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A Study of Selected Demographic Factors Associated with Population Change in Incorporated Rural Communities of South Dakota

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A STUDY OF SELECTED DEMOGRAPHIC FACTORS ASSOCIATED WITH POPULATION CHANGE IN INCORPORATED RURAL COMMUNITIES OF SOUTH DAKOTA

BY

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This thesis is approved as a creditable and independent investigation by a candidate for the degree, Master of Science, and is acceptable as meeting the thesis requirements for this degree, but without implying that the conclusions reached by the candidate are necessarily the conclusions of the major department.

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CHAPTER I

INTRODUCTION

Analysis of the population trends of South Dakota indicates that it is a state which is experiencing a very slow population increase. During the twenty year period from 1940 to 1960 South Dakota's population increased by a little less than six per cent or an increase of about three tenths of one per cent each year. However, upon employing a more detailed analysis, it becomes evident that the state is undergoing very rapid change in certain segments of its population.

The United States Census Bureau usually divides the population of any large geographical area into three broad categories -- urban, rural farm and rural non-farm. Demographers have performed much investigation in the former two areas; however, the research relative to the rural non-farm population segment lacks the intensity that characterizes investigations of the urban and rural farm populations. Recently there has been an awareness of this fact and the North Central Regional Committee on Community Adjustment to Social Change has initiated a large scale investigation of the changes and adjustments that are taking place within the communities of the region.

By following some of the procedures recommended by this committee, it is the intent of this thesis to provide a detailed demographic analysis of the rural non-farm population of South Dakota. One phase of this project deals with a detailed analysis of the characteristics of the rural non-farm population. South Dakota is cooperating in this regional study and this thesis will contribute to the analysis of data for South Dakota's rural non-farm populations. This thesis will concentrate solely upon the demographic factors that are associated with population change. It is, of course, impossible to completely separate social and cultural factors from a study of population change; however, their importance will be de-emphasized for the purposes of this investigation.

The sociological importance of the community has long been known to sociologists; however, they have just recently begun to see the vast significance of studying the community. This more recent viewpoint is expressed by Kimball and Arensberg in their book, Culture and Community. "We believe the community to be.....a key to society and a model, indeed perhaps the most important model, of culture. We are convinced that the community has shown itself, in the research of recent years, to be

a main link, perhaps a major determinant, in the connection between culture and society."[1]

The above statement seems to be representative of the feelings of most sociologists whose area of investigation is the community. The community is the most manageable and representative sample of the society or culture taken as a whole. The study of communities is not only a legitimate area for sociological research but perhaps one of the most important areas of study in sociology.

Population analysis or demography has been an important sub-discipline of sociology almost since its inception. A great deal of the work of demographers has been centered on large scale studies of the world's or a country's population. This method of macro-analysis has been, until recently, the rule rather than the exception. Microscopic investigation has only recently been employed in an effort to better understand the larger population changes that are taking place in the world today. This writer believes that a macro-analysis of the population changes of South Dakota communities would overlook many important factors. Because the intent of this

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[1] Solon T. Kimball and Conrad M. Arensberg, Culture and Community, New York: Harcourt, Brace and World, Inc., 1965, p. ix.

thesis is to provide a detailed investigation, a micro-analysis approach to the study of South Dakota communities will be employed. An intensive demographic analysis will, it is hoped, provide more meaningful information than an investigation that would reveal only the general trends of population change in the state as a whole.

The importance of population change is viewed in a number of ways by sociologists; however, this writer is of the opinion that these divergent viewpoints can be categorized under two schools of thought. First, there are those demographers who view population change as being a symptom of underlying social forces that are at work in the society. According to this viewpoint, population changes are merely reflections of social forces. For example, a population increase may be a reflection or symptom of a changing social value that encourages large families. This school of thought rules out the possibility that population change could actually be a cause of further population change. For the followers of this school, population changes are simply reflective devices for indicating changes in social or cultural values and ideas.

The second school of thought regards population change as being a causal factor, indeed the most important

factor, that explains changes that are taking place in a society or in the culture of a society. For these demographers, most changes which take place in a society are the result of the population changes that are being experienced by the society. Because of the importance that these demographers assign to population change, they can be referred to as demographic determinists. An example of their line of reasoning would be to attribute the cause of the increasing impersonalization and dehumanization of people located in large cities simply to the fact that the urban population has increased to such a large number.

This writer feels that the views of these two schools of thought can be reconciled and a common meeting place can be achieved. Both of these schools have partially legitimate claims and by synthesizing the ideas of the two an acceptable and realistic approach to population change can be realized. Population change is not simply a symptom of social forces nor is it the most important or sole cause of changes in these social forces; it must be looked upon as both a symptom and a cause. By the use of an example from this study, the validity of the preceding statement becomes readily apparent. A town that is experiencing a decrease in its population is doing so

because of certain social forces that are at work on its population. Migration is the most common reason for a decrease in population and migration is usually prompted by a promise of a more satisfactory life in another area. In this sense, a population decrease is a symptom of underlying social factors, in this case migration. However, once the community begins to lose population it becomes increasingly difficult to provide the necessary goods and services that its residents have come to expect. As dissatisfaction with the community increases so does migration and in this sense a decrease in population is actually the cause of a further decrease in population. This has been called the "vicious circle effect" in the decline in importance of small rural communities.[2] The same thing is true in a reverse situation. A community that is increasing in population is better able to offer more services which in turn will allow the community to attract more persons from the surrounding smaller areas. These two examples show that population change can be correctly viewed as both a cause and an effect.

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[2] Marvin J. Taves, "Consequences of Population Loss in Rural Communities," in Marvin J. Taves (ed.), Labor Mobility and Population in Agriculture, Ames: Iowa State University Press, 1961, p. 111.

In this thesis no attempt will be made to ascertain in which sense population change is more important; the intent is simply to view population change as being an important factor which must be considered in explaining certain social phenomena.

CHAPTER II

THE PROBLEM

South Dakota, like most areas of the United States, is experiencing rapid population changes. However, the changes that are occurring in South Dakota are different because most communities in the state are decreasing in population. This decrease in population is due, in part, to the fact that South Dakota is largely a rural state. Of the 307 incorporated communities in the state, 90 per cent of them are defined as rural communities and over two-thirds of these communities are experiencing a decrease in population.

The problem of this thesis is to discover the demographic characteristics, if any, that are associated with communities that are increasing or decreasing, respectively. For the purposes of this research, a community that is increasing in population is defined as a community that has experienced a population increase since the base year, 1940. Similarly, a community that is decreasing is operationally defined as a community that has undergone a population decrease since 1940.

