A study of the relation between the spatial church going behavior of Protestant church-goers and the location pattern of Protestant churches a case study in South Windsor area.

Ching-Yu. Ho

University of Windsor

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Canada
A STUDY OF THE RELATION BETWEEN THE SPATIAL CHURCH-GOING BEHAVIOR OF PROTESTANT CHURCH-GOERS AND THE LOCATION PATTERN OF PROTESTANT CHURCHES: A CASE STUDY IN SOUTH WINDSOR AREA

By

Ho, Ching-Yu

A Thesis submitted to the Faculty of Graduate Studies through the Department of Geography in partial fulfillment of the requirements for the degree of Master of Arts at the University of Windsor

Windsor, Ontario, Canada
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ABSTRACT

The aim of the study is to use the market behavioral approach to examine the relationship between the spatial church-going behavior of Protestant churchgoers and the location pattern of Protestant churches inside a metropolitan area. The present study is only a case study of the suburban Protestant churches and South Windsor was chosen as the study area. The findings of the study are that, about two thirds of the suburban Protestants tend to live within one and half to two miles radius of their churches. There is a limit of distance that a person is willing to go to a church and this limit varies with the attractiveness of the church as perceived by the person.

There is no significant status difference between the Protestant denominations in South Windsor in terms of median family income of their members. And, by using the theoretical market share and attractive index, it is possible to explain about eighty-one percent of the variance in the actual market share of the Protestant churches in South Windsor.
ACKNOWLEDGEMENT

Special appreciation is due to my adviser, Dr. Jack C. Ransome, for his valuable advice throughout the duration of this study. I also wish to thank Dr. A. Lall and Dr. Mansell J. Blair for their reviewing of the thesis and constructive suggestions. I also want to express my gratitude to the pastors/ministers of the Protestant churches in South Windsor for giving me the data. At last I want to thank my parents for their love, encouragement and financial support.
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CHAPTER I

INTRODUCTION

Churches like other service business are located in a geographical location that can best serve their members and which will provide them a minimum threshold to allow them to survive. But unlike other kinds of services, churches are non-profit voluntary organisations whose aims are to serve the spiritual and social needs of their church members. They may have a location pattern different from other services because of strong denominational preferences and a less even and less intensive distribution.

1.1 Religion as a field of Study in Geography

The geography of religion is a relatively neglected subject in North America and very little research has been done and most has been in the form of unpublished M.A. theses and Ph.D. dissertations. Generally, these studies can be grouped into four themes: (1) American denominational geography, e.g. Gaustad, 1976 and Gay, 1971; (2) The landscape impress and spatial organisation of certain conspicuous American sects, e.g. Francaviglia, 1979 and R.H. Jackson, 1978; (3) Sacred centre, e.g. King, 1972 and Shair and Karan, 1979; (4) Pilgrimages, e.g. Tuner, 1973 and Bhardwaji, 1973. Most of them
studied the geography of religion from a cultural perspective and were mostly on a macro scale. There was relatively little concern by geographers to study churches as religious and social service units in metropolitan areas. Although a lot of studies have been done about churches as urban institutions by many theologists and sociologists, very few of them have specifically talked about the location pattern of churches and the relation between the location of churches and the residences of church goers.

1.2 Objectives and Scope of the Study

In the present study an attempt will be made to use the market behavioural approach to study the relationship between the spatial behavior of church goers and the location pattern of churches inside a metropolitan area. Churches in the present study are considered as service units which provide spiritual and/or social services and whose customers are the Protestants in the study area.

In this study I will try to find out what are the factors and how important are they in affecting a person's choice of a church; To what extent can the Central Place Theory contribute to explain the location pattern of churches and their market share? What are the effects of the combination of the interaction between all the factors on the location pattern of churches.
This study is only confined to the study of suburban Protestant churches and suburban Protestant population. Through this study it is hoped that more insights can be accumulated to the knowledge of churches as religious service units in metropolitan areas.

1.3 The Study Area and The Study Object

In the present study only the suburban Protestant churches and the suburban Protestant population will be examined, and the study area is in South Windsor as seen in Fig.1. The northern boundary is composed of the C.P. Railway, Cleary Street and the Hildegard Street; the western boundary runs along Huron Church Road; the eastern boundary is formed by the C.P. Railway, and along the southern boundary run highway 3 and Highway 401.

Inside the study area there are eleven Protestant churches representing five denominations and one independent church, see Fig.1 and Table 1. This area had a population of about 35,000 in 1976 and is generally a suburban middle to upper income area. There were about 16,000 Protestants in 1971 with the majority of them Anglican and United.

It can be seen in Fig.1 that the Protestant churches in the study area are relatively isolated from the main body of churches in the core area around Downtown because
STUDY AREA AND DISTRIBUTION OF PROTESTANT CHURCHES IN WINDSOR

SOURCE: 1982 WINDSOR TELEPHONE DIRECTORY

FIG. 1
Table 1

The Names of the Protestant Churches Inside the Study Area

1. St. James' Anglican Church.
2. St. David's Anglican Church.
4. Glenwood United Church.
5. Roseland United Church.
7. Noble's Memorial Baptist Church.
8. Emmanuel Baptist Church.
9. Gethsemane Lutheran Church.
10. Paulin Memorial Presbyterian Church.
11. Church of God

much of South Windsor was a leapfrog development of outlying subdivisions. Suburban middle income people are the major supporters of Protestant churches and most church goers tend to go to churches close to their homes. As a result, this study can utilize a relatively isolated study area and a homogeneous population for the examination of the hypotheses.
CHAPTER II
REVIEW OF LITERATURE

In the first part of this chapter past studies of urban churches will be reviewed. Since the location pattern of churches is affected to a great extent by the behavior of church goers, the second part of this chapter will review the behavioral approach in marketing geography and some marketing behavioral models.

2.1 Review of Literature: Church as an Urban Institution

Christian Protestant churches have been established in North America since the first white settlers arrived in the New World. Since that time, American Protestantism has prospered and is deeply rooted in the agrarian societies. Although today American society is greatly urbanized, the rural Anglo-Saxon agrarian tradition of American Protestantism has not been changed to any great extent. Many urban churches still emphasize a small scale congregation and a close and intimate personal relationship between the minister and his fellow church members as well as with people of the neighboring community. This small scale tradition of most American Protestant churches is consistent with the Christian belief that:

Church is a divine-human community which bears witness to the love of God in Christ Jesus. Its basic task is to proclaim the gospel of Jesus Christ.
everywhere in the City so as to call men to
Christian faith and fellowship, to nurture them in
that faith so that they might serve the community
and the world.

This statement implies that church must be located close
to its people in order to witness the love of God, to serve
its members and to meet their spiritual and social needs
and to spread the gospel to the non-Christians. In order
to achieve these goals, a large number of churches must be
established throughout the city to cater to the needs of
church members. As said by Robert Lee that "instead of
people coming to church, it is the church going to the
people." Therefore, church must be located where there
are concentrations of people and be conveniently located
so that it is easily accessible to everyone in the
neighboring community. And also as said by F.A. Shippey
that:

Most residents are interested in the church and
religion, fellowship cultivation is needed to
galvanize people into participation action. The
church is expected to come to get them, residents
expect to be found and asked to participate, yet
they will do little to hasten or facilitate the
process.

and "all individuals should be placed under the aegis of
the church," and

People do tend to participate more fully in church
life as they live closer to their church of
memberships .... let us get the church as close to
them as we can, and we can maximize this by
spacing churches out, .... within a twelve minute
walking distance.
Once in the history of American Protestantism there was the one mile rule which was the guide line for the location of churches in urban area. This one mile rule was the product of Comity, an organization formed by several major Protestant denominations in late nineteenth century and the aim of which was to cooperate the efforts of different denominations to prevent uneconomical duplication of effort. In 1891, a group of Protestant churches advanced seven Comity principles for church locations. (Appendix A) The most central and widespread adopted principle was the one mile rule. The essence of the rule was that, "a new Comity church should not be located within one mile of any existing or proposed church which is related to a denomination shr.. in the Comity agreement." 17

The basic assumptions of the one mile rule were: 18

1. All denominations in the Comity were essentially similar that each of them was capable in serving all the Protestants in a given area.
2. It is desirable for most of the people in one neighborhood to be served by the same church.
3. Physical distance is the best single objective measurement in locating new churches.

Although Comity does not exist today the one mile rule still acts as an important standard for deciding church location within denominations. As one study reported, a large percentage of church members lived within one mile radius of the church location. 19 One planner also proposed that in order to solve the problems of "overlapping church locations" and "over churching" the community, the most
obvious solution is to space out churches, and the one mile rule of thumb is in common acceptance and churches should be about a mile apart except in very densely populated areas.\textsuperscript{20}

The political ideals of Americans have also significant impacts on American Church organisation and spatial structure of churches. As said by D.E. Sopher:\textsuperscript{21}

In the United States, these churches allow local congregations more control and choice than do the parent system in Europe. The spatial organisation of these churches is also less rigid than in the old Christian lands of Europe. Parish territories and their equivalents do not regulate an individual's choice of a church, so that churches are free to develop service area with fluid boundaries, much like retail stores and shopping centres.

The failure of Comity in the 1940s was mainly due to these political ideals of Americans. It was powerless to enforce its decisions and the competition between denominations for growth and better locations turned it into a battle ground for denominations. Therefore a location that can maximize the number of people coming to a church in minimum time is very important to the size and prosperity of the church and the denomination, which also means that a church must be so located that it is highly accessible to its members or potential members. Some church planners had proposed several location criteria for churches such as:\textsuperscript{22}

If a church expects to serve a neighborhood it should be located near the school at the centre of the area.

and
A multi-neighborhood or regional church accordingly should be located on the periphery in order to make use of the main traffic routes and to provide access from several smaller areas.

