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Agricultural Land Search Behavior: A Study of Agricultural Relocation in the Niagara Fruit Belt

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AGRICULTURAL LAND SEARCH BEHAVIOR: A STUDY OF AGRICULTURAL RELOCATION AND EXPANSION IN THE NIAGARA FRUIT BELT

by

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ABSTRACT

This thesis identifies and examines how people look for farms. In it the actual search rather than the decision to seek additional or alternative locations is the focus. It is estimated that the sample of farmers interviewed and surveyed consists of 50 per cent of those who had undergone the process of relocation/expansion in the past two years in the Niagara region of Ontario. The analytic framework used is adopted from a case study of intra-urban mobility. Therefore, this study is an attempt to transpose those urban concepts to an agricultural situation. Five important sets of variables of farmers are examined in relation to their agricultural location decision: (1) socio-demographic and economic characteristics, (2) housing/farming history, (3) a rationalization of the reasons for moving, (4) information sources, and (5) the characteristics of the actual search. Working hypotheses were tested using the Spearman rank-correlation test as well as the Kendall test. The results indicate that a positive relationship exists between the time spent searching and the number of alternatives examined, the time spent searching and the size of the search area, and the time spent searching and the distance of the move. Furthermore, Chi square tests indicated that 'familiarity with the area' is important in the search and that real estate agents and direct personal contact are the major information channels used by the searchers. Nevertheless, different groups exhibit different biases toward different information sources. Barrett's Indices of Search Behavior are presented in this thesis as well so that an analysis of the alternative locations can be made. On the whole the data on agricultural land search period is short, and restricted to a small area. The study concludes that agricultural and intra-urban search behavior differs mainly in degree rather than kind. Different types of farmers exhibited differences in their search behavior. The differences are attributed to the role of the vacancies of the market and the consequent effects of an immobile residence.

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CHAPTER 1

INTRODUCTION

This thesis, as an attempt to identify and examine how people look for farms or additional farmland bears similarity to a popular topic in recent urban geography; the attempt to examine and identify how people look for dwellings. Although the investigation of mobility is not a new topic, this study is unique in that an attempt is made to integrate the research of intra-urban mobility to an agricultural situation. While the need for research to attain theories, models, and concepts that transcend the sub-divisions of geography has been stressed, relatively little has been achieved. The aspect of agricultural mobility has virtually been ignored, while an attempt to regard this mobility as a behavioral process and relating the process to other areas of research is non-existent.

The methodology of the present study is based on Barrett's (1973) study of Toronto home buyer's search and relocation behavior. Barrett's work is used as a model because it appears to be the most comprehensive of the numerous intra-urban mobility studies. The analysis of search behavior is also referred to within a geographical framework, rather than solely in terms of behavior.

Antecedents of the Behavioral Approach to Migration

Since the early 1950's, geography has experienced a basic philosophical and methodological re-orientation. The emphasis on areal differentiation became widely criticized as an exercise in philosophical exceptionalism and one which used

methods of low predictive value (Schaefer, 1953). In addition, the traditional approach was criticized because geography lacked reasonably objective and comparable measurement techniques. The use of statistics was presented to overcome this latter short-coming (Garrison, 1956; Berry, 1959; Burton, 1963). The result was the acceptance of logical positivism which accepted the position that terrestial phenomena had a knowable and rational structure (Barrett, 1973). However, the basis of the re-orientation was the movement towards attempted theory and model building which was facilitated by the use of statistical techniques (Chorley, 1963; Chorley and Haggett, 1967; Harvey, 1969).

A result of this movement was research which attempted to seek normative laws. Normative applications to migration were most widely used in the context of "Economic Man" (Isaac, 1947). The concept of "Economic Man" was that of a rational, optimizing being whose decision making was based upon cost-benefit evaluations (Wolpert, 1964, 1965). This idea evolved into the concept of "Locational Man". However, the inability of this concept to explain the many variations of migration resulted in the re-assessment of the acceptability of "Economic Man" (Wolpert, 1964; 1965).

Behavioral Approach to Migration

Wolpert (1964; 1965) may be considered as the founder of the "Behavioral Man", a not so rational, knowledgeable person whose actions are formulated within the framework of the perceived rather than the objective world.

Cox and Golledge (1969) note that the use of Harvey's proposed indigenous geographic theory which incorporates laws

of spatial form say little of the processes which underlie spatial structure. As a result, there is a need to know of the antecedent decisions and behavior which arrange phenomena over space. Since information is required in a decision, the acquisition, and perception of information and the resultant distortions of space become of prime importance.

The essence of the behavioral approach with respect to mobility is concerned with the perception about origins and potential destinations, the evaluation process, and the resultant actions viewed in a spatial framework. The key terms of this approach are action space, awareness space, place utility, search behavior, and the vacancy set (Barrett, 1973).

Cox and Golledge (1969) also note that research has occurred at two levels: the first is the search for rules for choice, movement, and interaction which are independent of the spatial system in which they operate; and the second is the attempt to relate parameters which describe the actual behavior in relation to the spatial structure. A mean information field is one example. If behavior is constrained by the structure, then that behavior must not be used to explain the structure. Related to information fields, is the concept of information flows. It would appear that this is the key to understanding search behavior.

Clark (1969) describes a mean information field as a quantitative measure of the image or mental map which residents use in the evaluation of relocation opportunities. In addition, it is the regularity of distance decay which encourages the use of information flows. Marble and Nystuen (1971) note

that these fields express the average spatial extent of an individual's short term contacts. This concept provides a reasonable explanatory approach to relocation as an individual would be aware of vacancies only through these information inputs. In this way, one may view an area in terms of spatial patterns of human interactions, since one element necessary for human activity is communication, and to a lesser extent, travel to and from the place of activity. Chapin (1971) notes that location behavior grows out of the needs of day-to-day forms of interaction. This conceptual system is based on values and behavior patterns whose consequences require spaces.

Hanson (1970) refers to information as the spatial point set where with varying degrees of probability face-to-face contact does occur. Two fields exist: one where personal contact does occur; and one where contact can occur. Hanson also notes that communication patterns reflect both a high degree of areal specialization and the spatially variable levels of information which an individual possesses about his environment. It should be noted that these linkages vary with intensity, time, space, and the individual himself. Information flows and fields may be further explained by a trend in modern society in that neighbouring and friendship groups are becoming more independent which results in a less compact field.

The concept of action space, which is closely related to information fields, is pertinent to mobility studies. Brown and Moore (1970) describe action space as the subset of

all locations within areas comprising of those locations for which the migrant has sufficient knowledge to assign place utilities. Place utility is a measure of attractiveness of an area or location relative to alternatives as perceived by the individual decision maker (Wolpert, 1964; Brown and Longbrake, 1970).

Awareness space is a concept which overlaps with action space. Brown and Holmes (1971) explain action space as the set of locations within areas about which the migrant possesses some knowledge. Some areas within this may be better known than others since a variable information surface exists. This is a result of both direct and indirect contact. The awareness space which is the conceptualization of a mental map corresponds to Wolpert's action space. The distinction between these concepts could be considered to be a matter of degree of composition. An awareness space is a product of direct and indirect contacts whereas the action space is the product of direct contact.

The fourth factor in relocation is search behavior which is simply the action taken on the part of the migrant to seek out and acquaint himself with possible destinations. The vacancy set refers to the potential destinations which are available to the potential migrant. This set fluctuates in both size and location and varies with time.

While uniqueness exists in terms of individual action spaces, place utilities and search behavior, it is the aggregates of thousands of these that will reflect a commonality spread over a normal distribution (Barrett, 1973).

Some Specific Considerations Concerning Search Behavior

The Brown and Moore concept of migration "...may be viewed as a process whereby one location is substituted for another in order to better satisfy the needs and desires for each intended migrant" (1970,1). Migration consists of two inter-related elements; the decision to seek alternative locations, and the actual search. These two aspects may be separated to allow for conceptual efficiency and empirical testability.

Search behavior is composed of two sub-aspects: the search process, and the process of evaluation. The behavioral geographer's concern is the migrant's perception of space, the types of information used, and the effects of time on the search. Brown and Moore (1970) note that the search behavior is influenced by the individual's aspiration level which are the upper and lower levels of criteria specified in the evaluation of alternative locations. It is in the construction of the aspiration region that the awareness space becomes important. This is perhaps emphasized by Adam's (1969) conclusion that people possess only a narrow image of a place, and that an individual's mental map (awareness space) of a place is reduced to minimal information.

Search behavior is derived from a portion of the Brown-Moore intra-urban mobility model in which the search is an attempt to determine alternative locations is carried out in terms of the awareness space and its derivative, aspirations levels. These mental constructs are characterized by reducing information of a place to a minimum. However, the amorphous

nature of action and awareness spaces severely limits their operationalization as empirical concepts.

Summary of Barrett's Findings

Because this thesis is modelled after Barrett's (1973) study of relocation search behavior a summary of that research is necessary so that a better understanding of that study, and consequently, this thesis may be realized.

Barrett's research examined a portion of the Brown and Moore (1970) intra-urban mobility model. Specifically the focus centred on the actual search behavior of the relocations rather than on the decision to seek an alternative dwelling. Search behavior was examined as it is the most tangible element in the continuum of action space, awareness space, place utility, and vacancy set.

House buyers were characterized as a subset of all movers. The group exhibited an age bias with respect to intra-country movers as the former was an average of 10 years older. There was a similar bias in terms of the duration of stay at the previous residence. A dramatic shift from tenancy to ownership was also noted. Thirty per cent of the former tenants had lived in housing so that this shift was not restricted to apartment tenancy. Larger families were less likely to move than smaller families. Lower rates of expected future mobility were also noted.

The major reasons for moving were the desire to own a home, and that larger accommodations were needed. Contrary to this the two major reasons for selecting the new dwelling were cost considerations, and design of the dwelling. Thus, a rationalization of the reasons for mobility did not exist.

There was no consistency between dissatisfaction with the new home, and expected mobility.

Real estate agents were the most widely used information source. Driving and personal contact were ranked second.

House searching was not a thorough process. Seventy per cent were familiar with the area to which they moved. In addition, very few homes were examined over a short period within a small area. Although these locations were clustered, no directional bias was found. Moves were characterized by short distance.

Because Barrett's analysis included the alternative locations examined, three indices were developed. The Index of Intensity of Search (derived by dividing the number of houses examined by the time spent searching) indicated a low intensity. This was characteristic of the total distribution of moves. The Index of Search Cluster (the radial distance from the centroid of the locations examined) displayed the limited areal extent of the search. The Index of Concentration of the Search (obtained by dividing the former index by the latter) revealed higher search concentration in the city centre and somewhat lower values for those in the peripheral (new sub-division) areas.

The data indicated that residential search behavior can not be indentified by any one element. The findings indicate that the serious search behavior is restricted to a few houses in a short period in familiar areas.

CHAPTER II

RESEARCH STRATEGY

A Statement of the Problem

The essence of this study is concerned with four questions:

1. How do people look for farms or additional land?

2. In what ways is agricultural land location a behavioral process?

3. Do different types of farmers exhibit different search and location behaviors?

4. Is it feasible to examine agricultural mobility through search behavior concepts derived from urban geography?

Although these are simple questions, the answers to these require an understanding of the agricultural land location process.

The first question is of a practical nature and also the most fundamental. What are the spatial variables involved in the search for agricultural land? Is the search an efficient one? Where do people look for vacancies?

The second question poses another basic question since the research is based on the premise that behavior is influential in determining migration.

The third question assumes that relocation is a behavioral process. Barrett's study was restricted to one class -- home buyers. Murie (1974) hypthesizes differences in movement patterns of newly formed and established households.

Rossi (1955) notes differences between tenants and home owners. The basic question then concerns the idea that research in intra-urban mobility is applicable to agriculture.

The fourth question is the most abstract. Barrett (1973) notes that in the continuum of action space, awareness space, place utility, and search behavior, it is search behavior that is the most tangible. The other three variables tend to be of an amorphous nature and the most difficult in terms of refining models to enable empirical testing. It is on the belief that sub-concepts must be further refined to enable broader generalizations that this study is based. The study is an attempt to isolate and measure the role of search behavior in agricultural mobility.

A Justification For The Study

Jones (1977) notes that his book is largely about urban society and virtually excludes the rural world. This reflects the amount and distribution of studies. This does not distort the real situation because we live in an urban society and most of the problems lie in the city. This summary of Jones' introduction clearly outlines the geographer's viewpoint. There are other areas of an equally vital concern, one of which is agricultural land.

Intra-urban mobility was considered an appropriate area of research on the basis that twenty per cent of the urban population moves once every year (Simmons, 1968). Kosinski (1976) notes that 51 per cent of Canada's urban population moves in a five year period while the proportion for the rural non-farm and farm populations are 43 and 19 per cent respectively. Superficially, it would appear that the farm popula-

tion is a stable element. If, however, Keeble's (1971) work on industrial mobility is taken into account, a reconsideration of the existence of stable farm populations is warranted.

Keeble describes two aspects of the problem of a movement definition for industry. The first aspect concerns the definition of discrete economic units in which the distinction between an establishment and a firm must be made. Basically, the distinction is that the latter may operate several of the former.

The second aspect details the distance aspect of the movement definition in which the problem concerns the lack of a commonly accepted distance definition. Logically, if any new establishment is set up or if an establishment is replaced on a site which is not actually part of or contiguous with that already occupied by the firm, then the result is movement. This definition embraces a very large number of movers. This type of movement accounted for 23 per cent of Keeble's sample. This high frequency of short distance moves which may involve either a complete relocation or the occupancy of additional land has been virtually ignored in studies of industrial mobility.

In addition Keeble notes that firms cannot be regarded as organically unified entities requiring a single location at which point to perform a single clearly defined function. Every business is a packet of functions, and within limits, these functions can be separated and located at different places. Firms are themselves aggregates of different activities which may possess different locational needs and hence, differ-

ent movement probabilities. It is the contention of this thesis that agricultural mobility may be viewed in terms of Keeble's conclusions.

Population decline in rural areas is one of the most significant social developments of the twentieth century. Although a large number of researchers have examined the movement of populations from the farm to the city, the basic nature of spatial mobility among farmers remains to be systematically explained. Bremer (1974) addresses himself to the problem of persistence and turnover patterns. While Bremer's article does give some meaningful insights, little is gained in terms of the process of mobility. Instead a description of the people and the situation involved is given. Bremer notes the increasing trend towards persistence. Replacement explains only 60 per cent of the turnover. The remainder of the farms are either merged or leased. Replacement is explained by sons entering farming and replacement from outside. A lack of a relationship between turnover rate and net migration also exists.

Smith (1975) makes a statement similar to one by Bremer by noting that farms consisting of separated tracts appear to be increasing in number and in proportion of commercial farm operations because of the inability to acquire land near their farms. Farmers have joined the ranks of those who commute to work. Williams (1972) notes that sweeping changes in the past thirty years in agriculture have received little attention from geographers because it is deeply embedded in the geographical mind that rural settlement is characterized by stability

and simplicity, especially when compared with urban settlements. Instances of over-simplification are many. The farm is considered to be a combined place of work and residence and the farm itself is considered to be a compact unit. In contrast, the office and factory are thought of as a complex linked part of a larger structure. With this stereo-typical attitude, Keeble's third aspect is brought to mind.

Contemporary knowledge of farm layouts is confined to the people working each farm or to informed acquaintances. Farmers and close observers are well aware of the prevalence of fragmented farms in North America (and Australia) but they are little known compared with the rich documentation of the phenomena in other parts of the world. A generation of emphasis on visible agricultural phenomena may be traced to conferences of prominent geographers in the rural American Mid-West during the 1920's who recognized and emphasized that "...a large proportion of the facts needed by the geographer can be obtained only in the field..." and that "...field maps constitute a vital part of the record of those observations" (c.f. Smith, 1975, p. 68). The mapping, combined with the attempt to relate land use to physical factors diverted attention from the individual's role in shaping geographic patterns. Only recently with the work of Wolpert (1964) and Chisholm (1970) has the human choice element been included. (The mobility aspects, however, have been ignored). The outline of farm units is not visible on aerial photographs and in ground observation. In order to locate the holdings which comprise individual farms, one must ask the person who owns the land.

Only a few studies (Kollmorgen and Jenks, 1958) have tried to separate realities from myth about the geographic organization of American farms.

The myth of compact farms and consequently agricultural immobility (except in the rural to urban migration context) is based on the premise that the visible landscape may seem fixed. In reality, ownership and the working configuration are transformed repeatedly.

The image of unchanging and stable rural features has been projected to a rural society to suggest an in-built inertia to change. This projection has been supported by sociological and moral overtones. This has, of course, led to the oversimplification of the rural scene as well as to the neglect of the very existence of an urban society. Dynamics of rural settlement and change are seen in the context of the ever expanding edge of urban settlement. In essence, the inattention to the extent and frequency of fragmented farms has encouraged the stereotyped and inaccurate impression of the changing North American farm, and consequently the myths of agricultural immobility.

Although fragmentation is only one source of agricultural mobility, it is necessary to briefly describe fragmentation, so that agricultural mobility as a valid research area can be justified. Smith (1975) notes the similarities between the urban and rural situations. In both areas, subject to the actions of private owners, the geography of landholdings resembles a giant kaleidoscope, ever changing, continually reforming, always "unstable".

People in dissimilar stages of life are the agents responsible and the process of fragmentation unfolds in a myriad of management decisions. For example, the young get started by operating their father's land and with the rental of additional land. Others rent land to pay off a mortgage. Another is satisfied with what he has while others are retiring and selling. Included in this scenario is the role of rural residents and part-time farmers who may be undecided about expansion.

Fragmentation is the result of several factors. There are long term pressures to enlarge. Fuel is still relatively cheap. But the most important element is the vagaries of buying, selling, and rental of properties piecemeal and privately. Fragmented (which usually implies that a farm has been expanded) is only one kind of an adjustment to the demands of mechanized agriculture, more often than not, to attain economies of scale. It becomes a means of staying in agriculture. Fragmentation in North America can then be considered a type of land reform (Smith, 1975). This is contrary to the European situation in which land consolidation is considered land reform. Thus, with a change in transportation from foot and horse to truck and tractor, there is a new force at work in the landscape which gives a result similar in kind to traditional fragmentation, although different in scale and origin (Williams, 1972).

Agriculture mobility is a valid area of research even if only considered with respect to the long term directions of declining numbers of farms, fewer smaller operators and increasing units organized with multiple holdings. Dispersal

of holdings indicates that the demand for land from a declining number of operators exceeds the supply offered by marginal farmers and those ready to retire. Farmers must expand or intensify and those who do not are short-term or marginal operators (Smith, 1975).

Agricultural geography too often tends to be a discussion of agricultural typologies or agricultural regions. Overall, there is a strong lack of theory. As in geography in general, the behavioral approach was a reaction to the traditional approaches. Environmental determinists held an overemphasis on physical factors as a causative agent for agricultural patterns and structure. The normative economic approaches assumed that market and transportation factors were the basis of agricultural patterns. This behavioral approach takes into account the human variable as a decision maker. Unfortunately most of this work has beenapplied to determine land use patterns and crop associations. Little attention has been given to agricultural mobility as a process. Tarrant (1974) notes that geographers are concerned only with one aspect of the 'competition for land' which is the urban competition. The aspect of farmers competing for land is virtually ignored. The gist of this research is then a question which has not yet been asked by geographers. What is the process whereby people seek farmland? To this end, the behavioral approach seeks this process.

Agricultural mobility may be defined in terms of the Brown and Moore place utility adjustment definition. The definition must be extended so that a change in residence is not

required for mobility to occur. This is similar to Keeble's aspects of the industrial mobility definition.

Agricultural mobility may be examined through the use of intra-urban concepts as an exploratory framework for identifying this process. That approach is appropriate as this allows for the use of noneconomic variables. This is important, because agriculture can be considered as a combination of a way of life and an economic activity. (Home ownership also incorporates economic and 'way of life' reasoning).

Behavioral studies should not be put aside only because issues of social relevance are the current fad. Instead an attempt to integrate these studies so that concepts that transcend geography's sub-divisions may be developed. This research is also a reaction to the agricultural myths and the neglected aspects of agricultural mobility as well as a reaction to the predominant urban view so that the competition for land is placed in a broader context than that of competing non-agricultural uses.

Hypotheses Concerning Search Behavior

Several hypotheses will attempt to identify the critical elements of the search process. These were adapted from the Barrett study to suit the agricultural situation. The critical elements are:

1. the length of time spent searching;
2. the area included in the search;
3. information channels used in the search; and a closely related concept which is familiarity with the search area;
4. the number of locations examined;

5. the gross farm sales (as a surrogate measure for both income, and the price paid for the farm);

6. farm size (also as a surrogate measure for income, and the price paid for the farm);

7. managerial ability of the migrants;

8. distance between past and present locations;

9. the degree of search efficiency.

