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SPATIAL DISTRIBUTION OF HISPANIC HOUSEHOLDS IN HOLLAND, MICHIGAN: 1960-1990

by

Cynthia J. Longstreet

A Thesis
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
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Western Michigan University
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SPATIAL DISTRIBUTION OF HISPANIC HOUSEHOLDS IN HOLLAND, MICHIGAN: 1960 - 1990

Cynthia J. Longstreet, M.A.
Western Michigan University, 1991

This paper examines patterns of Hispanic household concentration and segregation from non-Hispanic households in Holland, Michigan for the decades from 1960 to 1990 with some analysis of 1950 patterns. Household data were obtained from United States census reports and Polk directories, from which location quotients and indices of dissimilarity were calculated for census tracts and census blocks within the study area.

Data showed that most of Holland's Hispanic households have been found in the three census tracts closest to the central city, but that deconcentration is occurring as more Hispanic families settle in peripheral areas of Holland. Data also indicated that there is decreasing segregation between Hispanic households and non-Hispanic households at both census tract and block levels, with central city areas showing less segregation than peripheral areas.
ACKNOWLEDGEMENTS

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I wish to express my appreciation to Andres Fierro, Alfredo Gonzales, Celestino Reyes, Lupita Reyes, and the many other people of Holland, Michigan who assisted me in this research. It is hoped that this study will be a useful contribution to the growing body of knowledge about Holland’s Hispanic heritage.

Special thanks go to my parents, Jim and Lee Barker, who have offered me much assistance in the achievement of my educational goals; for this I am very grateful. Finally, I would like to thank my husband, Kim, for his continuous patience, support, and encouragement.

Cynthia J. Longstreet
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CHAPTER I

INTRODUCTION AND BACKGROUND

Introduction

Minority group residential patterns in the United States have been a topic of interest in geography for a number of years. Most of the research in this area, however, has been limited to Black populations in large urban centers. More recently, Hispanic residential patterns have become the focus of much research as Hispanics become a more dominant minority group in the United States, but this research is also limited. Few studies of Hispanic residential patterns have dealt with Hispanic populations other than those in major cities of the Southwest.

This study of Hispanic residential patterns in Holland, Michigan provides an opportunity to look at patterns in a relatively small city in the North Central region of the United States. Ideally, this project, along with others by future researchers, will allow comparisons of patterns among a variety of city sizes and United States regions. In this way it may be possible to better determine the processes that contribute to the observed patterns.

The report offered here also seeks to provide information of purely local interest. Although some other quality projects dealing with the Hispanic experience in Holland have been produced, they are not geographical in nature and, therefore, do not offer detailed information about patterns of Hispanic settlement in the area. This study attempts to complement the historical and sociological approaches of earlier researchers by providing a geographical perspective.
Chapter I provides background information for this paper by discussing the early history of Holland, Michigan before the arrival of Hispanic families in the area. A general Hispanic history is also outlined. Beginning with the Spanish colonial period in Latin America, the Hispanic experience is traced to the United States. Included are descriptions of Hispanic migration to Michigan and, specifically, to Holland.

A brief review of the literature is provided in Chapter II. The relationship between social and spatial distance is discussed as well as the concept of pattern and process, and models of immigrant group residential patterns. Finally, specific studies of Hispanic residential patterns are cited.

Chapter III describes the research problem and methods used. Four research questions are identified along with an explanation of Hispanic terms, delineation of the study area, scales at which the study was done, time frame of the study, and interpretation cautions. The methods section of this chapter begins with an explanation of the compilation of Hispanic name lists from which much of the data were derived. Uses of individual household data from the Polk directories are described along with census block and tract level aggregations. The location quotient and index of dissimilarity are also explained.

Description and analysis of the data are offered in Chapter IV. Included here are descriptions of Hispanic household distributions, comparisons of these distributions with total households, and analysis of Hispanic households as a percentage of total households. Discussions of tract level, block level, and individual household data are included. Chapter V provides a summary of the study, and offers a brief discussion of future research questions.
Background

**Holland's Early History**

Holland, Michigan is often recognized, by both name and reputation, as a homogeneous Dutch enclave, vehemently espousing the Calvinistic beliefs of the Christian Reformed Church. Indeed, the city was founded in 1847 by a group of approximately 100 people from the Netherlands who sought to escape the religious persecution they had suffered in their European homeland. The Dutch community grew quickly as new arrivals from the Netherlands joined the original founders. By 1900, Holland had grown to a community of 8,000 people, all drawn together by the bond of common religious convictions (Van Reken 1983).

Holland became less culturally isolated as its economic development attracted newcomers from outside the city's ethno-religious sphere. An important part of this change was the settlement of Hispanic families in the community during the 1940s. Many Hispanics, who had originally arrived in the area as migrant agricultural workers, began to leave the migrant stream for jobs in Holland's rapidly developing manufacturing sector. This trend continued during the next several decades until, in 1980, Hispanics comprised more than 11% of Holland's population.

Holland's Hispanic community has continued to grow as more families leave the migrant stream or move directly from the South to join family and friends who have already established permanent homes in the area. For younger generations of Hispanics, Holland is the only home that they have ever known. Concurrent with this population growth has been increased Hispanic involvement in all areas of the city's social, political, and economic life.
Hispanic History

The general term “Hispanic” has been used to describe groups of people who possess a great variety of social, cultural, and political histories. This ambiguity has often led to uncertainty and confusion when discussing Hispanic issues. In order to more clearly understand the complexity of Hispanic heritage, a brief historical overview of Middle and South America will be useful.

Legacy of the Spanish Colonies

The social and cultural histories of both Middle and South America began long before the arrival of Europeans. Hundreds of native American groups inhabited this region from which the great Maya, Aztec, and Incan civilizations emerged. The leaders of these empires created advanced economic and political systems encompassing millions of people. English and Miller (1989) explain that “although very different from Old World civilizations and very different from each other, the Maya, Aztec, and Inca achieved levels of development equal to those of the Old World” (p. 227).

European entry into the Middle American realm began in 1492 with Columbus’ landing in the Bahamas. This represented the beginning of Spain’s colonization efforts in the New World. Cortés’ invasion of the Aztec empire in 1519, and Pizarro’s conquest of the Incas in 1531, secured Spain’s position as the dominant colonial force in Middle and South America (DeBlij and Muller 1988). Spanish political and economic systems, as well as the Roman Catholic religion, were established in the conquered areas, completely dominating the surviving native Americans. Shortly after Spanish invasion of the Americas, the Portuguese developed their own sphere of influence in the area that was to become Brazil. Because of this Iberian dominance in Middle and South America, the entire realm is often referred to as Latin America.
During the 17th and 18th centuries, the French, Dutch, and British also acquired territories in Latin America, in many instances taking control of territories that were previously under Spanish dominion (Dostert 1989). Despite the European scramble for colonies in this region, Spain remained the dominant colonial force until the early 19th century when most of the region's countries gained independence.

In the years that followed European invasion of Middle and South America, millions of native Americans died from newly introduced diseases from which they had no immunity. Others died from overwork, were shipped to the European mainland as slaves, or were killed in warfare. This resulted in a labor shortage for the European agricultural ventures that had been established in the Caribbean and on the coastal mainland, and African slaves were brought in to replace the decimated native American labor force. In the 19th century, emancipation of the slaves again created labor shortages, which led to the arrival of Asians from China and India as indentured servants (De Blij and Muller 1988).

Although the term “Hispanic” is used to describe the great majority of people from Latin America, it is clear that the process of discovery and conquest in Middle and South America has produced a complex variety of peoples with varying mixtures of African, Asian, Native American, and Northern European as well as Iberian roots. The mestizos (a combination of Native American and European ancestry) are the majority group in Mexico. Allen (1988) explains further that “none of the Spanish-speaking (Hispanic origin) groups have identified with the inclusive term ‘Hispanic.’ Rather, their social networks and ethnic identity have remained separate and tied to their specific country of origin” (p. 153). The following discussion of Hispanics in the United States will provide further understanding of the specific Hispanic sub-groups who migrated to Michigan and eventually settled in Holland.
Hispanics in the United States

Not all people of Hispanic origin came to the United States as immigrants. Nearly the entire southwestern portion of the United States was once part of Mexico, and many Hispanics who live there are descendants of those who lived in the southwest centuries ago. In addition, large numbers of Hispanics immigrate, both legally and illegally, from present-day Latin America to the United States each year.