William D. Pratt, a church planner also proposed ten criteria for church site selection. (Appendix B)

The church is one of the formative elements of most American cities and as said by R.W. Soke: "... take on to them a few stores, a bank, a courthouse, and they are on the way to becoming a city." As the city gradually grew in size and in population, so would the size of the first church. But there was a limit for the church to grow which was determined by the number of communications the minister could handle effectively with his church members and members of the community so that an intimate relationship could be maintained. Kloetzli said that:

... it is not the strategy to allow a single church to become too large.

Once a congregation numbers more than five hundred adult members there begins to be a change in the relationship between the members. A loss of fellowship or of personal identification with the congregation begins to take place.

As the size of church members and population exceeded this limit, branch churches or sister churches had to be established to take care of the outlying church members and this process would continue as long as the city grew in size and in population.

In the United States, the church population ratio
varies from region to region and from one area to another inside a metropolitan area. It was found that there were more churches in the Southern States than in the North and in the West and there were also more churches in the poor districts than in the wealthier districts inside a city. A study found that, on the average, the inner city area had about one church for each 300 to 600 residents while in the suburbia the ratio tended to be about one church for each 1000 to 2500 residents.25

In the past thirty years, due to the post war rapid economic development, American people became more and more affluent, and with the widespread use of automobiles and the construction of express highways, most of the affluent city dwellers left the city and went to the suburban areas in order to have a better living environment. This mass exodus of affluent people to the suburban areas had significant effects on city churches. The migration not only led to the rise of many suburban churches but also depleted the church membership and neighborhoods of the downtown city churches. But churches unlike retail stores in that their members are usually much more loyal and have a stronger sense of belonging to their own churches. Although people have moved away from the central city community, many of them are willing to spend a longer travel time to go back to their own churches. As a result, so long as these church members existed, many of the city churches
could exist but with most of their members not coming from the immediate neighborhoods but dispersed all over the metropolitan area. As one author stated, "even where churches are actually situated in such vacuum areas substantial of their membership are located outside them."\(^{26}\)

The general higher education level of the suburbanite also has substantial effect on the size of the congregation and hence the number of suburban churches too. For them, going to church is not just the accepted thing to do, a means of establishing respectability, a passive formality, it will be a personal commitment to an intimate involvement with others in the pursuit of Christian goals.\(^{27}\)

They would like a church where they could experience "the authentic, the small, the intimate — anything that they can get their arms around,"\(^{28}\) and the measure of the effectiveness of a church will be the extent to which the members know and love one another.\(^{29}\)

A study in late 1950s in Detroit found that:\(^{30}\)

About half of Detroit's churchgoers spend no more than ten minutes on their journey from home to church, and only one out of every four spends as much as twenty-five minutes. Well over half of the churchgoers live within two miles of their church, and 40 per cent live within one mile. ... relatively few Detroiters who move from one neighborhood to another will continue to attend the old church.

In another study it was found the churchgoers' residences were more dispersed than had been previously found but it concluded that nearness to a church was still the major
factor in determining the church attended within a denomination.\textsuperscript{31}

The use of automobiles also widened the scope of choice of the church goers. One author said that, "On weekdays one shops for food, on Saturday one shops for recreation, on Sunday one shops for the Holy Ghost." People would visit several churches before deciding their church home, just as he might visit many shopping centers or many places of amusement.\textsuperscript{32} This increase in selectivity in churches by church-goers might also be due to the general increase in education of the population who would expect they can really get something from the church that could meet their needs.

Today there exist different service area patterns of churches because of the different types of churches. Some churches have a very dispersed service area while others have most of their members concentrated in the neighborhood around their churches. According to their locations in metropolitan areas, churches can be divided into six major types as below:\textsuperscript{34}

1. Downtown Church — Sometimes know as metropolitan church, first church or mother church. It is the first church established in the community by a given denomination. Usually it is located in the city centre and acts as a church for the highly mobile city dwellers and the transients. It is also the symbol of the denomination in the heart of the city and serves as the voice of its
denomination. Its service area basically includes the whole metropolitan area.

(2) Multi-neighborhood or Regional Church - It is not located in the very heart of the city but in areas beyond the downtown district and usually in the inner city apartment areas. It draws most of its members from a sector of the metropolitan area and serves several neighborhoods. Most of its members belong to the lower level of the society.

(3) Neighborhood Church - It identifies itself with a particular neighborhood and involves itself in many community activities and responsibilities. A very high percentage of its members come from the local area and hence it has a very compact service area.

(4) Selective or Special Group Church - It serves only a certain part of the population and usually the ethnic groups. The size of its service area varies and depends on how the group is distributed in the metropolitan area. Therefore it may be a neighborhood type church or a metropolitan type church.

(5) Suburban Church - It refers to those congregations which have been established in the "bedroom" areas of the metropolitan centers, where the commuters sleep. It generally ministers to a homogeneous middle class population and usually identifies with its immediate neighborhood, therefore it is also a kind of the
neighborhood church.

(6) Store Front Church - It is located in the blighted, "port of entry" area of the city and serves the religious and social needs of the newcomers to the city. Most of the members are also coming from the immediate area of the church.

There were over two hundred major identifiable churches, denominations and sects in the United States in 1978 and about 85% of all Americans report Christian affiliation. Many of these churches, denominations and sects were developed to serve the needs of distinct socioeconomic groups and/or ethnic groups in society. As was found by Weber, "People choose their theologies according to how well they help them cope with the problems of daily living" and "social classes and status group differ in their religious preferences." As for the upper class people, they place more emphasize on present honor than on sin and future salvation, they would like a religious belief which will justify their present life pattern and situation. But for the under privileged groups, they want a religious belief which would give them salvation and future compensation for their hardship in the present world.

In general, the major religious groups in the United States can be classified into three categories according to their member's socio-economic status: (1) High status denominations, such as the Episcopalians, Presbyterians, Jews
and the Congregationalists; (2) Medium status denominations, such as the Methodists, Lutheran and Catholics; (3) Low status denominations, such as the Baptists and Pentecostal churches. There has been a good deal of movement of individuals between churches and between denominations because of the similarity of some religious faiths and the large choice of church locations. It was found in a study in 1975-76, about 25-32% of Americans had switched religions (including movement out of religion) in their life-time.  

In Canada, the population is almost equally divided between Catholic and Protestants and the majority of the Protestants belong to either the Anglican Church or to the United Church. Similar to the studies in the United States, there are significant differences in religious practices and beliefs between lower class and middle class Canadians. Generally Jews, Anglicans, Presbyterians and United Church members come more from the upper and middle class and members of other Protestant denominations, such as the Baptists, Lutheran and Pentecostal belong mostly to lower class. The five largest Protestant denominations in Canada in order of their membership size are: United Church, Anglican Church, Presbyterian Church, Lutheran Church and the Baptist Church.

It is because of the socio-economic difference and ethnic difference between churches and denominations that some areas in a city may have more churches of certain
denominations. The spatial concentration of lower income ethnic groups in United States inner cities has been especially significant in this regard.

There are two major functions of religion to men: the individual, personal and spiritual function; and the social or organisational function. The individual function suggests that an individual will switch his religion when he wants to seek a new, different, or more personally meaningful theology, pattern of ritual, or style of ministry. For the social function, it assumes that religious affiliation implies association with a membership of a particular composition in a specific location and an individual will switch his religion when he desires to worship with or associate with certain types of people or in a specific location due to 'convenience'. It was found in a study that the individual function was the most important reason for the mobility downward and the social function was the most important reason for the mobility upward.

The general trend in the last decade was the up and out trend where there were more people moving from the low and moderate denomination to the high status denominations and for the members of the higher status denominations to move out of active participation in religion altogether. This trend may be due to the general improvement in income and the accompanying changes in life styles, values,
expectations, family life cycle and housing choices of the population. As a person goes up the social and economic ladder he will change his residence and will like to affiliate with a group of people who are compatible with him, and as a result he may switch his church and/or religious affiliation because of the convenience factor and/or the compatibility factor. Within the American framework of diverse but not radically distinct denominations and the large choice of church locations such a choice of convenience and/or compatibility of religious worshippers can be easily accomplished without severe challenge to one's beliefs and up-bringing.
2.2 Review of Literature: Behavioral Approach in Marketing Geography

The behavioral approach in geography studies how attitudes and value system affect an individual's decision among a set of opportunities distributed over space. Actually, the behavioral point of view is not new in geography, but it only studies the observed behavior in space and has neglected the socio-psychological influences on an individual's behavior. As said by Cadwallader and Colledge, Brown and Williamson, the aim of the behavioral approach is to improve the existing models in human geography by introducing more 'realistic' assumptions and making them more powerful tools in describing spatial patterns, distributions and associations.

Marketing geography is one of the many branches in human geography which has long been concerned with human behaviors in space and their influence on the spatial pattern of retailing units. But the traditional micro-economic theory which has been applied in many marketing geographic studies failed to incorporate the socio-psychological influences on an individual's consumption behavior. They assume that all individual are 'economic man' and all of them have perfect information about all opportunities and they are homogeneous with regard to the product utility functions, and as a result they all behave in an optimal way. This is not true in reality, and
therefore, this traditional approach fails to produce total explanations of spatial patterns.

In the actual world, people's behaviors are non-optimal due to the influences of their aspiration levels, value systems, habits, social roles, the external influences of social and cultural institutions, social pressure and insufficient information. As a result, an individual, in making a choice among a set of opportunities, will be constrained by the above influences and this results in a preference ordering of the opportunities. The individual makes a decision not according to the 'optimization' principle as always has been assumed by the traditional economic theory but according to the satisficing principle and bounded rationality as proposed by H.A. Simon.

According to Simon, the satisficing principle is:

the replacement of the goal of maximizing with the goal of satisficing, of finding a course of action that is 'good enough'.

A person will stop the mechanism of searching when he has found an alternative which is 'good enough' for him. For the principle of bounded rationality, it was stated as:

The capacity of the human mind for formulating and solving complex problems is very small compared with the size of the problems whose solution is required for objectively rational behavior in the real world — or even for a reasonable approximation to such objective rationality.
If the principle is correct, then the goal of classical economic theory—to predict the behavior of rational man without making an empirical investigation of his psychological properties—is unattainable.

