of retail trade per capita, in this case, are much higher than the values for the dispersed city, which lies well outside two standard deviations from the mean of their distribution. This confirms that the cumulation of data for the southern Illinois centers, into one figure for a single dispersed city, is unlikely to have revealed by chance such low retail trade values per capita.

Percentage Sales Index

Certain assumptions involved in the fore-going paragraph, however, are not strictly valid. For example, the purchasing power of all persons is not equal, and secondly, given equal purchasing power varying amounts will be spent on retail purchases. An attempt in the direction of meeting the first objection is to consider the relationship of retail sales volume to effective buying income (E. B. I.). By calculating the former as a percentage of the latter, an index is obtained which is partly a measure of the amount of income spent on retail purchases and partly a measure of purchases made by non-residents and, therefore, of centrality.

When the index for the dispersed city is compared with the distribution of values for the 30 cities of similar size referred to above, it falls within one standard deviation of the mean, again suggesting a confirmation of the characteristics of a single large city. The second objection remains valid, that percentage of income spent on retail purchases varies from person to person and

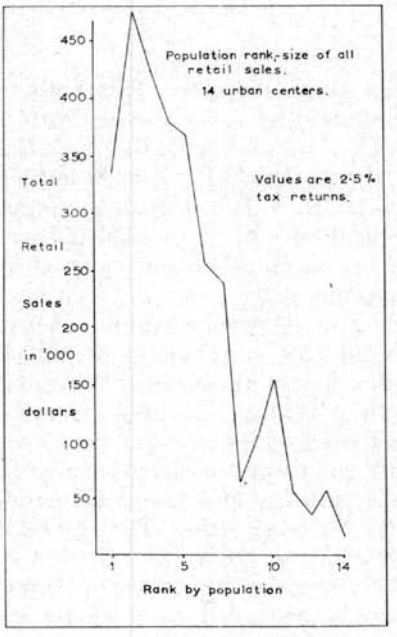

Figure 3.

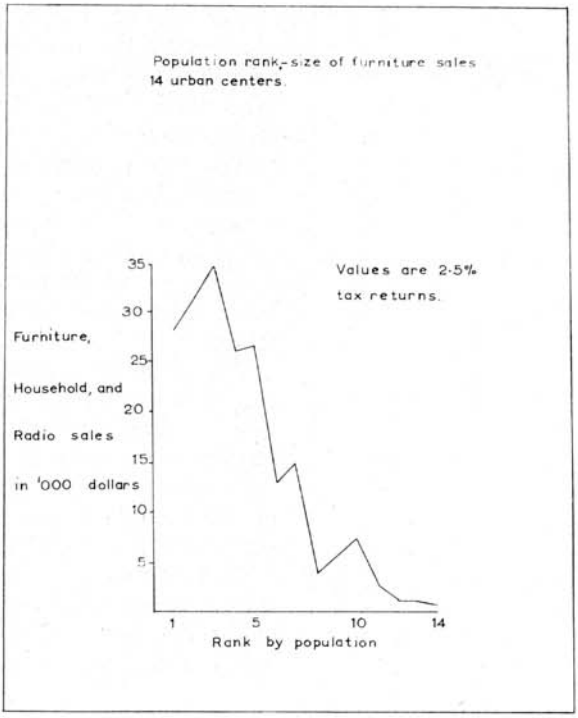

Figure 4.

from place to place. This factor is minimized by a comparison with all 66 cities of similar E. B. I. (E. B. I. of the dispered city is $193 million; similar E. B. I. is defined as ranging from $150 million to $250 million), on the assumption that expenditure on retail purchases will vary much less in each income group. The dispersed city is found to exhibit an index close to the mean of this group.

In conclusion it may be stated that evidence concerning the overall pattern of retail sales in this area has been gathered and compared against data for other cities. The results do not disprove the hypothesis that the discrete cities of southern Illinois may be regarded as a single dispersed city.

Internal Trade Patterns

It is now reasonable to question if the pattern of retail trade within the dispersed city corroborates data already discussed. The population rank-size graph for the 14 largest urban centers within the dispersed city (Fig. 2) assumes remarkably different form when population is replaced by value of retail sales. The second, third, fourth, and fifth urban centers in population rank all have a larger value of trade than the first center, West Frankfort (Fig. 3). The latter center, on the other hand, does have larger sales of furniture, household and radio goods than centers four and five (Fig. 4). Sales of general merchandise show an even more unusual pattern (Fig.

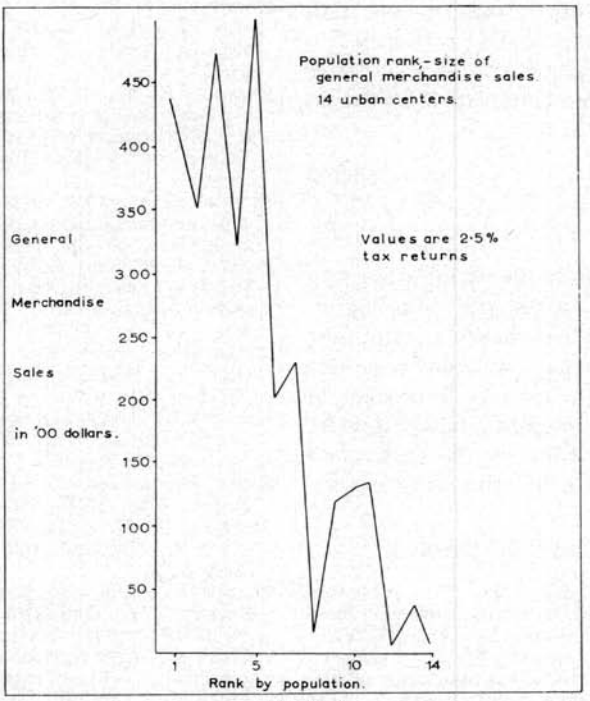

Figure 5.

5), centers two and four being much lower than centers one, three, and five. This evidence points strongly to a marked degree of local specialization in various types of retail trade among the different centers.

It seems clear that from the view point of retail trade these urban centers are not arranged in a hierarchical pattern, possibly because their very proximity to each other in an area of some 157,000 people has served to encourage local specialization rather than the domination of any one of them.

External Trade Patterns

The foregoing conclusions raise the question of the importance of a highly concentrated "downtown" shopping district. Information gathered in the dispersed city suggests that local specialization among the various centers does not completely replace the attraction of downtown shopping districts. For example, a study, by the Trades and Services Committee (1957), made in West Frankfort, the largest of the urban centers in the dispersed city, indicated that of a random sample of inhabitants interviewed 68% reported habitual purchases outside of West Frankfort. Of these, 81% reported the "outside place" to be another urban center in southern Illinois, thus demonstrating a general willingness to travel within the dispersed city to shop, a conclusion which might well have been predicted on the basis of the above anal-

ysis. It is interesting to note that the remaining 18.5% reported habitual purchases outside southern Illinois, these being distributed as follows:

St. Louis	14.1%
Chicago	2.5%
Evansville	1.9%

On the reasonable assumption that 18.5% is an unusually high figure for habitual purchases outside the city of residence, we may conclude that this dispersed city loses some of its trade to outside competitors by virtue of its lack of the equivalent of a "downtown" shopping center.

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