# SHOPPING CENTER LOCATION AND RETAIL STORE MIX IN METROPOLITAN AREAS

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*Abstract*—Retail sales in 1963 in 116 Standard Metropolitan Statistical Areas (SMSA's) are related to SMSA size in 1960. Nucleated sales occur in the Central Business District (CBD) and in Major Retail Centers (MRC's). As SMSA's grow, the proportion of sales in MRC's increases and that in the CBD decreases. The ratio of nucleated sales to dispersed sales remains constant. The laws of economic location operate to place shopping goods primarily in the CBD and in MRC's whereas convenience and other types of stores disperse throughout the SMSA. Plotting the straight line distance of every MRC relative to the CBD and computing the mix of trade types in MRC's reveals that, with some modifications, most MRC's have a mix of store types similar to the CBD. Convenience stores are somewhat more important and all other stores less so than they are in the CBD. The findings support the Harris-Ullman multiple nuclei hypothesis.

The shopping trip is second only to the journey to work as a crucial determinant in structuring the pattern of spatial activity of contemporary urbanites. While still dependent on public transport, urbanites were moved *en masse* along axial routes toward a hub of central activity. The dominant position of downtown in our old industrial cities attests to this massing. The growth of urban areas by accretion and the shift to personal transportation by automobile has disrupted the efficiency of the compactly organized, mono-centered city. Such adjustments to the existing structure as limited access highways emptying directly into downtown, parking garages, shopping malls and the like have brought only temporary and partial relief to the congestion and inconvenience of the central business district.

The role of place of work in shaping residence patterns has been discussed by Kain (1962) and Muth (1961) among others. Manufacturers and retailers, as employers, both influence the pattern through their choice of locations. In recent years, enterprising retailers have sought nucleated locations, that is, in a cluster of retail outlets, but not central locations. In this respect they are similar to manufacturers who have sought nucleated but not central locations throughout the standard metropolitan statistical area (SMSA) (Pred, 1964). The shifts in employer location and the residential structure are even more closely intertwined for retailers than for manufacturers, for local residents make up a major share of the "final market" for retailers.

The decline of downtown is a familiar lament and has been documented by this author and others (Casparis, 1967; Sternlieb, 1963). Although shopping has moved closer to its customers densities high enough for large volume and quick turnover merchandizing must still be present. Furthermore, the mix of trade types in shopping centers and retail clus-

ters must reflect the needs and interests of shoppers who had previously patronized downtown. Good case studies of shopping center locations exist; for example, Boston and Detroit have been studied by Cohen and Lewis (1967) and Chicago by Simmons (1964). Whether there are retail location patterns general to all SMSA's has apparently received less study although an interesting paper along this line has been published by Taeuber (1964). These observations raise the following questions to which this paper is directed: where within the SMSA is retailing located, how is the location pattern related to SMSA size and what is the mix of retail sales in shopping centers?

## DATA AND METHOD

The dependent variable is retail sales volume in those 116 SMSA's for which the 1963 United States Census of Business published data on sales in central business districts (CBD's) and in major retail centers (MRC's). MRC's are defined by the Census Bureau as "concentrations of retail stores (located inside the standard metropolitan statistical areas in which the CBD cities are located but outside of the CBD's themselves) which include a major general merchandise store—usually a department store. . . . MRC's include not only the planned suburban shopping centers but also the older 'string' street and neighborhood developments . . ." (United States Bureau of the Census, 1966, p. V).

A scale map of each SMSA with the political boundary of the central city from which the SMSA takes its name is provided in the reports and on it are indicated the location of the CBD and of every MRC. Using this map, each MRC was assigned to a location either in the central city if it fell inside the political boundary or in the ring if it fell outside. The sales data were then assigned to either a nucleated or a dispersed location. Nucleated sales include all those

transacted in the CBD, the MRC's in the central city and the MRC's in the ring. Dispersed sales include the central city sales (central city minus its CBD and minus its MRC's) and the ring sales (SMSA sales minus its central city and minus its ring MRC's). Based on an average of ten retail areas, the ratio of sales in one store category to total sales was applied to estimate sales for those cases where the Census had withheld data to avoid disclosure.

Next, the locations of all MRC's were plotted in terms of their straight line distance from the CBD. With the CBD as zero point, as many concentric circles at one mile intervals as were necessary were drawn for each SMSA in such a way that all MRC's could be assigned to a specific concentric mile zone. If an SMSA had more than one CBD or central city, the CBD with the greatest sales volume was treated as the CBD of the SMSA and the lesser CBD(s) was treated as an MRC. MRC's falling outside the scaled maps were pinpointed on a road atlas and the distances to downtown were computed in that way.