There are now two major approaches to the study of marketing geography, one is more emphasized on the theoretical side while the other is more concerned with empirical studies. The theoretical approach is characterized by the building of various models whose aim is to arrive at some universal theories. The empirical study approach is mainly represented by William Applebaum who is interested in applying various geographic knowledges and techniques as well as knowledges of other disciplines in solving the actual problems of various retailing and servicing units.

As a whole there are three major classes of theoretical models according to the degree of incorporation of the socio-psychological variable as below:

(1) Models in which functional relationships do not incorporate any psychological variables. In geography, such as the central place theory, it assumes that consumers are homogeneous and there are no differences in consumer perception and preferences, and space is uniform and customers tend to minimize the distance to shop. It also neglects differences between quality of shops and assumes an equilibrium between supply and demand. Its weakness is very similar to the traditional micro-economic theory which is not true in reality.
and as a result can not produce satisfactory explanation to real world problems.

(2) Models which take into account psychological variables by introducing dummy variables, as in various gravity models in geography. They consider the distance to shop and the size of shopping centre (mass) as the major factor and some of them also incorporate quality and attractiveness indicators and intervening opportunities. Their major advantages are their low requirements in data and they can easily be tested by quantitative methods. Their main weakness is their failure to consider behavior individually and space perception is also left out but nevertheless they are quite useful in studying group response and collective behavior.

(3) Integrated psychological economic models which fully incorporate socio-psychological variables as important factors. Up to the present they have not yet been developed except in the field of transportation research. This type of model assumes that shopping attitudes and behavior can only be explained on the basis of a multi-dimensional set of explanatory variables and the customer's image of a shopping centre, price perception and distance perception play a significant role. They are very useful in the analysis of disaggregate spatial choice behavior. Their major weakness is that perception, preferences and images are based on a static view from
the consumers and their predictive structure is not always clear.

The empirical study approach relies heavily on user surveys and therefore can take into consideration choice responses and socio-psychological elements of the consumers in arriving at some solution of a particular problem. Although this approach is more problem solving oriented, the knowledge accumulated by this approach provides valuable informations in understanding the field of marketing geography and in formulating more satisfying models and theories.

Since church is a kind of 'service station' which serves the spirit and social needs of people, its success in attracting more church memberships would no doubt be governed in part by some marketing factors. In addition, because people's choice of churches is less rational and more emotional based on their perceptions, more advanced behavioral models would be necessary to explain the relationship between the spatial behavior of church goers and the location pattern of churches.

In the present study I will employ Cadwallader's shopping behavior model in a modified form in the study of spatial behavior of church goers and to examine the extent to which it will affect the proportion of church goers to a church and the location pattern of churches.

Cadwallader's model was developed to predict the
proportion of consumers who would patronize a grocery store among a set of shopping alternatives in a lower middle income area. This model was later applied by R.Lloyd and D.Jennings in another study in two economically different areas. This technique was quite successful when the model was modified by adding the racial component.

The model postulated that the proportion of people patronizing any particular store increases with increasing attractiveness of the unit as perceived by customers and decreases with increasing distances from customers. The tradeoff between these two variables is constrained by the information the people possess about all the alternatives in the area. The basic structure of the model was as follow:

\[ P_i = \frac{A_i}{D_i} I_i \]

\( P_i \) = the proportion of customers patronizing store \( i \);
\( A_i \) = some measure of the attractiveness of store \( i \);
\( D_i \) = some measure of the distance store \( i \) from customer's home;
\( I_i \) = some measure of the amount of the information generated by store \( i \).
CHAPTER III

METHODOLOGY

In the present study, specific hypotheses will be formulated on the basis of the findings of past studies, and appropriate statistical techniques will be applied to test the validity of these hypotheses. A random questionnaire survey will be carried out to gather information according to the purposes of this study and to provide data for the testing of the hypotheses.

3.1 Specific Hypotheses

The purpose of this study is to examine the relationship between the spatial behavior of church goers and the location pattern of churches in a suburban neighborhood in a metropolitan area. Through the review of literature, five hypotheses are developed for testing in this study as follow:

(1) The church members of the suburban Protestant churches are distributed more in a cluster pattern than randomly around their churches in the study area.

(2) The major Protestant denominations reflect socio-economic differences especially in median family income in the study area.

(3) Those Protestants who have changed their church membership to churches in South Windsor after they had moved to South Windsor from another neighborhood tend to
consider the convenience factor more important than other attractive attributes of their old churches.

(4) Since most Protestants consider churches of their own denomination first when they have to choose a church in an area, the actual proportion of Protestant population going to a church in an area is closely related to the theoretical proportion of Protestant population going to that church in the area.

The theoretical proportion of Protestant population going to a church in an area is calculated by dividing the percentage of Protestant population of a denomination in that area by the number of churches of that denomination in that area. For example, if twenty percent of an area's Protestant population are Anglican and there are four Anglican churches in that area, assume all Anglicans only go to churches of their own, no Anglicans go to churches outside the area and all things between the Anglican churches are equal, then the theoretical proportion of Protestant population going to each of the Anglican churches in that area is five percent of the total Protestant population in that area.

(5) There is direct relationship between the attractiveness of a church as perceived by church members and the actual proportion of Protestant population going to that church in an area.

Hypotheses (4) and (5) can be expressed in linear form
as follow:

\[ P_i = T_i + A_i \]

\( P_i \) = the actual proportion of Protestant population going to Protestant church \( i \);

\( T_i \) = the theoretical proportion of Protestant population going to Protestant church \( i \);

\( A_i \) = some measure of the attractiveness of Protestant church \( i \).

3.2 Verification Procedure

In this study of the relationship between the spatial behavior of Protestant church goers and the location pattern of Protestant churches in South Windsor, four different statistical techniques, (1) near-neighbor analysis, (2) one way analysis of variance, (3) Phi coefficient analysis, and (4) multiple regression analysis, will be applied to test the hypotheses accordingly because of the differences in purposes and data requirements of the different hypotheses.

3.2.1 Hypothesis One – Near-neighbor Analysis

For hypothesis one, it will be tested by the near-neighbor analysis which is used to test the randomness of distribution of points in an area. It takes the mathematical
form of:  \( \bar{r}_a = \frac{d_{ij}}{N} \)
\( \bar{r}_e = \frac{1}{\pi} N/A \frac{1}{N} \)

\( \bar{r}_a \) = the mean distance between all points in an area;
\( d_{ij} \) = the distance between point \( i \) and point \( j \);
\( N \) = the total number of points in an area;
\( \bar{r}_e \) = the expected mean distance between points;
\( A \) = the area of the study area.

If \( \bar{r}_a / \bar{r}_e \) approaches one, then the pattern is random;
if \( \bar{r}_a / \bar{r}_e \) approaches zero, then the pattern is clustered; and
if \( \bar{r}_a / \bar{r}_e \) is greater than one, then the pattern tends
towards dispersal and uniformity.

A church membership distribution map of each of the
Protestant churches will be produced from the membership
list of the churches for the testing of this hypothesis
using the near-neighbor analysis.

3.2.2 Hypothesis Two - One Way Analysis of Variance

For hypothesis two, a random questionnaire survey of
the Protestant population in the study area will be carried
out to obtain the family income data of the population of
the major Protestant denominations in the study area.
Family income and education level had been used in many
previous studies\(^{52}\) to examine the socio-economic differences
between denominations and churches in the United States.
From the family income data obtained from the random questionnaire survey the median family income of the population of the major Protestant denominations in South Windsor can be calculated and they will be compared with each other to see if there are any differences and one way analysis of variances will be applied to see how significant the differences are.

3.2.3 Hypothesis Three - Phi Coefficient Analysis

In the testing of hypothesis three, Protestants will be divided into two groups: those who have changed their memberships to churches in South Windsor after they had moved to South Windsor (group 1) and those who have remained in their own church after they had moved into South Windsor (group 2), and they will be correlated with the percentage of Protestants who consider convenience is an important factor for them to change church (category X) and the percentage who consider convenience is not an important factor for them to change church (category Y).

The data for the testing of this hypothesis is obtained from the random questionnaire survey which will be discussed in the end of this chapter.

Since the variables used in the testing of this hypothesis are measured in the ordinal scale, only a non-parametric statistical test can be employed and in the
present test the Phi coefficient is used to correlate group one and group two with category X and category Y. A 2 x 2 contingency table will be constructed as follow using the data obtained from the random questionnaire survey.

<table>
<thead>
<tr>
<th>Category X</th>
<th>Category Y</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Group 2</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>Total</td>
<td>A + C</td>
<td>B + D</td>
</tr>
</tbody>
</table>

Using the notation in this table, the phi (φ) is given by:

\[
\phi = \frac{AD - BC}{\sqrt{(A+B)(C+D)(A+C)(B+D)}}
\]

The φ value ranges from 0 to 1 where 0 indicates no association. The SPSS computer program will be used for this analysis.

3.2.4 Hypotheses Four and Five - Multiple Regression Analysis

Hypotheses four and five will be tested by using the multiple regression technique which takes the mathematical form of:

\[
Y = a + b_1x_1 + b_2x_2 \ldots + b_jx_j
\]

Y = the dependent variable;
a = the intercept;
b_1x_1 to b_jx_j = the independent variables x_1 to x_j.

The multiple regression technique is best suited to the multivariate analysis of the relationship between the actual proportion of Protestants going to a church (Y) and the
theoretical proportion of Protestants going to the church \( x_1 \); and the attractiveness of the church as perceived by church members \( x_2 \).

The theoretical proportion of Protestant population going to a church \( x_1 \) in an area is calculated by dividing the percentage of Protestant population of a denomination in that area by the number of churches of the denomination in that area. The percentage of Protestant population of the major denominations in South Windsor is calculated from the data obtained in the 1971 Census of Population. The number of churches of a denomination in South Windsor can be obtained from the Yellow Pages of the Windsor Telephone Directory.

A random questionnaire survey of the Protestant population in South Windsor will be carried out to determine the attractive variable \( x_2 \). The details of the questionnaire survey will be discussed at the end of this chapter.