In 1980, the more than 14 million persons of Hispanic origin living in the United States comprised approximately 6.4% of the nation’s total population (U.S. Department of Commerce, 1983a). Of these, 60% were of Mexican origin, 14% of Puerto Rican origin, 5% of Cuban origin, and 21% designated as “other Spanish.” California is home to 31% of the country’s Hispanic population; 20% reside in Texas (U.S. Department of Commerce, 1983a). By the year 2000, Hispanics will be the largest ethnic minority in the United States.

Hispanics in Michigan

The Hispanics who settled in Michigan were primarily Mexican nationals and Mexican-Americans (United States citizens of Mexican descent). They began to arrive in the Great Lakes area during the early 1900s, many to work either in the sugar beet industry or as railroad workers (Garcia 1979). Shortages of cheap immigrant labor from Europe during World War I led to suspension of United States immigration laws which opened the door for many Mexican immigrants. Some settled in the cities of eastern Michigan to work in the auto industry, and the sugar beet industry continued to be an important source of employment. Other Hispanics sought agricultural employment which was concentrated in the Saginaw area (located in eastern Michigan) and in western Michigan.
During the 1920s, there was an especially dramatic increase in the number of Mexican and Mexican-Americans who migrated to Michigan. Garcia (1979) offers the following explanation:

This sudden increase, which was to continue unabated until the onslaught of the Depression, was brought about by a number of factors. One factor involved the post-war industrial economic boom. There was also a renewed effort on the part of labor to organize and achieve better wages and working conditions. This resulted in bitter clashes between the fledgling labor unions and the strongly entrenched corporates. A third factor was the continued decline in the number of immigrants from Europe. ... All of these factors contributed to a shortage of a readily available pool of cheap labor. To offset this shortage and to limit union organizing efforts, employers recruited large numbers of Mexican and Mexican American laborers. (p. 47)

The Depression of the 1930s created fierce competition for the few good jobs that were available. Mexicans and Mexican-Americans, whose labor had been viewed as an economic necessity before the Depression, were now considered by the Anglo community as an economic threat. Many who had settled in urban areas as industrial workers joined the migrant stream of agricultural workers. Deportation became state and local policy; even many United States citizens of Mexican descent were forcibly and illegally repatriated (Garcia 1979, 51; Grebler, Moore, and Guzman 1970, 66).

With the outbreak of World War II, there was a renewed demand for Hispanic labor in both the manufacturing and agricultural sectors of Michigan. The Emergency Farm Labor Supply Program of 1942 (also known as the Bracero Program) provided further impetus to the influx of Hispanics. This law permitted contracting of Mexican laborers on a seasonal basis for United States farm work (Haney 1979). The Hispanics who came to Michigan during this time, however, were largely Mexican-Americans from Texas. Garcia (1979) explains that

although ... braceros were not to be used in areas where sufficient domestic labor was available to perform the work, growers consistently ignored this provision. This practice served to displace Mexican Americans, who were not able to compete with the low wage rates paid
The displaced Mexican-American workers, in turn, sought employment in Michigan and other Midwestern states. The Bracero Program, which was originally intended to be an emergency war measure, continued until 1964 (Grebler et al. 1970). Although the importation of workers from Mexico was reduced after this time, a substantial number of Mexican-Americans from Texas continued to come to Michigan as migrant agricultural laborers.

Hispanics in Holland

Beginning in the 1940s, Hispanic families who had been travelling to Holland as seasonal agricultural workers began to settle permanently in the area. Rapid economic growth created new industrial jobs which encouraged many to leave the difficult life of the migrant stream (Michigan Civil Rights Commission 1969). Hispanics worked primarily in the manufacturing sector, few entering the service sector until the 1970s (Aldrich 1972, Berry 1970).

Migrant workers continue to come to Ottawa County, primarily from the Texas Rio Grande Valley. In 1988, Ottawa County had 58 migrant camps containing 487 housing units and 3,044 people (Draheim 1990). Most are employed in the tree nursery or blueberry industries. Each year, some of these people leave the migrant stream to make permanent homes in Holland.

In 1980, 3.1% of Michigan's Hispanic population lived in Ottawa County, ranking the county eighth in the state (see Figure 1). When considering Hispanics as a percentage of total county population, however, Ottawa County ranked fifth in the state of Michigan with 3.2% of the county's population being of Hispanic origin (see Figure 2). Hispanics living in the greater Holland area comprise 79% of the total Hispanic population in Ottawa county. Hispanics make up approximately 11% of Holland's
Hispanics as Percent of Michigan's Total Hispanic Population

- Over 9.99%
- 8.00 to 9.99%
- 6.00 to 7.99%
- 4.00 to 5.99%
- 2.00 to 3.99%
- Under 2.00%

Figure 1. Distribution of Hispanic Population in Michigan.

Hispanics as Percent of Total Population

- 5.00 to 5.99%
- 4.00 to 4.99%
- 3.00 to 3.99%
- 2.00 to 2.99%
- 1.00 to 1.99%
- Under 1.00%

Figure 2. Hispanics as a Percentage of Total Population: Counties of Michigan.

population, and the city has very few other minorities. In 1980, Asians accounted for 1.05% of Holland's population and Blacks comprised only 0.55% (U.S. Department of Commerce, 1981b). Both Black and Asian populations are growing, however, and they will certainly become a more dominant presence in the years ahead as the city continues to develop from a largely homogeneous Dutch town to a multicultural community.
CHAPTER II

LITERATURE REVIEW

Relationship Between Social and Spatial Distance

The study of ethnic group residential patterns in cities has long been a topic of interest for researchers from a number of disciplines. Each of these disciplines is characterized by particular approaches and perspectives. Fundamental to the theoretical basis used by many geographers is the idea that there is a relationship between spatial distance and social relationships. This connection was presented by R.E. Park in the following often quoted passage:

It is because social relations are so frequently and so inevitably correlated with spatial relations; because physical distances so frequently are, or seem to be the indexes of social distances, that statistics have any significance whatever for sociology. And this is true finally, because it is only as social and physical facts can be reduced to, or correlated with spatial facts that they can be measured at all. (Park 1926, cited in Peach 1975, 30-31)

Jakle and Wheeler, incorporating these observations by Park, state that it is this close connection between spatial and social relationships that makes a geographic approach to the study of ethnic communities useful:

As place of residence reflects the polar base from which both individual and group interaction derives, study of the spatial position of residences provides a manageable means of ascertaining social distance and, thus, of analyzing social interaction. If such be the case, the geographer should make substantial contributions to the continuing discussion of American ethnic communities. (Jakle and Wheeler 1969, 444)

It is important to note that although geographers generally agree that there is a relationship between physical and social distance, the nature of this relationship is the
subject of much debate. The connection between physical space and social interactions encouraged use of the scientific method and the methods of the physical sciences to explain social phenomena. In addition to positivistic approaches which emphasize quantitative methods, a variety of behavioral and humanistic approaches are used in analysis of social relationships. Some researchers view these approaches as being complementary rather than mutually exclusive:

Park’s view of the physical analysis of social relations in spatial terms has major intellectual attractions in that it is capable of generating hypotheses which conflict with hypotheses generated by other approaches. The conflicts are susceptible to empirical testing and solution. (Peach 1981, 20)

We . . . support Peach’s suggestion that humanistic and behavioural geographies do not seek to replace positivism. Instead, we argue that . . . phenomenology and related non-positivistic viewpoints (Mercer and Powell, 1972) provide a critique of conventional positivistic approaches, building upon them rather than representing a complete alternative. (Jackson and Smith 1981, 6-7)

Pattern and Process

Although geographic investigation often focuses on spatial patterns themselves, mere description of spatial pattern is not generally the ultimate goal of geographers. By analyzing spatial patterns of social phenomena, geographers attempt to develop greater understanding of the processes which contribute to those spatial patterns. “Each component of social experience which has spatial implications - ethnicity, class, interest-group activity, language, religion etc . - can be examined in terms of the patterns that arise from group differentiation and activities. This in turn leads to a search for processes” (Jones and Eyles 1977, 9).

Patterns demand explanation: the regularity of one pattern and its cultural repetition, e.g. the inner city distribution of migrants . . . suggest a significance which the geographer must investigate. Or it may be that the pattern confirms a significance which observation had merely suggested. In either case, when a pattern is thought to be significant,
i.e. the result of some interaction or process, then we are moving towards an explanation. (Jones and Eyles 1977, 88)

Models of Immigrant Group Residential Patterns

From these attempts to explain processes from pattern have come various models. One early model of initial residence patterns of immigrants is offered by Burgess.