Barrett notes that non-parametric tests should be used as the nature of the interview data is not suited to the rigorous testing of parametric tests. The data to be analyzed are questions of relationships. Spearman's Rank Correlation and Kendall's Tau were used to test rank-order correlation. Kendall's Tau is the preferred test when there are several tied rank. In addition, Kendall's Tau is more useful as the significance of Spearman's Rank is doubtful in small cases. Both measures have a correction for ties. In addition, although the correlation values may differ, both usually yield the same significance as they both have equal power to reject the null hypothesis (Daniel, 1978; Blalock, 1960). The Chi-square goodness of fit test was used with a second group of hypotheses concerning expected frequencies of observations.

Data Sources

Three types of data are used in this study: indirect sources in the form of lists of recent movers; direct sources in the form of questionnaires; and supplementary sources comprising data concerning the characteristics of the research area.

The basic source of information was the indirect data

which consisted of lists of names and addresses of new farmers who had purchased a farm, and existing farmers who had either relocated or expanded their farm by buying or renting additional land. The data was obtained from various sources. These sources were farm supply companies, fruit and vegetable shippers, fruit processors, and real estate companies. Another source of information concerning the mobility of other farmers was obtained from the farmer being interviewed.

Unlike the Barrett study, this sample was not restricted to very recent movers, but included movers who had done so in the past two years. This was necessary so that a sufficient sample could be found. The problem of having to draw the sample from a small group was lessened by the high rate of response.

The second type of source is the direct data which was obtained by interviewing the movers during autumn, 1978 and winter, 1979.

The basic data sources resulted in the provision of the names and addresses of 87 farmers who had been mobile in the past two years. Eight of these were unwilling to participate in the study while three other surveys were discarded due to incompleteness. The information derived from the 76 individuals who completed the survey forms the core of the data. The method of enquiry was of the interview type (54 cases) while 18 individuals completed the survey without an interview. In four other cases, the survey was left with the individual and picked up later when it was complete. Although an interview was attempted in all cases, the quality of the informa-

tion obtained from the latter 22 cases did not differ substantially from the previous 54 individuals.

A third category of sources provided supplementary data. This included discussions with agricultural representatives at the Horticultural Research Institute of Ontario at Vineland. Other secondary sources included Regional Municipality of Niagara planning reports on agriculture, and a report on the present condition and farmer attitudes in the Fruit Belt. These sources were useful in providing aggregated data on the characteristics of the study area. (It must be stressed that mobility also includes those obtaining additional land without involving the relocation of the residence. Henceforth, the terms "mobility" and "movers" will also include those individuals). The direct and indirect sources provided disaggregated data concerning the mobile population.

Sampling Frame

The sample size was determined on the basis of the number of movers who could be found. Kosinski (1976) notes that nineteen per cent of Canada's rural population moves once every five years. Kosinski's value is approximately five per cent per year. Hence, fifty to seventy farmers move each year (based on 1400 farms in the area). It is estimated that 150 farms are rented (source: discussion with N. Hoag, Agricultural Representative, Horticultural Research Institute. This value as well as his estimated four to five per cent turnover rate for buyers is attributed to "gut feelings"). The mobility rate for renters can only be estimated. Because renters have higher mobility rates than buyers, a random figure of ten

per cent is accepted as a minimum. Assuming that most leases cover a five year period, then it follows that twenty per cent of the leases expire each year resulting in a maximum annual turnover rate of 30 farms per year. One should bear in mind that many leases are extended so that the turnover is in fact less than 20 per cent.

Because this study includes movers for a two year period the sample is drawn from an estimated 100 to 140 farmland sales and 30 to 60 farmland leases. The 54 sales in the sample represent a 40 to 50 per cent coverage and the 22 leases indicate a 40 to 55 per cent coverage of the mobile population. Overall, a 40 to 60 per cent coverage is achieved.

Figure 2-1 illustrates the means of aggregating the data. This aggregation was necessary as the small numbers in some of the groups would not enable any accurate or reliable interpretation. Henceforth, reference will be made only to the aggregated groups.

Table 2-1 indicates the group and sub-group sizes aggregation, and the group nomenclature. New farmers and existing farmers who buy land outnumber renters by 2.5 to one. New farmers account for 40 per cent of the sample. The established (existing) farmers account for approximately 60 per cent of the sample. The established farmer group consists of approximately equal numbers of buyers and renters. Also included in Table 2-1 is the group subscripts which will be used in the contents of this paper. For that reason, an explanation concerning the nomenclature is given. The group structure is clarified in Table 2-2 in which the groups are defined.

FIGURE 2-1

LEVELS OF DATA AGGREGATION

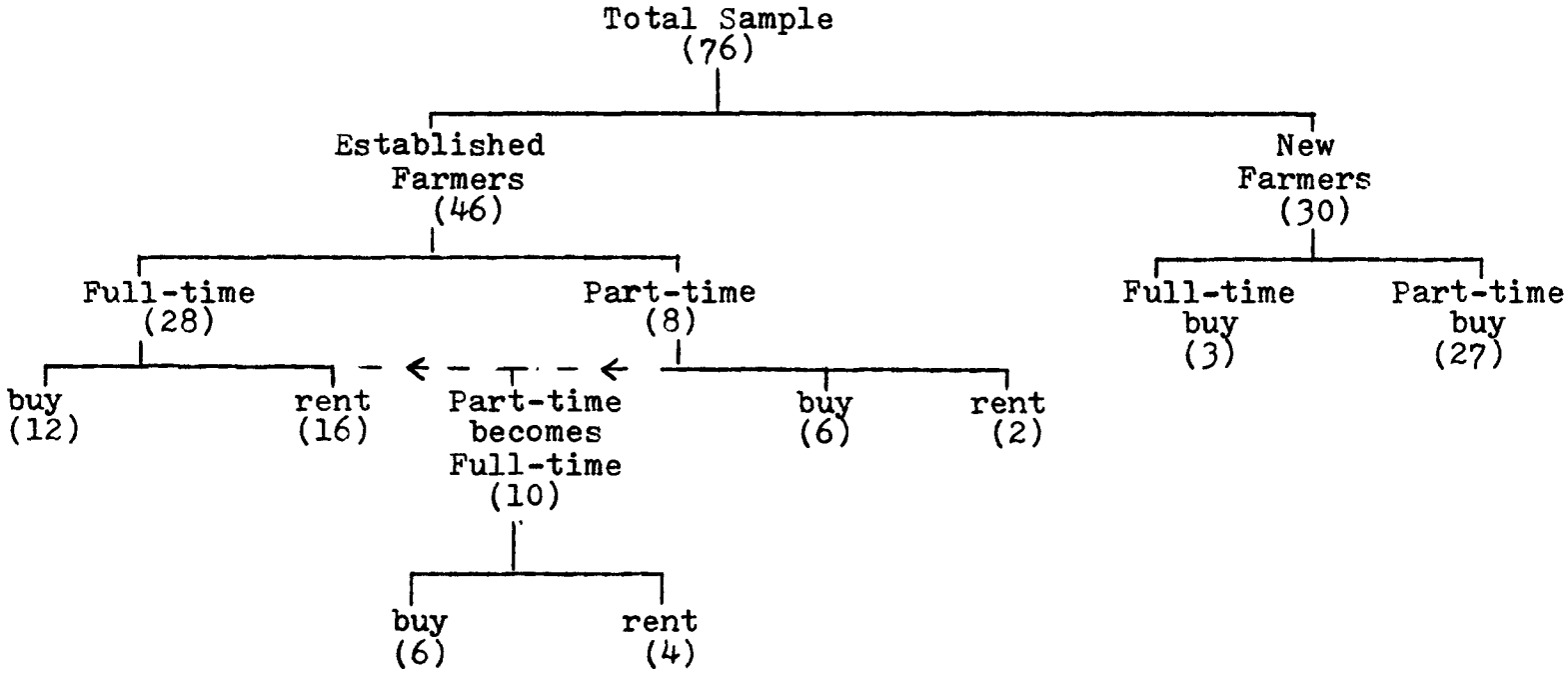


TABLE 2-1

GROUP SIZE AND DERIVATION OF NOMENCLATURE

Group Name	Sample Size		Original Status	Subsequent Status	Nature of Land Transaction
OPB	27	O	non farm	P-part-time	B -buy
OFB	3	O	non farm	F full-time	B buy
PFB	6	P	part-time	F full-time	B buy
PFR	4	P	part-time	F full-time	R rent
PPB	6	P	part-time	P part-time	B buy
PPR	2	P	part-time	P part-time	R rent
FFB	12	F	full-time	F full-time	B buy
FFR	16	F	full-time	F full-time	R rent

Aggregated Levels	Sample Size	Name	Group Constituents
N	76	total group	OPB OFB PFB PPB FFB PFR PPR FFR
NB	54	total buyers	PFB PPB FFB OFB OPB
NR	22	total renters	PFR PPR FFR
F	41	all full-time	OFB PFB PFR FFB FFR
FB	21	all full-time buyers	OFB PFB FFB
FR	20	all full-time renters	PFR FFR
P	35	all part-time	OPB PPB PPR
PB	33	all part-time buyers	OPB PPB
PR	2	all part-time renters	PPR
NEW	30	all new	OPB OFB
BEST	24	established buyers	PFB PPB FFB

TABLE 2-2

GROUP DEFINITIONS

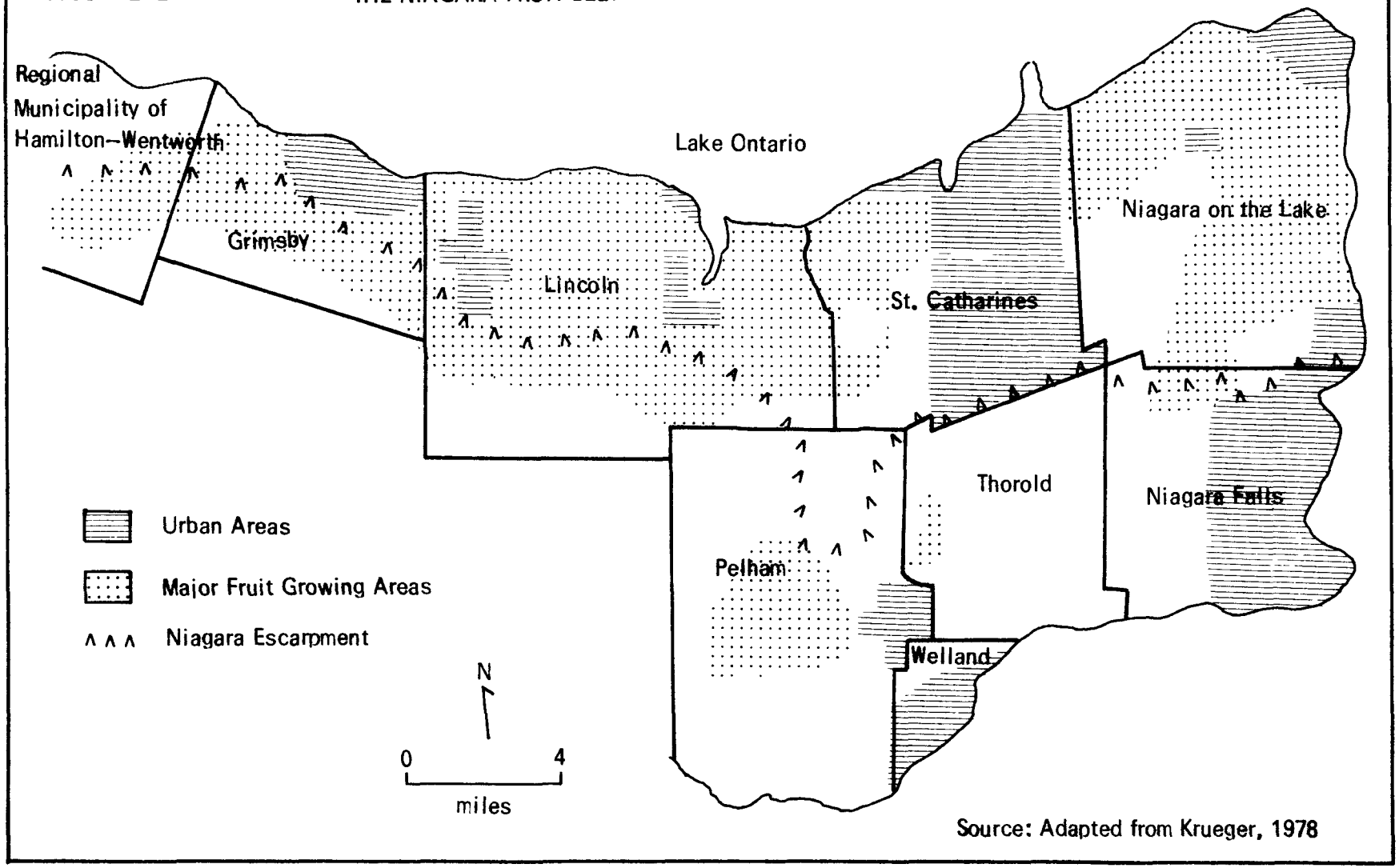
Group	Definition
N	- includes all of the individuals in the sample who have purchased or rented farm land.
NB	- includes all those who have bought a farm, or also those adding additional land to their farm by land purchase. - may or may not include a relocation of the residence.
NR	- includes all those who have rented land. - all the renters own their farm so that rental refers only to additional land that is rented. - does not include a relocation of the residence.
F	- this refers to all those who farm full-time.
FB	- includes all full-time farmers who have purchased or added a farm through a land purchase. - may or may not include a relocation of the residence.
FR	- includes all full-time farmers who rent land in addition to the land they own. - does not include a relocation of the residence.
P	- refers to all those who farm part-time.
PB	- includes all part-time farmers who purchase or add a farm through a land purchase. - may or may not include a relocation to the residence.
PR	- includes all part-time farmers who rent land in addition to the land they own. - does not include a relocation of the residence.
NEW	- refers to those farmers who have just purchased their first farm. - includes relocation of the residence.
BEST	- refers to those farmers who already own their farm but buy another farm or additional land. - may or may not include a relocation of the residence.

Figure 2-2 indicates the areal distribution where the mobility may occur, while Figures 2-3 to 2-5 illustrates the specific origins and destinations. A notable absence of renters can be detected in three areas while an "over-representation" can be detected in St. Catharines. Overall, there is a wide spread distribution of groups throughout the area. Most of the mobility occurs in the Niagara and St. Catharines areas and to a lesser extent in the Lincoln area.

There are some inherent biases in the sample. The 41 full-time farmers account for only 21 of the 54 purchases while the 35 part-time farmers account for 33 of the 54 purchases. The full-time group is divided evenly among the purchase and rental markets while the part-time group is essentially restricted to the purchase market. The term renter must be clarified. In this study, a renter is one who already owns a farm so that a lease is only in addition to ownership. It must be remembered that mobility does not necessarily include a relocation of the home. It may also refer to the purchase or leasing of land, adjacent to, or contiguous to the home or separated (fragmented) from the farmstead. The farmstead refers to the parcel of land containing the home. In this study, nine of the 24 established buyers did undergo a complete relocation (i.e. they also changed residences). Of these, three were part-time farmers.

All the people included in this study are fruit growers with the exception of three greenhouse operators and two nursery operators. For this study this distinction will be ignored as these are as much of an agricultural activity as fruit farming.

