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# SOCIAL PROBLEMS IN A SMALL JAMAICAN TOWN

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## PREFACE

The four papers presented in this volume result from work carried out during the 1972 Jamaica summer field camp sponsored by the Department of Geography, University of Illinois. The topics chosen for these research projects are the product of a common interest among the authors in the social behavior, social structures, and social issues that are present in and around the town of Port Antonio.

Port Antonio is located in Portland Parish on the northeast coast of Jamaica (Figure 1). Census figures show Port Antonio's population increasing from about 8,000 to 10,000 between 1960 and 1970; but much of this increase can be attributed to an areal expansion in the definition of the town boundaries. Most of the rural to urban migration within Jamaica has bypassed Port Antonio, going instead to the larger urban communities of Kingston and Montego Bay. Thus, Port Antonio is a stable community with few of the problems found in rapidly-expanding urban areas in developing nations.

Port Antonio functions principally as a service center for Portland Parish. It has a major market, is the seat of government offices for the Parish, and is a port for the one or two banana boats per week plus a tourist cruise ship once a week. The commercial nature

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We wish to acknowledge the assistance of the many persons who aided us in many ways while we were in Jamaica. Special thanks goes to Professor John Thompson of the University of Illinois for his help in making arrangements for the field camp, and to Professor L. Alan Eyre of the University of the West Indies for his help in orienting us to the island during our first week. In addition we would like to acknowledge the help of other members of the field camp, Donald L. Johnson, Philip DeMaris, and Ross Mullner. Finally, we acknowledge the financial assistance of the Center for Latin American Studies at the University of Illinois.

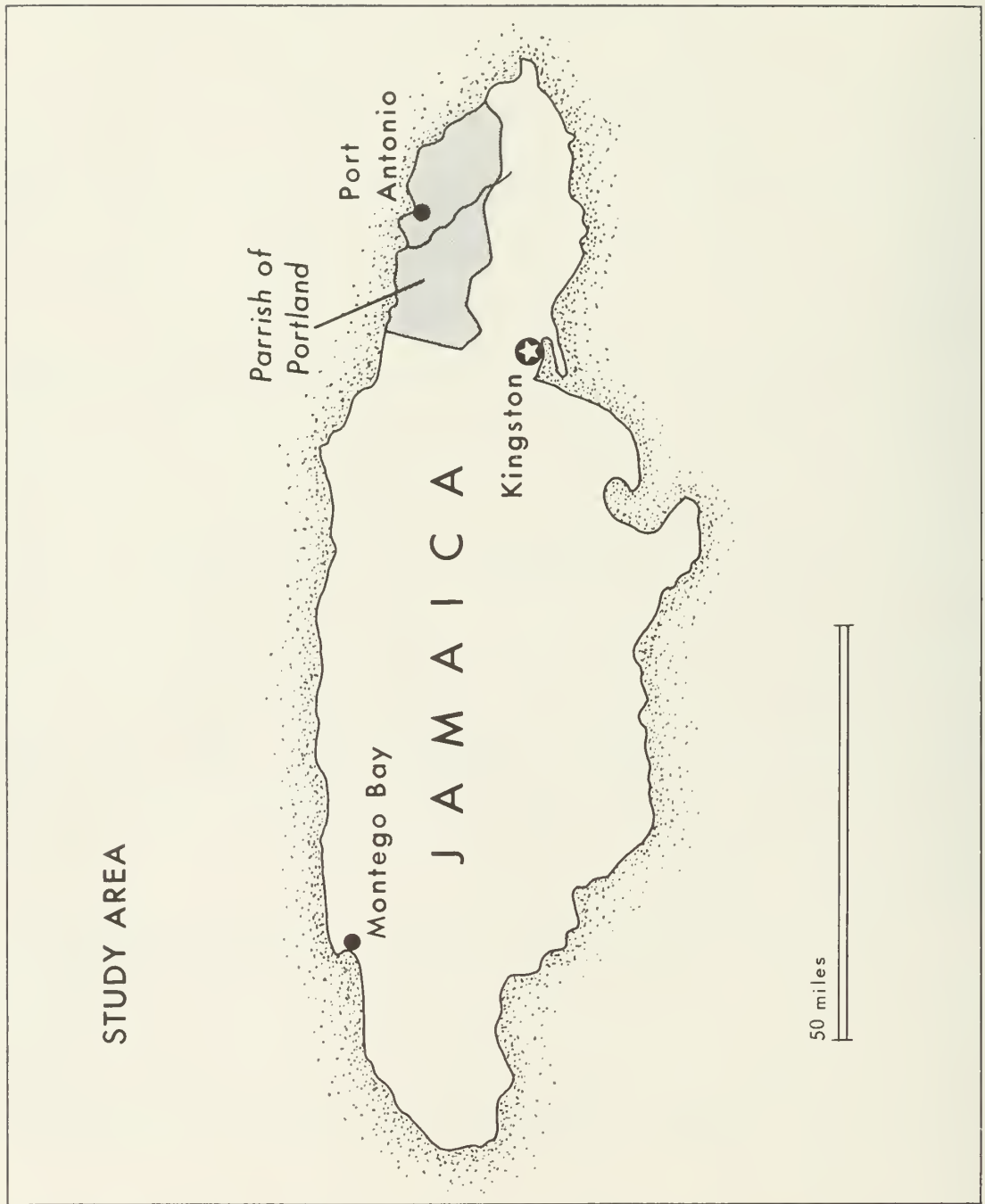


Figure 1

of the town is highlighted on the busy market days of Friday and Saturday. There is little visible poverty in the town, few beggars are seen and no shanty towns exist. However, considerable unemployment is found in Port Antonio.

The internal structure (Figure 2) is dominated by two streets radiating from the center of town along which most of the commercial activity is located. Most other streets, many winding into the hills, are predominantly residential. The government offices, the market and movie house are near the confluence of the two streets and comprise the focal point fo activity in town.

Port Antonio reflects many of the characteristics of all of Jamaican Society except for those which relate directly to rapid urbanization. For this reason, the town provides an excellent setting for the examination of social-geographic issues that are important to much of the population of this developing society.

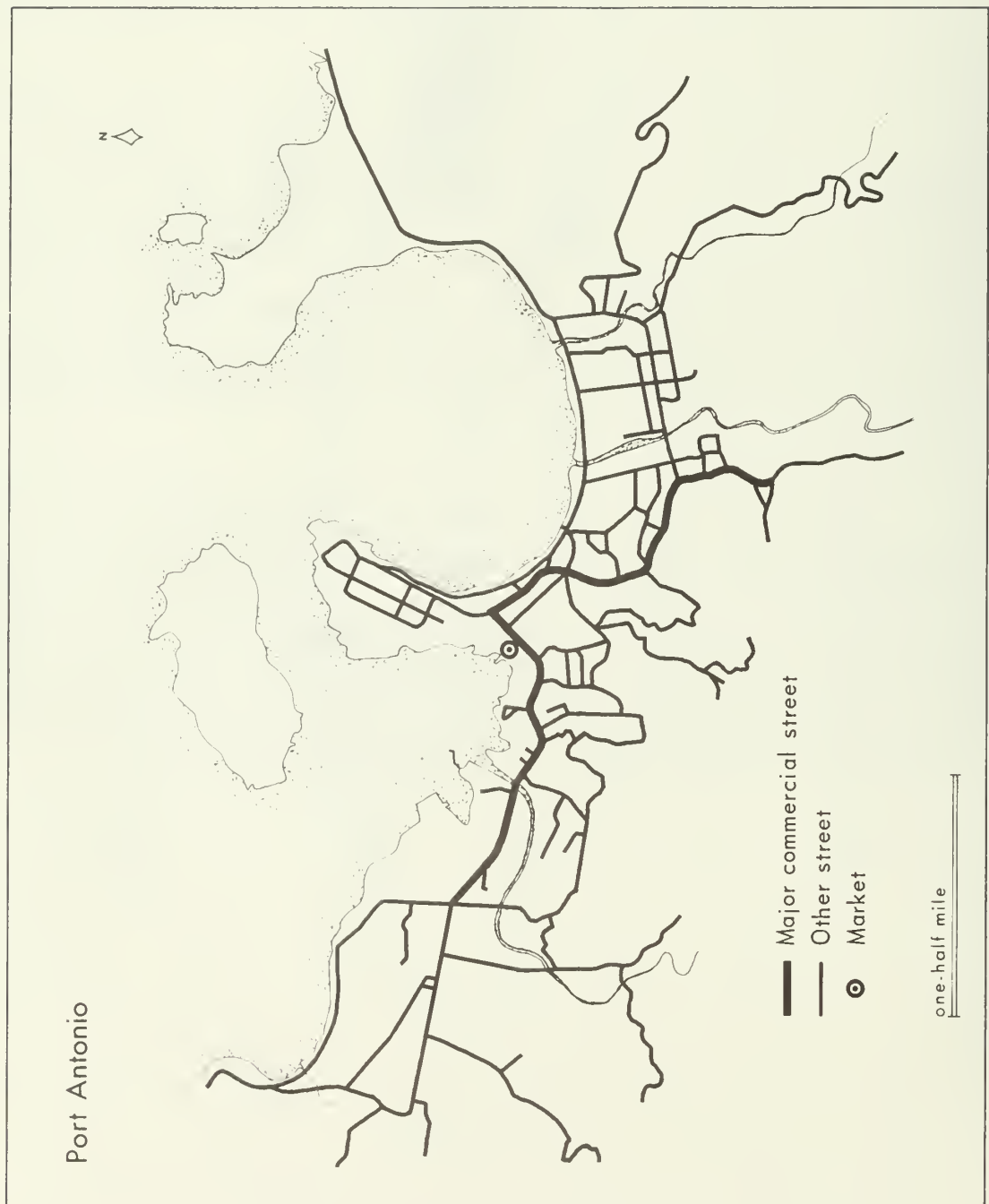


Figure 2

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SOCIO-ECONOMIC STRUCTURE WITHIN A SMALL COMMUNITY:  
THE CASE OF PORT ANTONIO, JAMAICA

Curtis C. Roseman

ABSTRACT

Socio-economic characteristics of the population of Port Antonio, Jamaica are analyzed within the context of the sociological concept of "community". Census variables describing educational, occupational, age and religious characteristics of the population, plus selected variables relating to hospital admissions, venereal disease, and literacy, are analyzed for 21 enumeration districts within the town of 8,000 population. Sub-communities within Port Antonio are found to be related to concentration of people of higher occupation status and concentration of particular religious groups. Principal components analysis reveals that the spatial dimensions of the socio-economic structure in this community are similar to those of larger urban communities in North America and differ considerably from those in urban communities in developing countries.

INTRODUCTION

The concept of "community" has provided the theoretical framework for numerous studies of society, particularly studies by sociologists.<sup>1</sup>

The definition of community invariably encompasses three elements:

(1) a social organization which is at least to some degree formalized, (2) interaction among community members, and (3) those members living or spending considerable time in close proximity to one another (Nelson, 1960; French, 1969; Warren, 1959).

In studies of large, urban communities all three elements of this definition have been the subject of research, including factorial ecology which addresses itself to spatial differentiation within urban areas. In viewing smaller communities, however, more emphasis has been

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<sup>1</sup>For a comprehensive review of the concept, see: Hillery, 1968.

placed upon analyses of social structure and interaction and less upon internal spatial differentiation among the population of the community.

This research examines various socio-economic attributes of the population as they vary spatially within Port Antonio, a town of about 8,000 population. The analysis will first compare the spatial distribution of each attribute in order to determine which of these attributes might be indicative of spatially-defined sub-communities. Secondly, a factorial ecology is performed in an effort to indicate ways in which the population of this small community differentiates itself residentially in comparison to such differentiation in larger urban communities.

It is noteworthy that similar studies of small towns are generally lacking. This is due, in part, to the absence of census data in many countries, including the United States, that is enumerated by fine areal divisions within small towns. Hence, this study represents an unusual opportunity to view internal spatial variation within a small community.<sup>2</sup>

#### SPATIAL DISTRIBUTIONS OF ATTRIBUTES

The first part of the analysis examines the variation of the population by 15 demographic, educational, occupational and religious measures, from the 1960 population census of Jamaica (Table 1). It also utilizes five variables that help to characterize additional aspects of community life not reflected in the census data. These were obtained from various public agencies during the summer of 1972. They

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<sup>2</sup>One exception is the study of pre-industrial Hamilton, Ontario for 1851-52 by Doucet (1973).



TABLE 1

FACTOR MATRIX, 15 VARIABLES, PORT ANTONIO, JAMAICA<sup>a</sup>

VARIABLE	FACTOR 1 ECONOMIC STATUS	FACTOR 2 AGE STRUCTURE	FACTOR 3 BAPTISTS	FACTOR 4
% of Labor Force, Prof. and Supervisory	.93			
% of Population under 29 in Secondary School	.90			
% of Population Anglican	.79			
% of Population Methodist	.72			
% of Labor Force, Manual and Service	-.62			
% of Labor Force, Craftsmen and Technicians	-.59			
% of Population Roman Catholic	.57		.53	
% of Population over 65 years of age		.89		
% of Population over 14 at work or on leave		.85		
% of Population over 10 with no education		-.79		
% of Population under 14 years of age		.75		
% of Population Baptist			.85	
Sex Ratio (M/F X 100)				.75
% Households in owner occupied units				.73
% of Population over 10 with four or more years education				-.54
Eigen Value:	5.39	3.82	1.54	1.13
Percent Explained Variance:	36%	25%	10%	8%

<sup>a</sup> Only factor loadings greater than .50 are reproduced in this table.  
Source: Computed by author.

are: (1) percent of the population under 29 years of age that attend Titchfield secondary school, (2) percent of the population over 14 years of age who have library cards, (3) percent of the population admitted to the Port Antonio hospital during 1971, (4) percent of the population who visited the Family Planning clinic during 1971, and (5) percent of females who visited the Venereal Disease clinic during 1971. All variables were tabulated for 21 enumeration districts within Port Antonio.

For each of the twenty variables, two indications of the degree of concentration are used; an analysis of its distribution on a map and examination of a ratio of the standard deviation to the mean. Mapping allows visual, and somewhat subjective, identification of spatially-defined sub-communities. The standard deviation-to-mean ratio is used to supplement these evaluations by indicating the degree to which the population with each attribute is unevenly distributed in space--the lower the ratio, the more even the distribution.<sup>3</sup> The range of this ratio is from .13 to .94 for the 15 variables studied here.

By both criteria, the percent of the labor force in professional and supervisory categories shows the most distinct spatial concentration. People in this category make up more than 20 percent of the labor force in the peninsular tract ("Titchfield Hill") and less than 10.9 percent in each of the other tracts (Figure 1). It also has the highest standard deviation-to-mean ratio, .94. The lower occupational categories,

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<sup>3</sup>The standard deviation-to-mean ration must be evaluated with caution when applied to percentage data since variables with generally low percentage values have a tendency to vary about the mean more readily. Hence, it is used here only as a supplementary measure to the map analysis.

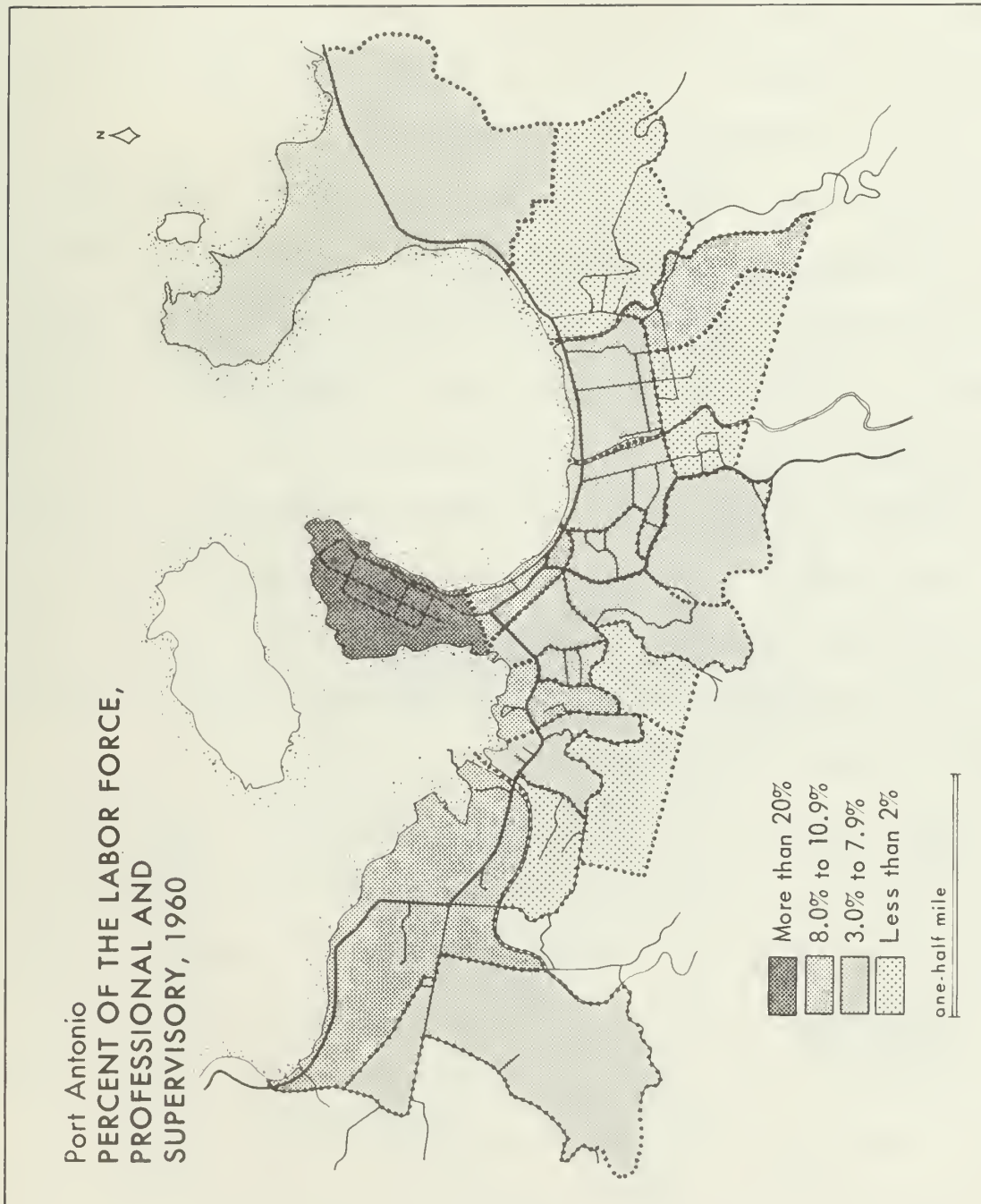


Figure 1

percent craftsmen and technical workers and percent manual and service workers, have considerably lower standard deviation-to-mean ratios (.28 and .18, respectively) and show relatively uniform spatial patterns. This result is taken as an indication of the higher class segregating itself from the remainder of the population.

Two religious variables, percent Roman Catholic and percent Baptist, have standard deviation-to-mean ratios higher than other religious variables: .71 and .57; respectively, as compared to percent Anglican with a ratio of .43. These maps also show spatial concentration (Figures 2 and 3). In both cases the concentration is in the vicinity of the church. Preliminary data on several fundamentalist religious bodies (not included in this analysis) also indicate a clustering of members near their church. Hence, church affiliation serves to help define sub-communities within Port Antonio, particularly through the smaller religious groups.