Each new group as it enters the city finds a place of most favourable entry. For all groups with one or more of the following characteristics - an alien culture, a low economic status and a different race - this point of arrival naturally tends to be in or near the central business district. (Burgess 1928, 109)

As the new immigrants move in, the residents who immigrated earlier move out toward the periphery (Lee 1977, 56). This “port-of-entry” model is an expression of the zone models developed by Burgess to explain general growth patterns of the city. Challenges to this concept, cited by Lee (1977) are offered by Duncan and Duncan (1957), Taeuber and Taeuber (1965), and Straits (1968).

One of the processes by which immigrants have been shown to enter ethnic neighborhoods is chain migration. By this method, immigrants settle in a new area because of connections with friends, relatives, or acquaintances who have already become established there. MacDonald and MacDonald (1964) describe this process with relation to Southern Italian immigrants to Northern cities of the United States. Massey (1986) describes the process for Mexican immigrants to the United States:

As migrants accumulate experience in the United States, social and economic ties are formed which progressively increase the likelihood of U.S. settlement. Over time, migrants bring family members abroad, make new friends, establish institutional connections, and obtain more stable, better paying jobs. As a result, less money is remitted home to Mexico, and more is spent in the United States. These trends give rise to a steady, cumulative increase in the probability of U.S. settlement. (p. 670)

Immigrant residential patterns resulting from chain migration are not necessarily
the same as those resulting from settlement without prior connections. "Chain migration can be responsible for immigrants moving directly to dispersed areas rather than 'ports of entry'" (Lee 1977, 61).

A number of models have also been developed to describe the nature of residential patterns of ethnic communities. Johnston (1971) describes two primary types of models:

1. Ghetto models - resulting from continuing segregation tendencies either within or outside the ghetto community.

2. Assimilation models - apply to groups which are socially and economically segregated within a society for only relatively short periods (perhaps a few decades), with their structural and cultural assimilation accompanied by more general spatial dispersal within cities. (p. 243)

Several sub-types of both of these general models are described in detail by Johnston (1971).

Boal (1976) presents a related group of four possible models for ethnic group residential patterns:

1. Dispersal - when entering group has very few differences from the host society.

2. Colony - when host group - ethnic group differences are initially important, but ethnic group concentration is only a temporary stage in the assimilation process.

3. Enclave - when concentration of the ethnic group is long term and the dominant factor in this concentration is internal cohesion forces.

4. Ghetto - when concentration of the ethnic group is long term and the dominant factor in this concentration is external pressure from the host society. (p. 57)

Both Johnston (1971) and Boal (1976) cite a number of studies which illustrate the models that they have defined. Ethnic groups rarely exhibit patterns corresponding with only one particular model. In most cases one could show a combination of internal cohesion and external pressures contributing to an ethnic group concentration.
The distinction between dispersed and concentrated groups is also rather difficult to
determine; however, these models have great utility in describing the processes that are
associated with various spatial distributions.

Studies of Hispanic residential patterns in United States cities have revealed a
number of variations of the models mentioned above. Since most of the above models
have been developed largely from studies of black neighborhoods, they must be
adjusted and/or expanded for application to Hispanics. In general, Hispanic residences
exhibit less concentration than do black communities. "A barrio-centered residential
pattern simply does not typify the residential distribution of Hispanics in the United
States in the same way that a ghetto-centered pattern characterizes that of American
blacks" (Massey 1983, 833).

Hispanic areas also do not seem to follow an "invasion and succession" pattern
that has been shown in research of black neighborhoods. In a study of several
Southwestern United States cities, Massey (1983) found that:

The classic ecological model of invasion, succession, and consolidation
does not appear to hold for Hispanic populations in the American
southwest. (p. 830)

When residential succession did take hold in areas of Hispanic
settlement, turnover was not nearly as rapid as in black succession
areas; and it did not seem to proceed as far in Hispanic areas, accounting
for the dearth of established Hispanic areas and the relative paucity of
tracts which are predominantly Hispanic. . . . Thus, an area of Hispanic
settlement cannot necessarily be characterized by a particular stage in the
succession process. In a large number of cases, succession simply does
not occur. In this sense, results question the relevance of the ecological
model with respect to the dynamics of ethnic segregation. In the case of
Hispanics, the model postulated by the Chicago ecologists does not
generally hold. In the vast majority of cases, complete succession does
not occur, and areas of Hispanic settlement are rarely the homogenous
natural areas idealized in ecological theory. (p. 833)

Studies of Hispanics in Michigan (Darden 1983) support the idea that Hispanic
residential patterns differ from those of blacks, and that these patterns vary greatly from
city to city within Michigan (Haney 1979).

Although existing studies of Hispanic community spatial patterns have provided much information, the majority of these studies has focused on Hispanics in large metropolitan areas, primarily in the Southwestern states. The study presented in this report of Hispanic residential patterns in Holland, Michigan is interesting because it provides an opportunity to analyze patterns in a smaller town, which has very few other minority group members, and for which the host community represents a largely homogeneous culture. For an understanding of the extent to which established theories and models can be applied to Holland, Michigan, it is necessary to study the changing spatial patterns of the city’s Hispanic community and the degree of residential segregation experienced by Hispanics who live there.
CHAPTER III

RESEARCH PROBLEM AND METHODS

The Research Problem

Research Questions

This study focuses on patterns of Hispanic households and degrees of residential segregation between Hispanic households and the rest of the Holland community for the years between 1960 and 1990. Answers to the following questions are sought:

1. How concentrated are Hispanic households in Holland?
2. How segregated are Hispanic households from Anglo households?
3. How did patterns of Hispanic household concentration and segregation change between 1960 and 1990?
4. What seem to be the current trends of Hispanic residence location?

In order to answer these questions, a variety of patterns is analyzed. The first of these patterns is the distribution of Hispanic households by census tract (proportion of the city’s total Hispanic households in each of the census tracts). This gives an indication of how concentrated Holland’s Hispanic households are. These Hispanic household proportions are then compared with proportions of the city’s total households in each census tract.

The next pattern to be looked at is Hispanic households as a proportion of total households in each of Holland’s census tracts. This shows varying Hispanic
household densities for each tract.

Census block level distributions of Hispanic households and Hispanic households as a proportion of total households are analyzed in order to gain more detail and to determine internal variation of patterns within each of the census tracts. In addition, individual Hispanic household patterns are constructed.

Finally, degrees of segregation between Hispanic households and total households are determined for each census tract and for the study area as a whole according to the method described in the last section of this chapter. Changes in in all of these patterns from 1960 to 1990 are then analyzed so that trends can be identified.

**Hispanic Terms**

For the purposes of this study, the term “Hispanic” is used in reference to those who are described in the 1980 United States Census as being of Spanish origin, and in the 1970 Census as persons of Spanish language. It also refers to those of Hispanic surname who are listed in the Holland-Zeeland Polk directories as described on pages 24 and 25 of this report. The term “Mexican-American” is used to describe those Hispanics who have a Mexican heritage but are United States citizens; “Mexican” refers only to those from Mexico who are not United States citizens.

**Study Area**

The study area consists of census tracts 223, 224, 225, 226, 227, 228, and 301 of the Grand Rapids, Michigan SMSA, which includes the entire City of Holland as well as two small parts of Holland Township. It was decided that the selected portions of Holland Township should be included in the study area because they have a closer association with the City of Holland than with neighboring rural areas. To have
excluded these parts of Holland Township would give a skewed impression of the actual residential patterns that exist in the city. Holland itself is divided between Ottawa and Allegan Counties; tract 301 is in Allegan County while the remaining part of the city is in Ottawa County (see Figure 3).

Although the research in this report focuses primarily on the above defined study area, an overview of census tracts north of the city is also included so that the city data can be put into perspective. This is important since the “Northside” has become a major area of settlement for newcomers to the Holland area and for those who are moving from the downtown district. The Northside is defined as census tracts 220, 221, and 222 which contain Park, Port Sheldon, and Olive townships, as well as the portion of Holland Township that is not included in the primary study area (see Figure 4). In this report, “Holland” will refer to the primary seven tract study area.

Scale

Data used in this research project are at census tract, block, and individual household levels. Since measures of household concentration, dispersion, and pattern are extremely sensitive to the scale at which they are studied, it is wise to investigate such phenomena at a variety of different scales. Boal (1976) explains:

Whether ethnic group concentrations exist or not seems to be related not to the geographic realities but to the scale of the spatial analysis. . . . Perhaps one should not attempt to establish an appropriate scale level for data sub-sets for any particular ethnic segregation analysis; rather one should analyse the segregation over a range of sub-set scales from a coarse to a very fine mesh. (p. 53)

Census data on Hispanics in Holland are available at the tract level only for 1970 and 1980. Only general city and township level data are available before 1970; there are no census data on Hispanic households or population in Holland before 1970. Block level data are only available for 1980; however, values for the missing years
Figure 3. Holland, Michigan in Relation to Ottawa and Allegan Counties.
Figure 4. Census Tracts in Holland, Michigan and Adjacent Areas.
were derived by reconciling data from the Holland-Zeeland Polk directories with census
data for larger spatial units. In this way, it was possible to obtain data at a variety of
scales which could be compared for all years included in the time frame of the study.

