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THE UNIVERSITY OF ALBERTA

MIGRATION PATTERNS IN WEST-CENTRAL ALBERTA

by

WILLIAM HO-CHING WONG

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE
STUDIES AND RESEARCH IN PARTIAL FULFILMENT OF THE
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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled MIGRATION PATTERNS IN WEST-CENTRAL ALBERTA submitted by William Ho-Ching Wong in partial fulfilment of the requirements for the degree of Doctor of Philosophy.

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ABSTRACT

This thesis examines the past migration patterns and future migration tendencies of a selected group of heads of household in eight communities of west-central Alberta. An interdisciplinary approach was used to study migration as a spatial, temporal and behavioural process.

The data for the analysis were obtained by means of a sample survey of households conducted during the summer and fall of 1972. The response to the survey yielded 273 returned questionnaires which form the basis of information for studying migration patterns and tendencies in this region of Alberta.

The analysis revealed a remarkable consistency with findings of previous research on migration. It was found that a significant proportion of the migrants came from within the province. Many of them, particularly those destined to the smaller villages, had lived in the vicinity of the study communities for a number of years. Only the larger towns of Hinton, Edson, Jasper and Stony Plain were able to attract long-distance migrants and migrants from large urban and metropolitan centres. Generally, the timing of their moves corresponded with the history of economic and industrial development in the study area. The analysis on the characteristics of migrants confirmed several propositions relating to migration selectivity. Based on an examination of five factors i) migration differentials, ii) reasons for moving, iii) places of origin and destination, iv) distance travelled, and v) duration of residence in the community, a typology of migrants to west-central Alberta was developed.

In analysing the future migration tendencies of the heads of household, it was found that different segments of the population are likely to vary considerably in their propensity to migrate. Five determinants

of prospective migration were identified: a) migration differentials and life cycle stage, b) duration of residence in the community, c) perception and satisfaction with the community, d) past migration experience, and e) present traveling patterns. In particular, a number of research hypotheses relating to the first four determinants have been confirmed and validated as functional to the propensity to migrate. Based on the analysis, it is possible to describe the typical profile of a prospective migrant (mover) as someone who is relatively young, either single or married with no children, fairly well-educated, employed in a professional or managerial capacity and earning a good income. He has lived in the community for a relatively brief period of time, and was initially attracted to the community because of job-related reasons. He does not own the dwelling which he presently occupies and is not an active participant of local communal activities. He travels out-of-town frequently for social and recreation purposes and generally considers the present community to be located too far away from a major city. He perceives the opportunities for future advancement in the community are limited and would not mind moving to a city if given a choice.

The results of the analysis on prospective migration tendencies were applied to the eight study communities. It was found that Jasper had the highest proportion of potentially more mobile residents, followed by Stony Plain and Wabanun, Edson, Hinton, Evansburg, Entwistle and Wildwood, in descending order with respect to the heads' propensity to migrate.

The concluding chapter presents a summary of the key findings, discusses the policy implications of the research problem, and recommends that future research should focus more attention on the causal mechanism underlying the decision to migrate and the identification of place utilities and preferences.

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CHAPTER I

INTRODUCTION

A. THE RESEARCH PROBLEM

Geographers have been interested in studying the spatial distributions of a wide range of phenomena such as physical features, natural resources, industrial establishments, population, settlements and so on. Hartshorne (1961, p. 21) states that the purpose of geographic research is "to provide accurate, orderly and rational description and interpretation of the varying character of the earth's surface". According to Abler, Adam and Gould (1971), however, the contemporary emphasis is on geography as the study of spatial organization expressed as patterns, structures, and processes, all involving change through time. Morrill (1971, p. 3) states that "space, spatial relations and change in space are the core elements of the science of geography", and that the most fruitful approach to geographic analysis is systematically to explain the locations and spatial interactions of the phenomena under study.

Population study which has gained recognition as a field of geography only since the early 1950s is closely linked to the modern development in geographic analysis.¹ According to Zelinsky (1966):

¹ The historical background of population geography is presented in Trewartha (1953), Hooson (1960), Zelinsky (1966), Clarke (1966), Hansen and Kosinski (1973).

Population geography can be defined accurately as the science that deals with the ways in which the geographic character of places is formed by, and in turn reacts upon, a set of population phenomena that vary within it through both space and time as they follow their own behavioural laws, interacting one with another and with numerous nondemographic phenomena (p. 5).

This thesis is concerned with the geographic analysis of human migration, generally considered as the most dynamic phenomenon in population geography. Migration, in this context, is defined as a spatial process of population movement from one geographical unit to another. A change of residence by the migrant from the place of origin to the place of destination is involved. Such migration is called "permanent migration" and should be distinguished from other forms of reciprocal movement which do not involve a change of residence (e.g. to and from the place of work and travelling for the purposes of visiting, shopping and sight-seeing).²

Another distinction which should be mentioned is that the study of migration in this thesis is restricted to movement between communities instead of movement within a particular community. The undertaking of the latter form of migration study - intra-municipal or residential mobility as it is sometimes known - requires different types of research methodology, theoretical propositions and data base which are not compatible with those used for studying inter-municipal migration (Harvey, 1969).

During the past two decades, migration studies have been receiving a great deal of interest and attention from social scientists, policy

² For a more comprehensive description of the types of migration and their definitions, see United Nations (1958), Roseman (1971), Kosinski and Prothero (1975).

planners and decision-makers. Generally speaking, academic researchers are more interested in the theoretical aspects of migration such as the causal mechanism underlying the decision to migrate, the macro and micro-factors affecting migration flows, the motivations of migrants, and, ultimately, the formulation of a theory of migration. Planners and policy makers, on the other hand, are primarily concerned with forecasting migration trends, the implications of migration on population change and the innumerable social, economic and political ramifications which migration effects in the processes of urbanization, industrialization and regional economic development. As Stone (1969) suggests:

Migration is an important component of population change, particularly when viewed from the standpoint of a local community. It is at once an indicator and a generator of social economic changes, altering the size and the demographic and socio-economic compositions of population. Through such alteration it influences the growth potential of a community and the extent to which the community experiences certain social and economic problems. (p. 4).

In assessing the impact of migration on a particular geographic location, researchers and policy analysts often revert to a number of basic questions, such as, "Who are the migrants?", "What characteristics do they possess?", "Why have they decided to move to this locality?", "Where did they come from?", "Will this trend likely continue into the future?", "What are the causes of this migration?".

Numerous studies have provided partial answers to these questions. In general, the major themes of research are not unlike the expressed concerns of policy analysts. In his review of literature Shaw (1975) has identified six major themes or "differentiating lines of inquiry" in migration research. They are summarised in the following:

1. Migration selectivity and differentials - age, sex, marital status, education, occupation, career and life cycle;

2. Economic aspects of migration - wages and salaries, employment opportunities, cost-benefit model, factor allocation;
3. Spatial aspect of migration - distance, directional bias, information flow, intervening opportunities, gravity model;
4. Behavioural aspects of the decision to migrate - place utilities, stresses, strains, residential complaints;
5. Migration probabilities and the mover-stayer continuum - migration expectancy, recurring intra and inter-regional flows;
6. Stochastic models dealing with migration histories, cumulative inertia, etc. (pp. 13-15).

The main criticism about the state of migration research, however, is that it is characterised by diverse empirical evidence which often reflects the disciplinary bias or orientation of the researchers. Consequently, there is a lack of conceptual models and theoretical statements to integrate the determinants of migration and to explain the nature of this process in a more systematic manner. According to Mangalam et al. (1970):

Despite a long history of empirical inquiry, researchers are only beginning to do the hard work of conceptualizing of the phenomenon (of migration) systematically positing causal sequences and testing relevant hypothesis, all of which must necessarily precede a formal statement of theory (p. 6).

In response to the above criticism, this thesis will utilize an interdisciplinary approach to study two types of migration classified according to a temporal dimension. Firstly, the moves of a selected group of people to eight communities in the west-central part of Alberta will be analysed. This is an event which has already occurred over time and space. Secondly, the future migration tendencies of the same group of people will be analysed - this is an event which may or may not occur, depending on the interaction of a number of determinants of mig-

ration and their effects on these individuals. The objectives of this thesis, therefore, are:

- i) to identify the characteristics of the migrants, the prospective migrants and non-migrants (stayers);
- ii) to identify the relationship, if any, between past migration and future migration;
- iii) to identify the determinants of past and prospective migration; and
- iv) to identify the geographical variations of these determinants among the communities under study.

The decision to use an interdisciplinary approach in this thesis was made because migration can best be studied in the following manner:

- i) as a spatial process - by focusing on the nature of the move between the places of origin and destination (e.g. interprovincial, urban-rural, etc.), the relative locations of these places vis-a-vis important urban centres and physical features, the distance travelled and directional orientations;
- ii) as a temporal process - by focusing on the length of stay in the current community, the migration histories of the people, and their future migration tendencies;
- iii) as a behavioural process - by focusing on the determinants of migration, especially prospective migration, and the process whereby migration decisions are made.

B. REVIEW OF LITERATURE ON MIGRATION

In this section, a review of the migration literature from the perspective of the objectives of this study will be presented. It has been mentioned that most of the relevant research has tended to be

empirical rather than theoretical in nature. An examination of migration bibliographies reveals that only a small number of studies in the vast body of migration literature can be considered to have a strong theoretical emphasis (Mangalam, 1968; Morrison, 1969; Greenwood, 1975; Shaw, 1975). According to Lee (1966, p. 48) since Ravenstein presented his two papers on "Laws of Migration" in 1885 and 1889, there have been literally thousands of migration studies but few additional generalizations have been advanced on migration theory. In view of this comment, it is worthwhile to discuss Ravenstein's major contribution.

Ravenstein formulated seven laws of migration based on his analysis of the censuses of 1871 and 1881 in Great Britain. These "laws" deal with a wide range of topics which include urbanizations, migration volume and distance, migration by stage, migration streams and counter-streams, migration and technological development, and selectivity of migrants. The first law states that the majority of migrants proceed only a short distance, and that "there takes place consequently a universal shifting or displacement of the population setting in the direction of the great centres of commerce and industry which absorb the migration" (Ravenstein 1885, P. 198).

The second law establishes a relationship between the volume of migration and the distance travelled. In Ravenstein's words: "The great body of our migrants enumerated in a certain centre of absorption will grow less as distance from the centre increases" (p. 198). This particular observation has since stimulated a great deal of interest and had led to the development of several spatial interaction models.

The second and third laws further describe the tendency for migration to take place by stages. The process is accomplished by "the

7

inhabitants of the country immediately surrounding a centre of rapid growth flocking into it; the gaps thus left in the rural population are filled by migrants from more remote districts, until the attractive forces of that growing makes its influence felt, step by step, to the most remote corner of the country" (p. 199).

The fourth law states that each main current of migration produces a compensating counter-current. The counter-current is not by any means composed only of migrants who return homeward disappointed, but also consists of a sizable "exchange" of natives between counties and towns, especially among the metropolitan areas.

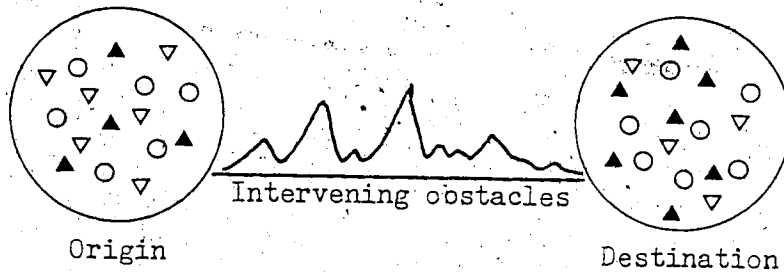
The fifth law asserts the tendency for long distance migrants to go to the larger cities while the sixth law states that migration tends to increase with advances in technology, business and transportation facilities. Finally, the seventh law states that females are more migratory than males within the area of their birth, but that males more frequently venture farther away.

Even at the time of his writing Ravenstein was criticized for expressing his propositions as "laws", because they were basically observations derived from his empirical research. Nevertheless, these axioms have a strong theoretical overtone and the majority of them are still relevant in studying migration in most developed countries today. Consequently, many researchers had adopted Ravenstein's findings in their efforts towards the development of migration models and theories. In this regard, Lee's "A Theory of Migration" (1966) is particularly worthy of attention. Lee bases his paper to a large extent on Ravenstein's work. His purpose is "the development of a general schema into which a variety of spatial movements can be placed to deduce a number of con-

clusions with regard to the volume of migration, the development of streams and counter-streams, and the characteristics of migrants" (p. 49). Unlike Ravenstein, Lee's conclusions and generalizations on these various aspects of migration are not based on empirical research (or at least such research activities are not referred to in his paper). He proposes a schema which basically incorporates a set of "push" and "pull" factors at the places of origin and destination, a set of intervening obstacles between the two points such as physical barriers, distance, immigration regulations and a series of personal factors which either facilitate or retard migration.

FIGURE 1.1

ORIGIN AND DESTINATION FACTORS
AND INTERVENING OBSTACLES IN MIGRATION



- ▲ factors which attract migration
- ▼ factors which repel migration
- factors neutral to migration

SOURCE: Lee 1966, p. 50.

Based on his conceptual framework, Lee suggests that concepts such as stages of the life cycle, decision-making threshold, migrant's personality, perception and awareness of the situation are important con-

siderations in formulating a series of hypotheses for analysing the volume of migration, migration streams and counter-streams, and the characteristics of migrants.

The volume of migration, according to Lee, is a function of such factors as the diversity of people, the diversity of areas, the difficulty of surmounting the intervening obstacles, the state of the economy, and time. Secondly, migration streams and counter-streams tend to be well defined routes toward highly specific destinations. The efficiency of the stream (ratio of stream to counter-stream) is affected by conditions at the places of origin and destination, especially if migrants have overcome great intervening obstacles during their journey. Thirdly, the characteristics of migrants depend to a large extent on the selective nature of the process according to age, socio-economic variables, and stages of the life cycle. The existence of intervening obstacles, the nature of positive and negative factors at origin and destination exert an important influence on the characteristics of migrants.

It is important to note that both Ravenstein and Lee considered migration as a process which is influenced by a series of spatial, temporal, human and behavioural constraints. In comparison, Ravenstein played a more important pioneering role in enumerating the factors of migration while Lee, eight decades later, incorporated a similar set of factors in a conceptual framework which facilitates more systematic analysis. Indeed, one can examine the voluminous body of migration literature from the perspective of empirical research - after the Ravenstein tradition - and from the perspective of theory and model development - after the Lee tradition. The latter, unfortunately, is only

beginning to receive recognition and significance in migration studies.

Another important paper of a theoretical nature is Peterson's, "A General Typology of Migration", which attempts to bring together into a conceptual classification schema some of the more significant analyses of both internal and international migration, "as a step towards a general theory in migration" (1958, p. 256). Peterson identifies two types of migration: (1) innovating migration refers to people moving as a means of achieving better opportunities; and (2) conservative migration refers to people moving so that they can retain their accustomed way of living. Based on these two concepts, the migration process is further divided into sub-types and classes. Peterson's typology of migration is summarised in the following table.

T A B L E 1.1

A TYPLOGY OF MIGRATION

RELATION	MIGRATORY FORCE	CLASS OF MIGRATION	TYPE OF MIGRATION	
			CONSERVATIVE	INNOVATING
Nature and Man	Ecological Push	Primitive	Wandering Ranging	Flight from the land
State and Man	Migratory Policy	Forced Impelled	Displacement Flight	Slave trade Coolie trade
Man and his Norms	Higher Aspirations	Free	Group	Pioneer
Collective Behaviour	Social Momentum	Mass	Settlement	Urbanization

SOURCE: Peterson, 1958, p. 266.

Peterson's paper represents a refreshing departure from the traditional view which considers migration as a homogeneous occurrence, dominated by a set of economic "push" and "pull" factors. By analysing the migration process in a multi-dimensional framework which takes into consideration, among other criteria, the environmental factors and man's response to changes in his surroundings, Peterson has in fact laid a conceptual base for the future development of behavioural models for analysing migration. According to Shaw (1975):

Migration phenomena are so diverse, that in many cases only specific types of individuals may be affected in settings that are both time and space-specific and possibly non-recurring settings Peterson's typology of migration is a good illustration of the various classes and types of migration phenomena it explicitly marks out the ground to be covered by any general statement on migration (p. 6).

During the past two decades, geographers and regional scientists interested in locational analysis have been active in studying the spread or diffusion of phenomena such as innovation, information, population movement over space and time. The main focus of spatial diffusion study is upon the processes controlling the locational change of the phenomenon under study, while its objective is the identification of the generative processes by which the observed spatial patterns of the given phenomenon come into existence.

The contribution of Hägerstrand to spatial diffusion research is generally recognized as the most significant and influential. Hägerstrand's (1953) initial study focuses on the spread of certain new agricultural techniques in Östergötland in central Sweden during the period 1929-1932. His conceptualization of the diffusion process suggests that adoption of an innovation is primarily the result of a learning process. An effective pattern of information flow is influenced by factors such

as the personal characteristics of the sender and the adopter, the intensity and frequency of messages, and the relationship between exposure to information and reduction of resistance to adoption. This resistance level differs from one individual to another and it can be considered in either social or economic terms. Hägerstrand also emphasizes the importance of inter-personal communication in the dissemination of information. He found that patterns of information that flow through interpersonal contact are influenced by the existence of various terrestrial barriers such as lakes, forests and geographical distances separating the potential communicants.

Since Hägerstrand's study (1953), geographers have made extensive attempts to relate models of spatial diffusion processes to other empirical situations. These include Morrill on migration and the spread and growth of urban settlements (1965-a), the expansion of Negro ghettos (1965-b), and the location of new activities at the fringe of an urban area (1965-c), Moore (1966), Hägerstrand (1962), and Brown and Herner (1967) on the establishment of new settlements in a frontier area; Nystuen (1967) on intra-urban travel; and Garrison and Marble (1965) on transportation network growth.

Based on extensive bibliographic review of literature on spatial diffusion, Brown (1968) has developed a general conceptual framework which may be employed to study the diffusion of phenomena in any context. The framework outlined by Brown is based on the premise that all spatial diffusion situations consist of six basic or common elements: a) an area or environment; b) a temporal dimension; c) an item to be diffused, for instance, migrants in this context; d) node of origin (locations of the item at the beginning of a time interval); e) node of destinations

(locations of the item at the end of a time interval); and f) paths of movements, influences or relationships between origins and destinations. These elements may be represented as a dynamic graph set in a temporal geographic space. Two basic types of diffusion process have been identified: i) relocation-type in which some members of the population at time t change their locations from time t to time $t + 1$; and ii) expansion-type in which new members are added to the population between time t and time $t + 1$ and locate so as to alter the general locational pattern of the whole population.

The behaviour of the graph which portrays the diffusion process is controlled by characteristics of its nodes and the relationships between them, the characteristics of the items being diffused, and the characteristics of the area or environment in which the graph is set. Brown comments that this conceptual framework is not intended to provide a total explanation of any particular spatial diffusion situation; rather, it is a first approximation of a concept which will encompass the major underlying dimensions of all spatial diffusion processes, of which migration is a significant one. For example, when people move from city X to city Y, this process can be considered as an example of the relocation type of diffusion. Alternatively, if the arrival of migrants in city Y resulted in changes in the residential neighbourhood of the city, this process can be considered as an example of the expansion type of diffusion.

Another application of the principles of spatial diffusion to migration is Zelinsky's "Hypothesis of Mobility Transition" (1971) which states:

There are definite, patterned regularities in the growth of personal mobility through space-time during recent history, and these regularities comprise an essential component of the modernization process (p. 337).

Briefly, Zelinsky's hypothesis postulates that with change and advancement in technology and the means of information diffusion, the total concept of territorial mobility could be more realistically viewed as an on-going process of a single continuum, extending from the shortest, most routine of iterated motions (circulations) to the most adventurous intercontinental journey.

Specifically, eight related statements are presented which, taken together, more adequately elucidate Zelinsky's hypothesis. These statements are summarised in the following:

1. Higher rates of movement always occur as a community experiences the process of modernization.
2. The course of the mobility transition closely parallels that of demographic transition.
3. There are major changes in the form as well as in the intensity of spatial mobility at various stages of the transition.
4. The interchangeability between social mobility and territorial mobility is an option open to the potential migrant.
5. Mobility conditions propagate themselves onward through time and outward through space from successful growth points.
6. The processes in question tend to accelerate in spatial and temporal pace with time.
7. Absolute dating or timing is of essence in determining the specific spatio-temporal scenario of change that occurs in a community.
8. The progression of stages of mobility transition is irreversible.

As a schema for classifying the spatial processes of population movement as they evolve during different stages of human civilization, Zelinsky's hypothesis of mobility transition is a useful contribution. However, it fails to identify the underlying causes of these migration and circulatory processes. Furthermore, it has yet to be demonstrated

that, these movements, for instance, circulatory in one extreme, and inter-continental migration on the other, are functionally related with one another at all.

Of particular interest to this study, however, are Zelinsky's observations on "Migration and Circulation in Phase IV - The Advanced Society".

He states:

The flight from the country-side of a truly "landward rural" population has slowed to a trickle Aggregate circulatory movement for most people living in Phase IV areas has reached unprecedented levels. Most persons are making longer trips for a greater variety of reasons more often than before A truly distinctive feature of this phase is the emergence of non-economic motivations for both migrant and circulator The most advanced and affluent societies have now achieved a state in which...constant changes in movement have truly become a way of life (p. 344-345).

Roseman (1971) also considers the interrelationships between temporal and spatial dimensions of migration. Within a framework of total human movement, Roseman identifies two categories of migration: i) those which involve complete spatial displacement of the daily/weekly reciprocal movement patterns of the migrant - total displacement migration, as it is labelled - and ii) those which involve displacement of only part of the everyday reciprocal movements of migrants (partial displacement migration). According to Roseman, these two types of migration are related to different information gathering processes, decision-making processes, adjustment processes, and the temporal dimensions of migration.

It is the opinion of this author that Roseman's study represents an excellent summary of the major theoretical and conceptual schema in migration research. His paper employs a behavioural perspective to consider migration at all geographic scales, with the goal of characterising various aspects of the phenomenon as a total process. Examples of some

of these aspects covered in his paper include distance as a deterrent in migration, the frequency and spacing of moves in time place utility, activity space, the role of friends and relatives as suppliers of information about potential destinations, the migration decision-making unit, length of residence and the axiom of cumulative inertia. Many of these aspects of migration will be examined in greater detail in the remaining part of this chapter. As well, some of them will be adopted and utilized as hypotheses for analysing migration flows in the west-central part of Alberta.

So far, the concept of distance as a function of migration has been briefly mentioned in reference to Ravenstein's "Laws of Migration" and Lee's "A Theory of Migration". Many researchers have been interested in the theoretical relationships among the volume of migration, the distance travelled and the size of the sending and receiving regions. Research into the spatial dimensions of population movement has led to the development of a number of "spatial interaction models" such as the gravity model, population potential model, and intervening opportunities model (Zipf, 1946; Stewart, 1950; Carrothers, 1956; Stouffer, 1940, 1960; and Olsson, 1965).

The gravity model which is derived from Zipf's interactance hypothesis (1946) states that the number of interactions is in proportion to the product of their masses which is some measure of their size, and inversely proportional to the distance between the two places. In operationalizing the model for migration analysis, the following formulation has been commonly used:

$$M_{ij} = K \frac{P_i P_j}{D_{ij}}$$

Where:

M_{ij} = migration from place i to j,

P_{ij} = population or some index of population at places i and j,

D_{ij} = distance between places i and j,

K = a constant

Carrothers' potential model which measures the attractive power of a certain location on another states that the potential of place i on another place j is equal to the mass or some measure of the size of j divided by its distance between the two places. Expressed symbolically:

$$V_i = \frac{P_j}{d_{ij}}$$

Where:

V_i = the potential at place i,

P_j = the size of another place j,

d_{ij} = the distance separating i and j

Stouffer's intervening opportunity model states that the number of people moving a certain distance is directly proportional to the number of opportunities at that distance, and inversely proportional to the number of intervening opportunities (1940). In a revised version of his original model, Stouffer (1960) considers the relevance of competing migrants from other centres in explaining movements of population over space. This particular factor is suggested to be inversely related with migration flow from places i to j.

Since the development of these models, geographers among other social scientists, have widely accepted and applied these tools in their research. Harris' study (1954) of market potentials uses the United States as a region, retail sales as a measure of mass, and transportation costs as a measure of distance. With these measures, the market potential of each major metropolitan centre is derived and an isarithmic map of market potentials for the United States constructed. Anderson (1955) studied intermetropolitan migration from 54 metropolitan subregions within the Northeast and North-Central regions of the United States to each of the nearest 30 metropolitan subregions between 1935-40. He tested the hypotheses of Zipf and Stouffer in his study and concluded that the two models yield equally close approximations to empirical patterns of migration. Ullman (1956) considered the concept of intervening opportunities between places as a basic factor influencing spatial interaction and concluded that this is probably the reason why "Florida attracts more amenity migrants from the Northeast than does more distant California" (p. 368).

Besides the aforementioned studies, a number of systematic research studies on population redistribution have also made use of spatial interaction models and the distance-decay function. Mention should be given to several excellent studies of migration which appear in Migration in Sweden: A Symposium (Hannerberg, et al. (eds.), 1957). According to Morrill (1965-a, p. 35), "these studies have provided detailed compilations of movements, elaborate surveys of migrant characteristics and motivations, and of migrant areas of population gain or loss, and some statistical tests of observed or suggested relationships".

Nevertheless, it should be noted that there are weaknesses inherent in the spatial interaction models. As Olsson (1965) notes, having

tested and verified some hypotheses relating to the gravity concept in his research in Sweden, one of the most common objectives pertains to the empirical regularity which forms the basis of the population-distance formulation. The most immediate problem lies in the assumptions that: i) all places are populated by standard people with identical needs, tastes and contracts; ii) the interaction intensity decreases over distance systematically in all directions; and iii) all migrants seek advantages that are a function of the population size in the destination. In other words, these models attempt to explain human behaviour with the formal structure and empirical content of a theory developed in a physical discipline. The concepts of "mass", "potentials", "inertia", for example, have little direct application and meaning in social sciences, while the concepts of "intervening opportunities" and "competing migrants" are imperfect and almost impossible to operationalize. Consequently, they remain no more than mechanical models applied to social data. Even if an empirical regularity does exist in this exercise, social scientists have not yet been able to furnish any sound theoretical explanation for it.

There are numerous migration studies which relate the concepts of distance and population size to the degree of differential opportunities or economic attractiveness within a system of settlements. One of the most significant contributions on this topic is the three volume study, Population Redistribution and Economic Growth, United States: 1870-1950, by Lee et al. (1957), Kuznets et al. (1960), and Elridge et al. (1964). In essence, these studies can be considered as a refinement or an extension of the spatial interaction models. For example, Somermeijer (1961), a Dutch demographer, builds on Zipf's interactance hypotheses

by separating gross migration into directional flows with the help of indices of the attractiveness of each place as a destination. These indices include such features as per capita income, percent employed, degree of urbanization, recreational resources, and quality of dwellings. When the model was applied to Dutch interprovincial migration, the results correlated very closely with observed net migration.

Further modification of this type of model was developed by Lowry (1966) in his study, Migration and Metropolitan Growth: Two Analytical Models Among Standard Metropolitan Statistical Areas in the United States.

According to Lowry:

$$M_{i \rightarrow j} = K \left[\frac{U_i}{U_j} \cdot \frac{W_j}{W_i} \cdot \frac{L_i L_j}{D_{ij}} \right]$$

Where:

- $M_{i \rightarrow j}$ = number of migrants from place i to place j,
- $L_i L_j$ = number of persons in the nonagricultural labour force at i and j,
- $U_i U_j$ = unemployment as a percentage of the civilian nonagricultural labour force at i and j,
- $W_i W_j$ = hourly manufacturing wage, in dollars, at i and j,
- D_{ij} = airline distance from i to j, in miles,
- K = constant

The model set forth above implies a causal relationship, in that people migrate in search of jobs from low-wage to high-wage areas, and from areas of surplus labour to those with labour shortages. The migrants, over time, will affect the labour market of the receiving area. As its labour supply is augmented, its relative attractiveness is dim-

inished; as its labour supply is depleted, its relative attractiveness is increased.

Lowry's application of this model to inter-metropolitan migration offered very encouraging results with respect to the relationship between economic attraction factors and the directional volume of migration between two places. In general, he found that $M_{i \rightarrow j}$ is more a function of employment opportunities at the place of destination and of the age and sex structure of the origin population than it is of the level of employment at the place of origin. Roger's (1968) study of inter-regional population growth and distribution in 72 localities in California utilizing a modified Lowry model also arrives at similar conclusions.

In two studies on interprovincial migration in Canada, Vanderkamp (1968) and Courchene (1970) both found that the level of unemployment at the places of origin is significantly related to out-migration, while unemployment at the place of destination is not significantly related to the rate of in-migration. More recent studies on interprovincial migration in Canada have further supported the hypothesis that employment opportunities at the destination exert a significant pull on in-migration (Statistics Canada, 1977). For example, the recent dramatic increase of net interprovincial migration to Alberta can be explained by the rapid economic growth and low unemployment rate in the province coupled with relatively stagnant economic conditions in most other provincial economies (Mansell and Wright, 1977).

Nevertheless, it is important to note that aggregative, macro-economic variables, such as employment and income levels, exert an influence on the migration behaviour of certain segment of the population

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only, and it is erroneous to assume, as most economic attraction models do, that man is economically rational, and that he will perceive and evaluate migration on that basis. According to Shaw (1975):

There may be a serious bias in this type of approach as there may be a denial of differential perception and evaluation and an excessive emphasis on purposively rational behaviour. In other words, by subsuming all motives under the assumption of man as an economic maximizer of economic wants, the economist runs the risk of reducing the complex decision of migration to a kind of mechanical unbalance of external and impersonal forces (p. 60).

As Lowry's study suggests, further improvements in migration analysis might be achieved by disaggregating the population-at-risk to further differentiate groups with varying propensities to migrate. This is because aggregate migration often does not allow differentiation of those who migrate for special reasons. According to Lowry:

There are several dimensions along which such disaggregation might reasonably proceed, age, sex, colour, education, occupation, family status, etc. In so far as SMSA populations differ from each other in these terms, their aggregate propensity to migrate would also differ (p. 26).

In light on this, several studies on migration differentials and selectivities will be included in this review.

Research on the selectivity of migration has gained much popularity since Dorothy Thomas released her landmark study on migration differentials in 1938. In general, this body of literature relates the basic demographic and socio-economic characteristics of the population to variations in their migration behaviour over time. Examples of these characteristics which have become more readily available with improvement in the national censuses in most countries, are age, sex, marital status, ethnicity or colour, family composition, educational attainment, occupation, income, home ownership, stage in life cycle. The major findings on the selectivity of migration have been summarised in Stone (1969, 1973), United

Nations (1970), Greenwood (1975), and Shaw (1975). Several generalizations and observations pertinent to this thesis will be presented in the following.

1. Age - In general, the age of a person varies inversely with his propensity to migrate. The groups which are most prone to moving, however, are those aged 15-24 and 25-34 years. In a recent study on in-migration to Alberta (Alberta Advanced Education and Manpower, 1978), based on data obtained from the Alberta Health Care Insurance Commission, it was found that of the in-migrants who reported their familial status as "single" (approximately 40.9 percent of the total), over ninety percent were between the ages of 15 and 34. By comparison, of those whose familial status were classified as "married" (including dependents), sixty percent were between the ages of 15 and 34.

While the above observations with respect to the higher mobility rate of younger people may be true, it has also been demonstrated that age-specific migration rates do not taper off uniformly with movement along the age continuum. Rather, there appears to be an up-surge of migration for those who are 65-70 years of age. Miller (1966) attributes this aberration in age-specific migration rate to the retirement of workers from the labour force. Proudfoot and Lamont in their study of migrants to small towns in Alberta (1972) also found that a great number of farmers tended to move to nearby small communities upon retirement.

2. Sex - Current research indicates that not only is sex less selective than age, but that it is less uniform over time and place. Generally, males are more migratory than females and males tend to migrate over longer distance within the same country (George, 1970). In inter-urban migration, however, males and females are almost equally represented. In fact, with the changing roles of males and females in industrialized

society, which resulted in a rise in the female labour force participation rate, females, especially those living in rural communities, have been increasingly active in moving to large urban centres in pursuit of better jobs (Long, 1973).

3. Marital Status - It has been pointed out, in discussion on age selectivity, that single persons tend to have a higher propensity to migrate. This is especially true of persons in their late teens and early twenties. When age is controlled, however, single persons might not exhibit a significantly higher migration rate than the rest of the population in the same age groups (George, 1970; Long, 1973).

Moreover, the marital status of the population is closely related to such factors as family size and home ownership. Marriage is considered as an important cause of migration because the newly-weds often leave their parents' home after marriage. In a recent study of migration within Alberta, Ironside and McVey (1973) found that married couples without children and nuclear families with young children were strongly represented among migrants to the small city and rural settlements. "The cross-tabulation for marital status (and migration status) was very similar to that of family size" (p. 66).

4. Family Status - Generally, the size of the family, measured in terms of the number of dependent children living with the parents, is inversely correlated with the head's propensity to migrate. This is especially true if the children are of school age and are enrolled in school-related activities. Under these circumstances, the social ties built up by the children, as well as their parents in the local community or neighbourhood, usually act as a deterrent to migration. (Long, 1972).

5. Educational Attainment - Studies relating the level of education and the migration status of a particular population have found that the two

variables are positively correlated with one another. In other words that segment of the population having a higher level of education is usually more inclined to migrate. This is due to the fact that education is a key to information about opportunities which exist beyond the immediate confine of one's "activity space". Moreover, education and job-related skills are usually the basic prerequisites for securing these employment opportunities (Morrison, 1971).

Since there is normally a very high correlation between one's education and occupation, it has been argued that people with relatively low level of education (and unemployed) are usually not prepared to move to places where job opportunities abound (Shaw, 1975, p. 23). This observation becomes more pronounced as migration distance increases.

Caldwell's study of rural-urban migration in Ghana (1970) also found that 59 percent of the males with limited primary level education never planned to migrate from their villages to nearby urban centres whereas among the males with secondary level and university training, this proportion was only 17 percent.

6. Occupational Status - As a corollary of the relationship between education and migration, occupational status is also positively correlated with the propensity to migrate. Many studies have found that migration tends to be selective with respect to higher status occupations, e.g. professional, administrative, technical and processing jobs (Stone, 1969; Morrison, 1975; Ironside and McVey, 1978). The nature of the operation of the labour market has much to influence the migration patterns of the working population and their dependents. Generally, occupations requiring good academic training and experience are advertised nationally and regionally in order to attract the best candidates. In contrast, menial labouring occupations are seldom advertised, if at all. Secondly,

even among higher status occupations, some are more conducive to migration than others. For example, teachers, college professors, engineers, public administrators, social and physical scientists are relatively more footloose and mobile than doctors, dentists, businessmen and merchants. People engaging in this latter group of professions and businesses have often built up a steady clientele, equipment and inventory. For them to move their practices and operations to another city is usually a very costly and difficult task.