FIGURE 2–2 THE NIAGARA FRUIT BELT



Source: Adapted from Krueger, 1978

FIGURE 2–3 ORIGIN AND DESTINATION –NEW FARMERS

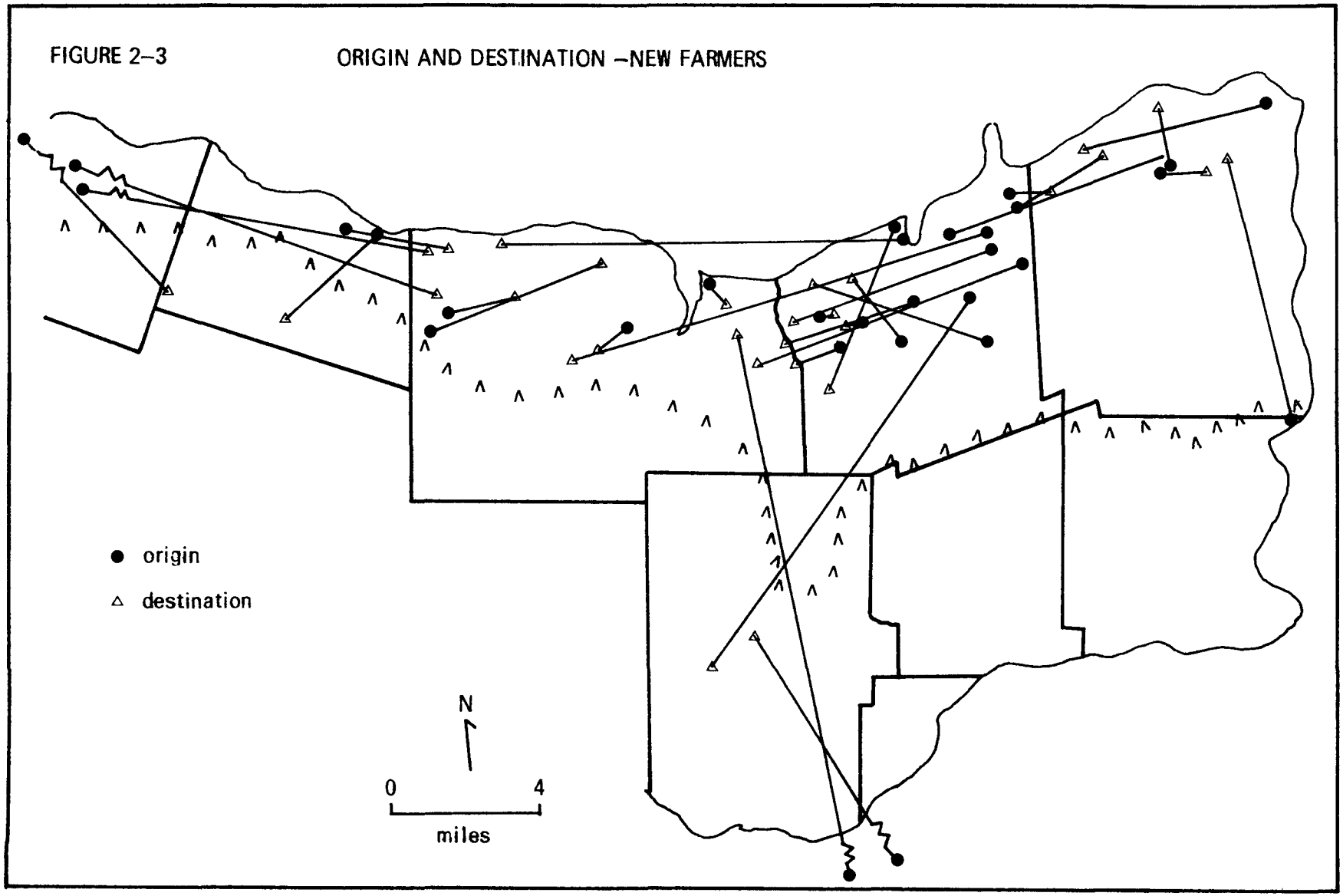


FIGURE 2–4 ORIGIN AND DESTINATION – ESTABLISHED BUYERS

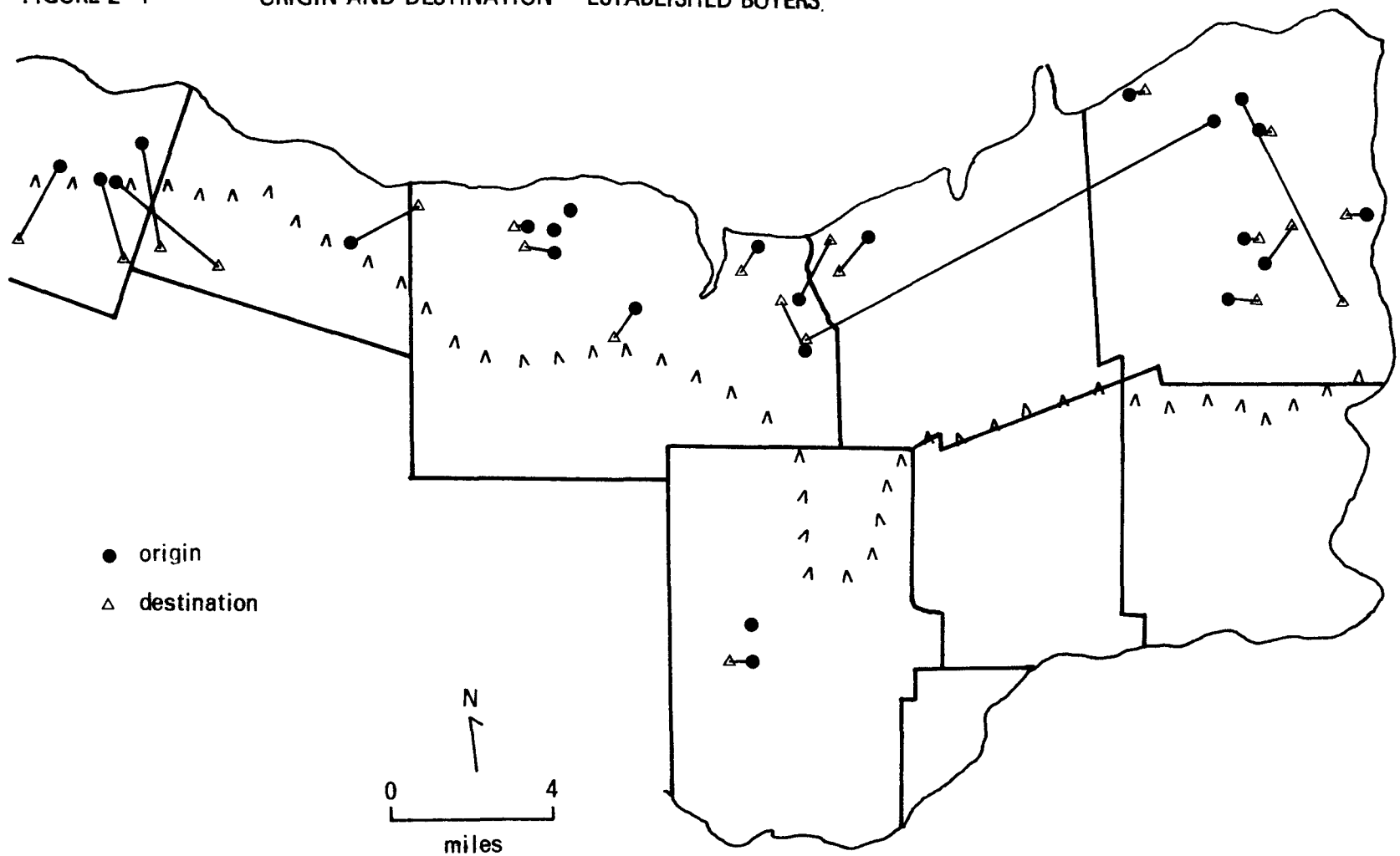
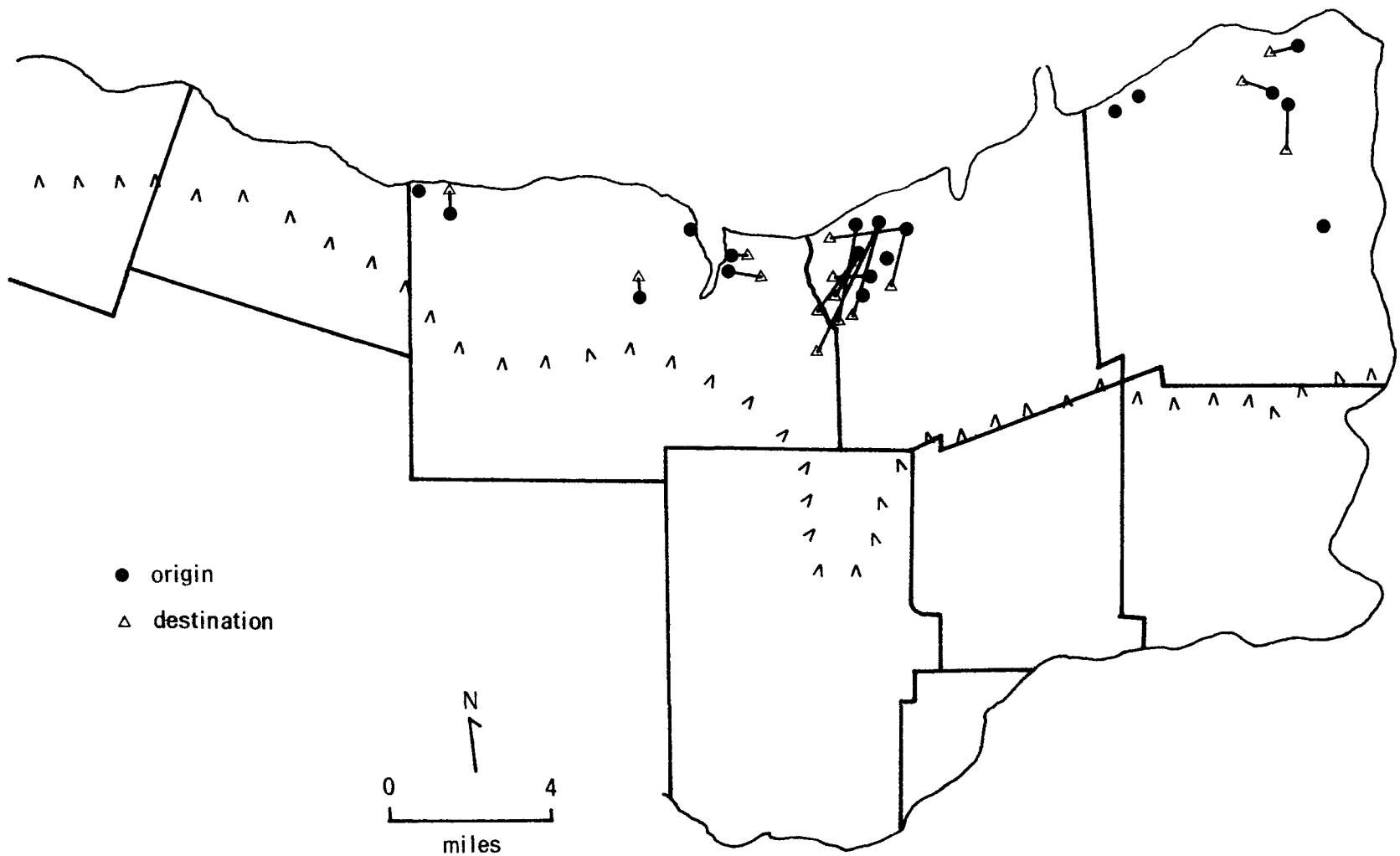


FIGURE 2–5 ORIGIN AND DESTINATION – RENTERS



The problem of who to study as a decision maker when a partnership existed (six cases) was alleviated by sampling the majority partner. This was synonymous with the senior partner.

A bias concerning age exists. Like the intra-urban mobility studies in which home buyers are examined, an age bias against the younger groups exists. In terms of farm renters there also is a bias towards the older ages as rental occurs only in cases where ownership already exists. Age bias also exists in the dichotomy of new and established farmers. A socio-economic bias exists, especially in terms of the new farmers, as ownership implies higher incomes.

Another source of bias concerns time. Because some of the sample were asked questions concerning behavior, it is expected that the more recent movers had a better ability to recall the events. Hence, the ability to recall information is not held constant.

Because the study focused on land that was purchased or leased for agricultural purposes, the sample was selective of rural mobility. Country lots are not included in this study. Also excluded is agricultural land that was purchased by non-farmers. If that land, however, was released for agriculture, eg. renting it to a farmer, it was included in the study.

By definition, selecting a study area means that one area over another has been sampled. The Niagara Fruit Belt was selected for several reasons. Here, there is a large number of part-time and full-time farmers. These high proportions

of each allow for comparison. Also, data on the area, relative to the data for other areas is adequate. This is crucial when agricultural mobility data is virtually non-existent. Related to this aspect is that the author's personal knowledge of the area of agriculture, and of the farmers is a definite advantage when data is collected from such diverse sources. The familiarity with the situation seemed to lessen the interviewee's reluctance to participate in the study. This is crucial when only a small sample exists.

The organization of the sample in this manner has a high degree of rationality. It is reasonable to compare urban mobility with agricultural mobility. Urban mobility is characterized by complete relocations. In this sample, a complete relocation is undergone by more than one-half of the sample. Twenty-two individuals in the remainder of the sample are renters who do not relocate their residence. Because renters display different search behavior than buyers in urban areas (Rossi, 1955; Barrett, 1973; Boots et. al., 1977; Hecht et. al., 1978), the inclusion of renters in this study may be considered reasonable. The small proportion of existing farmers who purchase additional land without involving a relocation of the residence, is included so that a fuller view is given concerning the behavior of established farmers who buy farmland. A comparison with urban mobility is also valid as much of the sample is located within the political boundaries of urban areas. In addition, this comparison is reasonable as the thesis is concerned with search behavior rather than with the factors affecting the choice of land.

In summation, the purpose of this chapter is to state the problem, justify the need for the study (in terms of expanding previous research), and to outline the various data sources and the sampling outline. Before the data is analyzed, it is necessary to examine the characteristics of the research area as these characteristics will place certain limitations on the study.

CHAPTER III

CHARACTERISTICS OF THE RESEARCH REGION

Because the data for this research is restricted to one specific area, the basic characteristics of this area must be known.

Overview of the Fruitlands Agriculture

The Niagara Fruit Belt, located in the Niagara Peninsula in southern Ontario, is situated between Lake Ontario and the Niagara Escarpment and extends from the Niagara River to Grimsby which is approximately 15 miles east of Hamilton. Earlier studies indicate that the Grimsby-Hamilton area is part of the fruit belt. However, under present conditions this area has become so urbanized that most of the farms have been lost. The fruit belt extends south of the Escarpment in the Pelham area where a break in the escarpment occurs. In other areas the boundaries of the fruit belt have been pushed above the escarpment. These latter areas tend to be grape growing rather than the tender fruit growing area. The area between the lake and the escarpment varies in width from one and a half miles in the west to six miles in the east and approximately 15 miles at Pelham. The approximate length of the fruit belt is 33 miles. For the purposes of this study the southern boundary follows the escarpment although fruit growing extends one to two miles beyond it. Tender fruit soils are found exclusively below the escarpment and in the Pelham area.

The Niagara fruit belt, relative to other agriculture

in the Niagara Peninsula, merits special attention. This may be viewed with respect to the uniqueness of the physical conditions and in terms of the volume of production. This area contains 80 per cent of the national grape acreage, 60 per cent of the national peach acreage and 50 per cent of the national plum, cherry and pear acreage (Krueger, 1978; 1959).

The physical basis, although only one element of several, such as technological, cultural, historical, markets, and inertia, is the prime agent responsible for this area being Canada's most prominent area of fruit production (Reeds, 1969).

It is the interaction of soils, climate, drainage and site that result in the uniqueness. The sandy soils have the good drainage required by the fruit trees. Lake Ontario acts as a moderating influence so that severe winter temperatures and early spring frosts are lessened. Precipitation as well as the "growing degree days" are sufficient during the growing season. An absence of high velocity winds is notably present due to the presence of the escarpment. The ultimate consideration is that there are few alternative locations for tender fruit growing in Canada that possess these favourable physical considerations (Krueger, 1977; 1978).

The historical development of fruit growing in the area is founded on the basis of comparative advantage. Reeds (1969) notes that in 1880, the area was similar to the rest of Ontario in that mixed farming was predominant. Only seven per cent of the farmland was devoted to orchards and gardens. By 1900, it was realized that there was no particular advantage for growing apples. The Georgian Bay area had an equal foot-

ing in the domestic market while Nova Scotia could compete at a better rate for the overseas market. During the severe winters of 1897-1904, the advantages of climate became apparent with the severe winter damage that occurred in Kent and Essex counties. A decline in mixed farming resulted because fruit yielded higher returns per acre. The accessibility of the urban markets accelerated the trend towards fruit growing. This trend was re-enforced by the establishment of the Horticultural Research Institute in Vineland.

The fruit growing is generally characterized by peach and grape growing. While there has been a decline in peach acreage, there has not been a decline in production (Niagara Official Plans Study, Report #10, 1972). There is a trend towards increasing peach fruit for the fresh fruit market, while peach processing is at a decline/(Niagara Official Plans Study, Report #10, 1972). It is essentially the peach crop that is adaptive to the tender fruit soils. Grapes can be grown on a wider variety of soils, and for that reason, they can be grown above the escarpment. The grape crop is used primarily for processing, particularly for wines. The introduction of mechanical harvesting and the introduction of French Hybrid grape varieties has enabled an increase in grape acreage and production (Niagara Official Plans Study, Report #10).

The area is characterized by small farms (44 per cent) and lower incomes (60 per cent are low income) than the provincial averages. This is essentially a result of the large proportion of part-time farmers. Reeds (1969) notes that the phenomenon of part-time farmers is a permanent feature. How-

ever, they are an unstable feature because of the higher turnover rates than in the full-time sector.

Several problems are plaguing the agricultural industry. There is the cost-price squeeze. Market uncertainty, a lack of protective tariffs and uncertainty about the future of fruit growing exist (Niagara Official Plans Study, Report #10). However, there are farm level adjustments occurring. Intensification, mechanization and expansion are occurring. These solutions, however, have limitations as the net value of production is often less than the production increase.

There is also the problem of land conversion to non-agricultural uses. The problem associated with this loss is reflected largely in the haphazard manner in which it occurs. Krueger (1959; 1978) notes that the effects of this are inflated land values, uncertainty in future land use patterns, assessment and taxation problems, and land becoming idle while waiting for potential development to occur. These features result in some land being allowed to deteriorate because of the anticipated sale for non-agricultural purposes. Since all the tender fruit soils are presently planted, any further increase in urbanization will result in the reduction of tender fruit crops.

Land preservation has become a central issue. The basic questions about preservation concern the uniqueness of the area, the volume of production, and the lack of alternative fruit growing areas. The land as a base for urban expansion and the uncertainty of the agricultural future (e.g. cost price squeeze), are the conflicting issues.* There is,

*See Krueger, 1959, 1977, 1978; Reeds, 1969 for a more detailed summary.

however, an increasing cultural resistance to urban encroachment.

Characteristics of the Farms and Farmers

The following section illustrates the socio-economic and demographic characteristics of the 1400 farmers in the area. Just as the characteristics of the study area often impose limitations on the universality of a study, so may the characteristics of the population since they may be considered a more detailed description of the study area. Also, these characteristics have several implicit references to mobility potential and consequently offer further evidence of the prevalence of agricultural mobility.

Reeds (1969) estimates that one half of the farmers farm on a part-time basis.

Age

There is no real age differences when the two groups are compared. What is significant is the old age of the farmers. Approximately 75 per cent are older than 45 years. Table 3-1 gives more specific age brackets.

Ethnic Origin

A Canadian origin accounts for 40 and 60 per cent of the part-time and full-time farmers respectively. Overall, 50 per cent have a Canadian origin. Table 3-2 gives more detailed breakdowns.

Length of Ownership

Table 3-3 indicates the greater stability of full-time farmers and the higher turnover rates for part-time farmers. This table, however, indicates that all full-time farmers are

TABLE 3-1

AGE OF THE FARMERS

Age	Proportion (%)
Less than 30	6.0
30 - 49	50.0
50 - 70	41.0
Older than 70	3.0
Total	100.0

Source: Bennett, 1972 p. 7

TABLE 3-2

BIRTHPLACE

Birth Place	Full-time (%)	Part-time (%)
Niagara Region	37.6	22.4
Canada and United States	16.5	19.9
United Kingdom	3.9	3.4
Western Europe	13.8	20.7
Eastern Europe	27.0	33.6
Other	1.2	.0
Total	100.0	100.0

Source: Bennett, 1972 p.25

TABLE 3-3

LENGTH OF OWNERSHIP

Ownership (years)	Full-time (%)	Part-time (%)
Less than one	2.6	6
1 - 5	16.6	22.4
5 - 10	12.7	27.6
10 - 20	26.0	29.3
20 - 40	34.2	14.7
More than 40	8.3	0
Total	100.0	100.0

Source: Bennett, 1972, p. 21

TABLE 3-4

FARM SIZE DISTRIBUTION

Size	Full-time (%)	Part-time (%)	Total (%)
Small	50.0	50.0	100.0
Medium	75.0	25.0	100.0
Large	81.0	19.0	100.0

Source: Bennett, 1972, p. 31

TABLE 3-5

FARM SIZE AND PROPORTION
OF FARMS HAVING CROPS SPECIALIZATION

Farm Size	Grapes (%)	Peaches (%)	Total (%)
Small	28.0	48.0	76.0
Medium	46.0	36.0	82.0
Large	66.0	30.0	96.0

Source: Bennett, 1972, p. 32

not old nor do all part-time farmers have high turnover rates.

There is a greater tendency for full-time farmers to inherit a farm. It should be remembered that a family farming tradition does not mean someone will farm full-time any more than one from a non-farming background. Only one fourth of the two groups had farming parents.

Farm Size

The following is an arbitrary classification of farm size: small if less than 25 acres; medium if 25 to 50 acres; and large if the size exceeds 50 acres. This is an arbitrary division particularly if the crop is considered. For example, 20 acres of peach production yields the same return as one hundred acres of grapes (Niagara Official Plan Studies, Report #10).

Table 3-4 indicates the division of farm size classes between full-time and part-time farmers. This clearly indicates that part-time farmers tend to be small and full-time farmers tend towards a larger size. However, small farms are equally divided among the two groups.

The median size for full-time farms is 45 acres while the median value for part-time farms is 13.5 acres. What is a more important consideration is the median fruit acreage; 31 acres for the full-time and 10 acres for the part-time group. Eighty per cent of the part-time farms are less than 20 acres while only 30 per cent of full-time farms are in that category (Niagara Official Plan Studies, Report #10).

Farm size is related to fragmentation. In essence, the larger the farm the greater the tendency for it to be

fragmented. Ninety-two per cent of the small farms and 79 and 61 per cent of medium and large farms respectively are in one piece. These figures refer only to land owned by the farmer. On that basis, rented land should make fragmented farms even more prevalent.

Having a partner is also related to farm size. The larger the farm the greater the tendency to have a partner. The proportions of small, medium, and large farms having partners are 8, 25, and 54 percent respectively (Bennett, 1972).

Another trend is that the larger the farm, the greater the tendency for it to have been expanded through land purchases. The proportions for small, medium, and large farms to display this characteristic are 9, 35, and 41 per cent respectively. In addition, of the 42 per cent of farmers having cropland changes, two thirds of these had expanded (Bennett, 1972).

Crop Specialization

There is a tendency for small and medium size farms to specialize in peaches and for large farms to specialize in grapes. This is evidenced in Table 3-5. The farmer status also indicates a crop specialization (Table 3-6). Forty per cent of full-time and 20 per cent of part-time farmers specialize in peach production: (on the basis of at least 60% of the acreage devoted to peaches) whereas only 15 per cent of part-time farms specialize in grapes compared to the 40 per cent of full-time farms. Approximately one half of part-time farms are mixed (i.e. no crop exceeds 60 per cent of the acreage) while 40 per cent of the full-time group are considered to be mixed fruit farms.

TABLE 3-6

FARMER STATUS AND CROP SPECIALIZATION

Type	Full-time (%)	Part-time (%)
Peaches	18.5	37.5
Grapes	42.6	15.0
Mixed	38.9	47.5
Total	100.0	100.0

Source: Niagara Official Plan Studies,

Report #10, p. 1-9

TABLE 3-7

CHILDREN TO CONTINUE FARMING

Response	Full-time (%)	Part-time (%)
Yes	31.5	15.0
No	30.5	46.0
Uncertain	38.0	39.0
Total	100.0	100.0

Source: Bennett, 1972, p. 32

Attitudes About the Future

Table 3-7 indicates a higher level of certainty of full-time farmers to have children who wish to continue farming. The level of uncertainty for both groups is high.

There is a greater tendency for large farms to expand while a greater tendency exists for small farms to maintain their level (Table 3-8).

Table 3-9 indicates a greater reluctance of larger farmers to sell and also a greater tendency to pass it on to the children. Small farmers show a tendency to sell their farm upon retirement or to continue farming.

The future plans on a basis of farmer status are indicated in Table 3-10. While 75 per cent of both classes intend to expand or maintain their farm, the tendency to expand is greater for the full-time group. These three tables also indicate the possible degree of mobility and potential for land transfers.