Time Frame

This study includes data from 1950 to 1990. However, the research
concentrates on the period from 1960 to 1990, with the most detailed analyses focused
on 1980. The 1950 data are included in order to gain an understanding of very early
Hispanic residence patterns in Holland.

Interpretation Cautions

Comparison of data for persons of Spanish language (1970 census), Spanish
origin (1980 census), and Hispanic surname (Polk directory data) would seem to be
problematic. Because of the relative homogeneity within the Hispanic community of
Holland, however, comparison of these data sources presents fewer difficulties than
would first appear to be the case.

Although some very useful information can be obtained through description and
analysis of census and other data sets, it is important that the results of such
investigations be interpreted judiciously. Areas defined by the census, although
offering some statistical convenience, are arbitrary in nature and do not necessarily
represent internal homogeneity. Johnston and Herbert (1976) comment that “social
areas defined in census taking are not communities... or even neighbourhoods as that
term is often used, because of both the absence of any data on social networks and the
social irrelevance of many of the boundaries” (p. 14). It must also be noted that
methods developed to manipulate census data “deal with population aggregates... and
thus interpretation faces the issue of the ecological fallacy (Alker 1969, Robinson 1950) of making inferences about individuals from data on groups” (Johnston and Herbert 1976, 14).

Approaching this project at a number of scales minimizes these problems to some degree, but limits to interpretations of such study results should, nevertheless, be recognized.

Methods

Data were obtained from both the United States census and the Holland-Zeeland Polk directories. Before 1970, census data on Hispanics were not available for Holland (they were collected for only five states in the southwestern United States); therefore, the Polk directories were used to obtain data on Hispanic households for 1950 and 1960. Polk directory data were also used for 1990 since census data for that year were not yet published at the time of the study.

Hispanic Name List

The initial task involved compiling a comprehensive list of Hispanic surnames to be used as a guide for determining which households listed in the Polk directories were indeed Hispanic. Buechley (1961) describes this method in detail. This approach is also supported by Jakle (1969) who used a similar procedure to identify persons of Dutch descent. Buechley states that although this method is reliable, it requires that the coder be very familiar with Spanish surnames. In order to minimize errors in this regard, an initial name list was compiled by the researcher using Buechley’s list as a base, and adding to it any name listed in the 1950, 1960, 1970, or 1980 Polk directories that appeared to have even the remotest possibility of being Hispanic. This
master list was then given to three persons of Hispanic origin, all long-term residents of Holland and in positions of active community involvement. Each editor, working independently, was asked to cross off names that were not Hispanic and to add any Hispanic names that were missing from the list. In the few instances where there was disagreement among editors, the decision was made to include the name in question if two out of the three editors indicated it to be of Hispanic origin. Included in the list were four names that all of the editors seemed uncertain about. In these cases, the researcher conducted brief telephone interviews with persons possessing the surnames in question, simply asking about their ethnic backgrounds. So that older individuals would be contacted, all interviewees were chosen on the basis of a listing in the Polk directory before 1960. It was decided that these particular people would be the most likely to have accurate knowledge of the their surname origins. There were 466 Hispanic surnames included in the final list.

Using the edited list of Hispanic surnames, lists of street addresses for all Hispanic households for the years 1950, 1960, 1970, 1980, and 1990 were compiled by the researcher. By this procedure, it was possible to generate detailed maps of Hispanic household location for each of the above years.

Individual Households

Using the Polk directory data, dot maps were constructed in order to analyze the spatial distribution of individual Hispanic households. Although the main emphasis of the study is on the years from 1960 to 1990, 1950 data were included in order to obtain an idea of Hispanic household distribution in the first years of permanent settlement. Data for 1990 were included so that a general idea of current Hispanic household patterns could be obtained. These maps do not necessarily reflect the total actual
numbers of Hispanic households for the given years. Although 1950, 1960, and 1970 data correspond quite closely with other estimates of Hispanic households for those years, the 1980 data represent only about 80% of the Hispanic households listed in the United States census for that year; the percentage represented by the 1990 map is unknown since neither census data nor other reliable estimates for that year were available for comparison at the time of the study.

Derived Values Using Polk Directory and Census Data

For choropleth mapping and statistical procedures to be included in the research project, data sets aggregated to the census block and tract levels were needed. Polk Directory data were reconciled with census data to derive values that were not available through the census. Block level maps were superimposed on the previously constructed dot maps so that Polk directory totals for census block and tract areas could be obtained.

Both the 1970 and 1980 census reports list the number of Hispanic households by tract, but neither lists Hispanic households by block. Block level values were derived by calculating the ratio of Hispanic households listed in the census to Hispanic households listed in the Polk directory. Directory values for each block were then multiplied by this same ratio to obtain an estimate of block level census totals. Ratios for each tract were computed separately.

For 1980, approximately 80% of the households listed in the census were accounted for in the Polk directory. Increasing numbers of intermarriages between Hispanics and non-Hispanics provide at least a partial explanation for this disparity between census and Polk directory figures. Children born of a Hispanic mother and non-Hispanic father may identify themselves as Hispanic even though their surnames
do not reflect their partial Hispanic heritage. These individuals would be identified as Hispanic in the census, but would not be identified as Hispanic according to the Polk directory identification method described above.

For 1970, census and Polk directory totals were very similar, the census listing slightly fewer Hispanic households than the directory (95.74%). As in the 1980 calculations, tract level totals for both the census and directory were listed. For tracts in which the census total was larger, estimated block level totals were derived using the same procedure as with the 1980 data. For tracts in which Polk directory values exceeded census values, the Polk figures were used. It was determined that this would provide the most accurate totals since an error of omission from the census would be more likely than the inclusion of extra Hispanic households in the Polk directory.

Hispanic household information was not available for the 1960 census. For this year, Polk directory totals were used. Since 1970 census and Polk values correspond so closely, it seemed reasonable that Polk values would provide an adequate estimate of what 1960 census values would have been (although this is admittedly questionable). Nevertheless, the Polk directory provides the most reliable alternative for obtaining data on Hispanic households for 1960.

For 1990, household numbers were taken from the Polk directory. These values are useful only as an approximate guide to distribution patterns. At the time of this report, 1990 census data were not available for comparison with the Polk directory for that year. It is, therefore, not possible to compare absolute numbers of Hispanic households with those of previous years. Some comparison of relative values is possible since the ratio of Hispanic households to total households was calculated from 1990 Polk data. However, all 1990 values in this report should be interpreted with caution since the proportion of Hispanic households not included in the directory may...
be different from the proportion of total households not included.

**Tract and Block Level Aggregations**

Census tract and block data were used to construct several types of choropleth maps. In addition to simple dot maps, Boal (1976) suggests the following types of maps for displaying the residential patterns of ethnic groups:

- Choropleth maps showing the percentage of the population in each data sub-set which belongs to the ethnic group being analyzed...

- Choropleth maps which indicate, for each data sub-set within a particular city, the proportion of the ethnic group in the city that is resident within each sub-set...

- Choropleth maps showing the proportion of the population in each data sub-set belonging to the ethnic group being analyzed relative to some "expected" proportion. The expected proportion is generated by making one or more assumptions, such as that of an even distribution. (p. 58)

Several versions of the maps suggested by Boal are included in this report. Maps showing the proportion of total Hispanic households in each tract or block were constructed as well as maps showing Hispanic households as a percentage of total households. These maps were constructed at both the tract and block levels. For comparison, maps showing the proportion of total households in each tract or block are also included. Location quotient maps were constructed to show the number of Hispanic households located in each tract and block relative to their "expected" proportions.