Nevertheless, job-related reasons are still the single most common cause of migration, responsible for over half of all the moves. It follows that places with better employment opportunities tend to pull, albeit selectively, prospective migrants to move and take up residence there. Over time, such a process would drain the most productive and employable groups of people away from economically depressed areas, thus creating gaps and unbalances in the areas of origin and their ability to support a high level of services. (See Proudfoot and Lamont, 1972; Shaw, 1975; Ironside and McVey, 1973, for more discussion on this aspect of migration and regional development).

7. Life Cycle Stage - Closely related to the above six correlates of migration selectivity is the concept of life cycle which has been used quite frequently during the last two decades to study migration propensity (See Wolpert, 1965; Lee, 1966; Roseman, 1971; Morrison, 1975). According to Lee:

There are clearly stages in the life cycle at which the positive elements at origin are overwhelmingly important in limiting migration, and there are times at which such bonds are slackened with catastrophic suddenness... (p. 52).

The stages in life cycle which have been identified, starting from birth are: childhood (pre-school), education, marriage, family formation,

career and retirement. There are, of course, variations and extensions to this list. For example, Alvarez (1967) focusing on the family formation stage identified the following sub-categories in the life cycle of the Puerto Rican migrants to the United States:

- a) Beginning family (recently married, no children)
- b) Child-bearing family (oldest child 2½ years)
- c) Child-bearing family (preschool children, school-age children, teenage children)
- d) Family as a launching centre
- e) Empty nest family
- f) Aging family (retirement)

Beside family status, the variables most commonly used to study migration in relation to one's position in the life cycle are: 1) age, 2) marital status, 3) formal education (of household head), 4) occupation, 5) home ownership or tenure status, and 6) head's attitude, perception and aspiration towards himself and the social and physical environment in which he is residing. Very often, these variables or factors act in conjunction with each other rather than in isolation. For instance, the relatively high migration rates among the youth or young adults in Canada can be attributed to the fact that these people have recently completed formal education, and are entering the labour market in search of an occupation of their choice. Since most of them are still single and have relatively little family obligations that will tie them to a particular location, they are prepared to migrate to places where better employment exists (Leslie and Richardson, 1961; Ladinsky, 1967; Morrison, 1971, 1975; Deutschman, 1972; Long, 1973).

According to Shaw (1975), however, conceptual elaboration and integration of the meaning of these factors (and their components) will be

required before the life cycle stage approach will contribute effectively to explaining who migrates and why. "That is, in its present form, the processes of life cycle and career pattern are little more than loose interrelations of various factors believed to influence the selectivity of migrants (p. 36)".

Recent research in the field of migration has shifted to more subjective factors underlying the migration process. The key question being considered is: "By what evaluative process do individuals arrive at the decision to migrate?" Studies which attempt to answer this question by means of a behavioural frame of reference generally focus on the basic decision-making units - the individual, family and household. This type of micro-analytical study is quite different from macro-analytical models which emphasize the ecological determinants of migration among a system of locations over space. In contrast, micro-analytical models are designed to depict the subjective evaluative processes which culminate in the decision to move or to stay. This decision-making process is influenced to a large extent by social, psychological, economic and cultural factors.

Broadly speaking, several concepts are central to the behavioural approach. The first of these is the notion of "place utility", defined as "the net composite of utilities which are derived from the individual's integration at some position in space" (Wolpert, 1965, p. 163). The individual is also attributed with a threshold of net utility or an aspiration level which adjusts itself on the basis of experiences (Siegel, 1957; Lewin, 1951). When faced with the decision to migrate, because of changing conditions at the place of origin, the individual may choose to adapt to the new situation and postpone, perhaps indefinitely, the decision to

move. On the other hand, the individual may decide to migrate to an alternative locality where the anticipated utility, based on personal experience and/or information about that place, is perceived to be higher than that in the present site. According to Welpert (1965):

The generation of population migration may be considered to be the result of a decision process which aims at altering the future in some way and which recognizes differences in utility associated with different places Thus, the flow of population reflects a subjective place utility evaluation by individuals (p. 162).

During the past decade, this concept has been widely used in migration research (Brown and Moore, 1970; Roseman, 1971; McCracken, 1973; Pryor, 1976). Pryor refined this concept to emphasize the individual migrant's desire to achieve "subjectively satisfying place utility (SSPU)" for a given residence location. According to Pryor, SSPU is defined as "What the migrant thinks he is evaluating, and what he hopes he is optimising in his migration decision-making" (p. 107).

Secondly, the concept of "action space" is important to the behavioural aspect of migration. This concept refers to the immediate subjective environment which the individual perceives and to which he responds. Generally speaking, the notion of action space is similar to Lewin's concept of "life space" defined as the universe of space and time in which the person perceives that he can or might move about (Lewin, 1951). Spatial or directional bias regarding the action space or life space might be, and often is, developed because of inadequate information and limited experience on the individual's part. Hence, in studies on migration over varying geographic scale, it is found that migrants tend to migrate either to places which they are most familiar with through direct contact as a result of frequent visits, or to places which they are most aware of through mass-communication media and personal infor-

mation exchange (Rossi, 1955; Adam, 1969; Proudfoot and Lamont, 1972; McCracken, 1973).³

Thirdly, the concept of "decision threshold" is also important for analysing the individual's propensity to migrate. Melpert (1965) advocates that the individual has a threshold of net utility or an aspiration level that adjusts itself on the basis of experience. Therefore, as an individual passes through different stages of his life, his attitudes, aspirations and range of alternatives change, in turn affecting his threshold of net place utility and his decision to migrate.

It is becoming more apparent that one's attitudes, experiences, perceptions and reaction to the surrounding environment are basic to the formulation of migration decisions. Down (1970) in his paper on "Geographic Space Perception" introduces a conceptual schema which attempts to explain how people perceive and react to their environment in a spatial and temporal context.

According to this schema (Figure 1.2), after the information on the real world has entered the individual through a system of perceptual receptors, and the precise meaning of the information is determined by an interaction between the individual's value system and his image of the real world, the individual may require to adjust himself, with respect to the real world, by making a decision which may or may not involve overt actions.

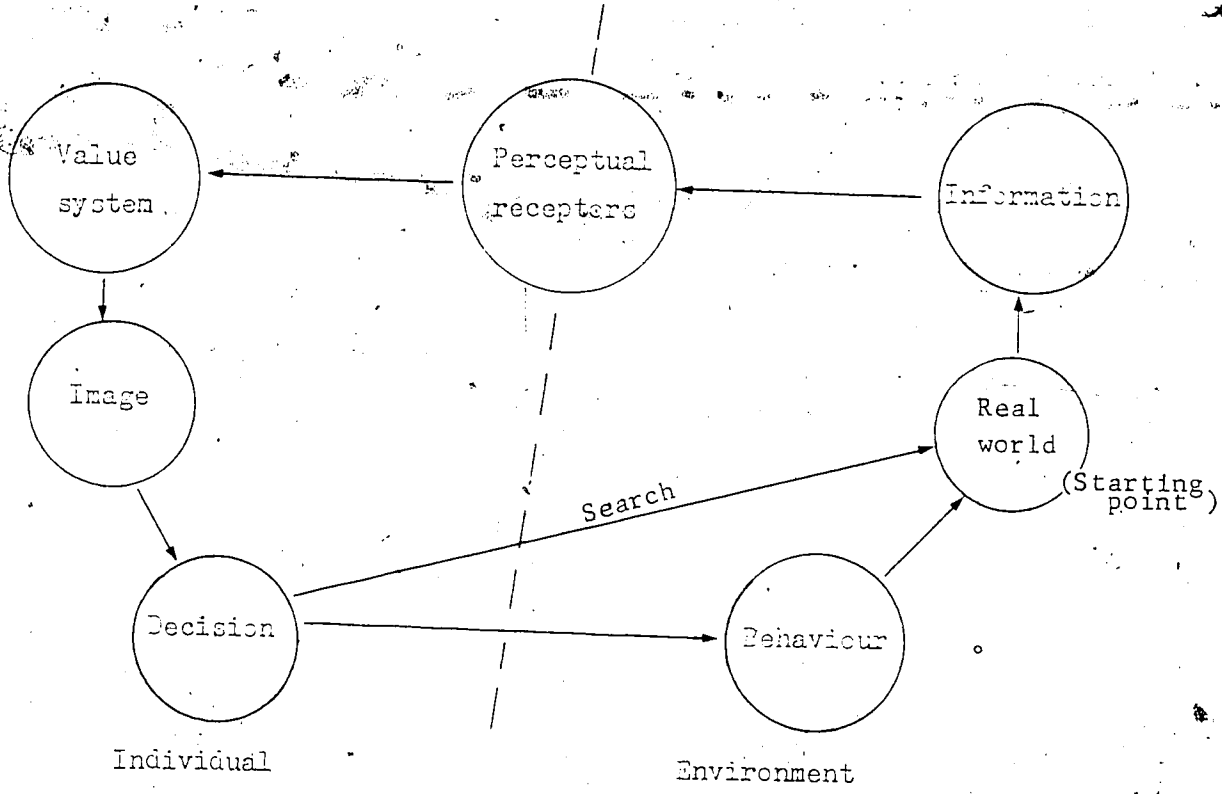
In the latter case, the individual may decide that his information on the real world is inadequate and will proceed to repeat or recycle

³ See Fryer (1976) for a more detailed discussion of the concepts of activity space, awareness space, aspiration space, search space.

the same search process all over again.

FIGURE 1.2

GEOGRAPHIC SPACE PERCEPTION: A CONCEPTUAL SCHEMA



SOURCE: Down, 1970, p. 85.

Studies utilizing these behavioural concepts have tended to focus on the sources of threshold variability regarding the decision to migrate. Morrison (1969) notes that recent research findings reveal at least three primary sources of constraint on the decision threshold:

- 1) the life cycle,
- 2) the structural conditions associated with specific occupations, and
- 3) prior experience of moving.

With regard to this third factor, Morrison states:

Mobility is evidently a cumulative process like fertility, linked to past experience as well as current circumstances. Prior experience with mobility appears to foster a degree

of learning and to facilitate subsequent movement... One possible explanation is that decision thresholds may be initially high for persons who have never migrated in their adult years. Once a move has been made and chastity has vanished, so to speak, a process of learning apparently blunts subsequent inertia (p. 13-14).

Van Arsdol (1963) in a longitudinal survey of retrospective movers and stayers, also found that people who have moved before are more oriented toward future mobility than are those who have not moved in the past. This latter group is more oriented toward continued stability and is more likely to stay in the present locality. Goldstein (1964) found that repeated migration was centered in the age group 25-44 years, while the very young and old were more likely to be stayers. His findings also support the conclusion that repeated migration was a function of residence status. Rogers (1963) and Rogers and Miller (1967) have developed statistical models to describe the mover-stayer concept by applying matrix algebra and techniques for estimating transition matrices of Markov chains. In their study of interregional migration in California, they found that a large proportion of the migration flows from a region can be attributed to a relatively constant group of individuals in the region's overall population who exhibit a high propensity to migrate.

As a corollary to this proposition, McGinnis and his associates at Cornell University have advocated "the axiom of cumulative inertia" which states that the probability of an individual continuing in a locality increases with increasing length of residence (McGinnis, 1963). Empirical verifications of the Cornell model have tended to support a negative and non-linear relationship between duration of residence and migration risk (Morrison, 1967, 1969, 1970; Land, 1969). Furthermore, it was found that this functional relationship between the probability to move and duration status holds across populations with very different ecological and dem-

graphic characteristics (Land, 1969, p. 139). The reasoning behind McGinnis' proposition is that the length of residence in the same place tends to foster social ties, familiarity and acceptance with the place. Under such a condition, inertia is generated which effectively depresses the prospective migrant's propensity to move.

In a study on three factors of migration: length of residence, social ties and economic opportunities, Toney (1976) found that the economic conditions in a given location do not exert as effective a general stimulus for out-migration as they are for in-migration. On the other hand, the existence of previous familial ties and contacts is positively associated with the length of residence. More recent investigations by the same researcher into the importance of social and economic factors in migration decision have also concluded that social ties play a more significant role in the selection of destinations with low levels of economic opportunities than they do in the movement to high opportunity areas (Toney, 1978).

In summary, the above review of literature on migration, though selective in coverage, has shown that researchers from various disciplines have contributed extensively towards a better understanding of the nature of the migration process. Unfortunately, this body of literature is still characterised by the following features which are not conducive to the development of a general theory of migration:

1. Favours a uni-disciplinary approach in analysis - e.g. economists using a cost-benefit framework in studying migration flows as well as the relative economic attractiveness of the places of origin and destination; geographers emphasizing human interaction and diffusion over space and the effects caused by friction of space; sociologists and behavioural scientists emphasizing social psychological variables such as attitude and perception to study the

decision to migrate.

2. Reliance on secondary sources of data in empirical analysis - e.g. data on the migration status and other characteristics of the population obtained from national censuses and other administrative statistical series usually cannot explain the causes of migration and numerous other aspects pertaining to the migration process. Data obtained through personal interviews, special purpose surveys, and longitudinal studies are rarely used in migration research, chiefly because of the cost involved in collecting these types of information.

3. Dependence on models and theoretical concepts which have little basis for their application in and explanation of human migration behaviour - e.g. physical models depicting the efficiency and volume of matter moving over space, concepts such as "gravity pull", "potentials", and others derived from general systems theory.

4. Emphasis on the deterministic approach which prescribes a precise relationship between migration event and the predictor or explanatory variables instead of the probabilistic approach whose objective is to establish and specify a relationship between the dependent and independent variables within certain limits according to statistical principles. The latter approach to migration studies has the merit which permits an assessment of the likelihood of a migration occurrence in the face of uncertainty (see Shaw, 1975, p. 15).

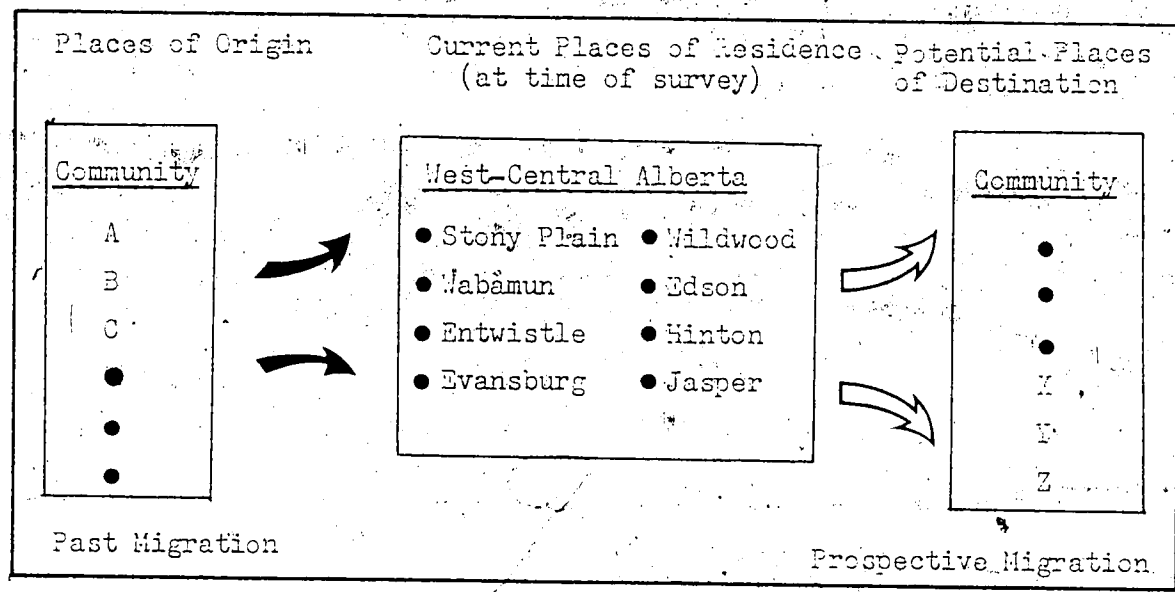
3. METHODOLOGY: AN OVERVIEW OF RESEARCH HYPOTHESES

Based on the literature cited in this chapter, a number of theoretical

propositions and hypotheses will be established to study migration in west-central Alberta. As indicated earlier, the focus of the investigation is on the past move of a selected group of people to eight communities in the study area, as well as the future migration tendency of these people. Since the major objective is to gain a better understanding of the nature of and the causal mechanisms underlying the migration process from a spatial, temporal and behavioural perspective, it is useful first, to identify the basic components of this process. Brown's (1968) conceptualization of the spatial diffusion process and the following conceptual schema of the research problem (Figure 1.3) can be adopted for this purpose.

FIGURE 1.3

A CONCEPTUAL SCHEMA OF THE RESEARCH PROBLEM



According to Brown, there are six key elements in a spatial diffusion process. The first is the "environment", which refers to the general area where migrants have contact and move about. This concept of the

"environment", as applied in migration research, points to the existence of complementary relationships among different localities in territorial space. In this context, the migrants could have come from any conceivable origin of the world to settle in the study area. No doubt, those who moved here were attracted by different conditions in west-central Alberta, such as the scenic surroundings, climate, job opportunities, housing, or the presence of families and friends. Other factors such as distance, accessibility, information about the region could also be responsible for the volume and direction of migratory flows. Some of these factors will be hypothesized as determinants of migration in this study. Particularly, the following aspects will be examined:

- i) To what extent is in-migration a function of the scenic attractiveness of west-central Alberta?
- ii) How does Edmonton, a metropolitan area located on the eastern border of the study area, affect migration flows in west-central Alberta?
- iii) Is distance a geographic barrier to migration in west-central Alberta and is distance between pairs of places inversely related to the volume of migration between them?
- iv) Are directional biases characteristic of the migration patterns in the study area?

The second element, the "items to be diffused", refers to the migrants and prospective migrants. In this context, the demographic and socio-economic characteristics of migrants, the particular stage of life cycle they are in, and their social-psychological attributes are important variables. Based on an analysis of these variables, typical profiles of migrants can be identified and employed to study their propensity to mig-

rate. A selection of personal characteristics of the residents in the study area will be hypothesized as functions of migration. For example, the propensity to migrate is hypothesized to vary i) inversely with the age of the individual, ii) directly with the degree of educational attainment, iii) directly with occupational status in administrative, managerial, professional, technical fields, and iv) directly with the level of family income. Furthermore, the extent to which an individual's aspirations, perceptions and degree of satisfaction regarding his career goals and the community he is living in can affect past and prospective migration will be investigated.

The "nodes of origin" and "nodes of destination", respectively, are the third and the fourth elements in Brown's conceptual framework. In this study they will be considered as the specific communities which send or receive migrants. The eight settlements selected as the focal points of migratory movements in west-central Alberta, and from which the main data base of this study is drawn, are by no means the only nodes of origin and destination that will be considered. This is because the migrants could have come from anywhere within the confines of the "environment" mentioned previously. Similarly, these eight centres could be regarded as potential nodes of origin, if, in the future, their residents decide to move elsewhere. Many factors of a push-pull nature will be hypothesized as factors of migration, though economic opportunity, availability of social services and amenities are the most common. The hypotheses will take the form that availability of these opportunities and services is inversely related to the propensity to migrate. In addition, both objective indicators (for example, labour force size, employment rate, income level etc.) and subjective indicators (for example, place utilities,

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perception on the social milieu, etc.) pertaining to these nodes will be analysed as factors of migration.

Fifthly, the "paths of movement or the relationships between origins and destinations" represent another key element of spatial diffusion. The application to migration studies is fairly obvious. The linkages between origins and destinations in migratory movement can be measured in terms of the physical distance separating them; the time or cost required to visit one another; the degree of accessibility and contact by means of different modes of transportation and communication media; as well as the types of complementary relationships existing between them (for instance, one centre might rely on the other for the provision of services such as post-secondary education, government services and recreation). Several hypotheses similar to those mentioned in the section on "environment" will be utilized to analyse migration flows between nodes of origin and destination. In addition, the frequency of migration between nodes will be hypothesized as a function of both the characteristics of these nodes as well as that of the migrants (e.g. retiring farmers would favour moving to nearby hamlets and villages while young professionals would favour moving to larger urban centres).

Lastly, Brown stresses the importance of the temporal destination in the spatial diffusion process. The relevance of this particular idea in migration studies has already been emphasized. In this study, several temporal phases of migration can be differentiated:

- i) the past migration history of the individual prior to moving to the present community;
- ii) his move to the present community;
- iii) his present travelling pattern, i.e. circulation;

iv) his future migration tendency - prospective migration.

A specific objective of this thesis is to find out whether any functional relationship exists among these temporal phases of migration. In particular, phases (ii) and (iv) will be studied in greater detail while (i) and (iii) are analysed primarily as functions of migration. From the spatial point of view, phase (ii) represents in-migration into these nodes, while phase (iv) portrays potential out-migration. Such an approach is an acceptable way for assessing the impact of migration on the communities.

The analysis of prospective migration deserves further elaboration. Unlike the specific move to the present community, which is an event that actually occurred and is measurable by such variables as the size of the origin and destination, the distance travelled, and the characteristics of the migrants at the time of moving, prospective migration, by definition, is a journey yet to take place, which might never happen at all. Several factors derived from studies in this area of research have been identified and hypothesized as determinants of prospective migration.

They are:

- i) life cycle and social and economic characteristics of the respondent (migration differentials);
- ii) length of stay in the community (cumulative inertia);
- iii) past migration experience (phase i);
- iv) perception and satisfaction with the community; and
- v) present travelling patterns (phase iii).

These hypotheses will be explained in greater detail in a subsequent chapter.

CHAPTER II

THE STUDY AREA AND DATA BASE

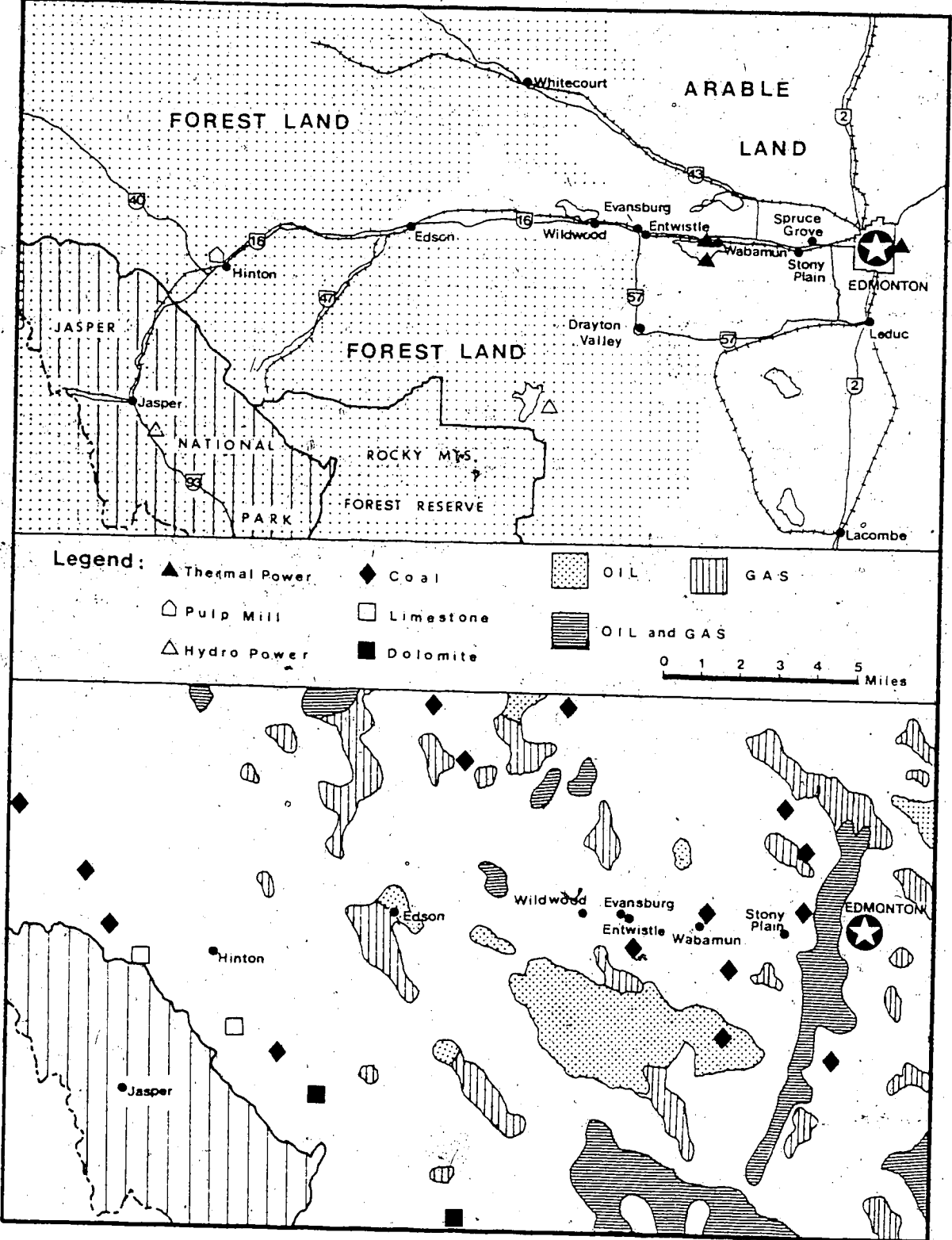
A. THE STUDY AREA

The study area of west-central Alberta includes the portion of Census Division 11 west of Edmonton, Census Division 14, and the northern half of Census Division 9, around the town of Jasper. It stretches in an east-west direction for almost three hundred miles. Physically, it extends over gently rolling agricultural land in the east through the foothills of the Rocky Mountains and into the mountain ranges of the continental divide in the west.

The region, especially Census Division 14, is endowed with rich reserves of a great variety of natural resources such as coal, oil and gas, limestone and lumber. As well, it has an excellent potential for tourism and recreation. However, with the exception of a relatively small eastern portion, much of the land in the region is not very suitable for agriculture, and only a small percentage of it has been cleared (Figure 2.1).

The majority of the homesteaders who came to settle in this area during the early part of the century were part-time farmers who also worked in the lumber industry and coal mining. As late as 1949 coal mining was a thriving business in the region, especially in the Coal Branch area near Robb and Cadomin. In 1959 when railways changed from steam to diesel locomotives, the demand for coal from the Coal Branch suddenly disappeared. The economic impact of this change in the area was severe. Within a period of ten to fifteen years, the estimated value of coal production declined from \$10,000,000 to \$35,000 and the number in

FIGURE 2.1
 STUDY AREA: WEST-CENTRAL ALBERTA
 HUMAN SETTLEMENTS AND NATURAL RESOURCES



the mining labour force declined from close to 1,600 to less than 20. The mining communities deteriorated and eventually became ghost towns (Alberta Agriculture, 1966).

Since the 1950s, the economy in the region has experienced remarkable changes, starting with the discovery of oil and gas in the vicinity of Edson and Whitecourt and the construction of processing plants for extracting by-products from oil and natural gas, the establishment of a pulp mill at Hinton and subsequently, the rejuvenation of coal mining activities in the Luscar and Grande Cache areas because of increased demand for coal on the international market. Moreover, with the increase of leisure time, and improved development of the Yellowhead Highway, the Rocky Mountains, especially the Jasper area, became a popular tourist mecca frequented by people from all over Canada and the United States. On the eastern edge of the study area, the rapid population growth in the City of Edmonton has spilled over to smaller, predominantly rural communities such as Spruce Grove and Stony Plain. Increased demands of energy consumption in central Alberta led to the building of a major thermal electric generating plant near the community of Wabamun by Calgary Power Ltd.

The pace of economic development in west-central Alberta during the past two decades has resulted in sizable increases of population in the local communities, largely through in-migration. Sheehan (1975) in her study on the effects of economic growth in the Alberta foothills area, states:

The problem in this region is that over the years, the basic industries of coal mining and lumbering which employed large number of local people and supported active non-basic (service) industries have disappeared. Although they have been replaced by other basic industries such as the production of oil and gas, and pulp, these have not employed the local people because they

have required skills and experience which the local people have lacked and have not had the time to acquire. The result is that the economy of the region has become dis-jointed.... The region in fact supports two parallel economies. One of these includes the workers who have come in from outside the area to be employed in the oil and gas industry and in the pulp mill at Hinton, and in other aspects of the forest industry. The other economy is based on farming and includes most of the local people (p. 19).

However, farming in west-central Alberta is a marginal economic activity. This is because the majority of land in the region, except for a relatively small portion to the east, is forested, the topography ranges from hilly to mountainous, and the soil (grey wooded) lacking sufficient humus content for grain cultivation. Consequently, a large proportion of the farms, particularly those located in Census Division 14, were small and uneconomical in 1971 (Table 2.1). Many farmers in the study area had to rely on part-time or seasonal off-farm employment to supplement their farm income. As in many poor farming areas, the farmers in this area are characterised by old age and relatively low educational attainment. These attributes further restrict them from taking full advantage of the employment opportunities in the new industries.

T A B L E 2.1
FARMS AND FARM INCOME IN SELECTED
CENSUS DIVISIONS, ALBERTA, 1971

Census Divisions	Total Farms	Sales Under \$2500 Number	Percent
10	8356	1983	23.7
11	7559	2680	35.5
12	3530	1354	38.4
13	5978	1956	32.7
14	942	503	53.4
15	8415	3175	37.7
Alberta	62,702	15,991	25.5

SOURCE: 1971 Census of Canada, Agriculture

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Between 1951 and 1971, a great deal of change occurred in the agricultural industry. The number of farms declined by 40 percent while the average farm size increased. More significantly, the number of workers in the agricultural labour force in Census Division 14 was expected to decline from 2741 in 1951 to approximately 750 in 1971 (Alberta Agriculture, 1966). These changes led to the migration of displaced farmers to nearby towns and villages.

In contrast with the above scenario, the development of the oil and gas industry around Edson, the pulp mill in Hinton and the thermal electricity plant at Wabamun resulted in the influx of a large number of skilled workers and their dependents from outside the area. The newcomers tended to stay in towns or villages closest to their places of employment, thus resulting in a high rate of population growth in these centres. This change in the settlement pattern in west-central Alberta is presented in Zimmerman and Monco's study, The Prairie Community System (1971), in which they trace the evolution of three classes of settlements, namely, i) prairie cities (e.g. Edmonton), ii) independent trade centers (e.g. Edson), and iii) dependent centers (i.e. stop-off places for convenience) in Alberta from 1936 through 1951, 1966 and 1970. Of particular interest to this study are the series of maps which show a gradual decrease in the number of dependent centers in west-central Alberta during this period. However, the number of independent trade centers (i.e. towns with 1000 or more people) had increased from two (namely Stony Plain and Edson) in 1951 to six in 1966, with the addition of Whitecourt, Drayton Valley, Hinton and Jasper.

Briefly, it could be surmised that when the economic base in an area, as diverse as west-central Alberta shifts from one form of resource devel-

ement to another, the traditional pattern of settlement also changes. As in the Alberta foothills area, communities that were based on an activity which no longer exists or which has changed radically, have lost their raison d'etre. For instance, the dispersed pattern of settlement that was based on agriculture can no longer persist after farming has ceased to provide a decent living for those engaged in it. Similarly, those towns that existed originally to service the mining industry in the Coal Branch have almost entirely disappeared. Even though the mine in Luscar area had re-opened in recent years, the miners are being bused in daily from Hinton where they live. In these days of improved transportation and communication, it is much easier for people to live in a few large, more centralized communities and commute to and from work, if necessary.

In view of the change in the settlement pattern that have occurred in west-central Alberta during the past two decades, eight communities located along Highway 16, west of Edmonton, have been selected for an in-depth analysis of migration. Together, the eight communities had a population of just over 15,000 in 1971, which represented more than 95 percent of the urban and rural non-farm population of settlements located along Highway 16, west of Edmonton, if the town of Spruce Grove was excluded from the total (Figure 2.2).

Besides being located relatively close to Edmonton, thus allowing easier access for interviews and field investigation, there are several reasons why these settlements have been selected for the study.

1. The eight communities vary in population size and rate of growth (Table 2.2). Four of them, namely Stony Plain, Edson, Hinton and Jasper, are urban municipalities (towns) with a population of 2000 or

more. These four towns experienced relatively high rate of population growth between 1956 and 1971, especially Hinton, which quadrupled its 1956 population. In contrast, the villages experienced varying degrees of population change during the same period. Evansburg was the only community which showed a consistent rate of increase.

T A B L E 2.2
POPULATION AND POPULATION CHANGE, 1956 - 1971

LOCALITY*	POPULATION				Population Change 1956 - 1971	
	1956	1961	1966	1971	Number	Percent
STONY PLAIN	1098	1311	1397	1770	672	61.2
WABAMUN	264	444	482	336	72	27.3
ENTWISTLE	354	411	345	353	-1	-0.3
EVANSBURG	358	452	472	528	170	47.5
WILDWOOD	547	479	403	386	-161	-29.4
EDSON	2560	3198	3788	3818	1258	49.1
HINTON	943*	3529	4307	4911	3968	420.8
JASPER	2105	2360	2505	2932	827	39.3

SOURCE: Statistics Canada, 1971 Census, Catalogue No. 92-702

* Unofficial estimates

2. Closely related to the above reason, the characteristics of the population in the eight communities are also very different. For instance, Hinton, Wabamun, Edson and Jasper had a more youthful population age structure than Entwistle, Evansburg, Wildwood and Stony Plain at the time of the 1971 Census. Other demographic characteristics, such as the marital status of the population and family size, also exhibited

large variance among the centres (e.g. 80 percent of the families in Hinton had unmarried children as compared with 53 percent, 54 percent and 55 percent of the families in Wildwood, Stony Plain and Entwistle, respectively). Furthermore, the level of educational attainment of the population, the labour force status by occupations, family income, etc. were found to be quite different among the eight communities.¹ Since it has been pointed out in Chapter I that migration is highly selective according to demographic and socio-economic characteristics and the stage of life cycle, these eight settlements would be expected to differ quite significantly according to the migration experience and intentions of their population.

3. The eight settlements serve very different economic functions in the study area. The diversity of the resource base and the history of development of these resources have resulted in a unique typology of settlements which presents an ideal setting for studying both past migration patterns as well as future migration intentions of the population in these settlements (Table 2.3).

4. The strategic location of the eight settlements along a major transportation thoroughway - the Yellowhead Highway - to the west of the city of Edmonton, poses an interesting situation for studying the pattern of spatial interaction among the residents of the communities. During the past fifteen years the Yellowhead Highway has undergone extensive improvement which has resulted in better accessibility and communication among the settlements in the study area. The extent to which migration patterns are affected by improved transportation facilities is

1 See Appendix A for a comparative analysis of selected population characteristics in these settlements.

an interesting topic for investigation. In addition, it is important to assess the impact of Edmonton, an ever-expanding metropolis of 600,000 people, on the migration volume and direction among the settlements in west-central Alberta.

T A B L E 2.3

A TYPOLOGY OF SETTLEMENTS IN WEST-CENTRAL ALBERTA

SETTLEMENT	CLASSIFICATION	MAJOR FUNCTIONS/SERVICES
STONEY PLAIN	Agricultural service centre, gradually developing as a dormitory community of Edmonton	Grain elevator, schools business and government services, restaurants, stores, churches, etc.
WABANUKE	Rural hamlet gradually becoming a small scale resource centre	Site of coal mine and thermal electric power plant, small convenience stores
ENTWISTLE EVANSBURG WILDWOOD	Small rural communities	Social institutions such as churches, schools, clubs and small convenience stores, some government services
EDSON	Sub-regional service centre	Fairly elaborate professional, commercial, government services, school districts regional office, hospitals, oil and gas servicing, gas plants, etc.
HINTON	Resource centre	Pulp mill, coal mining, tourism, plus basic commercial and professional services, social institutions, etc.
JASPER	Tourist and transport centre	Park administration, railway divisional point, plus basic services, especially those catering to tourists.