Distribution of Full-time and Part-time Farms

There is a greater density of part-time farms in the tender fruit areas than in the grape areas. In all areas except Pelham the density of part-time farms is high. Where there are intense urban pressures such as in the Grimsby and west St. Catharines areas this tendency is even greater. In areas of grape specialization (Niagara and southern Louth) there are predominately large farms. There are also concentrations of part-time farmers in the grape growing area above the escarpment at Grimsby and central Lincoln. The core of the fruit belt in terms of large full-time farms predominate

TABLE 3-8

FARM SIZE AND PLANS FOR FUTURE

Farm Size	Expand (%)	Maintain (%)	Retire (%)	Total (%)
Small	17	59	11	87
Medium	26	55	5	86
Large	46	44	5	95

Source: Bennett, 1972, p. 33

TABLE 3-9

PLANS FOR FARM WHEN RETIRED

Size	Sell (%)	Pass it on to Children (%)	Continue Farming (%)	Total (%)
Small	45	23	29	97.
Medium	43	43	13.5	99.5
Large	34	52	13.5	99.5

Source: Bennett, 1972, p. 33

TABLE 3-10

FARMER STATUS AND FUTURE PLANS

Response	Part-time (%)	Full-time (%)
Expand	12.2	24.1
Maintain	63.4	53.5
Cut-back	9.8	8.6
Sell-out	7.3	6.9
Uncertain	7.3	6.9
Total	100.0	100.0

Source: Niagara Official Plan Studies
Report #10, p. 1-21

between eastern Lincoln and west St. Catharines. In the fruit area of Niagara, 70 per cent of the farms are part-time.

Summary

The use of 1972 statistics reflects the problem of available data. Census data is aggregated by area rather than on group basis. Therefore, rural non-farm residents would also have been included. The use of these older studies is defended on the basis that these are the only comprehensive data available which are directly relevant to the population under study. What is important is that these data indicate proportions rather than precise values. Furthermore, it must be remembered that these studies on which the data were based were conducted because data did not exist and an attempt was made to fill that gap.

Several indications of potential mobility exist in terms of the following factors: age (in terms of mobility being selective with respect to age biases); length of ownership i.e. part-time farmers would appear to be more mobile; small farm size would indicate the need to expand and hence, become mobile in order to remain economically viable; and attitudes to the future which is reflected by mobility aspirations such as expansion or turnover.

The basic characteristics do not appear to display any dichotomies. Instead, there only appear to be tendencies for differences on the basis of the farmer status. It is in this light that an investigation into farm mobility can be made.

CHAPTER IV

THE VARIABLES OF AGRICULTURAL RELOCATION AND EXPANSION

This chapter is organized into three major sections: a general discussion of some of the variables of mobility so that their use in this study may be justified; the substantive portion of the thesis in which the data obtained from the questionnaires is presented; and a brief comparison of these findings with other related areas of research.

The Variables of Mobility

Barrett identified five clusters of variables common to search behavior. These are socio-demographic and economic characteristics, housing history, the rationalization of reasons for moving, information sources, and specific search behavior (1973, 45). Some modifications were necessary to adjust the characteristics used by Barrett so they would be more relevant to an agricultural situation.

Five variables concerning demographic and socio-economic characteristics were included in the questionnaire. They were age, family size, managerial ability, gross farm sales, and farm size. (Farm sales and farm size relate to that parcel of land resulting in the mobility). The latter variables are a modification of Barrett's variables of income and the price paid for the house. While Barrett was able to obtain the prices of homes, and income levels, this study was unable to do so. In addition the farm price variable would

not take into account the differences between the rental and purchase sectors. Gross farm sales is used as a surrogate for both the farm price and income. Farm size is used to substantiate the former data. Fuller (1975) notes that it is far more meaningful to speak in terms of sales or business volume than in terms of land size.

This manipulation of variables can be supported. Generally, a direct relationship exists between farm production and farm size (Chisholm, 1968; Munton and Morgan, 1972; Tarrant, 1974). Also it is a logical assumption that income increases as the farm sales increase even though there may not be porportionate increases.

Table 4-1 indicates that the 18 to 25 year age group is generally the most mobile. This mobility is considered to be a reflection of a clustering of events in the pattern of moves during one's life cycle (Rossi, 1955; Simmons, 1968; Barrett, 1973). Barrett's study indicates that a study of mobility (in terms of home buyers) will displace a certain age bias against the prime mobility group. This tends to be a result of the higher economic and familial status implied by home ownership. Also, the age of the head of the household tended to be shifted upward six years relative to all intra-county movers.

Smit (1975) notes that agricultural mobility is basically related to the life cycle. At age 40 a farmer may be rich enough to expand; too young to retire, and perhaps has a son ready to enter farming. In the case of farm expanders, the economic motives are conditioned by developments within

TABLE 4-1

MOVES DURING THE LIFE CYCLE

Age	Stage	Move
0	Birth	1
10	Child Adolescent	
20	Maturity	1
	Marriage	1
30	Children	1
40	Children Mature	
50		
60		1
	Retirement	
70	Death	
80		

Source: Barrett, 1973
(c.f. Rossi, 1955)

the family as it adjusts to familial needs and capabilities.

Enlargement by itself is not the key to increasing a farmer's income. Rather it is increasing the scale of operation that is the key. Managerial skills are an equally important element in imprcving one's economic situation (Zimmer and Rodd, 1971; Fuller, 1975).

Thus, one variable to be analyzed is one's managerial ability. Zimmer and Rodd noted that those with higher management abilities tend to be younger, more progressive, and more likely to expand than the norm.

Much attention has been given to place utility considerations in migration studies (Brown and Moore, 1970; Wolpert, 1964, 1965; Barrett, 1973). While this study focuses on search behavior, place utility is a closely related concept as this is the trigger mechanism for the search process. For that reason place utility is included in the study. Smit (1975) notes that agricultural mobility is the result of adjustments, conditioned by economics, to familial needs and aspriations. Unlike urban mobility, it was expected that farmers would give a greater consideration to economic reasoning.

Implicit in Wolpert's consideration of migration behavior is the assumption that search behavior is limited by the vacancy set. However, it appears that the vacancy set is of limited use in empirical studies as the number of locations comes no where to the ideal. Ideally an individual should examine all the locations that meet his criteria and then select the best choice in terms of greatest place utility. Barrett notes that a more important idea is the concept of infor-

mation channels interwoven within the concept of vacancy set because these are the cognitive mechanism by which the vacancies are discovered (1973, 104).

The search characteristics concerns specific actions of the movers in search of a farm. The search concerns three aspects; the time spent searching, the number of locations examined, and the distance between the past and present location. The third variable varies from the one used by Barrett in which his concern was with which areas were examined. Because data in this case was stratified by the group class rather than by area (as in the case of Barrett), it was thought that the origin-destination distance would be a surrogate of which areas were examined as distance is implicitly indicative of which areas were examined. The question of search area is not included in this section as this characteristic was considered an analytic rather than as a substantive characteristic.

The Variables of Agricultural Mobility

This section forms the substantive portion of the thesis in which the data derived from the questionnaires is presented. This data is organized into five clusters of variables. They are: socio-demographic and economic characteristics; housing/farming history; rationalization of the reasons for moving; information channels; and the characteristics of the search.

Socio-demographic and Economic Characteristics

Age

Agricultural mobility is characterized by age bias. In total terms, nearly half are concentrated in the 30-39 year

TABLE 4-2

AGE OF THE HEAD OF THE HOUSEHOLD

Group	Age											
	<30		30 - 39		40 - 49		50 - 59		>60		Total	
	f	%	f	%	f	%	f	%	f	%	f	%
N	15	19.7	26	47.4	18	23.7	6	7.9	1	1.3	76	100.0
NB	11	20.4	27	50.0	10	18.5	5	9.3	1	1.9	54	100.0
NR	4	18.2	9	40.9	8	36.3	1	4.6	-	-	22	100.0
F	7	17.1	16	39.1	14	34.2	3	7.3	1	2.4	41	100.1
FB	3	14.3	9	42.9	6	26.6	2	9.5	1	4.8	21	100.1
FR	4	20.0	17	35.0	8	40.0	1	5.0	-	-	20	100.0
P	8	22.9	20	57.2	4	11.4	3	8.6	-	-	35	100.1
PB	8	24.4	12	54.6	4	12.1	3	9.1	-	-	33	100.2
PR	-	-	2	100.0	-	-	-	-	-	-	2	100.0
NEW	10	33.3	18	60.0	2	6.7	-	-	-	-	30	100.0
BEST	1	4.2	9	37.5	8	33.3	5	20.8	1	4.2	24	100.0

age bracket (Table 4-2). Because a distinct feature of this study is an inclusion of renters, and a comparison of full-time and part-time farmers, a more comprehensive consideration of age is warranted. When the total number of buyers and total renters are compared, the renters tend to be younger than the buyers. This trend is more apparent when the full-time buyers and renters are compared.

When the total full-time groups and part-time groups are compared, the part-time group has a tendency to be of a younger age (80 per cent are less than 39 years) than the full-time group which is concentrated in the intermediate ages (75 per cent are 30 to 49 years). Ninety per cent of the new farmers are less than 39 years old while 90 per cent of the established farmers who have acquired farms are concentrated in the 30 to 59 age bracket.

These results may seem obvious. A new farmer (which generally means a part-time farmer) is expected to be younger than an established farmer. These age biases should not be disregarded as it is a distinguished feature with respect to mobility in general.

Family Size

Life cycle stages with respect to child raising is often considered an indicator of mobility. In terms of the total sample, only eight movers were without children. One third of the households contained none or only one child and one half the families contained one or two children.

It is logical to assume that children play a role in the determination of mobility because of the life cycle assump-

TABLE 4-3

NUMBER OF CHILDREN PER HOUSEHOLD

Group	Number of Children										Total	
	0		1		2		3		>3			
	f	%	f	%	f	%	f	%	f	%	f	%
N	6	7.9	19	25.0	19	25.0	22	28.9	10	13.2	76	100.0
NB	5	9.3	15	27.8	15	27.8	13	24.0	6	11.1	54	100.0
NR	1	4.5	4	18.2	4	18.2	9	4.0	4	18.2	22	100.0
F	4	9.8	11	26.8	9	22.0	12	29.3	5	12.2	41	100.1
FB	3	14.3	7	33.3	5	23.8	5	23.8	1	4.8	21	100.0
FR	1	5.0	4	20.0	4	20.0	7	35.0	4	20.0	20	100.0
P	2	5.7	8	22.9	10	28.8	10	28.6	5	14.3	35	100.3
PB	2	6.0	8	24.2	10	30.3	8	24.2	5	15.2	33	99.9
PR	-	-	-	-	-	-	2	100-	-	-	2	100.0
NEW	2	6.7	7	23.3	9	30.3	8	26.7	4	13.3	30	100.3
BEST	3	12.5	8	33.3	6	25.0	5	20.8	2	8.3	24	99.9

tions. The role may be more specifically determined by family age structure rather than the number of children.

Some patterns of family size are apparent when Table 4-3 is scrutinized. The total buyer group displays a normal distribution of family size. In contrast, the total renter group tends to have more large families (a model and median class of three children) compared to the all buyer group (model and median class of one to two children). The full-time buyers and full-time renters display the same characteristics as the two previous groups. When new farmers are compared with the established buyers a tendency towards larger families and smaller families for the two groups respectively exists.

Renters and new farmers tend to have larger families while the established buyers, and the total full-time and part-time groups reveal normal distribution.

Tables 4-4 and 4-5 illustrate the incidence of large families (having 3 or more children) and the duration of stay at the previous residence. (The duration of stay at the present location is noted for established farmers). Forty per cent of the new farmers, 30 per cent of the established buyers, and 55 per cent of the renters had large families. Forty per cent of the new farmers, had lived at their previous location for more than four years. Fifty per cent of the established buyers and 80 per cent of the renters had lived at their present residences for more than four years. On that basis it would appear that new farmers with large families are less stable, while the renters appear to be the most stable of those having large families.

TABLE 4-4

DURATION OF STAY AT FORMER ADDRESS AND INCIDENCE OF LARGE FAMILIES FOR THE "NEW FARMERS"

Duration of stay		Incidence of large families	
f	%	f	%
< 1 year	2	6.7	1	8.3
1 < 2 years	7	23.3	2	16.7
2 < 3 years	5	16.7	2	16.7
3 < 4 years	4	13.3	2	16.7
4 < 8 years	5	16.7	1	8.3
> 8 years	7	23.3	4	33.3
Total	30	100.0	12	100.0

TABLE 4-5

DURATION OF STAY AND INCIDENCES OF LARGE FAMILIES FOR THE ESTABLISHED FARMER

Duration of Stay		Incidence of large families	
Established Buyer	f	%	f	%
< 2 years	10	41.6	1	14.2
2 < 3 years	1	4.2	-	-
3 < 4 years	1	4.2	1	14.2
4 < 8 years	2	8.3	2	28.6
> 8 years	10	41.6	3	42.9
Total	24	100.0	7	99.9
Established Renters				
< 2 years	4.1	4.5	2	15.4
2 < 3 years	2	9.9	2	15.4
3 < 4 years	1	4.5	1	7.7
4 < 8 years	6	27.3	4	30.8
> 8 years	12	54.5	4	30.8
Total	22	100.7	13	100.0
Total Established				
< 2 years	11	23.9	3	15.0
2 < 3 years	3	6.5	2	10.0
3 < 4 years	2	4.3	3	15.0
4 < 8 years	8	17.4	6	30.0
> 8 years	22	47.8	6	30.0
Total	46	99.9	20	100.0

Why established renters have almost twice the number of children than established buyers can be explained in terms of the family cycle. Larger renter families may indicate the use of children as a source of labour. Also, the renter group, because of the household head's lower age, can be assumed to have younger children. The established buyer group tends to be older in age and consequently may have older children who are ready to enter farming. The renter group may be seen as a preliminary rather than a transitory phase, in which the child is given the opportunity to see if he would like farming. This may result in the purchase of a farm (as in the established buyer case) where that child is now old enough to enter farming with his father.

Farm Size

The degree of reliability with which income data can be derived from questionnaires is a major problem. For that reason farm size is used as a surrogate measure. Farm size is also used as a surrogate for the farm price or rent. Although there are numerous factors affecting the size and income relations, it is the combination of farm size and gross farm sales that is paramount.

Table 4-6 summarizes the data obtained from the questionnaire. In terms of the total group there is a normal distribution of farm size; the mean size was 14.9 acres with median and model classes of 10 to 20 acres. The total buyer group and total renter group displayed the same characteristic. The mean size for renters (16.6 acres) was slightly larger than the buyer group (14.2 acres). When the full-time and part-

TABLE 4-6

FARM SIZE

Group	Acres											
	Less than 5		5-10		10.1-20		20.1-30		More Than 30		Total	
	f	%	f	%	f	%	f	%	f	%	f	%
N	13	17.1	13	17.1	28	36.9	11	14.5	11	14.5	76	100.1
NB	9	16.7	10	18.5	21	38.9	8	14.8	6	11.3	54	100.2
NR	4	18.2	3	13.6	7	33.8	3	14.7	5	22.7	22	100.0
F	3	7.3	7	17.1	16	39.0	7	20.1	8	19.5	41	100.0
FB	2	4.8	4	19.0	9	42.8	4	19.1	3	14.3	21	100.0
FR	1	10.0	3	15.0	7	35.0	3	15.0	5	20.0	20	100.0
P	10	28.6	6	17.1	12	34.3	4	11.4	3	8.6	35	100.0
PB	8	24.2	6	18.2	12	36.4	4	12.1	3	9.1	33	100.0
PR	2	100.0	-	-	-	-	-	-	-	-	2	100.0
NEW	8	26.7	5	16.7	11	36.7	4	13.3	2	6.7	30	100.1
BEST	1	4.2	5	20.8	10	41.7	4	16.7	4	16.7	24	100.1

time groups are compared differences can be observed. While the median size class for both groups was 10 to 20 acres, the part-time group had a bimodal distribution at the 'less than five acres' and at the 10 to 20 acres. The full-time group had a modal class of 10 to 20 acres. While these results were expected the significance can be emphasized by the fact that when full-time farmers are obtaining additional land, the size is greater than that of the new farmers single tract of land.

When full-time buyers and renters are compared, a bimodal distribution for the renters and a normal distribution for full-time farmers is found. There is a greater tendency to rent larger parcels of land than to buy them. When the new farmers are compared with the established buyers, the tendencies that were noted for the full-time and part-time groups is amplified.

Gross Farm Sales

Table 4-7 summarizes the data obtained from the respondents concerning gross farm sales. These values should be used only as an estimate. In the case of the established farmers, more often than not, the data was only a rough estimate given by the farmer. Because this class is essentially composed of expanders, and because farm records are kept for the farm as a whole, the estimate was all that could be given. Like income data, the degree of reliability was low. This was indicated by the fact that most responses tended to be rounded off to the nearest $5,000 level.

The total group mean was $20,000. As well, the sales

TABLE 4-7

GROSS FARM SALES

Group	Gross Farm Sales ($)													
	Less than 5,000		5,000-9,999		10,000-14,999		15,000-19,999		20,000-30,000		More than 30,000		Total	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
N	6	7.9	12	15.8	6	7.9	24	31.6	12	15.8	16	21.1	76	100.1
NB	5	9.3	8	14.8	5	9.3	14	26.0	11	20.4	11	20.4	54	100.2
N	1	4.6	4	18.2	1	4.6	10	45.4	1	4.6	5	22.7	22	100.1
F	3	7.3	3	7.3	3	7.3	16	39.1	5	12.2	11	26.8	41	100.0
FB	2	9.5	1	4.8	2	9.5	6	28.6	4	19.1	6	28.6	21	100.1
FR	1	5.0	2	100.0	1	5.0	10	50.0	1	5.0	5	25.0	20	100.0
P	3	8.6	9	25.7	3	8.6	8	22.9	7	20.0	5	14.3	35	100.1
PB	3	9.1	7	21.2	3	9.1	3	24.2	7	21.2	5	15.2	33	100.0
PR	-	-	2	100.0	-	-	-	-	-	-	-	-	2	100.0
NEW	3	10.0	5	16.7	2	6.7	8	26.7	6	20.0	6	20.0	30	100.1
BEST	2	8.3	3	12.5	3	12.5	6	25.0	5	20.8	5	20.8	24	99.9

tended to be skewed to the higher incomes. The median and modal classes were $15,000 to $19,999. This pattern also applies to the 'all buyers' and 'all renters' groups.

Differences emerge when the full and part-time groups are compared. The respective mean sales were $23,000 and $16,500. The median class for both groups was $15,000 to $19,999 whereas the part-time modal class was $5,000 to $9,999. Thus, there is a tendency for the full-time group to obtain farms that yield higher sales.

Full-time renters and buyers both have mean sales of $17,000 and a median class of $15,000 to $19,999. There is a tendency for renters to be concentrated at an intermediate level.

When new farmers are compared with established buyers, no real differences emerge. Both groups tend to higher sales. It was expected that the new group would exhibit the opposite tendency. When the new group is compared with renters, the new group tends towards higher incomes. Renters, however, are concentrated at the intermediate level and display fewer lower sales than the new group.

Summary of Farm Size and Gross Farm Sales

Overall, there tends to be a normal distribution of farm size while farm sales are skewed to the higher levels. The same trend appears when buyers and renters are considered.

Part-time farmers tend to operate smaller farms with lower levels of sales than the full-time group. When full-time buyers and renters are compared, there is a tendency for renters to operate larger parcels but at lower sales levels than the full-time group.

Managerial Ability

Managerial ability is included as a socio-economic variable of mobility because it may effect the efficiency of the search process.

A detailed outline concerning the measurement of managerial ability is given in the Appendices. Although this score is by definition biased against new farmers, it does give an indication of one's farm management ability. This bias can be overlooked, however, because one may assume that when a new farmer is looking for land, he may typically be less knowledgeable of farming and this may be reflected in his decision to select one particular farm over another.

Overall, the scores tended to be low, with a mean of 11.4, 60 per cent had scores of twelve or less, while only 20 per cent were in the top category (Table 4-8). This pattern recurred when all buyers and all renters were considered. Differences can be noted when the full-time and part-time groups are compared. The mean scores of 12.9 and 9.7 respectively, however, were much less than anticipated. The modal class score for the full-time group was 9 to 12 while the part-time modal class was 0 to 8.

When the full-time buyers and renters are compared no real differences in terms of modal and median classes could be found. The full-time mean score (13.1) was substantially higher than the renter score (10.9).

The scores tended to be low. This may indicate that farmers are poor managers, and consequently poor decision makers; or the lower than expected scores may tend to be a result

TABLE 4-8

MANAGERIAL SCORES

Group	Score									
	0-8		9-12		13-16		17-20		Total	
	f	%	f	%	f	%	f	%	f	%
N	23	30.2	25	32.9	13	17.1	15	19.7	76	99.9
NB	18	33.3	17	31.5	9	16.7	10	18.5	54	100.0
NR	5	22.7	8	36.4	4	18.2	5	22.7	22	100.0
F	6	14.6	15	36.6	9	22.0	11	26.8	41	100.0
FB	3	14.3	7	33.3	5	23.8	6	28.6	21	100.0
FR	3	15.0	8	40.0	4	20.0	5	25.0	20	100.0
P	17	49.5	10	28.6	4	11.4	4	11.4	35	99.9
PB	15	45.4	10	30.3	4	12.1	4	12.1	33	99.9
PR	2	100.0	-	-	-	-	-	-	2	100.0
NEW	11	36.7	10	33.3	5	16.7	4	13.3	30	100.0
BEST	7	29.2	7	29.2	4	16.7	6	25.0	24	100.1

of the criteria used in measuring the score. What should be considered then is the relative positions in terms of comparing the different groups. The scores seem to substantiate the anticipated results that the part-time group would have lower scores than the full-time group. Why renters have a lower score than the full-time renters is not known. This may be a result of the renter's lower age and consequently less experience.