The attractive attributes of the churches used in the questionnaire survey to determine the attractiveness of the churches \( x_2 \) are designated through the review of literature. A study in the "Park Forest" suburb of Chicago revealed that the suburban church goers stress fellowship as the most important factor and they ranked their criteria for choice of a church as follow: (1) the minister; (2) the quality of Sunday school; (3) the location; (4) the
denomination; (5) the quality of music. In the present study, the attractive attributes by which the Protestant population choose a church are: (1) the character and style of the minister; (2) the degree of fellowship with other church members; (3) the convenience of the church's location; (4) the quality and variety of the church's activities and services; (5) the denomination.

The attractiveness \( x_2 \) of each of the churches in the study area is evaluated by sampling Protestant population. Each of the churches will be rated with respect to the five attractive attributes according to a seven point scale, from very unattractive to very attractive. The resulting scale value of the five attributes for each of the churches will then be aggregated and the median value of each of the attributes for each church will be chosen to construct a five by eleven attractiveness matrix as follows:

\[
\begin{array}{ccccccc}
& \text{Ch}_1 & \cdots & \text{Ch}_j \\\nA_i & x & \cdots & x & \text{Ch}_i = \text{church } i; \text{ } (1) & A_i = \text{attractive attribute } i. \\
& \cdot & \cdots & \cdot \\
A_j & x & \cdots & x & \end{array}
\]

The sampled Protestant population will also be asked to rank the importance of each of the five attributes for them in choosing a church. As a result, a row of weighting vectors will be produced and they will be standardized so they add to the value of one as follows:
The attractiveness matrix (1) will then be multiplied by the weighting vector (2) to adjust the attractiveness of each of the churches. The resulting row vector then forms the attractive vector for the churches.

\[
\begin{align*}
&Ch_i \quad \ldots \quad Ch_j \\
&x \quad \ldots \quad x \\
&\begin{array}{c}
A_i \\
&\ldots \\
A_j \\
\end{array} \\
&\begin{array}{c}
\times \quad \ldots \quad \times \\
\times
\end{array} \\
&\begin{array}{c}
W \\
V
\end{array}
\end{align*}
\]

\[
\begin{align*}
&Ch_i \quad \ldots \quad Ch_j \\
&x \quad \ldots \quad x \\
&\begin{array}{c}
A_i \\
&\ldots \\
A_j \\
\end{array} \\
&\begin{array}{c}
\times \quad \ldots \quad \times \\
\times
\end{array} \\
&\begin{array}{c}
W \\
V
\end{array}
\end{align*}
\]

Since the attractiveness of a church is constrained by how many people know about the church, an information variable is added to adjust the attractiveness of the churches.

In the random questionnaire survey, the sampled Protestant population will be asked whether they know about the eleven churches. The level of information for each church is measured by the percentage of people who are aware of the church, and an information vector will be produced as follow:
\[ I \mathbf{V} \]

\[ \mathbf{C} \mathbf{h}_i \times \mathbf{x} \]

\[ \mathbf{C} \mathbf{h}_j \times \mathbf{x} \]

(4) \[ I \mathbf{V} = \text{information vector.} \]

The attractive vector of the churches (3) will then be multiplied by this information vector (4) to produce the attractive index of the churches which will be used in the multiple regression analysis.

The actual proportion of Protestants going to a church (Y) can be calculated by the number of members of the church as a percentage of the total Protestant population in South Windsor. The number of church members of each church can be obtained directly from the membership list of the churches.

The SPSS computer program will be used for the multiple regression analysis of hypotheses four and five.

3.3 The Questionnaire Survey

The random questionnaire survey indicated earlier in this chapter will be carried out in two stages, the first stage is the random telephone survey of the population in South Windsor which is used to identify the location (addresses) of the Protestant population, and, in stage two, questionnaires will be sent personally to the sampled Protestant population. It is expected that about 160
questionnaires will be collected which represent about one percent of the Protestant population in the study area. A sample of the questionnaire is attached in the Appendix section. (Appendix C)

3.4 Summary

Through the review of literature, five hypotheses were formulated for the present study and they will be tested by different statistical techniques as follow: (1) Hypothesis 1 - near-neighbor analysis; (2) Hypothesis 2 - one way analysis of variance; (3) Hypothesis 3 - phi coefficient analysis; (4) Hypothesis 4 and 5 - multiple regression analysis. A random questionnaire survey of the Protestant population in South Windsor will be carried out to gather information and data for this study.
CHAPTER IV

ANALYSIS

In this chapter, the general socio-economic and, especially, religious characteristics of South Windsor will be presented which will serve as the background for analyzing and interpreting the findings in this study. Following, the result of the testing of the hypotheses will be presented and analyzed respectively. Finally, findings will be brought together about the location pattern of the suburban Protestant churches in South Windsor and how the behavior of churchgoers affects this location pattern.

(Figure 1)

4.1 General Socio-economic and Religious Characteristics of South Windsor.

According to the 1976 Census, there were about 35,000 people living in South Windsor and the average number of persons per family was about 3.8 persons in 1971.\textsuperscript{54} Generally, South Windsor was a middle to higher income area. (Fig.2B), the median family income was about $11,742 in 1971 and 68.4\% of the families earned more than $10,000 annually.\textsuperscript{55} In 1971,56.4\% of the population had an ethnic background in the British Isles; the next largest group was French, 14.8\%; and Italian, 10.3\%; then Eastern European, 8.2\%; German, 7.1\%; and others, 3.2\%. (Fig.2A) Since many of the Protestant and other denominations have strong ties
between religious choice and ethnic background, this may be reflected in the variety of churches in a community. For example, English families mainly belong to the Anglican Church; Germans belong to the Lutheran church; French and Italians belong to the Catholic church, and Eastern Europeans belong to the Orthodox church.

The religious composition in South Windsor (Fig. 3A) as indicated by the 1971 Census, shows the largest religious group was Catholic which accounted for a little more than half of the population in South Windsor; the next largest group was Protestant which accounted for 42.7%; and the other religious groups accounted for the remainder of 6.4%. Fig. 2A and Fig. 3A show a close relationship between the occurrence of population of British stock and the declaration of Protestant religion. Among the Protestants in South Windsor, (Fig. 3B), the two largest denominations were the United Church, 37.5%; and the Anglican Church, 31.8%.

The distribution of the population of the Protestant denominations in South Windsor, as shown by Fig. 4 through 10, demonstrates considerable variation from census tract to census tract. There were more Baptist, Pentecostals and Salvation Army in the northern section of South Windsor; the Presbyterians and Lutherans were more concentrated in Central South Windsor; the Anglicans were more concentrated in South-west South Windsor and in the central section of South Windsor; and the United mainly lived in the middle
RELIGION BACKGROUND OF THE POPULATION IN SOUTH WINDSOR

FIG. 3A

PERCENTAGE OF TOTAL PROTESTANT POPULATION OF THE MAJOR PROTESTANT DENOMINATIONS IN SOUTH WINDSOR

FIG. 3B

SOURCE: 1971 CENSUS OF POPULATION
DISTRIBUTION OF ANGLICANS BY CENSUS TRACTS IN SOUTH WINDSOR

SOURCE: 1971 CENSUS OF POPULATION

FIG. 4
DISTRIBUTION OF BAPTISTS BY CENSUS TRACTS IN SOUTH WINDSOR

SOURCE: 1971 CENSUS OF POPULATION

FIG. 6
DISTRIBUTION OF LUTHERANS BY CENSUS TRACTS IN SOUTH WINDSOR

SOURCE: 1971 CENSUS OF POPULATION

FIG. 7
DISTRIBUTION OF PRESBYTERIANS BY CENSUS TRACTS IN SOUTH WINDSOR

SOURCE: 1971 CENSUS OF POPULATION

FIG. 8
DISTRIBUTION OF PENTECOSTALS AND SALVATION ARMIES IN SOUTH WINDSOR

SOURCE: 1971 CENSUS OF POPULATION

FIG. 9
PROPORTION OF PROTESTANT BY DENOMINATIONS
BY CENSUS TRACTS IN SOUTH WINDSOR

SOURCE: 1971 CENSUS OF POPULATION
section of South Windsor. When the distribution of the
different Protestant denominations and the location of the
different churches are compared, most churches are located
where there are large concentrations of the churches'
denomination population. Both the United Church and the
Anglican Church have similar church location patterns
because of the similarity in distribution of their
denomination populations. Both denominations are well
represented in all census tracts except in northern South
Windsor.

The average number of denomination population per
church range from a low of 670 of the Baptist Church to a
high of 2027 of the United Church. (Table 2) The low figure
of the Baptist church is attributable to the fact that it
has just opened a new church in the south-eastern part of
South Windsor, where there are now new residential
developments and the church hopes to extend its influence
in this area where a lot of new residents will move in,
many of whom would need church services of one denomination
or another.

4.2 The Questionnaire Survey

For the purposes of this study, a questionnaire
survey was carried out to investigate the socio-economic
background and church-going behavior of the Protestant
Table 2

Denomination Population per Church in South Windsor

<table>
<thead>
<tr>
<th>Denominations</th>
<th>% of total Protestant population</th>
<th>No. of churches</th>
<th>No. of population per church</th>
</tr>
</thead>
<tbody>
<tr>
<td>United</td>
<td>37.6</td>
<td>6,080</td>
<td>3</td>
</tr>
<tr>
<td>Anglican</td>
<td>31.8</td>
<td>5,145</td>
<td>3</td>
</tr>
<tr>
<td>Presbyterian</td>
<td>12.7</td>
<td>2,055</td>
<td>1</td>
</tr>
<tr>
<td>Baptist</td>
<td>8.2</td>
<td>1,340</td>
<td>2</td>
</tr>
<tr>
<td>Lutheran</td>
<td>7.1</td>
<td>1,155</td>
<td>1</td>
</tr>
<tr>
<td>Pentecostal</td>
<td>1.7</td>
<td>275</td>
<td>0</td>
</tr>
<tr>
<td>Salvation</td>
<td>0.6</td>
<td>105</td>
<td>0</td>
</tr>
<tr>
<td>Army</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: 1971 Census of Population

population in the South Windsor area.