B. THE DATA BASE

The lack of an adequate data base for the study of human migration is a widely recognized problem, and Alberta is no exception. In general, three types of data series have been used to study migration. They are: i) census data, ii) administrative records of government agencies, and iii) data obtained from occasional, special purpose surveys.

Firstly, national censuses are still the most widely used data sources for studying internal migration in Canada. The 1961 and 1971 Censuses contained questions relating to place of birth, place of last residence, frequency of moves from one municipality to another, and place of residence five years ago, prior to the censuses. Based on a one-third systematic sample of the population aged 15 and older as of June 1, 1971, information on the migration status and mobility status of the population is provided at the enumeration area level in the 1971 Census (Statistics Canada, 1972). In addition, data on a variety of characteristics (e.g. sex, age, marital status, mother tongue, occupation and educational attainment) of both migrants and non-migrants can be obtained through special requests from Statistics Canada. Besides the usual response errors associated with data collected by means of sample survey, such as faulty memory, built-in bias to certain questions, and deliberate falsification of records, census migration data do not reflect the mobility of persons who died or had left Canada during the intercensal period. As well, no data exist from which inferences on the causes and decisions behind migration can be derived (Stone, 1978).

Secondly, administrative data of government agencies, such as the Alberta Health Care Insurance Commission registration records or the family allowance data of the Federal Department of Health and Welfare

have been used to estimate migration flows between provinces. Since Canada does not have a formal mechanism to register current migration patterns of its population, these agencies can be considered as quasi-population registers because of their complete coverage of the population or a certain segment of the population. For instance, almost every person in the province is covered by the Alberta Health Care Insurance plan, and newcomers into the province are required by law to register with the Commission. Hence, these records can be utilized to study migration with great accuracy. Furthermore, by joint agreement among the health care systems across the nation, exchange of information on client mobility is transferred back to the province of origin. In this case, the age, sex, marital status, family characteristics of migrants and their origin and destination areas can be estimated within a relatively brief time after the move was made. Similarly, the family allowance records, being a nationally administered plan and data system, have been used to measure inter-provincial migration in Canada (Horna, 1974; Statistics Canada, 1977).

Nevertheless, information from neither the census nor the administrative records is suitable for the present study because these data series do not contain enough detail on the characteristics of the migrants, nor do they include any data on behavioural aspects of migration such as future migration intentions. The main weakness, however, is that several of the communities under study are too small to be considered separately, even by the census, as a statistical unit for providing migration information. Because of these limitations, it was decided that a special-purpose, sample survey of households was required.

3. THE SAMPLE SURVEY

The sample survey was restricted to the eight communities under study. An attempt was made, firstly, to identify the total number of households in each community so that a systematic sample could be drawn.² Three possible data sources were considered: i) the 1971 Census Enumeration Area (E.A.) Household Data, available in both computer "print-outs" and tapes, ii) the 1971 Alberta Government Telephones (AGT) Community Data Sheet, and iii) the 1971 Household Directory of the Federal Post Office Department. The number of households in the eight communities varied greatly according to these three sources of information, as indicated in Table 2.4.

T A B L E 2.4
NUMBER OF HOUSEHOLDS IN THE COMMUNITIES, 1971

COMMUNITY	1971, June 1st CENSUS	1971 AGT SURVEY	1971 HOUSEHOLD DIRECTORY*
Stony Plain	530	500	733
Wabamun	100	186	218
Entwistle	120	116	158
Evansburg	165	190	200
Wildwood	130	138	231
Edson	1080	1259	1301
Hinton	1255	1332	1428
Jasper	830	862	756
TOTAL	4210	4583	5025

* Excludes heads of households whose occupation was farming.

² Household in this thesis refers chiefly to family households and households with single persons occupying one dwelling. This study excludes communal households, e.g. hospitals, boarding schools, camps, hotels, etc.

It is normally recognized that the Census should provide the most reliable household count because the B.A. data file is based on a detailed sample of the population of the locality. The AGT data, according to officials of the Business Development Branch of AGT, were based on an annual count of all households in each community. Hence, their accuracy should be similar to that of the Census, with the one qualification that these counts are made at different times during the calendar year. By contrast, the 1971 Household Directory was a compilation of all the users in a certain postal district or station, including non-residential users. The service areas of these postal districts do not necessarily coincide with the official boundary of a community. This means that many residents located outside the community limits would also be listed under that particular town or village in the Directory, resulting in a larger number of households in the community than that identified by the Census or the AGT Survey. For this reason, the 1971 Census was chosen as the basis for indicating the total number of households in the communities under study.

Secondly, with respect to the selection of a sample, since this research project was restricted by financial and manpower resources, it was decided at the initial stage that a sampling fraction ranging between five and twenty percent, depending on the size of the community, would be adopted. Secondly, it was decided that, as much as possible, data would be collected through a mail questionnaire. As it is not unusual to expect a relatively low response rate using this kind of interviewing technique, the sampling fraction for the smaller communities, namely the villages of Wabamun, Entwistle, Evansburg, and Wildwood, were enlarged in hope of achieving a higher response in these places. According to Moser and Kalton (1971, p. 93) a "disproportionate stratified sampling"

is justified in situations where the population in some strata are much more variable than those in others. "It would be sensible in this case to take a larger sampling fraction in the more variable strata, thereby increasing overall precision". Conway (1967) also suggests a similar procedure to deal with sampling units of variable size. Table 2.5 provides the specific information on the sample size and response rate in the survey.

TABLE 2.5
RESPONSE TO QUESTIONNAIRE SURVEY

COMMUNITY	NUMBER OF HOUSEHOLDS	NUMBER OF QUESTIONNAIRES SENT AWAY	NUMBER OF QUESTIONNAIRES RETURNED	RATE OF RESPONSE	OVERALL** COVERAGE
STONY PLAIN	530	53	25	47.2	4.7
WABASH	100	40	20	50.0	20.0
ENTWISTLE	120	40	20	50.0	16.7
EVANSBURG	165	40	20	50.0	12.1
WILDWOOD	130	40	25	62.5	19.2
EDSON	1080	110	56	50.9	5.2
HEMPHREY	1255	130	66	50.3	5.3
JASPER	330	33	41	49.4	4.9

* Based on 1971 Census

** Refers to the number of returned questionnaires as a proportion of the total number of households in the community.

The next step was to choose a sampling frame or a series of sampling frames for the distribution of questionnaires to the households in the communities. The 1971 Northern District Telephone Directory (AGT), which contained listings of users for all the eight study communities was con-

sidered first. However, discussion with officials of AGT revealed that, even though most of the households in these communities have telephones, only the larger communities have an installation rate of 90 percent or more. Therefore, instead of drawing the samples from a sampling frame whose coverage was known to be inadequate for the small villages, only the listings for Story Plain, Edson, Hinton, and Jasper in the AGT Directory were used while a drop-off, mail-back system involving field work and personal visits was adopted for the remaining communities.

A systematic sampling procedure which ensures that every primary sampling unit (PSU) has an equal and known probability of inclusion in the sample was employed to distribute the questionnaires to the households (Conway, 1967). For the four towns where questionnaires were to be mailed, after a random start, a copy of the questionnaire was sent to every k^{th} person whose name was listed in the telephone Directory. The number k was dependent on the sampling fraction for that particular town. An identification number was used in case it was necessary to send a copy of the questionnaire to the same person for follow-up. For the smaller villages a detailed map showing the location of every dwelling on every street was used at the initial stage to identify those households which were to receive a copy of the questionnaire. Again, after a random start, every k^{th} house was marked according to a regular interval. During the field work the locations of these houses were validated, and a copy of the questionnaire was delivered to them with instructions for its return. The main part of the field work was conducted during the summer and fall of 1972. The entire process proved to be quite successful, though rather slow moving at times. Some personal interviews were also conducted during these visits.

As can be seen in Table 2.5 a total of 536 questionnaires was sent out or delivered. This represents an aggregate sampling fraction of 12.7 percent out of a total of 4210 households in the study area. Of the 536 questionnaires, 273 were returned, giving an overall response rate of 50.9 percent which is good response for any survey using the mail interviewing technique (Moser and Kalton, 1971). Considering the communities separately, the response rate ranged between 40 and 62 percent. If the response rate was further represented as a percentage of the total number of households, the 273 returned represent an average 6.5 percent coverage of the households in the study area.³

D. THE QUESTIONNAIRE

After some pilot tests were conducted in Stony Plain and Wabamun, a questionnaire with 57 questions was designed to collect detailed migration data for the study.⁴ The questionnaire consists of four parts. Part A deals with the migration experience of the head of the household and the reasons for migration. The focus of this section is on the present community. It is intended to provide information on whether the head of the household was born in that community, and if not, the length of time he has stayed in that place, whether he came to the community by himself or with his wife and family, whether he was unemployed at that time, whether

3. Actually, 281 questionnaires were returned, but eight of them were unusable. Of the 273 usable questionnaires, 196 or 71.3 percent were sent back within 30 days of mailing. The remaining 77 were returned after a reminder letter and a second copy of the questionnaire were sent to the head of the household.

4. See Appendix B for a copy of the survey questionnaire.

he had a job waiting for him in the community, and, generally, why he chose this town as well as why he left his previous community. The last question of Part A seeks to find out the past migration experience of the head by asking him to trace all the communities that he had lived in, the length of stay in each place, and his occupation at each locality, dating back to the time when he left school. The purpose of this composite question is to collect the necessary information for testing the hypothesis of "cumulative inertia", to obtain information relating to duration of stay, and to obtain information of the characteristics of "chronic migrants".

Part B of the questionnaire is concerned with the attitudes and perceptions of the head and his future migration tendency. Several questions dealing with his general impressions of the community such as its economic prospects, the pace of population and business growth, and the friendliness of the local residents, are included. More specifically, the head was also requested to assess the quality and adequacy of certain basic services and amenities in town such as housing, transportation, medical care, recreation facilities, and shopping. Further to these rather subjective questions, the head was asked to indicate his future migration plans - whether he intends to stay in the community in the next few years, or to stay in town permanently.

Part C of the questionnaire is concerned with the personal profile or the demographic, social and economic characteristics of the head of household. Basic questions dealing with age, sex, birth place, marital status, family characteristics, educational attainment, occupation, employment status, place of work, spouse's educational attainment, occupation and employment status, family income, dwelling, ownership of other

properties and membership in organizations are included in this section. The information obtained will be used to analyse past and future migration, and as "sorting data", or independent variables, for the classification of migrants.

Lastly, Part D deals with the present travelling patterns of the head. The head is asked to state the frequency of his travel, and the purpose and destination of these trips. Since this thesis is concerned with the problems of spatial interaction, the information on present travelling patterns, i.e. the head's "activity space", and the experience and knowledge gained from the travel behaviour, i.e. his "awareness space", will be used in the analysis of future migration tendencies (Pryor, 1976).

B. LIMITATIONS OF THE DATA BASE.

As can be seen in the preceding discussion, the questionnaire covers a great variety of topics which are considered pertinent to the main objectives of this study. The treatment of some of the topics, however, is quite general. For instance, in Questions 10 and 11, the respondents are requested to state the reasons why they left their previous place of residence and why they chose to move to the present community. The answers to these two questions in most instances were simple and included reasons such as "job transfer", "retirement", and "family ties" and other personal reasons. According to the results of migration research advanced since this survey was undertaken (in 1972), the approach adopted in this study is not sufficient for the identification of the respondent's real motives of migration. As suggested by Pryor (1975), the study of motivations of migration requires very intensive investigation into the socio-psychological

domain of the respondent (e.g. attitudes, opinions, aspirations, and preferences), his reaction to environmental stress at the origin, his perception and expectations of the destination, and so on. Such an approach has not been taken in this study.

A second limitation is related to the assessment of "place utility" by the respondent, especially with respect to the present community prior to moving there. Three questions were asked which indirectly deal with this aspect of migration - whether there was a job waiting for the respondent prior to moving there, and if yes, what were the information sources of the job (Questions 9 and 10); whether the respondents had any relatives living in the present community, and if yes, whether they influenced his migration decision (Question 13). Again, results of recent literature indicate that in order to analyse "place utility", more attention is needed on the respondent's search for a "subjectively satisfying destination", i.e. his information gathering process culminating on the eventual decision to move or to stay.⁵

Thirdly, the analysis of the future migration tendency of respondents, which is an important aspect of this study, is primarily based on their reaction to Question 27 - Do you intend to live in this community 2 years from now?.... 5 years from now?.... permanently? Even though a theoretical model was developed to analyse this dependent variable of prospective migration, based on a number of determinants or factors which are known to influence people's propensity to migrate, it is still impossible to tell, except in a probabilistic way, whether the respondent

5 See, for example, Svart (1976) on "environmental preferences migration", Pryor (1976) on "subjectively satisfying locations", and Zucches (1977) on "place preferences" in migration research.

will indeed live up to what he has stated about his future migration intention in due course. A follow-up study of a longitudinal nature is needed in order to determine more definitively the relationship between migration intention and actual migration behaviour. This is not possible in view of the constraints being imposed on this research.

F. DATA ANALYSIS AND ORGANIZATION

The information obtained from the two hundred and seventy-three questionnaires returned was first checked for completeness and uniformity. After some minor editing the data were then coded and keypunched onto computer cards. The Statistical Package for the Social Sciences (SPSS) set of programs was primarily used for analysis. Some of the canned programs used included Crosstab, Codebook, Correlation, and Multiple Stepwise Regression. This phase of data analysis, using the computer facilities at the University of Alberta and the Alberta Government Data Centre, yielded a large number of contingency tables, cross-tabulations, correlation matrices, etc. Further selection of data was made according to the results of tests of significance at a minimum 95 percent level of confidence (0.5 or less). Together with other sources of information (e.g. 1971 Census) this body of data was analysed and interpreted according to the objectives set forth in Chapter I. The results of the analysis were organized for presentation in the following manner.

Chapter III presents the results of analysis on the past migration experience of the heads of household. The focus of analysis is on the most recent move to the present community. Chapter IV is devoted to studying the heads' propensity to migrate and the determinants of pro-

spective migration. In Chapter V, an attempt is made to apply the results of the previous two chapters to the settlements in the study area in order to assess the geographic variation of future migration tendencies among the heads. The final chapter, Chapter VI, presents a summary of findings and provides suggestions and directions for future migration research.

CHAPTER III

THE MIGRANTS AND THE MOVE

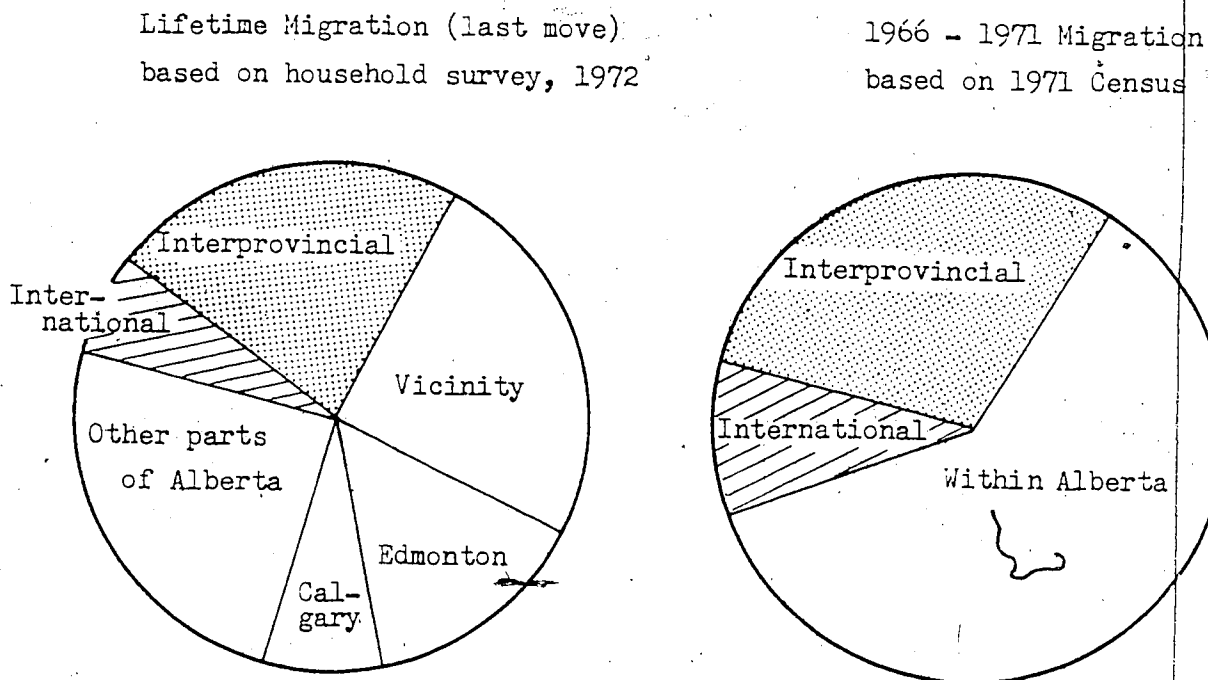
A. INTRODUCTION

This chapter describes the moves made by the respondents of the survey (heads of household) to the communities in the study area. It should be noted that not all the 273 respondents can be classified as migrants. In fact, twenty-one of them were born in the communities in which they

cent) of the heads of household (henceforth referred to as migrants) moved to the communities from within the province of Alberta. Of the 263 migrants, 40 came from Edmonton, 15 from Calgary, 65 from the vicinity of the communities (i.e. places located within a 30 mile radius of their destinations, excluding Edmonton), and another 65 came from other parts of the province. Of the remainder, 58 came from other provinces in Canada while 20 were immigrants or international migrants. As can be seen in Figure 3.1, these findings generally compare quite well with that of the 1971 Census on the places of origin of intermunicipal migrants for the eight centres.

FIGURE 3.1

ORIGINS OF THE MIGRANTS TO WEST-CENTRAL ALBERTA
(Percentage)



It is of interest to note that there is a higher proportion of migrants moving to the study area from out-of-province between 1966 and 1971 as compared to the migration patterns based on the survey data.

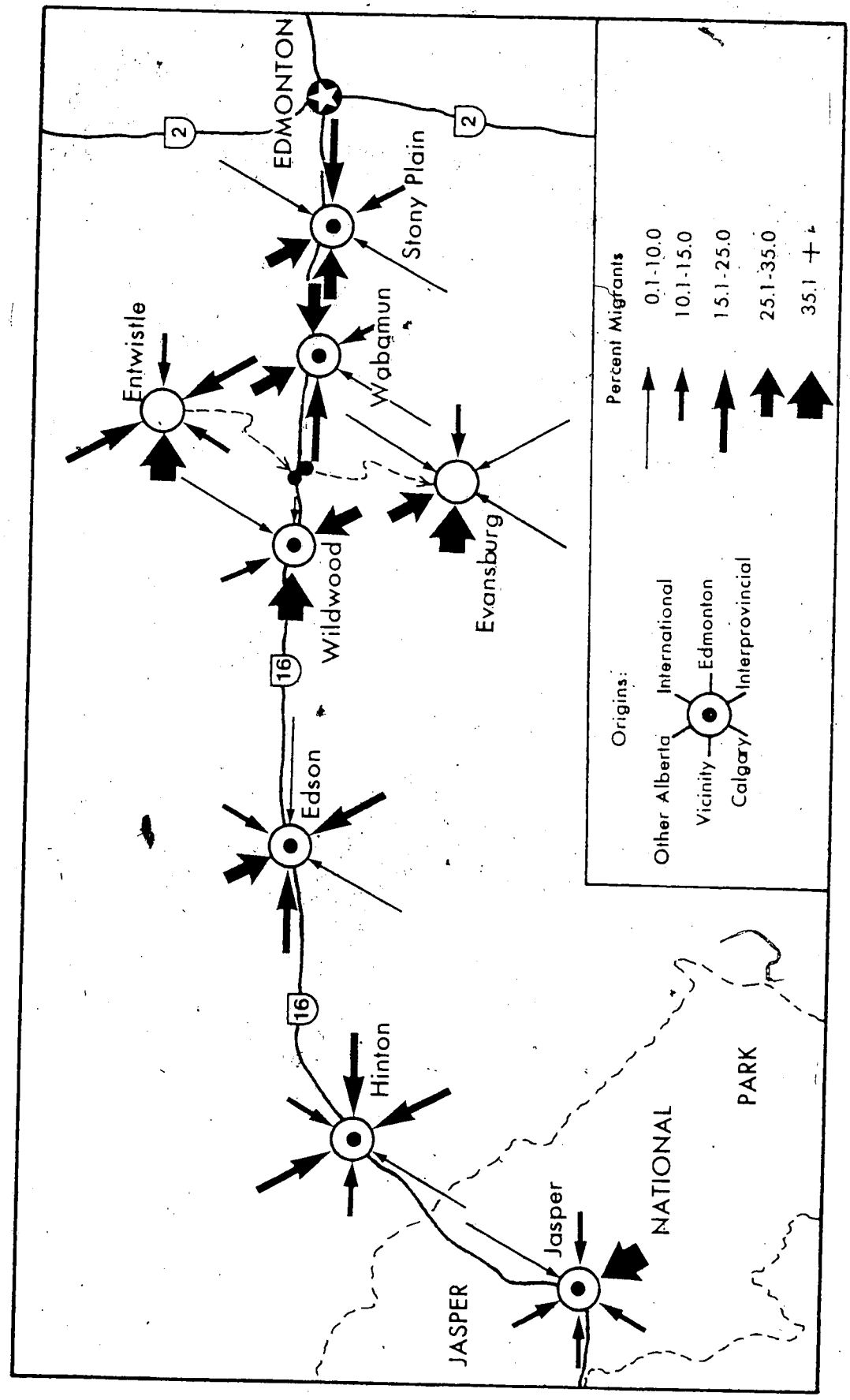
More detailed information relating the places of origin of the migrants and their destinations in the study area reveals that 85 per- cent of the international migrants were attracted to the three larger communities of Edson, Hinton and Jasper. Similarly, a sizeable per- centage of the inter-provincial migrants went to these places, as did the migrants from Calgary. This observation is in accordance with the proposition that long distance migrants tend to be attracted to centres where employment opportunities and wage levels are more favourable than in small rural communities.¹ In contrast, the villages of Entwistle, Evansburg, and Wildwood received most of their migrants from the immedi- ate vicinity and places within Alberta. To a lesser extent, the same migration pattern was evident in Stony Plain and Wabamun, with the ex- ception that, because of their proximity to Edmonton, these two communi- ties attracted a proportionally larger number of migrants from that city (Figure 3.2).

The move to the communities was further analysed according to the size of the place of origin. It is generally observed that migrants from rural areas, especially farmers, often retire and settle in a town or village in the surrounding area while residents of small towns and vill- ages prefer to move to a larger centre (Proudfoot and Lamont, 1972). Moreover, because migration volume is dependent on the size of the place of origin, a certain amount of out-migration from major cities and metro- politan areas to small towns and villages is not unusual.

The results of the survey indicate that 34 percent of the migrants came to the eight communities from farms or villages with less than 1000

1 See Appendix A for a comparative analysis of the socio-economic characteristics of the population in the eight settlements.

FIGURE 3.2
ORIGINS OF MIGRANTS TO STUDY COMMUNITIES



people, 32 percent came from non-metropolitan urban centres, and 29 percent came from metropolitan areas with over 100,000 people (Table 3.1). The four villages (including Wabamun) attracted 50 to 58 percent of their migrants from rural areas. Many of them could be considered as people who migrated to these places to retire or to prepare for impending retirement. For example, of the 11 migrants who moved to Entwistle from rural origins, five were previously farmers who had since retired. Two of the remaining six were still engaging in farming in the vicinity of the village even though they were already in their sixties at the time of the survey. In conjunction with previous findings on the origins of the migrants, it could be established that a certain degree of "directional bias" existed among the migrants to the villages since a majority of them tended to select familiar surroundings and communities as their places of destination.

T A B L E 3.1
ORIGINS OF MIGRANTS, BY TYPES OF MUNICIPALITY

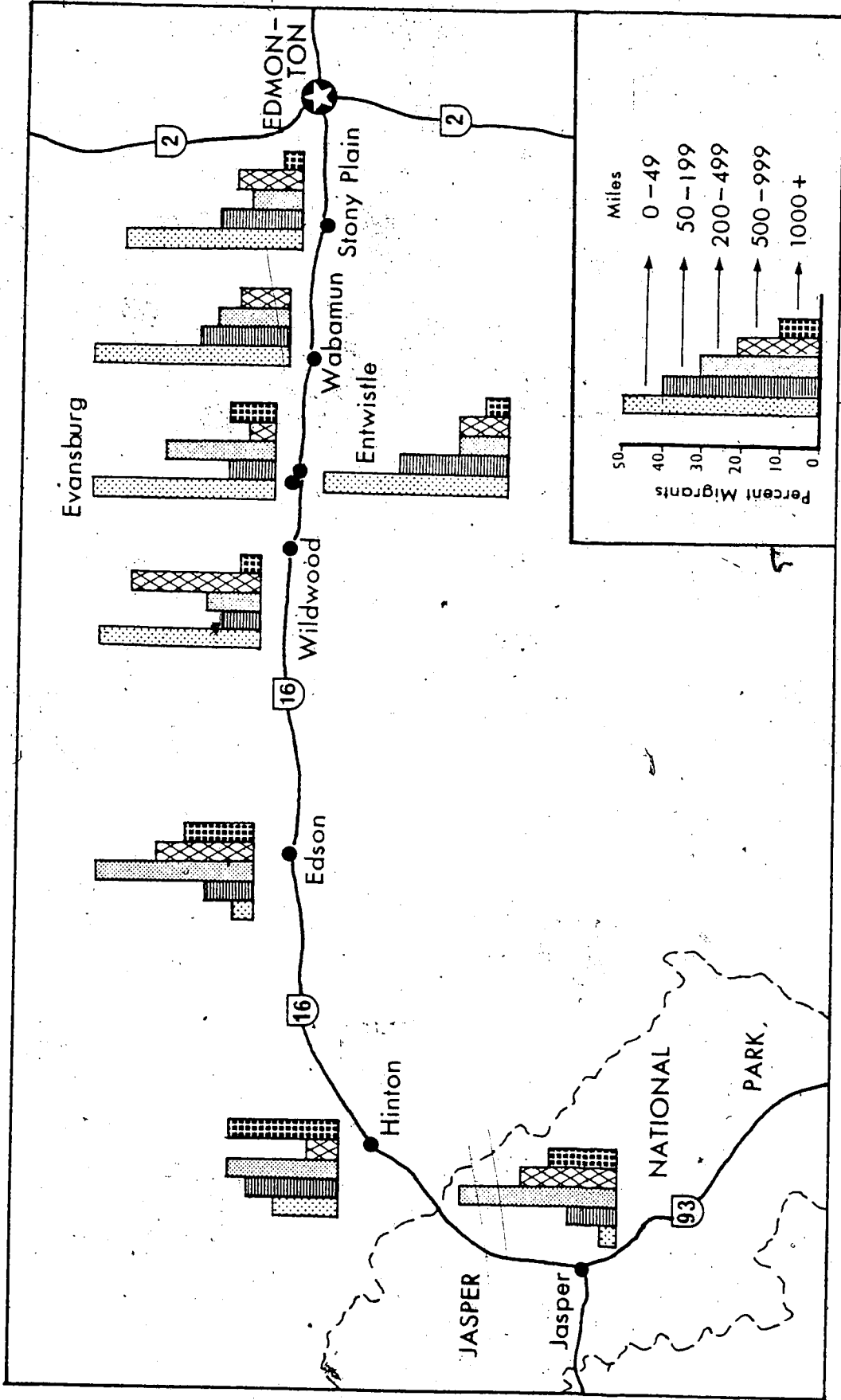
COMMUNITIES	Metro-Areas		Non-Metro Urban Areas		Villages of Farms		Unspecified*	
	Number	%	Number	%	Number	%	Number	%
Stony Plain	9	36.0	6	24.0	10	40.0	0	0.0
Wabamun	5	28.0	3	17.0	10	55.0	0	0.0
Entwistle	3	16.0	5	26.0	11	58.0	0	0.0
Evansburg	4	21.0	5	26.0	10	53.0	0	0.0
Wildwood	1	5.0	10	45.0	11	50.0	0	0.0
Edson	15	27.0	18	33.0	16	30.0	5	9.0
Hinton	26	39.0	21	32.0	14	21.0	5	8.0
Jasper	12	30.0	16	40.0	8	20.0	4	10.0
TOTAL	75	28.5	84	31.9	90	34.2	14	5.3

* Mostly from out-of-Canada

In comparison, migrants from urban centres and metropolitan areas, in particular, tended to go to the larger centres in the study area. Table 3.1 shows that 83 percent of all migrants from metropolitan areas went to Stony Plain, Edson, Hinton and Jasper. Hinton, for example, received close to 40 percent of its migrants from metropolitan areas, while another 32 percent of its migrants were from urban centres. These observations raise many more questions dealing with migration selectivity and the differential characteristics at the places of destination during the times of the moves.

Another dimension of the move concerns the distance travelled by the migrants between the origin and destination. Figure 3.3 shows that generally migrants destined to centres nearer Edmonton had travelled much shorter distance, usually less than 50 miles, while the reverse was true for those destined to Edson, Hinton and Jasper. Such a pattern could be attributed to a relatively sparse density of human settlement in the immediate vicinities of these three centres as well as a strong pull for workers (and their families) in response to increasing economic opportunities in these areas. The above observations compare very well with the migration status of population 5 years and over in these centres during the period 1966 to 1971, as reported in the 1971 Census (Table 3.2). It could be seen that Edson, Hinton and Jasper attracted a sizeable number of migrants from both central and eastern Canada, as well as from other countries. By contrast, the majority of migrants destined to the four villages were from places within Alberta. This observation again confirmed the proposition that long distance migrants tend to go to larger urban centres.

FIGURE 3.3
DISTANCE TRAVELLED BY MIGRANTS



T A B L E 3.2

POPULATION 5 YEARS AND OVER, BY MIGRATION STATUS, 1966-1971
(Percentages)

LOCALITY	M I G R A N T S F R O M W I T H I N C A N A D A							MIGRANTS OUTSIDE CANADA	TOTAL MIGRANTS
	Alberta	Mari- times	Que.	Ont.	Man.	Sask.	B.C.		
STONY PLAIN	320 (64.6)	15 (3.0)	5 (1.0)	30 (6.0)	20 (4.0)	30 (6.0)	30 (6.0)	0	495 (100.0)
WABAMUN	80 (66.7)	0	0	15 (12.5)	0	15 (12.5)	5 (4.2)	5 (4.2)	120 (100.0)
ENTWISTLE	80 (100.0)	0	0	0	0	0	0	0	80 (100.0)
EVANSBURG	100 (69.0)	0	0	0	0	25 (17.2)	15 (10.3)	5 (3.4)	140 (100.0)
WILDWOOD	85 (89.5)	0	0	0	0	0	10 (10.5)	0	95 (100.0)
EDSON	790 (76.3)	0	20 (1.9)	35 (3.4)	5 (0.5)	65 (6.3)	45 (4.3)	75 (7.2)	1035 (100.0)
HINTON	990 (58.8)	20 (1.3)	40 (2.4)	100 (5.9)	65 (3.9)	245 (14.5)	80 (4.7)	145 (8.6)	1685 (100.0)
JASPER	475 (43.4)	35 (3.2)	20 (1.8)	75 (6.8)	55 (5.0)	80 (7.3)	200 (18.3)	35 (3.2)	1095 (100.0)
TOTAL	2920 (61.5)	70 (1.6)	85 (1.8)	255 (5.4)	145 (3.1)	460 (9.7)	380 (8.0)	395 (8.3)	4745 (100.0)

SOURCE: Statistics Canada, 1971 Census.

C. THE MIGRANTS

Many questions immediately arise when studying the characteristics of the migrants. For instance, When did they move to the centres? What were their age and marital status at the time of the move? Did they come to the centres alone or with their families? Were they employed at the time of the move? and if yes, what occupations were they engaged in. It is necessary to have the answers to these questions if one wants to establish typical "profiles" of migrants and to relate the profiles with relevant spatial characteristics of the move.

1. When Did the Migrants Move to the Community?

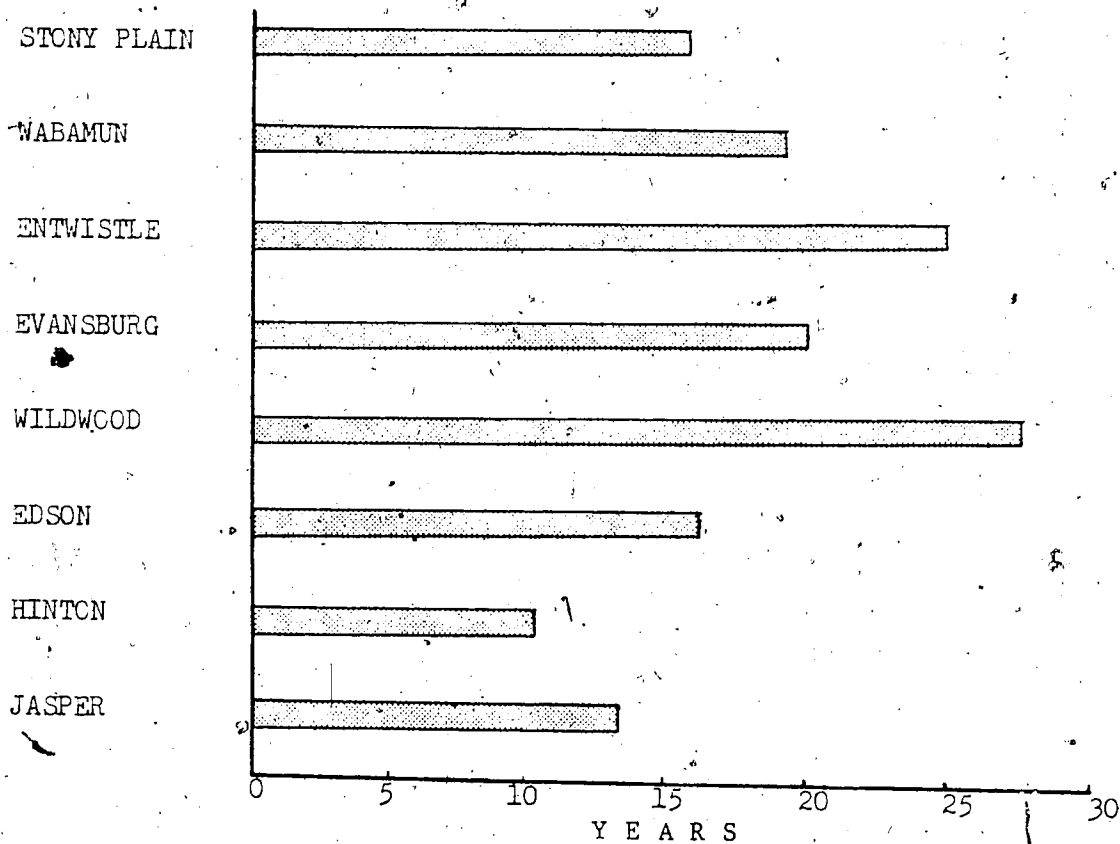
The results of the survey indicate that the average migrant moved to the present community about 18 years ago. Approximately half of them (51 percent) had lived in the community for over ten years. Several respondents who were already very old at the time of the survey came at the turn of the century and had remained in the community ever since. Only 21 migrants (8 percent) had lived in the community for two years or less.