It is hypothesized that there is a different list of demographic characteristics for each of the two types

of communities. These demographic characteristics coupled with the social and cultural factors (which will be the subject of study for a later phase of the state project) may be expected to show differences between the two types of communities. By isolating the factors, both demographic and social, that are associated with each of the two types of communities; it is hoped that sociologists will be able to provide information which will enable communities to better cope with the situation that accompanies a rapid population decrease.

There are two major ways of viewing the population loss of a community. Some may respond to the population loss by considering this loss a social evil in itself and propose different methods of reversing the trend and setting the communities back on the path of growth. Others may urge the residents to accept the declining population trend and adjust to it.[3] The purpose of sociological advisement is not, of course, to dictate to the residents of a community which of the two alternatives they should accept; however, once the community

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[3] Irwin T. Sanders, The Community: An Introduction to a Social System, New York: The Ronald Press Company, 1958, p. 22-23.

has reached a decision sociologists may advise the community concerning the best means to achieve the desired ends. As stated earlier, the immediate purpose of the thesis is to gather demographic information on South Dakota communities; however, the comprehensive purpose is to provide information that will be beneficial to interested persons who wish advisement on programs to help their communities. It is hoped that the information that results from this thesis will prove beneficial in aiding communities to adjust to change.

The practical problems of community development and re-development are of growing concern to sociologists. The ability of the sociologist to act in an advisory capacity will be greatly enhanced as more contributions are made to this body of knowledge. The problem of the population decline of small towns is one that is increasing in intensity each year. If one considers past and present population trends as an indication of future trends; it is quite apparent that the future existence of many small communities appears to be uncertain at best. Analysis of United States Census data indicates that over two-thirds of the incorporated rural communities in South Dakota have experienced a decrease in population since 1940 and this trend is expected to continue.

The study of South Dakota's communities is not to be viewed simply as an end in itself. By investigating these communities it is hoped that the findings can be generalized to include similar communities in other states. It is believed that South Dakota communities are representative of other communities in the North Central region which have similar characteristics and in this way this study may relate to a much larger population than that of South Dakota.

CHAPTER III

THEORETICAL FRAMEWORK

The theoretical framework upon which this thesis rests is derived from two distinct sub-disciplines of sociology--social change and demography. By synthesizing some of the major concepts of each of these areas a workable frame of reference can be achieved.

A social change is a socially significant event or series of events that has been transmitted from one generation to another and is thereafter considered to be a normal part of the culture of that society.[4] It is evident that a population increase or decrease would be considered a social change in itself; moreover, the adjustments that communities are forced to make because of a population change would also be included under the heading of social change. LaPiere states that there is a relationship between population growth and social change.[5] If this is true, then it is also reasonable to assume that a relationship exists between population decrease and

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[4] Richard T. LaPiere, Social Change, New York: McGraw Hill Book Company, 1965, p. 66.

[5] Ibid., p. 242.

social change. Therefore, social change is a function of both population increase or decrease and the communities that are experiencing either will show a proportional amount of change. However, as stated earlier, it is not the intention of this thesis to study the qualitative social changes that South Dakota communities are experiencing. The core of the study will deal with the quantitative social changes or population changes that tend to set the stage for further social change.

As stated previously, the major factor in the population decline of South Dakota communities is migration. Migration is proportional to the number of opportunities available in other areas and the lack of opportunities in an individual's home community.[6] These two factors--the attraction of the larger cities and the repulsion of the home community--taken together are the primary reasons in explaining the large out-migration that is taking place in South Dakota communities at the present time. Hobbs noted two different types of migrants

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[6] Bernard L. Berelson and Gary A. Steiner, Human Behavior: An inventory of Scientific Findings, New York: Harcourt, Brace, and World, Inc., 1964, p. 591.

--the resultant migrants and the epiphenomenal migrants.[7] The resultant migrant is one who chooses to migrate because of social-economic reasons and the epiphenomenal migrant is one who does not have any choice in the matter. An example of the latter type of migrant would be children who are taken by their parents when the parents change their residence. Later in the paper special reference will be made to each of these types when discussing the selective factors that are present in each age category as far as migration is concerned.

Of the three major migration patterns in the United States at the present time--South to North, East to West, and rural to urban--the latter is the one that is important when explaining the situation in South Dakota. Because South Dakota is primarily a rural state the migration loss is widespread throughout most of the state. The state also lacks a large number of urban places; consequently, the migrants usually leave the state rather than migrate to urban places in the state.

The redistribution of population by migration is, along with the relationship of deaths to births, a

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[7] Albert H. Hobbs, Differentials in Internal Migration, Philadelphia: University of Pennsylvania Press, 1942, pp. 43-44.

determining factor of the extent to which the population of a given area changes in number and character. The relationship of the number of people moving into an area and the number moving out determines the amount of gain or loss of population by migration and this amount when added to or subtracted from the excess of births over deaths gives the actual change in the population of an area over a given time. If the characteristics of the migrants differ from the non-moving population then the area's population composition is correspondingly modified.[8] By examining the age structure of South Dakota's communities in 1940 and again in 1960 any differences which may appear will be largely due to the selective factor that is present in the process of migration. It is obvious that the characteristics of the migrating portion of the population can be derived from studying them; however, it is also possible to infer their characteristics by studying the non-moving portion of the population. It has been demonstrated that the quality of a given area's population has a tendency to maintain itself over a period of time unless acted

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[8] Julian J. Petty, 20th Century Changes in South Carolina Population, Columbia: University of South Carolina, Bureau of Business and Research, 1962, p. 168.

upon by outside forces.[9] But when these outside forces do act upon any population, they are usually selective in nature; consequently, the character of this population changes accordingly. Later in this thesis the ways in which the migration process is selective and the effects of this selective process on the character of the remaining population will be shown.

The two important demographic characteristics that will be examined are age structure and the sex ratio. The association of age structure and population changes has been researched by many demographers. The general findings conclude that the United States, as a whole, is experiencing a marked increase in both the youth and the aged category of its population.[10] If this is true then it logically follows that the dependency ratio[11] is also increasing. Fuguitt found in rural Wisconsin

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[9] Berelson and Steiner, Human Behavior: An Inventory of Scientific Findings, p. 591.

[10] Glenn V. Fuguitt, "The Changing Age Structure of Wisconsin's Population," Madison: University of Wisconsin, Department of Rural Sociology, April, 1962, p. 47. (mimeographed)

[11] For a definition see "Operational Definitions" in Chapter V.

(an area similar in many ways to South Dakota) that there was a ".....larger young and old dependent population relative to the people of working years."[12] Similar findings have also been reported by Beegle, Phodtare, Rice, and Thaden in their population bulletin, Michigan Population; 1960. From their findings they concluded that rural areas that were decreasing in population had the highest dependency ratio.[13]

Demographers frequently divide the population of any area, according to age, into three categories--the youth category (0-14 years of age), the working population (15-64 years of age), and the aged category (65 years of age and over). However, for the design of this study, four age categories will be used. It is believed by the writer that by further dividing the working population into two categories---young adults (15-34 years of age) and older adults (35-64 years of age)-more meaningful conclusions can be reached regarding their demographic characteristics.