Other variables with high standard deviation-to-mean ratios are percent of the population over ten years of age with no education (.87), percent of the population under 29 years of age in secondary school (.83), and percent of females visiting the VD clinic in 1971 (.78). Maps of these variables, however, show relatively less spatial concentration. The education variables correspond only to some degree to the concentration of the high occupational group concentrated in the Titchfield area, and the visits to the VD clinic show concentration near the clinic, but additional concentrations elsewhere.

All other variables have a ratio of .60 or less and show little distinct spatial concentration. It is tentatively concluded, therefore,

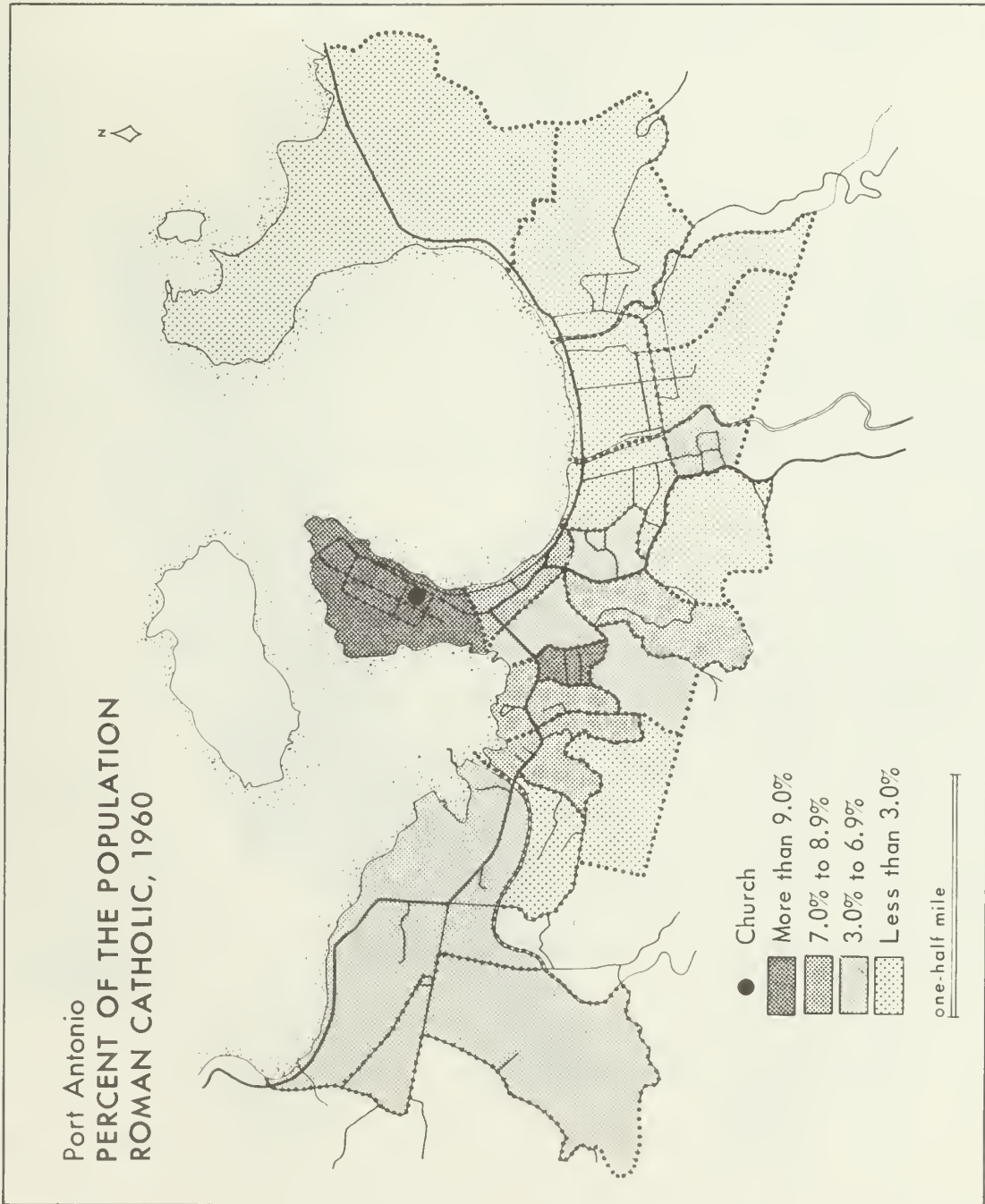


Figure 2

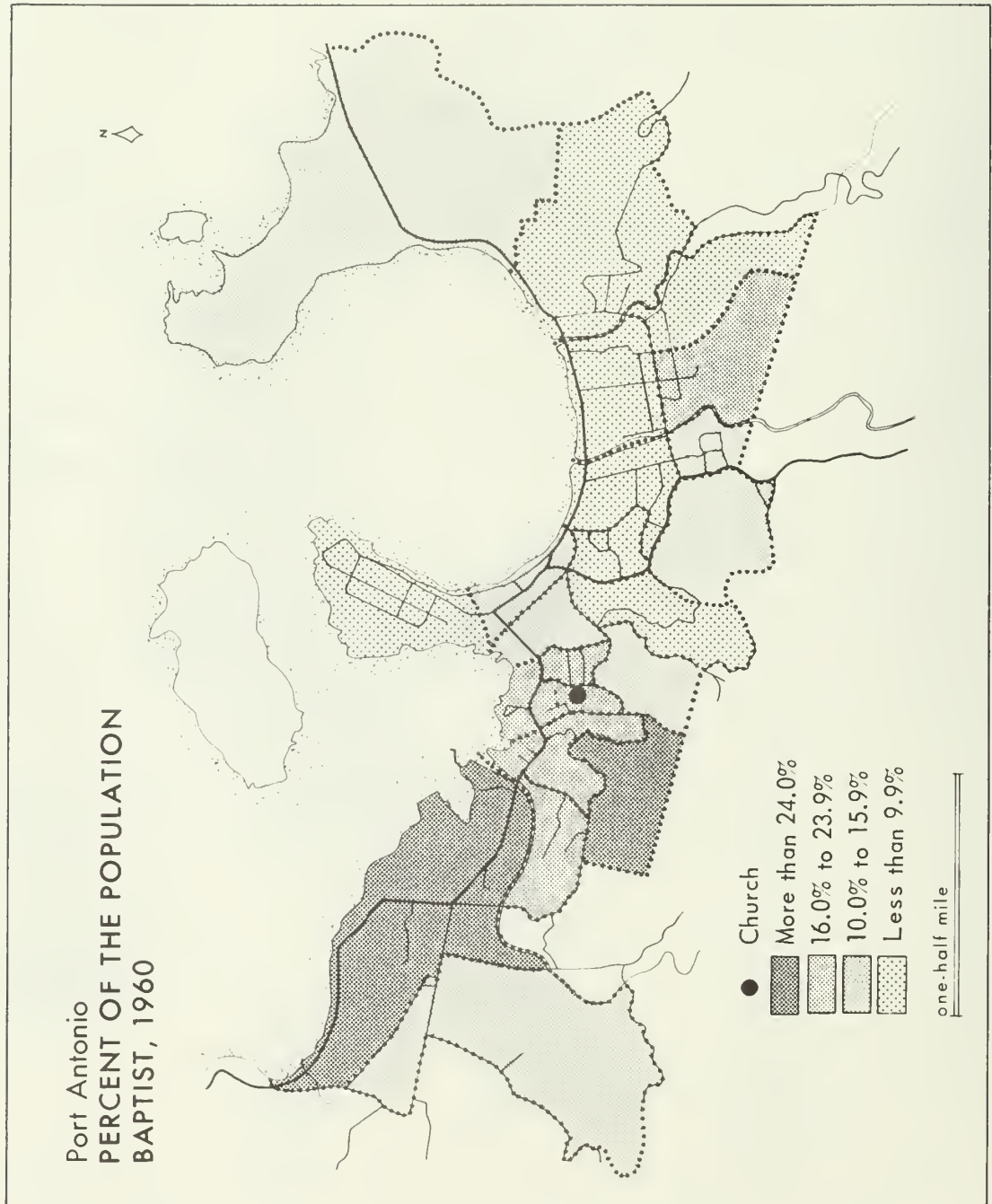


Figure 3

that the key variables in the identification of spatially-defined sub-communities in this town of 8,000 are the high occupational status and the religious variables. There is a tendency for the high occupational group to segregate itself spatially and for religious groups to cluster in the vicinity of their churches.

#### FACTORIAL ECOLOGY

The second part of the analysis uses principal components to identify basic underlying dimensions in the variation of the fifteen socio-economic variables from the census. A factor matrix is derived after four orthogonal factors with eigen values greater than one had been rotated (Table 1).

Factor 1, accounting for 36 percent of the variation in the original fifteen variables, is interpreted as an economic status factor, on which percent of the labor force that is professional or supervisory and percent of the population under 29 in secondary school, have the highest loadings. Also loading positively on this factor are two religious variables, percent Anglican and percent Methodist, indicating the correspondence of higher economic status with these denominations. Loading negatively, but at lesser levels, are percent craftsmen and technicians and percent manual and service, further evidence of the spatial segregation of the higher occupational group.

Factor 2, which accounts for 25 percent of the variance, is an age structure factor, with high loadings for percent of the population under 14 and percent of the population over 65 years of age. It is also related to percent of the population over ten years of age with

no education and percent of the population over 14 at work. Hence, it includes elements of education and unemployment which usually are related to economic status in studies of larger urban communities in the western world.

Factor 3 is best represented by percent Baptist, and factor 4 by sex ratio and percent households in owner occupied units. These account for ten and eight percent of the variance, respectively.

Perhaps the best way to compare these results with results of similar factorial ecologies is to first focus upon the single highest loading variable on each factor. Percent professional and supervisory, percent over 65 years of age and percent Baptists, load highly on the first three factors, respectively indicating their statistical independence from one another. Their independence is further witnessed by the fact that the simple correlations among the three are no higher than .16. Hence, Port Antonio displays three independent dimensions that show a striking parallel to those usually found in large North American cities, an economic dimension, a family or age structure dimension, and an ethnic dimension. However, the relationship of several of the other variables used in the analysis to these three dimensions is in contrast to findings in North American cities. For example, sex ratio is essentially independent of the age factor, and the education variables are more closely related to the age factor than to the economic status factor.

But the existence of the three dimensions contrasts with dimensions found for large non-western cities where, for example, economic status and ethnic status are strongly linked, as in the case of Calcutta



(Berry and Rees, 1969, p. 490), or family status and economic status merge, as in the case of Cairo (Abu-Loghod, 1969). Interpretation of the third factor as an "ethnic" factor may be improper, however; and, in fact, certain elements of ethnicity not represented by census variables may be correlated with economic status in Port Antonio.

These findings suggest that the community of Port Antonio possesses a social-spatial structure that is similar to but more complex than that of larger communities in North America. This may be due to its role in a developing country; but it may also be due to the scale at which the analysis is performed. Unfortunately, there are no similar studies of communities of this size that can be cited for comparison. With 21 tracts encompassing 8,000 people in a small area, we may be seeing the results of the ecological fallacy--the variation within tracts may be as great or more than the variation between tracts in this small community.

A map of factor scores on the first factor reveals the highest status area of Titchfield, other high status areas near downtown, and most of the low status areas on the periphery (Figure 4). This pattern is consistent with that found in larger urban communities in the developing world (Morris and Pyle, 1969). For factor 2, no discernible regularity in the pattern can be seen (Figure 5); but for the third factor, a fairly clear clustering of highly Baptist areas can be found surrounding the Baptist church (Figure 6). The clustering of this religious factor is similar to that found for ethnic status dimensions derived for most larger urban areas.