The average length of stay of the migrants varied by communities, as shown in Figure 3.4. More specifically, over 95 percent of the migrants in Hinton had lived there less than twenty years. In fact, most of them moved to the town after 1956 when Northwestern Pulp and Power Company started its operation in Hinton. Similarly, approximately 60 percent of the migrants in Stony Plain and Evansburg reported that they moved there during the past ten years. In the case of Stony Plain, most of its recent migrants came from Edmonton, as the town is gradually becoming a dormitory community of Edmonton. In the case of Evansburg, however, a sizeable percentage of the recent migrants were young professionals engaging, in particular, in the teaching occupation. By contrast, Entwistle,

Wildwood, and to a lesser extent, Edson, had a relatively large proportion of "old-timers" who moved to these places twenty or more years ago.

FIGURE 3.4

AVERAGE LENGTH OF RESIDENCE OF MIGRANTS



2. Age of Migrants

In accordance with the hypothesis that migration varies inversely with age, a sizeable number of migrants made their move to the study area when they were still fairly young. According to Figure 3.5, approximately sixty percent of the migrants were in their late teens, twenties and early thirties at the time of their move. For comparison, the present age of the migrants, at the time of the survey, is also presented. It is quite apparent that an inverse relationship exists between the two sets of ages

at the time of the move and at the time of the survey.

T A B L E 3.3

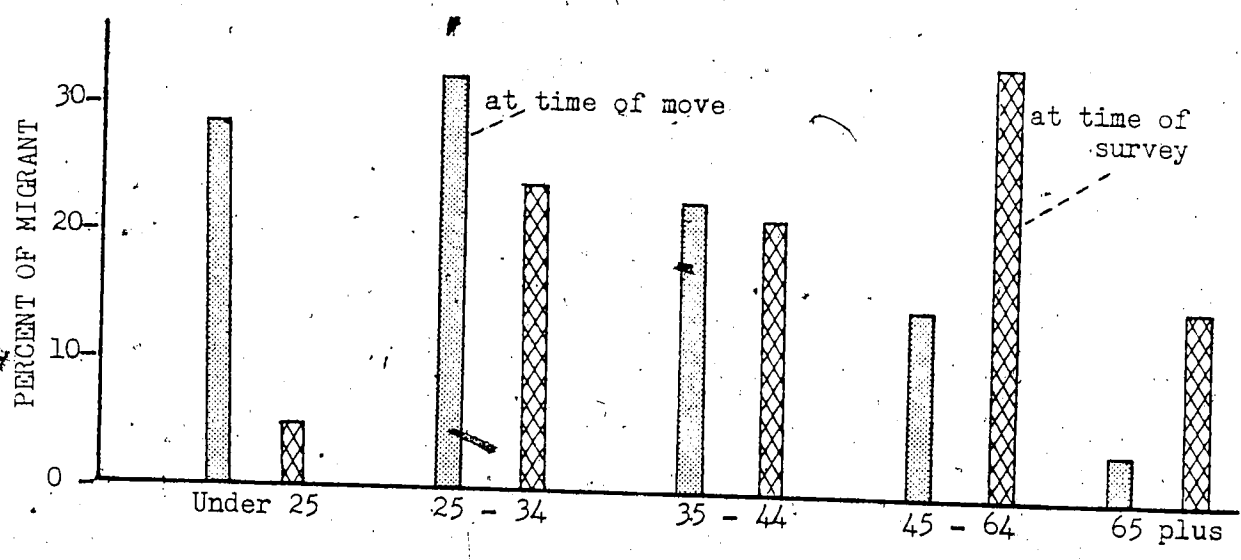
WHEN DID MIGRANT MOVE TO COMMUNITY?

	UNDER 2 YEARS		2-5 YEARS		6-9 YEARS		10-20 YEARS		OVER 20 YEARS	
	#	%	#	%	#	%	#	%	#	%
STONY PLAIN	4	16.0	4	16.0	6	24.0	4	16.0	7	28.0
WABAMUN	0	0.0	3	17.0	2	11.0	7	39.0	6	33.0
ENTWISTLE	1	5.0	2	10.0	7	37.0	4	21.0	5	26.0
EVANSBURG	4	21.0	3	16.0	5	26.0	1	5.0	6	32.0
WILDWOOD	1	5.0	2	9.0	6	27.0	3	14.0	10	45.0
EDSON	3	6.0	10	19.0	10	19.0	13	24.0	18	33.0
HINTON	4	6.0	13	20.0	20	30.0	27	41.0	2	3.0
JASPER	4	10.0	11	27.0	4	10.0	12	30.0	9	23.0
TOTAL	21	8.0	48	18.3	60	22.8	71	27.0	63	24.0

Respectively, the median ages of the migrants were 33 years and 42 years. The aging process experiences by the migrant population over the years is very evident.

F I G U R E 3.5

AGE OF MIGRANTS (Percentages)



Among the communities, the age of the migrants at the time of the move shows very little variation. Two exceptions, however, could be found. Firstly, Hinton, Edson and Jasper attracted a relatively higher percentage of their migrants in the 25-34 and 35-44 age groups. This could be attributed to the high demand for skilled or experienced workers in those age brackets in these places. Secondly, Entwistle, and Wildwood attracted approximately 30.0 percent of their migrants in the 45-64 and 65 and older age groups, as compared to an overall average of 17.5 percent of the migrants in these age brackets for the entire study area. As indicated earlier, this could be the result of farmers who moved from the immediate vicinity of their farms to retire in these villages. In general, it was found that a strong age selectivity for younger migrants was evident in the larger towns. This would have important implications on the future growth potentials of these centres through natural increase.

3. Marital Status and Family Size

Closely related to the age of the migrants are their marital status and familial status. Since migrants, in general, tend to be younger than non-migrants, it is not too surprising to find over one-quarter of the migrants were still single at the time of their move. Of these people, 14 reported they accompanied their parents to the study area at a young age. Others came alone or with friends. The majority of the migrants, however, were married and came with their families.

Among the communities, the larger centres attracted proportionally more migrants who came with a small family. For example, 44 percent of the migrants in Stony Plain and 40 percent in Jasper came with their wives and one or two children as compared to an average of 30 percent of the

migrants who belonged to this familial size category. By contrast, the villages tended to attract migrants with a larger family size, e.g. 32 percent of the migrants in Entwistle came with three to four children, as compared to an average of 17 percent in this size category, and another 16 percent of the migrants came with five or more children, as compared to five percent for the entire area.

Such findings reflect different processes of selection of migrants by age, marital status and stage of life cycle operating in the eight communities. Typically, the larger centres attracted migrants who were at the early child-bearing phase of family formation. They were relatively young, married, and came with a small number of young children. The rural communities, in contrast, attracted migrants who were at the later stage of family formation, or they might have completed the family formation (child-bearing) process and had passed on to the "empty nest family" and "aging family" stages, as categorized by Alvarex (1967).

TABLE 3.4

MARITAL STATUS AND FAMILY COMPOSITION OF MIGRANTS

	AT TIME OF MOVE		AT PRESENT	
	NUMBER	PERCENT	NUMBER	PERCENT
SINGLE	75	28.5	14	5.3
MARRIED WITH NO CHILDREN	48	18.3	20	7.6
1 - 2 CHILDREN	80	30.4	100	38.0
3 - 4 CHILDREN	46	17.5	85	32.3
5 OR MORE CHILDREN	14	5.3	44	16.7
TOTAL	263	100.0	263	100.0

A comparison of the migrants' marital status and family composition at the time of the move and at present (the time of the survey) shows the extent to which the process of family formation had taken place over the years in the eight communities under study (Table 3.4). The most significant changes, however, related to the decrease in the number and proportion of single migrants and married couples with no children, and the general increase in their family size. According to literature on migration behaviour, such a trend usually leads to a greater degree of stability and a lesser propensity for people to migrate to other places.

4. Employment and Occupation

Employment and occupation are two very important factors underlying the migration process. It is recognized that most people migrate to another community because of job-related reasons. Generally speaking, migrants who moved because of job-related reasons came to a particular place either to take up pre-arranged employment or to look for work. The results of our survey show that approximately two-thirds of the migrant heads had a job waiting for them when they moved to the community. Of the remainder, 20 percent came looking for jobs while 12 percent did not intend to join the work force right at that moment.

Those migrants who had come to a pre-arranged employment (about 180 of them) were asked to state the main source of information that had been used in obtaining their jobs. The results show that the largest group (40 percent) came because of job transfers. Another 27 percent learned of their jobs from friends and relatives while 15 percent responded to advertisements in the newspapers. Lastly, it was interesting to find only five percent of the migrants obtained information on their jobs through government manpower centres.

T A B L E 3.5

OCCUPATIONS OF MIGRANTS BEFORE MOVING

OCCUPATION	NUMBER	PERCENT
Professional and Managerial	63	24.0
Clerical, Sales, Services	41	15.6
Transport and Communication	19	7.2
Farming	25	9.5
Logging, Fishing, Mining	8	3.0
Craftsmen and Processing	46	17.5
Labourer	11	4.2
Retired	6	2.3
Unemployed	20	7.6
Others	24	9.1
TOTAL	263	100.0

NOTE: "Others" include students, housewives, and those not in the labour force.

A significantly high proportion (81 percent) of the migrants reported that they were employed prior to moving to the community. Table 3.5 shows their occupational distribution before moving. As can be seen, those who were in managerial and professional occupations and those who were craftsmen accounted for 41 percent of the occupations of the migrants. Detailed information reveals that these groups of migrants, by and large, were destined to the larger communities. Hinton, in particular, attracted 37 percent of the craftsmen and another 27 percent of the migrants who were in managerial and professional occupations. Moreover, it was interesting to find 55 percent of the unemployed migrants (20 in

total), were attracted to Hinton while the rest were shared equally by Edson and Jasper, but by no other centres. By the same token, just over 80 percent of all those who were in labourer occupations were attracted to these three centres. Wabamun received the remainder. These observations support the proposition that those of professional and managerial occupations, and those who are more highly skilled tend to migrate further to places where employment opportunities are available and their skills and training are in demand.

As for the four villages, close to two-thirds of those who were farmers before were drawn to these communities. Entwistle, in particular, received seven of the twenty-five farmers or 28 percent. Edson, partially because of its location and size, also attracted six of the migrant farmers. The villages also received their respective shares of migrants who were in clerical, sales and service occupations. Furthermore, 60 percent of those who had already retired migrated to the four villages.

Just under one-half of the migrants changed their occupations upon moving. In general, it was found that those who were in professional and managerial occupations, e.g. teachers, accountants, merchants and businessmen, and those who were transferred by their employers, e.g. RCMP officers and charter bank employees, CNR locomotive engineers, etc. were the ones who retained the same occupations. On the contrary, aging farmers and miners tended to retire upon moving; those who were unemployed or not in the labour force found work; and those who were relatively unskilled e.g. labourers, wood cutters, farm workers, certain types of equipment operators, clerks and sales persons, tended to change their occupations upon moving.

By geographical distribution, no particular pattern of variation emerged with respect to migrants' tendency to change occupations. Even

though it could be argued that larger centres usually offer better opportunities for occupational mobility, they are, at the same time, attracting a large number of migrants of higher skill levels, who because of training and educational background tend to stay in the same occupations. The results of this survey show that there was a fairly even chance for migrants to change occupation upon moving, irrespective of whether they were moving to villages or towns.

5. Formal Education and Training

Closely related to the occupation of the migrant are his training and educational background. Literature on migration behaviour tends to support a positive correlation between such variables as the frequency of move, the distance travelled and the level of education of the migrant. The results of this study confirm these hypotheses. The majority of the migrants (54 percent) had secondary level (Grade 9 - 13) education, 33 percent of them had elementary (up to Grade 8) education, while another five percent had some university education and nine percent had university degrees. In comparison with the educational levels of Albertans as a whole, the migrants of this study showed a remarkably similar level of educational attainment. According to the 1971 Census, statistics for the 1,020,475 Albertans, 5 years and over, not attending school are:

Elementary (Grade 8 or lower)	332,375	33 percent
Secondary (Grade 9 - 13)	581,650	57 percent
University (no degree)	55,225	5 percent
University (degree)	51,140	5 percent

Several observations regarding the spatial variations of the migrants' education and training levels can be made (Figure 3.6). Firstly, a rela-

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officers who had been transferred to a new posting once every nine months during the past three years. Similarly, employees of large corporations such as chartered banks and the railway company were also subject to this influence in their migration decisions. Of the 173 migrants who moved because of economic reasons, seventy (40 percent) were being transferred to the present communities. It is interesting to note that a substantial majority of the job transfers (83 percent) were destined to the four towns, particularly Edson and Jasper.

On the other hand, those who moved because of economic reasons other than job transfers usually stated job availability at destinations as the main pulling factor. Again this group could be sub-divided into two categories: i) those who had pre-arranged employment prior to moving, and ii) those who came looking for employment. It was found that migrants with pre-arranged employment accounted for just under three-quarters in this group. Proportionally, they were well represented in both the towns and the villages. In contrast, those who came looking for employment were primarily destined to the towns of Edson, Hinton and Jasper. Typically, these migrants were characterized by a relatively younger age, possessing high school or more education but lacking technical training. Moreover, the majority of them had migrated to the study area within the last ten to fifteen years.

Secondly, locational and environmental factors at the destinations were responsible for approximately 20 percent of all the moves to the communities. These factors included such things as the migrant's preference to live in a small centre as compared to living in a big city, familiarity with the present community and its surroundings, perceived amenities, special physical attributes and scenic attractions at the

destination, and the location of the community in relation to other centres.

In general, the study found that a higher proportion of the migrants who were destined to the villages tended to emphasize locational and environmental factors as the main reason for migration. Many of them were attracted particularly by the kind of life style and the more personal atmosphere that pervades in small communities. For instance, several migrants who were employed in the construction industry chose to live and bring up their families in places like Evansburg and Wabamun while they commuted to job sites in Sundance or Edmonton to work. It was also found that there was a high probability for people who were brought up in small villages or who had spent a large part of their lives in the vicinity of the villages to move to settle in these places for environmental reasons. Wildwood and Entwistle, in particular, had a notable number of such migrants.

Among the towns, Jasper and Stony Plain had a relatively larger percentage of their migrants who moved because of locational factors. For the former, the obvious factor related to the unique physical attractiveness of the town's surrounding, while the latter attracted migrants who wanted to take advantage of both the small town atmosphere and the services and amenities of a metropolitan area located approximately 20 miles away.

Thirdly, even though approximately 40 percent of the migrants reported that they had relatives and friends living in the present community at the time of their move, only 12 percent of them considered social ties as the principal reason for their move. Included in this category were some who accompanied their parents when they migrated to take up homesteads in the study area. These "second generation" migrants had

since moved to the nearby communities to set up their own homes and raise a family. Both Stony Plain and Wildwood had some of their migrants belonging to this category. Others who moved because of social reasons stated they came to join their friends and relatives. For instance, at least two or three migrant heads from out of the country reported that they immigrated to this part of Alberta to join their families (children in most cases). By geographical variation, the relative proportions of migrants who moved because of social ties were fairly evenly distributed among the communities under study.

Finally, a small percentage of migrants (three percent) stated that they moved to the present communities to retire. These people, as expected, were fairly old, and hence few in number, because of the selectivity of migration. Most of them were living in Entwistle and Wildwood at the time of the survey. Apparently, as discussed previously, there could be a larger number of migrants who moved to these communities for retirement. Since the respondents were responding to an open-ended question in the survey on this point, many of them chose to state other reasons, e.g. social ties and locational factors, as the principal motive underlying their moves.

E. MIGRANT PROFILES

The analysis in this chapter has shown that certain spatial, temporal and behavioural factors such as the size of the places of origin and destination, the length of residence in the community, and the motives of migration can exert an influence on the volume and the characteristics of migrants moving to a particular location. Theoretically, it is

possible to construct a model which incorporates sub-sets of variables associated with these factors to classify migrants into types or profiles. The resulting typology would represent a systematic conceptualization of knowledge on migration based on the principle of migration selectivity. Such a model, however, might not be practicable in this study because of lack of information of a uniform nature and quality on certain significant variables relating, for example, to the places of origin and the migrant's perception of the destination. Nevertheless, it is still possible to establish a fairly generalized typology of migrants based on the experience of their most recent move to the communities in west-central Alberta.

Following a discussion of the characteristics of an "average" or "typical" migrant in the study area, a typology of migrants will be presented as a synthesis of the results of analysis in this chapter (Table 3.6). This typology is formulated according to variation of migrant's characteristics according to five key factors, namely: i) migration differentials, ii) reasons for moving, iii) places of origin and destination, iv) distance travelled by migrants, and v) the length of residence in the present community.

Generally, the average migrant in west-central Alberta was relatively young at the time of his move. He was married and came with his wife and a small family. He was well-educated, having finished high school and, in certain instances, possessed of some technical training. He was employed at the time of his move. He came to the present community primarily because of economic reasons, either as a result of a job transfer, or because he had obtained a position which offered him a better career opportunity. The "average" migrant had been living in the

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THE UNIVERSITY OF ALBERTA

MIGRATION PATTERNS IN WEST-CENTRAL ALBERTA

by

WILLIAM HO-CHING WONG

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE
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FACULTY OF GRADUATE STUDIES AND RESEARCH



The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled MIGRATION PATTERNS IN WEST-CENTRAL ALBERTA submitted by William Ho-Ching Wong in partial fulfilment of the requirements for the degree of Doctor of Philosophy.

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ABSTRACT

This thesis examines the past migration patterns and future migration tendencies of a selected group of heads of household in eight communities of west-central Alberta. An interdisciplinary approach was used to study migration as a spatial, temporal and behavioural process.

The data for the analysis were obtained by means of a sample survey of households conducted during the summer and fall of 1972. The response to the survey yielded 273 returned questionnaires which form the basis of information for studying migration patterns and tendencies in this region of Alberta.

The analysis revealed a remarkable consistency with findings of previous research on migration. It was found that a significant proportion of the migrants came from within the province. Many of them, particularly those destined to the smaller villages, had lived in the vicinity of the study communities for a number of years. Only the larger towns of Hinton, Edson, Jasper and Stony Plain were able to attract long-distance migrants and migrants from large urban and metropolitan centres. Generally, the timing of their moves corresponded with the history of economic and industrial development in the study area. The analysis on the characteristics of migrants confirmed several propositions relating to migration selectivity. Based on an examination of five factors i) migration differentials, ii) reasons for moving, iii) places of origin and destination, iv) distance travelled, and v) duration of residence in the community, a typology of migrants to west-central Alberta was developed.

In analysing the future migration tendencies of the heads of household, it was found that different segments of the population are likely to vary considerably in their propensity to migrate. Five determinants

of prospective migration were identified: a) migration differentials and life cycle stage, b) duration of residence in the community, c) perception and satisfaction with the community, d) past migration experience, and e) present travelling patterns. In particular, a number of research hypotheses relating to the first four determinants have been confirmed and validated as functional to the propensity to migrate. Based on the analysis, it is possible to describe the typical profile of a prospective migrant (mover) as someone who is relatively young, either single or married with no children, fairly well-educated, employed in a professional or managerial capacity and earning a good income. He has lived in the community for a relatively brief period of time, and was initially attracted to the community because of job-related reasons. He does not own the dwelling which he presently occupies and is not an active participant of local communal activities. He travels out-of-town frequently for social and recreation purposes and generally considers the present community to be located too far away from a major city. He perceives the opportunities for future advancement in the community are limited and would not mind moving to a city if given a choice.

The results of the analysis on prospective migration tendencies were applied to the eight study communities. It was found that Jasper had the highest proportion of potentially more mobile residents, followed by Stony Plain and Wabamun, Edson, Hinton, Evansburg, Entwistle and Wildwood, in descending order with respect to the heads' propensity to migrate.

The concluding chapter presents a summary of the key findings, discusses the policy implications of the research problem, and recommends that future research should focus more attention on the causal mechanism underlying the decision to migrate and the identification of place utilities and preferences.

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CHAPTER I

INTRODUCTION

A. THE RESEARCH PROBLEM

Geographers have been interested in studying the spatial distributions of a wide range of phenomena such as physical features, natural resources, industrial establishments, population, settlements and so on. Hartshorne (1961, p. 21) states that the purpose of geographic research is "to provide accurate, orderly and rational description and interpretation of the varying character of the earth's surface". According to Abler, Adam and Gould (1971), however, the contemporary emphasis is on geography as the study of spatial organization expressed as patterns, structures, and processes, all involving change through time. Morrill (1971, p. 3) states that "space, spatial relations and change in space are the core elements of the science of geography", and that the most fruitful approach to geographic analysis is systematically to explain the locations and spatial interactions of the phenomena under study.

Population study which has gained recognition as a field of geography only since the early 1950s is closely linked to the modern development in geographic analysis.¹ According to Zelinsky (1966):

¹ The historical background of population geography is presented in Trewartha (1953), Hooson (1960), Zelinsky (1966), Clarke (1966), Hansen and Kosinski (1973).

Population geography can be defined accurately as the science that deals with the ways in which the geographic character of places is formed by, and in turn reacts upon, a set of population phenomena that vary within it through both space and time as they follow their own behavioural laws, interacting one with another and with numerous nondemographic phenomena (p. 5).

This thesis is concerned with the geographic analysis of human migration, generally considered as the most dynamic phenomenon in population geography. Migration, in this context, is defined as a spatial process of population movement from one geographical unit to another. A change of residence by the migrant from the place of origin to the place of destination is involved. Such migration is called "permanent migration" and should be distinguished from other forms of reciprocal movement which do not involve a change of residence (e.g. to and from the place of work and travelling for the purposes of visiting, shopping and sight-seeing).²

Another distinction which should be mentioned is that the study of migration in this thesis is restricted to movement between communities instead of movement within a particular community. The undertaking of the latter form of migration study - intra-municipal or residential mobility as it is sometimes known - requires different types of research methodology, theoretical propositions and data base which are not compatible with those used for studying inter-municipal migration (Harvey, 1969).

During the past two decades, migration studies have been receiving a great deal of interest and attention from social scientists, policy

² For a more comprehensive description of the types of migration and their definitions, see United Nations (1958), Roseman (1971), Kosinski and Prothero (1975).

planners and decision-makers. Generally speaking, academic researchers are more interested in the theoretical aspects of migration such as the causal mechanism underlying the decision to migrate, the macro and micro-factors affecting migration flows, the motivations of migrants, and, ultimately, the formulation of a theory of migration. Planners and policy makers, on the other hand, are primarily concerned with forecasting migration trends, the implications of migration on population change and the innumerable social, economic and political ramifications which migration effects in the processes of urbanization, industrialization and regional economic development. As Stone (1969) suggests:

Migration is an important component of population change, particularly when viewed from the standpoint of a local community. It is at once an indicator and a generator of social economic changes, altering the size and the demographic and socio-economic compositions of population. Through such alteration it influences the growth potential of a community and the extent to which the community experiences certain social and economic problems (p. 4).

In assessing the impact of migration on a particular geographic location, researchers and policy analysts often revert to a number of basic questions, such as, "Who are the migrants?", "What characteristics do they possess?", "Why have they decided to move to this locality?", "Where did they come from?", "Will this trend likely continue into the future?", "What are the causes of this migration?".

Numerous studies have provided partial answers to these questions. In general, the major themes of research are not unlike the expressed concerns of policy analysts. In his review of literature Shaw (1975) has identified six major themes or "differentiating lines of inquiry" in migration research. They are summarised in the following:

1. Migration selectivity and differentials - age, sex, marital status, education, occupation, career and life cycle;

2. Economic aspects of migration - wages and salaries, employment opportunities, cost-benefit model, factor allocation;
3. Spatial aspect of migration - distance, directional bias, information flow, intervening opportunities, gravity model;
4. Behavioural aspects of the decision to migrate - place utilities, stresses, strains, residential complaints;
5. Migration probabilities and the mover-stayer continuum - migration expectancy, recurring intra and inter-regional flows;
6. Stochastic models dealing with migration histories, cumulative inertia, etc. (pp. 13-15).

The main criticism about the state of migration research, however, is that it is characterised by diverse empirical evidence which often reflects the disciplinary bias or orientation of the researchers. Consequently, there is a lack of conceptual models and theoretical statements to integrate the determinants of migration and to explain the nature of this process in a more systematic manner. According to Mangalam et al. (1970):

Despite a long history of empirical inquiry, researchers are only beginning to do the hard work of conceptualizing of the phenomenon (of migration) systematically positing causal sequences and testing relevant hypothesis, all of which must necessarily precede a formal statement of theory (p. 6).

In response to the above criticism, this thesis will utilize an interdisciplinary approach to study two types of migration classified according to a temporal dimension. Firstly, the moves of a selected group of people to eight communities in the west-central part of Alberta will be analysed. This is an event which has already occurred over time and space. Secondly, the future migration tendencies of the same group of people will be analysed - this is an event which may or may not occur, depending on the interaction of a number of determinants of mig-

ration and their effects on these individuals. The objectives of this thesis, therefore, are:

- i) to identify the characteristics of the migrants, the prospective migrants and non-migrants (stayers);
- ii) to identify the relationship, if any, between past migration and future migration;
- iii) to identify the determinants of past and prospective migration; and
- iv) to identify the geographical variations of these determinants among the communities under study.

The decision to use an interdisciplinary approach in this thesis was made because migration can best be studied in the following manner:

- i) as a spatial process - by focusing on the nature of the move between the places of origin and destination (e.g. interprovincial, urban-rural, etc.), the relative locations of these places vis-a-vis important urban centres and physical features, the distance travelled and directional orientations;
- ii) as a temporal process - by focusing on the length of stay in the current community, the migration histories of the people, and their future migration tendencies;
- iii) as a behavioural process - by focusing on the determinants of migration, especially prospective migration, and the process whereby migration decisions are made.

B. REVIEW OF LITERATURE ON MIGRATION

In this section, a review of the migration literature from the perspective of the objectives of this study will be presented. It has been mentioned that most of the relevant research has tended to be

empirical rather than theoretical in nature. An examination of migration bibliographies reveals that only a small number of studies in the vast body of migration literature can be considered to have a strong theoretical emphasis (Mangalam, 1968; Morrison, 1969; Greenwood, 1975; Shaw, 1975). According to Lee (1966, p. 48) since Ravenstein presented his two papers on "Laws of Migration" in 1885 and 1889, there have been literally thousands of migration studies but few additional generalizations have been advanced on migration theory. In view of this comment, it is worthwhile to discuss Ravenstein's major contribution.

Ravenstein formulated seven laws of migration based on his analysis of the censuses of 1871 and 1881 in Great Britain. These "laws" deal with a wide range of topics which include urbanizations, migration volume and distance, migration by stage, migration streams and counter-streams, migration and technological development, and selectivity of migrants. The first law states that the majority of migrants proceed only a short distance, and that "there takes place consequently a universal shifting or displacement of the population setting in the direction of the great centres of commerce and industry which absorb the migration" (Ravenstein 1885, P. 198).

The second law establishes a relationship between the volume of migration and the distance travelled. In Ravenstein's words: "The great body of our migrants enumerated in a certain centre of absorption will grow less as distance from the centre increases" (p. 198). This particular observation has since stimulated a great deal of interest and had led to the development of several spatial interaction models.

The second and third laws further describe the tendency for migration to take place by stages. The process is accomplished by "the

7

inhabitants of the country immediately surrounding a centre of rapid growth flocking into it; the gaps thus left in the rural population are filled by migrants from more remote districts, until the attractive forces of that growing makes its influence felt, step by step, to the most remote corner of the country" (p. 199).

The fourth law states that each main current of migration produces a compensating counter-current. The counter-current is not by any means composed only of migrants who return homeward disappointed, but also consists of a sizable "exchange" of natives between counties and towns, especially among the metropolitan areas.

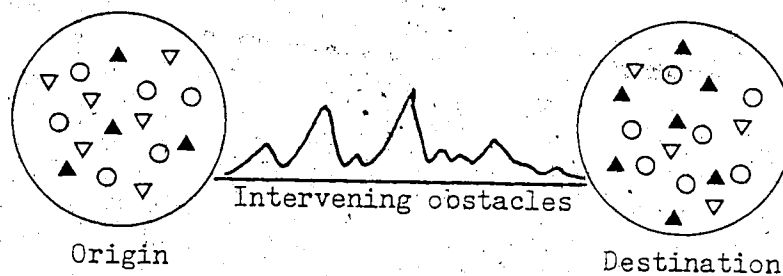
The fifth law asserts the tendency for long distance migrants to go to the larger cities while the sixth law states that migration tends to increase with advances in technology, business and transportation facilities. Finally, the seventh law states that females are more migratory than males within the area of their birth, but that males more frequently venture farther away.

Even at the time of his writing Ravenstein was criticized for expressing his propositions as "laws", because they were basically observations derived from his empirical research. Nevertheless, these axioms have a strong theoretical overtone and the majority of them are still relevant in studying migration in most developed countries today. Consequently, many researchers had adopted Ravenstein's findings in their efforts towards the development of migration models and theories. In this regard, Lee's "A Theory of Migration" (1966) is particularly worthy of attention. Lee bases his paper to a large extent on Ravenstein's work. His purpose is "the development of a general schema into which a variety of spatial movements can be placed to deduce a number of con-

clusions with regard to the volume of migration, the development of streams and counter-streams, and the characteristics of migrants" (p. 49). Unlike Ravenstein, Lee's conclusions and generalizations on these various aspects of migration are not based on empirical research (or at least such research activities are not referred to in his paper). He proposes a schema which basically incorporates a set of "push" and "pull" factors at the places of origin and destination, a set of intervening obstacles between the two points such as physical barriers, distance, immigration regulations and a series of personal factors which either facilitate or retard migration.

FIGURE 1.1

ORIGIN AND DESTINATION FACTORS
AND INTERVENING OBSTACLES IN MIGRATION



- ▲ factors which attract migration
- ▼ factors which repel migration
- factors neutral to migration

SOURCE: Lee 1966, p. 50.

Based on his conceptual framework, Lee suggests that concepts such as stages of the life cycle, decision-making threshold, migrant's personality, perception and awareness of the situation are important con-

siderations in formulating a series of hypotheses for analysing the volume of migration, migration streams and counter-streams, and the characteristics of migrants.

The volume of migration, according to Lee, is a function of such factors as the diversity of people, the diversity of areas, the difficulty of surmounting the intervening obstacles, the state of the economy, and time. Secondly, migration streams and counter-streams tend to be well defined routes toward highly specific destinations. The efficiency of the stream (ratio of stream to counter-stream) is affected by conditions at the places of origin and destination, especially if migrants have overcome great intervening obstacles during their journey. Thirdly, the characteristics of migrants depend to a large extent on the selective nature of the process according to age, socio-economic variables, and stages of the life cycle. The existence of intervening obstacles, the nature of positive and negative factors at origin and destination exert an important influence on the characteristics of migrants.

It is important to note that both Ravenstein and Lee considered migration as a process which is influenced by a series of spatial, temporal, human and behavioural constraints. In comparison, Ravenstein played a more important pioneering role in enumerating the factors of migration while Lee, eight decades later, incorporated a similar set of factors in a conceptual framework which facilitates more systematic analysis. Indeed, one can examine the voluminous body of migration literature from the perspective of empirical research - after the Ravenstein tradition - and from the perspective of theory and model development - after the Lee tradition. The latter, unfortunately, is only

beginning to receive recognition and significance in migration studies.

Another important paper of a theoretical nature is Peterson's, "A General Typology of Migration", which attempts to bring together into a conceptual classification schema some of the more significant analyses of both internal and international migration, "as a step towards a general theory in migration" (1958, p. 256). Peterson identifies two types of migration: (1) innovating migration refers to people moving as a means of achieving better opportunities; and (2) conservative migration refers to people moving so that they can retain their accustomed way of living. Based on these two concepts, the migration process is further divided into sub-types and classes. Peterson's typology of migration is summarised in the following table.

T A B L E 1.1

A TYPOLOGY OF MIGRATION

RELATION	MIGRATORY FORCE	CLASS OF MIGRATION	TYPE OF MIGRATION	
			CONSERVATIVE	INNOVATING
Nature and Man	Ecological Push	Primitive	Wandering	Flight from the land
			Ranging	
State and Man	Migratory Policy	Forced Impelled	Displacement	Slave trade Coolie trade
			Flight	
Man and his Norms	Higher Aspirations	Free	Group	Pioneer
Collective Behaviour	Social Momentum	Mass	Settlement	Urbanization

SOURCE: Peterson, 1958, p. 266.

Peterson's paper represents a refreshing departure from the traditional view which considers migration as a homogeneous occurrence, dominated by a set of economic "push" and "pull" factors. By analysing the migration process in a multi-dimensional framework which takes into consideration, among other criteria, the environmental factors and man's response to changes in his surroundings, Peterson has in fact laid a conceptual base for the future development of behavioural models for analysing migration. According to Shaw (1975):

Migration phenomena are so diverse, that in many cases only specific types of individuals may be affected in settings that are both time and space-specific and possibly non-recurring settings Peterson's typology of migration is a good illustration of the various classes and types of migration phenomena it explicitly marks out the ground to be covered by any general statement on migration (p. 6).

During the past two decades, geographers and regional scientists interested in locational analysis have been active in studying the spread or diffusion of phenomena such as innovation, information, population movement over space and time. The main focus of spatial diffusion study is upon the processes controlling the locational change of the phenomenon under study, while its objective is the identification of the generative processes by which the observed spatial patterns of the given phenomenon come into existence.

The contribution of Hägerstrand to spatial diffusion research is generally recognized as the most significant and influential. Hägerstrand's (1953) initial study focuses on the spread of certain new agricultural techniques in Östergötland in central Sweden during the period 1929-1932. His conceptualization of the diffusion process suggests that adoption of an innovation is primarily the result of a learning process. An effective pattern of information flow is influenced by factors such

as the personal characteristics of the sender and the adopter, the intensity and frequency of messages, and the relationship between exposure to information and reduction of resistance to adoption. This resistance level differs from one individual to another and it can be considered in either social or economic terms. Hägerstrand also emphasizes the importance of inter-personal communication in the dissemination of information. He found that patterns of information that flow through interpersonal contact are influenced by the existence of various terrestrial barriers such as lakes, forests and geographical distances separating the potential communicants.

Since Hägerstrand's study (1953), geographers have made extensive attempts to relate models of spatial diffusion processes to other empirical situations. These include Morrill on migration and the spread and growth of urban settlements (1965-a), the expansion of Negro ghettos (1965-b), and the location of new activities at the fringe of an urban area (1965-c), Moore (1966), Hägerstrand (1962), and Brown and Herner (1967) on the establishment of new settlements in a frontier area; Nystuen (1967) on intra-urban travel; and Garrison and Marble (1965) on transportation network growth.