If these scores are taken to represent optimal decision making (in an economic sense) it follows that decisions are far from optimal. If mobility is seen as a consequence of a decision, then one gains an insight from these scores for they indicate that either mobility is based on a poor decision, or mobility involves much more than economic considerations.

The socio-demographic and economic variables do not indicate any dichotomies when the groups are compared. Instead there are tendencies for groups to behave slightly more in one direction than another.

Housing/Farming History

It is on the assumption that the housing or farming history influences search behavior that this section is included. Because of the fundamental differences re: the origin that the group comparisons in this section are not comparable with the previous sections. The data is summarized in Tables 4-9 and 4-10.

New Farmers

There has been a shift from tenancy to ownership. Se-

TABLE 4-9

CHARACTERISTICS OF THE FORMER RESIDENCE -

"NEW" GROUP

Duration of Stay at Former Address			Owned Home		Rented Home		Other Rented	
	f	%	f	%	f	%	f	%
< 1 yr.	2	6.7	-	-	1	50.9	1	50.0
1 < 2 yr.	7	23.3	-	-	3	42.9	4	57.1
2 < 3 yr.	5	16.7	-	-	4	80.0	1	20.0
3 < 4 yr.	4	13.3	1	25.0	2	50.0	1	20.0
4 < 8 yr.	5	16.7	3	60.0	2	40.0	-	-
> 8 yr.	7	23.3	5	71.4	2	28.6	-	-
Total	30	100.0	9	30.0	14	46.7	7	23.3
From an urban area	23	100.0	8	34.8	10	43.5	5	21.7

TABLE 4-10

CHARACTERISTICS OF THE PRESENT RESIDENCE -

"ESTABLISHED" FARMERS

Duration of Stay			Did you rent or buy from this location before?					
			Rented		Bought		No	
Established Buyers:	f	%	f	%	f	%	f	%
< 2 yrs	10	41.6	-	-	-	-	10	62.5
2 < 3 yrs	1	4.2	1	20.0	-	-	-	-
3 < 4 yrs	1	4.2	-	-	1	33.3	-	-
4 < 8 yrs	2	8.3	1	20.0	-	-	1	6.3
> 8 yrs	10	41.6	3	60.0	2	66.7	5	31.3
Total	24	99.9	5	20.8	3	12.5	16	66.7
Renters:								
< 2 yrs	1	4.5	1	12.5	-	-	-	-
2 < 3 yrs	2	9.9	-	-	1	20.0	1	11.1
3 < 4 yrs	1	4.5	1	12.5	-	-	-	-
4 < 8 yrs	6	27.3	2	25.0	1	20.0	3	33.3
> 8 yrs	12	54.5	4	50.0	3	60.0	5	55.6
Total	22	100.1	8	36.4	5	22.7	9	40.9
Total Established:								
< 2 yrs	11	23.9	1	9.1	-	-	10	40.0
2 < 3 yrs	3	6.5	-	-	2	20.0	1	4.0
3 < 4 yrs	2	4.3	-	-	2	20.0	-	-
4 < 8 yrs	8	17.4	3	27.3	1	10.0	4	16.0
> 8 yrs	22	47.8	7	63.7	4	40.0	10	40.0
Total	46	99.9	11	23.9	10	21.7	25	54.3

venty per cent were previous tenants while 30% had owned their previous home. Seven per cent had lived at their previous location for less than one year. This value is much lower than the 20 per cent mobility rate given by Kosinski. Forty per cent had lived at their previous residence for more than four years. There was also a trend that the longer the duration of the previous residence, the greater the tendency to be a home owner. Seventy per cent of new farmers had previously lived in urban areas.

Established Renters

None of this group was involved in a total relocation. Sixty per cent of this group had previously rented or purchased farms while living at their present location. The data does not indicate any relation between the present rental and past behavior i.e. if one has purchased in the past, the next move has an equal probability of being either a rental or purchase. The data also indicates that the greater the duration of stay, the greater the tendency to buy or rent and the greater the tendency to do so again.

Established Buyers

One third of this group had previously rented or purchased land. There is one major distinction of this group with the renters in that this group included nine complete relocations. Thus, there is a large proportion in this group who have been at their present location for less than two years. It may be concluded that established buyers have a greater propensity to completely relocate than the renters.

In summary there has been shifts from urban areas and

from tenancy to ownership for the new group. The duration of stay at the previous location was longer than anticipated.

The established groups differ with respect to complete relocations. Prior rental or purchase is not an indicator of whether one will rent or buy. For both groups the greater the duration of stay, the greater the tendency to have purchased or rented additional land.

Rationalization of the Reasons for Moving/Expanding

If mobility is the result of adjusting to one's needs and capabilities, then the reasons for moving/expanding should be balanced by the reasons for selecting the new location.

Reasons for Moving (Leaving the Previous Location)

Table 4-11 summarizes the responses elicited by the questionnaire. This data was aggregated so that comparisons could be made. A more detailed breakdown of the data is contained in the Appendices. In terms of total sample the main reasons for moving were: wanted the country life; house factor; the presence of children as help; the farm was too small; and investment. Some of these responses are a group bias. When an individual moves because the farm is too small, it is inherent that he is already farming. When all buyers are considered the same six responses are noted, although the ranking has changed. When renters are considered, the farm and economic considerations are the rule. This is unlike the buyer situation where the three main reasons were: the country life; house factors; and the ambiguous "I wanted to farm" factor. These three reasons basically reflect aesthetic rather than economic concerns. These three factors re-emerge when the new

TABLE 4-11

REASONS FOR MOVING/EXPANDING

Group N		NB		NR	
reasons	% of total		%		%
country life	15.4	country life	18.0	children help	23.5
house factor	13.4	house factor	16.1	farm too small	20.6
children to help	13.4	wanted to farm	11.4	increase income	11.8
farm too small	11.9	children	11.4	impulse	11.8
wanted to farm	10.4	farm too small	10.2		
investment	8.5	investment	10.2		
	73.0		77.9		87.7

Group F		FB		FR	
reasons					
farm too small	23.2	farm too small	23.9	children	21.4
children as help	18.2	children farming	16.9	farm too small	21.4
ambition	9.1	investment	8.5	impulse	14.3
	50.5		67.8		67.1

Group P	
reasons	
country life	29.4
house factors	20.6
wanted to farm	16.7
investment	10.8
	77.5

NEW GROUP		BEST GROUP	
reasons			
country life	30.4	farm too small	24.5
house factors	21.6	children farming	17.4
wanted to farm	19.6	investment	11.6
investment	10.8	ambition	8.7
		increase income	7.2
	82.4		

farmer group and all part-time farmer groups are considered. This is in marked contrast to the full-time group and its two constituents. It is in these groups that farm-related factors are noted. Renters also give impulse as a determinant of mobility.

In summary, the part-time and new farmer groups leave their previous residence because of the attraction of farming. The first two responses account for 50 per cent of the responses. The full-time group moves because the present farm is too small and children are there as help. This accounts for 40 per cent of the responses. The third most popular answer varies with the group. These factors are investment, ambition, and impulse, and to increase one's income. Relocation on the basis of impulse indicates a low level of rationalization. However, little rationalization is needed, since a farm was not being sought.

Reasons for Selecting the New Location

Table 4-12 summarizes the results of the data concerning the reasons for selecting the new location. A more detailed list is given in the Appendices.

Overall, the main reasons for selecting the new location were farm factors, cost, country life, house factors and accessibility to other farm units. When all buyers are considered, non-economic reasons emerge as the most popular responses. Renters select on a basis of farm factors, windfall (i.e. they were not looking for a farm, but took advantage of an opportunity that made itself available) and cost. When the full-time group and full-time buyers are considered, the three main rea-

TABLE 4-12

REASONS FOR SELECTION

Group N	% total reasons	NB	%	NR	%
farm factor	21.1	farm factors	19.3	farm factor	31.1
cost	13.4	house factors	15.0	windfall	13.3
house factors	12.7	cost	13.8	cost	11.1
country life	10.0	wanted to farm	7.5		
accessibility*	7.4	investment	5.5		
	64.6		61.1		55.5

Group F		FB		FR	
farm factor	31.5	farm factor	34.1	farm factor	17.9
accessibility	15.4	cost	14.3	accessibility	17.9
cost	13.8		14.3		15.4
	60.7		62.7		64.0

Group P		PB	
house factors	21.3	house factors	22.1
country life	17.8	country life	18.4
cost	13.0	cost	13.5
	52.1		54.0

NEW GROUP		BEST	
house factors	21.1	condition of farm	22.1
country life	17.4	cost	16.8
cost	13.7	accessibility	13.7
		opportunity available	9.5
	52.2		62.1

* accessibility to other farm units

sons were farm factors, accessibility, and cost. The full-time renters select on the same basis as the two groups but include the windfall reason. The new farmers and the part-time group are concerned with house factors, country life, and cost.

Cost is a major consideration for all groups. The part-time group's major decision criteria is non-farm related, while the full-time group is influenced by the farm factors. These results are self-evident, because the part-time group is interested in just "wanting to farm" rather than having a farm that meets certain criteria as in the full-time group. Also, house considerations would be more important in the new group because this group is involved in a total relocation which is in contrast to the full-time group which generally is not involved in a home relocation.

Table 4-13 indicates the average number of responses per individual for the reasons for moving and selection. In all cases more reasons are given for the selection than for moving. In addition, renters give a lower level of response than the buyer groups. Full-time groups also tend to give lower responses than the part-time group. It may be interpreted that renters have less of a financial commitment and therefore result in a lower degree of rationalization. The element of windfall must not be ignored as a plausible explanation. Part-time farmers may perhaps give more reasons than the full-time group because they are concerned with house factors as well as farm factors, whereas several of the farm purchases and rentals did not involve a house.

TABLE 4-13

RATIONALIZATION FOR MOVING

	Reasons for Relocation	Reasons for Selection of Alternatives
	average number per individual	average number per individual
N	2.7	3.9
NB	3.1	4.7
NR	1.6	2.1
F	2.4	3.2
FB	3.4	4.3
FR	1.4	2.0
P	2.9	4.8
PB	2.9	4.9
PR	3.0	3.0
NEW	3.4	5.8
BEST	2.9	4.0

Future Mobility

An enquiry to determine satisfaction with the new location and intentions concerning future mobility may provide an insight into search behavior and its consequences.

Overall, approximately 16 per cent of the sample is both dissatisfied and considering expanding the farm. There is a drastic decline in the proportion planning to move (Table 4-14). When the buyers and renters are compared, approximately 15 per cent of each are dissatisfied. However, a much larger proportion of the renters, relative to the buyers desires continued expansion. Another important difference is the absence of moving intentions for the renter group. If the full-time and part-time groups are compared, both groups show the same level of dissatisfaction with the new location. However, the part-time group has no intention to expand, while this intention is present in the full-time group.

For those who are currently searching for a new farm, or additional land, there appears to be an active effort to do so. This is evidenced by the ability to name the areas being searched.

The results in Table 4-14 would appear to indicate that the continued search is a reflection of the desire to expand one's farm size, rather than a dissatisfaction with the new location.

Information Sources

This would appear to be a key variable of the search process because this is the mechanism by which the vacancy stock is discovered.

TABLE 4-14

FUTURE MOBILITY INDICATORS

Are you Dissatisfied with your Location?			Future Plans				Are you Currently looking?		Can you tell me where?	
	Yes		Expand		Move		Yes		Yes	
	f	%	f	%	f	%	f	%	f	%
N	12	15.8	13	17.1	3	4.0	9	11.8	10	13.1
NB	8	14.8	4	7.4	3	5.6	4	3.7	4	3.7
NR	4	18.2	9	40.9	-	-	5	31.8	5	31.8
F	5	12.2	13	31.7	-	-	8	19.5	8	19.5
FB	2	9.5	4	19.1	-	-	3	14.3	3	14.3
FR	3	15.0	9	45.0	-	-	5	25.0	5	25.0
P	7	20.0	-	-	3	8.6	1	29.0	1	29.0
PB	6	18.2	-	-	3	9.1	1	3.0	1	3.0
PR	1	50.0	-	-	-	-	-	-	-	-
NEW	6	20.0	1	3.3	2	6.7	2	6.7	2	6.7
BEST	2	8.3	3	12.5	-	-	2	6.7	2	6.7

The data obtained from the questionnaire is shown in Table 4-15. There are two features of this that need to be clarified. One is the vagaries of data collection. In certain situations in the real estate and direct second party sources, the percentages of subsequent and total usage indicate a level of more than 100 per cent. Some of this may be attributed to the assumption that once the search begins, it does not stop until a location is found. This, however, is not true. In several cases, the search was given up (rather than postponed) and was later on resumed. This is especially true in the rental market. One must also assume that results are not obtained on the first contact. Thus, a return to that source (i.e. real estate or the second party in the direct contact situation) is reported as a subsequent method. Why this situation did not occur in the other sources is not known. Perhaps when newspapers are used, this is considered to be a part of reading the newspaper so that this repeated use is not double reported as in the previous cases. Also, no action is required whereas a special trip is made to the real estate agent so that the action is reinforced. There may also be a type of misrepresentation notably in the direct party contact and real estate in that a person has left his name with an estate agent so that he may be contacted should a vacancy arise. This would result in a double reporting of that agent as the initial and subsequent method. The same situation could occur in private deals among farmers. One peculiarity is that the over-reporting is found in the real estate for buyers and in direct party contact for the renters. Thus,

TABLE 4-15

INFORMATION SOURCES

Group		Driving		Friends Relatives Neighbours		Newspaper		Real Estate		Direct Party Contact		Total	
		f	%	f	%	f	%	f	%	f	%	f	%
N	I (Initial)	3	3.9	22	28.9	20	26.3	16	21.1	15	19.7	76	99.9
	S (Subsequent)	17	22.4	20	26.3	9	11.8	39	51.3	48	63.1		
	T (Total)	20	26.3	42	55.2	29	38.1	55	72.4	63	82.8		
NB	I	3	5.6	11	20.4	18	33.3	16	29.6	6	11.1	54	100.0
	S	17	31.4	18	33.3	9	16.7	38	70.3	22	40.7		
	T	20	37.0	29	53.7	27	50.0	54	99.9	28	51.8		
NR	I	-	-	11	50.0	2	9.1	-	-	9	40.9	22	100.0
	S	-	-	2	4.1	-	-	1	4.5	26	118.8		
	T	-	-	13	59.1	2	9.1	1	4.5	35	169.7		
F	I	2	4.9	16	39.0	7	17.1	2	4.9	14	34.1	41	100.0
	S	7	17.0	11	26.8	4	9.8	11	26.8	39	95.1		
	T	9	21.9	27	65.8	11	26.9	13	31.7	52	99.2		
FB	I	2	9.5	7	33.3	5	23.8	2	9.5	5	23.8	21	99.9
	S	7	33.3	9	42.8	4	19.0	10	47.6	14	66.7		
	T	9	42.8	16	75.1	9	42.8	12	57.1	19	90.5		

(continued)

TABLE 4-15 (Continued)

Group		Driving		Friends Relatives Neighbours		Newspaper		Real Estate		Direct Party Contact		Total	
		f	%	f	%	f	%	f	%	f	%	f	%
FR	I			9	45.0	2	10.0	-	-	9	45.0	20	100.0
	S			2	10.0	-	-	1	5.0	24	120.0		
	T			11	55.0	2	10.0	1	5.0	28	140.0		
P	I	1	2.9	6	17.1	13	37.1	14	40.0	1	2.9	35	100.0
	S	10	28.6	9	25.7	5	14.3	28	80.0	10	28.6		
	T	11	31.4	15	42.8	18	51.4	42	120.0	11	31.5		
PB	I	1	3.0	4	12.1	13	39.4	14	42.4	1	36.0	33	99.9
	S	10	30.3	9	27.2	5	15.1	28	84.8	8	24.2		
	T	11	33.3	13	34.4	18	54.5	42	127.3	9	17.2		
PR	I			2	100.0							2	100.0
	S									2	100.0		
	T			2	100.0					2	100.0		
NEW	I	1	3.3	2	6.7	14	46.7	13	43.3	-	-	30	100.0
	S	10	33.3	8	26.7	8	26.7	27	90.0	6	20.0		
	T	11	36.6	10	33.3	22	73.4	40	133.3	6	20.0		
BEST	I	2	8.3	9	37.5	4	16.7	3	12.5	6	25.0	24	100.0
	S	7	29.2	10	41.7	1	4.2	11	45.8	16	66.7		
	T	9	37.5	19	79.2	5	20.9	14	58.3	22	91.7		

when a value for the use exceeds 100 per cent, that value should be regarded as being emphatic of that source, rather than as an actual per cent.

Because the cases where windfall occurred were all a result of direct contact with the second party, windfall users were reported as being a result of direct party contact. Windfall is the situation where there was no search being made, but because a vacancy was made known, action was taken. This factor did not account for the over-reporting in that category.

Driving

This source of information is notably absent in the rental market. Its usage as an initial source is limited. Even in terms of subsequent use this source is relatively small. The amount of private deals would mean a general absence of signs advertising that sale. For that reason, a drive through the countryside to look for signs would be a futile effort.

Friends, Relatives, Neighbors

Overall, there is a 55 per cent usage rate. There is a tendency for the use to increase as a subsequent source in the buyer group, while the usage declines for renters. For renters this was the most important source for initial use. These sources were important initially for the "FB" and "BEST" groups also. For the "PB" group, this source was third in importance as an initial source. This perhaps is indicative of the fact that most of this group is new farmers. As such, because almost all of them originate in the city, their friends might also be urban oriented and are best aware of vacancies.

Newspapers

Newspapers can be considered to rank first, with friends, as an initial source of information. Newspapers are restricted to serving as an initial information channel. Their purpose is to guide the migrants to a subsequent source, more notably, the real estate agent. Newspapers do not serve any renters as a channel of information. For all buyers, newspapers rank first as the initial source of information. When the "FB" group is compared with the "PB" group there is a strong trend for part-time farmers to use this channel to a much greater extent than the full-time group. The "PB" tendency is emphasized when the new group is considered.

Real Estate

Overall, real estate agents rank second as a total information channel. The initial use for this source is relatively low when compared to total usage. Renters have a very low usage rate of real estate agents. This is because real estate agents do not handle the rental of land. The usage rate for buyers is 100 per cent. This figure is greatly influenced by the part-time (i.e. new farmers) group. Corresponding with this is the lower rate of use by the full-time buyers. For the latter group, real estate has a very low initial use while in total use, it ranks third. The initial and total rankings for the part-time group is first. These patterns repeat themselves for the established buyer group and the new farmer groups respectively.

Direct Contact with the Second Party

The term "second party" refers to the vendor or the

lessor. In terms of an initial source, it must be assumed that the second party are friends, relatives or neighbours. If this was not the case, one would assume that this group would not be used as an initial source. (It just seems unlikely that a person would ask a stranger if he could buy or rent land unless he was informed beforehand of the possibility of a vacancy). Overall, this source has a low initial rank but in total usage, it ranks first. This is indicative of the great amount of private transactions that exist in an agricultural situation. There is a low initial use for the buyer group. In total terms the usage ranks third. It can be noted that this source is primarily oriented to the rental market. This is expected as rental, unlike sales, is handled by individuals rather than by estate agents. However, the importance of this source cannot be set aside because it also has a very high initial use. A dichotomy of usage is revealed when the "FB" and "PB" groups are considered. The part-time group has a low initial and total usage for this source while this channel ranks first for the full-time group in both initial and total use.

Overall, friends and newspapers are the major initial sources while in total usage direct contact with the second party and real estate agents are the major sources. The combination of uses in that summary statement reveals that a generalization concerning the total sample obscures, specific patterns. In essence a basic dichotomy exists. The dichotomy may be illustrated by stating that new farmers (i.e. part-time farmers) begin their search by using their friends and are consequently guided to direct contact with the vendor/lessor.

The higher than expected use of real estate by the full-time buyer is attributed to the fact that some deals can only be transacted by an estate agent. This is perhaps comparable to the situation of the new farmers who use real estate agents to go to direct contact only because an estate agent is not handling the deal.