In the first phase of the survey, a random telephone survey was carried out to identify the addresses of the Protestant population in the South Windsor area. In the second phase of the survey, questionnaires were sent personally to the identified Protestant population who would then fill in the questionnaire and sent it back by an enclosed return envelope.

In the first phase of the survey, about one thousand telephone calls were made and about two hundred Protestant addresses were identified. In the second phase of the survey, questionnaires were sent personally to these two
hundred Protestants and one hundred and forty-five valid questionnaires were returned which represent approximately one percent of the total Protestant population in South Windsor.

4.2.1 The Socio-economic Background of the Sampled Protestant Population

Fig.11 and Fig.12 illustrate that the majority of the sampled Protestant population (74.5%) had British Isles origins, especially English, were between the age 31 to 70 (82.2%), and had three or more members in the family (73.5%). Nearly 40% of the respondents had eleven to grade thirteen terminal education and 44% of them had post secondary and above education. The median annual family income was between 15,000 to 30,000 dollars.

The findings of the socio-economic structure of the Protestant population in South Windsor in this questionnaire survey is very similar to the socio-economic structure of the population in South Windsor as a whole which is essentially a middle to higher income area.

4.2.2 The Church Going Behavior of the Sampled Protestant Population

Nearly half of the sampled Protestant population belonged to the United Church and the Anglican Church which
are the two largest Protestant denominations in South Windsor as well as in Windsor as a whole. (Fig. 133) Following the United Church and the Anglican Church was the Presbyterian Church. Because many Presbyterians come from the higher income group, it is not surprising to find a higher proportion of Presbyterians in a higher income area like South Windsor than in the total city. Twenty percent of the Protestant population did not have any denomination preference, indicating that denomination was not a major factor affecting their choice of a church.

Forty-five percent of the sampled Protestant population never or only occasionally went to church. Among the sampled Protestant population, twenty-two percent were not members in any church and forty percent had membership in one church, but also went to another church occasionally because of convenience, friends and relatives in that church, special events and social services and activities. The majority of the sampled Protestant population (37.8%) went to churches within fifteen minutes travel distance of their homes and forty-seven percent of the sampled Protestant population had family members going to different churches.

The rating by the sampled Protestant population of the factors affecting their choice of a church is shown in Table Three.

On the average, the sampled Protestant population consider denomination as the most important factor affecting
Table Three

Rating by the Sampled Protestant Population of the Factors Affecting Their Choice of a Church.

<table>
<thead>
<tr>
<th>Factors</th>
<th>Standardized Rating</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pastor</td>
<td>0.232</td>
<td>2</td>
</tr>
<tr>
<td>Fellowship</td>
<td>0.190</td>
<td>4</td>
</tr>
<tr>
<td>Convenience</td>
<td>0.131</td>
<td>5</td>
</tr>
<tr>
<td>Activities and Services</td>
<td>0.203</td>
<td>3</td>
</tr>
<tr>
<td>Denomination</td>
<td>0.241</td>
<td>1</td>
</tr>
</tbody>
</table>

*The higher the rating, the more important the factor.

Their choice of a church, followed by pastor, activities and services, fellowship and convenience. It was found in the survey that about eighty-eight percent of the sampled Protestants went to churches within fifteen minutes travel distance of their homes. Thus, while members went to churches which were convenient to them, they did not consider convenience to be as important as other factors. The reason for the low relative score for the convenience factor may be that there is a travel limit a person is willing to go to a church. If there are several churches within this travel limit, distance is not an important factor to him, and he will view other factors as more important.

As was mentioned previously, eighty percent of the sampled Protestant population had a denominational preference. In South Windsor there are many churches within close range representing nearly all the major Protestant
denominations in Windsor and it is logical for residents to consider a church of their own preference first when choosing a church.

Also as was stated before, there were forty percent of the sampled Protestant population attending two churches and forty-seven percent of them had family members attending different churches. This may indicate that, although many Protestants have denomination preference, this preference is not very rigid and since the doctrines and teachings of the major Protestant denominations are basically similar, the only difference between them are the kinds of ritual and church organisation. Since ritual and church organisation in general do not affect the majority of the members, therefore it is not very difficult for a person to adjust to a different Protestant denomination.

The ability of a particular church to hold and to attract more members depends to a great extent on the quality and character of the pastor, and how he manages the church to meet the needs of the people. From the rating of the factors affecting a Protestant's choice of a church, the factor of pastor was only a little less important than the denomination factor. (Table Three) This finding was similar to past studies about suburban churches which revealed that suburban population, being better educated, have higher demands and are more critical of their pastors.

Following the denomination factor and the pastor
factor; the activities and services factor and the fellowship factor were also rated very closely. (Table Three) The varieties and quality of activities and services, such as Sunday school, day care centre, boy scout and girl guide, church music and some special events are quite attractive to some of the Protestant population, and especially those with children. The activities and services factor was one of the major factors why some Protestants attend two churches. They might prefer the pastor and/or denomination of one church but also like the activities and services provided by another church. As a result, they attended both churches alternately.

The fellowship factor was also found to be quite important in the survey. To many people, the suburban church is not only a place to worship God, to have spiritual and social services, but also a place where they can know more about their neighbors; a place where they can have someone they can talk to and communicate with and can mutually support each other spiritually and/or professionally; a place for co-ordinating the affairs and problems in their neighborhood; and a place for organizing neighborhood activities and services. Therefore, if a church can better perform this fellowship function it will enhance its attractiveness in drawing more members.
4.3 Hypothesis One – Near Neighbor Analysis

A summary of the near neighbor analysis of the churches in South Windsor is shown as below:

Table Four

<table>
<thead>
<tr>
<th>Churches</th>
<th>$r_a/r_e$ value</th>
<th>$Z$ observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roseland United</td>
<td>0.057</td>
<td>-477.0</td>
</tr>
<tr>
<td>Grace United</td>
<td>0.078</td>
<td>-144.2</td>
</tr>
<tr>
<td>St. Matthew's Anglican</td>
<td>0.043</td>
<td>-501.0</td>
</tr>
<tr>
<td>St. James' Anglican</td>
<td>0.068</td>
<td>-311.7</td>
</tr>
<tr>
<td>Paulin Presbyterian</td>
<td>0.046</td>
<td>-590.6</td>
</tr>
<tr>
<td>Noble's Baptist</td>
<td>0.022</td>
<td>-38.9</td>
</tr>
<tr>
<td>Gethsemane Lutheran</td>
<td>0.100</td>
<td>-143.7</td>
</tr>
<tr>
<td>Church of God</td>
<td>0.263</td>
<td>-41.5</td>
</tr>
</tbody>
</table>

$Z$ critical = $\pm 1.96$ at 95 percent confidence level.

For the near neighbor analysis, only eight churches out of the eleven churches in South Windsor were analyzed because of the unavailability of the church membership lists of three churches. But the above eight churches were considered representative for the purpose of this study. The near neighbor analysis only includes those church members who live within the South Windsor area.
MEMBERSHIP DISTRIBUTION OF NOBLE'S MEMORIAL BAPTIST CHURCH 1982

SOURCE: NOBLE'S MEMORIAL BAPTIST CHURCH

BAPTIST CHURCH
ONE HOUSEHOLD

FIG. 18
MEMBERSHIP DISTRIBUTION OF GETHSEMANE LUTHERAN CHURCH 1982

SOURCE: GETHSEMANE LUTHERAN CHURCH

FIG. 20
MEMBERSHIP DISTRIBUTION OF PAULIN MEMORIAL PRESBYTERIAN CHURCH 1982

SOURCE: PAULIN MEMORIAL PRESBYTERIAN CHURCH

FIG. 21
As can be seen from the table above, all the churches have a very low ra/re value and are significant at the ninety-five percent confidence level. Fig.14 to Fig.23 show the membership distribution of the eight churches respectively.

4.3.1 Interpretation of the Near Neighbor Analysis

In Table Four and Fig.14 to Fig.21, data show that all the Protestant churches in South Windsor have very low ra/re values which means that their members in South Windsor cluster around their churches.

For the churches of the larger denominations, the United Church, the Anglican Church and the Baptist Church, all have a lower ra/re value (from 0.073 to 0.022) which means that their church members are even more clustered around their churches. The reason may relate to the fact that these larger denominations have a larger population size which can support more churches and as a result there are more churches available to their members and at a closer range. As can be seen in Fig.14 to Fig.21 the United Church, the Anglican Church and the Baptist Church all have more churches which are more evenly distributed than other smaller denominations. Fig.22 and Fig.23 show that the service areas of the Anglican churches and the United churches in South Windsor are equally divided in
SPATIAL DISTRIBUTION OF MEMBERS OF THE PROTESTANT CHURCHES IN SOUTH WINDSOR

- Members live outside South Windsor but within Windsor
- Members live within South Windsor
- Members live outside Windsor and those whose address cannot be determined

FIG. 24
number, and every church has a service area of similar size and these churches are approximately one to two miles apart from each other. Therefore, most of them have very few of their members coming from outside South Windsor. (Fig. 24)

The smaller denominations, such as the Lutheran Church and the Church of God, have a smaller population size which can support only a smaller number of churches, therefore their members have to travel a longer distance to go to a church of their own. As a result the churches of these denominations generally have a more dispersed membership distribution pattern and a higher ra/re value (from 0.100 to 0.236), (Fig. 19 and Fig. 20). The churches of the smaller denominations also have a higher proportion of their members coming from outside South Windsor, see Fig. 24, with the extreme case of the Church of God which has 62.5% of its members coming from outside South Windsor and belongs more to the selective or special group church than to the suburban church. The only exception to the above is the Paulin Presbyterian Church which is a church of a smaller denomination in Windsor but it has a very low ra/re value of 0.046 and has fewer members coming from outside South Windsor as compared to the other small denominations (Fig. 21 and Fig. 24). The reason may relate to the fact that Presbyterians come more from higher income groups, and the location of the church
in the higher income area of South Windsor, enables it to draw most of its members from the immediate area of the church.