Various maps showing the amount of change in Hispanic household distribution patterns between 1960 and 1990 were also constructed. Included are maps showing changes in both percentage values and absolute numbers.
Location Quotients

The location quotient, as applied in this study, compares each area’s share of Hispanic households with the area’s share of total households according to the formula described by Barber (1988):

\[
LQ_i = \frac{A_i / \sum A_i}{B_i / \sum B_i}
\]

Lee (1977) explains further:

The location quotient . . . can be used to compare the area-by-area distribution of an immigrant population with that of the total population. . . . The index is based on a concept of proportional expectation, in that a sub-area is regarded as having a “surplus”, or a concentration, of a sub-population if it has a greater proportion of the sub-population total than it does of the total population. . . . Location quotients of 1.0 indicate that the sub-group is distributed proportionately to the total population. Values of less than 1.0 and greater than 1.0 indicate a deficit and surplus, respectively. At the crudest level, values greater than 1.0 could be interpreted as areas of immigrant “concentration”, and values of less than 1.0 as “dispersed” areas of immigrant settlement. (pp. 172-173)

Location quotients are presented in graph as well as map form for a clearer overview of values for 1960, 1970, 1980, and 1990. In this study, \(A_i\) represents the number of Hispanic households in tract \(i\), and \(B_i\) represents the total number of households in tract \(i\). A location quotient of 1 indicates that the tract’s proportions of Hispanic households and total households are equal. A location quotient of greater than 1 indicates that the tract’s proportion of Hispanic households is greater than its proportion of total households; a location quotient of less than 1 indicates that the tract’s proportion of Hispanic households is less than its proportion of total households.
Measures of Segregation

In order to calculate the degree of segregation between Hispanic households and others, the "index of dissimilarity" was used. This measure is defined by Denton and Massey (1988) as:

\[ D_{xy} = (0.5) \left( \sum \left| \left( \frac{x_i}{X} \right) - \left( \frac{y_i}{Y} \right) \right| \right), \]

where \( x_i \) is the number of minority group X members in tract i, \( y_i \) is the number of group Y members in tract i, and X and Y are their metropolitan-areawide totals. This index gives the relative number of minority members who would have to change tracts in order to achieve an even residential distribution. It is not affected by the proportion of minority members in the metropolitan area. (p. 802)

Although this index is widely used to measure residential segregation between ethnic groups, it does have some drawbacks. If the number of minority group households is smaller than the total number of inhabited blocks, the index value will be unduly high. This drawback becomes clear by examining the following theoretical example: Imagine that there are twenty census blocks each containing a total of ten households, and included within this twenty block area are five minority households, each located in a different block. The calculated index of dissimilarity of the minority group compared with total population would be 75%, even though both populations are fairly evenly scattered over the twenty block area. Cowgill and Cowgill (1951) provide further elaboration on the above theoretical problem and present an alternate index of segregation to be used at the block level:

Operationally this index defines the degree of segregation as the ratio of the number of city blocks inhabited by any nonwhites to the number of blocks which would be inhabited by nonwhites under conditions of total segregation on the one hand and the number which would be inhabited by nonwhites under conditions of complete lack of segregation on the other hand. . . . The formula is:

\[ I = \frac{C - X}{C - B} \]

(pp. 827-828).
In this formula, C represents the total possible blocks that would be occupied by the minority group assuming maximum spread.

This is equivalent to one of two figures; it is either the total number of blocks in the city or the total number of dwellings occupied by nonwhites, whichever is the lesser figure. The rationale for this figure is that obviously in a city with only 20 nonwhite dwelling units, these dwelling units cannot be distributed in more than 20 blocks, hence, 20 blocks will represent the maximum spread or complete lack of segregation for that city. However, in another city with 3400 nonwhite dwelling units and only 700 blocks, the maximum number of blocks which could be occupied by nonwhites is not the number of nonwhite dwelling units, but the total number of blocks. (Cowgill and Cowgill 1951, 228-229)

The variable B represents the number of blocks that would be occupied by the minority group under conditions of maximum concentration. This value is obtained by first finding the mean number of households in those blocks containing minorities. The total number of minority households is then divided by the mean number per block to arrive at the final value for B. The variable X represents the total number of blocks containing minority households.

If the formula suggested by Cowgill and Cowgill is applied to the theoretical problem mentioned above, the resulting index of segregation value would be zero. In this particular case, the Cowgill and Cowgill index seems to provide a more adequate description of the spread of households than does the index of dissimilarity. The index of dissimilarity does, however, consider the number of both minority and total households within each block rather than just the presence or absence of minority households. Because of the strengths in each of the measures of segregation discussed above, both are used for the description of data in this study.
CHAPTER IV

DATA DESCRIPTION AND ANALYSIS

Increase and Distribution of Holland's Hispanic Households

Increase of Hispanic Households

The number of permanent Hispanic households, first established in Holland during the 1940s, has risen dramatically since that time. In 1950, only eleven Hispanic households were documented, that number climbing to 787 in 1980 (see Figure 5). Final census counts for 1990 are expected to be even greater. The number of Hispanic households increased at a faster rate than total households during these years, so that, Hispanic households have constituted an increasing proportion of the city's total households, reaching a level of approximately 8% in 1980. Because the number of persons per household in Holland's Hispanic community is greater than is found in the general community, the proportion of Hispanics in the general population is greater than the number of households would indicate. In 1980, Holland's 8% Hispanic households constituted more than 11% of the city's total population.

The most dramatic increase in number of Hispanic households between 1960 and 1970 occurred in tracts 224 and 225 (see Figure 6). During this same period, there was a loss in total number of households for these two tracts (see Figure 7). For the period from 1970 to 1980, numbers of Hispanic households continued to increase in all tracts, the greatest increase in both Hispanic and total households occurring in tract 301.
Figure 5. Number of Hispanic Households in Holland, Michigan: 1950 to 1980.

Census Tracts. Grand Rapids, Michigan SMSA. 
Final Reports: PHC(1)-80 and PHC 80-2-172. 

Figure 6. Increase in Number of Hispanic Households: Holland, Michigan.


Figure 7. Change in Total Number of Households: Holland, Michigan.


Mere observation of change in number of households provides rather limited information about changing patterns of Hispanic household distribution and their relationships with general household patterns. The following analyses of tract, block, and individual level data will provide more insight.

**Distribution of Hispanic Households by Tract**

Some important trends become apparent when observing patterns of change in proportions of both Hispanic and total households for Holland’s census tracts during the years from 1960 to 1990. In order to clearly identify general trends, it is useful to designate Holland’s census tracts as central (223, 224, and 225), or peripheral (226, 227, 228, and 301). Within this framework, it is possible to determine which general areas in Holland have increasing or decreasing proportions of Hispanic households, and to compare these proportions with total households throughout the city.

Initial Hispanic settlement in Holland exhibited a relatively dispersed pattern. Although all Hispanic households documented in 1950 were located in tracts 223, 224, and 225, they were not tightly clustered. During the 1950s, some Hispanic households were established in census tracts outside of the central city, but an area of concentration was clearly developing within the central tracts. By 1960 more concentration had occurred (see Figure 8); approximately 90% of Holland’s Hispanic households were located in the three central city tracts, over 40% being located in tract 224 alone. Tracts 223 and 225 contained approximately 34% and 15% of Holland’s Hispanic households, respectively (see Table 1).

Hispanic household concentration in Holland’s three central tracts became even more evident by 1970, when more than 94% of the city’s Hispanic households were located in these three tracts. Although both tracts 223 and 224 experienced slight
Figure 8. Distribution of Hispanic Households: 1960 to 1990.


decreases in their shares of Hispanic households during the 1960s, tract 224 still contained the largest share (39.55%). The greatest change occurred in tract 225, in which the share of Hispanic households increased by nearly 10 percentage points during the 1960s (see Figure 9). The actual number of Hispanic households increased slightly in tract 227 during this period, but because of more rapid growth in the three central tracts, it experienced a decline of nearly 6 percentage points in its share of the city's Hispanic households, having only 2.24% in 1970. Hispanic households had begun to appear in tract 301 by 1970 but, this tract, as well as tracts 226 and 228, each had only slightly more than 1% of the city's Hispanic households.

Table 1

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In 1980, the main concentration of Hispanic households remained in tracts 223, 224 and 225, but there was more even distribution among these three tracts than in 1960 or 1970. Tract 225 had the largest proportion of Hispanic households (29.61%),
Figure 9. Change in Distribution of Hispanic Households: 1960 to 1990.

Census Tracts. Grand Rapids, Michigan SMSA.
Final Reports: PHC(1)-80 and PHC 80-2-172.

followed by tract 224 (27.83%) and tract 223 (25.92%). The greatest increase occurred in tract 301 which, by 1980, contained 8.51% of the city’s Hispanic households. Tracts 226, 227, and 228 all had slightly larger proportions of Hispanic households in 1980 than in 1970, but each of these tracts still had less than 4% of the total Hispanic households in 1980.