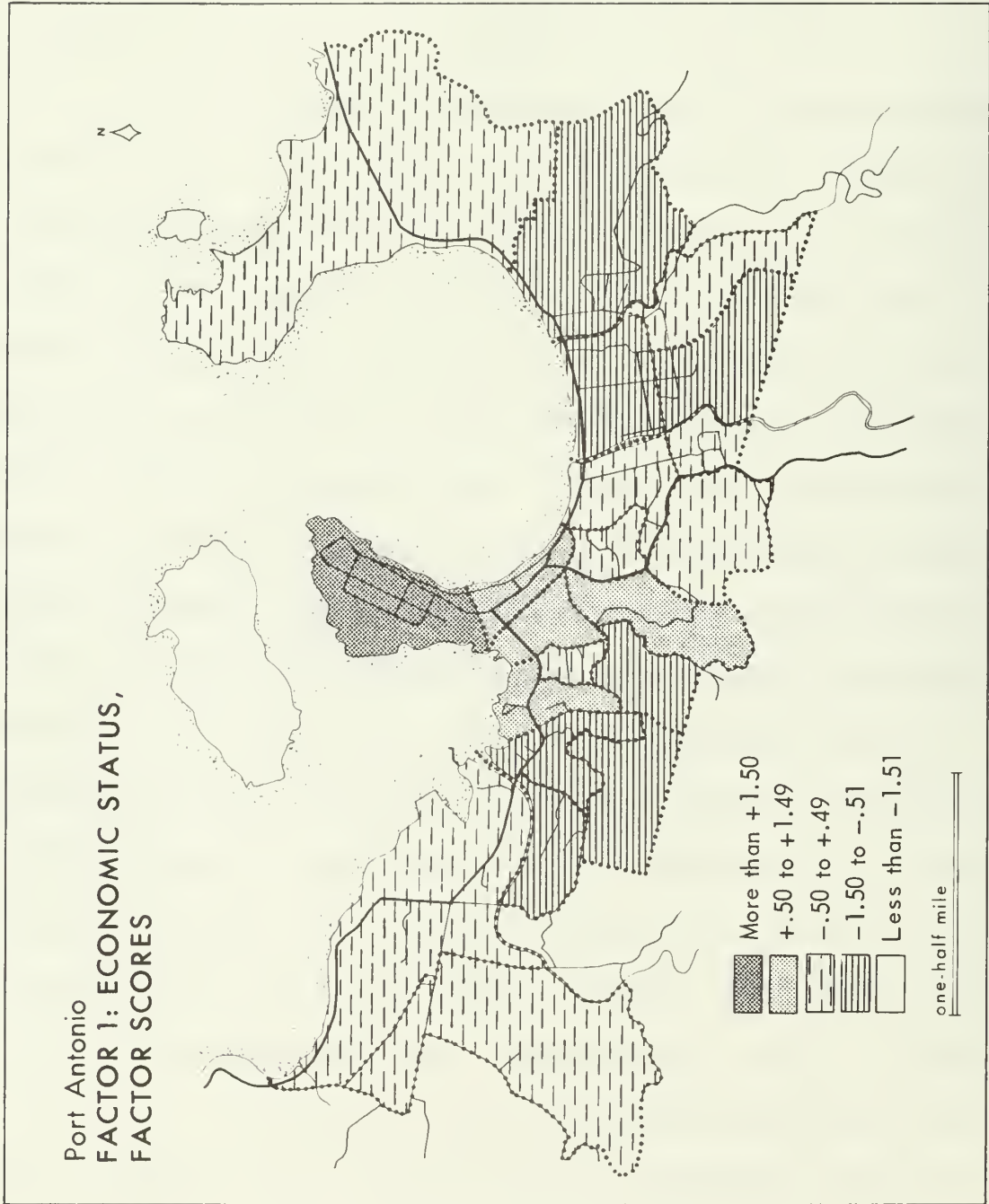


Figure 4

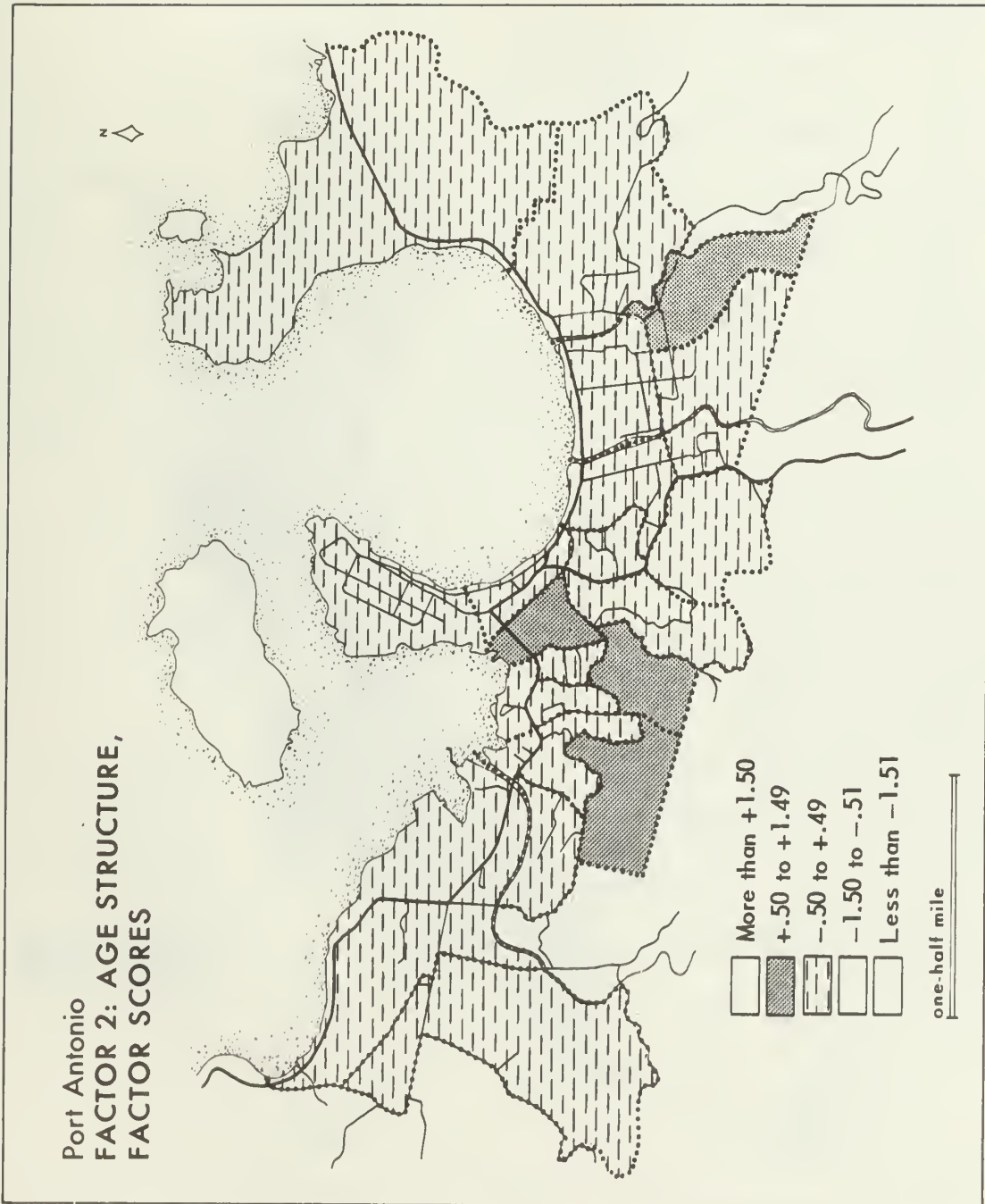


Figure 5

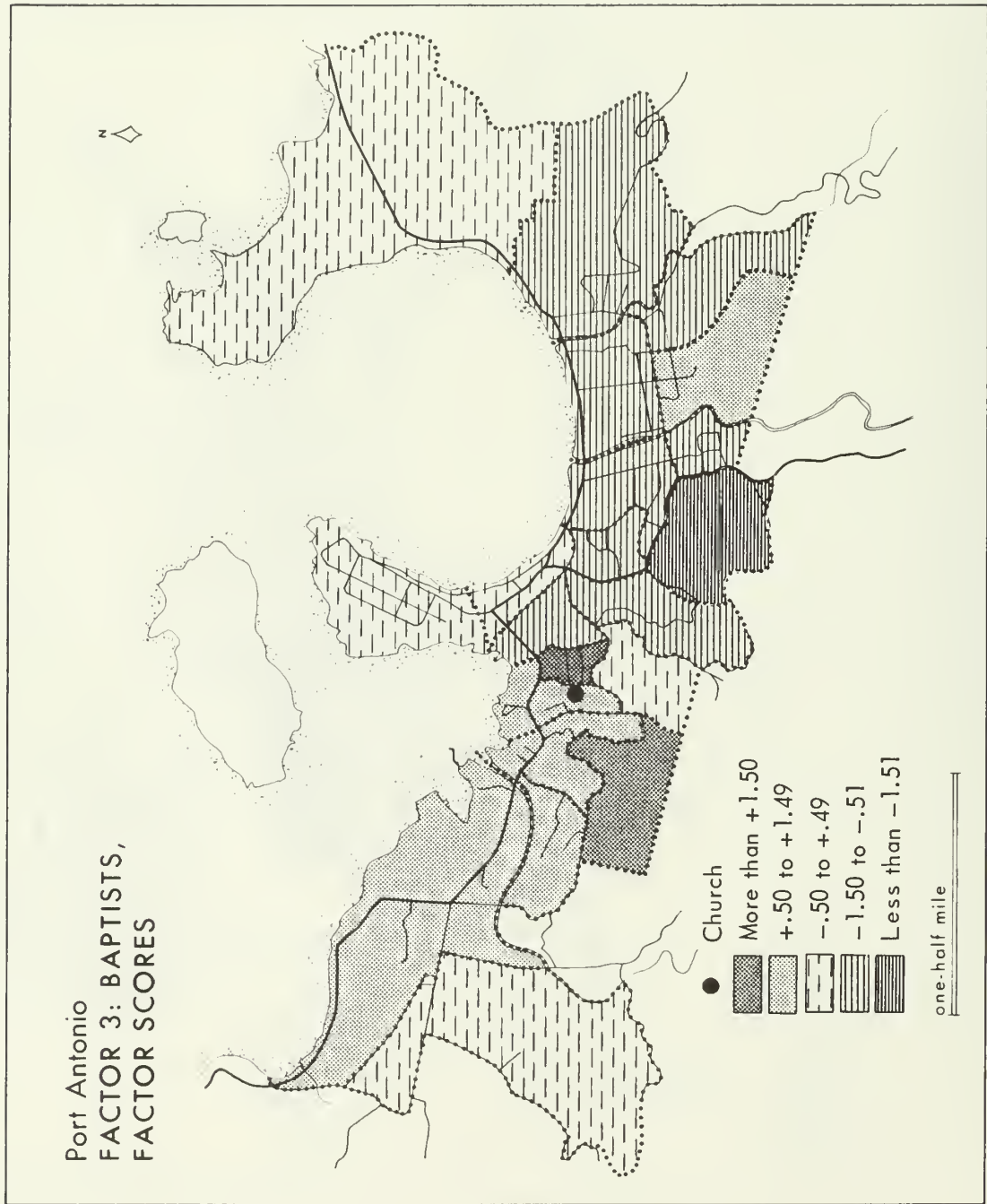


Figure 6

## CONCLUSIONS

This analysis is an initial description of the internal spatial expression of socio-economic characteristics within a small community, with an eye toward identifying the existence and nature of any sub-communities. Sub-communities are found to be identifiable in terms of religion and in terms of the high occupational class segregating itself. Furthermore, basic dimensions derivable from these variables show similarities to those derived in larger urban communities, but specific relationships among some of the variables are different than those seen in larger communities.

In order to further understanding of spatial-social differentiation within small communities, this kind of analysis is valuable, but should be supplemented with analysis of social interaction. Using this approach, sub-communities could be identified on the basis of interaction and participation as well as upon static attributes of the population. Also, it would be beneficial to attempt to define sub-communities on the basis of individual identifications with spatially-defined sectors of the community, following the tradition of numerous community identification studies by social scientists (Young and Larson, 1970). In this approach, sub-communities would be defined on the basis of their perceived existence by members of the community. All three approaches are probably necessary to accurately describe any sub-communities within towns such as Port Antonio.

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THE INEQUALITY OF ACCESS TO PUBLIC SERVICES:  
THE CASE OF PORT ANTONIO, JAMAICA

Henry W. Bullamore

ABSTRACT

Both health care and information services in Port Antonio, Jamaica reach only a part of the population and the proportion of people served varies greatly between different areas of the town. Step-wise regression analysis identified those social and economic characteristics from the Jamaican census which best predict the level of use of four health care facilities and three information services in the census enumeration districts within Port Antonio. The economic status of an area is important in understanding its level of use of all public services, since some services are used primarily by residents of upper income areas and other services by lower income area residents. Further, a comparison of the rural service areas of the public services showed that the presence or absence of alternative facilities in the rural areas surrounding Port Antonio strongly influence the rural impact of the urban based services examined.

INTRODUCTION

Most modern societies consider education, health care, cultural facilities, and utilities as essential to the public welfare, and provide them through the public sector in varying degrees. Any analysis of public services must consider geographic accessibility to the entire population as well as unequal distribution to different social groups.

In a few cases geographers have examined the problem of spatial access to essential public services. The work of Hirsch (1968), an economist, indicated that much of the problem for researchers as well as government results from the different sizes of population needed for efficient operation of various services. The problems that occur when local government must provide several types of services in the same area have been discussed by Honey (1972), Massam (1972), and abler,

Adams, and Gould (1971). Geographers have also looked at the problem of determining the most efficient location for additional service points such as new hospitals in Sweden (Godlund, 1966) and in Guatemala (Gould and Leinbach, 1966). Others have redefined service area boundaries to increase efficiency in both the case of school districts (Yeates, 1963) and electricity distribution districts (Goodchild and Massam, 1969).

Still other geographers have directed their attention to the question of social access to public services. The basic problem concerns segments of society which are not receiving the public services that the system was designed to provide. Prominent in this approach is a recent issue of Antipode titled "Access to Essential Public Services" (November, 1971). Particularly in the case of hospital care, the failure of the system to provide adequate hospital care for the poor has been documented (Morrill, Earickson, and Rees, 1970; de Vise, 1969; and Earickson, 1970). However, only a small amount of research has been conducted on other types of services, although some economists are beginning to show interest in other public services (Schreiber, Gatons, and Clemmer, 1971).

Jamaica provides a setting to study the related questions of social and spatial access to public services. Developing nations such as Jamaica have financial problems that limit their ability to provide public services to the people. Certainly there may also be cultural differences that could lead to an uneven distribution of public services. In any case not all areas or all the people are adequately served in Jamaica and this raises the very basic question of exactly who is and



who is not served. Therefore, it is the purpose of this paper to determine the social groups and areas that are actually served in one parish of Jamaica by identifying those individuals served by selected public services. Through the study of the Jamaica case, a better understanding of the nature of social and spatial access to services should result.

#### DATA SOURCES

The provision of public services in Jamaica has been the subject of remarkably little study. Generally the only studies are publications of the ministries concerned with providing a particular service, such as the Ministry of Education's 1970 Annual Report. Little of this research deals with the problems of distribution of services to the population. Charley's work on medical services was useful, but now is out of date (Charley, 1943). Sources related to telephone service are also old (Hedley, 1937; and Government of Jamaica, 1945). However, the struggle to unify the electric power system led to publication of a number of items concerning provision of electric power in Jamaica (Bloch, 1957; Electricity Frequency Standardization Commission, 1959; Electric Power Resources Investigation Committee, 1966; and Electricity Survey Commission, 1957).

The data used in this analysis come from two basic sources. The first is the 1960 Census of Jamaica which provided data on sixteen social, economic, and religious variables for the twenty-one enumeration districts in the town of Port Antonio (Government of Jamaica, Department of Statistics, 1962). The second set of data is a compilation of user addresses for seven Port Antonio public services. These were the only public services for which address information was available. Included

are addresses for all female users of the Family Planning Center and the Venereal Disease Clinic, plus a 20% random sample of users of the local hospital and the out-patient clinic. In addition, addresses for all subscribers to the Port Antonio telephone exchange, all students at Titchfield Secondary School, and a 10% random sample of the adult cardholders of the Portland Parish Library were collected.

#### METHODOLOGY

In the examination of the users of each service two different kinds of analysis are used. Regression analysis is utilized to identify social and economic characteristics which effectively predict the level of public service use in different parts of Port Antonio. The address information was used to calculate the proportion of the appropriate population who use the service in each enumeration district, which serves as the dependent variable in step-wise regression. Sixteen social and economic variables from the census report are the independent variables. Examination of the spatial patterns of utilization and consideration of simple correlations in addition to the step-wise regression, permits understanding of social and spatial access to the services by Port Antonio residents.

The second type of analysis characterizes the spatial extent to which various services reach people outside of Port Antonio. The mean highway distance travelled by rural users of each service and the proportion of clients from Port Antonio are calculated to compare services.

## HEALTH CARE SERVICES

The Port Antonio Hospital In-patient Section

Various types of health care services are considered first. In the study of the Port Antonio Hospital In-patient section the dependent variable in the step-wise regression analysis is the percentage of the population who were admitted to the hospital in 1970 (Table 1). The first variable to enter the regression analysis is the percentage of the population that are Roman Catholic with a correlation of -0.44. The reason this variable entered the equation first is not clear. The next three variables to enter the regression equation are all demographic parameters with low simple correlations. The failure of economic variables to appear in the step-wise analysis may be explained by the fact that some people of high economic status seek care at the private hospitals in Kingston. At the same time, people of low economic status might not seek hospital care because of the cost involved--although at J\$0.20 (US\$0.25) a day it costs very little.<sup>1</sup> The Port Antonio Hospital is located to serve the central part of Portland Parish. Over sixty per cent of the patients come from the rural areas surrounding Port Antonio and travel an average of over 10 miles--a substantial distance by Jamaican standards--to reach the hospital (Table 2).

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<sup>1</sup> During July, 1972, the Government of Jamaica made regular hospital care completely free.

TABLE 1<sup>a</sup>  
STEP-WISE REGRESSION  
PORT ANTONIO HOSPITAL IN-PATIENT SECTION

Step	Variable	r	R	R <sup>2</sup>
dependent	% of Pop. admitted to hospital			
1	% of Pop. Roman Catholic	-.44	.44	.19
2	Total population	-.30	.57	.33
3	% of Pop. over 65 years	-.26	.65	.42
4	% of Pop. under 14 years	.22	.72	.52
5	% of Pop. over 10 with nil education	.06	.81	.65
*	% of Pop. in manual and service occ.	.43		
*	% of Pop. under 29 in secondary sch.	-.43		
*	% of Pop. under 29 not in school	.40		

\* other variables with simple correlations greater than .40

<sup>a</sup> The step-wise regressions utilized Biomed program BMD02R with a F value of 1.00 for variable inclusion and F value of 0.40 for variable deletion from the regression equation. These same F levels were used throughout the analyses.

TABLE 2  
COMPARISON OF SERVICE AREAS

Services	Number in sample (S)/ population (P)	% users in Port Antonio	Mean rural service distance (miles)	Distance to farthest point served (miles)
Hospital In-patient Section	497 (S)	36.6	10.6	27.0
Hospital Out-patient Clinic	471 (S)	53.7	6.5	22.4
Venereal Disease Clinic	335 (P)	38.5	9.4	27.0
Family Planning Center	366 (P)	52.7	7.7	26.5
Portland Parish Library	378 (S)	58.2	7.8	26.8
Residential Telephones	77 (P)	88.3	3.1	5.1
Titchfield Secondary School	579 (P)	50.6	11.7	28.6

### The Port Antonio Hospital Out-patient Clinic

The results of the step-wise regression with the percentage of the population visiting the hospital out-patient clinic as the dependent variable, suggest that two distinct processes are operating to influence use of the clinic (Figure 1 and Table 3). First, the clinic is used primarily by residents of low economic status areas as indicated by the low secondary education level (the first variable to enter) and low employment in professional occupations (the third variable to enter). Second, the second variable to enter, percentage of the population Baptist, indicates that even within Port Antonio the spatial process of distance decay is operating. The Baptists are highly clustered in the enumeration districts surrounding the Baptist Church which is located a very short distance from the hospital (Figure 2). Thus, the tendency of the population living in the neighborhood of the hospital to go to the clinic for treatment more frequently than residents of other parts of the community is shown. Within the rural areas, the out-patient clinic has a much more restricted service area than the hospital itself due to the presence of alternative government health centers and private clinics. As a result, over fifty per cent of the patients come from Port Antonio, and those coming from rural communities are coming largely from the nearby towns.

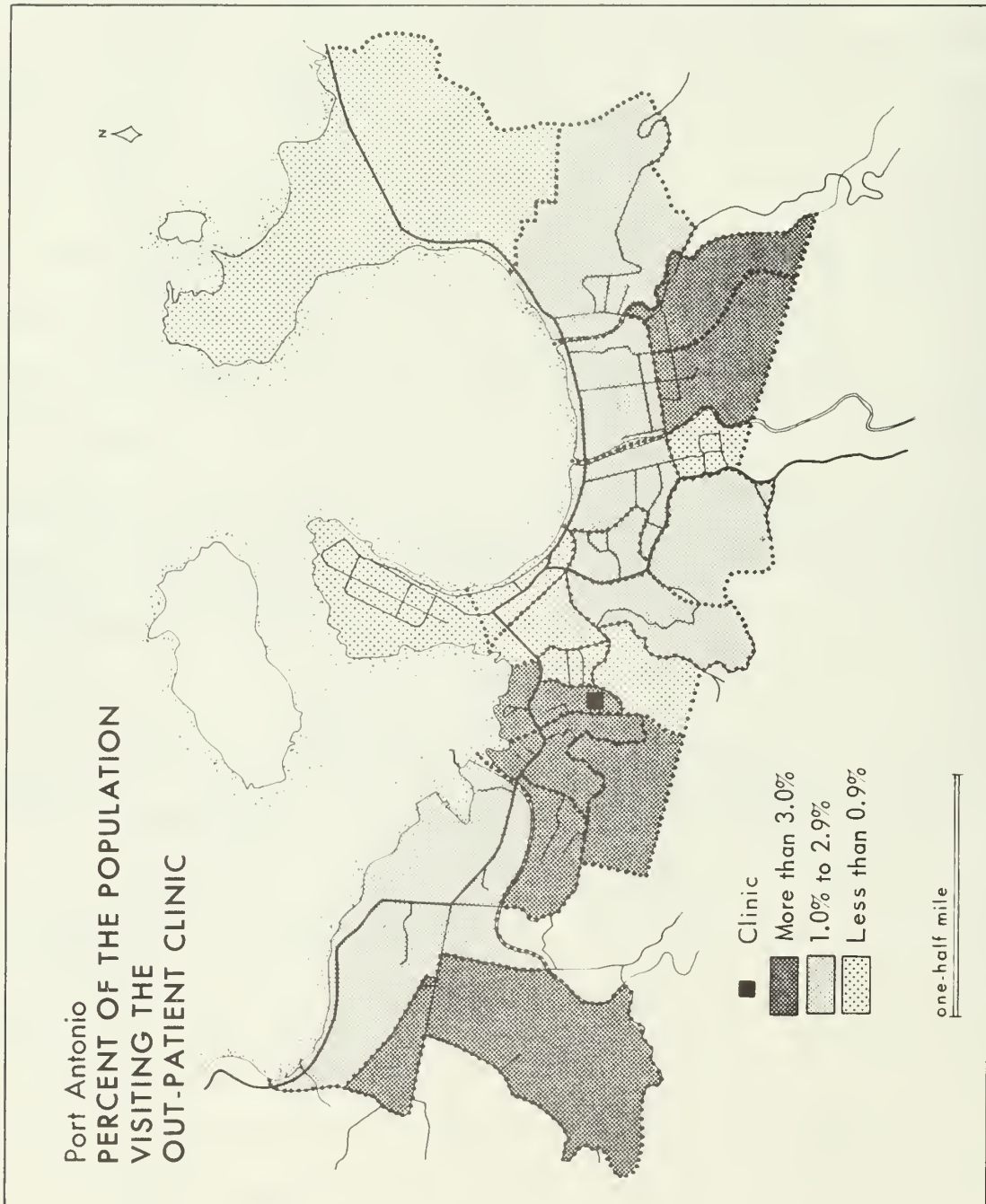


Figure 1

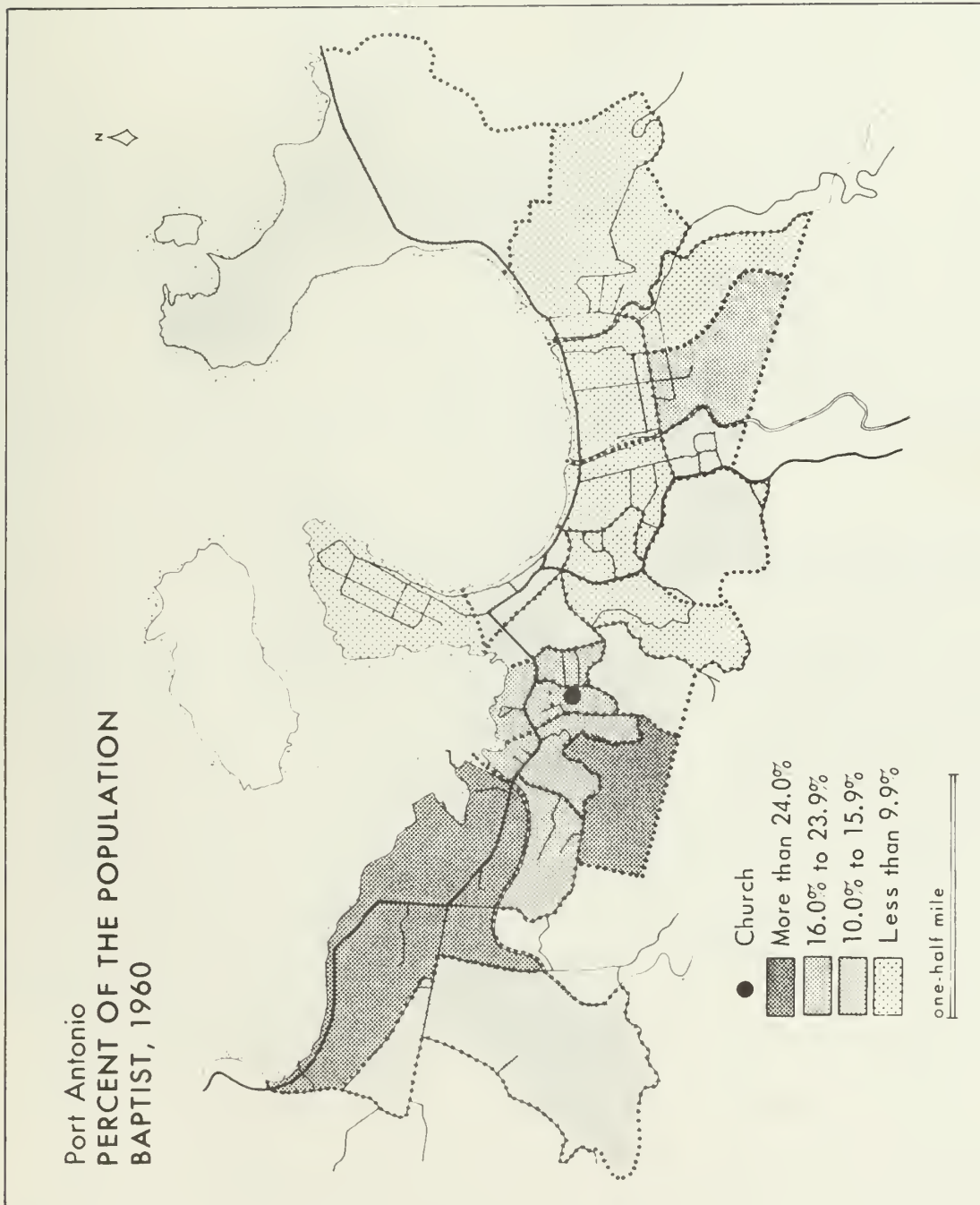


Figure 2

TABLE 3  
STEP-WISE REGRESSION  
PORT ANTONIO HOSPITAL OUT-PATIENT CLINIC

Step	Variable	r	R	R <sup>2</sup>
dependent	% of Pop. who visited out-patient clinic			
1	% of Pop. under 29 in secondary sch.	-.51	.51	.26
2	% of Pop. Baptist	.47	.66	.43
3	% of Pop. in Prof. and supervisory occ.	-.27	.75	.56
4	% of Pop. Roman Catholic	-.32	.78	.60
5	% of Pop. under 29 not in school	.50	.80	.63
6	Total population	-.06	.82	.66
*	% of Pop. Anglican	-.49		
*	% of Pop. in manual and service occ.	.47		
*	% in owner occupied dwellings	.43		