Except the Church of God, all the churches have more than two-thirds of their members living within one and one-half miles to two miles radius of the church, (Fig. 25). The clustering of members is especially prominent for the churches of the larger denominations, such as the Anglican churches and the United churches which have two-thirds of their members living within a one mile radius of the churches. The clustering of members around their churches once again shows the neighborhood nature of these suburban churches in South Windsor.

The more centrally located churches, such as St. Matthew's, Paulin and Roseland, have their members more evenly distributed around their churches, and they also have a larger potential area (Fig. 14, 16 and Fig. 21) from which they can draw their members and thereby increase their membership size. (Table Two) The fringe-located churches, such as Noble's, Grace and Bethesda, have church members coming from one side of the church territory because of the barrier effects of highways, industrial areas or undeveloped area, (Fig. 15, 18 and Fig. 20). As a result, they have a limited potential area from which they can draw their members and this may produce a smaller membership.
PERCENTAGE OF MEMBER OF THE PROTESTANT CHURCHES IN SOUTH WINDSOR BY DISTANCE ZONES

GRACE

PAULIN

ST. MATTHEW'S

ROSELAND

FIG. 25
A very low negative relationship ($r = -0.181$) was found between the time distance travel to church and the number of times going to church per year for the churchgoers in South Windsor. This shows that distance is not a major factor affecting the number of times a churchgoer attends church and the other factors such as religiosity, fellowship and the needs for certain church services may be more important than distance.

4.4 Hypothesis Two – One Way Analysis of Variance

In the one way analysis of variance between the annual median family income of the sampled Protestant population, a $F$-observed value of 1.248 was obtained which is smaller than the $F$-critical of 2.29, therefore there is no significant difference between the annual family income of the members of the Protestant denominations in South Windsor at the 95% confidence level. The finding of this analysis is contrary to the second hypothesis that the major Protestant denominations reflect socio-economic differences especially in median family income.

4.4.1 Interpretation of the Analysis of Variance

See Fig. 26, the annual family income of the members of the six Protestant denominations in South Windsor were
FIG. 26A
MIDIAN FAMILY ANNUAL INCOME OF THE SAMPLED PROTESTANT POPULATION BY DENOMINATION

FIG. 26B
AVERAGE EDUCATION LEVEL OF THE SAMPLED PROTESTANT POPULATION BY DENOMINATION
77

basically very similar with the exception of the Presbyterian Church whose members' income was higher than the average and also the Lutheran Church whose members' income was lower than the average. Except for the Presbyterian Church, most members of the other five Protestant denominations had annual median family incomes fall within the 15,000-30,000 income group. The finding of the annual median family income of the members of the six Protestant denominations is supported or complemented by the finding of the average education level of the members of the six denominations. As in past studies, there were close relationships between education level and income. The education levels of members of the six Protestant denominations were very similar. The Lutheran level of education was below the average for South Windsor and is reflected in a lower annual median family income.

Table Five
Correlation Between Higher Income Census Tracts in South Windsor and Concentrations of Population of the Protestant Denominations in South Windsor

<table>
<thead>
<tr>
<th>Denomination</th>
<th>r value</th>
<th>Significant (95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lutheran</td>
<td>0.67</td>
<td>Yes</td>
</tr>
<tr>
<td>Baptist</td>
<td>0.42</td>
<td>No</td>
</tr>
<tr>
<td>Anglican</td>
<td>0.74</td>
<td>Yes</td>
</tr>
<tr>
<td>United</td>
<td>0.61</td>
<td>Yes</td>
</tr>
<tr>
<td>Presbyterian</td>
<td>0.57</td>
<td>No</td>
</tr>
</tbody>
</table>
When we compare the higher income census tracts in South Windsor and the concentrations of the population of the Protestant denominations in South Windsor, (Table Five), all the denominations have a moderate correlation from 0.42 of the Baptist to 0.74 of the Anglican. Except for the Baptist and the Presbyterian whose $r$ value is not significant, the $r$ values of the rest of the Protestant denominations are very close, from 0.61 of the United to 0.74 of the Anglican. The result of the correlation analysis is very similar to the previous finding in that there is no significant difference between the Protestant denominations in South Windsor in terms of median family income. No data is available for the Church of God, therefore it was excluded from the correlation analysis.

When we compare Fig.26 with Table Five, although the Lutheran Denomination was found to have below average median family income in South Windsor in the survey, in the correlation analysis it was found to have a moderate correlation of 0.67 which is second only to the Anglican. The explanation of this difference may due to the fact that the people living in the higher income area may not necessarily belong to the higher income group, or the income scale used in the survey was not detail enough to detect differences in income of the Protestant population.

The higher annual median family income of the Presbyterian in South Windsor is similar to past findings
in Canada and in the United States where the Presbyterian Church belongs to the group of higher socio-economic status churches. But no significant correlation was found between the higher income area and the concentration of Presbyterians in South Windsor.

Since South Windsor is a more homogeneous middle to higher income area, and most of the people living here have very similar socio-economic background and the difference in income between census tracts in South Windsor is actually not very great, it is very difficult to detect any major socio-economic differences between members of the Protestant denominations who live in South Windsor. In order to study the socio-economic differences between members of the different denominations in Windsor, a larger study area is more appropriate, and more income group categories would have to be used.

4.5 Hypothesis Three - Phi Coefficient Analysis

By using the Phi coefficient analysis, there is a medium association ($\phi = 0.528$) between (1) the Protestants who have changed their church memberships to churches in South Windsor after they had moved to South Windsor from another neighborhood in Windsor, and (2) the importance of the convenience factor. When using the chi-square test for significance, it had a chi-observed value of 11.98 and was significant at the 95% level with chi critical value equal to 3.84. The finding of the Phi value was complemented by Tau b (0.528) and was
also significant at the 95% level. (Tau b value ranges from -1 to 1 where 0 indicates no association)

4.5.1 Interpretation of the Phi Coefficient Analysis

The finding of the phi coefficient analysis was similar to the previous finding in this study that there is a limit people are willing to travel to a church. When people moved their homes to South Windsor, many will have their old churches outside of their travel limit, and if there are churches of their own denominations inside the South Windsor area, it is very likely they will move their memberships to a more convenient church in South Windsor.

The reasons for remaining in the old church of those who had moved their homes to South Windsor include: they went to the church for a long time and have special feelings about the church; they like the pastor; they have good friends there; and because of ethnicity reasons for which there is no substitute in South Windsor. When deciding which church they will attend, people will weigh the cost and benefit of the different attributes of their possible choices. When a church can give special benefits to a person, either spiritual or physical benefits, he may be willing to travel a longer distance to go to that church, as Schelver said: 56

Place of residence usually becomes less important than does social class, nationality, or ethnic background, income, theology, sentimental ties, race, or region of birth in determining where the Protestant residents of an area go to church.
4.6 Hypothesis Four and Five - Multiple Regression Analysis

A summary of the multiple regression analysis is shown below.

**Table Six**

Summary of the Stepwise Regression Analysis

<table>
<thead>
<tr>
<th>Step</th>
<th>Independent variable</th>
<th>Beta</th>
<th>Multiple R</th>
<th>Simple r</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Theoretical percentage (X₂)</td>
<td>0.51030</td>
<td>0.81320</td>
<td>0.81320</td>
</tr>
<tr>
<td>2</td>
<td>Attractive index (X₃)</td>
<td>0.49403</td>
<td>0.90200</td>
<td>0.80691</td>
</tr>
</tbody>
</table>

R² R² Increase

0.66130 0.66130

0.81361 0.15231

F = F observed value  F critical = 5.32 at 95% level

The first variable entered into the multiple regression equation was the theoretical market share of the churches. This produced a multiple R of 0.8132 and a R² of 0.6613. Thus, one variable explains two-thirds of the variance in the actual market share of the churches. The relationship between this variable and actual market share is positive, as predicted.

The second and also the last variable entered into the multiple regression equation was the attractive index
of the churches and produced a multiple $R$ of 0.902 and a $R^2$ of 0.81351. Hence two variables together explain eighty one percent of the variance in the market share of the churches. The relationship between this variable and actual market share is positive, also as predicted.

In summary, using the theoretical market share and the attractive index it is possible to explain about eighty-one percent of the variance in the actual market share of the churches in the South Windsor area.

4.6.1. Interpretation of the Multiple Regression Analysis

The theoretical market share variable is positive and significant at the ninety-five percent level. This variable alone explains about two thirds of the variance in the actual market share of the churches.

The market share of the churches in the South Windsor area follows to a great extent the theoretical share as predicted by the central place theory. That means if all things are equal between the churches, people tend to go to the nearest church. This finding complements the previous finding in the near neighbor analysis of the churches where all have most of their members in South Windsor clustered around the churches. This finding is also very close to past studies of suburban churches that most were of neighborhood type and drew most members.
from the immediate area of the churches. Suburban churches are also very similar to the lower order more convenience-type retail stores which are widely distributed and have most of their customers coming from the neighborhood of the store.

The correlation of the attractive index and the actual market share is positive and significant at the ninety-five percent level. The addition of this variable increased the $R^2$ from 0.6613 to 0.81361, an increase of 0.15231.