The Concept of Familiarity as a Variable of Information Channels

The concept of information channels is difficult to assess. The impact of the use of the channels cannot be measured. In addition, the subconscious acts as selection mechanism which subconsciously excludes some locations while favouring others. The question of familiarity is used to gain insights into the individual's previous awareness of the new location with respect to his previous location. It should be noted that familiarity is an ambiguous concept in that the degree of familiarity cannot be ascertained.

The results in Table 4-16 illustrate varying degrees of familiarity in terms of the group and with the subject of familiarity. There are no major differences among the groups when familiarity with the area is considered. Renters have only slightly higher scores than the buyers. Also, no substantial differences exist between established buyers and the new farmers.

There is a considerable decline in familiarity when the street or block is considered. Group variations also become more discernible. Thirty and forty per cent of new farmers and established buyers respectively claimed to have a famili-

TABLE 4-16

FAMILIARITY WITH THE DESTINATION

	Number Familiar With the Area		Number Familiar With the Street/Block	
	f	%	f	%
N	49	64.5	31	40.8
NB	32	59.3	19	35.2
NR	17	77.3	12	54.5
F	29	70.7	20	48.8
FB	14	66.7	9	42.9
FR	15	75.0	11	55.0
P	20	57.1	11	31.4
PB	18	54.5	10	30.3
PR	2	100.0	1	50.0
NEW	17	56.7	9	30.0
BEST	15	62.5	10	41.7

TABLE 4-17

SOURCES OF FAMILIARITY

Group	Familiar with area		Sources of Familiarity							
			lived here		lived here		friends relatives		other	
	f	%	f	%	f	%	f	%	f	%
NR	15	62.5	2	13.3	6	40.0	5	33.3	2	13.3
BEST	17	77.2	-	-	14	82.3	3	17.6	-	-
NEW	17	56.7	6	33.3	2	11.8	7	41.2	2	11.8

arity on the street/block level. The overall level was forty per cent. Renters were also more familiar with the street than the buyers. This pattern repeats itself for the full-time and part-time buyers.

Familiarity was determined essentially by factors of "live in the area" or "had lived in the area". Another source of familiarity was the location of friends or relatives in the area (Table 4-17). This may explain the high proportion of the sample who had used friends and relatives as information channels. Thus, friends and relatives help make a searcher aware of the vacancy, but it is the direct searching and the use of real estate by which searching is most commonly carried out.

Characteristics of the Search

Three elements, the time spent searching, the number of locations examined, and the distance of the move are examined. These factors may be considered as the spatio-temporal elements of the search process.

Search Time

Table 4-18 summarizes the data obtained from the respondents. Overall, 18 per cent did not look while another 28 per cent spent less than one month searching. When all buyers are considered, this tendency is reduced. It can be seen that renters were primarily responsible for skewing, a high proportion having a search time of less than one month.

When other groups are considered, several trends can be noted. The full-time class spends less time looking than the part-time farmer group (means of 3.5 and 5.6 months respectively). This is also reflected in the median and modal classes

TABLE 4-18

TIME SPENT SEARCHING

Group	Months															
	Did not look		1		2		3		4-6		7-12		More than 12		Total	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
N	14	18.4	21	27.6	7	9.2	7	9.2	16	21.1	6	7.9	5	6.5	76	99.9
NB	6	11.1	14	25.9	4	7.4	6	11.1	13	24.1	6	11.1	5	9.3	54	100.0
NR	8	36.4	7	31.8	3	13.6	1	4.5	3	13.6	-	-	-	-	22	100.2
F	9	22.0	14	34.1	3	7.3	4	9.8	7	17.1	2	4.9	2	4.9	41	100.1
FB	3	14.3	7	33.4	-	-	3	14.3	4	19.1	2	9.5	2	9.6	21	100.2
FR	6	30.0	7	35.0	3	15.0	1	5.0	3	15.0	-	-	-	-	20	100.0
P	5	14.3	7	20.0	4	11.4	3	8.6	9	25.7	4	11.4	3	8.6	35	100.0
PB	3	9.1	7	21.2	4	12.1	3	9.1	9	27.3	4	12.1	-	-	33	99.9
PR	2	100.0	-	-	-	-	-	-	-	-	-	-	-	-	2	100.0
NEW	2	6.7	4	13.3	4	13.3	4	13.3	8	26.7	4	13.3	4	13.3	30	99.9
BEST	4	16.7	10	41.7	-	-	2	8.3	5	20.8	2	8.3	1	4.2	24	100.0

of one and three months respectively. The new farmer group emphasizes that trend with a mean search time of 7.4 months. There is a wide distribution of time categories, however, with a modal class of 4 to 6 months. Established buyers and the renters as well as full-time buyers and renters display the same characteristics as the total buyer and renter group in that renters spend less time searching than the buyer group. The full-time group, however, spends less time searching than the part-time group.

The small amount of time spent searching indicates a seller's market situation as well as the strong desire to expand. (This latter factor has already emerged when the rationalization was discussed). The greater time spent searching than the urban situation reflects the idea that less vacancies are available in the agricultural areas. Thus, when a vacancy is created, it is immediately selected. The new farmer group would have a greater search time than the established group as the latter would have a greater awareness of vacancies. This is perhaps demonstrated by the high proportion using direct contact with the second party as an information channel.

Search Number

Table 4-19 summarizes data concerning the number of locations searched. The basic pattern is one of a repetition of the patterns noted with search time in that there is a respective decline for those selecting the first location in the progression of renters, all full-time, all part-time, and new farmers. There appears to be a direct relationship be-

TABLE 4-19

NUMBER OF LOCATIONS SEARCHED

Group	Number													
	1		2		3		4		5-10		More than 10		Total	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
N	30	39.5	17	22.4	6	7.9	8	10.5	13	17.1	2	2.7	76	100.1
NB	14	25.9	12	22.2	5	9.3	8	14.8	13	24.1	2	3.7	54	100.0
NR	16	72.7	5	22.7	1	4.5	-	-	-	-	-	-	22	99.9
F	23	56.1	11	26.8	3	7.3	2	4.9	2	4.9	-	-	41	100.0
FB	9	42.9	6	28.6	2	9.5	2	9.5	2	9.5	-	-	21	100.0
FR	16	70.0	5	25.0	1	5.0	-	-	-	-	-	-	20	100.0
P	7	20.0	6	17.1	3	8.6	6	17.1	6	31.5	2	5.7	35	100.0
PB	5	15.2	6	18.2	3	18.2	6	18.2	11	33.3	2	6.1	33	100.2
PR	2	100.0	-	-	-	-	-	-	-	-	-	-	2	100.0
NEW	3	10.0	5	16.7	3	10.0	5	16.7	12	40.0	2	6.7	30	100.1
BEST	11	45.8	7	29.2	2	8.3	3	12.5	1	4.2	-	-	24	100.0

tween the time spent searching and the number of locations searched.

Distance Between Origin and Destination

Table 4-20 summarizes the origin-destination distance data.

Overall, the mean distance was 2.8 miles. The modal class was 2.1 to 5 miles while the median distance class was 1.5 to 2 miles.

The newcomer group was characterized by greater distances. Renters were characterized by moves of one mile while full-time movers are characterized by distances of 1.1 to 1.5 miles.

The shorter distances for the renters and established farmers may indicate an unwillingness to go beyond a certain distance from the farmstead. Some of the longer distances of the established farmer reflect the situation where a complete relocation has occurred. The data does not enable one to determine a threshold distance.

This section has examined the variables of agricultural relocation mobility by tabulating the questionnaire data. The data does not identify any one key variable for search behavior. However, the data does show that different classes of farmers show tendencies to behave in slightly different manners.

Comparing the Findings

The age bias away from the most mobile segment of population was also replicated in Barrett's study of home buyers. This was primarily due to the socio-economic status implied by home (farm) ownership.

TABLE 4-20

DISTANCE BETWEEN PAST AND PRESENT LOCATION

Group	Miles															
	0		.01-.5		.51-1.0		1.01-1.5		1.51-2.0		2.01-5.0		>5		Total	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
N	10	13.2	8	10.5	10	13.2	12	15.8	7	9.2	17	22.4	12	15.8	76	100.1
NB	6	11.1	3	15.5	5	9.3	8	14.8	4	7.4	16	29.6	12	22.2	54	99.9
NR	4	18.2	5	22.7	5	22.7	4	18.2	3	13.6	1	4.5	-	-	22	99.9
F	7	17.1	6	14.6	7	17.1	9	22.0	5	12.2	4	9.8	3	7.3	41	100.1
FB	3	14.3	3	14.3	2	9.5	5	23.8	2	9.5	3	14.3	3	14.3	21	100.0
FR	4	20.0	3	15.0	5	25.0	4	20.0	3	15.0	1	5.0	-	-	20	100.0
P	3	8.6	2	5.7	3	8.6	3	8.6	2	5.7	13	37.1	9	25.7	35	100.0
PR	-	-	2	100.0	-	-	-	-	-	-	-	-	-	-	2	100.0
NEW	1	3.3	-	-	3	10.0	-	-	3	10.0	13	43.3	10	33.3	30	99.9
BEST	8	20.8	3	12.5	2	8.3	8	33.3	1	4.2	3	12.5	2	8.5	24	100.1
PB	3	9.1	-	-	3	9.1	3	9.1	2	6.1	13	39.3	9	27.3	33	100.0

Life cycle considerations are important in both agricultural and urban mobility. Fuller (1975) found that lessees, relative to the general farm population, had a larger family and 91 per cent had children aged 17 and under compared to a norm of 70 per cent.

The number of children in agricultural families which move contrasts to Barrett's study of home buyers in Toronto in which one quarter of the households were childless, one half of the households has one or no children and 80 per cent had two children or less. It would seem that a greater presence of children is characteristic of agricultural mobility even though there are no basic age differences in the heads of the household in the two studies.

Rossi (1955) observed that large families were more mobile than small ones. Barrett could not substantiate those results in his study. To maintain a comparison standard with Barrett a large family is one consisting of three or more children. Forty per cent of the new farmers, 30 per cent of established buyers, and 55 per cent of the renters had large families (Table 4-4 and 4-5). Forty per cent of the new farmers and 60 per cent of the established farmers who had large families had remained at that previous location for more than four years. Barrett found that 40 per cent of his sample which had large families had remained in the same location for more than four years (1973, 64). Thus, new farmers are similar to the urban situation. New farmers are quite stable while the established farmers with large families are only slightly more so. However, the concept of mobility varies in the sense

that for existing farmers the place of residence may remain constant. If one views mobility solely in terms of a changing residence, then established farmers are less mobile than what their "true" mobility is.

The reasons for moving may be compared to urban and agricultural studies. Smit (1975) noted in his study of farm enlargers that the main reasons for enlargement were family reasons; small farm, an investment; increase income; and the opportunity was available.

Barrett found that the two most popular responses for his study were "I wanted to own a house" and "the previous accommodation was too small" (1973). There is an apparent transposing to the "I wanted to farm" and "the farm is too small" reasons for the farmers. Barrett also notes that the two main reasons for selection are cost and house design (1973, 99). There is a commonality if one equates farm factors with house design in situations where no residence change occurs.

Barrett concludes that the failure to rationalize the reasons for moving with the reasons for selection indicates the problems of measuring place utility (1973, 99). This is demonstrated by the ambiguities such as "I wanted to farm" and cost, both of which do not refer to place utility. The same conclusion may be drawn when place utility considerations are applied to agricultural mobility.

Barrett's study noted a marked attrition when questions were asked in the continuum of dissatisfaction with the new location, future mobility plans, currently looking for alternatives, and where are you looking.

Table 4-14 indicated that agricultural mobility only partially replicates Barrett's findings. These differences may be due to the temporal aspect in that Barrett was concerned with recent movers who had not yet had enough time to assess their new location. Differences are more likely the result of the basic differences in the two groups. Residential relocation seems to be an end. However, agricultural mobility is largely due to the expanding farm. As such this expansion is an ongoing process. This is one of the differences between intra-urban and agricultural mobilities even though both are considered to be a process of adjusting location with one's needs and aspirations.

Table 4-21 illustrates the differences and similarities between the Rossi study and the Barrett study with the agricultural mobility study.

Because Rossi's (1955) study was concerned with renters and buyers, it was anticipated that the data of this study would have had fewer differences. It is perhaps the fact that Rossi also had different socio-economic groups included in the sample that accounts for these differences. The present study bears more similarities with Barrett's even though Barrett was concerned with buyers, rather than renters.

The major difference between this study and the other two is the low occurrence of driving (and walking) in the agricultural sample. There was a general consensus on the role of personal contact. In terms of real estate this study differs very little from Barrett's sample. This also occurs in terms of newspaper usage. Rossi accounts for those differences by

TABLE 4-21

A COMPARISON OF INFORMATION SOURCES
USED IN THE SEARCH

	Rossi* Study	Barrett** Study	Agricultural Mobility	% difference with: Rossi	Barrett
Walking, driving	57%	72%	26%	-31	-46
Personal contact	62	45	55	-6	+12
Direct contact with owner	-	-	83	-	-
Newspaper	63	43	38	-25	-5
Real Estate	50	69	72	+22	+3
Windfall	31	-	-	-	-

* Rossi, 1951 p. 161.
** Barrett, 1973, p. 107.

stating that personal sources are used primarily for the rental market whereas newspapers and real estate are used more often in the purchase market (1955, 162). The tendency for personal sources to be used in the rental market is a function of the type handled by real estate. In agriculture, land is often sold without the housing. This may in part indicate the increased role of personal sources rather than to resort to the real estate. It is difficult to make comparisons with respect to socio-economic status as a different data base was used for this study. Barrett specifically notes the relatively low occurrence of real estate agents to be found in the "seller's market" areas, (1973, 116). In that respect a similar situation exists because the relative amount of vacancies tends to be small in this sample area. Sublett (1975) also makes a similar statement by noting the relative absence of real estate agents in proportion to the amount of land that turns over.

Barrett notes that 70 per cent of his sample claimed to be familiar with the area while 60 per cent claimed a familiarity with the street (1973, 131). Generally, full-time farmers tend to be more familiar with the street and area than the part-time group. A conclusion similar to the one made by Barrett must be reached in that search behavior is not a spatial excursion but rather areal mobility within reassuring confines (1973, p. 131).

In this agricultural study the short distance of moves is characterized by the high degree of familiarity with the area and consequently by an awareness of vacancies. The number of moves involving no distance movement (i.e. contiguous

land) supports Keeble's proposition of a "non-mover" mobility over space.

Sublett (1975) notes that the newcomers median distance for the three areas in his study were 7, 2, and 4 miles. The median distance class for newcomers in this study was 2.51 to 5 miles. This corresponds quite closely with Sublett's findings. This study does not concur with Fuller's (1975) findings of a 60 per cent modal class of renters in the 0 to .5 mile distance. Fuller's 18 per cent of renters moving more than two and one half miles cannot be found in this study. The similarity between this study and Fuller's study is that the majority of renter moves are less than two miles. These distance variables may reflect the different agricultural types of the studies as Fuller draws his sample from eastern and northern Ontario.

In terms of the locations searched Boots et. al. (1977) also noted that renters examined fewer locations than buyers.

Barrett also reported the same trend (p. 138). However, there was a tendency in the Toronto study to examine more locations than in the fruit belt, even though the number of locations searched was still small. This is a reflection of the two different markets; agriculture is re-sale while urban areas consist of re-sale plus new developments. This latter feature allows a greater number of vacancies to exist and hence to be searched.

Barrett's study also replicated the findings of this study in that only a short time is devoted to seeking a new

location. Agricultural movers, however have a greater tendency to have not looked for a new location.

It would appear that differences in agricultural and intra-urban mobility are a matter of degree. In neither situation could any one key variable of the search be identified nor is the search a simple process.

CHAPTER V

AN ANALYSIS OF AGRICULTURAL SEARCH BEHAVIOR

This chapter will analyze the data which was presented in the substantive portion of the study so that the key variables of the search process may be examined. The degree of rationality of the search is also examined.

Hypotheses Concerning Agricultural Search Behavior

Hypothesis 1

Ho: There is no relationship between the time spent in search and the number of locations examined.

The data concerning time and number of locations was derived from the questionnaires. This hypothesis was rejected at the .001 significance level by all the aggregated groups considered. The results are shown in Table 5-1. These groups were the total sample (N), all buyers (NB), all renters (NR), full-time buyers (FB), part-time buyers (PB), full-time renters (FR) and the group of new farmers (NEW). Henceforth, the groups will be referred to as denoted by the subscript indicated in brackets. What can be said is that the greater time spent searching, the greater the number of locations examined. Conversely, those spending less time searching also examine fewer locations. The strength of the relationship is not indicative, however, of the amount of change one variable will undergo as the other changes.

Hypothesis 2

Ho: There is no relationship between the time spent searching and the size of the area searched.*

*This term is discussed under the heading of Index of Search Cluster. This is the mean of all the distances from the centroid of all the houses examined including the chosen locations.

TABLES 5-1

Hypothesis 1

H_o: There is no relationship between the time spent in search and the number of locations examined.

Group	Kendall's Tau Coefficient	Level of Significance	Spearman's Rank Coefficient	Level of Significance
N	.6437	.001	.7728	.001
NB	.5804	.001	.7120	.001
NR	.6041	.001	.6857	.001
FB	.6488	.001	.7569	.001
FR	.6042	.001	.6893	.001
PB	.6008	.001	.7223	.001
NEW	.5012	.001	.6233	.001

This hypothesis was rejected at the .001 significance level by the N and NB groups. (See Table 5-2). The NR rejected this hypothesis at the .05 (Kendall's Tau) and .01 (Spearman r) significance level. The FB group rejected this hypothesis at the .01 level significance while the FR and PB groups led to a rejection at the .05 level of significance. Those who spend more time searching also search a larger area for those locations.

Hypothesis 3

Ho: There is no relation between the time spent in search and gross farm sales.

This is a modification of Barrett's hypothesis, that there is no relationship between time spent searching and the price of the house (1973, 168). This hypothesis is based on the assumption that those buying more expensive locations would have greater flexibility in searching because of their economic status. Only the full-time buyer group was able to reject this hypothesis. (Table 5-3). This rejection also occurred at the .05 significance level. Thus, in overall terms only one group exhibits the aforementioned characteristic of economic flexibility. Generally there is no significant relationship between the time spent searching and the price (as measured through gross farm sales) of the location. The alternative surrogate for price paid and income, farm size, also led to the acceptance of this hypothesis. Consequently, when the number of locations examined is substituted for the time spent in search so that when the hypothesis reads, "There is no relation between the number of locations examined and

TABLES 5-2

Hypothesis 2

H_o: There is no relationship between the time spent searching and the size of the search area.

Group	Kendall's Tau Coefficient	Level of Significance	Spearman's Rank Coefficient	Level of Significance
N	.4764	.001	.6371	.001
NB	.3523	.001	.4974	.001
NR	.4173	.012	.5103	.008
FB	.4925	.002	.6354	.001
FR	.4044	.018	.5018	.012
PB	.2622	.021	.3853	.013
NEW	.1621	.114	.2479	.093

TABLE 5-3

Hypothesis 3

H_o: There is no relationship between the time spent searching and gross farm sales.

Group	Kendall's Tau Coefficient	Level of Significance	Spearman's Rank Coefficient	Level of Significance
N	.1020	.109	.1485	.100
NB	.0997	.156	.1395	.157
NR	.0708	.332	.1115	.311
FB	.2773	.046	.3911	.040
FR	.0399	.408	.0777	.372
PB	.0060	.481	.0051	.489
NEW	.0289	.415	.0334	.431

H_o: There is no relationship between the time spent searching and the size of the farm.

N	-.0085	.460	-.0056	.481
NB	-.0576	.291	-.0648	.321
NR	.0861	.301	.1589	.240
FB	-.0203	.451	-.0072	.488
FR	.0461	.395	.1242	.301
PB	.0060	.481	-.0135	.470
NEW	-.0535	.346	-.0623	.372

gross farm sales", the same findings result. This assumption is logical as the time searching is related to the number examined. This would also be true if search area was substituted for time. (The statistical results are shown in the Appendices).

Hypothesis 4

Ho: There is no relationship between the time spent searching and managerial ability.

Zimmer and Rodd (1972) note that those farmers that expand can be predicted on the basis of their younger age, more progressiveness, and greater managerial ability. This hypothesis is predicated on the basis that those with greater managerial skills and abilities will be more knowledgeable and efficient in the search than those with less managerial ability. The FB group was the only one to be able to do so. This hypothesis could only be rejected at the .05 level of significance. (See Table 5-4 for other results). Generally, there is no significant relationship between managerial ability and the time spent in search.

When similar hypotheses concerning the relationship of managerial ability with the number of locations searched, and also with the size of the area searched, based on the equation of managerial ability with efficiency and thoroughness, it was concluded that there were no significant relationships in these two cases as no group was able to reject the null hypothesis with the exception of the PB group for which there is a relationship at the .05 level of significance between managerial ability and the number of locations examined. However, the lower managerial scores noted in the previous chap-

TABLE 5-4

Hypothesis 4

H_o: There is no relationship between the time spent searching and managerial ability.