Because MRC data are given only by major retail store type, the data for the other areas were combined in the same way. Based on the Standard Industrial Classification Code, the three types are: Convenience Goods Stores which include food stores, eating and drinking places, and drug stores; Shopping Goods Stores which include general merchandise stores, apparel and accessory stores, and furniture stores; and All Other Retail Stores which include lumber and hardware stores, automotive dealers, gas stations, and other retail stores.

The sales data, coded by type, area, and distance zone, were then related to our independent variable: population size of the SMSA as of the 1960 Census.

## FINDINGS

At any point in time the morphology of a settlement is closely related to the

number of its inhabitants. Through time McKenzie (1925, p. 73) notes that "in the process of community growth there is a development from the simple to the complex, from the general to the specialized; first to increasing centralization and later to a decentralization process." In the 1920's this decentralization process was already being observed in our largest metropolitan communities. With respect to retailing Burgess (1925, p. 52) found that in Chicago "sub-business centers have grown up in outlying zones." By 1963 the Census counted 972 MRC's spread through 116 SMSA's.

Table 1 shows that as communities grow their retail clusters become more numerous. The mean number of MRC's per SMSA increases from less than two for the smallest SMSA's to almost forty-five for the largest SMSA's. The size of MRC's, as measured by the mean number with a sales volume of at least $50 million and the mean number of stores these contain, also increases with increasing SMSA size. For example, SMSA's with 1.2 to 2.4 million inhabitants average one such mammoth retail cluster with an average of 127 stores per center. Such centers can compete very effectively with the CBD for customers interested in a wide selection, as well as for those buying specialized items. The

CBD, however, retains one major competitive asset over the individual MRC: its far larger size allows for a much greater diversification of store types and with it the possibilities for comparison shopping. One measure of this is the mean number of stores per CBD; the CBD's in the smallest SMSA's still have on the average more stores (263) than do the large MRC's of the largest SMSA's (194).

To become large enough to support a major retail development outside the CBD, SMSA's apparently have to grow to between 100,000 and 300,000 inhabitants. An SMSA begins to spin off MRC's at about the point when its CBD has a sales volume of $50 million. In the smallest SMSA's 89 percent of the CBD's have reached this sales volume and each has on the average 1.8 MRC's. The tipping point for the development of very large MRC's seems to begin in the population range of 600,000 to 1.2 million and with a retail volume in the CBD of $125 million or more. Slightly over half of the SMSA's in this size class have MRC's with a sales volume of $50 million and 57 percent of these SMSA's have CBD's doing at least $125 million worth of retailing.

The functional importance of MRC's in the retailing structure of SMSA's is

TABLE 1.—Sales Volume, in Millions, and Number of Stores in Central Business Districts (CBD's) and Major Retail Centers (MRC's) of 116 Standard Metropolitan Statistical Areas (SMSA's) in 1963, by SMSA Size Class

| SMSA population, 1960, in thousands | Number of SMSA's | Percent of SMSA's with CBD sales of | | Mean number of MRC's per SMSA | | Mean number of stores per | |
|---|---|---|---|---|---|---|---|
| | | $50 or more | $125 or more | All | Sales $50 or more | MRC with sales $50 or more | CBD |
| All SMSA's. . | 116 | 94.8 | 33.6 | 8.38 | .64 | 170 | 585 |
| 100 to 299. . . . | 37 | 89.2 | 2.7 | 1.84 | .03 | 60 | 263 |
| 300 to 599. . . . | 33 | 97.0 | 12.1 | 4.24 | .03 | 88 | 349 |
| 600 to 1199 . . . | 28 | 96.4 | 57.1 | 9.36 | .54 | 138 | 520 |
| 1200 to 2399. . . | 11 | 100.0 | 100.0 | 17.18 | 1.00 | 127 | 1056 |
| 2400 and over . . | 7 | 100.0 | 100.0 | 44.71 | 6.57 | 194 | 2923 |

Source: United States Bureau of the Census, 1966, Tables 1, 3, and 8.