Table Seven

<table>
<thead>
<tr>
<th>Church</th>
<th>Market Share</th>
<th>Attractive Vector</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. David</td>
<td>1.500</td>
<td>5.87</td>
</tr>
<tr>
<td>St. James'</td>
<td>2.677</td>
<td>5.11</td>
</tr>
<tr>
<td>St. Matthew's</td>
<td>3.576</td>
<td>4.43</td>
</tr>
<tr>
<td>Glenwood</td>
<td>3.392</td>
<td>4.67</td>
</tr>
<tr>
<td>Roseland</td>
<td>3.515</td>
<td>5.17</td>
</tr>
<tr>
<td>Grace</td>
<td>1.614</td>
<td>5.52</td>
</tr>
<tr>
<td>Noble's</td>
<td>0.756</td>
<td>5.29</td>
</tr>
<tr>
<td>Emmanuel</td>
<td>0.500</td>
<td>6.30</td>
</tr>
<tr>
<td>Paulin</td>
<td>4.025</td>
<td>4.83</td>
</tr>
<tr>
<td>Gethsemane</td>
<td>1.635</td>
<td>5.97</td>
</tr>
<tr>
<td>Church of God</td>
<td>0.817</td>
<td>5.54</td>
</tr>
</tbody>
</table>

The attractive index explains a large part of the deviation from the theoretical market share as predicted by the central place theory. People tend to weight the different attributes of the churches within a certain distance limit around them. Within this distance limit,
they tend to go to the churches most ideal to them if there is one available, but if there is no one church ideal to them within this distance limit, they will begin to weigh the cost and benefits of whether to spend more travel time to a better church or just go to a church which is not so perfect but good enough for them. Therefore, for the ideal centrally-located churches, such as Glenwood, St. Matthew's, and Paulin, although all have a lower attractive vector, a larger market share is possible. Because of their good location members may be willing to sacrifice some benefits from an ideal church for the convenience reason. (Table Seven.)

The smaller churches are located on the fringe area of South Windsor and farther away from the major population concentration in South Windsor. It is because of the smaller size of these churches that a closer interaction can be maintained between the minister and the church members and between the members themselves. This is reflected in the attractive rating. (Table Eight.) The large churches, such as St. Matthew's, Glenwood, Roseland and Paulin, generally have a lower value in the pastor and fellowship attributes than the smaller churches, such as Emmanuel, St. David, Grace and St. James'. Smaller churches may have fewer conflicts and problems, and even when there are conflicts and problems, it may be much easier to discover and solve problems. The pastor
Table Eight

The Attractiveness of the Various Attributes of the Study Churches as Perceived by Church Members

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Pastor</th>
<th>Convenience</th>
<th>Fellowship</th>
<th>Services and Activities</th>
<th>Denomination</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. David</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>St. James</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>St. Matthew's</td>
<td>7</td>
<td>3</td>
<td>4</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Glenwood</td>
<td>5</td>
<td>7</td>
<td>2</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Roseland</td>
<td>5</td>
<td>6</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Grace</td>
<td>6</td>
<td>7</td>
<td>5</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Noble's</td>
<td>5</td>
<td>7</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Emmanuel</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Paulin</td>
<td>4</td>
<td>7</td>
<td>4</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Gethsemane</td>
<td>6</td>
<td>7</td>
<td>4</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Church of</td>
<td>God</td>
<td>6</td>
<td>7</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Scale: from 7 very attractive to 1 very unattractive.

An attribute was rated as the second most important factor, just a little behind the denomination attribute, in affecting people's choice of a church. The smaller church minister can give more personal care and attention to the needs of the church members and as a result the church members may become more satisfied and happier.

For the larger churches, due to the larger size, the church minister may not be able to serve the diverse needs of the members and together with the more impersonal atmosphere, many of the church members may feel less satisfied.
A church may be very attractive as perceived by its members but very few people may know about this church, and therefore it will not draw more members and increase its market share; the opposite is that even if a church is less attractive as perceived by its members but more people know about the church and it is conveniently placed, it can still draw more people to the church and increase its market share. Therefore, the attractive vector of the churches has to be adjusted by the information variable in order to predict the market share of the churches. (Table Nine) All the larger churches had more people know about them than the smaller churches and as a result they have a higher attractive index after being adjusted by the information factor. The attractive index was found to be a significant variable explaining the actual market share of the churches.
Table Nine

Influence of the Information Variable in Affecting the Attractive Index

<table>
<thead>
<tr>
<th>Church</th>
<th>Attractive Vector</th>
<th>Information Vector</th>
<th>Attractive Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. David</td>
<td>5.87</td>
<td>0.320</td>
<td>1.88</td>
</tr>
<tr>
<td>St. James'</td>
<td>5.11</td>
<td>0.630</td>
<td>3.22</td>
</tr>
<tr>
<td>St. Matthew's</td>
<td>4.43</td>
<td>0.720</td>
<td>3.19</td>
</tr>
<tr>
<td>Glenwood</td>
<td>4.67</td>
<td>0.860</td>
<td>4.02</td>
</tr>
<tr>
<td>Roseland</td>
<td>5.17</td>
<td>0.789</td>
<td>4.08</td>
</tr>
<tr>
<td>Grace</td>
<td>5.52</td>
<td>0.449</td>
<td>2.48</td>
</tr>
<tr>
<td>Noble's</td>
<td>5.29</td>
<td>0.586</td>
<td>3.10</td>
</tr>
<tr>
<td>Emmanuel</td>
<td>6.30</td>
<td>0.320</td>
<td>2.04</td>
</tr>
<tr>
<td>Paulin</td>
<td>4.83</td>
<td>0.728</td>
<td>3.52</td>
</tr>
<tr>
<td>Gethsemene</td>
<td>5.97</td>
<td>0.438</td>
<td>2.62</td>
</tr>
<tr>
<td>Church of God</td>
<td>5.54</td>
<td>0.350</td>
<td>1.94</td>
</tr>
</tbody>
</table>

4.7 Summary of Chapter Four

Except hypothesis two, all the hypotheses were confirmed. Most church members of the Protestant churches in South Windsor were found to live very clustered around their churches. Those people who switched their church memberships to churches in South Windsor after they had moved to South Windsor were found to consider the convenience factor as more important than the other attributes of their old churches. The theoretical market share and the attractive index explained about eighty-one percent of the variance in the actual market share of the
Protestant churches in South Windsor. The second hypothesis was rejected because the more or less homogeneous socio-economic structure of the Protestants in South Windsor produced no significant difference between the Protestant denominations in South Windsor in terms of median family income.
CHAPTER V

CONCLUSION

A summary of the findings of the present study is presented in this chapter together with a discussion of the limitations of the present study and some suggestions for further research in this area.

5.1 Summary of the Finding in the Present Study

The objective of this study is to use the market behavioral approach to study the relationship between the spatial behavior of churchgoers and the location pattern of churches inside South Windsor, a larger sector of a metropolitan area.

Through the present study it was found that most of the suburban churches in South Windsor tend to be located in areas where there were concentrations of their church's denomination population and most Protestants in South Windsor tend to go to churches nearer to their homes. For the churches of the large denominations, their location pattern tends to follow the one mile rule with each church approximately one to two miles apart.

There is a travel limit a person is willing to go to a church. This limit fluctuates and depends on how far the church choices are from his residence, and how
attractive these churches are as compared with each other. If there is no church which is ideal within close distance, then the individual will begin to weight the costs and benefits of whether to spend more time and effort to go to a more remote church, or to go to a nearer but not so ideal church, or not go to church. It was found in the present study that most churchgoers in South Windsor tend to go to churches within fifteen minutes travel time from their homes, and many of the Protestants switched their church memberships to churches in South Windsor because their old churches were too far away from their present residences, or the old churches were outside the limit they were willing to travel. If their old churches were really very important and attractive to them, they would travel a longer distance to continue membership in their old churches instead of attending a nearer church in South Windsor.

Denomination and pastor were the two most important attributes among the church attributes which affect people's choice of a church. Services and activities and fellowship were next in importance, and the least important was convenience. Although denomination was thought by many Protestants to be an important factor affecting their choice of a church, it was also found in the survey that about twenty percent of the Protestants did not have any denomination preference and forty percent of the
Protestants went to more than one church. If there are churches of their own denominations within their travel limit they will consider these churches first, but this denomination preference is not very rigid. It also depends on other church attributes of the church and churches of other denominations within their travel limit. Since the doctrines and teachings of most Protestant denominations are very similar it is not difficult for a person to go to a church of another denomination. As a result, the other attribute of pastor is really a very important factor in affecting the attractiveness of a church. The services and activities attribute and the fellowship attribute also depend on how the pastor can manage to determine the needs and problems of his church members and how he can solve these problems to meet the needs of his church members. The more the pastor can satisfy the needs and solve the problems of his church members the more attractive will be the church as perceived by church members. But there is also a limit in size of membership a pastor can manage efficiently, therefore the larger the size of a church the less efficient the pastor may be, the more impersonal of the environment he may be, and the less attractive the church may be to the church members. Optimum membership limit varies in part with the ability of the pastor.

It was also found in the survey that the convenience factor was thought to be the least important factor in
affecting people's choice of a church, which is contrary to the finding in this study that most people live within close distance of their churches. This discrepancy may be due to the fact that there are many churches within South Windsor representing all the major denominations. Most churches are within the travel limit of most of the people and therefore distance was not perceived as an important factor affecting them in South Windsor. Perhaps members took for granted the location factor, and, as a more emotional response, considered other attributes over the distance factor.

Although a church could be considered very attractive by its church members, if very few people in the area knew about the church it would not draw people to the church and increase its market share in the area. Therefore, the attractiveness of a church has to be adjusted by the information variable of the church as evaluated by residents. When the information variable was added, the attractive index of the churches was found to be a major variable in explaining the actual market share of the Protestant churches in South Windsor.

As a whole, in using the theoretical market share of the churches and the attractive index of the churches the study was able to explain eighty-one percent of the variance in the actual market share of the Protestant churches in South Windsor.
The socio-economic structure of the Protestant population in South Windsor was found to be very similar to the population as a whole in South Windsor, which is a middle to higher income area. It is because of this homogeneity in socio-economic structure between the Protestants that no significant difference was found between the different denominational groups in terms of median family income in South Windsor.