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12 Fuguitt, "The Changing Age Structure of Wisconsin's Population," p. 49.

13 Allan Beegle, Hambir Phodtare, Rodger Rice, and John T. Thaden, Michigan Population: 1960, East Lansing: Michigan Agr. Exp. Sta., Bull. 438, 1962.

The sex ratio[14] of any community is also influenced by the selective factor in migration. There are three factors which seemingly have a bearing on the proportion of males to females in the population of any given area. These factors are (1) more males than females are born, (2) the death rate for males at all ages is higher than that for females, and (3) while males generally outnumber females in long distance migration, females are in the majority in short distance migrations.[15]

The sex ratio of any large population area such as a country seems to be related in the following manner to age. The number of males is greater from birth until middle age when the number of females equals and then surpasses the number of males. As age is increased the number of females proportionate to the males becomes increasingly larger.

In a rural setting, such as a small community, the picture is much different than in the large area. As expected the males still out number the females at birth because of the fact that more males are born

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[14] For a definition see "Operational Definitions" in Chapter V.

[15] Petty, 20th Century Changes in South Carolina Population, p. 79.

and also no selective factor has yet entered the picture. The small majority of males at birth increases as the age cohort enters young adulthood because more females migrate at this age than do males. This majority of males continues but slowly decreases until about the age of fifty when the females become a majority and continue to increase their percentage in all subsequent ages. However, the increase is not as large as would be true in an urban setting or in the country as a whole. Petty found in South Carolina that the total sex ratio in the 85 years old and over age category of small rural communities was 71.5, whereas, the total for the state taken as a whole was 43.4.[16] This simply means that in the older age categories although women outnumber men in both a rural and an urban setting their majority is much smaller in rural areas.

Another variable which will be tested will be the relationship between nearness to a large city and the population change of a community. Fuguitt found that communities that were near large cities tended to be growing more rapidly than others.[17] Hassinger came

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[16] Ibid., p. 87.

[17] Glenn V. Fuguitt, "Growing and Declining Villages in Wisconsin: 1950-1960," Madison: University of Wisconsin, Department of Rural Sociology, March, 1964,

to the same conclusion with his study of declining rural villages in southern Minnesota. He concluded that distance to cities with a population of 5,000 or more was inversely associated with growth of the surrounding smaller communities.[18] Other studies which report similar findings include those by Chittick,[19] Anderson,[20] and Doerflinger.[21] For this study the term "large cities" will be subdivided into Standard Metropolitan Statistical Areas and cities with a population of at least 10,000 but not more than 50,000 persons.

The theoretical framework for this study is not based solely upon a single body of theory but also a series of findings on population studies of incorporated rural communities. This thesis will examine some of the

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[18] Edward Hassinger, "Factors Associated with Population Changes in Agricultural Trade Centers of Scuthern Minnesota," Unpublished Ph. D. dissertation, Minneapolis: University of Minnesota, 1956, p. 124-134.

[19] Douglas Chittick, "Growth and Decline of South Dakota Centers 1901-1951," Brookings: South Dakota Agr. Exp. Sta., Bull. 448, 1955.

[20] Albert Anderson, "Population Changes in Incorporated Places," Unpublished Master's thesis, Ames: Iowa State University, 1960.

[21] Jon Doerflinger, Geographic and Residential Distribution of Iowa's Population and Changes 1950-1960, Ames: Iowa State University, Department of Economics and Sociology, 1962.

variables which have been previously studied and others that are expected to conform more closely to the situation that is present in South Dakota. In most of the previous studies the differences between rural and urban places were analyzed; however, this research will focus on the differences between two types of rural communities --those that are increasing and those that are decreasing in population. Both the findings of previous studies and selected generalizations from the body of theory will be tested in this thesis in an effort to determine whether there are different demographic characteristics for each type of community.

CHAPTER IV

HYPOTHESES AND RATIONALE

It is the purpose of this chapter to present the major hypotheses and the working subhypotheses, as well as the rationale that was employed in the formulation of each of them. The procedure that will be followed in this chapter is to list each major hypothesis and its respective subhypotheses, each of which will be preceded by a brief discussion.

The first major hypothesis presented will deal with the relationship between population change and distance to a large city.

> Hypothesis 1: There is a negative relationship between population growth of a community and the distance from that community to a large city.

It is expected that the closer a small community is to a large city, the greater the population growth it will have experienced. An ever increasing number of small close lying communities are becoming merely suburbs to the larger cities. As persons are willing and able to commute farther distances to work, the small communities adjacent to the cities are becoming more desirable places in which to live. Some attractions of small town living are lower taxes, more primary group relationships, and a slower

pace of life. These types of communities function less as agricultural trade centers and more as suburban communities. Findings of research on Wisconsin villages also supports this hypothesis. It was found that villages tended to reflect the growth of the urban centers around which they were located.[22] During the period of time from 1940 to 1960 all of the large cities in South Dakota increased quite sizably and it is expected that the surrounding communities also reflected this growth.

The North Central Regional Committee plans to investigate this variable with relation to distance from Standard Metropolitan Statistical Areas. In South Dakota, where there is only one Standard Metropolitan Statistical Area, located in the southeastern corner of the state, the writer feels that distance from a city of 10,000 or more persons would be more appropriate. This seems to be realistic when one considers that there are only 25 communities in the entire state with a population of over 2,500. The relationship of population growth to distance from both Standard Metropolitan Statistical Areas and cities of 10,000 or more persons will be investigated.

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[22] Glenn V. Fuguitt, Growing and Declining Villages in Wisconsin: 1950-1960, Department of Rural Sociology, University of Wisconsin, 1964, p. 24.

Subhypothesis 1: There is a negative relationship between distance to a Standard Metropolitan Statistical Area and population growth of surrounding communities.

Subhypothesis 2: There is a negative relationship between distance to a city of 10,000 or more persons and population growth of surrounding communities.

The second major hypothesis deals with the association of the age structure of a community and the population change of that community.

Hypothesis 2: There is an association between the population change of a community and the age structure of that community.

The population of a community will be divided into the previously mentioned four age categories for the analysis of this variable and a subhypotheses will be formulated concerning each of these categories.