\* other variables with simple correlations greater than .40

#### The Venereal Disease Clinic

In the regression analysis for the other hospital clinic (the Venereal Disease Clinic) the dependent variable is the percentage of females in each enumeration district who first visited the VD clinic in 1971 or early 1972. (Figure 3 and Table 4). The first variable to enter the analysis is the percentage of the population Baptist with a correlation of .41. Again, this is a case of spatial association and reflects the higher levels of usage in the area of the hospital (Figure 2). It suggests that individuals are most likely to seek examination or treatment if it is close at hand. Analysis of the original data shows that a larger proportion of the visitors to the clinic from enumeration districts near the hospital did not have VD (62.5% versus 44.1% non-reactive), which probably indicates that individuals who suspect that they have VD are more likely to go to the



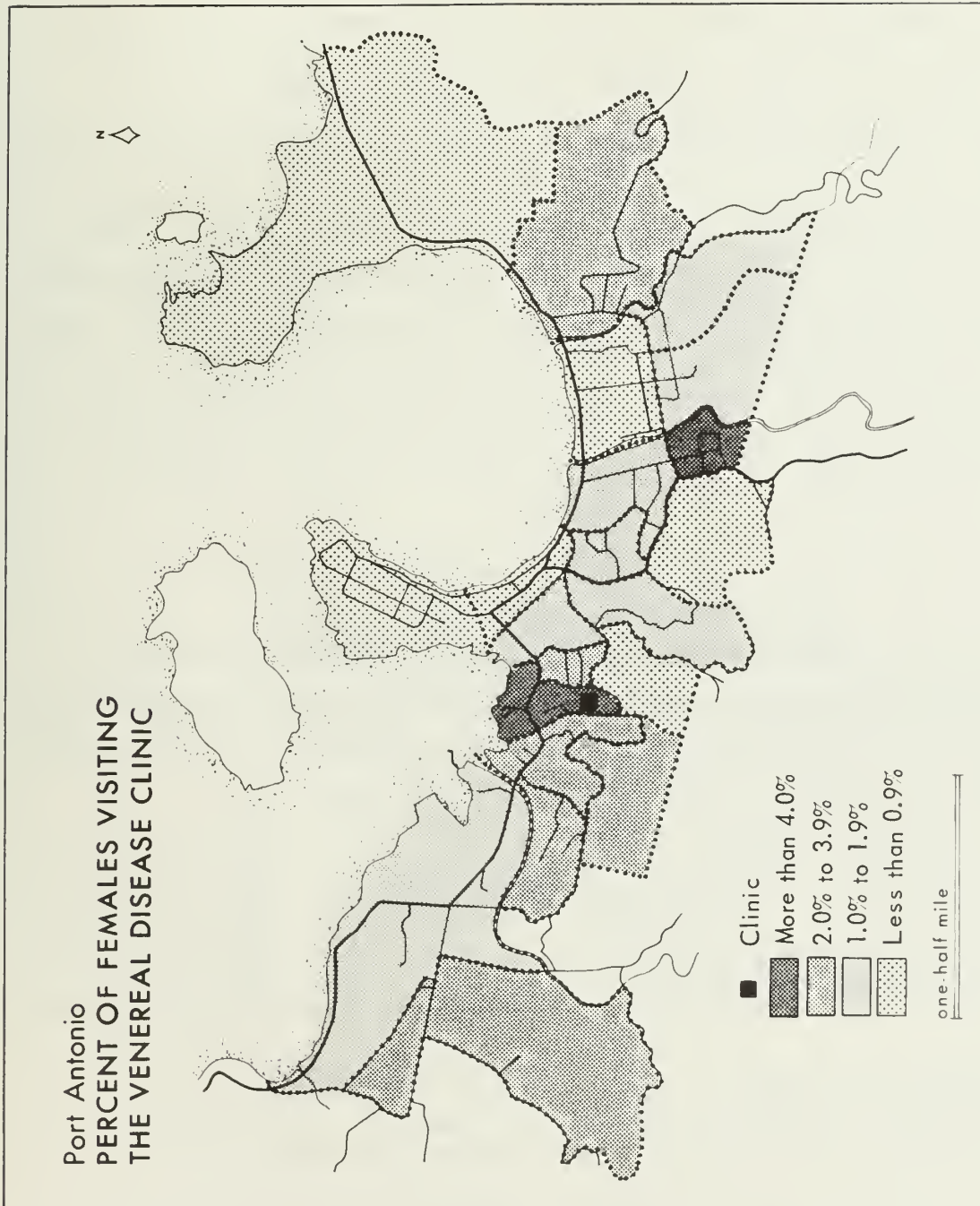


Figure 3

clinic if it is easily accessible. The second variable to enter the equation, percentage in professional and supervisory occupations with the second highest correlation (-0.37), was followed by several other economic status variables. Together they indicate that the clinic serves lower status areas and could mean higher status individuals seek treatment from private physicians. Over sixty-two percent of the visitors to the VD clinic come from outside Port Antonio a percentage only slightly lower than the percentage for the hospital itself. The mean distance travelled by rural patients is over 9 miles and is an indication of the major VD problem in some rural areas of Jamaica.

TABLE 4  
STEP-WISE REGRESSION  
PORT ANTONIO VENEREAL DISEASE CLINIC

Step	Variable	r	R	R <sup>2</sup>
dependent	% of females who visited the VD clinic			
1	% of Pop. Baptist	.41	.41	.17
2	% of Pop. in Prof. and supervisory occ.	-.37	.51	.26
3	% of Pop. in craft and technical occ.	-.05	.58	.33
4	% of Pop. over 65 years	-.22	.66	.43
5	% of Pop. over 14 at work	-.04	.71	.50
6	% of Pop. Anglican	-.17	.73	.53

#### The Family Planning Center

Family planning counseling and birth control device distribution are provided without charge by the Port Antonio Family Planning Center. In the step-wise regression analysis the dependent variable is the percentage of females in each enumeration district who made their first visit to the family planning center in 1971 or the first half of 1972 (Table 5). Only one variable explained a large part of the variance.

The first variable to enter the equation has a simple correlation of .60 and is the percentage of owner occupied dwellings. When it is considered along with the low negative correlation of the second variable percentage in manual and service occupations, indicates that the family planning idea is more easily received in the higher status areas. There are a number of small family planning centers in the parish which limit the Port Antonio clinic's rural service area. As a result, over 50% of the clients come from Port Antonio, and the mean rural travel distance is low compared to the other services.

TABLE 5  
STEP-WISE REGRESSION  
PORT ANTONIO FAMILY PLANNING CENTER

Step	Variable	r	R	R <sup>2</sup>
dependent	% of females visiting Fam. Plan. Center			
1	% in owner occupied dwellings	.60	.60	.36
2	% of Pop. in manual and service occ.	-.21	.76	.58
3	% of Pop. Roman Catholic	.18	.80	.64
4	% of Pop. Methodist	-.18	.82	.67
5	% of Pop. under 29 not in school	.13	.84	.71
6	% of Pop. Anglican	-.28	.86	.74
7	% of Pop. over 10 with nil education	-.22	.87	.76
8	% of Pop. Baptist	.20	.91	.83
+			.99	.97
*	% of Pop. over 14 at work	.45		

+ steps 9<sub>2</sub> through 16 added 6 variables and removed 2 variables, final R and R<sup>2</sup> values given here

\* other variables with simple correlations greater than .40

In summary, Port Antonio health care services appear to serve different economic status groups. While the hospital in-patient section serves primarily middle income areas, the Venereal Disease and out-patient clinics serve the low income areas, and finally the family planning

center serves the higher status areas. Certainly, these results must be considered in light of alternative health care facilities such as private physicians. Unfortunately, it was not possible to identify the precise role of the private physician, but probably higher status groups would seek care from physicians for venereal disease and out-patient services. In addition, the higher status groups may decide to seek care in Kingston or somewhere else besides Port Antonio.

#### INFORMATION SERVICES

##### Portland Parish Library

The Portland Parish Library provides free library service for all residents in the parish. In the step-wise regression analysis the percentage of adult population with library cards at the main library is the dependent variable. It clearly shows that the library is actually serving the higher economic status areas (Table 6 and Figure 4). The first element to enter the regression equation is the percentage of workers employed in professional and supervisory occupations, and the second most important variable is the percentage with 4 years or more of education (Figure 5). This suggests that the library has not been successful in reaching the lower class areas possibly because of the problem of illiteracy. In spite of 14 branch libraries and book centers throughout the parish which provide limited service to the smaller communities, the main library serves individuals from all parts of the parish. More than 40% of the library's users come from rural areas, and they travel an average of 6 miles to get there. The wider selection of materials at the main library is the probable explanation for extensive rural use.

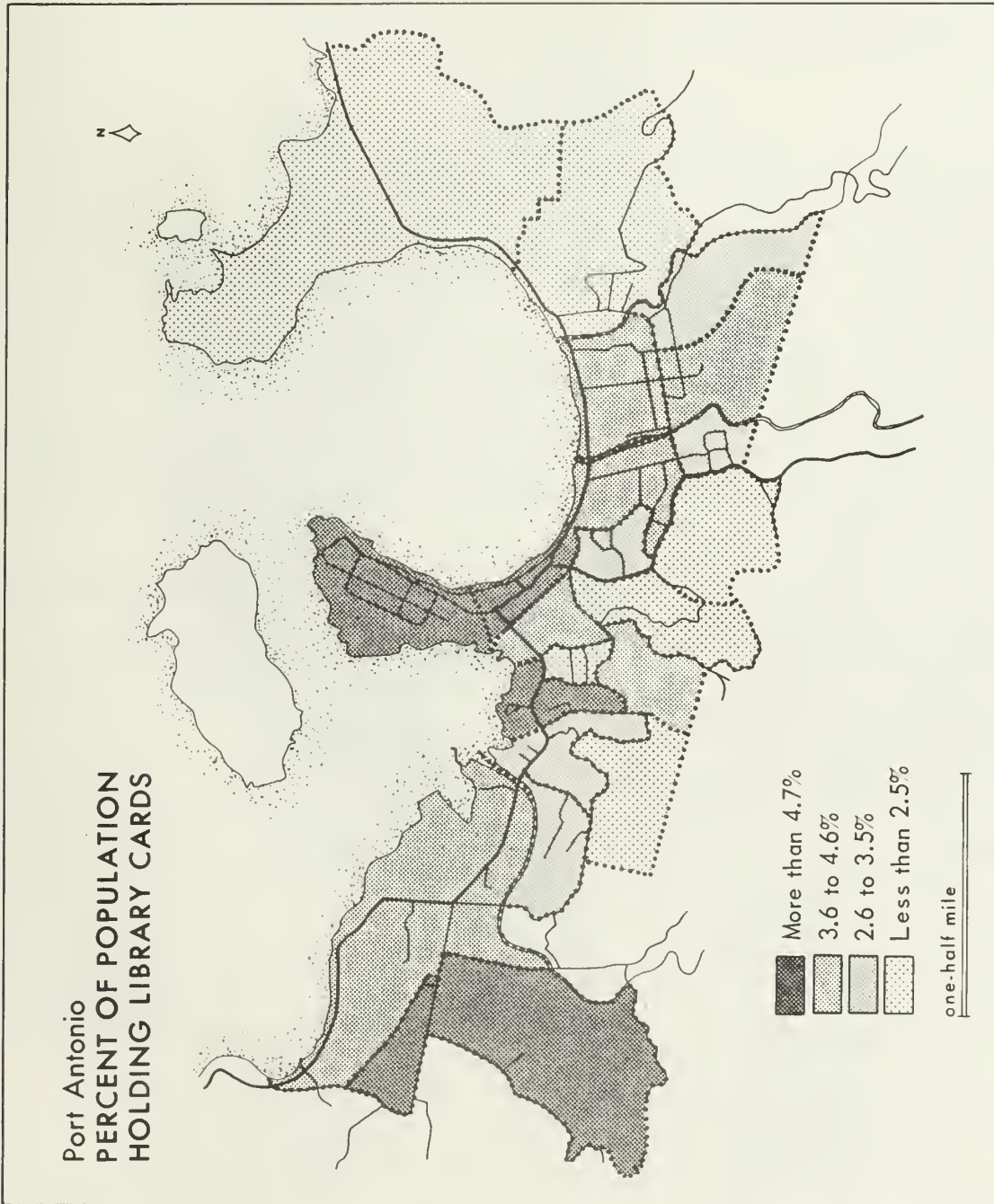


Figure 4

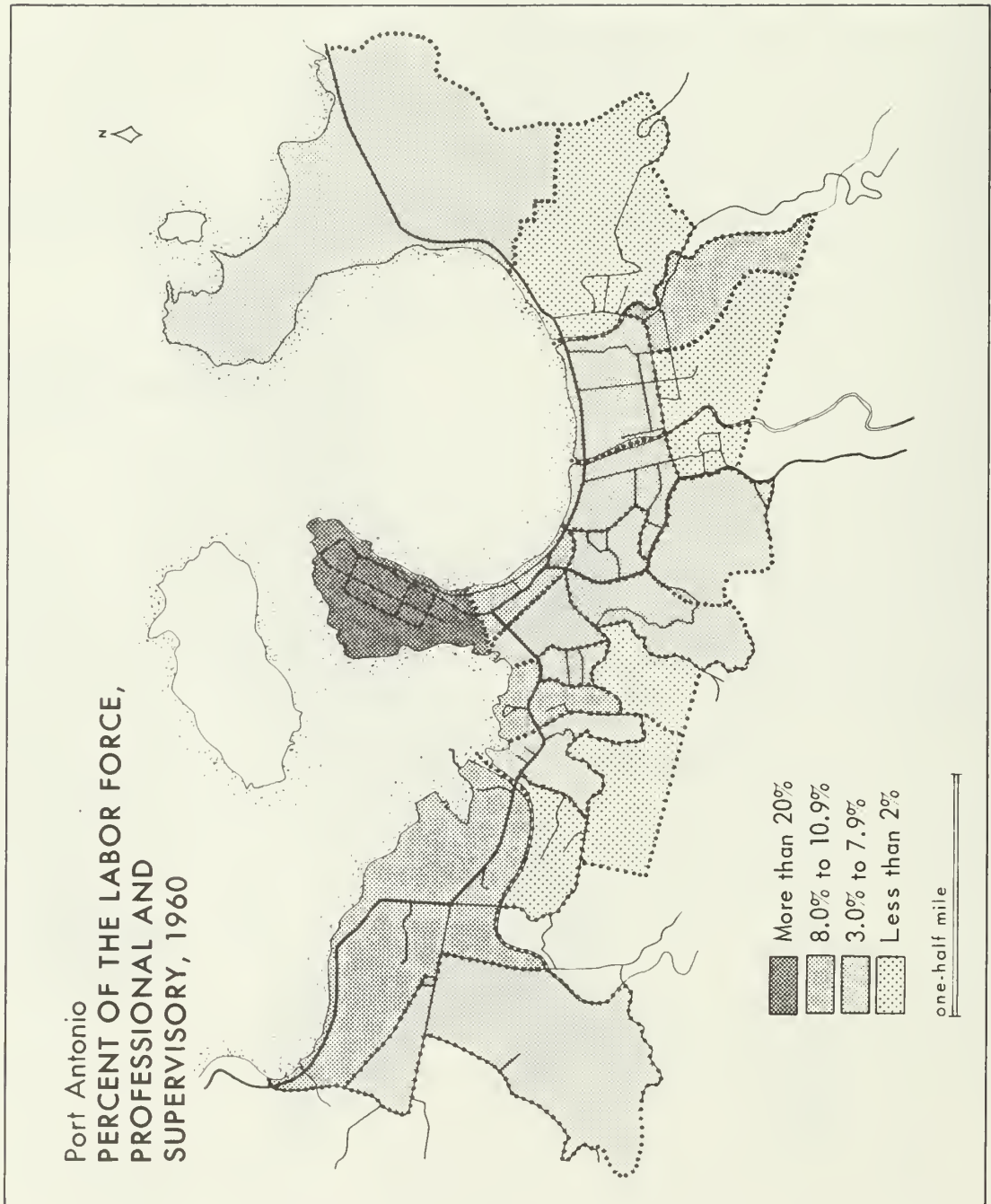


Figure 5

TABLE 6  
STEP-WISE REGRESSION  
PORT ANTONIO LIBRARY

Step	Variable	r	R	R <sup>2</sup>
dependent	% of Pop. over 14 with library cards			
1	% of Pop. in prof. and supervisory occ.	.68	.68	.46
2	% of Pop. over 10 with 4 years of sch.	.68	.82	.67
3	% of Pop. Baptist	-.21	.85	.72
4	% of Pop. under 14 years	-.03	.87	.76
5	% of Pop. in craft and technical occ.	-.29	.89	.78
6	% of Pop. Methodist	.47	.90	.81
*	% of Pop. over 10 with nil education	-.59		
*	% of Pop. under 29 in secondary sch.	.57		
*	% of Pop. in manual and service occ.	-.54		
*	% of Pop. Anglican	.49		

\* other variables with simple correlations greater than .40

#### Residential Telephone Service

Economic status is the most important determinant of households with residential telephones in Port Antonio (Table 7 and Figure 6). Telephone service is limited in access both spatially and socially, because telephone lines are not available to all parts of the town and service is costly. The dependent variable in the step-wise regression is the proportion of households with residential telephones in each enumeration district. As might be expected, the percentage in professional and supervisory occupations is the first variable entered and has a correlation of .80 (Figure 5). The next two variables, percentage in craft and technical occupations plus percentage in manual and service occupations have simple correlations of -0.61 and -0.49 respectively, which affirm the higher economic class use of the telephone. The distribution of telephones in the parish is highly restricted