Group	Kendall's Tau Coefficient	Level of Significance	Spearman's Rank Coefficient	Level of Significance
N	.0751	.188	.1031	.188
NB	.1109	.135	.1580	.127
NR	.1123	.252	.1488	.254
FB	.3613	.016	.4520	.020
FR	.0765	.332	.0952	.345
PB	.0690	.297	.0982	.293
NEW	.1124	.203	.1692	.186

ter must be given some consideration before this hypothesis can be given any real meaning.

Hypothesis 5

Ho: There is no relationship between the number of locations examined and the size of the search area.

This hypothesis is predicated on two hypotheses already established; the time and number of locations examined and the time and search area relationships. Table 5-5 indicates that the "PB" group rejected this hypothesis at the .05 significance level while the "FB", "FR", "MR", "NB" and "N" groups rejected this hypothesis at the .001 significance level. Thus, those who spend more time searching examine more houses in larger areas.

Hypothesis 6

Ho: There is no relationship between the time spent in search and the distance between the past and present locations.

This hypothesis is based on a comparison with the general sequence of industrial search behavior. Townroe (1972) notes that non-locational alternatives to the problem are considered first. Examples of this relating to an agricultural situation would be intensification. The next step is an examination of locations adjacent or close by the plant. If this does not yield a solution, the seach spreads to the local areas. Thus, as search time increases, because the locational problem cannot be solved at or near the origin, there is a sequential trend to continue seeking a location radially outward from the origin. In essence, an increase in distance from the origin to distination is a product of the failure to

TABLE 5-5

Hypothesis 5

H_o: There is no relationship between the number of locations examined and the size of the search area.

Group	Kendall's Tau Coefficient	Level of Significance	Spearman's Rank Coefficient	Level of Significance
N	.6387	.001	.7932	.001
NB	.4612	.001	.6106	.001
NR	.6957	.001	.7347	.001
FB	.5878	.001	.7620	.001
FR	.6780	.001	.7194	.001
PB	.2957	.011	.4020	.010
NEW	.2183	.052	.2936	.058

find locations near the origin. This would appear to be the case for established farms. Table 5-6 gives weak support to this supposition. The full-time buyer group rejects the null hypothesis as the .05 level of significance. The "total buyers" group rejects this as does the "total" group at the .01 and .001 levels of significance.

There is no significant relation for renters as there is a tendency to find locations within a shorter period of time.

Logically, because there is a significant relationship between time spent searching and the number of locations examined, then the number of locations examined should also vary significantly as the distance from the origin increases.

A stronger relationship exists. There is a significant relationship between the number of locations examined and distance for the "N", "NB" and "FB" groups at the .001 significance level and for the part-time buyer group at the .01 significance level.

Because the time spent searching and the number of locations examined vary significantly with the size of the search area, then it must follow that as the search area increases or decreases so does the distance from the origin to destination increase or decrease. The new farmer group and part-time buyer group vary significantly at the .05 level of significance. A significant relationship at the .001 level exists for the "N", "NB" and "FB" groups. As the size of the search area increases in relation to the time spent searching, there is also a corresponding number of locations examined

TABLE 5-6

Hypothesis 6

H_o: There is no relationship between the time spent searching and the distance between the past and present location.

Group	Kendall's Tau Coefficient	Level of Significance	Spearman's Rank Coefficient	Level of Significance
N	.3368	.001	.4649	.001
NB	.2338	.009	.3315	.007
NR	.2360	.078	.3214	.072
FB	.3781	.011	.4613	.018
FR	.2031	.122	.2856	.111
PB	.1675	.094	.2382	.091
NEW	-.0432	.373	-.0419	.413

H_o: There is no relationship between the number of locations examined and the distance of the move.

N	.5514	.001	.6890	.001
NB	.4853	.001	.6134	.001
NR	.2751	.066	.3150	.077
FB	.5299	.001	.6728	.001
FR	.2521	.095	.2870	.110
PB	.3783	.002	.4857	.002
NEW	.1975	.070	.2624	.081

H_o: There is no relationship between the size of the search area and the distance of the move.

N	.5287	.001	.6766	.001
NB	.4598	.001	.5955	.001
NR	.2196	.108	.2567	.124
FB	.6074	.001	.7739	.001
FR	.1887	.155	.2164	.180
PB	.2971	.009	.3802	.015
NEW	.2500	.028	.3107	.047

as the distance from the origin increases. This appears to be nothing but a geometric truism.

Hypothesis 7

Ho: There is no relationship between the size of the farm and the distance between the origin and destination of the move.

This hypothesis is based on a conclusion reached by Sublett (1975) that farmers are willing to go further for a large piece of land than for a small piece. By extension if farm size is taken to be a surrogate measure of income, then a farmer will move further to increase his income. The null hypothesis is rejected at the .05 level of significance by the "N", and "NB" and part-time buyer groups. The negative Kendall Tau coefficients as noted in Table 5-7, however, indicate a inverse relation. The inverse relation may be explained by the part-time factor. The majority of this group are the new farmers who originate in the urban areas. Also, indicated in the substantive results is the tendency for this group to buy smaller farms. Thus, this inverse relation is a geometric truism. This factor would also explain the smaller gross farm sales tendency for this group was also noted in the substantive portion of this paper. It appears that no relationship exists for full-time farmers and renters groups.

The Chi-square goodness of fit test was used to examine a second group of hypotheses concerned with expected frequencies of occurrances. The results are as follows:

Hypothesis 8

Ho: Real estate usage as an information channel does not significantly vary from all other channels used.

TABLE 5-7

Hypothesis 7

H_o: There is no relationship between the size of the farm and the distance between the origin and destination of the moves.

Group	Kendall's Tau Coefficient	Level of Significance	Spearman's Rank Coefficient	Level of Significance
N	-.1413	.040	-.2001	.042
NB	-.1714	.037	-.2403	.040
NR	-.0181	.455	-.0554	.403
FB	.0685	.335	.0913	.347
FR	.0822	.312	-.1644	.244
PB	-.2115	.045	-.2720	.063
NEW	-.1289	.167	-.1723	.180

H_o: There is no relationship between the level of gross farm sales and the distance between the origin and distinction of the move.

N	.0069	.466	.0217	.426
NB	-.0064	.473	.0099	.472
NR	-.0178	.455	-.0332	.442
FB	.1408	.190	.2482	.132
FR	-.0813	.312	-.1361	.284
PB	-.0192	.438	-.0271	.440
NEW	_.1301	.159	-.1661	.190

This hypothesis was predicated on the differences in real estate use noted by Rossi and Barrett. Also, the data in this study indicated group differences in terms of the usage of the various channels. Therefore, it was necessary to determine whether any significant differences exist.

Initial Use

Table 5-8 indicates that part-time buyers, and new farmers reject the hypothesis at the .01 level of confidence. The use of real estate agents was greater than expected for these groups. (The Appendices list specific frequencies). The renters, full-time, and full-time renters rejected the hypothesis at the .05 confidence level. Real estate usage was less than expected for these groups.

Total Use

The full-time group rejects the null hypothesis, at the .05 confidence level. The renters and full-time renters also led to a rejection, but at the .01 confidence level. Real estate usage was much less than expected. The total sample rejected the null hypothesis at the .05 confidence level while the total buyers, new, part-time, and part-time buyer groups led to a rejection at the .01 level. The observed real estate usage was much greater than expected for these groups.

Hypothesis 9

Ho: Direct contact with the second party does not differ significantly the use of all other channels.

This hypothesis was predicated for the same reasons as Hypothesis 8. In addition, a clarification between this source and the use of real estate was needed. Table 5-8 con-

TABLE 5-8

CHI SQUARE RESULTS: INFORMATION SOURCES

H_0: Real estate usage as an information channel does not significantly differ from all other channels used.

Group	Initial Usage		Total Usage	
	X^2	Level of Significance**	X^2	Level of Significance
N	0.05		5.20	95
NB	3.13		19.86	99
NR	4.46*	95	10.37	99
F	5.86	95	4.93	95
FB	1.44*		0.10	
FR	5.00*	95	9.39	99
P	8.75	99	32.90	99
PB	10.37	99	36.76	99
NEW	10.21	99	34.61	99
BEST	0.85*		0.0	

H_0: The use of direct contact with the second part as an information channel does not dignificantly differ from the use of all other channels.

Group	Initial Usage		Total Usage	
	X^2	Level of Significance**	X^2	Level of Significance
N	0.0		13.44	99
NB	2.66		0.51	
NR	6.01*	95	75.36	99
F	5.13	95	48.89	99
FB	0.19*		3.47	
FR	7.81*	99	46.00	99
P	6.42	99	5.69	95
PB	5.93	95	7.55	99
NEW	7.50	99	9.78	99
BEST	0.38*		6.09	95

* based on 4 - expected frequency - 5. There is no agreement on the minimum size of the expected frequency. Daniel (1978, p. 256; c.f. Cochran, 1952; 1954) notes that no expected frequency in a goodness of fit test should be less than one.

** level of significance for one degree of freedom

tains the test results for this hypothesis.

Initial Use

The part-time, part-time buyers and new groups use of this information channelwas less than expected while the usage was greater than expected for total renters, full-time, and full-time renter groups. The usage rates are the converse of that, when real estate usage was considered.

Total Usage

The total, part-time, part-time buyers and new farmers reject the null hypothesis when total usage is tested. The rejection must be viewed in terms of the lower than expected frequency of use of this channel. The total renters, full-time, full-time renters and established buyers also reject the null hypothesis. The usage rate of this channel was higher than expected.

Comparing the Information Channels

The total group displays a type of bimodal behavior in terms of the total use of real estate and direct contact. The total buyer, part-time, and new groups prefer real estate agents while the renters show a preference for direct contact. The full-time and established groups also show this preference.

Hypothesis 10

Ho: Locations are examined, regardless of the mover's familiarity with the area containing that location.

The major problem in working with the concept of familiarity is the ambiguity in which that term may be defined. However, familiarity will be used as this is an accurate reflection of one's awareness space. The data in Chapter 4

revealed a high degree of familiarity (awareness) with the areas searched. The Chi-square goodness of fit test was used to determine the statistical significance of the high proportion indicating a familiarity with the area.

Familiarity with the Area

Table 5-9 indicates that only one half of the sample groups reject the null hypothesis. The total sample and total renters as well as the total full-time group, full-time renters and full-time buyers do not search in areas which are unfamiliar. (This is indicated in the Appendices where the expected frequencies are less than the observed occurrences to look in the familiar areas). That the renter and full-time groups (which are mainly established farmers who also tend to move very short distances) have a familiarity with the area may be considered a geometric truism. Barrett noted that familiarity with an area tended to decrease with those moving to the new suburban developments. In terms of familiarity, the part-time group (the majority of whom originate in the urban areas) may be considered to be analogous to Barrett's suburban movers.

Familiarity with the Street/Block

When the Chi-square test is applied to familiarity with the street/block, only the new, part-time, part-time buyers, and the total sample groups reject the null hypothesis (Table 5-9). There is a relationship between familiarity and the location examined for these groups. If the Apendices are examined the less than expected rates of familiarity is noted.

TABLE 5-9

CHI SQUARE RESULTS:

FAMILIARITY WITH THE AREA

H_o: Locations are examined regardless of the Familiarity with that area.

Group	Familiar with area		Familiar with the street/block	
	X^2	Level of significance*	X^2	Level of significance
N	6.36	99	2.58	
NB	1.86		4.74	95
NR	6.54	99	0.18	
F	8.80	99	0.02	
FB	3.86	95	0.42	
FR	5.00	95	0.02	
P	0.71		4.82	95
PB	0.28		5.12	95
NEW	0.54		4.80	95
BEST	1.50		0.67	

* Level of significance for one degree of freedom.

Thus, there is a tendency for those groups to search unfamiliar streets.

It was anticipated that the full-time groups would have demonstrated a stronger tendency to have a familiarity with the street or block because of the shorter distance of the move as well as by the proportion using friends and neighbours, and direct contact (presumably neighbours and friends) as information channels. However, the test only indicates a close association of the observed and expected frequencies. This may indicate that perhaps, for these groups, familiarity with the persons, rather than the actual location, is more important and may be the key to understanding relocation.

The Indices of Search Behavior

Barrett notes that awareness space tends to be an amorphous concept (1973, 5). Because familiarity is difficult to define, there is a need to measure other and more tangible variables of search.

Three measures, known as the Indices of Search Behavior were developed by Barrett. They draw attention to the spatial and temporal aspects of the total search. Greater attention is given to the vacancy set (whereas awareness space diverts attention from the vacancy set) so that a more gainful insight is achieved. Three elements; time, number, and search area are examined. These may be considered the parameters of the search (1973, 196). The influence of these three characteristics were noted in the discussion of the hypotheses.

Index of the Intensity of the Search

This index combines the variables of length of the search

with the number of locations examined. The index of intensity is measured by dividing the number of locations examined by the time spent searching. A high value for the index indicates an intensive search while a low value is indicative of a casual search. Table 5-10 indicates the potential values for this index.

The results of the data are given in Table 5-11. When this table is compared with the potential values, it can be seen that agricultural search behavior is characterized by a very low intensity. The median class intervals were .5 to 1.0 for the N, NB, NR, P, PB, and new groups. The modal classes for the part-time and new farmers was 1.01 to 2.0. The modal classes for the renters was 0. The median class for full-time buyers and renters and established farmers was .01 to .5. The modal classes correspond with the median classes. Overall, there is a very low intensity, especially when considering Barrett's modal and median classes were 1.0 - 1.99 and 3.0 - 3.99 respectively.* Renters, full-time farmers, and established farmers have a lower intensity of search than the part-time farmers. This factor may be explained by the underlying differences in the two groups. Full-time farmers are characterized by a change in residence. It would seem that the farmers are restricted in the search by that characteristic. It was expected that renters would have a lower intensity than buyers as rental implies less financial obligations. Similarly, the full-time group is not generally concerned with a home re-

*Barrett's sample's intensity values ranged from zero to 56 whereas the maximum value for this group was 10.

TABLE 5-10

POSSIBLE VALUES FOR THE INDEX OF SEARCH INTENSITY

Months	Number of Locations						
	1	3	6	9	15	20	25
18	.05	.16	.3	.5	.83	1.01	1.38
9	.1	.3	.6	1.0	1.6	2.2	2.7
5	.2	.6	1.2	1.8	3.0	4.0	5.0
4	.25	.75	1.5	2.25	2.75	5.0	6.25
3	.3	1.0	2.0	3.0	5.0	6.7	8.3
2	.5	1.5	3.0	4.5	7.5	10.0	12.5
1	1.0	3.0	6.0	9.0	15.0	10.0	25.0

TABLE 5-11

INTENSITY OF SEARCH INDEX

Group	Intensity													
	Not defined		.01-.50		.51-1.0		1.01-2.0		2.01-5.0		Greater than 5		Total	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
N	14	18.4	21	27.6	17	22.4	13	17.1	3	3.9	8	10.5	76	100.0
NB	6	11.1	16	29.6	12	22.2	12	22.2	3	5.6	5	9.3	54	100.0
NR	8	36.4	5	22.7	5	22.7	1	4.5	-	-	3	13.6	22	100.0
F	9	22.0	13	31.7	9	22.0	3	7.3	1	2.4	6	14.6	41	100.0
FB	3	14.3	8	38.1	4	19.0	2	9.5	1	4.8	3	14.3	21	100.0
FR	6	30.0	5	25.0	5	25.0	1	5.0	-	-	3	15.0	20	100.0
P	5	14.3	8	22.8	8	22.8	10	28.6	2	5.7	2	5.7	35	99.9
PB	3	9.1	8	24.2	8	24.2	10	30.3	2	6.1	2	6.1	33	100.0
PR	2	100.0	-	-	-	-	-	-	-	-	-	-	2	100.0
NEW	2	6.7	8	26.7	7	23.3	10	33.3	2	6.7	1	3.3	30	100.0
BEST	4	16.7	8	33.3	5	20.8	2	8.3	1	4.2	4	16.7	24	100.0

location. Thus, relocation implies only that land is purchased. Part-time farmers are characterized by the inclusion of the home variable which in turn increases the financial obligation. This provides a reasonable explanation for the differences among the groups.

In general terms, Barrett explains the low intensity to the idea that once a potential aspiration is reached there is information feedback. When this aspect of "space coverage occurs", general probing stops and the search becomes highly concentrated. This is due to a behavioral characteristic termed as "found potential". The result is the exclusion of potentially greater pay-offs (1973, 198). This may be interpreted also in terms of market conditions. The existence of a restricted resale market was already established. In that case, especially for full-time farms who are restricted a low intensity would be expected. The search stops at the level of found potential for there is the expectation that if the search continues, someone else will take that vacancy. The same situation applies to new farmers. They are not restricted to a constant residence and for that reason exhibit a slightly higher intensity of search.

Search Cluster

This index was developed to place more emphasis on the location of alternatives so that mobility is viewed in a broader context than origin and distinction. This is important because search behavior is concerned with the exploration of alternative locations which yield the destination. The question then becomes how big an area is searched.

The search cluster is defined as the mean of all the distances between all the locations examined and the centroid. The centroid is the point which is equidistant, between all the points in the set (Barrett, 1973, 208). In essence this is a measure of dispersal from the mean centre. This measure alleviates certain problems associated with the measurement of area. When no locations are examined, the index takes on a value of zero. When only two locations are examined the value becomes half the distance between the points. These two factors make this index especially relevant to this study as area could not otherways be measured. This index is also more indicative of search behavior. In the situation of several locations, the search cluster does not measure the area within the points (as this area is not searched) but rather the dispersal from the mean centre of the points. The minimum size of the search cluster is zero while the maximum value is determined by the area being studied. In this study, the maximum value would be 16.5 as the greatest length of the area is 33 miles.

Table 5-12 contains the results of the analysis. The values are very low. This is due to the proportion of the sample examining only one or two locations. These results in all cases except for the new farmers are indicative of seeking only one or two alternatives. The spatial restriction imposed by a constant residence for most established farmers can be interpreted in view of Townroe's (1972) work on the sequences of industrial location search behavior. The search actually begins by considering "in situ" factors. If this fails, then

TABLE 5-12

AVERAGE DISTANCE OF THE SEARCH CLUSTER

Group	Miles													
	0		01-.5		.51-1.0		1.1-1.5		1.51-2.5		> 2.5		Total	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
N	30	39.4	6	7.9	8	10.5	9	11.8	6	7.9	17	22.4	76	100.1
NB	14	25.9	2	3.7	7	13.0	8	14.8	6	11.1	17	31.5	54	100.0
NR	16	72.7	4	18.2	1	4.6	1	4.6	-	-	---		22	100.1
F	23	56.1	4	9.8	3	7.3	6	14.6	3	7.3	2	4.9	41	99.8
FB	9	42.9	-	-	2	9.5	5	23.8	3	14.3	2	9.5	21	100.0
FR	14	80.0	4	20.0	1	5.0	1	5.0	-	-	-	-	20	100.0
P	7	20.0	2	5.7	5	14.2	3	8.6	3	8.6	15	42.9	35	100.0
PB	5	15.2	2	6.1	5	15.2	3	9.1	3	9.1	15	45.5	33	100.2
PR	2	100.0	-	-	-	-	-	-	-	-	-	-	2	100.0
NEW	3	10.0	2	6.7	5	16.7	2	6.7	3	10.0	15	50.0	30	100.1
BEST	11	45.8	-	-	2	8.3	6	25.0	3	12.5	2	8.3	24	99.9

the search begins adjacent to the origin. The failure of this results in seeking radially outward from the origin until a location is found. The new farmers and for those who undergo a complete relocation (i.e. of the house) correspond to those in Townroe's sequence of seeking radially outward, while the full-time group and renters are typically characterized by those seeking adjacent to origin.

This study has very few large search clusters compared to Barrett's study. The new farmers have a greater tendency to duplicate Barrett's findings, although at a smaller scale. The limited number of vacancies may be used to explain the differences. A valid comparison with Barrett cannot be made on the totality of this sample but rather in the context of new and established farmers. Barrett noted a modal and median class of .001-1 mile. The modal class for the established buyers is zero (i.e. no alternative search) while the modal value for new farmers is greater than 2.5 miles. In terms of the new farmers, the vacancies are more limited than in the Toronto situation which means that more locations must be searched in a larger area. The limited vacancies for the established farmers, because of the restriction of a fixed residence means that if a farmer cannot find a nearby vacancy either no mobility will occur, or a total relocation will occur.

Index of the Concentration of Search

This index incorporates the spatial aspects of the index of search cluster with the temporal aspects of the intensity of search so that a correlation may be made. The index of the concentration of the search is obtained by dividing

the Intensity Index by the search cluster (Barrett, 1973, p. 217).