TABLE 2.—Distribution of 1963 Sales in Three Types of Retail Stores Among the Central Business District (CBD), the Major Retail Centers (MRC's), the Central City, and the Ring, by Standard Metropolitan Statistical Area (SMSA) Size Class

| SMSA population, 1960, thousands, and retail type | SMSA sales, billions | Percent of SMSA sales | | | Ratio of MRC sales to dispersed sales | | |
|---|---|---|---|---|---|---|---|
| | | CBD | MRC's | Dis-persed | SMSA | City | Ring |
| SHOPPING GOODS | | | | | | | |
| All . . . . . . | 37.1 | 30.1 | 34.6 | 35.3 | .978 | .801 | 1.161 |
| 100 to 299. . . . . | 2.7 | 48.1 | 19.0 | 32.9 | .580 | .719 | .290 |
| 300 to 599. . . . . | 4.8 | 39.0 | 25.1 | 35.9 | .698 | .685 | .713 |
| 600 to 1199 . . . . | 8.4 | 29.2 | 35.3 | 35.5 | .997 | 1.011 | .983 |
| 1200 to 2399. . . . | 7.1 | 28.9 | 36.3 | 34.8 | 1.047 | .711 | 1.346 |
| 2400 and over . . . | 14.1 | 24.7 | 39.4 | 35.9 | 1.100 | .784 | 1.423 |
| CONVENIENCE GOODS | | | | | | | |
| All . . . . . . | 51.8 | 6.1 | 10.5 | 83.4 | .125 | .103 | .148 |
| 100 to 299. . . . . | 3.6 | 8.4 | 7.6 | 84.0 | .090 | .101 | .066 |
| 300 to 599. . . . . | 6.7 | 5.7 | 9.1 | 85.2 | .107 | .111 | .102 |
| 600 to 1199 . . . . | 11.7 | 5.0 | 11.6 | 83.4 | .139 | .135 | .143 |
| 1200 to 2399. . . . | 9.9 | 5.9 | 11.7 | 82.4 | .143 | .108 | .172 |
| 2400 and over . . . | 19.9 | 6.5 | 10.1 | 83.4 | .121 | .082 | .166 |
| ALL OTHER RETAIL | | | | | | | |
| All . . . . . . | 53.3 | 8.2 | 6.8 | 85.0 | .080 | .069 | .091 |
| 100 to 299. . . . . | 4.6 | 20.9 | 3.5 | 75.6 | .046 | .055 | .030 |
| 300 to 599. . . . . | 7.7 | 10.0 | 5.4 | 84.6 | .064 | .058 | .072 |
| 600 to 1199 . . . . | 13.1 | 8.5 | 7.6 | 83.9 | .090 | .086 | .093 |
| 1200 to 2399. . . . | 9.8 | 7.0 | 8.2 | 84.8 | .097 | .079 | .111 |
| 2400 and over . . . | 18.1 | 4.7 | 6.9 | 88.4 | .078 | .060 | .093 |

Source: United States Bureau of the Census, 1966, Tables 1, 2, 3, and 5, and SMSA maps.

shown in Table 2. Of the 142 billion dollars worth of retailing in these SMSA's the MRC's captured 15 percent and the CBD's 13 percent. As the size of the SMSA increases the importance of retailing in MRC's, or retail clusters outside the CBD, increases proportionately and at the expense of the CBD. However, the proportion of sales transacted at nucleated locations, in CBD's and MRC's combined, remains constant regardless of SMSA size. Similarly the proportion of sales at dispersed locations remains constant. For shopping goods it stays around 35 percent and for the other two types around 84 percent.

The ratio of MRC sales to dispersed

sales within the city and the ring generally shows that MRC's are relatively more important in the ring than they are in the city. Furthermore, as the size of the SMSA increases the functional importance of MRC's in the ring also increases. The ratios in the city either seem not to be related to SMSA size or show little variation by SMSA size. This suggests that the retail structure of the city has reached a certain stability. The density of settlement, the slow rate of population growth and the inflexibility of existing buildings and transportation patterns in the central city may partly account for this stability. In contrast, the availability of open land and the stimu-

lus of a rapidly growing population have contributed to the growth of major retail centers in the ring, and with this a new type of retail structure.

The distribution of sales by type of store reflects the operation of the traditional "laws" of economic location (Hoover, 1963, p. 130). Shopping goods are found in the CBD at points maximally accessible to public transport and foot traffic from places of work, and in city and ring MRC's at transportation breaks suitable for the large scale parking of automobiles. Convenience goods and all other retail stores disperse primarily throughout the SMSA. Secondarily, they attach themselves to shopping goods locations and feed off the retail traffic collected there, both downtown and in MRC's. The sorting of retail functions into either a dispersed or a nucleated location is not affected by the size of the SMSA; the proportions remain constant. However, SMSA size does operate to determine what proportion of sales are to be transacted at the three different nucleated locations (CBD, city MRC, and ring MRC) and at the two dispersed locations in the city and in the ring.