It is expected that the communities that have experienced the greatest population decrease will also have the smallest percentage of their population in the youth age category. Migration takes away a large number of potential parents when it draws heavily on the young single persons in the community. This may account, in part, for the relatively small number of children that are now present in the declining community. Another factor that might explain the small number of children in a decreasing community is that young married couples are more likely to migrate than couples that have been

married for a longer period of time. Because couples tend to have their children in the early part of their married life, their migration also takes with them a large number of children. It is true that married couples aren't as likely to migrate as single persons, but when married couples do migrate they usually do so in the early part of their married lives. Further evidence of this is shown by the large number of small town schools that are forced to close their doors because of the small number of children in the community.

> Subhypothesis 3: Communities that are decreasing in size will have a lower percentage of their population in the youth category than towns that are increasing in population.

It is also expected that the young adult age category will be proportionately lower in communities that are decreasing when compared with communities that are increasing. The migration factor draws most heavily upon this age category because of the lack of opportunities for these people in a small town. There seems to be an ever decreasing number of occupational opportunities in the small town and when the few jobs that remain are filled the excess of people is forced to migrate.

Subhypothesis 4: Communities that are decreasing in population will have a lower percentage of their population in the young adult age category than communities that are increasing in size.

Because the likelihood of migration decreases with age, it is expected that the older adult age category will comprise a larger percentage of the population of a community that is decreasing in size than would be true for the population of a town that is experiencing growth. Persons in this age category are the people who occupy the desirable positions in the small community and are established in the town; consequently, they have a reluctance to migrate.

Subhypothesis 5: Communities that are experiencing a decrease in population will have a higher percentage of their population in the older adult age category than towns that are increasing in size.

The aged category of the population is also expected to be higher in communities that are decreasing in size. The aged rarely migrate because migration offers little or no chance for personal betterment for them; consequently, they are content to live out their lives in their home community. The increasing life expectency may be another reason why there are so many aged people in the small community.

Subhypothesis 6: Communities that are decreasing in size will have a higher percentage of their population in the aged category than communities that are increasing in population.

In addition to the age structure of a community, another important factor to be considered is the change that has taken place in the age structure since the base year, 1940. By examining the changes that have occurred in each of the four age categories since 1940 it is possible to show trends of increase or decrease for each of the age categories in the two different types of communities.

> Hypothesis 3: There is a relationship between the population change of a community and the changes that have occurred in the age structure of that community.

On the surface it would seem correct to infer that decreasing communities with a numerical loss of small children would also have had a decrease in the youth category's percentage of the total community population. However, this may not be the case because of the out migration that has occurred in the other age categories. In communities where the absolute number of children has decreased since 1940 their percentage of the total community population may have actually increased slightly because the other age categories have lost a proportionately larger amount of persons through migration. Moreover, towns that have increased in population can be expected to have experienced both a numerical and a percentage increase in the youth category of their population.

Because of this it is hypothesized that communities having a decrease in population will show a smaller increase in the youth category's percentage than towns that have experienced an increase in population.

> Subhypothesis 7: Communities that are decreasing in population will have a smaller percentage increase in the youth category of the population than towns that have increased in size.

Migration is an important factor in the population loss of declining communities and because it affects the young adult age category more than any other, it is expected that the decrease in percentage of the young adult age category will be larger in the declining communities. It is probably correct to assume that both types of communities in South Dakota are losing young people from this category but it is hypothesized that the loss will be greater in the towns that are losing population.

> Subhypothesis 8: Communities that are decreasing in size will show a greater decrease in the young adult age category's percentage of the population than towns that are increasing in population.

The supposed decrease in the previously mentioned age category is not expected to hold true for the older adult age category's percentage of the population. Because migration does not affect this group as extensively as it does the young adult age category, it is expected

that this group's percentage of the population will have increased in communities that have experienced a loss of population. This increase is not due to an absolute numerical increase, but rather that this group remains fairly constant in number and its percentage increases as the population of the community decreases. It is anticipated that both types of towns have had a percentage increase in this age category, but it is hypothesized that declining communities have shown a greater increase than communities that are growing.

> Subhypothesis 9: Communities that are decreasing in size will have a greater percentage increase in their older adult age category's percentage of the population than towns that have increased in population.

The aged category's percentage change is expected to follow a pattern similar to that of the older adult group. The absolute number of old people has increased in many instances and their percentage of the total population has increased in almost every community. But it is expected that communities that are decreasing in size will show a larger percentage increase than growing communities because of the larger percentage loss in the other age categories. The movement of large numbers of retired farm people into small towns coupled with

increasing life expectancy may explain why a small decreasing community has such a large percentage of old people. Migration is a factor but it seems apparent that most of the migration of old people is into the community rather than out of it.

> Subhypothesis 10: Communities that are decreasing in population will have a larger increase in the aged category's percentage of the population than towns that are increasing in size.

The dependency ratio provides another index of the population changes in the age structure of a community. If the percentage of dependents in a town is high then the dependency ratio will be correspondingly high. The dependency ratio also reflects the extent of migration in the productive age categories.

> Subhypothesis 11: Communities that are decreasing in size will have a higher dependency ratio than towns that are increasing in population.

It is known that the dependency ratio is increasing throughout the United States but the important reason for this in most places is the large increase in the number of children not the increase in the number of old people. However, in the small declining communities of South Dakota it is expected that the increase in the dependency ratio will be due to a large increase in the number of people in the aged category. When the dependency ratio is subdivided into

the youth dependency ratio and the aged dependency ratio it is believed that it will be possible to determine which of the two has had the most influence on the increase in the dependency ratio. It is expected that rural communities that are decreasing in size can attribute their high dependency ratio to the increasing number of old people rather than to the number of children.

> Subhypothesis 12: Communities that are decreasing in size will have a larger aged dependency ratio than towns that are increasing in population.

> Subhypothesis 13: Communities that are decreasing in size will have a smaller youth dependency ratio than towns that are increasing in size.

The change in the dependency ratio of communities since 1940 is also one of the variables that will be examined in this thesis. It is anticipated that towns which are decreasing in population will show a greater increase in the dependency ratio from 1940 to 1960 than communities that are increasing in size. This supposition is supported by evidence that indicates that the dependent age categories' percentages are increasing more rapidly in declining communities.

> Subhypothesis 14: Towns that are decreasing in population will show a greater increase in their dependency ratio than communities that are increasing in size.

It is hypothesized that this increase has been due largely to the increase in the aged ratio and not to the increase in the youth ratio.

> Subhypothesis 15: Communities that are decreasing in population will have a greater increase in the aged dependency ratio than towns that have shown an increase in population.

> Subhypothesis 16: Communities that are decreasing in size will have a smaller increase in the youth dependency ratio than towns that have increased in population.

The third variable that will be examined is the sex ratio for both types of communities. The sex ratio is simply a numerical indication of the number of males as compared to the females that are present in a given population. A high sex ratio indicates that there are more males than females; conversely, a low sex ratio shows that there are more females than males.