Based on extensive bibliographic review of literature on spatial diffusion, Brown (1968) has developed a general conceptual framework which may be employed to study the diffusion of phenomena in any context. The framework outlined by Brown is based on the premise that all spatial diffusion situations consist of six basic or common elements: a) an area or environment; b) a temporal dimension; c) an item to be diffused, for instance, migrants in this context; d) node of origin (locations of the item at the beginning of a time interval); e) node of destinations

(locations of the item at the end of a time interval); and f) paths of movements, influences or relationships between origins and destinations. These elements may be represented as a dynamic graph set in a temporal geographic space. Two basic types of diffusion process have been identified: i) relocation-type in which some members of the population at time t change their locations from time t to time $t + 1$; and ii) expansion-type in which new members are added to the population between time t and time $t + 1$ and locate so as to alter the general locational pattern of the whole population.

The behaviour of the graph which portrays the diffusion process is controlled by characteristics of its nodes and the relationships between them, the characteristics of the items being diffused, and the characteristics of the area or environment in which the graph is set. Brown comments that this conceptual framework is not intended to provide a total explanation of any particular spatial diffusion situation; rather, it is a first approximation of a concept which will encompass the major underlying dimensions of all spatial diffusion processes, of which migration is a significant one. For example, when people move from city X to city Y, this process can be considered as an example of the relocation type of diffusion. Alternatively, if the arrival of migrants in city Y resulted in changes in the residential neighbourhood of the city, this process can be considered as an example of the expansion type of diffusion.

Another application of the principles of spatial diffusion to migration is Zelinsky's "Hypothesis of Mobility Transition" (1971) which states:

There are definite, patterned regularities in the growth of personal mobility through space-time during recent history, and these regularities comprise an essential component of the modernization process (p. 337).

Briefly, Zelinsky's hypothesis postulates that with change and advancement in technology and the means of information diffusion, the total concept of territorial mobility could be more realistically viewed as an on-going process of a single continuum, extending from the shortest, most routine of iterated motions (circulations) to the most adventurous intercontinental journey.

Specifically, eight related statements are presented which, taken together, more adequately elucidate Zelinsky's hypothesis. These statements are summarised in the following:

1. Higher rates of movement always occur as a community experiences the process of modernization.
2. The course of the mobility transition closely parallels that of demographic transition.
3. There are major changes in the form as well as in the intensity of spatial mobility at various stages of the transition.
4. The interchangeability between social mobility and territorial mobility is an option open to the potential migrant.
5. Mobility conditions propagate themselves onward through time and outward through space from successful growth points.
6. The processes in question tend to accelerate in spatial and temporal pace with time.
7. Absolute dating or timing is of essence in determining the specific spatio-temporal scenario of change that occurs in a community.
8. The progression of stages of mobility transition is irreversible.

As a schema for classifying the spatial processes of population movement as they evolve during different stages of human civilization, Zelinsky's hypothesis of mobility transition is a useful contribution. However, it fails to identify the underlying causes of these migration and circulatory processes. Furthermore, it has yet to be demonstrated

that these movements, for instance, circulatory in one extreme, and inter-continental migration on the other, are functionally related with one another at all.

Of particular interest to this study, however, are Zelinsky's observations on "Migration and Circulation in Phase IV - The Advanced Society".

He states:

The flight from the country-side of a truly "landward rural" population has slowed to a trickle Aggregate circulatory movement for most people living in Phase IV areas has reached unprecedented levels. Most persons are making longer trips for a greater variety of reasons more often than before A truly distinctive feature of this phase is the emergence of non-economic motivations for both migrant and circulator The most advanced and affluent societies have now achieved a state in which...constant changes in movement have truly become a way of life (p. 344-345).

Roseman (1971) also considers the interrelationships between temporal and spatial dimensions of migration. Within a framework of total human movement, Roseman identifies two categories of migration: i) those which involve complete spatial displacement of the daily/weekly reciprocal movement patterns of the migrant - total displacement migration, as it is labelled - and ii) those which involve displacement of only part of the everyday reciprocal movements of migrants (partial displacement migration). According to Roseman, these two types of migration are related to different information gathering processes, decision-making processes, adjustment processes, and the temporal dimensions of migration.

It is the opinion of this author that Roseman's study represents an excellent summary of the major theoretical and conceptual schema in migration research. His paper employs a behavioural perspective to consider migration at all geographic scales, with the goal of characterising various aspects of the phenomenon as a total process. Examples of some

of these aspects covered in his paper include distance as a deterrent in migration, the frequency and spacing of moves in time place utility, activity space, the role of friends and relatives as suppliers of information about potential destinations, the migration decision-making unit, length of residence and the axiom of cumulative inertia. Many of these aspects of migration will be examined in greater detail in the remaining part of this chapter. As well, some of them will be adopted and utilized as hypotheses for analysing migration flows in the west-central part of Alberta.

So far, the concept of distance as a function of migration has been briefly mentioned in reference to Ravenstein's "Laws of Migration" and Lee's "A Theory of Migration". Many researchers have been interested in the theoretical relationships among the volume of migration, the distance travelled and the size of the sending and receiving regions. Research into the spatial dimensions of population movement has led to the development of a number of "spatial interaction models" such as the gravity model, population potential model, and intervening opportunities model (Zipf, 1946; Stewart, 1950; Carrothers, 1956; Stouffer, 1940, 1960; and Olsson, 1965).

The gravity model which is derived from Zipf's interactance hypothesis (1946) states that the number of interactions is in proportion to the product of their masses which is some measure of their size, and inversely proportional to the distance between the two places. In operationalizing the model for migration analysis, the following formulation has been commonly used:

$$M_{ij} = K \frac{P_i P_j}{D_{ij}}$$

Where:

- M_{ij} = migration from place i to j,
 P_{ij} = population or some index of population
 at places i and j,
 D_{ij} = distance between places i and j,
 K = a constant

Carrothers' potential model which measures the attractive power of a certain location on another states that the potential of place i on another place j is equal to the mass or some measure of the size of j divided by its distance between the two places. Expressed symbolically:

$$V_i = \frac{P_j}{d_{ij}}$$

Where:

- V_i = the potential at place i,
 P_j = the size of another place j,
 d_{ij} = the distance separating i and j

Stouffer's intervening opportunity model states that the number of people moving a certain distance is directly proportional to the number of opportunities at that distance, and inversely proportional to the number of intervening opportunities (1940). In a revised version of his original model, Stouffer (1960) considers the relevance of competing migrants from other centres in explaining movements of population over space. This particular factor is suggested to be inversely related with migration flow from places i to j.

Since the development of these models, geographers among other social scientists, have widely accepted and applied these tools in their research. Harris' study (1954) of market potentials uses the United States as a region, retail sales as a measure of mass, and transportation costs as a measure of distance. With these measures, the market potential of each major metropolitan centre is derived and an isarithmic map of market potentials for the United States constructed. Anderson (1955) studied intermetropolitan migration from 54 metropolitan subregions within the Northeast and North-Central regions of the United States to each of the nearest 30 metropolitan subregions between 1935-40. He tested the hypotheses of Zipf and Stouffer in his study and concluded that the two models yield equally close approximations to empirical patterns of migration. Ullman (1956) considered the concept of intervening opportunities between places as a basic factor influencing spatial interaction and concluded that this is probably the reason why "Florida attracts more amenity migrants from the Northeast than does more distant California" (p. 368).

Besides the aforementioned studies, a number of systematic research studies on population redistribution have also made use of spatial interaction models and the distance-decay function. Mention should be given to several excellent studies of migration which appear in Migration in Sweden: A Symposium (Hammerberg, et al. (eds.), 1957). According to Morrill (1965-a, p. 35), "these studies have provided detailed compilations of movements, elaborate surveys of migrant characteristics and motivations, and of migrant areas of population gain or loss, and some statistical tests of observed or suggested relationships".

Nevertheless, it should be noted that there are weaknesses inherent in the spatial interaction models. As Clsson (1965) notes, having

tested and verified some hypotheses relating to the gravity concept in his research in Sweden, one of the most common objectives pertains to the empirical regularity which forms the basis of the population-distance formulation. The most immediate problem lies in the assumptions that: i) all places are populated by standard people with identical needs, tastes and contracts; ii) the interaction intensity decreases over distance systematically in all directions; and iii) all migrants seek advantages that are a function of the population size in the destination. In other words, these models attempt to explain human behaviour with the formal structure and empirical content of a theory developed in a physical discipline. The concepts of "mass", "potentials", "inertia", for example, have little direct application and meaning in social sciences, while the concepts of "intervening opportunities" and "competing migrants" are imperfect and almost impossible to operationalize. Consequently, they remain no more than mechanical models applied to social data. Even if an empirical regularity does exist in this exercise, social scientists have not yet been able to furnish any sound theoretical explanation for it.

There are numerous migration studies which relate the concepts of distance and population size to the degree of differential opportunities or economic attractiveness within a system of settlements. One of the most significant contributions on this topic is the three volume study, Population Redistribution and Economic Growth, United States: 1870-1950, by Lee et al. (1957), Kuznets et al. (1960), and Elridge et al. (1964). In essence, these studies can be considered as a refinement or an extension of the spatial interaction models. For example, Somernejer (1961), a Dutch demographer, builds on Zipf's interactance hypotheses

by separating gross migration into directional flows with the help of indices of the attractiveness of each place as a destination. These indices include such features as per capita income, percent employed, degree of urbanization, recreational resources, and quality of dwellings. When the model was applied to Dutch interprovincial migration, the results correlated very closely with observed net migration.

Further modification of this type of model was developed by Lowry¹⁹⁶⁶ in his study, Migration and Metropolitan Growth: Two Analytical Models Among Standard Metropolitan Statistical Areas in the United States.

According^{to} Lowry:

$$M_{i \rightarrow j} = K \left[\frac{U_i}{U_j} \cdot \frac{W_j}{W_i} \cdot \frac{L_i L_j}{D_{ij}} \right]$$

Where:

- $M_{i \rightarrow j}$ = number of migrants from place i to place j,
- $L_i L_j$ = number of persons in the nonagricultural labour force at i and j,
- $U_i U_j$ = unemployment as a percentage of the civilian nonagricultural labour force at i and j,
- $W_i W_j$ = hourly manufacturing wage, in dollars, at i and j,
- D_{ij} = airline distance from i to j, in miles,
- K = constant

The model set forth above implies a causal relationship, in that people migrate in search of jobs from low-wage to high-wage areas, and from areas of surplus labour to those with labour shortages. The migrants, over time, will affect the labour market of the receiving area. As its labour supply is augmented, its relative attractiveness is dim-

inished; as its labour supply is depleted, its relative attractiveness is increased.

Lowry's application of this model to inter-metropolitan migration offered very encouraging results with respect to the relationship between economic attraction factors and the directional volume of migration between two places. In general, he found that $M_i \rightarrow j$ is more a function of employment opportunities at the place of destination and of the age and sex structure of the origin population than it is of the level of employment at the place of origin. Roger's (1968) study of inter-regional population growth and distribution in 72 localities in California utilizing a modified Lowry model also arrives at similar conclusions.

In two studies on interprovincial migration in Canada, Vanderkamp (1968) and Courchene (1970) both found that the level of unemployment at the places of origin is significantly related to out-migration, while unemployment at the place of destination is not significantly related to the rate of in-migration. More recent studies on interprovincial migration in Canada have further supported the hypothesis that employment opportunities at the destination exert a significant pull on in-migration (Statistics Canada, 1977). For example, the recent dramatic increase of net interprovincial migration to Alberta can be explained by the rapid economic growth and low unemployment rate in the province coupled with relatively stagnant economic conditions in most other provincial economies (Mansell and Wright, 1977).

Nevertheless, it is important to note that aggregative, macro-economic variables, such as employment and income levels, exert an influence on the migration behaviour of certain segment of the population

only, and it is erroneous to assume, as most economic attraction models do, that man is economically rational, and that he will perceive and evaluate migration on that basis. According to Shaw (1975):

There may be a serious bias in this type of approach as there may be a denial of differential perception and evaluation and an excessive emphasis on purposively rational behaviour. In other words, by subsuming all motives under the assumption of man as an economic maximizer of economic wants, the economist runs the risk of reducing the complex decision of migration to a kind of mechanical unbalance of external and impersonal forces (p. 60).

As Lowry's study suggests, further improvements in migration analysis might be achieved by disaggregating the population-at-risk to further differentiate groups with varying propensities to migrate. This is because aggregate migration often does not allow differentiation of those who migrate for special reasons. According to Lowry:

There are several dimensions along which such disaggregation might reasonably proceed, age, sex, colour, education, occupation, family status, etc. In so far as SMSA populations differ from each other in these terms, their aggregate propensity to migrate would also differ (p. 26).

In light on this, several studies on migration differentials and selectivities will be included in this review.

Research on the selectivity of migration has gained much popularity since Dorothy Thomas released her landmark study on migration differentials in 1938. In general, this body of literature relates the basic demographic and socio-economic characteristics of the population to variations in their migration behaviour over time. Examples of these characteristics which have become more readily available with improvement in the national censuses in most countries, are age, sex, marital status, ethnicity or colour, family composition, educational attainment, occupation, income, home ownership, stage in life cycle. The major findings on the selectivity of migration have been summarised in Stone (1969, 1978), United

Nations (1970), Greenwood (1975), and Shaw (1975). Several generalizations and observations pertinent to this thesis will be presented in the following.

1. Age - In general, the age of a person varies inversely with his propensity to migrate. The groups which are most prone to moving, however, are those aged 15-24 and 25-34 years. In a recent study on in-migration to Alberta (Alberta Advanced Education and Manpower, 1978), based on data obtained from the Alberta Health Care Insurance Commission, it was found that of the in-migrants who reported their familial status as "single" (approximately 40.9 percent of the total), over ninety percent were between the ages of 15 and 34. By comparison, of those whose familial status were classified as "married" (including dependents), sixty percent were between the ages of 15 and 34.

While the above observations with respect to the higher mobility rate of younger people may be true, it has also been demonstrated that age-specific migration rates do not taper off uniformly with movement along the age continuum. Rather, there appears to be an up-surge of migration for those who are 65-70 years of age. Miller (1966) attributes this aberration in age-specific migration rate to the retirement of workers from the labour force. Proudfoot and Lamont in their study of migrants to small towns in Alberta (1972) also found that a great number of farmers tended to move to nearby small communities upon retirement.

2. Sex - Current research indicates that not only is sex less selective than age, but that it is less uniform over time and place. Generally, males are more migratory than females and males tend to migrate over longer distance within the same country (George, 1970). In inter-urban migration, however, males and females are almost equally represented. In fact, with the changing roles of males and females in industrialized

society, which resulted in a rise in the female labour force participation rate, females, especially those living in rural communities, have been increasingly active in moving to large urban centres in pursuit of better jobs (Long, 1973).

3. Marital Status - It has been pointed out, in discussion on age selectivity, that single persons tend to have a higher propensity to migrate. This is especially true of persons in their late teens and early twenties. When age is controlled, however, single persons might not exhibit a significantly higher migration rate than the rest of the population in the same age groups (George, 1970; Long, 1973).

Moreover, the marital status of the population is closely related to such factors as family size and home ownership. Marriage is considered as an important cause of migration because the newly-weds often leave their parents' home after marriage. In a recent study of migration within Alberta, Ironside and McVey (1973) found that married couples without children and nuclear families with young children were strongly represented among migrants to the small city and rural settlements. "The cross-tabulation for marital status (and migration status) was very similar to that of family size" (p. 66).

4. Family Status - Generally, the size of the family, measured in terms of the number of dependent children living with the parents, is inversely correlated with the head's propensity to migrate. This is especially true if the children are of school age and are enrolled in school-related activities. Under these circumstances, the social ties built up by the children, as well as their parents in the local community or neighbourhood, usually act as a deterrent to migration. (Long, 1972).

5. Educational Attainment - Studies relating the level of education and the migration status of a particular population have found that the two

variables are positively correlated with one another. In other words that segment of the population having a higher level of education is usually more inclined to migrate. This is due to the fact that education is a key to information about opportunities which exist beyond the immediate confine of one's "activity space". Moreover, education and job-related skills are usually the basic prerequisites for securing these employment opportunities (Morrison, 1971).

Since there is normally a very high correlation between one's education and occupation, it has been argued that people with relatively low level of education (and unemployed) are usually not prepared to move to places where job opportunities abound (Shaw, 1975, p. 23). This observation becomes more pronounced as migration distance increases.

Caldwell's study of rural-urban migration in Ghana (1970) also found that 59 percent of the males with limited primary level education never planned to migrate from their villages to nearby urban centres whereas among the males with secondary level and university training, this proportion was only 17 percent.

6. Occupational Status - As a corollary of the relationship between education and migration, occupational status is also positively correlated with the propensity to migrate. Many studies have found that migration tends to be selective with respect to higher status occupations, e.g. professional, administrative, technical and processing jobs (Stone, 1969; Morrison, 1975; Ironside and McVey, 1978). The nature of the operation of the labour market has much to influence the migration patterns of the working population and their dependents. Generally, occupations requiring good academic training and experience are advertised nationally and regionally in order to attract the best candidates. In contrast, menial labouring occupations are seldom advertised, if at all. Secondly,

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even among higher status occupations, some are more conducive to migration than others. For example, teachers, college professors, engineers, public administrators, social and physical scientists are relatively more footloose and mobile than doctors, dentists, businessmen and merchants. People engaging in this latter group of professions and businesses have often built up a steady clientele, equipment and inventory. For them to move their practices and operations to another city is usually a very costly and difficult task.

Nevertheless, job-related reasons are still the single most common cause of migration, responsible for over half of all the moves. It follows that places with better employment opportunities tend to pull, albeit selectively, prospective migrants to move and take up residence there. Over time, such a process would drain the most productive and employable groups of people away from economically depressed areas, thus creating gaps and unbalances in the areas of origin and their ability to support a high level of services. (See Proudfoot and Lamont, 1972; Shaw, 1975; Ironside and McVey, 1978, for more discussion on this aspect of migration and regional development).

7. Life Cycle Stage - Closely related to the above six correlates of migration selectivity is the concept of life cycle which has been used quite frequently during the last two decades to study migration propensity (See Wolpert, 1965; Lee, 1966; Roseman, 1971; Morrison, 1975). According to Lee:

There are clearly stages in the life cycle at which the positive elements at origin are overwhelmingly important in limiting migration, and there are times at which such bonds are slackened with catastrophic suddenness... (p. 52).

The stages in life cycle which have been identified, starting from birth are: childhood (pre-school), education, marriage, family formation,

career and retirement. There are, of course, variations and extensions to this list. For example, Alvarez (1967) focusing on the family formation stage identified the following sub-categories in the life cycle of the Puerto Rican migrants to the United States:

- a) Beginning family (recently married, no children)
- b) Child-bearing family (oldest child 2½ years)
- c) Child-bearing family (preschool children, school-age children, teenage children)
- d) Family as a launching centre
- e) Empty nest family
- f) Aging family (retirement)

Beside family status, the variables most commonly used to study migration in relation to one's position in the life cycle are: 1) age, 2) marital status, 3) formal education (of household head), 4) occupation, 5) home ownership or tenure status, and 6) head's attitude, perception and aspiration towards himself and the social and physical environment in which he is residing. Very often, these variables or factors act in conjunction with each other rather than in isolation. For instance, the relatively high migration rates among the youth or young adults in Canada can be attributed to the fact that these people have recently completed formal education, and are entering the labour market in search of an occupation of their choice. Since most of them are still single and have relatively little family obligations that will tie them to a particular location, they are prepared to migrate to places where better employment exists (Leslie and Richardson, 1961; Ladinsky, 1967; Morrison, 1971, 1975; Deutschman, 1972; Long, 1973).

According to Shaw (1975), however, conceptual elaboration and integration of the meaning of these factors (and their components) will be

required before the life cycle stage approach will contribute effectively to explaining who migrates and why. "That is, in its present form, the processes of life cycle and career pattern are little more than loose interrelations of various factors believed to influence the selectivity of migrants (p. 36)".

Recent research in the field of migration has shifted to more subjective factors underlying the migration process. The key question being considered is: "By what evaluative process do individuals arrive at the decision to migrate?" Studies which attempt to answer this question by means of a behavioural frame of reference generally focus on the basic decision-making units - the individual, family and household. This type of micro-analytical study is quite different from macro-analytical models which emphasize the ecological determinants of migration among a system of locations over space. In contrast, micro-analytical models are designed to depict the subjective evaluative processes which culminate in the decision to move or to stay. This decision-making process is influenced to a large extent by social, psychological, economic and cultural factors.

Broadly speaking, several concepts are central to the behavioural approach. The first of these is the notion of "place utility", defined as "the net composite of utilities which are derived from the individual's integration at some position in space" (Wolpert, 1965, p. 163). The individual is also attributed with a threshold of net utility or an aspiration level which adjusts itself on the basis of experiences (Siegel, 1957; Lewin, 1951). When faced with the decision to migrate, because of changing conditions at the place of origin, the individual may choose to adapt to the new situation and postpone, perhaps indefinitely, the decision to

move. On the other hand, the individual may decide to migrate to an alternative locality where the anticipated utility, based on personal experience and/or information about that place, is perceived to be higher than that in the present site. According to Welpert (1965):

The generation of population migration may be considered to be the result of a decision process which aims at altering the future in some way and which recognizes differences in utility associated with different places Thus, the flow of population reflects a subjective place utility evaluation by individuals (p. 162).

During the past decade, this concept has been widely used in migration research (Brown and Moore, 1970; Rosenan, 1971; McCracken, 1973; Pryor, 1976). Pryor refined this concept to emphasize the individual migrant's desire to achieve "subjectively satisfying place utility (SSPU)" for a given residence location. According to Pryor, SSPU is defined as "what the migrant thinks he is evaluating, and what he hopes he is optimising in his migration decision-making" (p. 107).

Secondly, the concept of "action space" is important to the behavioural aspect of migration. This concept refers to the immediate subjective environment which the individual perceives and to which he responds. Generally speaking, the notion of action space is similar to Lewin's concept of "life space" defined as the universe of space and time in which the person perceives that he can or might move about (Lewin, 1951). Spatial or directional bias regarding the action space or life space might be, and often is, developed because of inadequate information and limited experience on the individual's part. Hence, in studies on migration over varying geographic scale, it is found that migrants tend to migrate either to places which they are most familiar with through direct contact as a result of frequent visits, or to places which they are most aware of through mass-communication media and personal infor-

mation exchange (Rossi, 1955; Adam, 1969; Proudfoot and Lamont, 1972; McCracken, 1973).³

Thirdly, the concept of "decision threshold" is also important for analysing the individual's propensity to migrate. Wolpert (1965) advocates that the individual has a threshold of net utility or an aspiration level that adjusts itself on the basis of experience. Therefore, as an individual passes through different stages of his life, his attitudes, aspirations and range of alternatives change, in turn affecting his threshold of net place utility and his decision to migrate.

It is becoming more apparent that one's attitudes, experiences, perceptions and reaction to the surrounding environment are basic to the formulation of migration decisions. Down (1970) in his paper on "Geographic Space Perception" introduces a conceptual schema which attempts to explain how people perceive and react to their environment in a spatial and temporal context.

According to this schema (Figure 1.2), after the information on the real world has entered the individual through a system of perceptual receptors, and the precise meaning of the information is determined by an interaction between the individual's value system and his image of the real world, the individual may require to adjust himself, with respect to the real world, by making a decision which may or may not involve overt actions.

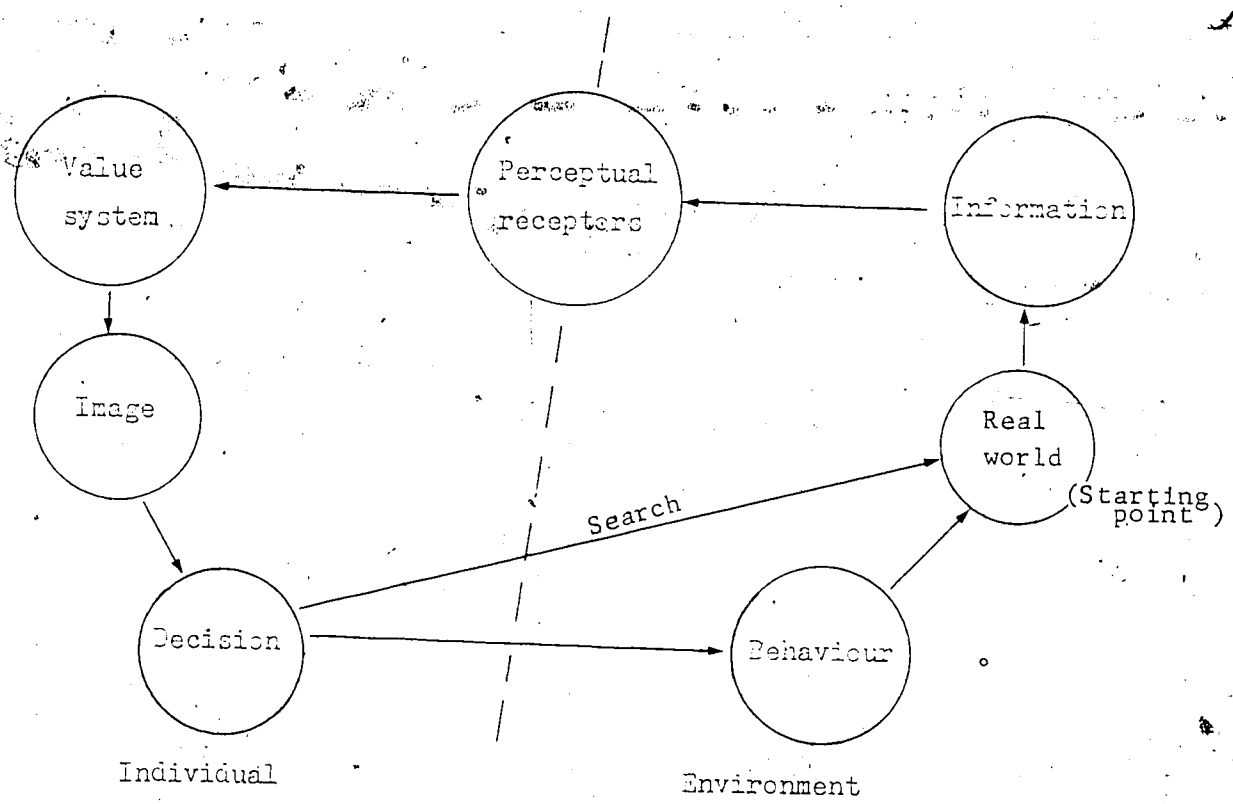
In the latter case, the individual may decide that his information on the real world is inadequate and will proceed to repeat or recycle

³ See Pryor (1976) for a more detailed discussion of the concept of activity space, awareness space, aspiration space, search space.

the same search process all over again.

FIGURE 1.2

GEOGRAPHIC SPACE PERCEPTION: A CONCEPTUAL SCHEMA



SOURCE: Down, 1970, p. 85.

Studies utilizing these behavioural concepts have tended to focus on the sources of threshold variability regarding the decision to migrate. Morrison (1969) notes that recent research findings reveal at least three primary sources of constraint on the decision threshold: 1) the life cycle, 2) the structural conditions associated with specific occupations, and 3) prior experience of moving. With regard to this third factor, Morrison states:

Mobility is evidently a cumulative process like fertility, linked to past experience as well as current circumstances. Prior experience with mobility appears to foster a degree

of learning and to facilitate subsequent movement... One possible explanation is that decision thresholds may be initially high for persons who have never migrated in their adult years. Once a move has been made and chastity has vanished, so to speak, a process of learning apparently blunts subsequent inertia (p. 13-14).

Van Arsdol (1963) in a longitudinal survey of retrospective movers and stayers, also found that people who have moved before are more oriented toward future mobility than are those who have not moved in the past. This latter group is more oriented toward continued stability and is more likely to stay in the present locality. Goldstein (1964) found that repeated migration was centered in the age group 25-44 years, while the very young and old were more likely to be stayers. His findings also support the conclusion that repeated migration was a function of residence status. Rogers (1963) and Rogers and Miller (1967) have developed statistical models to describe the mover-stayer concept by applying matrix algebra and techniques for estimating transition matrices of Markov chains. In their study of interregional migration in California, they found that a large proportion of the migration flows from a region can be attributed to a relatively constant group of individuals in the region's overall population who exhibit a high propensity to migrate.

As a corollary to this proposition, McGinnis and his associates at Cornell University have advocated "the axiom of cumulative inertia" which states that the probability of an individual continuing in a locality increases with increasing length of residence (McGinnis, 1963). Empirical verifications of the Cornell model have tended to support a negative and non-linear relationship between duration of residence and migration risk (Morrison, 1967, 1969, 1970; Land, 1969). Furthermore, it was found that this functional relationship between the probability to move and duration status holds across populations with very different ecological and dem-

graphic characteristics (Land, 1969, p. 139). The reasoning behind McGinnis' proposition is that the length of residence in the same place tends to foster social ties, familiarity and acceptance with the place. Under such a condition, inertia is generated which effectively depresses the prospective migrant's propensity to move.

In a study on three factors of migration: length of residence, social ties and economic opportunities, Toney (1976) found that the economic conditions in a given location do not exert as effective a general stimulus for out-migration as they are for in-migration. On the other hand, the existence of previous familial ties and contacts is positively associated with the length of residence. More recent investigations by the same researcher into the importance of social and economic factors in migration decision have also concluded that social ties play a more significant role in the selection of destinations with low levels of economic opportunities than they do in the movement to high opportunity areas (Toney, 1978).

In summary, the above review of literature on migration, though selective in coverage, has shown that researchers from various disciplines have contributed extensively towards a better understanding of the nature of the migration process. Unfortunately, this body of literature is still characterised by the following features which are not conducive to the development of a general theory of migration:

1. Favouring a uni-disciplinary approach in analysis - e.g. economists using a cost-benefit framework in studying migration flows as well as the relative economic attractiveness of the places of origin and destination; geographers emphasizing human interaction and diffusion over space and the effects caused by friction of space; sociologists and behavioural scientists emphasizing social psychological variables such as attitude and perception to study the

decision to migrate.

2. Reliance on secondary sources of data in empirical analysis - e.g. data on the migration status and other characteristics of the population obtained from national censuses and other administrative statistical series usually cannot explain the causes of migration and numerous other aspects pertaining to the migration process. Data obtained through personal interviews, special purpose surveys, and longitudinal studies are rarely used in migration research, chiefly because of the cost involved in collecting these types of information.

3. Dependence on models and theoretical concepts which have little basis for their application in and explanation of human migration behaviour - e.g. physical models depicting the efficiency and volume of matter moving over space, concepts such as "gravity pull", "potentials", and others derived from general systems theory.

4. Emphasis on the deterministic approach which prescribes a precise relationship between migration event and the predictor or explanatory variables instead of the probabilistic approach whose objective is to establish and specify a relationship between the dependent and independent variables within certain limits according to statistical principles. The latter approach to migration studies has the merit which permits an assessment of the likelihood of a migration occurrence in the face of uncertainty (see Shaw, 1975, p. 15).

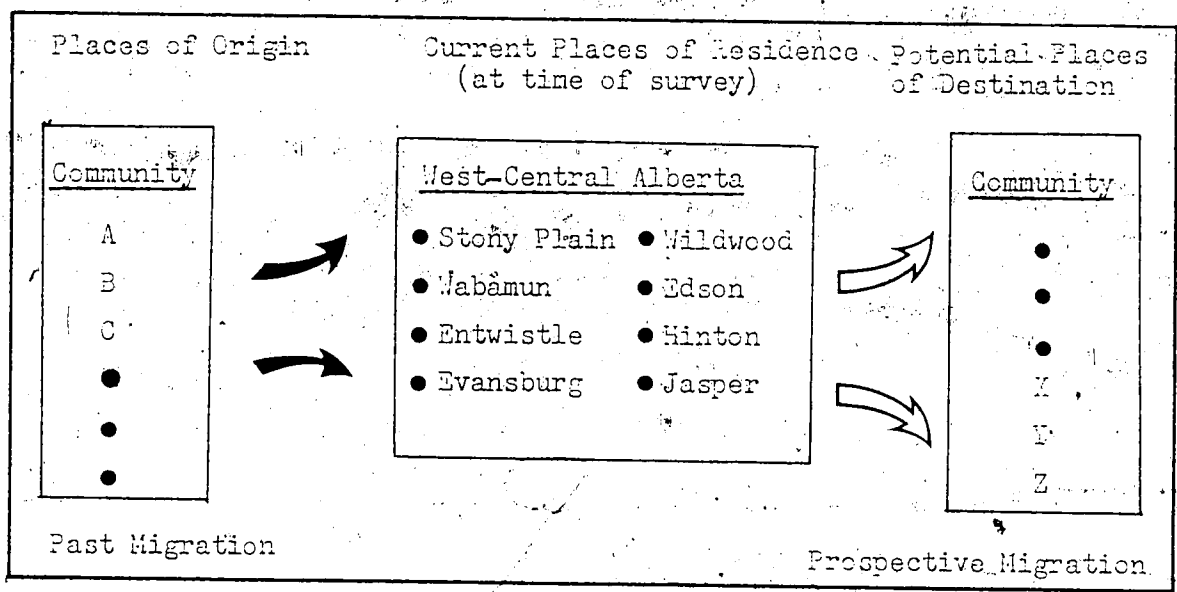
3. METHODOLOGY: AN OVERVIEW OF RESEARCH HYPOTHESES

Based on the literature cited in this chapter, a number of theoretical

propositions and hypotheses will be established to study migration in west-central Alberta. As indicated earlier, the focus of the investigation is on the past move of a selected group of people to eight communities in the study area, as well as the future migration tendency of these people. Since the major objective is to gain a better understanding of the nature of and the causal mechanisms underlying the migration process from a spatial, temporal and behavioural perspective, it is useful first, to identify the basic components of this process. Brown's (1968) conceptualization of the spatial diffusion process and the following conceptual schema of the research problem (Figure 1.3) can be adopted for this purpose.

FIGURE 1.3

A CONCEPTUAL SCHEMA OF THE RESEARCH PROBLEM



According to Brown, there are six key elements in a spatial diffusion process. The first is the "environment", which refers to the general area where migrants have contact and move about. This concept of the

"environment", as applied in migration research, points to the existence of complementary relationships among different localities in territorial space. In this context, the migrants could have come from any conceivable origin of the world to settle in the study area. No doubt, those who moved here were attracted by different conditions in west-central Alberta, such as the scenic surroundings, climate, job opportunities, housing, or the presence of families and friends. Other factors such as distance, accessibility, information about the region could also be responsible for the volume and direction of migratory flows. Some of these factors will be hypothesized as determinants of migration in this study. Particularly, the following aspects will be examined:

i) To what extent is in-migration a function of the scenic attractiveness of west-central Alberta?

ii) How does Edmonton, a metropolitan area located on the eastern border of the study area, affect migration flows in west-central Alberta?

iii) Is distance a geographic barrier to migration in west-central Alberta and is distance between pairs of places inversely related to the volume of migration between them?

iv) Are directional biases characteristic of the migration patterns in the study area?