Hispanic household concentration in Holland’s three central tracts declined to 70.50% in 1990. Hispanic households were also less evenly distributed among these three tracts in 1990 than in 1980. Tract 225 still had the greatest concentration (33.33%) and was the only one of the central tracts to experience an increase in its share of Hispanic households. Tracts 224 and 223 had the next greatest proportions with 23.40% and 13.76% respectively, although both of these values reflect declines since 1980. The decline in tract 223 was especially dramatic with a drop of more than 12 percentage points since 1980. The greatest increase occurred in tract 228, which contained 10.50% of the city’s Hispanic households in 1990. Tracts 227 and 301 also experienced increases in their shares of Hispanic households. Tract 226 remained the tract with the smallest proportion of total Hispanic households, that proportion changing little since 1980.

Considered together, tracts 223, 224, and 225 have been, thus far, the areas where the great majority of Holland’s Hispanic households have located. For each of the ten year intervals from 1960 to 1990, between 70% and 94% of Holland’s Hispanic households have settled within these three tracts, although tract 225 has experienced an increase during each decade while tract 223 has experienced a decrease. Hispanic household concentration in tracts 223, 224, and 225 may be explained by the lower median housing values in these tracts compared with other areas of the city. These lower income areas would be the easiest places for new arrivals, often with limited
financial resources, to begin to establish households. The central city tracts were also in close proximity to most of the employment opportunities that were available to the new Hispanic residents, especially during the 1950s and 1960s.

The distribution pattern seems to be changing, however, as greater proportions of Hispanic households continue to locate in tracts 227, 228, and 301. The sudden jump in proportions of Hispanic households in tract 301 during the 1970s, and in tract 228 during the 1980s, may be due to construction of low income apartment housing in those tracts during the decades when the proportion jumps occurred. This shift toward the peripheral tracts may also reflect increased economic choices for Hispanic families (now including second and third generations) as they become more established in Holland.

Tract 226 has clearly experienced the least change in its share of Hispanic households, its proportion varying by less than 1 percentage point during the 30 years from 1960 to 1990. This pattern may also have an economic explanation since tract 226 also has the highest median housing value of all tracts in the city.

Distribution of Hispanic Households Compared With Distribution of Total Households

The Hispanic household patterns described above do not merely reflect general household distribution patterns. The distribution of Hispanic households for these years differs greatly from that of total households (see Figure 10). In 1960, the proportion of total households in Holland’s central tracts was 55.8%, compared with 89.2% of Hispanic households. This proportion continued to decline during the next three decades until, in 1990, only 35.3% of Holland’s total households were located in the central tracts compared with 70.49% of Holland’s Hispanic households. Specifically, tract 224 had the greatest proportion of Hispanic households in 1960 and
Figure 10. Distribution of Total Households: 1960 to 1990.

1970, with tract 225 having the greatest proportion in 1980 and 1990. The greatest proportion of Holland’s total households existed in tract 225 in 1960, 1970, and 1980, with tract 301 having the greatest total proportion in 1990 (see Table 2). The biggest contrasts between proportions of Hispanic households and total households occurred in tract 224 for each of the years being considered, although tract 225 displayed very close to the same value as tract 224 in 1990.

Table 2

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Overall patterns show, then, an increasing proportion of Hispanic households in the central tracts during the 1960s, and a proportion decrease in these tracts during the next two decades. The proportion of total households in the central tracts decreased during each of the three decades from 1960 to 1990 (see Figure 11). There has been a decreasing difference between proportions of Hispanic and total households in these tracts, but for each of the years under consideration, the proportion of Hispanic
Figure 11. Change in Distribution of Total Households: 1960 to 1990.


households has been greater than the proportion of total households.

In general, Holland’s peripheral tracts have been characterized by an increase in proportion of total households. It should be noted, however, that tract 227 experienced a slight decrease in proportion of total households for each of the ten year periods being considered. The proportion of Hispanic households in the peripheral tracts decreased between 1960 and 1970, then increased during the next two decades. Of course, as can be determined from the case in the central tracts, the difference between proportions of Hispanic and total households in the peripheral tracts increased between 1960 and 1970, then decreased during the following two decades. In contrast to the central tracts, the proportion of total households in the peripheral tracts was greater than the proportion of Hispanic households for each of the years under consideration.

Proportions of both Hispanic and total households increased in the peripheral tracts during each of the three decades. The difference in proportions of Hispanic and total households did not change as much in the peripheral tracts as in the central tracts. The difference between proportions of Hispanic and total households increased during the 1960s, then decreased only slightly during the 1970s and 1980s. In each of the census years, the proportion of total households in these tracts was greater than the proportion of Hispanic households.

The relationship between Hispanic households and total households in Holland can be further described by calculating location quotients (LQs) for each of the city’s census tracts. Table 3 and Figure 12 provide a summary of tract LQs for 1960, 1970, 1980, and 1990. Location quotient maps for each of the study years are provided in Figure 13.

In 1960, tracts 223 and 224 had LQs of greater than 1, while all other tracts had LQs of less than 1. Location quotients for tracts 223 and 224 were still greater than 1
in 1970, tract 224 showing a slight increase from 1960 with tract 223 showing very little change. As in 1960, tracts 226, 227, and 228 had LQs of less than 1 in 1970. There was very little change in tracts 226 and 228 between these two years, while tract 227 showed a decrease in LQ so that by 1970, all three of these tracts, along with tract 301, had very similar LQs. The greatest change in LQ between 1960 and 1970 occurred in tract 225 where the 1960 value was less than 1 and the 1970 value was nearly equal to 1.

Table 3
Location Quotients: Tract Level

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<td>226</td>
<td>0.19</td>
<td>0.16</td>
<td>0.22</td>
<td>0.23</td>
</tr>
<tr>
<td>227</td>
<td>0.40</td>
<td>0.11</td>
<td>0.20</td>
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</tr>
<tr>
<td>228</td>
<td>0.20</td>
<td>0.13</td>
<td>0.23</td>
<td>0.65</td>
</tr>
<tr>
<td>301</td>
<td>. . .</td>
<td>0.10</td>
<td>0.48</td>
<td>0.48</td>
</tr>
</tbody>
</table>

Location quotients for 1980 showed patterns similar to those of 1970. Tracts 223, 224, and 225 still had LQs of greater than 1, with tract 224 showing a fairly noticeable decrease and tract 225 showing a slight increase over 1970 values. The remaining tracts had LQs of less than 1, although all showed an increase from 1970 values. The most significant increase occurred in tract 301.
Figure 12. Location Quotients: Hispanic Households
Holland, Michigan: 1960 to 1990 (Graph).
Figure 13. Location Quotients: Hispanic Households

Location Quotients
- More than 1.5
- 0.5 to 1.5
- Less than 0.5
- Not Applicable
Values for 1990 show the same general patterns as those for 1980; tracts 223, 224, and 225 had location quotients of greater than 1 while the remaining tracts had values of less than 1. Among the first three tracts, 224 and 225 showed increases over 1980 values while tract 223 showed a noticeable decrease for the first time. Tracts 226, 227, and 301 showed little change from 1980, while tract 228 experienced an increase in LQ.

Holland’s central tracts have generally had greater proportions of Hispanic households than total households. In 1960, Hispanic household concentration was present in tracts 223 and 224; this concentration extended into tract 225 for 1970, 1980, and 1990. There was a slight increase in the concentration of Hispanic households in central tracts between 1960 and 1970, with a clear decrease in 1980 and a very slight increase again in 1990. The peripheral tracts, of course, show trends that are opposite of the central tracts. They have had lesser proportions of Hispanic households than total households for each year of the study, the difference between proportions increasing between 1960 and 1970, then decreasing in 1980 and 1990. These tracts had increasing differences between proportions of Hispanic and total households for 1980 and 1990, tract 225 having an increasingly larger proportion of Hispanic households, with the proportion of Hispanic households in tract 227 lessening during these years.

In summary, for each of the three decades between 1960 and 1990, the census tracts located farthest from Holland’s central tracts (226, 228, and 301) experienced increases in their shares of the city’s total households, while all other tracts experienced decreases. In contrast, the increases in Hispanic household proportions have generally occurred in all of the census tracts previously designated as “peripheral” (an exception being a decline in tract 227 between 1960 and 1970). For example, the greatest
increase in Hispanic household proportion during the 1960s occurred in tract 225, however, this tract had the greatest decrease in its proportion of total households during the same decade. The biggest differences between proportions of Hispanic households and total households were in the central tracts during the 1960s and 1970s, and in the peripheral tracts during the 1980s.