> Hypothesis 4: There is a relationship between the population change of a community and the sex ratio of that community.

In small communities there are more jobs and opportunities for males because of the particular type of economic structure. Therefore, it seems reasonable to hypothesize that the sex ratio will be higher in a town that is losing population.

> Subhypothesis 17: Communities that are decreasing in size will have a higher sex ratio than towns that are increasing in size.

An analysis of the sex ratio of South Dakota communities will be more meaningful if the population of these towns is once again analyzed in terms of the four previously identified age categories. It is expected that the selective factor of migration is not acting upon the youth age category in a direct manner and because of this no correlations will be computed for this segment of the population. Both types of communities could be expected to have a sex ratio that shows the males to slightly outnumber the females because of the biological fact that more males than females are born.

The young adult age category of the population of communities that are decreasing in size is expected to have a higher sex ratio than growing communities because more females than males migrate in this age category. In a movement from rural to urban areas, women usually outnumber the males, with the result that rural areas have an excess of males and urban places an excess of females. The out-migration of the females of this age category is anticipated to be larger in declining communities; consequently, the sex ratio is expected to be higher.

> Subhypothesis 18: Communities that are decreasing in population will have a higher sex ratio in the young adult age category than communities that are increasing in size.

The persons included in the older adult age category are usually divided almost equally as far as sex is concerned. In this age group the vast majority of the people are married and this largely accounts for the equal distribution of the sexes. However, it is expected that the sex ratio of this age group will be higher in towns that are decreasing because most migration will still be done by women. The opportunities for single men in this age category are much greater than they are for women and because of this women are more likely to migrate. This difference is once again due to the nature of the economic structure of the small community. In the upper years of this age category the women will start to outnumber the males because of the longer life expectancy for females, but it is not expected to completely offset the male majority that was created in the early years of this age group by female migration.

> Subhypothesis 19: Communities that are decreasing in population will have a higher sex ratio in the older adult age category than towns that are increasing in size.

In the aged category of the population the women are expected to outnumber the men. This is primarily because females live longer than males. Small rural

communities that are decreasing in population are expected to have a higher sex ratio than communities that are growing. It is assumed that the sex ratio is higher in decreasing communities than it is for increasing communities in all three age categories because of the population loss by female migration. There could possibly be a selective migration factor that might have an influence on this situation. Widows are more likely to migrate to live with their children than are widowers but this is not expected to have much of an effect on the differential sex ratio because it probably has the same influence on both types of communities.

> Subhypothesis 20: Communities that are decreasing in population will have a higher sex ratio in the aged category of the population than communities that are increasing in size.

CHAPTER V

DESIGN OF THE STUDY

Data gathering

The data for this thesis were compiled from the United States Censuses (South Dakota Supplements) of 1940 and 1960. The data were either taken directly from the census or computed from information and figures that were given in the tables of each census. The demographic characteristics of each community were coded and the information was then transferred to IBM cards for the purpose of machine tabulation and analysis.

Analysis of Variables

The variables that were used in this study were paired with population change of a community and in this manner it was believed that significant differences between the two types of communities could be discovered. For the purposes of this investigation the population change that a community has experienced was considered the independent variable and the population characteristics that were coupled with population change were considered the dependent variables.

The sole independent variable used in this thesis

was the population change that had been experienced by a community since 1940; however, three major dependent variables were examined. The first dependent variable, distance to a large city, was computed by determining mileage over the most accessible highway route from a given community to its nearest large city. The term "large city" has been applied only to cities of 10,000 or more that were located in South Dakota; however, Standard Metropolitan Statistical Areas that were located in other states were used because in many instances a community was closer to an out of state Standard Metropolitan Statistical Area than to Sioux Falls. The Standard Metropolitan Statistical Areas of other states that were used include: Sioux City, Iowa; Fargo, North Dakota; Denver, Colorado; and Billings, Montana.

Age structure percentage, the second variable, was computed by dividing the population of a community into four categories by figures given in the 1960 census. Change in the age structure percentage was found by comparing the age structure of a community in 1940 with that of 1960 and noting changes that had occurred during the twenty year period.

The sex ratio of a community was the third major dependent variable that was examined in this thesis. The sex ratio was computed by using data given in the 1960

census and was computed for a community as a whole and for three of the four age categories in the community.

Correlation analysis was used to test the hypotheses and subhypotheses in this research. If the selected dependent variable changes in the same direction as the population change then a positive coefficient of correlation can be expected. If the dependent variable changes in the opposite direction then a negative coefficient of correlation will be expected. For example, it is hypothesized that as distance to a large city decreases, the population of the surrounding communities will increase; therefore, a negative correlation would be expected. When examining the age structure of communities, it is expected that as the population of a community decreases, the percentage of the community's population in the young adult age category will also decrease. This would be an example of a positive correlation.

In testing hypotheses regarding the relationship between the independent and dependent variables the following formula was used.[23]

$$r = \frac{\Sigma XY - \frac{(\Sigma X)(\Sigma Y)}{N}}{\sqrt{\left[\Sigma X^2 - \frac{(\Sigma X)^2}{N}\right]\left[\Sigma Y^2 - \frac{(\Sigma Y)^2}{N}\right]}}$$

The value obtained in this computation is a coefficient of correlation and its range of variation is between minus one and plus one. A plus one indicates a perfect positive correlation and a minus one indicates a perfect negative correlation. The five per cent level of significance will be used in this thesis for acceptance of the hypotheses.

Population

The population for this thesis consisted of 275[24] incorporated rural communities in the state of

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[23] X = Independent variable observation.
Y = Dependent variable observation.
N = Number of observations.
r = Coefficient of Correlation

[24] Actually there are 282 rural incorporated communities in South Dakota, but seven of these communities' data could not be compared from 1940 to 1960 because they were incorporated after the year 1940. Therefore they will not be included in the study.

South Dakota. There are quite a large number of unincorporated communities in the state; however, census data are not available for these communities and they will not be included in the investigation.

Limitations of the Study

Probably the major limitation present in this thesis stems from the lack of a large amount of demographic information concerning communities in the United States Censuses. Information in depth is given only for larger areas such as counties or states. The lack of depth in this thesis is regretted; however, it is believed that the data that were analyzed will be sufficient for discovering some general differences between the two types of communities.

The primary purpose of this investigation is to uncover demographic characteristics that are associated with communities that are either increasing or decreasing. No attempt will be made in the analysis to include social and cultural factors which have certainly played an important role in the population change of any community. A later phase of this project will investigate the importance of these factors, but they will not be dealt with in this research.