The second element, the "items to be diffused", refers to the migrants and prospective migrants. In this context, the demographic and socio-economic characteristics of migrants, the particular stage of life cycle they are in, and their social-psychological attributes are important variables. Based on an analysis of these variables, typical profiles of migrants can be identified and employed to study their propensity to mig-

rate. A selection of personal characteristics of the residents in the study area will be hypothesized as functions of migration. For example, the propensity to migrate is hypothesized to vary i) inversely with the age of the individual, ii) directly with the degree of educational attainment, iii) directly with occupational status in administrative, managerial, professional, technical fields, and iv) directly with the level of family income. Furthermore, the extent to which an individual's aspirations, perceptions and degree of satisfaction regarding his career goals and the community he is living in can affect past and prospective migration will be investigated.

The "nodes of origin" and "nodes of destination", respectively, are the third and the fourth elements in Brown's conceptual framework. In this study they will be considered as the specific communities which send or receive migrants. The eight settlements selected as the focal points of migratory movements in west-central Alberta, and from which the main data base of this study is drawn, are by no means the only nodes of origin and destination that will be considered. This is because the migrants could have come from anywhere within the confines of the "environment" mentioned previously. Similarly, these eight centres could be regarded as potential nodes of origin, if, in the future, their residents decide to move elsewhere. Many factors of a push-pull nature will be hypothesized as factors of migration, though economic opportunity, availability of social services and amenities are the most common. The hypotheses will take the form that availability of these opportunities and services is inversely related to the propensity to migrate. In addition, both objective indicators (for example, labour force size, employment rate, income level etc.) and subjective indicators (for example, place utilities,

perception on the social milieu, etc.) pertaining to these nodes will be analysed as factors of migration.

Fifthly, the "paths of movement or the relationships between origins and destinations" represent another key element of spatial diffusion. The application to migration studies is fairly obvious. The linkages between origins and destinations in migratory movement can be measured in terms of the physical distance separating them; the time or cost required to visit one another; the degree of accessibility and contact by means of different modes of transportation and communication media; as well as the types of complementary relationships existing between them (for instance, one centre might rely on the other for the provision of services such as post-secondary education, government services and recreation). Several hypotheses similar to those mentioned in the section on "environment" will be utilized to analyse migration flows between nodes of origin and destination. In addition, the frequency of migration between nodes will be hypothesized as a function of both the characteristics of these nodes as well as that of the migrants (e.g. retiring farmers would favour moving to nearby hamlets and villages while young professionals would favour moving to larger urban centres).

Lastly, Brown stresses the importance of the temporal destination in the spatial diffusion process. The relevance of this particular idea in migration studies has already been emphasized. In this study, several temporal phases of migration can be differentiated:

- i) the past migration history of the individual prior to moving to the present community;
- ii) his move to the present community;
- iii) his present travelling pattern, i.e. circulation;

iv) his future migration tendency - prospective migration.

A specific objective of this thesis is to find out whether any functional relationship exists among these temporal phases of migration. In particular, phases (ii) and (iv) will be studied in greater detail while (i) and (iii) are analysed primarily as functions of migration. From the spatial point of view, phase (ii) represents in-migration into these nodes, while phase (iv) portrays potential out-migration. Such an approach is an acceptable way for assessing the impact of migration on the communities.

The analysis of prospective migration deserves further elaboration. Unlike the specific move to the present community, which is an event that actually occurred and is measurable by such variables as the size of the origin and destination, the distance travelled, and the characteristics of the migrants at the time of moving, prospective migration, by definition, is a journey yet to take place, which might never happen at all. Several factors derived from studies in this area of research have been identified and hypothesized as determinants of prospective migration. They are:

- i) life cycle and social and economic characteristics of the respondent (migration differentials);
- ii) length of stay in the community (cumulative inertia);
- iii) past migration experience (phase i);
- iv) perception and satisfaction with the community; and
- v) present travelling patterns (phase iii).

These hypotheses will be explained in greater detail in a subsequent chapter.

CHAPTER II

THE STUDY AREA AND DATA BASE

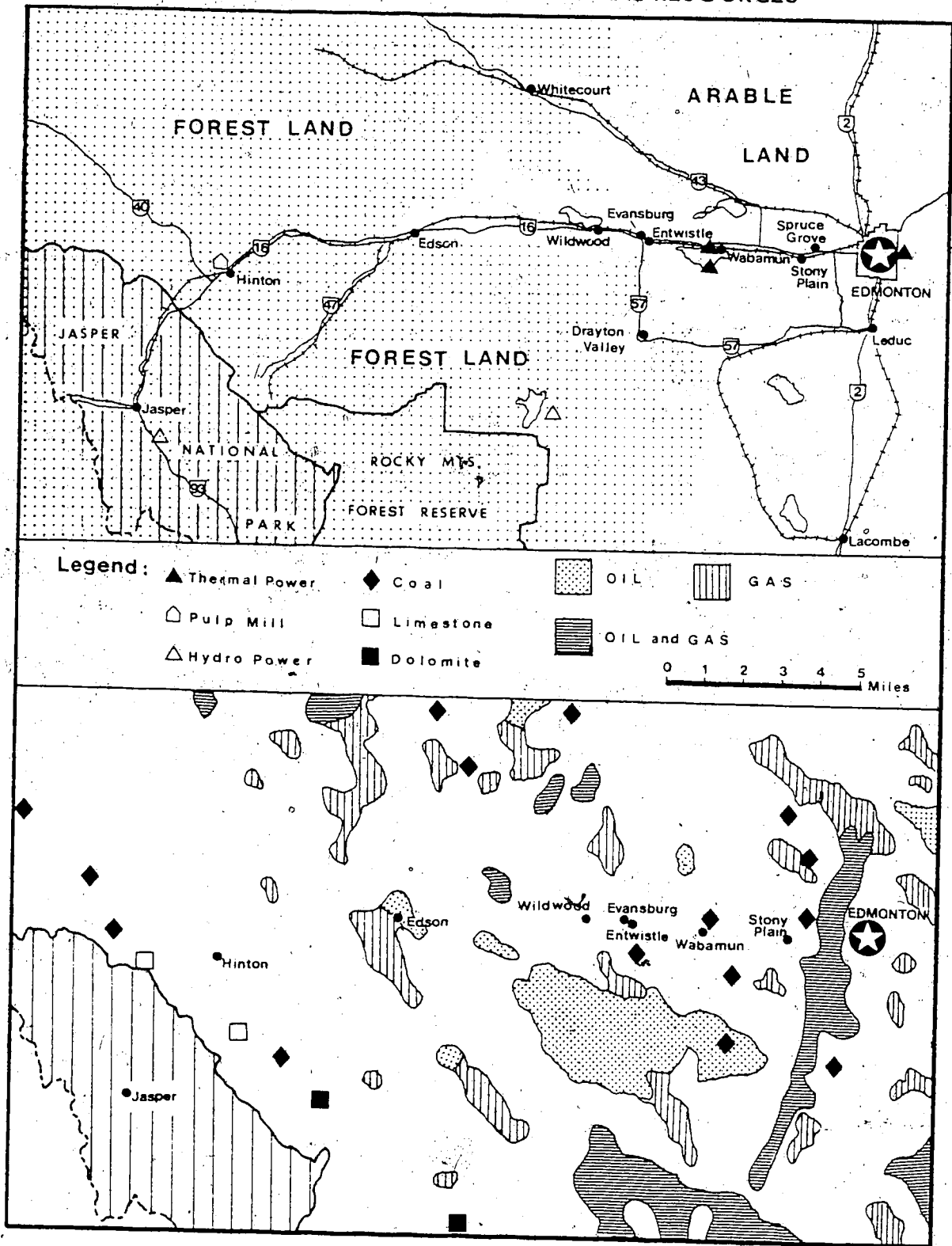
A. THE STUDY AREA

The study area of west-central Alberta includes the portion of Census Division 11 west of Edmonton, Census Division 14, and the northern half of Census Division 9, around the town of Jasper. It stretches in an east-west direction for almost three hundred miles. Physically, it extends over gently rolling agricultural land in the east through the foothills of the Rocky Mountains and into the mountain ranges of the continental divide in the west.

The region, especially Census Division 14, is endowed with rich reserves of a great variety of natural resources such as coal, oil and gas, limestone and lumber. As well, it has an excellent potential for tourism and recreation. However, with the exception of a relatively small eastern portion, much of the land in the region is not very suitable for agriculture, and only a small percentage of it has been cleared (Figure 2.1).

The majority of the homesteaders who came to settle in this area during the early part of the century were part-time farmers who also worked in the lumber industry and coal mining. As late as 1949 coal mining was a thriving business in the region, especially in the Coal Branch area near Robb and Cadomin. In 1959 when railways changed from steam to diesel locomotives, the demand for coal from the Coal Branch suddenly disappeared. The economic impact of this change in the area was severe. Within a period of ten to fifteen years, the estimated value of coal production declined from \$10,000,000 to \$35,000 and the number in

FIGURE 2.1
STUDY AREA: WEST-CENTRAL ALBERTA
HUMAN SETTLEMENTS AND NATURAL RESOURCES



the mining labour force declined from close to 1,600 to less than 20. The mining communities deteriorated and eventually became ghost towns (Alberta Agriculture, 1966).

Since the 1950s, the economy in the region has experienced remarkable changes, starting with the discovery of oil and gas in the vicinity of Edson and Whitecourt and the construction of processing plants for extracting by-products from oil and natural gas, the establishment of a pulp mill at Hinton and subsequently, the rejuvenation of coal mining activities in the Luscar and Grande Cache areas because of increased demand for coal on the international market. Moreover, with the increase of leisure time, and improved development of the Yellowhead Highway, the Rocky Mountains, especially the Jasper area, became a popular tourist mecca frequented by people from all over Canada and the United States. On the eastern edge of the study area, the rapid population growth in the City of Edmonton has spilled over to smaller, predominantly rural communities such as Spruce Grove and Stony Plain. Increased demands of energy consumption in central Alberta led to the building of a major thermal electric generating plant near the community of Wabamun by Calgary Power Ltd.

The pace of economic development in west-central Alberta during the past two decades has resulted in sizable increases of population in the local communities, largely through in-migration. Sheehan (1975) in her study on the effects of economic growth in the Alberta foothills area, states:

The problem in this region is that over the years, the basic industries of coal mining and lumbering which employed large number of local people and supported active non-basic (service) industries have disappeared. Although they have been replaced by other basic industries such as the production of oil and gas, and pulp, these have not employed the local people because they

have required skills and experience which the local people have lacked and have not had the time to acquire. The result is that the economy of the region has become dis-jointed.... The region in fact supports two parallel economies. One of these includes the workers who have come in from outside the area to be employed in the oil and gas industry and in the pulp mill at Hinton, and in other aspects of the forest industry. The other economy is based on farming and includes most of the local people (p. 19).

However, farming in west-central Alberta is a marginal economic activity. This is because the majority of land in the region, except for a relatively small portion to the east, is forested, the topography ranges from hilly to mountainous, and the soil (grey wooded) lacking sufficient humus content for grain cultivation. Consequently, a large proportion of the farms, particularly those located in Census Division 14, were small and uneconomical in 1971 (Table 2.1). Many farmers in the study area had to rely on part-time or seasonal off-farm employment to supplement their farm income. As in many poor farming areas, the farmers in this area are characterised by old age and relatively low educational attainment. These attributes further restrict them from taking full advantage of the employment opportunities in the new industries.

T A B L E 2.1
FARMS AND FARM INCOME IN SELECTED
CENSUS DIVISIONS, ALBERTA, 1971

Census Divisions	Total Farms	Sales Under \$2500 Number	Percent
10	8356	1983	23.7
11	7559	2680	35.5
12	3530	1354	38.4
13	5978	1956	32.7
14	942	503	53.4
15	8415	3175	37.7
Alberta	62,702	15,991	25.5

SOURCE: 1971 Census of Canada, Agriculture

Between 1951 and 1971, a great deal of change occurred in the agricultural industry. The number of farms declined by 40 percent while the average farm size increased. More significantly, the number of workers in the agricultural labour force in Census Division 14 was expected to decline from 2741 in 1951 to approximately 750 in 1971 (Alberta Agriculture, 1966). These changes led to the migration of displaced farmers to nearby towns and villages.

In contrast with the above scenario, the development of the oil and gas industry around Edson, the pulp mill in Hinton and the thermal electricity plant at Wabamun resulted in the influx of a large number of skilled workers and their dependents from outside the area. The newcomers tended to stay in towns or villages closest to their places of employment, thus resulting in a high rate of population growth in these centres. This change in the settlement pattern in west-central Alberta is presented in Zimmerman and Moneo's study, The Prairie Community System (1971), in which they trace the evolution of three classes of settlements, namely, i) prairie cities (e.g. Edmonton), ii) independent trade centers (e.g. Edson), and iii) dependent centers (i.e. stop-off places for convenience) in Alberta from 1936 through 1951, 1966 and 1970. Of particular interest to this study are the series of maps which show a gradual decrease in the number of dependent centers in west-central Alberta during this period. However, the number of independent trade centers (i.e. towns with 1000 or more people) had increased from two (namely Stony Plain and Edson) in 1951 to six in 1966, with the addition of Whitecourt, Drayton Valley, Hinton and Jasper.

Briefly, it could be surmised that when the economic base in an area, as diverse as west-central Alberta shifts from one form of resource devel-

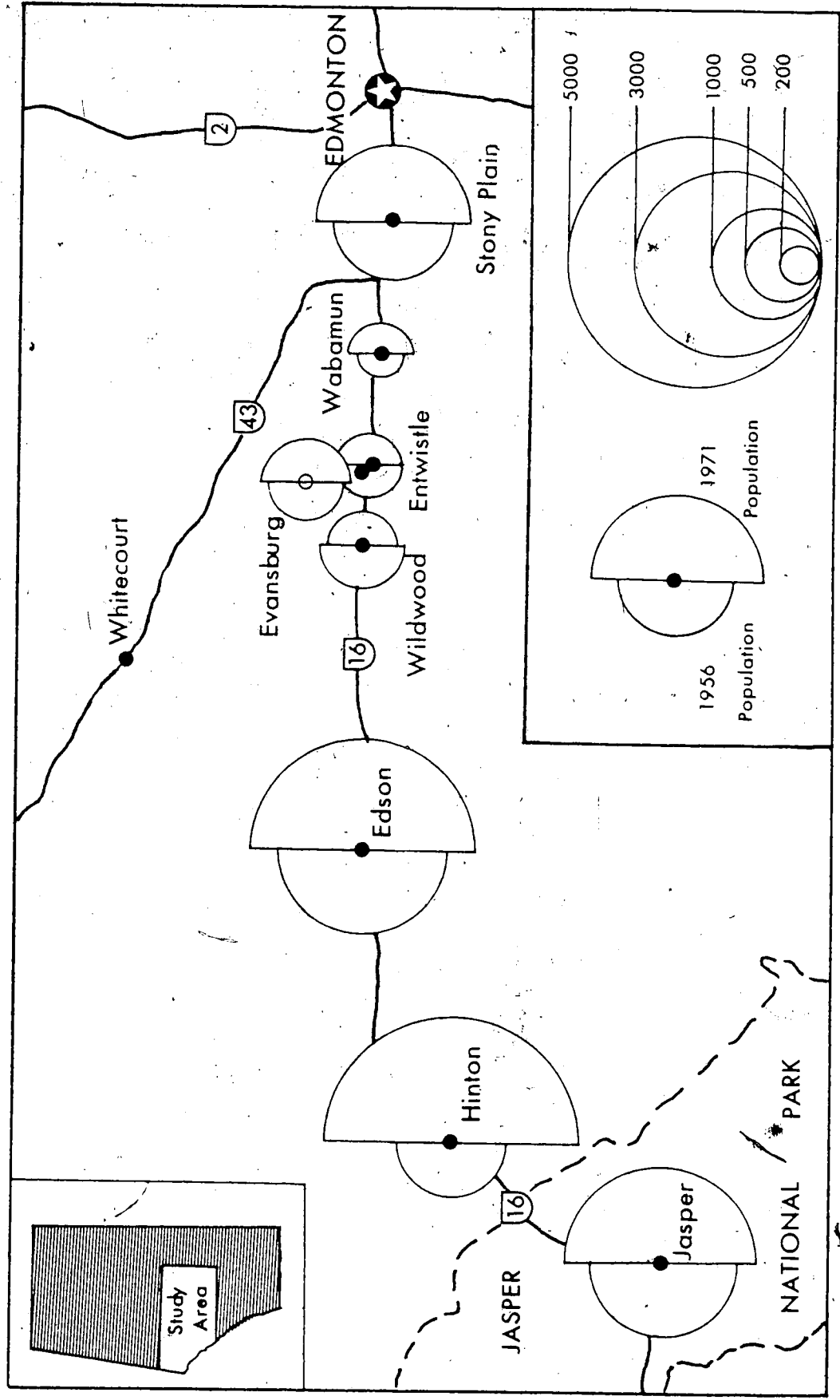
movement to another, the traditional pattern of settlement also changes. As in the Alberta foothills area, communities that were based on an activity which no longer exists or which has changed radically, have lost their raison d'être. For instance, the dispersed pattern of settlement that was based on agriculture can no longer persist after farming has ceased to provide a decent living for those engaged in it. Similarly, those towns that existed originally to service the mining industry in the Coal Branch have almost entirely disappeared. Even though the mine in Luscar area had re-opened in recent years, the miners are being bused in daily from Hinton where they live. In these days of improved transportation and communication, it is much easier for people to live in a few large, more centralized communities and commute to and from work, if necessary.

In view of the change in the settlement pattern that have occurred in west-central Alberta during the past two decades, eight communities located along Highway 16, west of Edmonton, have been selected for an in-depth analysis of migration. Together, the eight communities had a population of just over 15,000 in 1971, which represented more than 95 percent of the urban and rural non-farm population of settlements located along Highway 16, west of Edmonton, if the town of Spruce Grove was excluded from the total (Figure 2.2).

Besides being located relatively close to Edmonton, thus allowing easier access for interviews and field investigation, there are several reasons why these settlements have been selected for the study.

1. The eight communities vary in population size and rate of growth (Table 2.2). Four of them, namely Story Plain, Edson, Hinton and Jasper, are urban municipalities (towns) with a population of 1000 or

FIGURE 2.2
POPULATION CHANGE IN STUDY COMMUNITIES, 1956-1971



more. These four towns experienced relatively high rate of population growth between 1956 and 1971, especially Hinton, which quadrupled its 1956 population. In contrast, the villages experienced varying degrees of population change during the same period. Evansburg was the only community which showed a consistent rate of increase.

T A B L E 2.2
POPULATION AND POPULATION CHANGE, 1956 - 1971

LOCALITY	POPULATION				Population Change 1956 - 1971	
	1956	1961	1966	1971	Number	Percent
STONY PLAIN	1098	1311	1397	1770	672	61.2
WABANUN	264	444	482	336	72	27.3
ENTWISTLE	354	411	345	353	-1	-0.3
EVANSBURG	358	452	472	528	170	47.5
WILDWOOD	547	479	403	386	-161	-29.4
EDSON	2560	3198	3788	3818	1258	49.1
HINTON	943*	3529	4307	4911	3968	420.8
JASPER	2105	2360	2505	2932	827	39.3

SOURCE: Statistics Canada, 1971 Census, Catalogue No. 92-702

* Unofficial estimates

2. Closely related to the above reason, the characteristics of the population in the eight communities are also very different. For instance, Hinton, Wabanun, Edson and Jasper had a more youthful population age structure than Entwistle, Evansburg, Wildwood and Stony Plain at the time of the 1971 Census. Other demographic characteristics, such as the marital status of the population and family size, also exhibited

large variance among the centres (e.g. 80 percent of the families in Hinton had unmarried children as compared with 53 percent, 54 percent and 55 percent of the families in Wildwood, Stony Plain and Entwistle, respectively). Furthermore, the level of educational attainment of the population, the labour force status by occupations, family income, etc. were found to be quite different among the eight communities.¹ Since it has been pointed out in Chapter I that migration is highly selective according to demographic and socio-economic characteristics and the stage of life cycle, these eight settlements would be expected to differ quite significantly according to the migration experience and intentions of their population.

3. The eight settlements serve very different economic functions in the study area. The diversity of the resource base and the history of development of these resources have resulted in a unique typology of settlements which presents an ideal setting for studying both past migration patterns as well as future migration intentions of the population in these settlements (Table 2.3).

4. The strategic location of the eight settlements along a major transportation thoroughway - the Yellowhead Highway - to the west of the city of Edmonton, poses an interesting situation for studying the pattern of spatial interaction among the residents of the communities. During the past fifteen years the Yellowhead Highway has undergone extensive improvement which has resulted in better accessibility and communication among the settlements in the study area. The extent to which migration patterns are affected by improved transportation facilities is

1 See Appendix A for a comparative analysis of selected population characteristics in these settlements.

an interesting topic for investigation. In addition, it is important to assess the impact of Edmonton, an ever-expanding metropolis of 600,000 people, on the migration volume and direction among the settlements in west-central Alberta.

TABLE 2.3

A TYPOLOGY OF SETTLEMENTS IN WEST-CENTRAL ALBERTA

SETTLEMENT	CLASSIFICATION	MAJOR FUNCTIONS/SERVICES
STONY PLAIN	Agricultural service centre, gradually developing as a dormitory community of Edmonton	Grain elevator, schools, business and government services, restaurants, stores, churches, etc.
WABANU	Rural hamlet gradually becoming a small scale resource centre	Site of coal mine and thermal electric power plant, small convenience stores
ENTWISTLE EVANSBURG WILDWOOD	Small rural communities	Social institutions such as churches, schools, clubs and small convenience stores, some government services
EDSON	Sub-regional service centre	Fairly elaborate professional, commercial, government services, school districts regional office, hospitals, oil and gas servicing, gas plants, etc.
HINTON	Resource centre	Pulp mill, coal mining, tourism, plus basic commercial and professional services, social institutions, etc.
JASPER	Tourist and transport centre	Park administration, railway divisional point, plus basic services, especially those catering to tourists.

B. THE DATA BASE

The lack of an adequate data base for the study of human migration is a widely recognized problem, and Alberta is no exception. In general, three types of data series have been used to study migration. They are: i) census data, ii) administrative records of government agencies, and iii) data obtained from occasional, special purpose surveys.

Firstly, national censuses are still the most widely used data sources for studying internal migration in Canada. The 1961 and 1971 Censuses contained questions relating to place of birth, place of last residence, frequency of moves from one municipality to another, and place of residence five years ago, prior to the censuses. Based on a one-third systematic sample of the population aged 15 and older as of June 1, 1971, information on the migration status and mobility status of the population is provided at the enumeration area level in the 1971 Census (Statistics Canada, 1972). In addition, data on a variety of characteristics (e.g. sex, age, marital status, mother tongue, occupation and educational attainment) of both migrants and non-migrants can be obtained through special requests from Statistics Canada. Besides the usual response errors associated with data collected by means of sample survey, such as faulty memory, built-in bias to certain questions, and deliberate falsification of records, census migration data do not reflect the mobility of persons who died or had left Canada during the intercensal period. As well, no data exist from which inferences on the causes and decisions behind migration can be derived (Stone, 1978).

Secondly, administrative data of government agencies, such as the Alberta Health Care Insurance Commission registration records or the family allowance data of the Federal Department of Health and Welfare

have been used to estimate migration flows between provinces. Since Canada does not have a formal mechanism to register current migration patterns of its population, these agencies can be considered as quasi-population registers because of their complete coverage of the population or a certain segment of the population. For instance, almost every person in the province is covered by the Alberta Health Care Insurance plan, and newcomers into the province are required by law to register with the Commission. Hence, these records can be utilized to study migration with great accuracy. Furthermore, by joint agreement among the health care systems across the nation, exchange of information on client mobility is transferred back to the province of origin. In this case, the age, sex, marital status, family characteristics of migrants and their origin and destination areas can be estimated within a relatively brief time after the move was made. Similarly, the family allowance records, being a nationally administered plan and data system, have been used to measure inter-provincial migration in Canada (Horna, 1974; Statistics Canada, 1977).

Nevertheless, information from neither the census nor the administrative records is suitable for the present study because these data series do not contain enough detail on the characteristics of the migrants, nor do they include any data on behavioural aspects of migration such as future migration intentions. The main weakness, however, is that several of the communities under study are too small to be considered separately, even by the census, as a statistical unit for providing migration information. Because of these limitations, it was decided that a special-purpose, sample survey of households was required.

C. THE SAMPLE SURVEY

The sample survey was restricted to the eight communities under study. An attempt was made, firstly, to identify the total number of households in each community so that a systematic sample could be drawn.² Three possible data sources were considered: i) the 1971 Census Enumeration Area (E.A.) Household Data, available in both computer "print-outs" and tapes, ii) the 1971 Alberta Government Telephones (AGT) Community Data Sheet, and iii) the 1971 Household Directory of the Federal Post Office Department. The number of households in the eight communities varied greatly according to these three sources of information, as indicated in Table 2.4.

T A B L E 2.4

NUMBER OF HOUSEHOLDS IN THE COMMUNITIES, 1971

COMMUNITY	1971, June 1st CENSUS	1971 AGT SURVEY	1971 HOUSEHOLD DIRECTORY*
Stony Plain	530	500	733
Wabamun	100	186	218
Entwistle	120	116	158
Evansburg	165	190	200
Wildwood	130	138	231
Edson	1080	1259	1301
Hinton	1255	1332	1428
Jasper	830	862	756
TOTAL	4210	4583	5025

* Excludes heads of households whose occupation was farming.

² Household in this thesis refers chiefly to family households and households with single persons occupying one dwelling. This study excludes communal households, e.g. hospitals, boarding schools, camps, hotels, etc.

It is normally recognized that the Census should provide the most reliable household count because the B.A. data file is based on a detailed sample of the population of the locality. The AGT data, according to officials of the Business Development Branch of AGT, were based on an annual count of all households in each community. Hence, their accuracy should be similar to that of the Census, with the one qualification that these counts are made at different times during the calendar year. By contrast, the 1971 Household Directory was a compilation of all the users in a certain postal district or station, including non-residential users. The service areas of these postal districts do not necessarily coincide with the official boundary of a community. This means that many residents located outside the community limits would also be listed under that particular town or village in the Directory, resulting in a larger number of households in the community than that identified by the Census or the AGT Survey. For this reason, the 1971 Census was chosen as the basis for indicating the total number of households in the communities under study.

Secondly, with respect to the selection of a sample, since this research project was restricted by financial and manpower resources, it was decided at the initial stage that a sampling fraction ranging between five and twenty percent, depending on the size of the community, would be adopted. Secondly, it was decided that, as much as possible, data would be collected through a mail questionnaire. As it is not unusual to expect a relatively low response rate using this kind of interviewing technique, the sampling fraction for the smaller communities, namely the villages of Wabamun, Entwistle, Evansburg, and Wildwood, were enlarged in hope of achieving a higher response in these places. According to Moser and Kaltbn (1971, p. 93) a "disproportionate stratified sampling"

is justified in situations where the population in some strata are much more variable than those in others. "It would be sensible in this case to take a larger sampling fraction in the more variable strata, thereby increasing overall precision". Conway (1967) also suggests a similar procedure to deal with sampling units of variable size. Table 2.5 provides the specific information on the sample size and response rate in the survey.

TABLE 2.5

RESPONSE TO QUESTIONNAIRE SURVEY

COMMUNITY	NUMBER OF HOUSEHOLDS	NUMBER OF QUESTIONNAIRES SENT AWAY	NUMBER OF QUESTIONNAIRES RETURNED	RATE OF RESPONSE	OVERALL** COVERAGE
STONY PLAIN	530	53	25	47.2	4.7
WABASH	100	40	20	50.0	20.0
ENTWISTLE	120	40	20	50.0	16.7
EVANSBURG	165	40	20	50.0	12.1
WILDWOOD	130	40	25	62.5	19.2
EDSON	1080	110	56	50.9	5.2
HEMLOCK	1255	130	66	50.8	5.3
JASPER	330	33	41	49.4	4.9

* Based on 1971 Census

** Refers to the number of returned questionnaires as a proportion of the total number of households in the community.

The next step was to choose a sampling frame or a series of sampling frames for the distribution of questionnaires to the households in the communities. The 1971 Northern District Telephone Directory (AGT), which contained listings of users for all the eight study communities was con-

sidered first. However, discussion with officials of AGT revealed that, even though most of the households in these communities have telephones, only the larger communities have an installation rate of 90 percent or more. Therefore, instead of drawing the samples from a sampling frame whose coverage was known to be inadequate for the small villages, only the listings for Story Plain, Edson, Hinton, and Jasper in the AGT Directory were used while a drop-off, mail-back system involving field work and personal visits was adopted for the remaining communities.

A systematic sampling procedure which ensures that every primary sampling unit (PSU) has an equal and known probability of inclusion in the sample was employed to distribute the questionnaires to the households (Conway, 1967). For the four towns where questionnaires were to be mailed, after a random start, a copy of the questionnaire was sent to every k^{th} person whose name was listed in the telephone Directory. The number k was dependent on the sampling fraction for that particular town. An identification number was used in case it was necessary to send a copy of the questionnaire to the same person for follow-up. For the smaller villages a detailed map showing the location of every dwelling on every street was used at the initial stage to identify those households which were to receive a copy of the questionnaire. Again, after a random start, every k^{th} house was marked according to a regular interval. During the field work the locations of these houses were validated, and a copy of the questionnaire was delivered to them with instructions for its return. The main part of the field work was conducted during the summer and fall of 1972. The entire process proved to be quite successful, though rather slow moving at times. Some personal interviews were also conducted during these visits.

As can be seen in Table 2.5 a total of 536 questionnaires was sent out or delivered. This represents an aggregate sampling fraction of 12.7 percent out of a total of 4210 households in the study area. Of the 536 questionnaires, 273 were returned, giving an overall response rate of 50.9 percent which is good response for any survey using the mail interviewing technique (Moser and Kalton, 1971). Considering the communities separately, the response rate ranged between 40 and 62 percent. If the response rate was further represented as a percentage of the total number of households, the 273 returned represent an average 6.5 percent coverage of the households in the study area.³

D. THE QUESTIONNAIRE

After some pilot tests were conducted in Stony Plain and Wabamun, a questionnaire with 57 questions was designed to collect detailed migration data for the study.⁴ The questionnaire consists of four parts. Part A deals with the migration experience of the head of the household and the reasons for migration. The focus of this section is on the present community. It is intended to provide information on whether the head of the household was born in that community, and if not, the length of time he has stayed in that place, whether he came to the community by himself or with his wife and family, whether he was unemployed at that time, whether

3. Actually, 281 questionnaires were returned, but eight of them were unusable. Of the 273 usable questionnaires, 196 or 71.3 percent were sent back within 30 days of mailing. The remaining 77 were returned after a reminder letter and a second copy of the questionnaire were sent to the head of the household.

4. See Appendix B for a copy of the survey questionnaire.

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Many questions immediately arise when studying the characteristics

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3. Actually, 281 questionnaires were returned, but eight of them were unusable. Of the 273 usable questionnaires, 196 or 71.3 percent were sent back within 30 days of mailing. The remaining 77 were returned after a reminder letter and a second copy of the questionnaire were sent to the head of the household.

4. See Appendix B for a copy of the survey questionnaire.

As can be seen in Table 2.5 a total of 4210 questionnaires were sent out or delivered. This represents a 65 percent out of a total of 4210 households. Of the 4210 questionnaires, 273 were returned, 65 percent which is good response for a door-to-door questionnaire technique (Moser and Kalton, 1971). The response rate ranged between 40 percent and 80 percent. The 273 returned represent an average of 65 percent of the 4210 households in the study area.³

D. THE QUESTIONNAIRE

After some pilot tests were conducted, a final questionnaire with 57 questions was developed.

CHAPTER III

THE MIGRANTS AND THE MOVE

A. INTRODUCTION

This chapter describes the moves made by the respondents of the survey (heads of household) to the communities in the study area. It should be noted that not all the 273 respondents can be classified as migrants. In fact, twenty-one of them were born in the communities in which they were surveyed. Eleven of these twenty-one heads, however, had moved and lived elsewhere during various stages of their lives, including those who had moved from one study town to another. They had since returned to their places of birth, at the time of the survey. This means that only ten of the respondents cannot be classified as migrants because they had never moved before.

Several key areas or themes relating to the move will be discussed: the distance travelled between the places of origin and destination, the types of move in terms of rural-urban, interprovincial and international migration, the characteristics of the migrants, the types of places they came from, the destinations in the study area, and the reasons underlying the move to the study area. In general, the main objective of this chapter is to identify whether any apparent relationships exist among these themes within the constraints of the data base. Furthermore, attempts will be made to establish typical profiles of migrants in the following analysis.

B. THE MOVE

1. Origins of the Migrants

The results of the survey indicate that a large proportion (70 per-

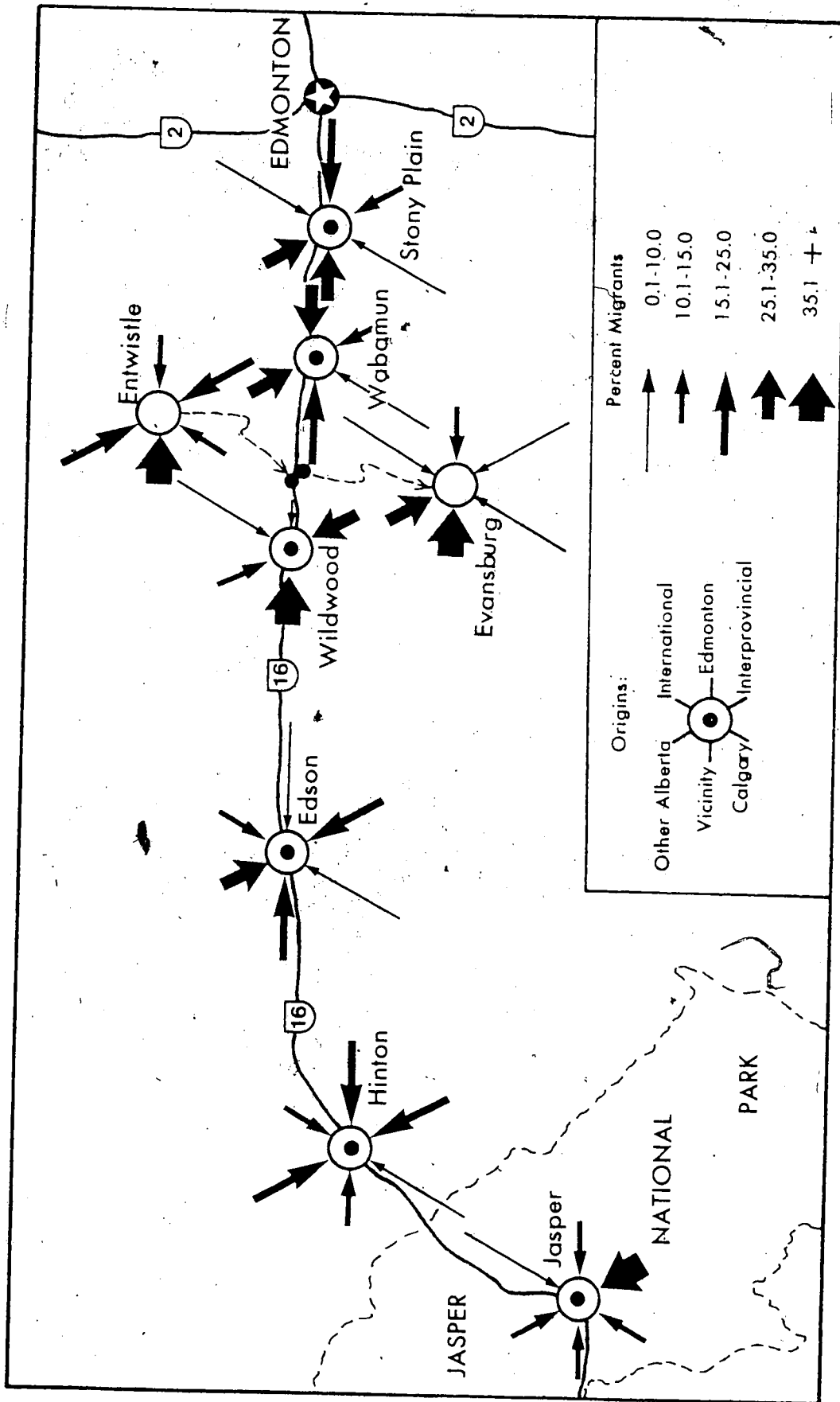
More detailed information relating the places of origin of the migrants and their destinations in the study area reveals that 85 per cent of the international migrants were attracted to the three larger communities of Edson, Hinton and Jasper. Similarly, a sizeable percentage of the inter-provincial migrants went to these places, as did the migrants from Calgary. This observation is in accordance with the proposition that long distance migrants tend to be attracted to centres where employment opportunities and wage levels are more favourable than in small rural communities.¹ In contrast, the villages of Entwistle, Evansburg, and Wildwood received most of their migrants from the immediate vicinity and places within Alberta. To a lesser extent, the same migration pattern was evident in Stony Plain and Wabamun, with the exception that, because of their proximity to Edmonton, these two communities attracted a proportionally larger number of migrants from that city (Figure 3.2).