5.2 Limitations of the Present Study and Suggestions for Future Research

As indicated in the title of this study, it is a case study using South Windsor to examine the relationship between the church-going behaviors of Protestants and the location pattern of Protestant churches inside a metropolitan area. The result of this study cannot be generalized into any theory about church locations, it can only provide us some insights about the very complicated relationship between the behaviors of churchgoers and the location of churches. This study only examined the middle to higher income suburban churches, and not the lower income suburban churches, the central city church, the regional church, and churches of non-Protestant denominations, such as Catholic, Orthodox and the Mormons, or churches of the small sects. The churches examined in the present study mostly belonged to the larger
denominations except the Church of God, which has a very small church and had the majority of its members coming from outside South Windsor, which is very different from the other churches in the study area. The study also did not consider the minority churches, such as the Chinese church etc. Will the differences in culture, socio-economic status, value and/or religious beliefs influence the church-going behavior of the members of these smaller churches and the minority churches and the resulting location of the churches. As said by Schaller:57

The history of Protestantism demonstrates that it can reach all persons only through a many-faceted approach. This has involved large congregations and small congregations, Lutheran churches and Episcopal churches, rural churches and city churches, new churches and old churches, big buildings and no buildings.

Therefore more studies should be made about all these different kinds of churches before a more comprehensive knowledge about churches and their location patterns can be accumulated.

The present study also could not discover any significant difference between the denominations in terms of the median family income of the different Protestant denomination populations. In order to better understand this relationship, a larger range of median family income and with more diverse social groups within a larger study area is needed.

The behavior model used in the present study while
not the most comprehensive model used in studying behaviors, was chosen because of its simplicity in data requirements. Since the location of churches is a relatively neglected subject with very few studies, and there is still a lot of unknowns, the simpler model was selected to accumulate more knowledge before more advanced behavior models are attempted. In the future, more advanced behavior models should be used to study the relationship between the behaviors of church goers and the location patterns of churches. A larger study area should be used in order to have a more comprehensive view of the total picture of the relationship between the church going behaviors of church goers and the location of churches.

The model developed by Cadwallader to examine the market share of supermarkets was found to quite accurate in analyzing the market share of suburban Protestant churches in a slightly different form in the present study.
APPENDIX A

The Seven Comity Principles Adopted in 1891:

(1) No denomination should enter a community in which another denomination has a legitimate claim without first conferring with the denominations having such claims.

(2) Whenever possible a feeble church should be revived rather than a new one of a rival denomination organized.

(3) If other factors are equal the denomination having churches nearest a particular community should have first claim on organizing a new church in that community.

(4) The preferences of the community should be a factor in deciding which denomination shall go in, however.

(5) There should be no interference with a denomination which has initiated a new work in a community.

(6) Temporary suspension of work by a denomination is not sufficient justification for the entrance of other denominations.

(7) The Comity Commission shall decide questions of interpretation of these principles.

Major supporters of Comity include: Presbyterian church, Methodist church, Congregationalists and Evangelicals. The others include the Episcopalians and the Lutherans.

APPENDIX B

A Check List of Criteria for Church Site Selection:

1. The nature of the program projected for the church.
2. The type and size of church to be accommodated.
3. The location with reference to those who will use the building.
4. Size with reference to parking, landscaping, and future expansion.
5. Location with reference to objectionable features such as distracting noise, unpleasant odors, excessive dust or smoke.
6. Location with reference to traffic as exists or will exist in view of developments in the neighborhood.
7. Accessibility to the total community for general use as well as by the current membership.
8. Location with reference to other churches.
9. Proximity to other community-serving agencies such as library, schools, museum, parks, etc.
10. Visibility of site that the architecture may speak (preach).

Source: Pratt W.D., "The Church in City Planning", The City Church, March-April, 1959, P.11.
APPENDIX C

QUESTIONNAIRE
(1) Do you have any denomination preference?
   Yes ____ (please list the name of the denomination)
      My denomination is ________________________________ .
   No ____

(2) How often do you attend church (per week, per month or per year) or never attend church?

  ☐ If you never attend church please skip to question 15.

(3) Are you a member of a church?
   Yes ____ (please list the name of the church)
      The name of my church is ________________________________ .
      When did you become a member of this church? ____________ .
   No ____ (please list the name of the church which you are regularly attending or lastly attended)
      The name of the church is ________________________________ .
      When did you start going to this church? ____________ .

(4) Except the church listed on question 3, do you go to other church or churches occasionally?
   Yes ____ (please list the name of the church/one of the churches.)
      The name of the church is ________________________________ .
      Would you tell me the reason of going to this church?
   No ____

(5) Before coming to the present address, which area in Windsor were you living in? Please see the map on page 5 and check one below.

   Same area
   East Windsor
   Central Windsor
   West Windsor
   Outside Windsor
(6) When did you move to the present address?
I moved to the present address in __________

(7) Is the present church (the church listed on question 3) the same church before you had moved to the present address?
Yes ____ (skip to question 8)
No ____ (answer question 7A and 7B)

(7A) Please list the name of the old church.
The name of the church is __________________________

(7B) What was the reason you decided to go to the present church? Please list.

* From question 8 and on; the church means the church you have listed in question 3.

(8) How long does it take you to go to your church from your residence?

Less than 10 minutes ______
10 to 15 minutes ______
16 to 20 minutes ______
20 to 25 minutes ______
More than 25 minutes ______

(9) Have you heard about the churches listed below? Please check if you have heard about them.

St. James' Anglican Church
St. Luke In The Field Anglican Church
St. David's Anglican Church
St. Matthew's Anglican Church
Glenwood United Church
Roseland United Church
Grace United Church
Noble's Memorial Baptist Church
Emmanuel Baptist Church
Gethsemane Lutheran Church
Paulin Memorial Presbyterian Church
Church of God

(10) How attractive and helpful is your church's pastor/minister to you spiritually and in personal life? Please check the appropriate degree along the line below.

Very helpful ______ Not helpful at all ______
(11) How convenient is your church's location to you? Please check the appropriate degree along the line below.

Very convenient _______ _______ Not convenient at all

(12) What is the degree of fellowship/sharing you have with your church members? Please check the appropriate degree along the line below.

Very deep _______ _______ Very superficial.

(13) How attractive and helpful are your church's activities and services (e.g. Sunday school, fellowship, prayer group, social activities, church music and nursery) to you and your family? Please check the appropriate degree along the line below.

Very attractive _______ _______ Not attractive at all.

(14) How attractive is your church's denomination (in terms of social, economic and cultural characteristics, style of worship and the organisation of the denomination etc.) to you? Please check the appropriate degree along the line below.

Very attractive _______ _______ Not attractive at all.

(15) Would you rate the following factors in terms of their importance for you to choose a church. (from 1 the most important to 5 the least important):

Character and style of the pastor/minister _______

The quality and quantities of activities and services _______

Close fellowship/sharing with members of the church _______

The denomination _______

Close to your residence _______

(16) Would you tell me your age? _______

(17) Would you tell me the number of family members in your family?

There are _______ members in my family.

Do all members of your family go to the same church?

Yes _______ No _______

(18) Would you tell me your ethnic background? (e.g. British, Italian)

(19) Would you tell me the annual income of your family?

Below 15,000 _______

15,000-30,000 _______

30,000-45,000 _______

Above 45,000 _______
(20) Would you tell me the level of education you have attended?

<table>
<thead>
<tr>
<th>Choice</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Below grade 11</td>
<td></td>
</tr>
<tr>
<td>Grade 11-13</td>
<td></td>
</tr>
<tr>
<td>Post secondary non-university</td>
<td></td>
</tr>
<tr>
<td>University degree</td>
<td></td>
</tr>
<tr>
<td>University degree with professional status</td>
<td></td>
</tr>
</tbody>
</table>

END OF QUESTIONNAIRE

THANK YOU VERY MUCH
APPENDIX D

Church Planning Principles:

(1) It usually is easier to raise money in the local church for a local building program than for any other purpose.

(2) The amount of money that can be raised, more than any other single factor, determines the size and general character of any major building project.

(3) It is easier to interest laymen in accepting leadership responsibilities in a building project than in any other aspect of the church's program.

(4) The size and nature of the church plant, more than any other single factor, determine how the pastor will spend his time.

(5) The most important single factor in determining the nature and content of the church program is the size of a congregation.

(6) The number of paid staff member in a local church is determined primarily by the financial resources of the membership rather than by need or by the number of members.

(7) There is no such thing as an "optimum number of numbers" which can be applied as a general principle in planning church growth.

(8) There is only one effective way to limit the size of the membership in a local church - "sending out colonization teams".

(9) The ratio of local churches to population in an area rarely is less than one church per 1,000 residents.

(10) The institutional nature of the local church must be recognized in planning for interchurch relationships.

(11) Local churches, and denominations, tend to become institutionalized, and as this happens they become subject to the effects of institutional blight.

(12) The geographical parish no longer is the most meaningful basis for describing the people served by a local church in Protestantism.

(13) New churches tend to reach the newcomers, and particularly the residents of new housing, while older congregations tend to be made up largely of "old timers"
A denomination will achieve a deeper penetration into the total population with many smaller churches than with a few larger congregations.

FOOTNOTES:


15 Ibid., P.120.


18 Ibid., P.100.


Ibid., P.528.

Ibid., P.539.


46. Ibid., P. 204-205.

47. Ibid., P. 198.


51. La Valle B. D., Quantitative Geography (University of Windsor, 1981).


53. Ibid., P. 188.

54. 1971 Census of Population

55. Ibid.


57. Ibid., P. 133.
BIBLIOGRAPHY


Dixon C.J. and Leach R., "Questionnaires and Interviews in Geographical Research", Geo Abstract, University of East Anglia.

Eberhard T.W., "How Does Your Church Measure Up - Church and Community", Church Management, March 1974, P.15.

Forster H.J., The Church in the City Streets, Toronto: The United Church of Canada, 1942.


Marty M.K., "The Suburban Church, A Second Look", The City Church, March-April, (1962), P.4-7.


Vita

Date of Birth: 20th November, 195?
Place of Birth: Hong Kong

Year
1975 Hong Kong Certificate of Education.
General Certificate of Education, University of London, 1 'A', 5 'O'.
1976 The Chinese University of Hong Kong Matriculation Certificate
1976-1979 Attended Hong Kong Baptist College.
1980 Bachelor of Science (Geography), University of Oregon.
1981-1983 Attended University of Windsor.
1983 Master of Arts (Geography), University of Windsor.