The period of time that was used, 1940-1960, may not be long enough upon which to base any trends or generalizations. However, the twenty year period was used primarily for establishing only population change and for purposes of categorizing communities into two types and not to serve as a basis for prediction. The major contribution of this thesis will be in the area of description rather than prediction; consequently, the results will have limited value in anticipating the future situation.

Operational definitions

There are a number of definitions that have been operationalized for use in this thesis and they are listed in the following section.

1. Increasing population--an increase in population since 1940.
2. Decreasing population--a decrease in population since 1940.
3. Dependency ratio--$\frac{\text{dependent age categories}}{\text{productive age categories}} \times 100$
4. Aged ratio--$\frac{\text{No. of people 65 \& over}}{\text{No. of people 15-64 yrs.}} \times 100$
5. Youth ratio--$\frac{\text{No. of people under 15}}{\text{No. of people 15-64 yrs.}} \times 100$
6. Sex ratio--$\frac{\text{No. of males}}{\text{No. of females}} \times 100$

7. Dependent age categories--No. of people 0-14 years of age and the No. of people 65 years and older.

8. Productive age categories--No. of people 15-34 years of age and the No. of people 35-64 years of age.

9. Age categories of a community--division of the community into four categories:
   a. 0-14 years of age (youth)
   b. 15-34 years of age (young adults)
   c. 35-64 years of age (older adults)
   d. 65 years of age and over (aged)

10. Standard Metropolitan Statistical Area--one or more contiguous nonagricultural counties containing at least one city of 50,000 or more and having a generally metropolitan character based on the counties' social and economic integration with the central city.[25]

11. Large city--a city having a population of at least 10,000 persons but not more than 50,000 persons.

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[25] William Peterson, Population, New York: The Macmillan Company, 1961, p. 186.

CHAPTER VI

ANALYSIS OF DATA

This study focused on the central problem of uncovering the demographic characteristics related to communities experiencing population growth and those related to communities experiencing population decline. Correlation analysis was used to indicate the significance of these relationships.

Population change and distance

It was expected that the closer a community was located to a Standard Metropolitan Statistical Area or a large city; the greater the likelihood that it has experienced growth during the last twenty years. However, a reverse situation was shown by analysis.

Table 1. Distance to Nearest SMSA for Increasing and Decreasing Communities by Number and Per Cent

Distance to nearest SMSA (in miles)	Communities			
	Number		Percentage	
	Increasing	Decreasing	Increasing	Decreasing
Under 50	17	25	19.1%	13.4%
50-99	14	45	15.6%	24.5%
100-149	15	47	16.7%	25.2%
150-199	7	35	7.7%	18.8%
200-249	11	18	12.1%	9.6%
250-299	13	10	14.4%	5.3%
300 & over	13	6	14.4%	3.2%
Totals	89	186	100.0%	100.0%

r = .180 (significant at 5% level)

A coefficient of correlation of a positive .180 was found between distance to a Standard Metropolitan Statistical Area and population change and it was significant at the five per cent level.

Table 2. Distance to Nearest Large City for Increasing and Decreasing Communities By Number and Per Cent.

Distance to nearest large city (in miles)	Communities			
	Number		Percentage	
	Increasing	Decreasing	Increasing	Decreasing
Under 25	23	43	25.9%	23.4%
25-49	32	90	35.9%	48.3%
50-74	15	30	16.8%	16.2%
75-99	10	14	11.2%	7.4%
100-124	5	5	5.8%	2.6%
125-149	2	3	2.2%	1.6%
150 & over	2	1	2.2%	.5%
Totals	89	186	100.0%	100.0%

r = .110 (significant at 5% level)

A positive coefficient of correlation of .110 was found between distance from a large city and population change; however, this was not significant at the five per cent level. Although this was not statistically significant, the direction of the relationship was in the opposite direction to that hypothesized and the findings are very similar to those that resulted from correlating population change and distance to a stable Standard Metropolitan Statistical Area.

These findings would seem to indicate that the farther a community is located from a Standard Metropolitan Statistical Area or a large city the greater the likelihood that it has experienced growth. Apparently a community with a population of less than 2,500 persons must be a certain distance from a large center of population to experience a large amount of population increase. However, the data indicate one exception to this general pattern. The communities that are immediately adjacent to Sioux Falls are increasing in population. This is probably due to the large number of persons who live in these towns but work in Sioux Falls. These surroundings act as suburbs and are not in competition with the urban center for goods and services. Analysis would seem to indicate that most towns in South Dakota act as trade areas and in order that this type of community experience growth it must be able to establish its own sphere of influence on surrounding areas without competition from larger cities. This condition is possible only when there exists a sizable distance from a large urban center which enables the community to delimit its own area of influence and act as the most important trade center of this immediate area.

Population change and age structure

It was hypothesized that there was a significant difference between the age structures of communities that were increasing and those that were decreasing. This hypothesis was not supported by the analysis. In the youth, young adult and aged categories the coefficients of correlation were very close to zero. Although the coefficient of correlation of the older adult category was considerably larger than the others, it was not statistically significant.

Table 3. Percentage of Population in Youth Category for Increasing and Decreasing Communities by Number and Per Cent

Percentage in the Youth Category	Communities			
	Number		Percentage	
	Increasing	Decreasing	Increasing	Decreasing
Under 10%	0	0	0%	0%
10-19.9%	0	12	0%	6.4%
20-29.9%	35	111	39.4%	59.7%
30-39.9%	50	58	56.4%	31.3%
40% & over	4	5	4.4%	2.6%
Totals	89	186	100.0%	100.0%

r = .027 (not significant at 5% level)

Table 4. Percentage of Population in Young Adult Category for Increasing and Decreasing Communities by Number and Per Cent

Percentage in Young Adult Category	Communities			
	Number		Percentage	
	Increasing	Decreasing	Increasing	Decreasing
Under 10%	0	1	0%	.5%
10-19.9%	36	128	40.5%	68.9%
20-29.9%	52	55	58.4%	29.5%
30-39.9%	0	2	0%	1.1%
40% & over	1	0	1.1%	0%
Totals	89	186	100.0%	100.0%

r = .020 (not significant at 5% level)

Table 5. Percentage of Population in Older Adult Category for Increasing and Decreasing Communities by Number and Per Cent

Percentage in Older Adult Category	Communities			
	Number		Percentage	
	Increasing	Decreasing	Increasing	Decreasing
Under 10%	0	0	0%	0%
10-19.9%	1	1	1.1%	.5%
20-29.9%	31	43	34.8%	23.2%
30-39.9%	57	128	64.1%	68.8%
40% & over	0	14	0%	7.5%
Totals	89	186	100.0%	100.0%

r = .105 (not significant at 5% level)

Table 6. Percentage of Population in Aged Category for Increasing and Decreasing Communities by Number and Per Cent

Percentage in Aged Category	Communities			
	Number		Percentage	
	Increasing	Decreasing	Increasing	Decreasing
Under 10%	10	7	11.4%	3.8%
10-19.9%	60	88	67.4%	47.3%
20-29.9%	16	77	17.9%	41.4%
30-39.9%	3	14	3.3%	7.5%
40% & over	0	0	0%	0%
Totals	89	186	100.0%	100.0%

$r = -.063$ (not significant at 5% level)

It appears likely that the age structure of communities under 2,500 persons is very similar regardless of their population growth or decline. It could be hypothesized that differences in the age structures of communities is a function of their population size not of their population change. However, this can only be speculated on and not supported by empirical evidence in this hypothesis.