The move to the communities was further analysed according to the size of the place of origin. It is generally observed that migrants from rural areas, especially farmers, often retire and settle in a town or village in the surrounding area while residents of small towns and villages prefer to move to a larger centre (Proudfoot and Lamont, 1972). Moreover, because migration volume is dependent on the size of the place of origin, a certain amount of out-migration from major cities and metropolitan areas to small towns and villages is not unusual.

The results of the survey indicate that 34 percent of the migrants came to the eight communities from farms or villages with less than 1000

1 See Appendix A for a comparative analysis of the socio-economic characteristics of the population in the eight settlements.

FIGURE 3.2
ORIGINS OF MIGRANTS TO STUDY COMMUNITIES



people, 32 percent came from non-metropolitan urban centres, and 29 percent came from metropolitan areas with over 100,000 people (Table 3.1). The four villages (including Wabamun) attracted 50 to 58 percent of their migrants from rural areas. Many of them could be considered as people who migrated to these places to retire or to prepare for impending retirement. For example, of the 11 migrants who moved to Entwistle from rural origins, five were previously farmers who had since retired. Two of the remaining six were still engaging in farming in the vicinity of the village even though they were already in their sixties at the time of the survey. In conjunction with previous findings on the origins of the migrants, it could be established that a certain degree of "directional bias" existed among the migrants to the villages since a majority of them tended to select familiar surroundings and communities as their places of destination.

T A B L E 3.1
ORIGINS OF MIGRANTS, BY TYPES OF MUNICIPALITY

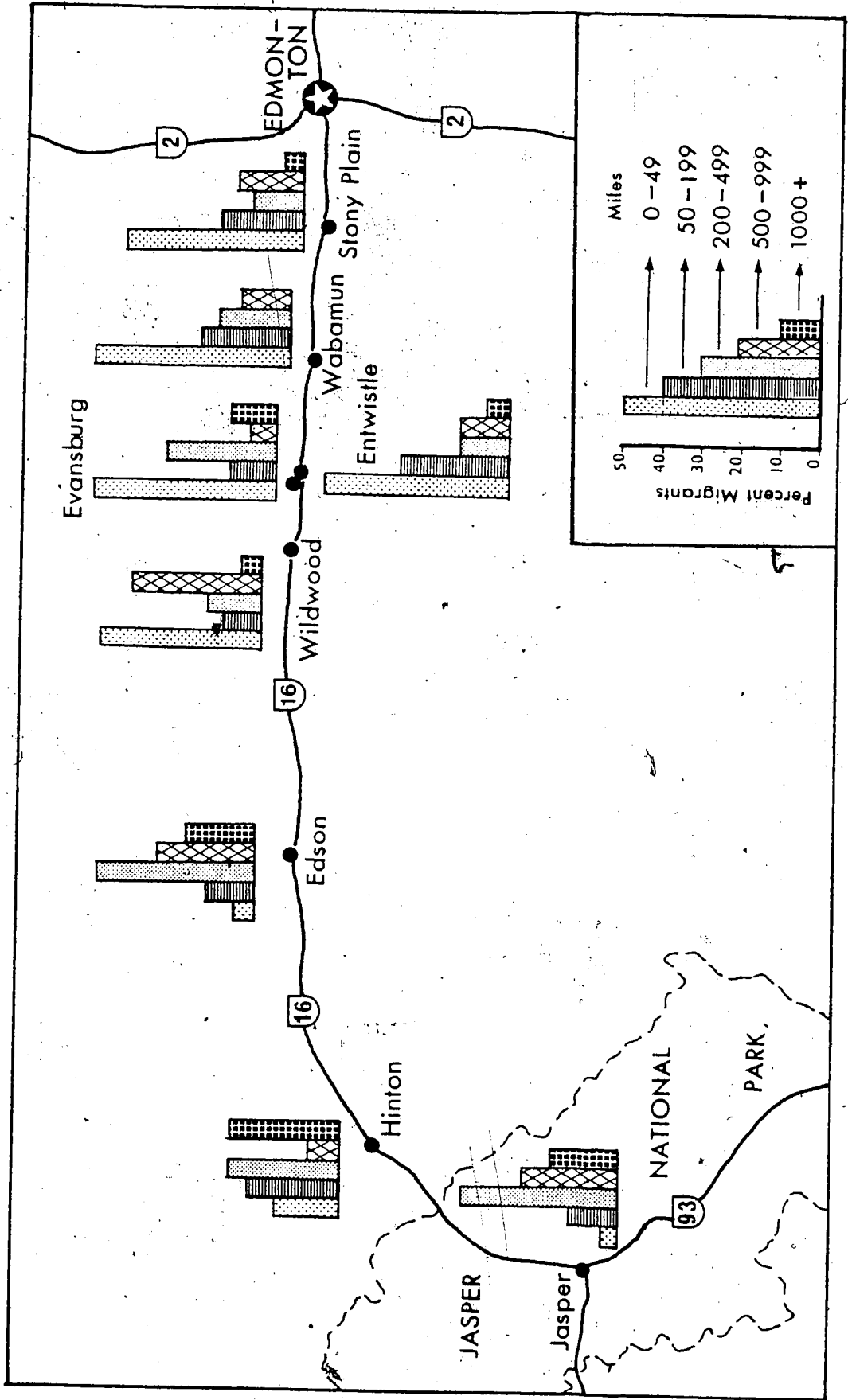
COMMUNITIES	Metro-Areas		Non-Metro Urban Areas		Villages of Farms		Unspecified*	
	Number	%	Number	%	Number	%	Number	%
Stony Plain	9	36.0	6	24.0	10	40.0	0	0.0
Wabamun	5	28.0	3	17.0	10	55.0	0	0.0
Entwistle	3	16.0	5	26.0	11	58.0	0	0.0
Evansburg	4	21.0	5	26.0	10	53.0	0	0.0
Wildwood	1	5.0	10	45.0	11	50.0	0	0.0
Edson	15	27.0	18	33.0	16	30.0	5	9.0
Hinton	26	39.0	21	32.0	14	21.0	5	8.0
Jasper	12	30.0	16	40.0	8	20.0	4	10.0
TOTAL	75	28.5	84	31.9	90	34.2	14	5.3

* Mostly from out-of-Canada

In comparison, migrants from urban centres and metropolitan areas, in particular, tended to go to the larger centres in the study area. Table 3.1 shows that 83 percent of all migrants from metropolitan areas went to Stony Plain, Edson, Hinton and Jasper. Hinton, for example, received close to 40 percent of its migrants from metropolitan areas while another 32 percent of its migrants were from urban centres. These observations raise many more questions dealing with migration selectivity and the differential characteristics at the places of destination during the times of the moves.

Another dimension of the move concerns the distance travelled by the migrants between the origin and destination. Figure 3.3 shows that generally migrants destined to centres nearer Edmonton had travelled much shorter distance, usually less than 50 miles, while the reverse was true for those destined to Edson, Hinton and Jasper. Such a pattern could be attributed to a relatively sparse density of human settlement in the immediate vicinities of these three centres as well as a strong pull for workers (and their families) in response to increasing economic opportunities in these areas. The above observations compare very well with the migration status of population 5 years and over in these centres during the period 1966 to 1971, as reported in the 1971 Census (Table 3.2). It could be seen that Edson, Hinton and Jasper attracted a sizeable number of migrants from both central and eastern Canada, as well as from other countries. By contrast, the majority of migrants destined to the four villages were from places within Alberta. This observation again confirmed the proposition that long distance migrants tend to go to larger urban centres.

FIGURE 3.3
DISTANCE TRAVELLED BY MIGRANTS



T A B L E 3.2

POPULATION 5 YEARS AND OVER, BY MIGRATION STATUS, 1966-1971
(Percentages)

LOCALITY	M I G R A N T S F R O M W I T H I N C A N A D A							MIGRANTS OUTSIDE CANADA	TOTAL MIGRANTS
	Alberta	Mari- times	Que.	Ont.	Man.	Sask.	B.C.		
STONY PLAIN	320 (64.6)	15 (3.0)	5 (1.0)	30 (6.0)	20 (4.0)	30 (6.0)	30 (6.0)	0	495 (100.0)
WABAMUN	80 (66.7)	0	0	15 (12.5)	0	15 (12.5)	5 (4.2)	0	120 (100.0)
ENTWISTLE	80 (100.0)	0	0	0	0	0	0	0	80 (100.0)
EVANSBURG	100 (69.0)	0	0	0	0	25 (17.2)	15 (10.3)	0	140 (100.0)
WILDWOOD	85 (89.5)	0	0	0	0	0	10 (10.5)	0	95 (100.0)
EDSON	790 (76.3)	0	20 (1.9)	35 (3.4)	5 (0.5)	65 (6.3)	45 (4.3)	0	1035 (100.0)
HINTON	990 (58.8)	20 (1.3)	40 (2.4)	100 (5.9)	65 (3.9)	245 (14.5)	80 (4.7)	0	1685 (100.0)
JASPER	475 (43.4)	35 (3.2)	20 (1.8)	75 (6.8)	55 (5.0)	80 (7.3)	200 (18.3)	35 (3.2)	1095 (100.0)
TOTAL	2920 (61.5)	70 (1.6)	85 (1.8)	255 (5.4)	145 (3.1)	460 (9.7)	380 (8.0)	35 (0.7)	4745 (100.0)

SOURCE: Statistics Canada, 1971 Census.

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C. THE MIGRANTS

Many questions immediately arise when studying the characteristics of the migrants. For instance, When did they move to the centres? What were their age and marital status at the time of the move? Did they come to the centres alone or with their families? Were they employed at the time of the move? and if yes, what occupations were they engaged in. It is necessary to have the answers to these questions if one wants to establish typical "profiles" of migrants and to relate the profiles with relevant spatial characteristics of the move.

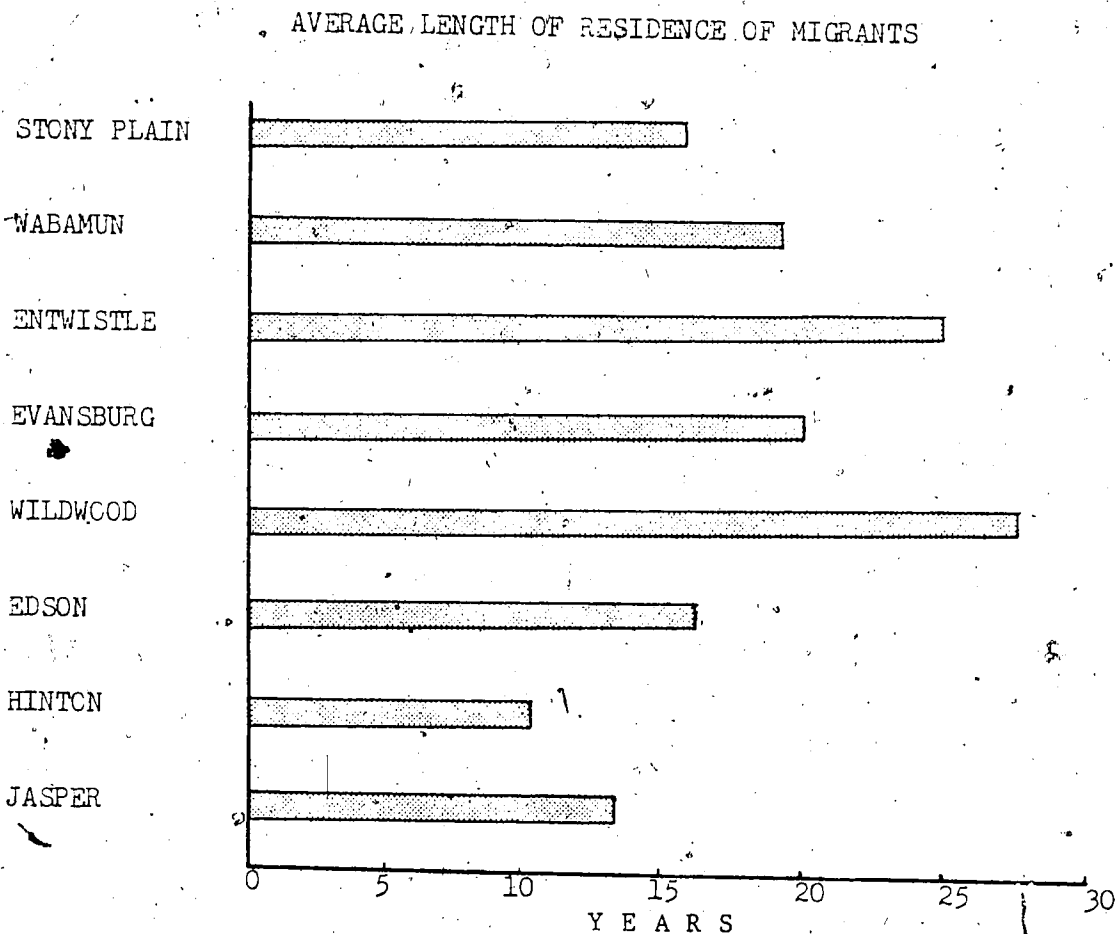
1. When Did the Migrants Move to the Community?

The results of the survey indicate that the average migrant moved to the present community about 18 years ago. Approximately half of them (51 percent) had lived in the community for over ten years. Several respondents who were already very old at the time of the survey came at the turn of the century and had remained in the community ever since. Only 21 migrants (8 percent) had lived in the community for two years or less.

The average length of stay of the migrants varied by communities, as shown in Figure 3.4. More specifically, over 95 percent of the migrants in Hinton had lived there less than twenty years. In fact, most of them moved to the town after 1956 when Northwestern Pulp and Power Company started its operation in Hinton. Similarly, approximately 60 percent of the migrants in Stony Plain and Evansburg reported that they moved there during the past ten years. In the case of Stony Plain, most of its recent migrants came from Edmonton, as the town is gradually becoming a dormitory community of Edmonton. In the case of Evansburg, however, a sizeable percentage of the recent migrants were young professionals engaging, in particular, in the teaching occupation. By contrast, Entwistle,

Wildwood, and to a lesser extent, Edson, had a relatively large proportion of "old-timers" who moved to these places twenty or more years ago.

FIGURE 3.4



2. Age of Migrants

In accordance with the hypothesis that migration varies inversely with age, a sizeable number of migrants made their move to the study area when they were still fairly young. According to Figure 3.5, approximately sixty percent of the migrants were in their late teens, twenties and early thirties at the time of their move. For comparison, the present age of the migrants, at the time of the survey, is also presented. It is quite apparent that an inverse relationship exists between the two sets of ages

at the time of the move and at the time of the survey.

TABLE 3.3

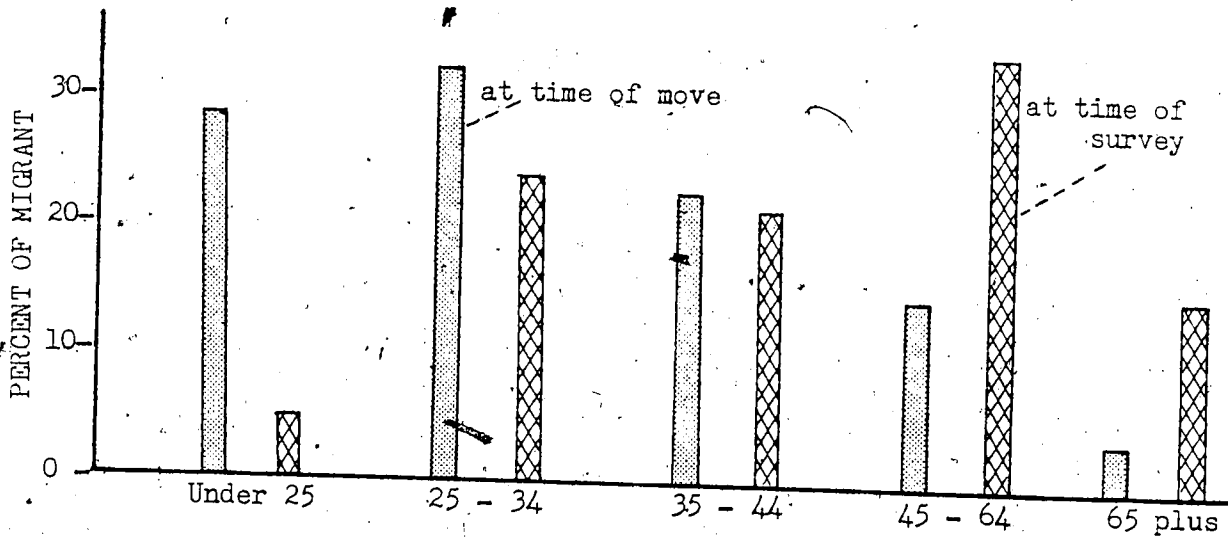
WHEN DID MIGRANT MOVE TO COMMUNITY?

	UNDER 2 YEARS		2-5 YEARS		6-9 YEARS		10-20 YEARS		OVER 20 YEARS	
	#	%	#	%	#	%	#	%	#	%
STONY PLAIN	4	16.0	4	16.0	6	24.0	4	16.0	7	28.0
WABAMUN	0	0.0	3	17.0	2	11.0	7	39.0	6	33.0
ENTWISTLE	1	5.0	2	10.0	7	37.0	4	21.0	5	26.0
EVANSBURG	4	21.0	3	16.0	5	26.0	1	5.0	6	32.0
WILDWOOD	1	5.0	2	9.0	6	27.0	3	14.0	10	45.0
EDSON	3	6.0	10	19.0	10	19.0	13	24.0	18	33.0
HINTON	4	6.0	13	20.0	20	30.0	27	41.0	2	3.0
JASPER	4	10.0	11	27.0	4	10.0	12	30.0	9	23.0
TOTAL	21	8.0	48	18.3	60	22.8	71	27.0	63	24.0

Respectively, the median ages of the migrants were 33 years and 42 years. The aging process experienced by the migrant population over the years is very evident.

FIGURE 3.5

AGE OF MIGRANTS (Percentages)



Among the communities, the age of the migrants at the time of the move shows very little variation. Two exceptions, however, could be found. Firstly, Hinton, Edson and Jasper attracted a relatively higher percentage of their migrants in the 25-34 and 35-44 age groups. This could be attributed to the high demand for skilled or experienced workers in those age brackets in these places. Secondly, Entwistle, and Wildwood attracted approximately 30.0 percent of their migrants in the 45-64 and 65 and older age groups, as compared to an overall average of 17.5 percent of the migrants in these age brackets for the entire study area. As indicated earlier, this could be the result of farmers who moved from the immediate vicinity of their farms to retire in these villages. In general, it was found that a strong age selectivity for younger migrants was evident in the larger towns. This would have important implications on the future growth potentials of these centres through natural increase.

3. Marital Status and Family Size

Closely related to the age of the migrants are their marital status and familial status. Since migrants, in general, tend to be younger than non-migrants, it is not too surprising to find over one-quarter of the migrants were still single at the time of their move. Of these people, 14 reported they accompanied their parents to the study area at a young age. Others came alone or with friends. The majority of the migrants, however, were married and came with their families.

Among the communities, the larger centres attracted proportionally more migrants who came with a small family. For example, 44 percent of the migrants in Stony Plain and 40 percent in Jasper came with their wives and one or two children as compared to an average of 30 percent of the

migrants who belonged to this familial size category. By contrast, the villages tended to attract migrants with a larger family size, e.g. 32 percent of the migrants in Entwistle came with three to four children, as compared to an average of 17 percent in this size category, and another 16 percent of the migrants came with five or more children, as compared to five percent for the entire area.

Such findings reflect different processes of selection of migrants by age, marital status and stage of life cycle operating in the eight communities. Typically, the larger centres attracted migrants who were at the early child-bearing phase of family formation. They were relatively young, married, and came with a small number of young children. The rural communities, in contrast, attracted migrants who were at the later stage of family formation, or they might have completed the family formation (child-bearing) process and had passed on to the "empty nest family" and "aging family" stages, as categorized by Alvarex (1967).

T A B L E 3.4
MARITAL STATUS AND FAMILY COMPOSITION OF MIGRANTS

	AT TIME OF MOVE		AT PRESENT	
	NUMBER	PERCENT	NUMBER	PERCENT
SINGLE	75	28.5	14	5.3
MARRIED WITH NO CHILDREN	48	18.3	20	7.6
1 - 2 CHILDREN	80	30.4	100	38.0
3 - 4 CHILDREN	46	17.5	85	32.3
5 OR MORE CHILDREN	14	5.3	44	16.7
TOTAL	263	100.0	263	100.0

A comparison of the migrants' marital status and family composition at the time of the move and at present (the time of the survey) shows the extent to which the process of family formation had taken place over the years in the eight communities under study (Table 3.4). The most significant changes, however, related to the decrease in the number and proportion of single migrants and married couples with no children, and the general increase in their family size. According to literature on migration behaviour, such a trend usually leads to a greater degree of stability and a lesser propensity for people to migrate to other places.

4. Employment and Occupation

Employment and occupation are two very important factors underlying the migration process. It is recognized that most people migrate to another community because of job-related reasons. Generally speaking, migrants who moved because of job-related reasons came to a particular place either to take up pre-arranged employment or to look for work. The results of our survey show that approximately two-thirds of the migrant heads had a job waiting for them when they moved to the community. Of the remainder, 20 percent came looking for jobs while 12 percent did not intend to join the work force right at that moment.

Those migrants who had come to a pre-arranged employment (about 180 of them) were asked to state the main source of information that had been used in obtaining their jobs. The results show that the largest group (40 percent) came because of job transfers. Another 27 percent learned of their jobs from friends and relatives while 15 percent responded to advertisements in the newspapers. Lastly, it was interesting to find only five percent of the migrants obtained information on their jobs through government manpower centres.

T A B L E 3.5

OCCUPATIONS OF MIGRANTS BEFORE MOVING

OCCUPATION	NUMBER	PERCENT
Professional and Managerial	63	24.0
Clerical, Sales, Services	41	15.6
Transport and Communication	19	7.2
Farming	25	9.5
Logging, Fishing, Mining	8	3.0
Craftsmen and Processing	46	17.5
Labourer	11	4.2
Retired	6	2.3
Unemployed	20	7.6
Others	24	9.1
TOTAL	263	100.0

NOTE: "Others" include students, housewives, and those not in the labour force.

A significantly high proportion (81 percent) of the migrants reported that they were employed prior to moving to the community. Table 3.5 shows their occupational distribution before moving. As can be seen, those who were in managerial and professional occupations and those who were craftsmen accounted for 41 percent of the occupations of the migrants. Detailed information reveals that these groups of migrants, by and large, were destined to the larger communities. Hinton, in particular, attracted 37 percent of the craftsmen and another 27 percent of the migrants who were in managerial and professional occupations. Moreover, it was interesting to find 55 percent of the unemployed migrants (20 in

total). were attracted to Hinton while the rest were shared equally by Edson and Jasper, but by no other centres. By the same token, just over 80 percent of all those who were in labourer occupations were attracted to these three centres. Wabamun received the remainder. These observations support the proposition that those of professional and managerial occupations, and those who are more highly skilled tend to migrate further to places where employment opportunities are available and their skills and training are in demand.

As for the four villages, close to two-thirds of those who were farmers before were drawn to these communities. Entwistle, in particular, received seven of the twenty-five farmers or 28 percent. Edson, partially because of its location and size, also attracted six of the migrant farmers. The villages also received their respective shares of migrants who were in clerical, sales and service occupations. Furthermore, 60 percent of those who had already retired migrated to the four villages.

Just under one-half of the migrants changed their occupations upon moving. In general, it was found that those who were in professional and managerial occupations, e.g. teachers, accountants, merchants and businessmen, and those who were transferred by their employers, e.g. RCMP officers and charter bank employees, CNR locomotive engineers, etc. were the ones who retained the same occupations. On the contrary, aging farmers and miners tended to retire upon moving; those who were unemployed or not in the labour force found work; and those who were relatively unskilled e.g. labourers, wood cutters, farm workers, certain types of equipment operators, clerks and sales persons, tended to change their occupations upon moving.

By geographical distribution, no particular pattern of variation emerged with respect to migrants' tendency to change occupations. Even

though it could be argued that larger centres usually offer better opportunities for occupational mobility, they are, at the same time, attracting a large number of migrants of higher skill levels, who because of training and educational background tend to stay in the same occupations. The results of this survey show that there was a fairly even chance for migrants to change occupation upon moving, irrespective of whether they were moving to villages or towns.

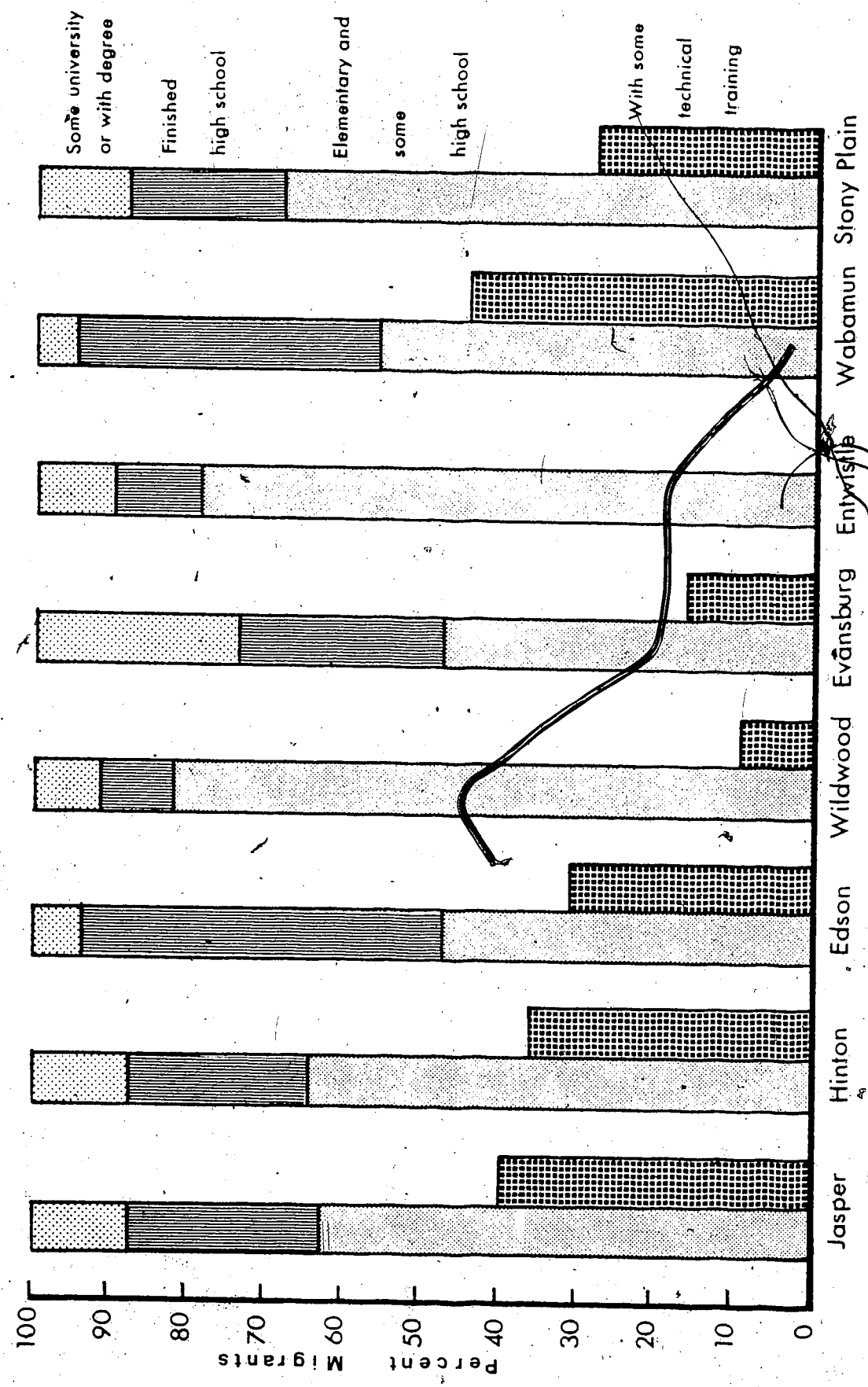
5. Formal Education and Training

Closely related to the occupation of the migrant are his training and educational background. Literature on migration behaviour tends to support a positive correlation between such variables as the frequency of move, the distance travelled and the level of education of the migrant. The results of this study confirm these hypotheses. The majority of the migrants (54 percent) had secondary level (Grade 9 - 13) education, 33 percent of them had elementary (up to Grade 8) education, while another five percent had some university education and nine percent had university degrees. In comparison with the educational levels of Albertans as a whole, the migrants of this study showed a remarkably similar level of educational attainment. According to the 1971 Census, statistics for the 1,020,475 Albertans, 5 years and over, not attending school are:

Elementary (Grade 8 or lower)	332,375	33 percent
Secondary (Grade 9 - 13)	581,650	57 percent
University (no degree)	55,225	5 percent
University (degree)	51,140	5 percent

Several observations regarding the spatial variations of the migrants' education and training levels can be made (Figure 3.6). Firstly, a rela-

FIGURE 3.6
EDUCATIONAL ATTAINMENT OF MIGRANTS



tively high percentage of the migrants destined to Hinton, Edson, Jasper and Wabamun had undertaken some technical training prior to moving there. This could be a function of employment opportunities that were available in these centres, e.g. tradesmen and other operating engineers employed with Calgary Power Ltd. in Wabamun, Northwestern Pulp and Power Ltd. in Hinton, and the C.N.R. in Jasper and Edson. Secondly, the migrants in Entwistle and Wildwood had a much lower level of education and technical training. This could be attributed to the lack of employment opportunities in secondary industries in these places, as well as an older migrant population to whom education seemed not so needed nor so available. Thirdly, Evansburg's migrants tended to possess a fairly high level of education. This was primarily caused by the presence of a relatively large number of professionals, particularly teachers, in the community since Evansburg is the location of the only senior high school between Stony Plain and Edson and Highway #16.

D. PRINCIPAL REASONS FOR MOVING

Economic reasons were responsible for about two-thirds of all the moves to the communities in the study area. In view of the selectivity in the migration process for the young, the educated and skilled individuals, such a finding did not come as a surprise. In this context, economic reasons refer mainly to movements due to job transfers and/or opportunities for career advancement. The former is less voluntary, and even obligatory, because the decision to move to a new job site in another community is partially or entirely pre-determined by the migrant's employer. An extreme case of this type of move was that of two RCMP

officers who had been transferred to a new posting once every nine months during the past three years. Similarly, employees of large corporations such as chartered banks and the railway company were also subject to this influence in their migration decisions. Of the 173 migrants who moved because of economic reasons, seventy (40 percent) were being transferred to the present communities. It is interesting to note that a substantial majority of the job transfers (83 percent) were destined to the four towns, particularly Edson and Jasper.

On the other hand, those who moved because of economic reasons other than job transfers usually stated job availability at destinations as the main pulling factor. Again this group could be sub-divided into two categories: i) those who had pre-arranged employment prior to moving, and ii) those who came looking for employment. It was found that migrants with pre-arranged employment accounted for just under three-quarters in this group. Proportionally, they were well represented in both the towns and the villages. In contrast, those who came looking for employment were primarily destined to the towns of Edson, Hinton and Jasper. Typically, these migrants were characterized by a relatively younger age, possessing high school or more education but lacking technical training. Moreover, the majority of them had migrated to the study area within the last ten to fifteen years.

Secondly, locational and environmental factors at the destinations were responsible for approximately 20 percent of all the moves to the communities. These factors included such things as the migrant's preference to live in a small centre as compared to living in a big city, familiarity with the present community and its surroundings, perceived amenities, special physical attributes and scenic attractions at the

destination, and the location of the community in relation to other centres.

In general, the study found that a higher proportion of the migrants who were destined to the villages tended to emphasize locational and environmental factors as the main reason for migration. Many of them were attracted particularly by the kind of life style and the more personal atmosphere that pervades in small communities. For instance, several migrants who were employed in the construction industry chose to live and bring up their families in places like Evansburg and Wabamun while they commuted to job sites in Sundance or Edmonton to work. It was also found that there was a high probability for people who were brought up in small villages or who had spent a large part of their lives in the vicinity of the villages to move to settle in these places for environmental reasons. Wildwood and Entwistle, in particular, had a notable number of such migrants.

Among the towns, Jasper and Stony Plain had a relatively larger percentage of their migrants who moved because of locational factors. For the former, the obvious factor related to the unique physical attractiveness of the town's surrounding, while the latter attracted migrants who wanted to take advantage of both the small town atmosphere and the services and amenities of a metropolitan area located approximately 20 miles away.

Thirdly, even though approximately 40 percent of the migrants reported that they had relatives and friends living in the present community at the time of their move, only 12 percent of them considered social ties as the principal reason for their move. Included in this category were some who accompanied their parents when they migrated to take up homesteads in the study area. These "second generation" migrants had

since moved to the nearby communities to set up their own homes and raise a family. Both Stony Plain and Wildwood had some of their migrants belonging to this category. Others who moved because of social reasons stated they came to join their friends and relatives. For instance, at least two or three migrant heads from out of the country reported that they immigrated to this part of Alberta to join their families (children in most cases). By geographical variation, the relative proportions of migrants who moved because of social ties were fairly evenly distributed among the communities under study.