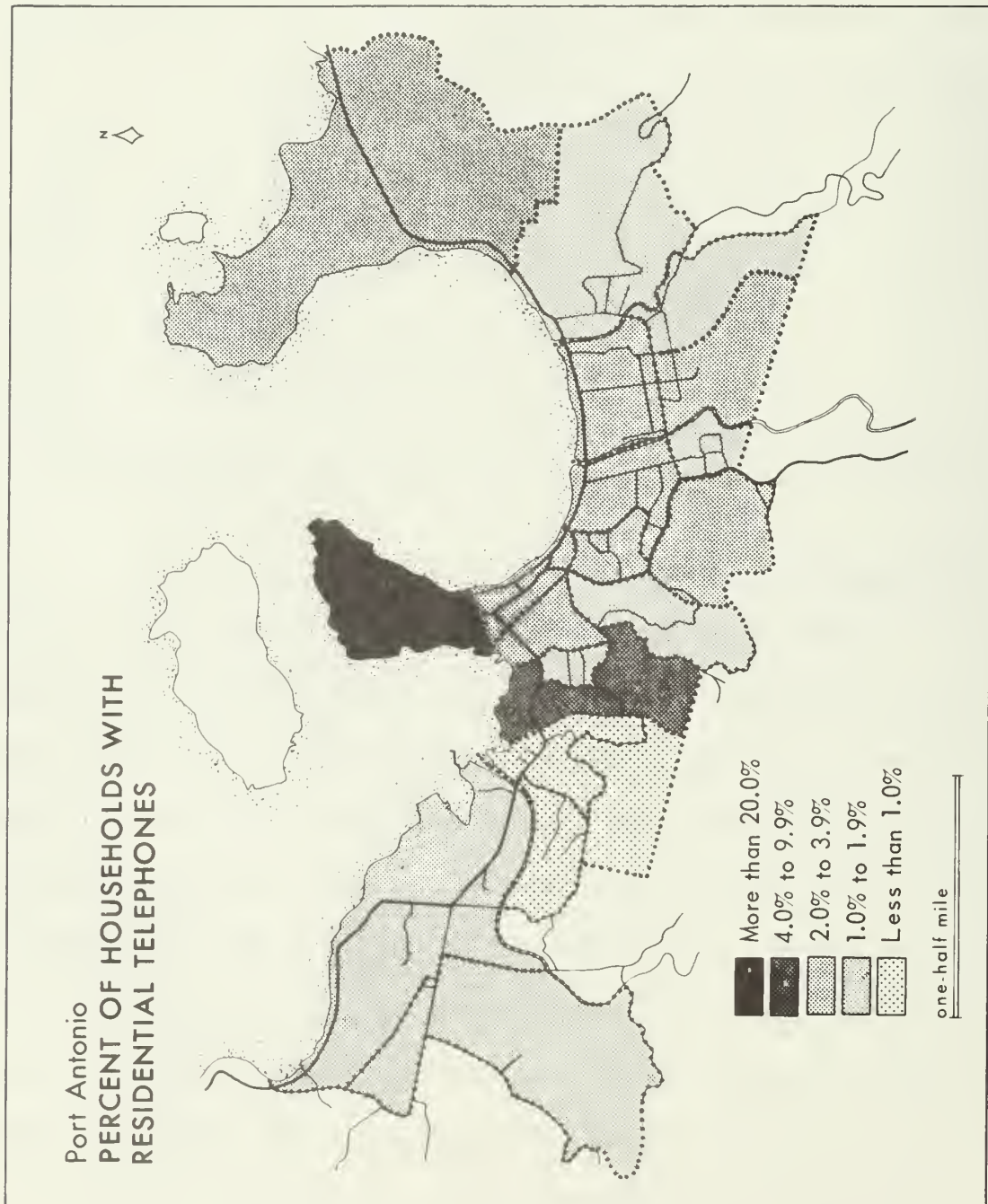


Figure 6



since only a few commercial phones are located outside of Port Antonio except for a small exchange serving a resort area.

TABLE 7  
STEP-WISE REGRESSION  
RESIDENTIAL TELEPHONES

Step	Variables	r	R	R <sup>2</sup>
dependent	% of households with telephones			
1	% of Pop. in prof. and supervisory occ.	.80	.80	.63
2	% of Pop. in craft and technical	-.61	.81	.66
3	% of Pop. in manual and service occ.	-.49	.84	.70
4	% of Pop. Roman Catholic	.43	.86	.73
+			.89	.80
*	% of Pop. under 29 in secondary sch.	.74		
*	% of Pop. Anglican	.59		
*	% of Pop. Methodist	.54		
*	% of Pop. under 14 years	-.45		

+ steps 5<sub>2</sub> through 8 added 3 variables and removed one variable, final R and R<sup>2</sup> values given here

\* other variables with simple correlations greater than .40

#### Titchfield Secondary School

Titchfield Secondary School is the largest secondary school in the parish and the only school designed to prepare students for post-secondary education. The regression analysis indicates that a large proportion of the students of the school come from the higher economic status areas of Port Antonio (Table 8). With the percentage of people under 29 years of age enrolled at Titchfield School as the dependent variable, the percentage of workers in professional and supervisory occupations was the first variable to enter the regression equation with a correlation of .57. The next variable to enter the equation was the percentage not in school with a simple correlation of -0.55.

Within the context of the geographic service area, Titchfield is rather like the hospital since it draws its students from many parts of the parish. In fact, the service area of Titchfield School is larger than that of the hospital particularly on the west where the hospital competes with Buff Bay Hospital. Titchfield draws about 10% of its students from Buff Bay which does not have a secondary school. As a result, the mean distance travelled by the students of Titchfield (11.7 miles) is larger than that of any other service considered. In spite of competitive examinations, a disproportionately large part (over 50%) of the students come from Port Antonio reflecting the social advantages of urban residents.

TABLE 8  
STEP-WISE REGRESSION  
TITCHFIELD SECONDARY SCHOOL

Step	Variable	r	R	R <sup>2</sup>
dependent	% of Pop. under 29 at Titchfield			
1	% of Pop. in prof. and supervisory	.57	.57	.32
2	% of Pop. in under 29 not in school	-.55	.63	.40
3	Total population	-.21	.66	.43
*	% of Pop. under 29 in secondary sch.	.52		

\* other variables with simple correlations greater than .40

The information services, in summary, all appear to be serving primarily the higher status areas. Although that is expected in the case of residential telephones where service is provided by a private corporation, it is not expected in the case of free library service. The case of Titchfield is complicated by varying amounts of scholarship aid awarded solely on the basis of competitive examinations in addition

to the presence of a few "full fee" students. Probably the higher status areas have won more than their share of scholarships and, of course, residents would be able to pay fees for any child that did not win full aid.

### CONCLUSIONS

The analyses in this paper illustrate aspects of social and spatial access to essential public services in Portand Parish, Jamaica. More importantly, however, the study has shown the applicability of this type of theoretic approach to the analysis of public service distribution. This paper has again shown that the location of the service point--its position of geographic accessibility--will greatly affect who it serves. This is strongly indicated by the sharp distance decay effect noted in the area of the hospital in reference to the out-patient clinic and the Venereal Disease Clinic and also by the varied rural service areas. In addition, it has been shown that social accessibility to a service is a viable concept and a function of several factors. The fact that cost of the service alone is not a determining factor is indicated by higher status use of the Family Planning center and the library despite the fact that both are free.

The study has also indicated that the perceived quality of the service is a factor that should be considered in future analyses of the level of usage of public services. Certainly, in the case of health care, some individuals sought care from private physicians or in Kingston because they felt the quality of care was better and worth the additional cost. The question that remains to be answered, however, is how does

the inequality of access to service in Jamaica compare to the situation in the United States. De Vise (1971) has clearly shown that the public hospitals of American cities serve the poor while the wealthy travel to private hospitals. An unanswered question concerns the degree to which public libraries in the United States serve the upper middle class while the entire population pays taxes to support them. In conclusion, this paper, through the use of the Jamaican case, has demonstrated the reality of inequality of access to essential public services.

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FAMILIAL AND LOCATIONAL FACTORS ASSOCIATED WITH  
ASPECTS OF TEENAGE SEXUAL BEHAVIOR  
IN PORTLAND PARISH, JAMAICA

41

Jill M. Price

ABSTRACT

The number of illegitimate births among Jamaican teenagers has increased by over 80 percent in the last thirty years. As a result, the Jamaican government has instituted several sex education and family planning programs, directing much of their emphasis towards this teenage population. Therefore, a necessary prerequisite for a successful family planning program is knowledge of the teenage sexual behavior, which in Jamaica is termed "visiting." From an analysis of a sample of 84 females in several areas of Portland Parish, two general conclusions are drawn: (1) certain conditions present in the girl's home environment, including mother's age, position in family, and presence of an adult male are good indicators of the girl's future visiting behavior, and (2) increasing urban exposure leads to more liberal visiting practices and attitudes towards visiting; i.e., younger, less stable unions, and greater tolerance towards pregnancies and illegitimate births.

INTRODUCTION

In 1960, the annual rate of increase for the population of Jamaica was 3.1 percent (Directions for Jamaican Family Planning, 1970, p. 2). Projecting this figure into the future, Jamaica will double its population in 23 years. Because of the potential individual economic burdens, the sociological problems and the strain on governmental expenditures for health, education, housing and welfare, the Jamaican government during the 1960's instituted several national family planning and sex education programs in an attempt to curb this increase.

A problem which is important to these family planning programs is the large increase in the number of illegitimate births to Jamaican teenagers. Illegitimacy has increased by over 80 percent in the last 30 years (Family Planning in Jamaica, 1971). To contribute to the solution for this situation, knowledge of teenage sexual patterns is necessary.

The purpose of this paper is to examine the relationship between teenage sexual behavior and familial and locational factors in Portland Parish, Jamaica. This will be done by analyzing the results of 84 interviews with teenage females in Port Antonio, the capital and largest town in the parish, and the smaller, more isolated communities of Manchioneal and Black Rock.

Part of the sample was selected from volunteers contacted through family planning clinics, mother-child care clinics and pre- and post-natal care clinics in those areas. In an attempt to offset bias in the sample that may have resulted from certain segments of the population utilizing those clinics, the additional volunteers were contacted through the Jamaican youth clubs. Although certain clubs may represent specific socio-economic classes, the several clubs involved represent several different classes and should provide some degree of socio-economic diversity in the sample.

"Visiting" as it is called, is the loose, premarital sexual associations engaged in by Jamaicans. While "visiting" is not exclusive to Jamaican teenagers, it is the predominant form of sexual behavior in that age group. This paper will present a general discussion of visiting behavior, and then employ this concept in the analysis of sexual behavior in the sample.



## VISITING BEHAVIOR

In Portland Parish, girls begin visiting between the ages of 12 and 19. Their boyfriends are generally two or more years older than themselves. In general, the boys are originally from the girls' neighborhood. (Often however, these boys may be absent for periods of time as they may be employed elsewhere.) An exception to this general pattern is found in Port Antonio, where girls are exposed to men from other parts of the island via banana and tour boats. Whether they are from the local area or not, many of the young men are employed outside the locale of their homes.

The first incidence of visiting usually occurs at a party, at a friend's home, on the way home from a party, or on the way home from school or the market. After visiting and walking the girl home from the locale of the visit, the boy may be invited into the house by the girl's mother, the girl may be told that she may not continue seeing the boy, or the situation may be ignored by the girl's mother.

If the girl's mother disapproves of the situation, the couple generally continues to visit at a friend's house or out in the bush. This continues until the girl becomes pregnant. Few girls have had any formal sex education and their mothers discover that they are pregnant about the same time that the girls do.

A girl faces one of the biggest emotional crises of her life when she discovers that she is pregnant. She may be forced to leave her parent's home, she may be deserted by her boyfriend and, if she attends church, she may be condemned and ostracized by her church congregation. At best, she will be allowed to remain at home and her boyfriend will

continue seeing her and hopefully, help financially support her and her child once it is born. However, even if she is allowed to remain at home after one pregnancy, she will probably be forced to move out if a second pregnancy occurs.

If she is forced to move out, she may move in with a friend, a relative, usually her grandmother, or her boyfriend. Sometimes, she may be allowed to move back into the house after the child is born. Whether she does, or does not return home however, the strained mother-daughter relationship is generally relaxed with the child's birth. If her boyfriend does not desert her, he will attempt to financially support the child for as long as possible, even if the girl moves in with a new boyfriend. If he has no other girlfriend and she has been thrown out of her home, the boyfriend may offer to live with the girl. This is not prevalent in the first few visiting relationships, however.

Although visiting is associated with households other than matrifocal households, it necessarily leads to matrifocal households in economies such as Jamaica's. Non-local, external wage employment creates an imbalance in the local sex ratio (Gonzalez, 1969). This creates the necessity for cooperative ties - economic and emotional - between the female and her family. These ties are necessary for the maintenance of households (Gonzalez, 1969).

A matrifocal household is created when the daughter and her children reside with her mother and possibly her sisters and brothers. Once the children are old enough, the daughter works while her mother cares for the children. The relative importance of the brother within the matrifocal household depends largely on his financial contributions

to the household.

Although visiting, by one name or another, has been observed to be the most frequent pattern of "extra residential sexual behavior in the West Indies, it's generally discussed in the ethnographic literature only in terms of its patterning for matrifocal households"(Gonzalez, 1969; Blake, 1961; Onesco, 1956; Cumper, 1954; Herslcovits, 1947). Visiting is usually treated implicitly as this type of association is for the most part only a reflection of the more permanent mainstream unions (Smith, 1962).

From the historical descriptions of visiting, it would appear that many of the traditional features have disappeared. In the past elaborate preliminary arrangements took place. Before any contact could take place, the boy would arrange for an older male relative to discuss the possibility of the relationship with the boy's father or the mother's consort, who, if he approved, would then confer with the boy's mother. If the girl and her family were approved, then, the couple's fathers would confer. The girl's father would then initiate a meeting between both families. At this meeting the young couple would be questioned as to their love and their intentions for a peaceable relationship. They would also be warned of the seriousness of their step. At this conference, a date of consummation and a contract for any labor involved would be set.

The contract would provide for the boy's provision of household goods to the girl's mother and the girl and would sometimes include a chattel for the boy to clear land for the girl's father. After the contract was fulfilled, the couple would meet in the girl's home and

the first sexual contact would supposedly take place. (Clark, 1954).

From the author's observation and other sources, (Blake, 1961; Comper, 1954; Herslcovits, 1947), it would appear that none of these procedures are met any longer. Although the norm is supposedly that the girl's parents should at least approve of the girl's partner, realistically most parents are lucky if they even know the boy.

#### DATA

Each of the 100 girls was interviewed in order to assess specific relationships between visiting behavior and family and environmental factors. Information on the family environment includes (1) whether or not an adult male was present in the household; (2) the mother's age; (3) the girl's age; (4) the girl's position in the family; (5) family socio-economic class; (6) the girls education level; and (7) the availability of sex education and related information. Information on the visiting behavior included: (1) the boyfriend's age; (2) whether or not a child was born; (3) the stability of the union; (4) whether support was provided; and (5) whether or not the girl had been forced to move out of the household after becoming pregnant.

Two types of analyses are performed. The relationship between familial characteristics and visiting patterns is examined. Then the relationship between the size of the community, its degree of urbanization, and its influence on several aspects of visiting is studied.

## FAMILY CHARACTERISTICS AND VISITING

The beginning step of the analyses assesses the factors influencing the decision to force the pregnant daughter to move out of her household (mandatory move). In households where adult males are present, there are twice as many "mandatory moves" as in households where no male is present. Of the households with males present--24 of 37 pregnant girls were required to move (65%) whereas in households with no male present only 10 of 63 (16%) were forced out. The man's status, either as mother's husband or as consort, does not affect this increase in mandatory moves in any observable way. Disregarding the obvious explanation that this mandatory move is just the result of the man's stronger reaction against disrespect by the girl, that is her pregnancy violates his self-image as a figure of authority, there is the question of the mother's reaction to her daughter's obvious new, sexual identity to be considered.

A middle and lower class Jamaican woman's role has been primarily that of a child bearer. Childless women are often ostracized and sometimes called "mules." Because of the obvious necessity for men to help fulfill this maternal role and because of the real shortage of men, Jamaican women are greatly concerned with keeping their men and are naturally quite jealous of any suspected threat. When a girl fulfills her sexual role by becoming pregnant; perhaps the mother feels sexually threatened by the pregnancy when a man is present. If she does, then in her mind, her daughter has become competition and she reacts to this threat by forcing her daughter to move out.

If this unconscious sexual threat occurs, it would seem to last until menopause. The number of mandatory moves in the sample dropped from 32 of 84 (38%) in the group with mothers under the age of 50, to 3 of 16 (18%) in the group with mothers over 50. Apparently women are no longer considered as sexual beings or objects by their society and themselves when they cease producing children. Consequently, their problems of competition are no longer present.

In the sample the presence of an adult male postpones the age of visiting for the eldest daughter by an average of 1.5 years. This may be attributed to fear of, or respect for, the stronger male authority figure. Male presence does not affect postponement for younger daughters, perhaps because parental reaction is not as violent as feared or expected.

Thus, the mandatory move is related to the girl's position in the family. The number of mandatory moves for the eldest daughter is 36.3 percent higher than the number of mandatory moves for middle or youngest daughters (eldest 11, middle 4, youngest 4). One possible explanation for this could be that parents learn to accept unpleasant realities of life such that their reaction to the youngest daughter's pregnancy is less vehement than their reaction to the pregnancy of the eldest daughter.

An alternative, or perhaps additional, cause for the decrease in the percentage of mandatory moves is a correlation between the girl's position in the family and the mother's age. The sample shows that the eldest daughter becomes pregnant while her mother is still in her late 20's or 30's while sexual competition is still strong. When the

youngest daughter becomes pregnant, her mother has usually passed menopause and no longer see herself threatened by her daughter.

Mandatory moves, stability and support are all directly influenced by the ages of the girl and her boyfriend. A couple under the age of 14 has an average visiting frequency of once per week and a probability of pregnancy of 39 percent, whereas a couple over 14 has a pregnancy probability of 86 percent and a visiting frequency of three times per week. The less chance a girl has of becoming pregnant, the less chance she will have of being forced to leave her home. No pregnant 12-year old girls in the sample were forced to move out, whereas half of the pregnant 17-year olds moved. The 12-year old's inability to care for herself is probably the determining factor. So long as no pregnancy results, no one seems too concerned about visiting and no mandatory moves result.

For this sample, the younger a couple is, the fewer their chances are for a stable union either in common law or legal marriages. Jamaicans do not usually enter into common law unions or marriages until late in their twenties or thirties. This postponement can be explained in two ways: (1) few Jamaicans enter into stable relations until they have engaged in several visiting relationships, and (2) the substantial amount of money necessary for the traditional Jamaican wedding usually requires a considerable amount of time to accumulate. Obviously, a young couple lacks the time to accomplish this. A more important consideration however, is the lack of inclination. Jamaican women seem to consider themselves too young for a stable relationship before they are thirty. Jamaican women indicate that they have no

desire for the responsibility of a stable union and they also say that Jamaican men do not believe that they are ready for marriage until a Jamaican woman decides for them. These findings agree with Kerr's (1942, p. 147) observations.

The younger the couple, the less chance there is of the girl receiving support from the boy. This is probably for two reasons: (1) fewer pregnancies occur and consequently there is less need for support; and (2) the boyfriend is frequently unable to obtain a job in order to pay the support. There is a bell-shaped pattern in the curve of support payments related to the boy's age. At the younger ages, the boys have fewer children and less reason to pay support and even less money with which to pay it; in the middle age group there are more children to support as well as more money available; but, in the oldest age group, where there are the most children, there is proportionally less money available because of the number of children involved.