Population change and changes in the age structure since 1940

Analysis of this variable, change in the age structure, yielded significant findings in all of the four age categories. This indicates that there are distinctive differences between the changes in the age structure of

growing communities and those of declining communities.

Table 7. Percentage Change of Youth Category for Increasing and Decreasing Communities by Number and Per Cent

Percentage change in youth category	Communities			
	Number		Percentage	
	Increasing	Decreasing	Increasing	Decreasing
-10% & over	0	6	0%	3.3%
-5% to -9.9%	0	22	0%	11.8%
0 to -4.9%	8	45	9.0%	24.2%
0 to 4.9%	30	54	33.7%	29.0%
5% to 9.9%	32	45	36.0%	24.2%
10% & over	19	14	21.3%	7.5%
Totals	89	186	100.0%	100.0%

r = .431 (significant at 5% level)

Table 8. Percentage Change of Young Adult Category for Increasing and Decreasing Communities by Number and Per Cent

Percentage change in young adult category	Communities			
	Number		Percentage	
	Increasing	Decreasing	Increasing	Decreasing
-10% & over	46	122	51.7%	65.7%
-5% to -9.9%	33	54	31.1%	29.0%
0 to -4.9%	8	9	9.0%	4.8%
0 to 4.9%	1	1	1.1%	.5%
5% to 9.9%	0	0	0%	0%
10% & over	1	0	1.1%	0%
Totals	89	186	100.0%	100.0%

r = .209 (significant at 5% level)

The coefficients of correlation, .431 and .209, for the youth and the young adult age categories, respectively, indicate that both the youth and the young adult age categories' percentage of the total population has decreased more in communities that have experienced a declining population than in communities that have grown in size. The high degree of significance that is indicated by these two coefficients shows strong evidence to support this.

Table 9. Percentage Change of Older Adult Category for Increasing and Decreasing Communities by Number and Per Cent

Percentage change in older adult category	Communities			
	Number		Percentage	
	Increasing	Decreasing	Increasing	Decreasing
-10% & over	7	6	7.9%	3.3%
-5% to -9.9%	11	24	12.4%	13.0%
0 to -4.9%	44	64	49.4%	34.4%
0 to 4.9%	22	55	24.7%	29.5%
5% to 9.9%	5	23	5.6%	12.3%
10% & over	0	14	0%	7.5%
Totals	89	186	100.0%	100.0%

r = -.256 (significant at 5% level)

Table 11. Dependency Ratio for Increasing and Decreasing Communities by Number and Per Cent

Dependency Ratio	Communities			
	Number		Percentage	
	Increasing	Decreasing	Increasing	Decreasing
under 80	18	30	20.3%	16.2%
80-89	26	40	29.2%	21.5%
90-99	25	56	28.1%	30.1%
100-109	10	29	11.2%	15.6%
110-119	6	12	6.7%	6.4%
120-129	4	6	4.5%	3.2%
130 & over	0	13	0%	7.0%
Totals	89	186	100.0%	100.0%

$r = .017$ (not significant at 5% level)

Apparently the dependency ratio is quite high for both types of communities and once again may be more dependent upon the size than population change. What was found for the dependency ratio as a whole was also shown when it was subdivided into the youth and the aged dependency ratios. Neither of the coefficients of correlation that were computed for these were significant; moreover, the aged dependency ratio and population change showed zero correlation.

Table 12. Youth Dependency Ratio for Increasing and Decreasing Communities by Number and Per Cent

Youth Dependency Ratio	Communities			
	Number		Percentage	
	Increasing	Decreasing	Increasing	Decreasing
under 30	1	2	1.1%	1.1%
30-39	0	23	0%	12.5%
40-49	11	50	12.3%	26.8%
50-59	37	49	41.7%	26.3%
60-69	22	37	24.7%	19.9%
70 & over	18	25	20.2%	13.4%
Totals	89	186	100.0%	100.0%

r = -.042 (not significant at 5% level)

Table 13. Aged Dependency Ratio for Increasing and Decreasing Communities by Number and Per Cent

Aged Dependency Ratio	Communities			
	Number		Percentage	
	Increasing	Decreasing	Increasing	Decreasing
under 30	43	40	48.5%	21.5%
30-39	31	56	34.8%	30.1%
40-49	10	51	11.2%	27.4%
50-59	3	21	3.3%	11.3%
60-69	1	5	1.1%	2.7%
70 & over	1	13	1.1%	7.0%
Totals	89	186	100.0%	100.0%

r = .000 (not significant at 5% level)

Population change and changes in the dependency ratios since 1940

No significant difference was found between changes in the dependency ratio of growing communities and that of declining communities.

Table 14. Change in Dependency Ratio for Increasing and Decreasing Communities by Number and Per Cent

Change in Dependency Ratio	Communities			
	Number		Percentage	
	Increasing	Decreasing	Increasing	Decreasing
under 10	3	19	3.4%	10.3%
10-19	9	18	10.2%	9.7%
20-29	19	37	21.4%	19.9%
30-39	25	42	28.0%	22.6%
40-49	19	33	21.4%	17.7%
50-59	7	17	7.8%	9.1%
60 & over	7	20	7.8%	10.7%
Totals	89	186	100.0%	100.0%

r = -.046 (not significant at 5% level)

There appeared to be significant differences when these changes were divided into change in the youth dependency ratio and change in the aged dependency ratio.