Since the ratio of nucleated to dispersed sales is similar for all SMSA's, we investigated whether the mix of trade types in MRC's is similar to the CBD mix. That is, if similar forces of economic location operate in the MRC as operate in the CBD and the SMSA generally, then the MRC ought to be a miniature version of the CBD's retail structure. Setting the CBD as the norm, the mix of trade types as one moves from the CBD to central and then to peripheral MRC's is shown in Table 3. Shopping Goods Stores are the dominant retailing function in both CBD's and MRC's; between fifty and sixty percent of total sales are of this type. The difference in retail composition is that in MRC's the Convenience Goods Stores tend to be more important while in

CBD's the All Other Retail Stores category tends to be more important. The specialty store, often innovating and taking high risks, still seeks a downtown location where it will be accessible

TABLE 3.—Percentage Distribution of 1963 Sales by Type of Retail Store for the Central Business District (CBD) and Major Retail Centers (MRC's), by Standard Metropolitan Statistical Area (SMSA) Size Class

| SMSA population, 1960, thousands, and location of shopping center | Retail type | | |
|---|---|---|---|
| | Shopping | Convenience | All other |
| **100 TO 299** | | | |
| CBD . . . . . . . | 51.3 | 11.7 | 37.0 |
| MRC's by distance (miles) from CBD | | | |
| 0- 2 . . . . . . | 53.4 | 30.7 | 15.9 |
| 2- 4 . . . . . | 54.8 | 29.0 | 16.2 |
| 4- 6 . . . . . | 58.6 | 26.6 | 14.8 |
| 6- 8 . . . . . | 57.3 | 18.3 | 24.4 |
| 8-10 . . . . . | ... | ... | ... |
| 10-12 . . . . . | 33.3 | 46.7 | 20.0 |
| 12-14 . . . . . | 33.3 | 44.4 | 22.3 |
| 14-16 . . . . . | ... | ... | ... |
| 16-20 . . . . . | ... | ... | ... |
| 20 or more. . . | 44.4 | 33.3 | 22.3 |
| **All MRC's . . . .** | 54.9 | 28.3 | 16.8 |
| **300 TO 599** | | | |
| CBD . . . . . . . | 61.8 | 12.6 | 25.6 |
| MRC's by distance (miles) from CBD | | | |
| 0- 2 . . . . . | 49.8 | 28.9 | 21.3 |
| 2- 4 . . . . . | 55.6 | 28.6 | 15.8 |
| 4- 6 . . . . . | 59.0 | 25.6 | 15.4 |
| 6- 8 . . . . . | 52.4 | 28.6 | 19.0 |
| 8-10 . . . . . | 38.1 | 33.3 | 28.6 |
| 10-12 . . . . . | 57.3 | 29.9 | 12.8 |
| 12-14 . . . . . | 54.0 | 14.3 | 31.7 |
| 14-16 . . . . . | 45.2 | 32.2 | 22.6 |
| 16-20 . . . . . | 40.6 | 15.9 | 43.5 |
| 20 or more. . . | 40.0 | 21.4 | 38.6 |
| **All MRC's . . . .** | 53.9 | 27.2 | 18.9 |
| **600 TO 1199** | | | |
| CBD . . . . . . . | 59.2 | 14.0 | 26.8 |
| MRC's by distance (miles) from CBD | | | |
| 0- 2 . . . . . | 60.7 | 20.3 | 19.0 |
| 2- 4 . . . . . | 54.6 | 26.5 | 18.9 |
| 4- 6 . . . . . | 59.9 | 25.9 | 14.2 |
| 6- 8 . . . . . | 53.8 | 26.3 | 19.9 |
| 8-10 . . . . . | 51.4 | 32.3 | 16.3 |
| 10-12 . . . . . | 60.9 | 18.6 | 20.5 |
| 12-14 . . . . . | 55.9 | 27.3 | 16.8 |
| 14-16 . . . . . | 54.0 | 18.0 | 28.0 |
| 16-20 . . . . . | 62.5 | 30.4 | 7.1 |
| 20 or more. . . | 45.3 | 22.5 | 32.2 |
| **All MRC's . . . .** | 56.0 | 25.5 | 18.5 |