The girl's socio-economic class, her level of education and the availability of sex information in her community, are all interrelated and in turn, influence mandatory moves and illegitimate births. For example, 29 percent of the 31 girls with sex education became pregnant as opposed to 83 percent of the 69 without sex education. On the other hand, as the girl's socio-economic class rises the later she begins childbearing. This may be attributed to the fact that the higher the socio-economic class of the girl, the higher her level of education and the higher the probability of sex education information being available to her. Sex education obviously postpones childbearing, which in turn, postpones mandatory moves.



## COMMUNITY SIZE AND VISITING

The second part of the analysis focuses upon the variety of visiting behavior in the different-sized communities sampled. With an increase in urbanization and increased accessibility to Port Antonio come modernizing influences. These modernization and urbanization factors greatly influence visiting patterns.

In the three communities of Port Antonio, Manchioneal and Black Rock there is little difference in the number of households with males present (Table 1). However, the percentage of mandatory moves decreases with an increase in the size of the girl's community (Table 1). In the smaller areas there is less exposure to outside modernizing influences and a stronger fundamentalist church influence than in Port Antonio. The fundamentalist churches take a strong stand against illegitimate births and consequently visiting. Because of their very vocal condemnation of visiting and because of their strong influence in the community, there is an increased tendency for church going mothers (which most rural mothers are) to force their daughters to move out. In addition, the increased percentage of adult males present in the rural areas affects this increased percentage of mandatory moves there.

The increased influence of the church, increased percentage of adult males present and the less tolerant attitudes of the less urbanized areas act to postpone the age at which a girl will start visiting (Table 1). The later age of visiting adds to the chances of mandatory moves because fertility increases with increasing age. There is also tendency to force an older pregnant girl to leave home. At it's "not right" for a boy to visit with a girl more than three years younger

TABLE 1  
ASPECTS OF "VISITING" BEHAVIOR  
IN TOWNS OF DIFFERENT SIZES

	PORT ANTONIO	MANCHIONEAL	BLACK ROCK
PERCENT OF GIRL'S HOUSEHOLDS WITH MALES PRESENT	14	18	17
PERCENT OF GIRLS EXPERIENCING MANDATORY MOVES	21	29	65
GIRL'S AVERAGE AGE	13.9 yrs.	15.4 yrs.	16.5 yrs.
VISITOR'S AVERAGE AGE	16.0 yrs.	17.3 yrs.	18.0 yrs.
PERCENT OF GIRLS WITH SEX EDUCATION	56	11	6
PERCENT OF GIRLS BECOMING PREGNANT AS A RESULT OF FIRST VISITING RELATIONSHIP	82	94	100
PERCENT OF GIRLS RECEIVING CHILD SUPPORT FROM THE FATHER	34	53	65
PERCENT OF GIRLS IN A STABLE UNION	8	11	18
PERCENT OF GIRLS WITH CHURCH MEMBERSHIP	38	88	94
SAMPLE SIZE	50	17	17
TOWN POPULATION	8000	2000	200

SOURCE: Compiled by Author

than himself, all the influences affecting the girl's age will affect the boy's age also.

Because of more conservative attitudes in the rural areas, there seems to be fewer number of visiting associations before a union is stabilized. Consequently, there are proportionally fewer chances to impregnate different women and fewer children per man to support, and obviously, a greater probability for obtaining support for each child produced. There also seems to be a more responsible attitude towards both former girlfriends and their children which results in a higher percentage of support paid (Table 1).

Finally, because of lower levels of education in rural areas and strong church reaction against birth control, there is less sex education and family planning information available. Consequently, there is an increased proportion of pregnancies and mandatory moves there (Table 1).

#### CONCLUSIONS

The sample demonstrates that both family environment, especially the presence of an adult male, the girl's mother's age, the girl's socio-economic class and associated factors and the community environment are highly associated with important aspects of visiting. Hence, any policies directed towards family planning in Jamaica should take both types of actors into consideration, if the policies are to effectively deal with the population problem associated with Jamaican teenagers. Attempts have been made to reach the rural population by utilizing traveling education officers who encourage girls to participate

in family planning programs and methods at an early age. In urban areas, similar efforts are directed towards teenagers in secondary schools. A full understanding of the complex social environment that surrounds and influences the sexual behavior of the teenage girl in Jamaica will enhance these efforts.

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SPATIAL PATTERNS AND FUNCTIONS OF DRINKING ESTABLISHMENTS  
IN PORT ANTONIO, JAMAICA AND CHAMPAIGN-URBANA, ILLINOIS

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Gordon L. Bower

ABSTRACT

This paper compares the spatial distribution of different classes of drinking establishments in the communities of Port Antonio, Jamaica and Champaign-Urbana, Illinois. Different classes of public drinking establishments were identified by variations in the services they provide. These classes were found to display different spatial patterns. Since these different types appear to perform different functions and, hence, may provide the setting for different types of drinking behavior, drinking behavior itself may display specific spatial patterns.

In recent years geographers have become increasingly concerned with social issues which traditionally have been studied by other social scientists. Urban concerns and the problems of minorities, especially Blacks, have been areas of intensive investigation by geographers and entire issues of recent geographic journals have been devoted to these subjects (Economic Geography, 1972; Southeastern Geographer, 1971). The application of a geographic viewpoint to social issues has brought about a more complete understanding of the factors underlying certain social problems. Adams (1972) has used a spatial approach to explain the occurrence of racial riots. Other geographers have employed it in studies on crime, poverty, and disease (Lee and Egan, 1972; Morrill and Wohlenberg, 1971; Pyle and Rees, 1971). It is the contention of this paper that such a viewpoint might be applied

to the study of other socially relevant issues such as drinking patterns and/or behavior.

The literature in the fields of sociology, anthropology, psychology, and psychiatry reveals that the subject of the consumption of alcoholic beverages has been of immense concern to most social science disciplines. Geographers, however, have contributed little or nothing to our knowledge of drinking behavior.

Traditionally, most social science disciplines, with the possible exception of anthropology, have focused their attention on the deviant aspects of drinking. Sociologists, for example, have conducted numerous studies on the Skid Row alcoholic (Blumberg, Shipley, and Moor, 1971; Rubington, 1971; Wallace, 1968). Psychologists and psychiatrists have looked primarily at the question of why people do or do not drink and why people do or do not become alcoholics when they drink (Ludwig, 1972; Keller, 1970; Glatt, 1970). Anthropologists have been interested in the attitudes and behavior toward alcohol in different cultures (Kearney, 1970; Lomnitz, 1969; Ferguson, 1968). An excellent source from which to examine the type of research that has been conducted by social scientists from several disciplines is Society, Culture, and Drinking Patterns, edited by Pittman and Snyder (1962).

While attention has been paid to the subject of the consumption of alcoholic beverages, little research has focused on the spatial aspects of drinking behavior. The purpose of this paper is to suggest a research design for investigating drinking behavior and its role in society from a geographic perspective. Specifically, it compares the



spatial distribution of different classes of drinking establishments and their social role in the communities of Port Antonio, Jamaica and Champaign-Urbana, Illinois. The object, then, is to discover spatial patterns associated with certain classes of drinking establishments rather than to make direct comparisons between the two communities.

Many approaches to the issue of drinking behavior within a spatial context are possible. For example, one could study the spatial distribution of alcohol consumption in order to identify areas of high or low per capita consumption. Presumably this would tell us something about the attitudes of people toward alcohol consumption and how those attitudes vary spatially. One could analyze the journey to drink in order to identify where people drink and the distances and routes involved in going to and from one's drinking place. In this paper the drinking establishment or bar is investigated in order to identify variations in the drinking environment and to see how these variations are arranged spatially. Thus, bars are classified according to the services they provide. The function and the spatial pattern of each class is analyzed.

Macrory (1952, p. 611) defined a tavern as ". . . any establishment whose business consists largely of selling and serving intoxicating liquors and/or beer for consumption on the premises." If this were the only function of a drinking establishment, there would presumably be little variation in types of bars. But Macrory also stated, "Investigation reveals that taverns are of many different types each of which fulfills a role and function in the community" (Macrory, 1952, p. 625). Macrory (1952) and Clinard (1962) developed a classification that

Identifies five distinct types of drinking establishments based primarily upon their location and the characteristics of their patrons. They are: the "Skid Row tavern"; the "downtown bar"; the "drink and dine tavern"; the "night club"; and the "neighborhood tavern". This is a fairly subjective classification based at least partly upon the researcher's perception. Cavan (1966) attempted to classify bars according to how they are used by their patrons and identifies four major types: the "convenience bar"; the "nightspot"; the "marketplace bar"; and the "home territory bar". Both of these classifications attempt to be all inclusive, but as Jupp (1971, p. 80) wrote ". . . an abundance of evidence persists to suggest that drinking behavior - what one drinks, when one drinks, where one drinks and how one drinks - is not something that individuals choose randomly, but rather is determined by the social norms peculiar to the culture of which one is a part." Thus, it would appear that one all inclusive classification for drinking establishments might be inadequate when applied to more than one culture. For this reason the classification used here for both Port Antonio and Champaign-Urbana is based upon the actual services provided by the bar rather than any previous classification.

Services in this case are identified by those facilities placed in or attached to the drinking establishment by the proprietor for the use of his patrons. Thus, facilities such as juke box, dance floor, restaurant, television, and games (pinball, pool, etc.) represent services provided for the customer and these are used to classify drinking establishments. Each bar was visited in order to ascertain the services available. These were analyzed as dichotomous variables

(that is, the bar either has or does not have this particular service) in a Q-mode principle components analysis which grouped together those bars which offered the same types of services.

There was no particular problem in using Macrory's definition to identify bars in Champaign-Urbana. In Port Antonio, however, beer is sold for consumption on the premises in most business establishments including grocery stores and gasoline stations. For this reason only those dispensing hard liquor were considered to be bars.

The analysis of the forty-nine bars in Port Antonio resulted in five factors or five different types of bars (Figure 1). The first three types, in varying degrees, function as neighborhood bars. The last two classes are referred to here as the "dance club" and the "red light bar." Only seven bars were placed in these last two classes.

Of the three neighborhood type bars, the one which offers the widest variety of services is referred to as the "skittle bar." Functionally it is quite similar to the "neighborhood bar" described by Macrory; that is, it functions as a social gathering place. People visit with friends, listen to the juke box, and play skittle (a game similar to pool). This type also caters to the widest range of age groups. There appears to be a tendency for this type of bar to cluster (Figure 2). One cluster is located in the west, one in the CBD, and two smaller clusters along the main artery extending toward the southeast.

The second neighborhood type bar also has a juke box, but lacks games. Although this type functions as a social center, it does so to

FIG. 1

ALL BARS

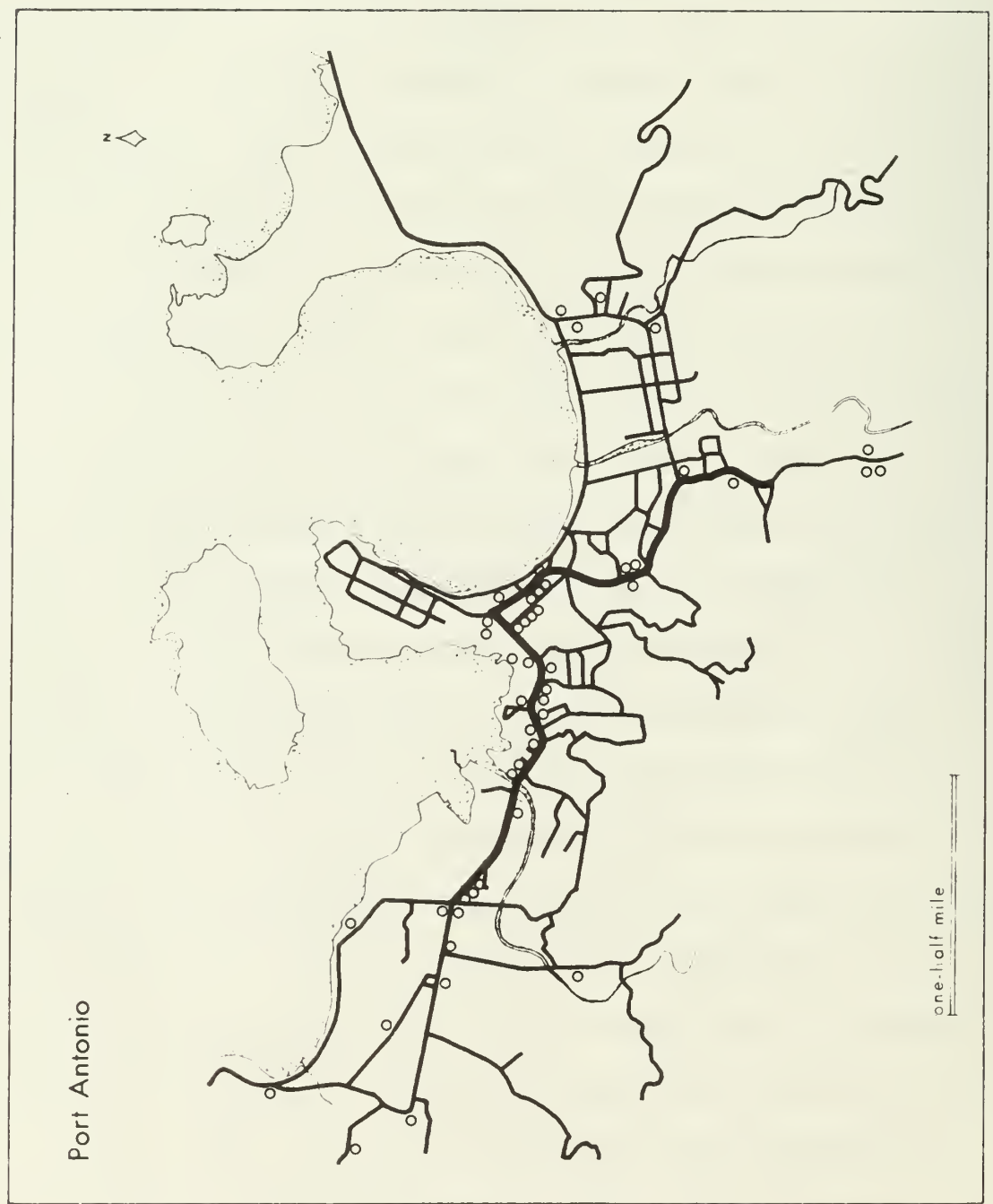
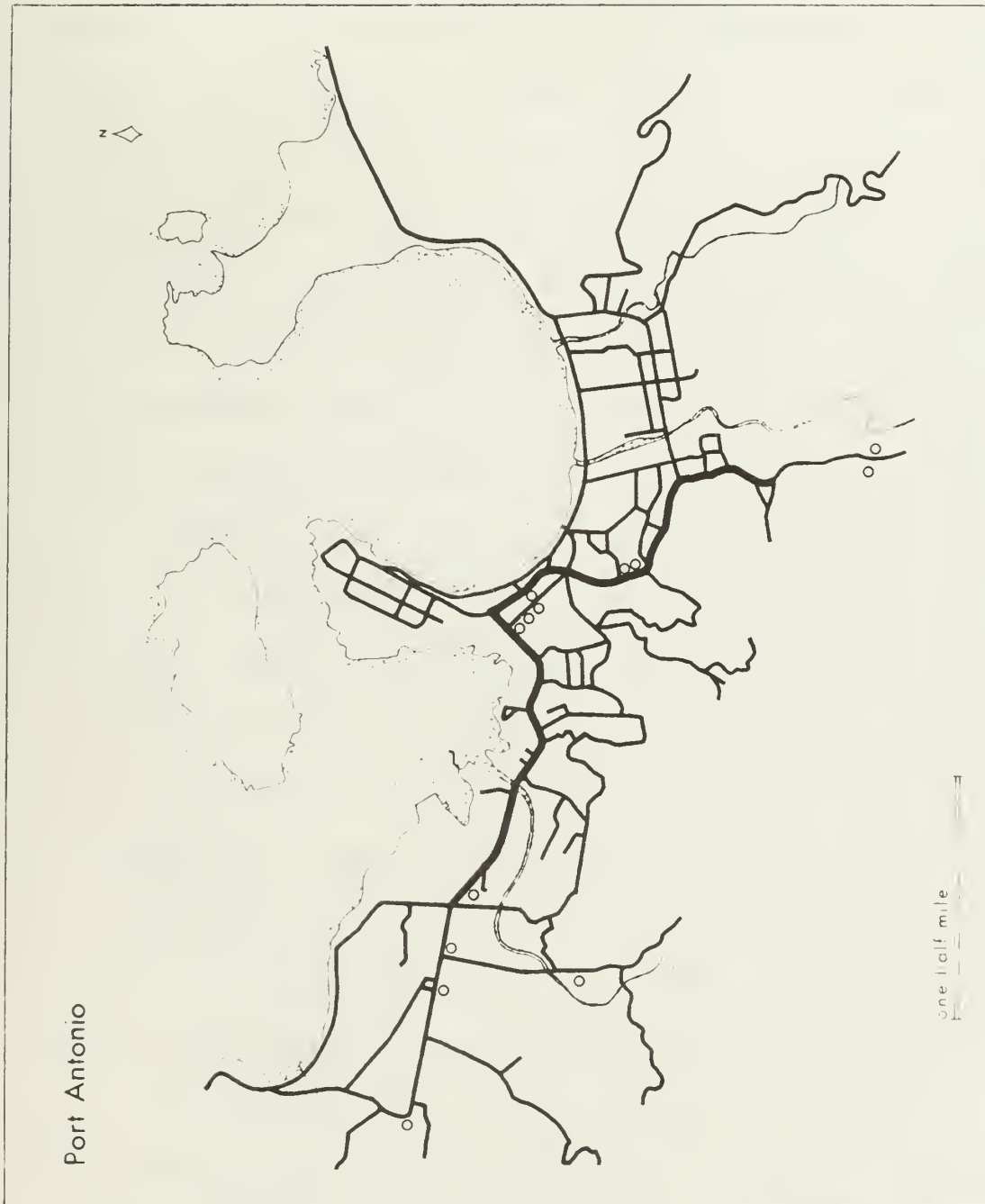


FIG. 2

SKITTLE BARS



a lesser degree than the skittle bar. It caters primarily to a young age group and is a relatively quiet place where a young man might bring his date.

The third neighborhood type bar is characterized by its extremely small size. Several have a seating capacity of seven or less. There are no games or juke box and usually the only service provided is the sale of alcohol. This type caters primarily to an older age group composed largely of local businessmen who gather in the late afternoon to discuss business. For this reason this type can be referred to as the "businessman's bar." Both this type and the second neighborhood type display a relatively dispersed spatial pattern (Figures 3 and 4).

The "dance club" is similar to the "night club" described by Macrory. These are large bars by Port Antonio standards with seating capacities of over fifty. They are characterized by having a dance floor, occasional live music and shows, and quite elaborate stereo sound systems either in addition to or in place of a juke box.

The "red light bar" is distinguished from the other classes by its function as a house of prostitution. While prostitutes might occasionally frequent any of the bars described above, the red light bar is unique in that the proprietor furnishes the prostitute a room either in or attached to the bar in which she might ply her trade. There appears to be a tendency for both the dance clubs and red light bars to locate near the CBD, but because of the small total numbers of these establishments, no other spatial patterns are readily apparent (Figures 5 and 6).