When considering the area around Holland, as well as the city itself, it is clear that proportions of both Hispanic and total households decreased in the city as more families moved to surrounding townships during the decade from 1970 to 1980 (see Figure 14). The largest increase for Hispanic households occurred in outlying areas closest to the city, while total household increases were more evenly spread over the entire area north of Holland.

Hispanic Households as a Proportion of Total Households

Although the map of Hispanic household distribution gives the impression of Hispanic household dispersion over time, the distribution of Hispanic households as a percentage of total households displays a very different pattern (see Figure 15, Table 4). In 1960, with only 74 Hispanic households in the entire city, every tract in Holland was less than 5% Hispanic.

By 1970, Hispanic households comprised larger proportions of the total households in all seven tracts, especially tracts 223, 224, and 225. The main concentration of Hispanic households was clearly in tract 224. In 1960, this tract was only 3% Hispanic but by 1970, nearly 17% of its households were Hispanic, an increase of almost 14 percentage points. Tract 223 had become approximately 10% Hispanic, with a gain of almost 8 percentage points since 1960. Slightly more than 5% of the families in tract 225 were Hispanic in 1970 as compared with less than 1% in
Figure 14. Change in Distribution of Households: 1970 to 1980
Holland, Michigan and Adjacent Areas.

Census Tracts. Grand Rapids, Michigan SMSA.
Final Reports: PHC(1)-80 and PHC 80-2-172.
Figure 15. Hispanic Households as Percent of Total Households: 1960 to 1990.

Census Tracts. Grand Rapids, Michigan SMSA.
Final Reports: PHC(1)-80 and PHC 80-2-172.

Despite increases, tracts 226, 227, 228, and 301 were still less than 1% Hispanic in 1970.

### Table 4

Hispanic Households as a Percentage of Total Households

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>223</td>
<td>2.07</td>
<td>9.82</td>
<td>17.36</td>
<td>13.90</td>
</tr>
<tr>
<td>224</td>
<td>3.06</td>
<td>16.79</td>
<td>22.17</td>
<td>22.00</td>
</tr>
<tr>
<td>225</td>
<td>0.58</td>
<td>5.13</td>
<td>11.66</td>
<td>14.40</td>
</tr>
<tr>
<td>226</td>
<td>0.19</td>
<td>0.77</td>
<td>1.86</td>
<td>1.80</td>
</tr>
<tr>
<td>227</td>
<td>0.40</td>
<td>0.54</td>
<td>1.68</td>
<td>2.90</td>
</tr>
<tr>
<td>228</td>
<td>0.20</td>
<td>0.64</td>
<td>1.92</td>
<td>5.30</td>
</tr>
<tr>
<td>301</td>
<td>0.00</td>
<td>0.50</td>
<td>4.05</td>
<td>3.90</td>
</tr>
</tbody>
</table>

Hispanic household concentrations in tracts 223, 224, and 225 became even more clearly defined by 1980. Tract 224 still had the highest proportion of Hispanic households (22.17%), but tract 223 showed the greatest gain in percentage points during the 1970s with 17.36% Hispanic households in 1980 compared with 9.82% in 1970. Tract 225 exhibited the second highest gain in percentage points (6.54) with 11.66% Hispanic households in 1980. There was also a significant increase in the proportion of Hispanic households in tract 301 during the 1970s. Although only slightly more than 4% of this tract’s households were Hispanic by 1980, this represents an increase of 3.56 percentage points from 1970. Tracts 226, 227, and 228 experienced small gains but, in 1980, all less than 2% of the households in these tracts.
were Hispanic.

The 1990 pattern indicates that there was significantly less change in the census tracts’ proportions of Hispanic households during the 1980s than during the 1960s or 1970s. During the 1980s, tracts 224, 226, and 301 all had changes of less than .2% although, in 1990, tract 224 still continued to be the most largely Hispanic (22%). Tracts 223 and 225 also contained relatively high percentages of Hispanic households in 1990 (13.9% and 14.4% respectively), but this represents a gain of 2.72 percentage points in tract 225 and a loss of 3.46 percentage points in tract 223. The largest gain in percentage points occurred in tract 228. By 1990, 5.3% of this tract’s households were Hispanic compared with only 1.92% in 1980. Tract 227 experienced a small gain of only 1.22 percentage points during the 1980s, remaining less than 3% Hispanic by 1990.

It is clear that the highest concentrations of Hispanic households, as a percentage of total households, has developed in the areas closest to Holland’s central business district (tracts 223, 224, and 225). This concentration was primarily in tract 224 during the 1960s, reaching tracts 223 and 225 during the 1970s and 1980s. Smaller concentrations developed in tract 301 during the 1970s, and in tract 228 during the 1980s. The most rapid changes in percentage points occurred during the 1960s and 1970s, with dramatically less change during the 1980s (see Figure 16).

Block Level Hispanic Household Patterns

If Hispanic household proportions are observed only at the tract level, general Hispanic household concentration near the central city is identifiable, but internal variation within each of the census tracts can be easily overlooked. Figures 17, 18, 19, and 20 show that proportions of total Hispanic households vary considerably among
Figure 16. Change in Hispanic Households as Percent of Total Households: 1960 to 1990.


Figure 17. Distribution of Hispanic Households, 1960: Census Blocks.

Source: Polk's Holland and Zeeland Directory
Figure 18. Distribution of Hispanic Households, 1970: Census Blocks.

Source: Polk's Holland and Zeeland Directory
Figure 19. Distribution of Hispanic Households, 1980: Census Blocks.

Source: Polk's Holland and Zeeland Directory
Figure 20. Distribution of Hispanic Households, 1990: Census Blocks.

Source: Polk's Holland and Zeeland Directory
the blocks within a particular census tract, especially among tracts where the overall proportion of Hispanic households is higher. For example, tracts 223 and 224 had the greatest proportions of total Hispanic households in 1960. In both of these tracts, all seven classes of Hispanic household distribution were represented while, in the other five tracts, only the three lowest proportion classes were represented. Similar patterns can be observed for 1970, 1980, and 1990. It is also apparent that as Hispanic households became more evenly distributed among tracts during the study period, general variation at the block level was reduced.

Tract level representations of Hispanic households as a percentage of total households also mask block level variation (see Figures 21, 22, 23, and 24). For example, in 1980, between 20 and 25% of the households in tract 224 were Hispanic. Block level distributions for this tract show, however, that Hispanic household concentrations range from zero Hispanic households to more than 50% Hispanic. Variation in concentrations of Hispanic households as a percentage of total households seems to follow the same pattern as variation in the distribution of Hispanic households; tracts that show the overall highest densities of Hispanic households also show the greatest block level density variations.

**Individual Hispanic Household Patterns**


Although the distributions discussed in the preceding pages indicate Hispanic household concentration in particular census tracts or blocks, associations at the
Figure 21. Hispanic Households as Percent of Total Households, 1960: Census Blocks.

Source: Polk's Holland and Zeeland Directory.
Figure 22. Hispanic Households as Percent of Total Households, 1970: Census Blocks.

Source: Polk's Holland and Zeeland Directory.
Figure 23. Hispanic Households as Percent of Total Households, 1980: Census Blocks.

Source: Polk's Holland and Zeeland Directory.
Figure 24. Hispanic Households as Percent of Total Households, 1990: Census Blocks.

Source: Polk's Holland and Zeeland Directory.
Figure 25. Hispanic Households, 1950: Dot Map.

Source: Polk's Holland and Zeeland Directory
Figure 26. Hispanic Households, 1960: Dot Map.

Source: Polk's Holland and Zeeland Directory
Figure 27. Hispanic Households, 1970: Dot Map.

Source: Polk's Holland and Zeeland Directory
Figure 28. Hispanic Households, 1980: Dot Map.

Source: Polk's Holland and Zeeland Directory
Figure 29. Hispanic Households, 1990: Dot Map.

Source: Polk's Holland and Zeeland Directory
borders of these rather arbitrary spatial divisions could not be discerned. Maps of individual households show that Hispanic household concentrations are often oriented across streets as well as within blocks. This pattern is especially apparent for 1980 and 1990. If analysis is limited only to the block level, degrees of Hispanic household concentration could be underestimated since conventional aggregation schemes tend to spatially divide the very areas where cultural associations are occurring.

Dot maps can also point out various idiosyncratic occurrences within the study area. Especially large, concentrated groupings of Hispanic households (tract 301 for 1980, and tracts 228 and 301 for 1990) represent construction of low rent apartments. This pattern, easily identifiable only with dot maps, could be important in developing hypotheses about the processes that contribute to Hispanic household patterns.