Table 5-13 demonstrates the range of values on a group basis. The median class for all groups except for the renters and full-time groups is 0-.5. The median for the latter group is unidentified. The modal class for all groups except renters, the part-time and new farmer classes is unidentified. The modal class for the latter groups is 0-.5. This compares with a median and modal class of 4-5.99 and 0-.99 for Barrett's study. Barrett did not include the identified.

The groups previously identified as having low search intensities and small areas are easily identified as having low search intensities and small search areas are easily identified by an unidentified search concentration. (The term "unidentified" is used. This is because the search cluster for this group was zero. Since division by zero is unidentified, the term is borrowed from that mathematical operation). Few people had a high concentration of search. In other words, the majority did not look at several locations in a very short time over a small area. This is evidenced by the vacancy market. Unlike urban areas there are no new subdivisions where people may look at several vacancies in a short time. The agricultural search behavior is characterized by searching only a few locations in a small period of time in concentrated areas (as in the case of established farmers) or in a larger area (as in the case of new farmers).

The differences among full-time and part-time farmers is only a matter of degree rather than kind. This is due to

TABLE 5-13

INDEX OF THE CONCENTRATION OF THE SEARCH

Group	Concentration											
	Undefined		0.0-.5		.51-1.0		1.1-5		>5		Total	
	f	%	f	%	f	%	f	%	f	%	f	%
N	30	39.4	27	22.4	5	6.6	9	11.8	5	6.6	76	99.8
NB	14	25.9	27	50.0	3	5.6	6	11.1	4	7.4	54	100.0
NR	16	72.7	-	-	2	9.1	3	13.6	1	4.6	22	100.0
F	23	56.1	9	22.0	3	7.3	4	4.8	2	4.9	41	100.1
FB	9	42.9	9	42.9	1	4.8	1	4.8	1	4.8	21	100.2
FR	14	70.0	-	-	2	10.0	3	15.0	1	5.0	20	100.0
P	7	20.0	18	51.4	2	5.7	5	14.2	3	8.6	35	99.9
PB	5	15.2	18	54.5	2	6.1	5	15.2	3	9.1	33	100.1
PR	2	100.0	-	-	-	-	-	-	-	-	2	100.0
NEW	3	10.0	18	60.0	2	6.7	4	13.3	3	10.0	30	100.0
BEST	11	45.8	9	37.5	1	4.2	2	8.3	1	4.2	24	100.0

the basic underlying structure of the two groups: one is established and is restricted with respect to the fixed residence; and the other is a new group and is not restricted. On a similar basis, differences in the search behavior of intra-urban movers and the agricultural situation are too a matter of degree rather than kind. This difference is basically a result of the varying differences of the vacancy rate and distributions, and the effects of an immobile residence.

CHAPTER VI

SEARCH BEHAVIOR RECONSIDERED

Summary

The thesis was an application of intra-urban search behavior to an agricultural situation. Rural mobility has received little attention except in the case of urban land competition and rural to urban migration. Agriculture mobility is more prevalent than it is apparent and consequently it deserves attention. The study was predicated on the belief that search behavior was the same in both situations.

In the agricultural situation mobility is redefined so that a change in the place of residence is not a pre-requisite for mobility. Mobility is defined in terms of place utility.

The sample involved the aggregation of farmers at different levels (i.e. full-time, or part-time, a buyer or renter, and established or new farmer) as the total aggregation into one group would obscure several differences.

The search process was not a thorough search. Few locations were examined in a short time in familiar areas. Real estate agents and direct second party contact were the major information channels used. Differences in the usage of information sources varied with the group and status; buyers and new farmers favouring the real estate, while established farmers and renters preferred the direct second-party contact

source. Most of the moves were short. New farmers, moved a greater distance while buyers tended to move further than renters.

Alternative locations were also examined in addition to the origin and destination. Three Indices of Search behavior indicated that a low search intensity was common. New farmers had a greater search cluster than the established farmers. A concentration of search was undefined for the majority of farmers. These three conditions were explained in terms of the small vacancy rate of the market and on the basis of a mobile immobile residence restriction.

Generally, differences in the search behavior on the basis of farmer status were more a matter of degree than kind. When comparisons with Barrett's study were made, the differences were also more a matter of degree than kind. These differences were attributed to the differences in vacancy rates and distribution of the two study areas, and the effects of a fixed residence.

Conclusions

Because this study basically followed the outlines and procedures of Barrett's study, and because only differences of degree rather than kind were noted, then by logical extension, if one accepts Barrett's conclusion regarding search behavior as a process of uncertainty reduction, those conclusions will be appropriate to agricultural search behavior.

Those conclusions appear to be valid but they must also take into account the effect of two differences; that of the different market conditions i.e. the number of vacancies that

exist as potential destinations; and the role of a fixed residence rather than a mobile one.

The search for a location is not thorough. The decision to buy, or rent occurs after only a few locations are examined in a short time. The behavior is not consistent if one regards that decision as one of the major decisions made and in terms of the obligations of that decision. In this light, lack of an efficient search for rented land is not critical.

Barrett notes the emphasis on concepts of the known versus the unknown vis a vis Adam's (1969) concepts of an individual's limited awareness or mental map of an area and the space "covering concepts" and the dependence on "found potential". This may also be viewed in terms of certainty and uncertainty of an area.

In an agricultural situation, the position of the established farmer is important. Because there is often no change in place of the residence, the uncertainty of area should be replaced by the concept of an uncertainty of vacancies in the area. That uncertainty is reduced by contacting those most aware of the vacancies, which are the farmers in that area. Efficiency is achieved by accepting the first vacancy made known to be available. This is a feature of the market place. A continued search for more alternatives might result in that known vacancy to be taken by another farmer who is in the same situation as the first. Thus, this quick process results in another type of uncertainty in that the farmer has reduced his uncertainty of vacancies by depending on the found

potential. He has in essence minimized his uncertainty that vacancies for him exist. In this way the uncertainty is a minimizing process of search as opposed to the maximizing approach of economic man. One can pass these minimum uncertainty thresholds quicker than the maximization of economic optimum. For the established farmer to maximize the economic optimum, the conditions of the market and farming would result in either no vacancy being found or total relocation. In the final case, that vacancy may be taken by someone else as the person continues his search. Because there are few vacancies in the market, they will tend to be further away. Since there is a threshold distance (as of yet undefined) in which farming can be carried out away from the home (in economic and social terms) that farmer would have to relocate or stay in his present situation without the increased land.

The new farmer does not have a fixed residence. Also, his knowledge of the vacancies in areas is not as great because he is extraneous to the situation. Most of the farms are sold privately. He depends less on direct sources of information. Hence he must turn to his friends and real estate agents. Because the new farmer is uncertain about the area, he must reduce that uncertainty. The real estate reduces this uncertainty by guiding the client as to where vacancies exist. Uncertainty about the area is reduced by selecting the one he is most familiar with. Once his "found potential" is discovered his uncertainty is reduced to a minimum satisfactory level, then the search stops. This is a minimizing approach as the vacancy is selected on the basis of the familiarity with the area rather

than with the farm. In essence vacancies in less familiar areas are not considered. On that basis, because there are only few vacancies in the market the minimum uncertainty threshold is passed sooner than in the maximizing economic optimum.

The uncertainty concept in relation to market conditions and the role of the fixed or mobile residence provides a reasonable outline rather than a precise formulation to explain agricultural mobility.

Future Research

This thesis was based on the adoption of the work done in intra-urban mobility because no other models and studies existed concerning agricultural mobility in terms of a process. In general agricultural mobility is a worthy field of research. Because agricultural mobility appears to be necessary, in terms of the expansion to maintain economic viability, a further knowledge of the relocation process is warranted. Insights are needed as the result of much of the mobility is fragmented farms. Since there is a general consensus that these farm types are less productive, any insight into the alleviation of this problem would be worthwhile. Insights into relocation and the competition for land are also necessary if one views land as a diminishing resource which requires some form of control or management.

Only occasional references are given to the role of the market. It is believed that the role of the vacancy market is very significant in search behavior and its role as a constraint has yet to be identified.

This study was basically, a starting point in that agricultural mobility is a neglected area of research. The sample was small and the characteristics of this area were perhaps atypical of most other areas. What is needed is more studies which will test this work. The testing should give more attention to areal relationships. A more precise framework is also needed with search behavior can be explained.

Several specific areas for potential research exist. Sherwood's (1975) sample included some farmers in his study of residential relocation through expropriation. Unfortunately, because of the small sample size, the farmers were aggregated with the other movers. This aggregation resulted in a last opportunity that may have provided insights into search behavior and its consequences for those farmers who do not have the choice of voluntary mobility.

Farmland abandonment has received some attention from geographers (eg. Parson 1979, 1977). These studies emphasizes that abandonment occurs in agriculturally marginal areas as well as in areas facing urban expansion. Research in the area of farm abandonment may also include the aspects of agricultural mobility in which the effects and implications of abandonment on relcoation or relocation potential are examined.

Hecht et. al. (1978) noted the effects of residential relocation on the changing spatial activity structure in which a general suburbanization occured. One may wonder what the effects of having a farm in two locations might be. Could an awareness of vacancies for future mobility be based on the two locations or would an awareness remain centred on the

one location? Such a question is important when friends and direct contact is used as a source of information for finding vacancies.

In summary, several areas for research exist. These areas may be concerned with either practical concerns or increasing the theoretical understanding of agricultural search behavior and relocation.

APPENDIX A

A Survey of Agricultural Moves in the Niagara Fruit Belt

I'm from Wilfrid Laurier University, Waterloo. I am conducting a study of agricultural moves in the Fruit Belt and I would like to ask you some questions. Your co-operation is sincerely appreciated as this study is not possible without your help.

1. Do you farm a) full-time? _____
   b) part-time? _____

2. Do you: own all the land you farm? _____
   own and rent the land you farm? _____
   rent all the land you farm? _____

3. What is your address? _____
   _____
   _____
   _____
   nearest crossroads _____

4. In the past 2 years did you: rent land? _____
   buy land? _____

   What is its address? _____
   _____
   _____
   _____

   Previous to this did you farm? _____

   If yes, did you farm full-time _____ or part-time?_____

   If yes, did you rent or buy land prior to this? _____

   How many acres were involved in this land? _____

   What was the gross sales for that land? _____

   If this land is separated from your home, what is the distance from the home to the land? _____

5. When did you move to this address? _____

6. What was your last address? _____
   _____
   _____
   _____

7. How long did you live at that address? _____

   Did you own_____or rent your former residence?_____

   Was your former residence a: home? _____
   apartment,townhouse,etc?_____
   farm? _____

8. How many children live in this house? _____

9. Do you have a partner? _____

10. What was your age on your last birthday? _____

11. When did you seriously begin to look for a farm/or additional land? _____

_____

12. When did you sign an agreement to purchase or rent the farm?
_____

13. Why did you move/or obtain this additional land?

_____

_____

_____

_____

_____

_____

_____

14. How did you begin to look for a farm?

_____

_____

_____

15. What other methods did you use to look for a farm?

_____

_____

_____

_____

_____

16. How many places did you look at before taking this one?

_____

_____

17. What were the locations of some of these?

18. Which did you seriously consider?

19. Did you know the area before looking?

20. Why did you decide to thake this place?

21. Before taking this place, were you familiar with the:

area? _____

street/or block? _____

22. How did you become familiar with the area?

23. After farming here for a while, are you in any way dissatisfied with the farm?

If yes, would you like to stay?_____ or leave?_____

If you want to leave are you looking for another place?_____

If you are looking what areas are they in?

_____

_____

_____

_____

24. If you are satisfied, are you looking for more land?____

If you are looking, what areas are you looking at?

_____

_____

_____

_____

_____

25. Do you share machinery or have custom work done?_____

Have you made recent farm improvements?_____Specify.

_____

_____

_____

_____

Do you have any planned farm improvements?_____Specify.

_____

_____

_____

_____

_____

Do you participate in: leaf analysis programs?_____
soil analysis programs?_____
spray report programs? _____

Do you have cold storage facilities?_____

Do you have adequate labour?_____

Do you have marketing problems?_____

THANK YOU FOR YOUR CO-OPERATION

APPENDIX B

Development of Management Ability Score

The data used in the derivation of this score was obtained from the questionnaire. The questions needed some modifications from those of Zimmer and Rodd (1975), because of the different type of agriculture and the differing conditions of the area under study. However, the questions are of essentially the same nature.

The questions relating to the management score were:

1. Do you share machinery/have custom work done?
2. Have you made recent farm improvements? If yes, specify.
3. Do you participate in the following programs:
   spray reports?
   soil analysis?
   leaf analysis?
4. Do you have any planned farm improvements? If yes, specify.
5. Do you have cold storage facilities?
6. Do you have adequate labour?
7. Do you have marketing problems?

- The assignment of scores was as follows: -

1. 1 point for each yes answer. Maximum of 2 points.
2. 1 point for answering yes; 1 additional point for each specification (up to 4). Maximum of 5 points.
3. 1 point for each yes answer. Maximum of 3 points.
4. Same scoring as in number 2. Maximum of 5 points.
5. 1 point for each yes answer.
6. 2 points for each yes answer.
7. 2 points for each no answer. (The values in numbers 6 an 7 are weighted because of the importance of these variables).

A maximum of 20 points is possible.

APPENDIX C

Reasons for Moving/Expanding

Reason	Group										
	N	NB	NR	F	FB	FR	P	PB	PR	NEW	BEST
-better place for children	14	14	-	1	1	-	13	13	-	14	-
-wanted place in country	17	17	-	-	-	-	17	17	-	17	-
-wanted to farm	21	19	2	4	2	2	17	17	-	20	-
-house factors	18	18	-	4	4	-	14	14	-	15	-
- site/location factors of house	9	9	-	2	2	-	7	7	-	7	2
-increase income	13	9	4	7	4	3	6	5	1	6	5
-change over crop/re-planting	5	3	2	5	3	2	-	-	-	-	3
-economics of sale	5	3	2	5	3	2	-	-	-	-	3
-present farm too small	24	17	7	23	17	6	1	-	1	-	17
-investment	17	17	-	6	6	-	11	11	-	11	8
-children to continue farming	8	6	2	7	5	2	1	1	-	-	5
-children as help	19	13	6	11	7	4	8	6	2	6	7
-tax saving	4	4	-	4	4	-	-	-	-	-	4
-accessibility to other farm units	2	2	-	2	2	-	-	-	-	-	2
-opportunity available	3	1	2	-	-	-	3	1	2	1	1
-ambition	9	6	3	9	6	3	-	-	-	1	6
-social reasons (pride of ownership)	4	4	-	3	3	-	1	1	-	1	3
-impulse	9	5	4	6	2	4	3	3	-	3	2
Total	201	167	34	99	71	28	102	96	6	102	69

APPENDIX D

Reasons for Selection

Reason	Group										
	N	NB	NR	F	FB	FR	P	PB	PR	NEW	BEST
-better place for children	14	14	-	-	-	-	14	14	-	14	1
-wanted place in country	16	16	-	-	-	-	16	16	-	16	-
-wanted to farm	19	19	-	-	-	-	19	19	-	19	-
-house factors	25	25	-	2	2	-	23	23	-	24	2
-site/location factors of house	13	13	-	-	-	-	13	13	-	13	2
-increase income	10	8	2	4	2	2	6	6	-	6	3
-economies of scale	10	7	3	10	7	3	-	-	-	-	7
-investment	14	14	-	4	4	-	10	10	-	11	4
-children as help	3	2	1	3	2	1	-	-	-	-	2
-tax saving	1	1	-	-	-	-	1	1	-	1	-
-farm factors (right crops)	9	6	3	9	6	3	-	-	-	1	6
-condition of farm	34	25	9	23	16	7	11	9	2	13	14
-condition building/ equipment	20	18	2	9	9	-	11	9	2	12	7
-accessibility to other farm units	22	13	9	20	13	7	2	-	2	2	13
-opportunity available	13	9	4	13	9	4	-	-	-	-	9
-ambition	6	5	1	2	1	1	4	4	-	4	1
-social reasons (pride of ownership)	9	9	-	1	1	-	8	8	-	8	2
-financing	11	11	-	3	3	-	8	8	-	8	3
-cost	40	35	5	18	13	5	22	22	-	24	16
-impulse	10	4	6	9	3	6	1	1	-	-	3
Total	299	254	45	130	91	39	169	163	6	175	95

APPENDIX E

STATISTICAL RESULTS FOR SELECTED HYPOTHESES

H_o: There is no relationship between the managerial ability score and the size of the search area.

Group	Kendall's Tau Coefficient	Level of Significance	Spearman's Rank Coefficient	Level of Significance
N	-.0195	.410	-.0317	.393
NB	.0181	.428	.0119	.466
NR	.0655	.358	.1008	.328
FB	.0387	.411	.0664	.388
FR	.0153	.468	.0393	.435
PB	.1443	.127	.1811	.157
NEW	.1520	.126	.1935	.153

H_o: There is no relationship between the managerial ability score and the number of locations examined.

N	-.0062	.472	.0125	.457
NB	.0579	.286	.0782	.287
NR	.0408	.413	.0384	.433
FB	.0463	.398	.0634	.392
FR	-.0160	.467	-.0269	.455
PB	.2710	.018	.3843	.014
NEW	.2130	.058	.3015	.053

H_o: There is no relationship between the number of locations examined and gross farm sales.

N	.0652	.224	.0909	.217
NB	.0888	.189	.1235	.187
NR	.0329	.427	.0379	.439
FB	.1841	.145	.2485	.139
FR	-.0232	.452	-.0375	.438
PB	.1344	.147	.1846	.152
NEW	.0675	.307	.1149	.273

H_o: There is no relationship between the size of the search area and gross farm sales.

N	.0167	.421	.0334	.387
NB	-.0044	.482	.0033	.491
NR	.1836	.147	.2399	.141
FB	-.0533	.376	-.0692	.383
FR	.1259	.246	.1644	.244
PB	.1128	.175	.1678	.175
NEW	.0608	.321	.1052	.290

APPENDIX F

Hypotheses 8

Group		Initial Use		Total Use	
		Real Estate	Other Channels	Real Estate	Other Channels
N	O*	16	60	55	154
	E**	15.2	60.8	41.8	167.2
NB	O	16	38	54	104
	E	10.8	43.2	31.6	126.4
NR	O	0	22	1	50
	E	4.4	17.6	10.2	40.8
F	O	2	39	13	99
	E	8.7	32.8	22.4	89.6
FB	O	2	19	12	53
	E	4.2	16.8	13	52
FR	O	0	20	1	46
	E	4	16	9.4	37.6
P	O	14	21	42	55
	E	7	28	19.4	77.6
PB	O	14	19	42	51
	E	6.6	26.4	18.6	77.4
NEW	O	13	17	40	49
	E	6	24	17.8	71.2
BEST	O	3	21	14	55
	E	4.8	19.2	13.8	55.2

*O = observed frequency
**E = expected frequency

APPENDIX G

Hypothesis 9

Group		Initial Use		Total Use	
		direct contact	Other Channels	direct contact	Other Channels
N	O*	15	61	63	146
	E**	15.2	60.8	41.8	167.2
NB	O	6	48	28	130
	E	10.8	43.2	31.6	126.4
NR	O	9	13	35	16
	E	4.4	17.6	10.2	40.8
F	O	14	27	52	60
	E	8.2	32.8	22.4	89.6
FB	O	5	16	19	46
	E	4.2	16.8	13	52
FR	O	9	11	28	19
	E	4	16	9.4	37.6
P	O	1	34	10	87
	E	7	28	19.4	77.6
PB	O	1	32	8	85
	E	6.6	26.4	18.6	74.4
NEW	O	0	30	6	83
	E	6	24	17.8	71.2
BEST	O	6	18	22	47
	E	4.8	19.2	13.8	55.2

*O = observed frequency
**E = expected frequency

APPENDIX H

Hypothesis 10

Group		Familiar with the area		Familiar with the Street/Block	
		Yes	No	Yes	No
N	O*	49	27	31	45
	E**	38	38	38	38
NB	O	32	22	19	35
	E	27	27	27	27
NR	O	17	5	12	10
	E	11	11	11	11
F	O	29	12	20	21
	E	20.5	20.5	20.5	20.5
FB	O	14	6	9	12
	E	10.5	10.5	10.5	10.5
FR	O	15	5	11	9
	E	10	10	10	10
P	O	20	15	11	24
	E	17.5	17.5	17.5	17.5
PB	O	18	15	10	23
	E	16.5	16.5	16.5	16.5
NEW	O	17	13	9	21
	E	15	15	15	15
BEST	O	15	9	10	14
	E	12	12	12	12

*O = observed frequency
**E = expected frequency

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