FIG. 3

JUKE BOX BARS

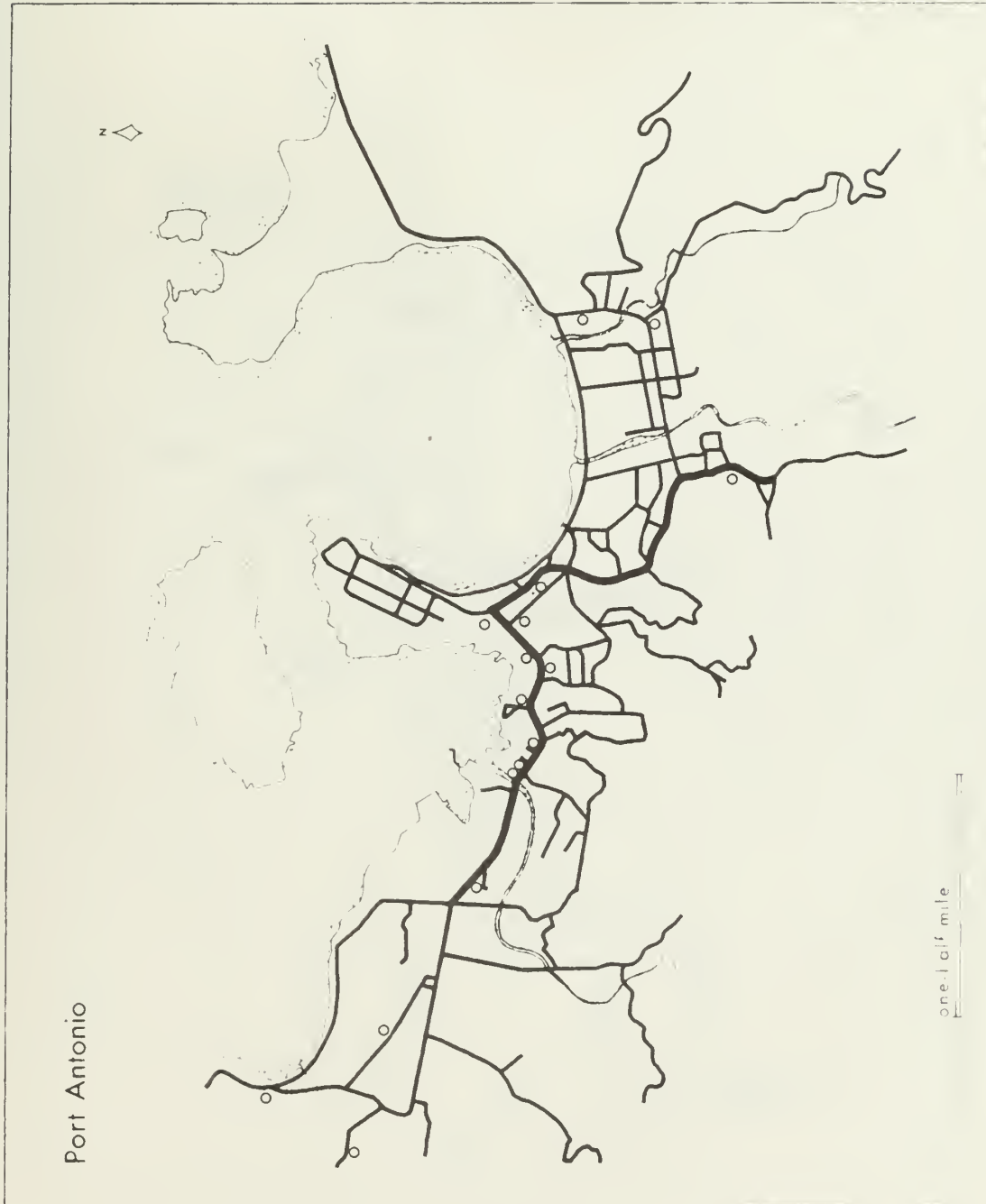
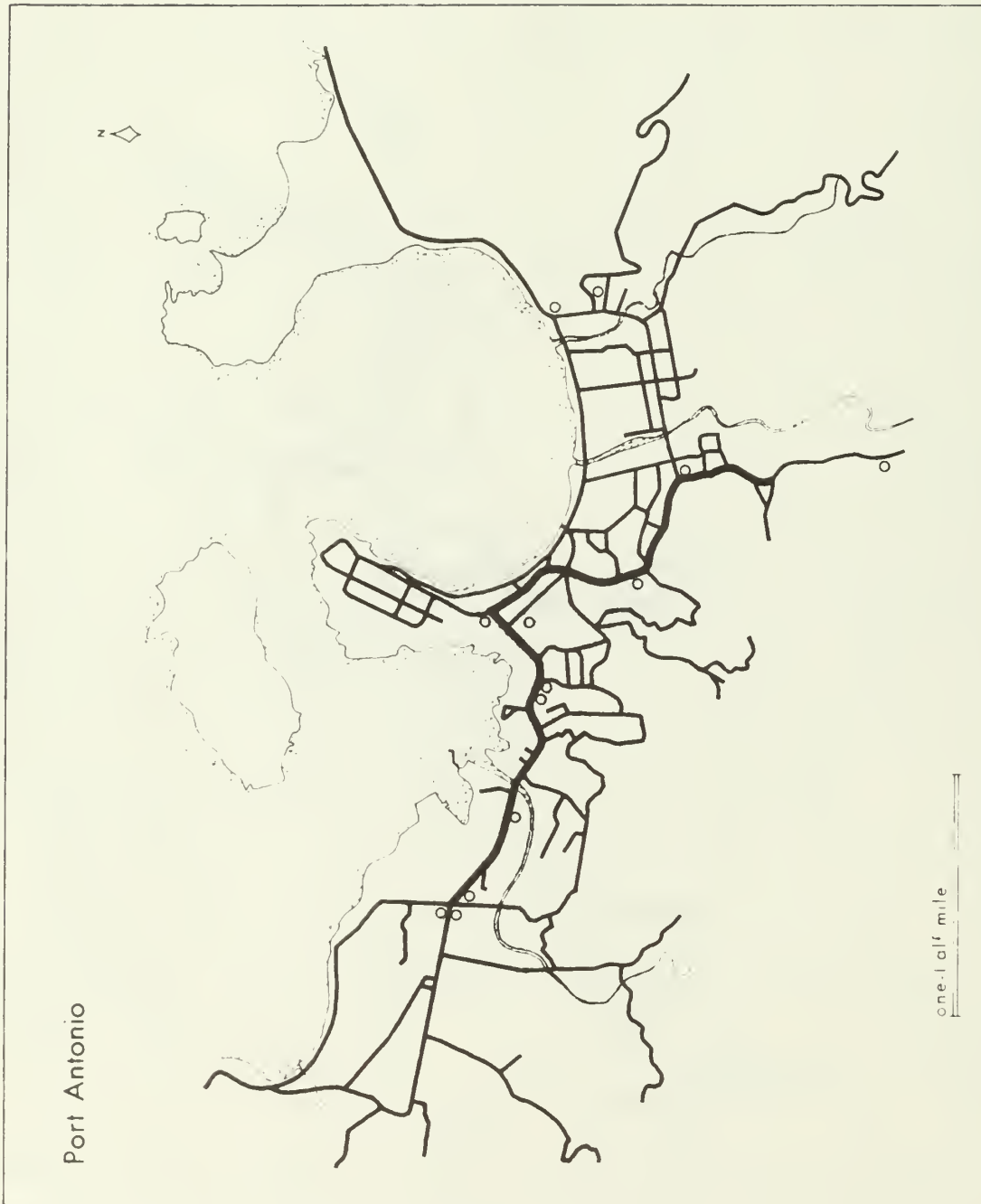


FIG. 4

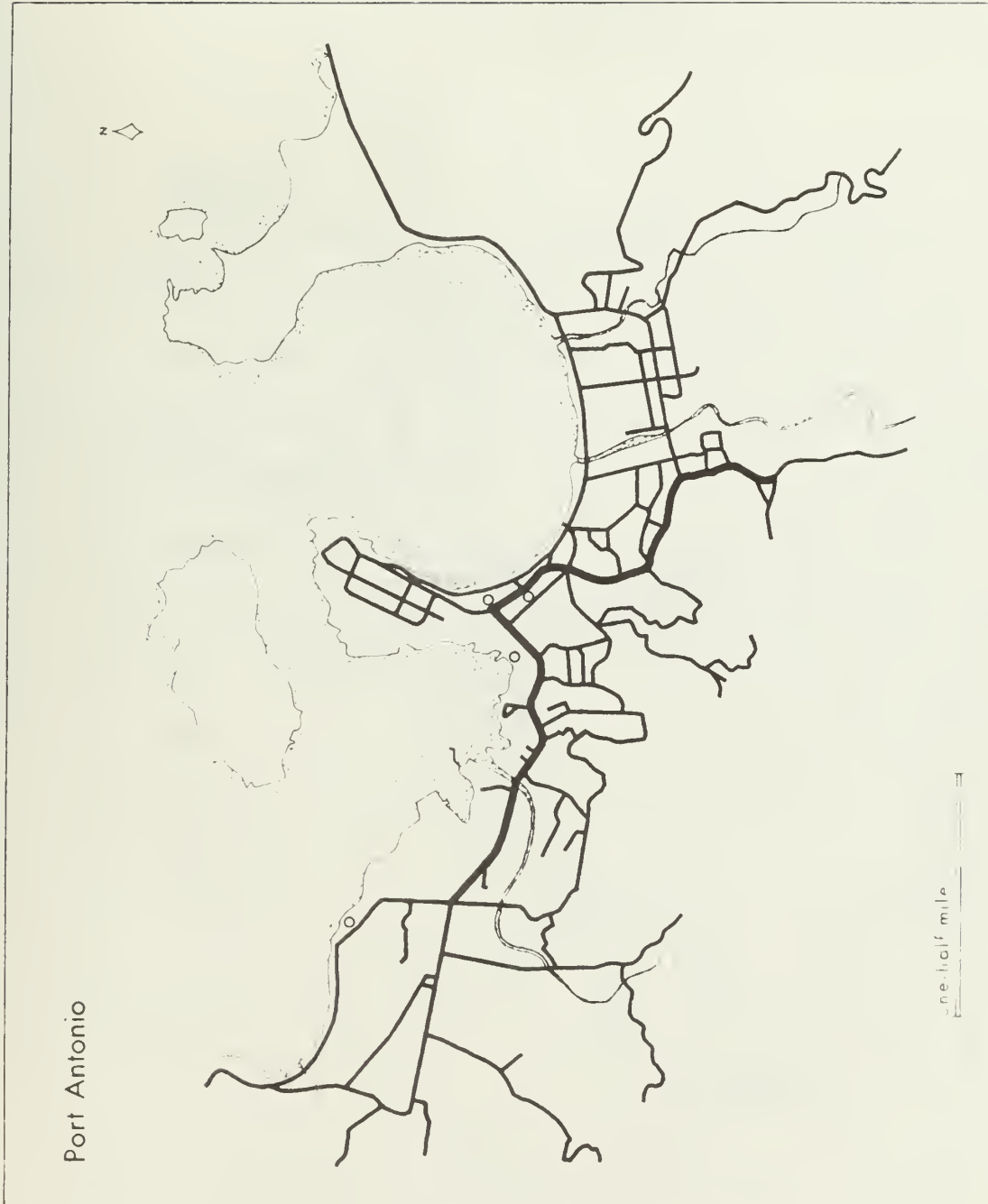
BUSINESSMAN'S BARS



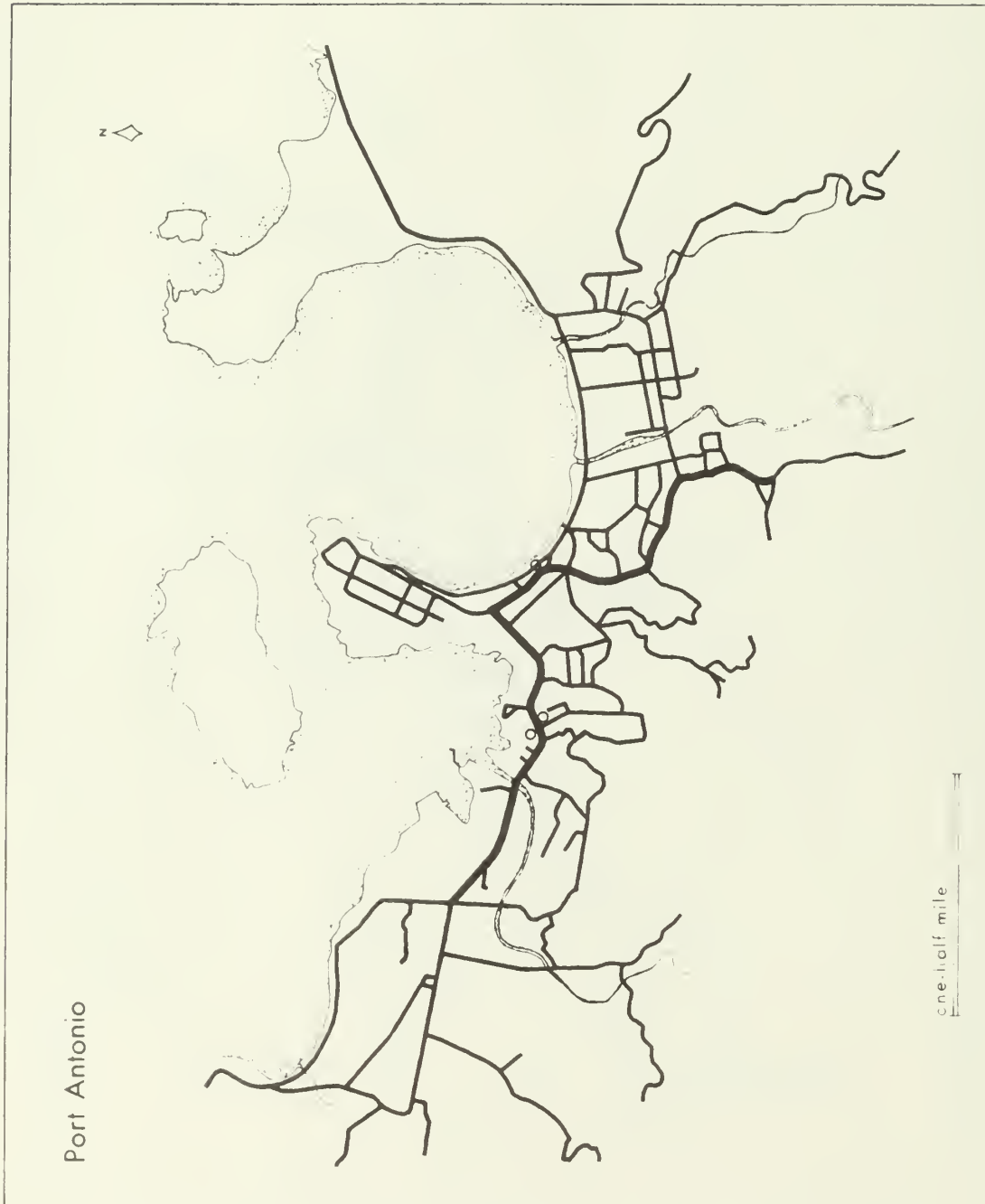


DANCE CLUBS

FIG. 5



RED LIGHT BARS  
FIG. 6



The analysis of the sixty-seven bars in Champaign-Urbana, Illinois (an urban area with a population of about ninety thousand) revealed six factors or six types of bars: the "action spot"; the "workingman's bar"; the "cocktail lounge"; the "campus bar"; the "drink and dine"; and the "pizza house " (Figure 7).

The service which is most important in identifying the "action spot" is live music. It may also have a dance floor and a restaurant although these services are absent in several action spots. This type caters to a relatively young, loud, jovial group of people. It would include those bars classified as "nightclubs" by Macrory, but it would also include certain pizza parlors. These bars form a widely dispersed spatial arrangement (Figure 8).

The "workingman's bar" is characterized by sale of hard liquor, plus a juke box, television set, and some type of game. It does not have a restaurant although sandwiches can usually be purchased. This type is predominantly patronized by middle aged and older working class people and functionally is similar to the "neighborhood tavern" described by Macrory. It is ". . . the most numerous and apparently the most varied functionally of all the tavern types" (Macrory, 1952, p. 627). A spatial analysis reveals a strong tendency toward clustering in the two CBD's of Champaign and Urbana (Figure 9). Thus, locationally, this type differs from Macrory's "neighborhood bar" which is located primarily in residential areas.

The most important distinguishing characteristics of the "cocktail lounge" are its attachment to some other business; and the sale of hard