Individual household maps are also useful for a clearer understanding of percentage distributions. For example, the 1970 block level map of Hispanic households as a percentage of total households (see Figure 22) indicates that a particular block on the east side of tract 301 was more than 49.99% Hispanic. By looking at the dot map for the same year, however (see Figure 27), it can be seen that this percentage represents very few actual households (see comments in “Individual Households” section on pages 25 - 26).

Various quantitative measures can be obtained from construction of dot maps. Figures 30 through 34 provide an overall view of individual Hispanic households along with mean centers and standard distance units for each of the study years (the standard distance unit is the spatial equivalent of the standard deviation unit). Figures 35 and 36 show temporal changes in both mean centers and weighted mean centers; exact distances are summarized in Table 5. The increasing standard distance over the study period indicates a generally increasing spread of Hispanic households. Mean centers
Figure 30. Hispanic Households, 1950: Mean Center and Standard Distance.

Source: Polk's Holland and Zeeland Directory
Figure 31. Hispanic Households, 1960: Mean Center and Standard Distance.

Source: Polk's Holland and Zeeland Directory
Figure 32. Hispanic Households, 1970: Mean Center and Standard Distance.

Source: Polk's Holland and Zeeland Directory
Figure 33. Hispanic Households, 1980: Mean Center and Standard Distance.

Source: Polk's Holland and Zeeland Directory
Figure 34. Hispanic Households, 1990: Mean Center and Standard Distance.

Source: Polk's Holland and Zeeland Directory
Figure 35. Mean Centers of Hispanic Households: 1950 to 1990.
and weighted mean centers have followed similar patterns, beginning in the center of tract 224 in 1950, moving to the southeast in 1960 and 1970, to the southwest in 1980, and slightly south in 1990. The change in distance of the mean centers is also declining over time, which may suggest that the increasing spread indicated by the standard distances is occurring more evenly in all directions (although levels of dispersion in each of these general directions may vary).

Table 5

<table>
<thead>
<tr>
<th>Year</th>
<th>Standard Distance (miles)</th>
<th>Change in Mean Center (miles)</th>
<th>Change in Weighted Mean Center (miles)</th>
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<td>. . . .</td>
<td>. . . .</td>
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<tr>
<td>1990</td>
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Segregation of Hispanic Households

Earlier sections of this paper have focused on distributions of Hispanic households and Hispanic households as a percentage of total households, but neither of these types of analyses indicate the degree of segregation between Hispanic households and total households in the study area. The index of dissimilarity (ID), discussed in Chapter III, is commonly used by sociologists and social geographers to describe such relationships.
It is apparent from Figure 37 (based on block data) that segregation of Hispanic households has continually declined from 1960 to 1990. When calculations are based on tract level aggregates, there is still a decline in dissimilarity although the decline is less dramatic and the degree of dissimilarity for each of the study years is less than that based on block level data. Because 1960 values may be artificially high (for the reasons discussed on pages 30-31), the Cowgill index was also calculated. This index shows the lowest level of segregation occurring in 1960, with a sharp increase in 1970, followed by decreases in both 1980 and 1990. All of these index values are summarized in Table 6.

Further information about Hispanic residential segregation can be discerned by looking at temporal changes in the index of dissimilarity for each individual census tract. All tracts showed a decline in dissimilarity between 1960 and 1990 with the exception of tract 223, which showed an increase between 1980 and 1990 (see Table 7). The 1990 value was even slightly higher than that for 1970. This may be explained by downtown revitalization projects during the 1980s which destroyed much low income housing and created more high rent properties. In general, the peripheral tracts showed much higher levels of dissimilarity than the central tracts for each of the study years (see Figure 38).

Continued decline in ID values is likely as Hispanic residents continue to gain better economic positions in the community, thus having greater choice of residence. It should be noted, however, that as the Holland area continues to grow, residential patterns that were once characteristic of the city's central tracts, may become characteristic of the city as a whole; patterns that were previously observed in the peripheral tracts within Holland, may become evident in areas peripheral to the city itself. Therefore, although the ID measure indicates a general decline in residential
Figure 37. Index of Dissimilarity: Hispanic Households in Relation to Total Households: 1960 to 1990.
Table 6

Index of Dissimilarity: Comparison of Census Block and Tract Aggregations With Cowgill and Cowgill Index

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<td>35.16</td>
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<tr>
<td>Based on Block Data</td>
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<td>55.31</td>
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<td>.319</td>
<td>.662</td>
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<td>.458</td>
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</table>

Table 7

Index of Dissimilarity: Individual Census Tracts

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<td>301</td>
<td>. . .</td>
<td>91.66</td>
<td>64.65</td>
<td>44.83</td>
</tr>
</tbody>
</table>
Figure 38. Index of Dissimilarity: Individual Census Tracts, 1960 to 1990.
segregation of Hispanic households from non-Hispanic households within the City of Holland, further analysis of areas outside of the city would need to be undertaken in order to establish whether this decline reflects a true decrease in residential segregation or merely an expansion of the “inner city.”
CHAPTER V

SUMMARY AND CONCLUSION

Summary

Holland, Michigan began in the mid-nineteenth century as a homogeneous Dutch community. Beginning in the 1940s, Hispanics who had originally come to the area as migrant workers began to settle permanently. In 1980, more than 8% of Holland’s households were Hispanic.

The great majority of Hispanic households were found in the three census tracts closest to Holland’s central business district for the years from 1960 to 1990. The proportions of Hispanic households in these tracts is declining, however, as more Hispanics move to peripheral tracts within the city and immediately outside of the city. When compared to total households, proportions of Hispanic households in the central city tracts were generally greater than proportions of total households, while proportions of total households were greater in the peripheral tracts. Location quotients indicate that these proportion differences are declining.

Hispanic households as a percentage of total households increased in all tracts for each of the study years from 1960 to 1980. Between 1980 and 1990, there was a significant decrease in tract 223 with very slight decreases in tracts 224, 226, and 301 during the same time period.

Block level analyses show that the variation in Hispanic household distribution was greatest within tracts that had the largest proportions of total Hispanic households. It was further shown that tracts with larger concentrations of Hispanic households as a
percentage of total households also exhibited more block level variation in Hispanic household densities.

Dot maps indicated groupings of Hispanic households across streets as well as within census blocks or tracts. Household groupings representing low rent apartment complexes could also be identified. Mean center and standard distance calculations suggested that there is an increasing spread of Hispanic households over the study area, and that this spread is occurring more evenly in all directions with each successive decade.

Index of dissimilarity measures indicate that there is generally decreasing segregation between Hispanic households and total households within the City of Holland. This overall pattern can be seen in each of the individual census tracts as well, with the exception of tract 223 which showed an increase in dissimilarity between 1980 and 1990. Central city areas generally showed lower dissimilarity values than did peripheral areas.

Conclusion

This paper identifies patterns of Hispanic household concentration and segregation for the decades from 1960 to 1990, with some information for 1950. The situation in Holland, Michigan appears to support Massey’s (1983) view that Hispanic areas do not seem to follow the same type of invasion and succession pattern that is often found in black communities (discussion on page 16). By investigating patterns of Hispanic concentration and segregation in the future, it will be possible to determine whether Hispanic residential integration in Holland will continue, or whether it will reach a point at which further integration is resisted. This largely descriptive study, however, represents only the foundation for dealing with larger questions concerning
the processes that contribute to Hispanic household patterns.

This project leads to other interesting questions that are often set forth in the literature: To what degree are Hispanic household patterns determined by economic constraints of the households in question or ethnic group discrimination, and to what degree are these patterns determined by mere choice of minority group households?

It is possible that these determinants of minority household patterns are moderated by the economic health of the community in question. Under good economic conditions, a city may offer less resistance to an influx of minority households - they may not be perceived as an economic threat and so are better able to obtain jobs and to mix freely (at least residentially) with the majority population.

The degree of cultural homogeneity (in terms of such things as religion and ethnic background) of the majority population may also be a factor in the acceptance of or resistance to minority households in a given area. Cultural homogeneity of the majority population may create more ethnocentric attitudes and, therefore, more resistance to minority groups. On the other hand, cultural homogeneity may create a more secure sense of political and economic control within the majority community and, therefore, minority households would not be viewed as a viable threat to the established order.

A number of the above issues could be investigated by developing indices of economic health and cultural homogeneity for urban areas, and by obtaining data on income levels and attitudes toward residential segregation for both majority and minority populations. Of particular interest would be temporal changes in patterns, differences occurring by region of the United States or by city size, and differences occurring by ethnic group.

Consideration of these and other questions could lead to development of further
hypotheses about the processes that contribute to Hispanic household distributions and residential patterns of other ethnic groups.
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