Table 15. Change in Youth Dependency Ratio for Increasing and Decreasing Communities by Number and Per Cent

Change in youth dependency ratio	Communities			
	Number		Percentage	
	Increasing	Decreasing	Increasing	Decreasing
under 10	11	77	12.4%	41.3%
10-19	33	50	37.1%	26.7%
20-29	24	42	27.0%	22.6%
30-39	13	10	14.6%	5.7%
40-49	5	4	5.6%	2.1%
50-59	2	1	2.2%	.5%
60 & over	1	2	1.1%	1.1%
Totals	89	186	100.0%	100.0%

r = .308 (significant at 5% level)

Table 16. Change in Aged Dependency Ratio for Increasing and Decreasing Communities by Number and Per Cent

Change in aged dependency ratio	Communities			
	Number		Percentage	
	Increasing	Decreasing	Increasing	Decreasing
under 10	36	33	40.5%	17.8%
10-19	32	51	35.9%	27.5%
20-29	15	55	16.9%	29.5%
30-39	6	26	6.7%	14.0%
40-49	0	10	0%	5.3%
50-59	0	9	0%	4.8%
60 & over	0	2	0%	1.1%
Totals	89	186	100.0%	100.0%

r = -.376 (significant at 5% level)

This confirms the hypothesis that towns that are decreasing in population will have greater increases in the aged dependency ratio than communities that are experiencing a growth in population. Towns that are decreasing in population will also experience smaller increases in the youth dependency ratio. When these two factors were combined (as in the total dependency ratio, see Table 14), they tended to balance one another. This resulted in no significant difference being identified in the changes of the total dependency ratio of both types of communities. However, a breakdown of the dependency ratio did yield significant differences in the changes in the youth and aged dependency ratios.

Population change and sex ratio

No significant differences between communities that are decreasing and those that are increasing were found in the total sex ratio.

Table 17. Sex Ratio for Increasing and Decreasing Communities by Number and Per Cent

Sex Ratio	Communities			
	Number		Percentage	
	Increasing	Decreasing	Increasing	Decreasing
under 80	1	6	1.1%	3.2%
80-89	15	40	16.9%	21.6%
90-99	46	61	51.7%	32.8%
100-109	20	47	22.5%	25.2%
110-119	5	19	5.6%	10.2%
120-129	1	7	1.1%	3.8%
130 & over	1	6	1.1%	3.2%
Totals	89	186	100.0%	100.0%

$r = -.077$ (not significant at 5% level)

It was expected that communities that are decreasing in population would have a higher sex ratio because of the large female out-migration, but this hypothesis was not supported by the evidence. Once again, when the population was sub-divided into the three age categories and when the sex ratio of each of these was correlated with population change significant results were achieved.

Table 18. Sex Ratio for Young Adult Category for Increasing and Decreasing Communities by Number and Per Cent

Sex Ratio in young adult category	Communities			
	Number		Percentage	
	Increasing	Decreasing	Increasing	Decreasing
under 80	12	42	13.6%	22.7%
80-89	22	29	24.7%	15.6%
90-99	30	30	33.7%	16.1%
100-109	11	29	12.3%	15.6%
110-119	8	22	9.0%	11.8%
120-129	1	10	1.1%	5.3%
130 & over	5	24	5.6%	12.9%
Totals	89	186	100.0%	100.0%

r = -.130 (significant at 5% level)

Table 19. Sex Ratio for Older Adult Category for Increasing and Decreasing Communities by Number and Per Cent

Sex Ratio in older adult category	Communities			
	Number		Percentage	
	Increasing	Decreasing	Increasing	Decreasing
under 80	5	22	5.7%	11.8%
80-89	25	27	28.2%	14.5%
90-99	30	60	33.7%	32.3%
100-109	15	39	16.8%	21.0%
110-119	10	24	11.2%	12.9%
120-129	1	4	1.1%	2.2%
130 & over	3	10	3.3%	5.3%
Totals	89	186	100.0%	100.0%

r = -.058 (not significant at 5% level)

Table 20. Sex Ratio for Aged Category for Increasing and Decreasing Communities by Number and Per Cent

Sex Ratio in Aged Category	Communities			
	Number		Percentage	
	Increasing	Decreasing	Increasing	Decreasing
under 80	20	40	22.6%	21.5%
80-89	23	36	25.8%	19.4%
90-99	15	16	16.8%	8.6%
100-109	11	26	12.3%	14.0%
110-119	9	16	10.2%	8.6%
120-129	1	17	1.1%	9.1%
130 & over	10	35	11.2%	18.8%
Totals	89	186	100.0%	100.0%

r = -.217 (significant at 5% level)

Analysis of the data in the above tables indicates that communities which are decreasing in population have a significantly higher sex ratio in the young adult and aged categories. No significant difference was found when analyzing the sex ratio of the older adult age category. (See Table 19) This would seem to indicate that the sex ratio of this age category is about the same regardless of the population changes experienced by the communities.

CHAPTER VII

SUMMARY AND CONCLUSIONS

The findings that were yielded from this study would seem to indicate that there are some distinct differences between the demographic characteristics of the two types of communities. Contrary to what was hypothesized, communities that are growing are more likely to be located a substantial distance from large cities and communities that are decreasing in population are more likely to be located closer to a large center. These close lying communities act as agricultural trade areas, not as suburbs, and are forced into competition with the larger trade centers in offering goods and services. Because of their natural disadvantaged position, they can not compete successfully; consequently, they lose trade business and population. Apparently, for a community to experience growth it must be located at a sufficient distance from a large center so this urban place does not offer too much competition to the smaller community's trade center. In this way a community is able to act as the focal point of its own trade center. Achieving this position is done at the expense of the still smaller communities in that immediate area.

Although no significant differences were found in the age structure of growing and declining communities, it can be expected that differences may exist in the future. This is indicated by the nature of the trends reflected in the data from this study, even though many of these changes were not yet great enough to show statistical significance. Although both types of communities are experiencing similar migration patterns, the migration drain seems to be more acute in the communities that are decreasing. This type of community is losing persons in the youth and young adult age categories at a faster rate than the community that is increasing in population. A trend is also evident indicating that declining communities are gaining, proportionately, more persons in the older adult and aged categories of their populations than increasing communities, although no statistically significant differences appear at the present time.

The same conclusion can be drawn about the association of the dependency ratio and population change. No statistically significant differences were found in the dependency ratios of the two types of communities. However, analysis of dependency ratio change since 1940 showed that declining communities are experiencing a larger increase in the aged dependency ratio and a smaller increase in the youth dependency ratio than is true for

communities that are increasing in size. This would seem to indicate that in the future these differences will become significant. While the dependency ratio as a whole may not show a sizeable difference it is expected that the component parts of the dependency ratio will differ to a significant degree. This difference will be largely due to the larger aged dependency ratio in the declining communities and the larger youth dependency ratio in the increasing communities.

The findings of the research on sex ratio and population change indicate that there is, at present, no significant difference in the total sex ratio of growing or declining communities. However, once again there is evidence to indicate that a difference may exist in the future. Communities that are losing population are experiencing a greater decrease in the number of females in the young adult and the aged categories than are communities that are growing. This gives strong support to the assumption that differences will appear even though they do not exist at this date.

In conclusion, there are differences in demographic characteristics between communities that are

increasing and those that are decreasing in population. These differences, which are evident from the analysis of changes that have taken place in the population during the past twenty years, are expected to become even greater in the future.

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