FIG. 7

ALL BARS

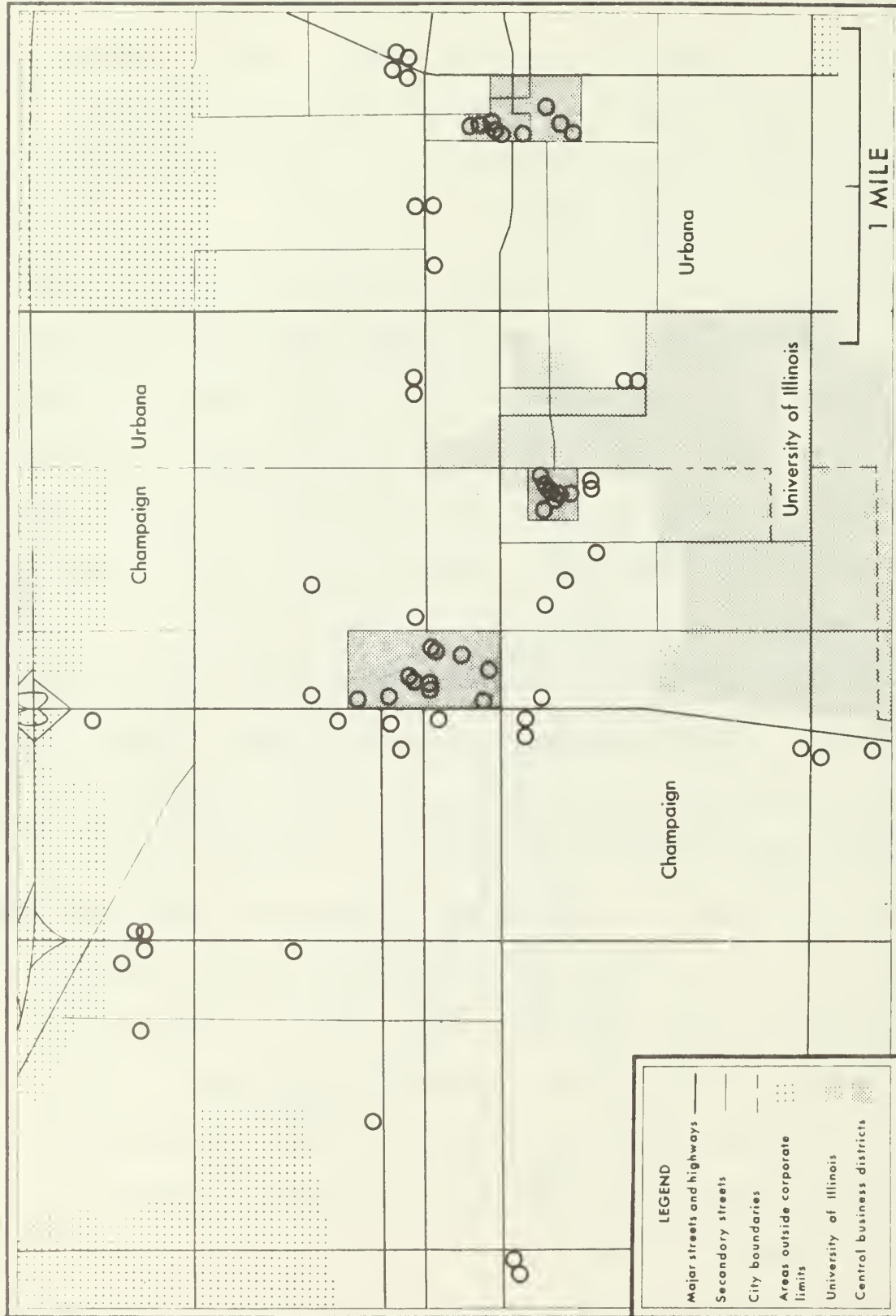
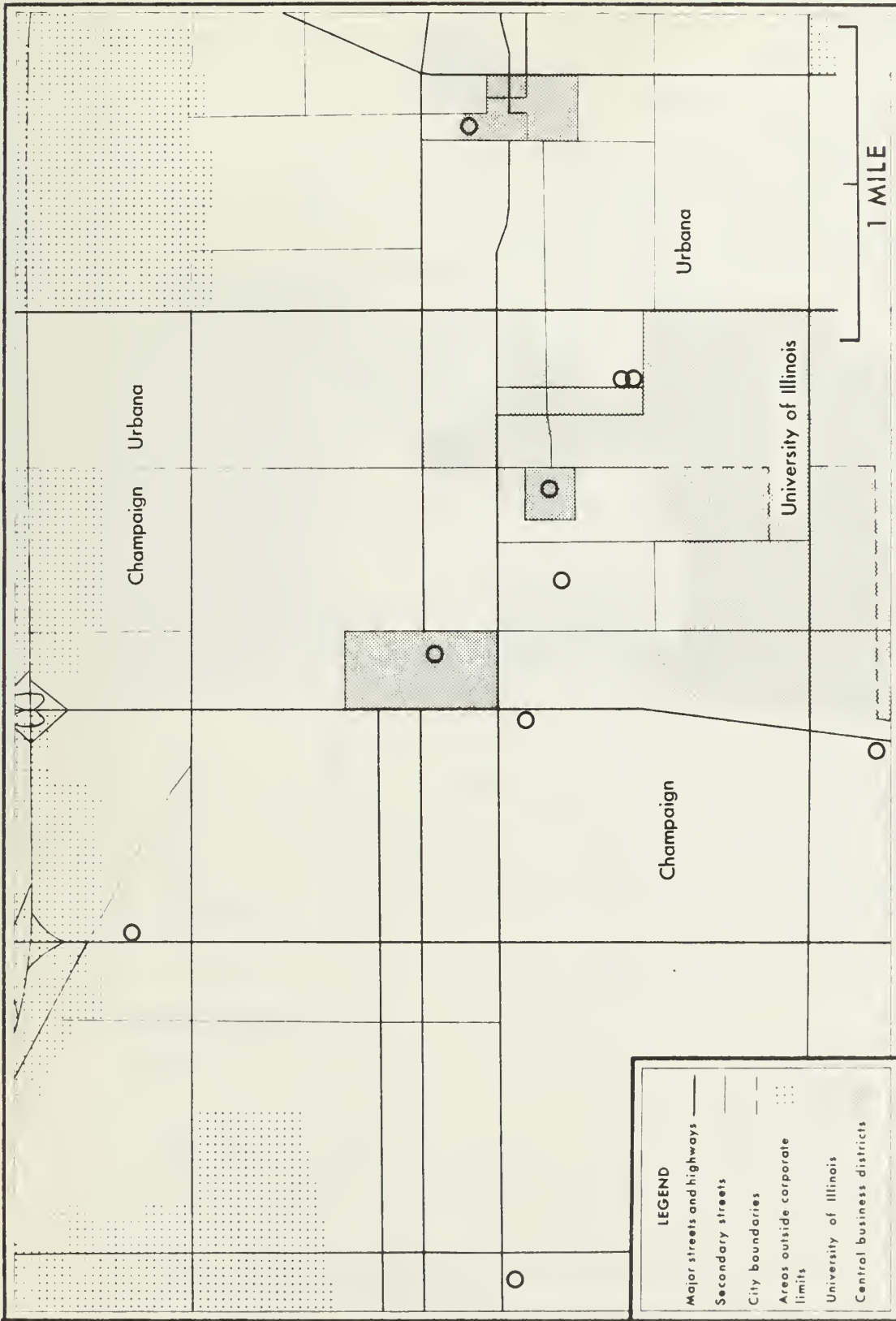
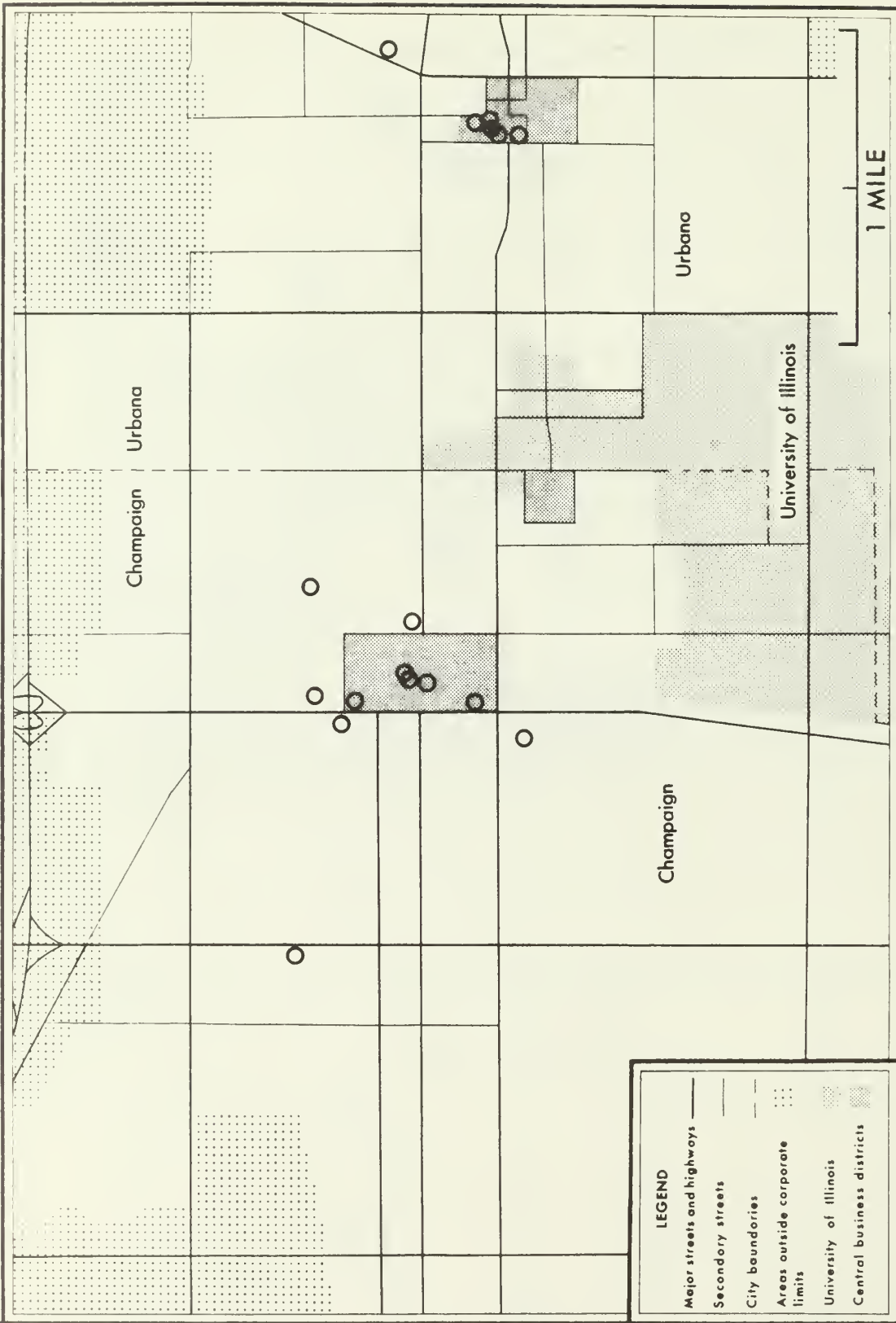


FIG. 8

ACTION SPOTS



WORKINGMAN'S BARS  
FIG. 9



liquor. Most of the "cocktail lounges" are included within a hotel or motel. Some, but not all of these bars, have restaurants attached. These are usually rather elegant, quiet places used to drink and discuss business. They cater primarily to middle and older age groups and the middle and upper class businessman. Although there is a slight tendency toward clustering in the two CBD's, this type is much more dispersed than the "workingman's bar" (Figure 10).

The "campus bar" is characterized by the absence of hard liquor and the presence of pinball machines. This is the only type of bar in Champaign-Urbana where pinball machines are common. Most of these bars also have a television set and function as a restaurant or snack bar. This type caters primarily to college students and, as would be expected, are clustered close to the campus of the University of Illinois (Figure 11).

The "drink and dine establishment" is primarily a higher class restaurant and only secondarily a drinking establishment. It is characterized by its dispensing of hard liquor, its background music, and the absence of a dance floor or games. These establishments are highly dispersed spatially (Figure 12).

The "pizza house" is also primarily an eating establishment, but of a lower class than the drink and dine. It has neither hard liquor nor live music. Most of these places also lack an actual bar. Beer or wine is served only with food. This type includes most of the small Italian restaurants in addition to the pizza parlors. Although several of these establishments are located near the Champaign CBD, the spatial pattern as a whole is relatively dispersed (Figure 13).

FIG. 10  
COCKTAIL LOUNGES

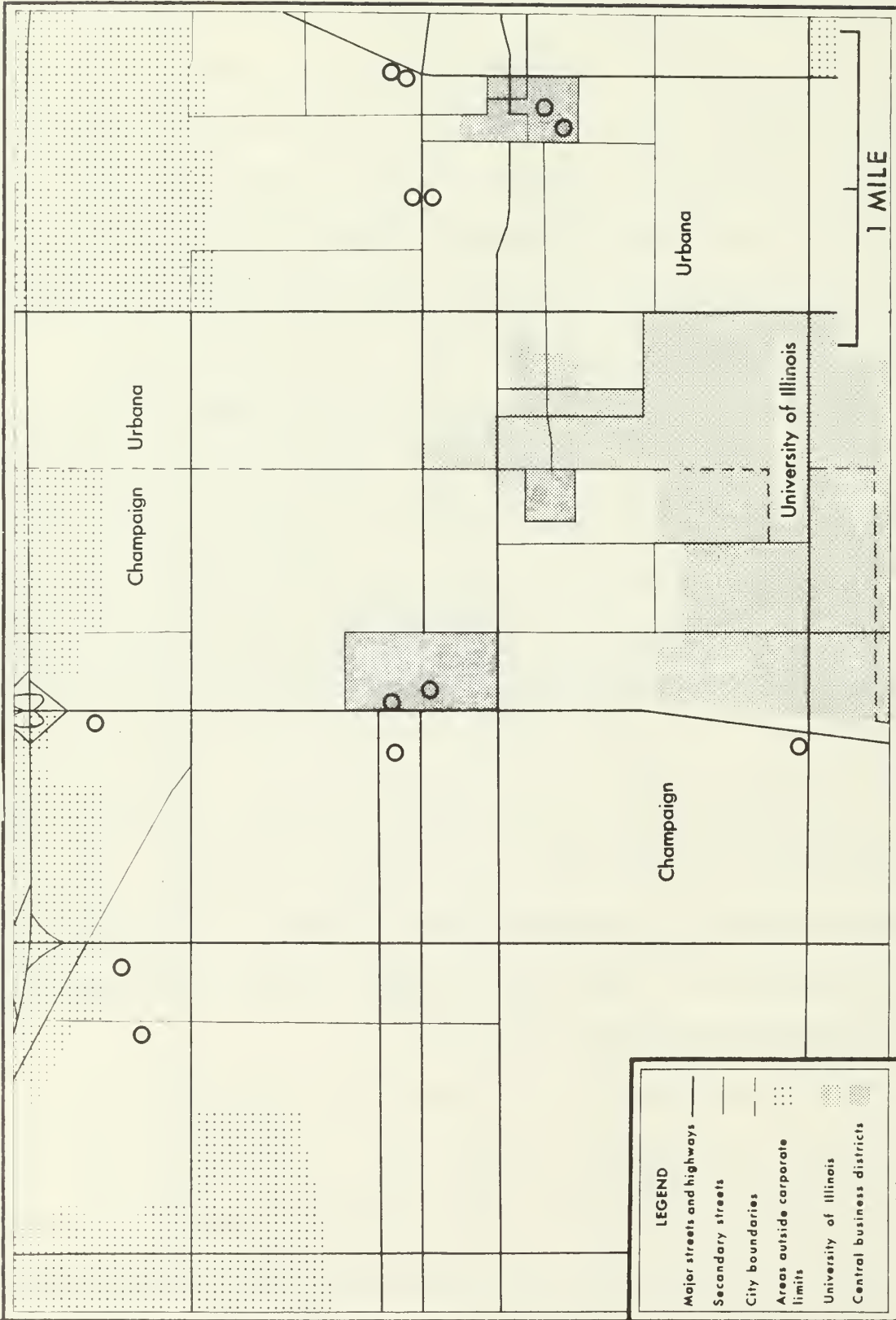
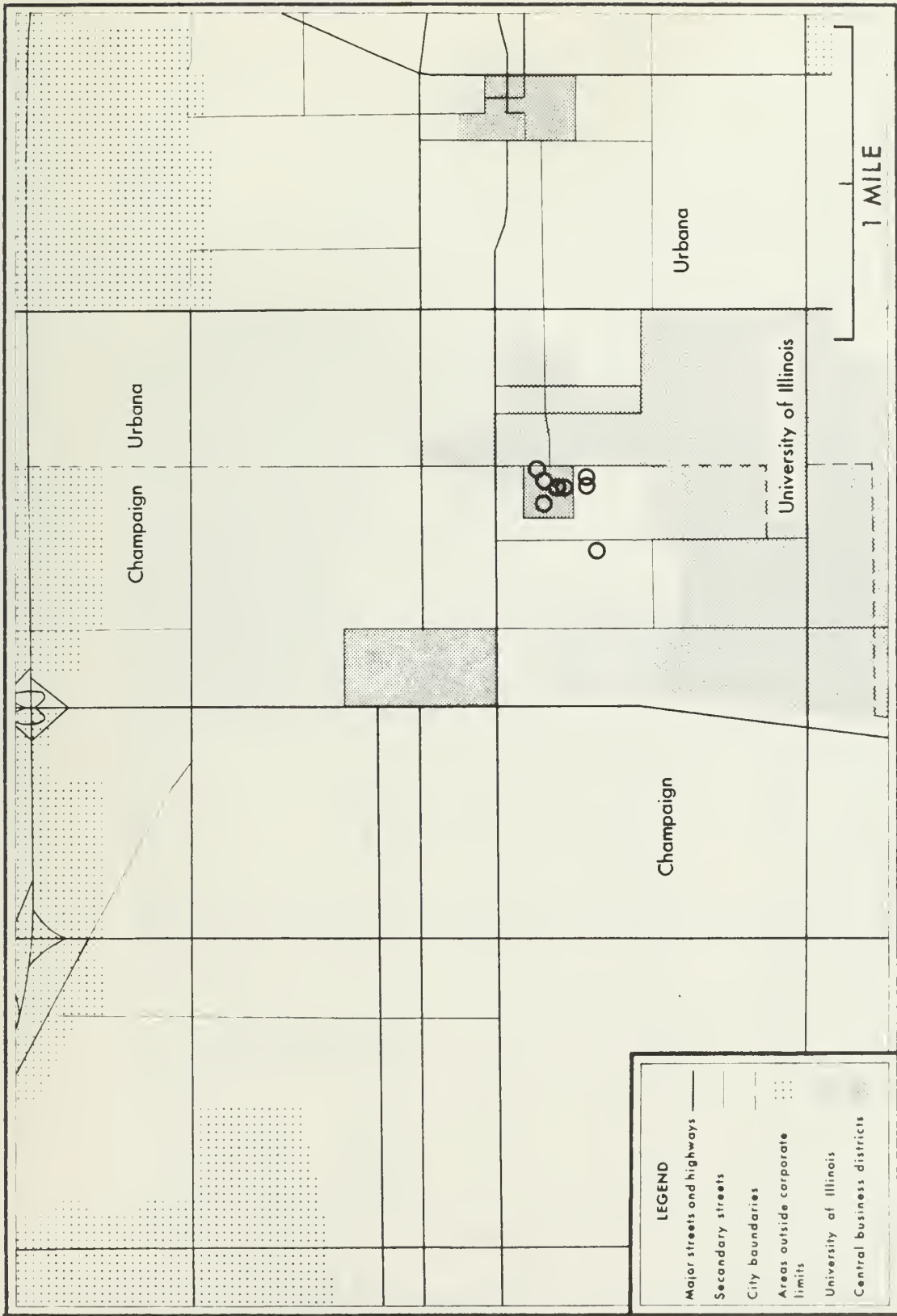




FIG. 11

CAMPUS BARS



## SUMMARY AND CONCLUSIONS

The foregoing discussion would suggest that those bars offering a wide variety of services tend to form relatively clustered spatial patterns. It can be hypothesized that the Port Antonio "skittle bar" clusters because of competition. If the proprietor of one bar increases the services he offers, his neighbor may be forced to increase his offerings as well in order to retrieve those customers attracted to the first bar. There also appears to be a tendency for skittle bar patrons to visit several skittle bars in one night. This type of movement is facilitated by a clustered pattern.

In Champaign-Urbana the "workingman's bar" might be limited to the two CBD's because of inertia. Most of these are older establishments built when the urban area was much smaller; and, because there does not appear to be a tendency to build new bars of this class, the spatial pattern reflects the original small town centralized location.

In summary, there are some important differences between the drinking establishments of these two communities. The Port Antonio bars offer a more limited range of services, tend to be much smaller, and yet appear to be much more important to the average citizen of Port Antonio than are the bars of Champaign-Urbana to its citizens. These differences are in large part due to the much smaller total spendable income in Port Antonio. This limits the range of services that can be provided, makes it difficult for an individual to amass the large amount of capital necessary to open a larger bar, and limits the number of alternative forms of entertainment that are available. However, there are similarities in the functions of certain types of bars. Port

Antonio's "skittle bar" has nearly the same function as Champaign-Urbana's "workingman's bar"; that is, both serve as recreation places where people can come together to play games, listen to music, and talk with friends. Both types also exhibit a relatively clustered spatial pattern although the factors responsible for such patterns might be dissimilar. Port Antonio's "businessman's bar" serves a function and has a spatial pattern similar to Champaign-Urbana's "cocktail lounge" even though they are vastly different in terms of physical appearance and decor. The same is true of the "dance club" and the "action spot."

This paper has attempted to show that the various functions of bars can be identified through quantitative analyses of the services available for use by bar patrons. An individual will choose a particular bar or class of bars to patronize on the basis of how well his own objectives correspond to his perception of the function of that bar in relation to the other bars available to him. It is therefore likely that certain classes of bars attract patrons who display certain specific types of bar-room behavior. It is also suggested here that bars performing certain functions may form certain characteristic spatial patterns. Thus, bar behavior might also be sorted out into certain spatial patterns. More research is needed, however, before any statement can be made as to the spatial arrangement of bars in general. Such research could contribute toward the development of a theory of spatial drinking behavior. As long as drinking is viewed as a social issue or problem, there is a need for a geographic analysis of where people drink. Additional research needs to focus on the factors responsible for the location of drinking establishments, the

factors contributing to the individual decision making process of where to drink, and the route that one takes in going to and from drinking establishments.

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