TABLE 3.—Percentage Distribution of 1963 Sales by Type of Retail Store for the Central Business District (CBD) and Major Retail Centers (MRC's), by Standard Metropolitan Statistical Area (SMSA) Size Class (Continued)

| SMSA population, 1960, thousands, and location of shopping center | Retail type | | |
|---|---|---|---|
| | Shopping | Convenience | All other |
| **1200 TO 2399** | | | |
| CBD . . . . . . . | 61.6 | 17.6 | 20.8 |
| MRC's by distance (miles) from CBD | | | |
| 0- 2 . . . . . | 59.2 | 18.3 | 22.5 |
| 2- 4 . . . . . | 61.0 | 24.6 | 14.4 |
| 4- 6 . . . . . | 53.5 | 26.9 | 19.6 |
| 6- 8 . . . . . | 53.4 | 27.0 | 19.6 |
| 8-10 . . . . . | 65.5 | 24.2 | 10.3 |
| 10-12 . . . . . | 46.9 | 31.0 | 22.1 |
| 12-14 . . . . . | 65.9 | 21.1 | 13.0 |
| 14-16 . . . . . | 56.3 | 26.3 | 17.4 |
| 16-20 . . . . . | 65.3 | 22.6 | 12.1 |
| 20 or more. . . | 54.1 | 26.0 | 19.9 |
| **All MRC's . . . .** | 56.5 | 25.7 | 17.8 |
| **2400 AND OVER** | | | |
| CBD . . . . . . . | 61.7 | 23.0 | 15.3 |
| MRC's by distance (miles) from CBD | | | |
| 0- 2 . . . . . | 68.1 | 24.6 | 7.3 |
| 2- 4 . . . . . | 51.3 | 26.8 | 21.9 |
| 4- 6 . . . . . | 52.2 | 28.5 | 19.3 |
| 6- 8 . . . . . | 62.1 | 23.9 | 14.0 |
| 8-10 . . . . . | 69.4 | 20.5 | 10.1 |
| 10-12 . . . . . | 67.5 | 20.5 | 12.0 |
| 12-14 . . . . . | 61.0 | 24.8 | 14.2 |
| 14-16 . . . . . | 63.4 | 24.9 | 11.7 |
| 16-20 . . . . . | 62.6 | 21.9 | 15.5 |
| 20 or more. . . | 64.8 | 20.3 | 14.9 |
| **All MRC's . . . .** | 63.0 | 22.8 | 14.2 |

... No center at location
Source: See Table 2

to a metropolitan-wide clientele. Also included in the All Other category are jewelry stores, stationery stores and florists. In the MRC these may more often be included as adjuncts of the convenience goods store, for example books and stationery in a large drug store and flowers in a supermarket, or of the shopping goods store, for example jewelry in a department store. Furthermore, automotive dealers and gas stations are still found in the CBD but they are not generally included in many planned shopping centers. The higher shares of Convenience Goods Stores sales in MRC's

is mainly due to the importance of the food supermarket in these retail clusters. Whereas the core of downtown retailing is a number of department stores and women's clothing stores, both shopping goods, in the MRC it is a department store with a food supermarket. Other types of stores will often not risk moving in unless these two types are already there to draw sufficient customers. In the largest SMSA's these differences do not apply. Here the composition of retail trade types in the CBD is reproduced almost identically in the MRC's at every distance zone.

SUMMARY AND CONCLUSION

This paper has described the pattern of retailing of SMSA's and shown how the size of the community influences the location of different types of stores. The decentralization of retailing is directly related to the increasing size of SMSA's. Major Retail Centers spread throughout the SMSA and gain sales in direct proportion to the losses sustained by the CBD. In the city and the ring miniature CBD's, with some modifications, are created which serve both the shopping and convenience goods needs of the SMSA resident. While the retail structure of a community adapts itself to population growth and with this to the changing demands of its customers, the forces which impel stores to seek a nucleated or a dispersed location have remained constant.

In relation to other research, our findings support the observation that as communities grow multiple nuclei of similar functions tend to develop. (Harris and Ullman, 1945; Ullman, 1966). However, retailing is a function not only of population size but also of population composition (Hawley, 1941). Residential neighborhoods are stratified according to the socio-economic status of their inhabitants. This sorting may help to explain variations on the general retailing patterns reported in this paper.

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