Finally, a small percentage of migrants (three percent) stated that they moved to the present communities to retire. These people, as expected, were fairly old, and hence few in number, because of the selectivity of migration. Most of them were living in Entwistle and Wildwood at the time of the survey. Apparently, as discussed previously, there could be a larger number of migrants who moved to these communities for retirement. Since the respondents were responding to an open-ended question in the survey on this point, many of them chose to state other reasons, e.g. social ties and locational factors, as the principal motive underlying their moves.

E. MIGRANT PROFILES

The analysis in this chapter has shown that certain spatial, temporal and behavioural factors such as the size of the places of origin and destination, the length of residence in the community, and the motives of migration can exert an influence on the volume and the characteristics of migrants moving to a particular location. Theoretically, it is

possible to construct a model which incorporates sub-sets of variables associated with these factors to classify migrants into types or profiles. The resulting typology would represent a systematic conceptualization of knowledge on migration based on the principle of migration selectivity. Such a model, however, might not be practicable in this study because of lack of information of a uniform nature and quality on certain significant variables relating, for example, to the places of origin and the migrant's perception of the destination. Nevertheless, it is still possible to establish a fairly generalized typology of migrants based on the experience of their most recent move to the communities in west-central Alberta.

Following a discussion of the characteristics of an "average" or "typical" migrant in the study area, a typology of migrants will be presented as a synthesis of the results of analysis in this chapter (Table 3.6). This typology is formulated according to variation of migrant's characteristics according to five key factors, namely: i) migration differentials, ii) reasons for moving, iii) places of origin and destination, iv) distance travelled by migrants, and v) the length of residence in the present community.

Generally, the average migrant in west-central Alberta was relatively young at the time of his move. He was married and came with his wife and a small family. He was well-educated, having finished high school and, in certain instances, possessed of some technical training. He was employed at the time of his move. He came to the present community primarily because of economic reasons, either as a result of a job transfer, or because he had obtained a position which offered him a better career opportunity. The "average" migrant had been living in the

T A B L E 3.6

A TYPOLOGY OF MIGRANTS - A SYNTHESIS

MIGRANT PROFILE	MIGRATION DIFFERENTIALS	REASONS FOR MIGRATION	PLACES OF ORIGIN AND DESTINATION	DISTANCE TRAVELLED	LENGTH OF STAY IN THE STUDY AREA
1. Young Professionals (12% of total)	<ul style="list-style-type: none"> - young, i.e. 20-30 years old - single, or recently married with no children - highly educated at university level - limited employment experience - employed in professional occupations, e.g. teaching, accounting 	<ul style="list-style-type: none"> - economic - for employment - indifferent to quality of life and amenities in present community 	<ul style="list-style-type: none"> Origin - large urban centres, i.e. cities Destination - varied, depending on employment opportunities 	<ul style="list-style-type: none"> Varied depending on location of destination 	<ul style="list-style-type: none"> Brief - under 5 years
2. Retirees/Pensioners (8%)	<ul style="list-style-type: none"> - old, i.e. 60 years or older - married or widowed - family already left home - poorly educated - retired 	<ul style="list-style-type: none"> - for retirement - familiar with local environment and preferred living in nearby communities 	<ul style="list-style-type: none"> Origin - farm in vicinity or nearby hamlets Destination - nearby village or small service centre 	<ul style="list-style-type: none"> Short distance - 25 - 50 miles 	<ul style="list-style-type: none"> Lengthy - over 20 years

TABLE 3.0 (continued)

MIGRANT PROFILE	MIGRATION DIFFERENTIALS	REASONS FOR MIGRATION	PLACES OF ORIGIN AND DESTINATION	DISTANCE TRAVELLED	LENGTH OF STAY IN THE STUDY AREA
3. Local Businessmen (25-30%)	<ul style="list-style-type: none"> - middle-aged, i.e. 35-45 years old - married with a family - well-educated, with some vocational training - possessed entrepreneurial skills and managerial experience - operating own businesses, e.g. retail trades, hotels, and restaurants 	<ul style="list-style-type: none"> - economic - for business and employment - enjoyed living in small urban centres 	Origin and Destination: Urban Centres i.e. towns or larger villages	Average distance - 100 - 200 miles	10 - 20 years
4. Blue Collar Workers (40%)	<ul style="list-style-type: none"> - prime labour force age, i.e. 25-40 years old - married with family - high-school education with vocational technical training - good technical skills - employed as tradesmen, operators 	<ul style="list-style-type: none"> - economic - for employment - enjoyed living in small urban centres 	Origin and Destination: larger towns	Fairly long distance - 150 miles or more	10 - 15 years
5. Former local Residents (70%)	<ul style="list-style-type: none"> - middle-aged, i.e. 35-55 years old - married with family - average educational level and occupational skills 	<ul style="list-style-type: none"> - social ties and environmental factors 	Previously residents of places of destination or were brought up in the study area	Varied, depending on origin	10 - 20 years

present community for approximately 18 years. He came from a slightly larger or a similar-sized town in Alberta at a distance of 100 miles or more away.

With reference to the personal characteristics associated with the "average" migrant, a typology of profiles of migrant have been identified in the following:

1. Young Professionals

Migrants in this group were characterized by their youthfulness and a high level of educational attainment, usually at the university level. Many of them were single at the time of the move. Frequently, they came from a much larger urban centre because of the existence of job opportunities in the present community. As the title suggests, a large number of them were engaged in professional occupations such as teaching, nursing and social services. Many of them were indifferent to the quality of life and the amenities in the present community and might not be interested in staying in there indefinitely.

2. Retirees and Pensioners

This group of migrants were significantly older than the young professionals and they tended to be much less educated. Many of them were living by themselves or with their spouses since their children had left home to be on their own. Most of the retired migrants came from the vicinity of the present community where they had spent a great part of their lives farming or engaging in other extractive industries such as mining or forestry. It could be said that they chose to live in the present community because of their familiarity and attachment to the quality of life in the surrounding environment. Nearly all of them had no desire to move elsewhere.

3. Local Businessmen

This group of migrants came to establish their own businesses in the community. Typically, they were middle-aged and married with three or four children. Many of them were born and raised in small towns in rural Alberta or Saskatchewan. They generally possessed high school education and maybe some technical and vocational training which qualified them to be employed in their own small business. Like the retired migrants, they enjoyed and preferred living in small communities rather than in a big city. Many of them would be staying in the present community indefinitely.

4. "Blue Collar" Workers

These people had generally travelled long distance to the communities in the study area. Some of them were immigrants and interprovincial migrants. Most, however, were destined to the towns where more employment opportunities were available. The selectivity of the migration process would apply most appropriately to this group of migrants because they were generally in the prime labour force age of 25-35 years, married, fairly well-educated and possessing technical skills and/or extensive employment experience. Very often, they were employed as tradesmen and operators, earning a high income. Many of them came to the study area because they enjoyed the quality of life in the surrounding environment.

5. Former Local Residents

As the title suggests, this group of people were either born or brought up in a community in the study area. They might have moved elsewhere during various stages of their lives but had since returned to their "home towns" at the time of the survey. Normally, it would be

difficult to differentiate these migrants into a distinct type on the basis of their demographic and socio-economic attributes alone. Rather, the presence of families, relatives and friends, and an affinity with the local environment were the unifying factors which had drawn these people to the present community.

CHAPTER IV

DETERMINANTS OF FUTURE MIGRATION TENDENCY

A. INTRODUCTION

Unlike the last chapter which was directed at the move to the eight communities and the characteristics of the migrants at the time of the move, this chapter is focused on the future migration tendencies of the heads of household in the study area. As indicated in Chapter II, the 273 returns to the questionnaire will form the main data base of this analysis. At this stage, however, no disaggregation of data by the eight communities will be attempted since the main objective of this chapter is to examine the relationships between prospective migration and several general factors hypothesized as determinants of this phenomenon.¹

It is commonly acknowledged that the decision to move to a new locality, or to remain in the same place, is a difficult one for most individuals to make. This is because it is often influenced by a host of possible constraining and facilitating forces within a multi-dimensional frame of reference. For instance, Magladry (1976), in a recent study on job transfers among Canadian business executives, reports that an increasingly large number of managers are reluctant to accept out-of-town job transfers for the following reasons: i) interference with spouse's employment at current place of residence; ii) children's unwillingness to change schools; iii) perceived higher living cost at prospective destination; iv) lack of amenities, e.g. ballet school, hockey team,

¹ See Appendix C for an analysis of selected characteristics of the respondents.

good restaurants at destination; and v) disruption of established social ties in the present community. Indeed as Shaw suggests (1975), when a society progresses along a development continuum from a rural-agricultural economy to an urban-industrialized and technocratic society, the importance of economic factors diminishes as an influence in migration. Furthermore, even though work related and economic considerations still appear to be the major motive in up to 50-60 percent of the decisions to migrate, other factors such as those mentioned by Magladry will become more important in influencing people's decision to migrate in the future.

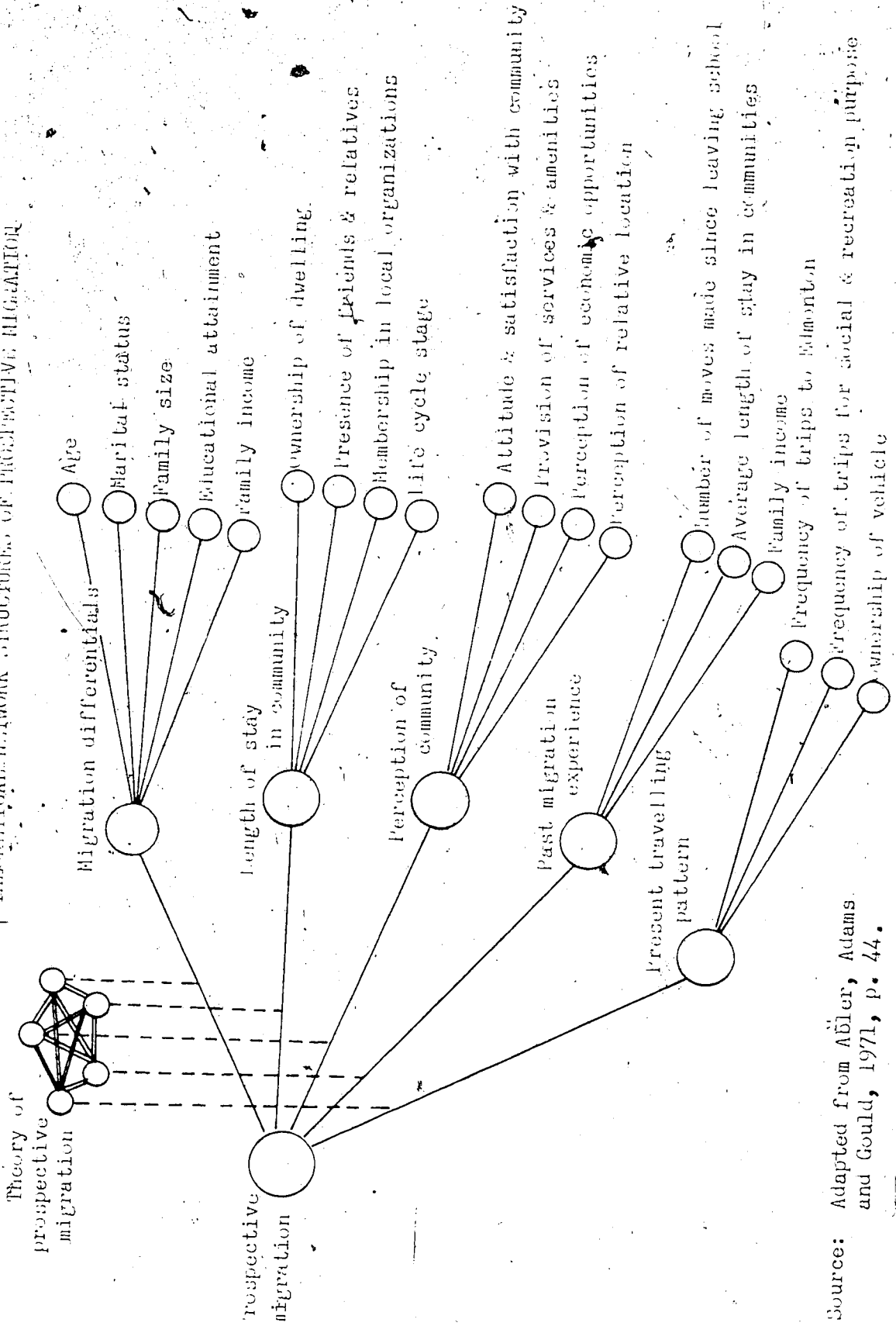
Based on the review of migration literature in Chapter I, the following factors have been identified and hypothesized as determinants of the head's propensity to migrate:

- i) migration differentials and life cycle stage,
- ii) length of stay in the community,
- iii) perception of the quality of life in the community,
- iv) past migration experience, and
- v) present travelling patterns.

Research studies have found that these five factors are not independent of each other. For instance, it could be argued that the head's perception of the community is functionally related to his length of stay in that community, as to the stage of life cycle he is in, as well as a host of other variables which also affect and interrelate with these factors. In order to facilitate the analysis of the head's propensity to migrate according to the five factors identified above, the following conceptual schema, adapted from Abler, Adams and Gould's theoretical network for studying social phenomena, such as minority group urban riots (1971, p. 44), will be employed in this chapter (Figure 4.1).

FIGURE 4.1

THEORETICAL NETWORK STRUCTURES OF PROSPECTIVE MIGRATION



Source: Adapted from Adler, Adams and Gould, 1971, p. 44.

To borrow the terminology of Abler et al., the five factors hypothesized as determinants of prospective migration can be regarded as five "probabilistic laws" each interrelating with the others to describe the conditions most suitable for prospective migration. Taken together as a group, these five laws constitute a "theory of prospective migration" since, according to Abler et al., a theory is simply a system of laws and laws are hypotheses which have been tested and confirmed as valid. They further claim that laws are very useful in science because one can explain past and present experiences and predict future events by demonstrating that these actual or potential experiences are instances in which laws are applicable (pp. 41-43).

In the following sections, an investigation of the interrelationships among the five determinants (probabilistic laws) of prospective migration will be undertaken. Since it is also true that each of the five determinants is in turn affected by and related with other socio-economic variables and constructs, it is important, firstly, to examine these patterns of relationships which characterise the five determinants. The statistical technique of correlation analysis will be used to assist this aspect of the analysis. Subsequently, the extent to which these five determinants can explain or predict the head of household's propensity to migrate will be analysed by means of a theoretical framework which takes the form of a multiple regression model in statistical analysis. The dependent variable in this case is the head's propensity to migrate, and the independent or explanatory variables are the five determinants and several other variables identified as a function of prospective migration. In notation form:


$$P_m = f(X_1, X_2, X_3, X_4, \dots, X_n)^{st}$$

WHERE P_m represents the propensity to migrate,

X_n are the factors or determinants of P_m , and

st is the state of the "system" made up of the individual and his environment at time t .

For analytical purpose, the variable of prospective migration was derived from the question to the heads asking them to indicate if they foresaw staying in the present community two years from now, five years from now, ten years from now, or permanently. The result to this question was organized in the form of a mover-stayer continuum with values assigned to each of the six categories in the following manner:

CONTINUUM	HEAD'S FUTURE MIGRATION TENDENCY	SCORE
MOVER  STAYER	i will not stay two years hence	1
	ii not sure of migration plan ²	2
	iii will stay two years hence	3
	iv will stay five years hence	4
	v will stay ten years hence	5
	vi plan to stay permanently	6

2. It could be argued that if the head was not sure of his future migration plan, he could be classified as a stayer as well as a mover. In this instance, the eight individuals who were not sure of their migration plan were considered more likely to be movers because if they had any strong intention to stay in the community they could have easily checked one of the four options in the questionnaire which describes different degrees of propensity to stay.

The results of the analysis show that a large number of variables were found to be statistically related to the head's propensity to migrate. The majority of these variables had a correlation coefficient ranging between ± 0.250 and ± 0.400 , at a confidence level of 0.99 or 99.0 percent. This level of result is considered significant in statistical analysis with a sample of 273 cases (Moser and Kalton 1971, Conway 1967). The nature of the interrelationships among the variables could be classified into several groups, corresponding closely with the five major determinants of migration.

B. MIGRATION DIFFERENTIALS AND LIFE CYCLE STAGE

It has been pointed out in the literature review in Chapter I that because of the selective nature of the migration process, migrants tend to be differentiated from non-migrants according to their demographic and socio-economic attributes. For instance, the analysis of the characteristics of migrants in Chapter II found that the average migrants who came to west-central Alberta tended to be young, married and well-educated at the time of their move. In this section, several general hypotheses relating to the selectivity of migration will be employed to analyse the nature of the relationships among the characteristics of the heads of household, the stage of life cycle they were in at the time of the survey, and their propensity to migrate.

1. Age. - The age of the heads was the first attribute to be analysed. The standard hypothesis relating age and the propensity to migrate states that the two are inversely related, i.e. the older the head, the less likely it is that he will move to another community. The

results of the correlation analysis not only confirmed this hypothesis as being valid, it also revealed a number of interesting patterns of association between the age and other socio-economic characteristics of the heads. For instance, age was found to be inversely related with the levels of educational attainment, and the average family income, but positively related with family size, ownership of residence, and the length of stay in the community.

Since the average age of the heads was between 40 and 50 years old, based on the above analysis, it would be expected that the majority of them would prefer to stay in the community in the future. Table 4.1 confirms this conclusion, as it shows a gradual increase in the proportion of heads who intended to stay in the community permanently as age increases.

T A B L E 4.1

FUTURE MIGRATION TENDENCIES OF HEADS, BY SPECIFIED AGE GROUPS
(percentages)

FUTURE MIGRATION TENDENCY	A G E					
	21 - 30	31 - 40	41 - 50	51 - 60	61 - 70	70
will not stay 2 years hence	13 (25.0)	9 (15.0)	5 (9.4)	2 (4.5)	6 (16.7)	0
not sure	2 (3.8)	3 (5.0)	2 (3.8)	2 (4.5)	0	0
will stay 2 years hence	14 (26.9)	14 (23.3)	3 (5.7)	2 (4.5)	8 (22.2)	0
will stay 5 years hence	9 (17.3)	7 (11.7)	8 (15.1)	6 (13.6)	1 (2.8)	0
will stay 10 years hence	4 (7.7)	8 (13.3)	14 (26.4)	8 (18.2)	0	1 (5.1)
will stay permanently	10 (19.2)	19 (31.7)	21 (39.6)	24 (54.5)	21 (58.3)	24 (95.0)
TOTAL	52 (100.0)	60 (100.0)	53 (100.0)	44 (100.0)	36 (100.0)	25 (100.0)

2. Marital Status and Family Composition - Age, marital status and family composition are three important demographic variables which have been used conjunctively to describe an individual's migration behaviour and in reference to his life cycle stage. It is hypothesized that people who are young and single are generally more mobile than those who are middle-aged, married and raising a family. The results of the analysis show that the heads' propensity to migrate was positively related to single marital status and inversely related to the size of the family. This means that the above hypotheses was validated, albeit partially.

In addition, the analysis found that being single was inversely related to age and the length of stay in the community, but positively related to one's level of education and the frequency of making trips to Edmonton. On the other hand, it was also found that the family size was positively related to the age of heads, ownership of the dwelling presently residing in, and the length of stay in the community. These findings further substantiate the general hypothesis that the middle-aged head of household, who is at a child-bearing or rearing stage of his life cycle, tends to exhibit a greater degree of stability with reference to his migration propensity than the single, young adult who can move from one community to another with greater ease.

3. Formal Education - It is generally accepted that migration is highly selective with respect to education. The rationale is that the higher an individual's level of educational attainment, the more likely it is that he will be aware of differential opportunities and amenities at alternative places of residence (Shaw, 1975). The results of the correlation analysis confirmed the existence of a positive relationship between the level of education and the heads' propensity to migrate

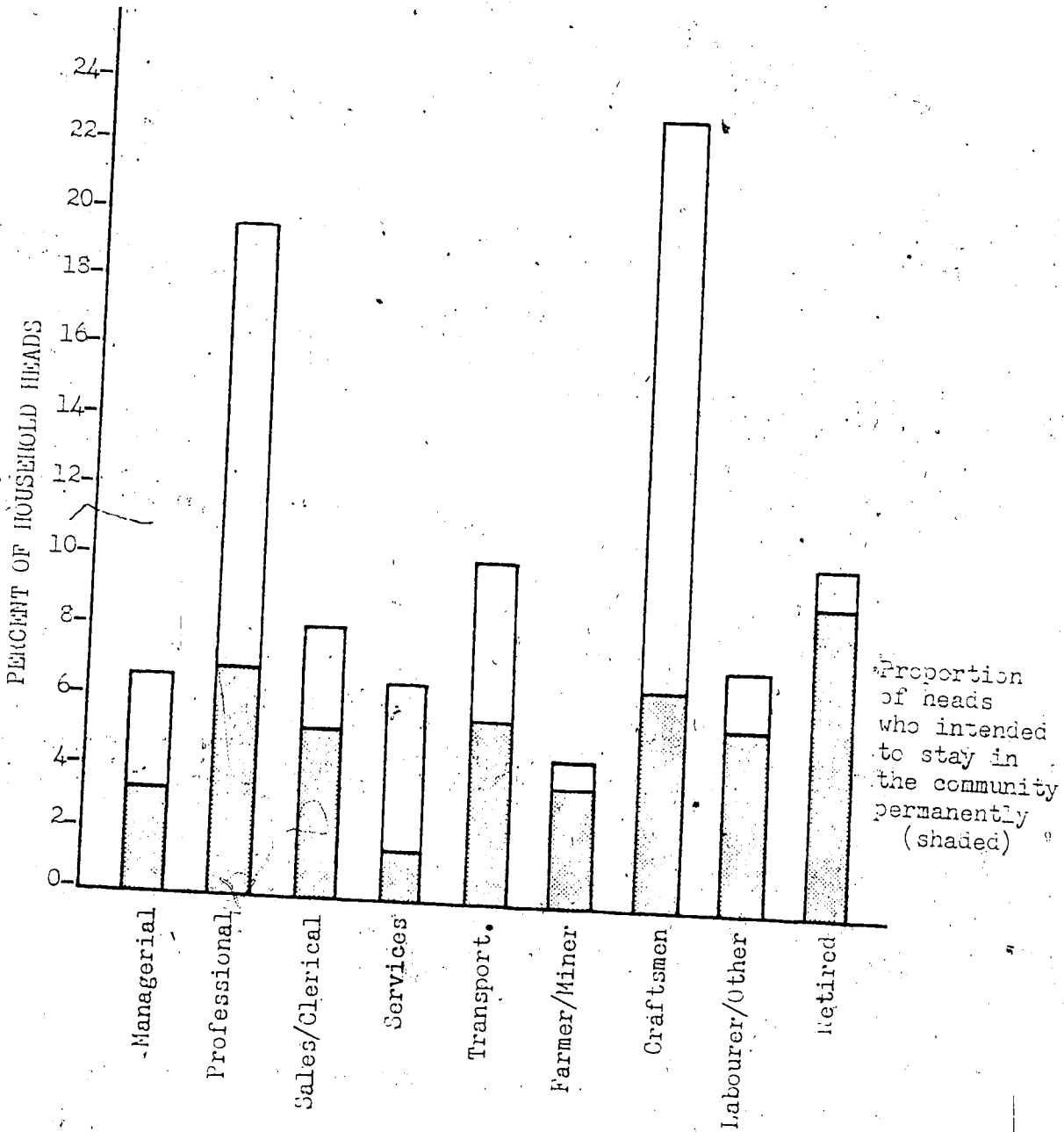
($r = 0.283$) as well as the frequency with which the heads made trips of 200 or more miles during the past two years ($r = 0.262$). The latter finding is of particular interest since it can be argued that travelling is an effective means of expanding one's awareness of the existence of opportunities and attractions in alternative locations. In addition, it was found that those heads possessing a high level of educational attainment tended to be relatively young, single, earning a good income, and had lived in the community for a relatively short time.

4. Present Occupations - Figure 4.2 shows that those heads who were retired, farmers, salespersons and labourers tended to be significantly less inclined to migrate than those who were employed in community services or professional and processing occupations. These findings support the generalization that migration is selective of higher status occupations and, a higher propensity for professional and skilled craftsmen to migrate. In addition, the analysis found that higher status occupations among the heads was directly related with the level of educational attainment, the level of annual family income, the existence of pre-arranged employment for the heads prior to moving to the community, as well as a relatively brief period of stay in the community.

5. Annual Family Income - The last socio-economic variable to be analysed was annual family income. As indicated previously, this variable was inversely correlated with the age of the heads, and directly related with a high level of educational attainment as well as employment in a higher status occupation. Since economic considerations were the chief reason for the heads to move to the communities in the first place, it was not too surprising to find that the heads' propensity to migrate was positively related to the level of family income as well.

FIGURE 4.2

PERCENTAGE DISTRIBUTION OF OCCUPATION OF HOUSEHOLD HEADS,
AND FUTURE MIGRATION TENDENCIES



To summarise, the statistical evidence describing the relationship between the propensity to migrate and migration differentials is presented in the following:

SOCIO-ECONOMIC CHARACTERISTICS
AS RELATED TO PROPENSITY TO MIGRATE

CORRELATION
COEFFICIENT

1. Age	-0.367
2. Marital status (single)	0.291
3. Number of children	-0.237
4. Number of children who have left the household	-0.212
5. Formal education of head	0.283
6. Annual family income	0.281

C. THE LENGTH OF RESIDENCE IN THE COMMUNITY

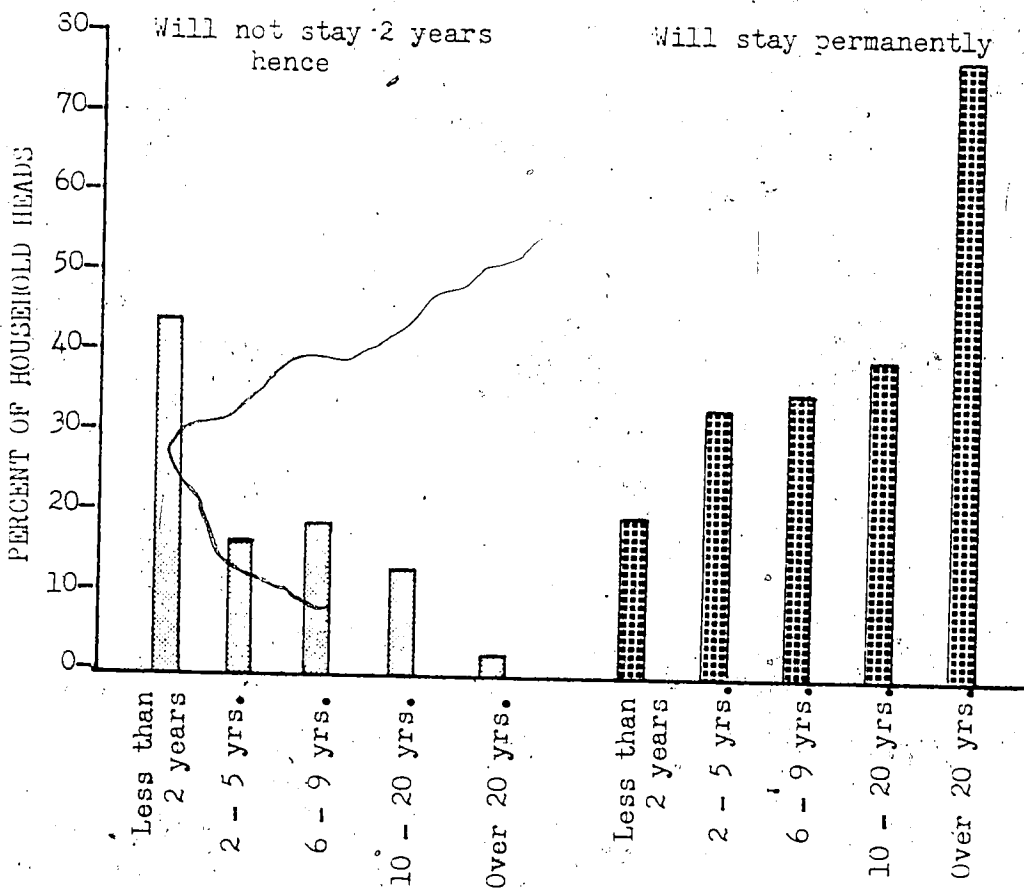
The duration of residence in a community, as an effect on future migration tendency, is a factor which has received a lot of attention in recent migration literature. McGinnis and his associates at Cornell University proposed the "axiom of cumulative inertia" which states that the probability of an individual continuing to stay in a particular community increases with increasing length of residence in that place (McGinnis, Myers, et al. 1967 and 1968). The rationale behind this proposition is that residence in the same place fosters ever increasing social ties which operate as an inertia factor which may effectively raise the social and psychological costs of migration. Hence, accumulated residence seems to generate inertia.

Generally, the results of the analysis tend to substantiate the above proposition. The inverse relationship between the duration of residence and propensity to migrate means that the longer the head stayed in the community, the less likely it is for him to migrate elsewhere. Figure 4.3 which presents the future migration tendencies of the heads

by selected length of residence status in the community also represents a confirmation to the hypothesis of "cumulative inertia".

FIGURE 4.3

DURATION OF RESIDENCE AND FUTURE MIGRATION TENDENCIES OF HOUSEHOLD HEADS (in percent)



In addition, the analysis of the head's duration of residence in the community also revealed that this factor is positively related with the age of the head, the size of the family, ownership of dwelling presently occupied, and membership of community organizations. In other words, those who had lived in the community for a relatively long period

tended to be middle-aged or older, had several children, owned the house they were living in, and belonged to one or more social organizations in the community. Such a pattern of association is indicative of strong communal ties and residential stability among the heads in the study area.

To summarise, the nature of the interrelationships between the propensity to migrate and the variables associated with heads' duration of residence in the community is presented in the following:

<u>DURATION OF RESIDENCE IN THE COMMUNITY AS RELATED TO PROPENSITY TO MIGRATE</u>	<u>CORRELATION COEFFICIENT</u>
1. Length of stay in the community	-0.380
2. Relatives and friends influenced his move to the community	-0.251
3. Owns dwelling presently staying in	-0.296
4. Plans to buy property in town	-0.339
5. Member of community organizations	-0.145

D. PERCEPTION OF THE QUALITY OF LIFE IN THE COMMUNITY

It is a commonplace that people will not stay in a given locality when they have good enough reason to move. It is equally true that they will not move if there is sufficient reason to stay. This means that if an individual is satisfied with a particular locality he will stay there as long as he wishes. Nevertheless, the degree of satisfaction which the head feels for a particular community, i.e. his "subjectively satisfying place utilities", is difficult to measure because it is influenced by a number of objective factors (age, the size of the community, the economy, etc.) as well as his subjective evaluation of the attractiveness of the

community (Pryor, 1976). Some of the subjective evaluations have increasingly been focused on quality of life issues exemplified by such phenomena as the provision of basic social services, the availability of recreational facilities and other amenities, and the general social milieu of the community. Studies have shown that the outcome of people's attitudes towards these issues varies with the background and characteristics of the individual, and could differ significantly depending on the actual situation facing him (Murphy and Colledge 1971, Saarinen 1976). Thus, it is important to analyse the interrelationships between subjective criteria and objective factors to make a meaningful assessment of the prospective migration tendencies of the heads in the study area.

In general, the analysis of the heads' perceptions and attitudes at the time of the survey showed that most of them expressed a high degree of satisfaction with the community they were living in. More specifically, the extent of their satisfaction was related positively to the provision and quality of services and amenities such as shopping, transportation, T.V. and radio in the area, and their perception that the economic opportunities in the community were good, that the people there were friendly, and the community was suitable for bringing up children.

The analysis also found that a positive relationship existed between heads' degree of satisfaction and several variables which reflected residential stability, e.g. ownership of dwelling presently occupied and membership in community organizations. Finally, there was a tendency for those heads who were satisfied with the community to express a high probability that they would continue to stay there. This latter observation confirms the hypothesis that prospective migration is directly related to one's attitude, perception and satisfaction with the quality

of life in the community.

Supplementary to the heads' degree of satisfaction with the community, their perceptions of the economic opportunities in the community were also subjected to analysis. First of all, it was found that the age of heads was inversely related to the perception of good economic opportunities. This means that younger heads were generally not impressed by the economic prospects of the study area. This finding was consistent with previous results relating to the length of stay in the community and prospective mobility. Generally, those (relatively older) heads who were satisfied with the economic opportunities of the town were also the ones who indicated that substantial changes had taken place in the population size and business activities of the community since they had moved there. In addition, ownership of the existing dwelling, and willingness to invest in more property in town, were positively associated with heads' perception of a healthy economy.

The heads' perception of the relative location of the community in which he was residing was analysed based on the question: "Do you think the community is located too far away from a big city such as Edmonton?" Several interesting observations were made. Firstly, the length of stay in the community was found to be inversely related with this variable of relative distance. This means that the longer the head had stayed in the community the less likely that he would consider it to be too far from a major city. Secondly, it was found that those heads who considered the community was located too far from a city would prefer to move to a major city, if they were given a choice. Thirdly, and most significant of all, the future migration propensity of heads was also related to the variable of relative distance, indicating a tendency for those who did

not consider the community to be located too far away from a major city to be more likely to stay in the community in the near future.

The following listing of patterns of interrelationship was prepared to serve as a summary of this section:

A. Head's Degree of Satisfaction with the Community

AND

- | | | |
|----|---|-----------|
| 1. | perception of the quality of shopping, T.V. and radio, transportation facilities | POSITIVE |
| 2. | perception of economic opportunities, and social environment (e.g. <u>friendliness of people</u>) of the community | POSITIVE* |
| 3. | ownership of present dwelling | POSITIVE |
| 4. | membership in community organization | POSITIVE |

B. Head's Perception of the Economic Opportunities in the Community

AND

- | | | |
|----|---|----------|
| 5. | perception of trends of population growth and business development | POSITIVE |
| 6. | perception of prospect for personal advancement in the community | POSITIVE |
| 7. | ownership of present dwelling and intention to purchase properties in the community | POSITIVE |

C. Head's Perception of the Relative Location of the Community*

AND

- | | | |
|----|---|----------|
| 8. | length of stay in the community | NEGATIVE |
| 9. | head will move to the city, if given a choice | POSITIVE |

* Relative location is measured by head's perception of the distance between a major city and his present community.

10. perception of quality of services, e.g. T.V. shopping, education NEGATIVE
11. head is single POSITIVE

The results of the correlation analysis describing the nature of the relationships between the propensity to migrate and the variables associated with heads' perception of the community are presented below:

<u>PERCEPTIONS OF COMMUNITY AS RELATED TO PROPENSITY TO MIGRATE</u>	<u>CORRELATION COEFFICIENT</u>
1. General satisfaction with present community	-0.322
2. Provision and quality of housing	-0.321
3. Provision and quality of education	-0.248
4. Provision and quality of shopping facilities	-0.313
5. Provision and quality of transportation	-0.255
6. Perception of economic condition of community	-0.204
7. Perception of population change since moving to community	-0.226
8. Friendliness of local residents	-0.244

3. PAST MIGRATION EXPERIENCE

Migration is a learning process. The initial reason which triggered the first move could very likely result in second and third moves. This is especially true if the first move is considered successful and the individuals involved recognize a personal gain through moving. Several studies have demonstrated that migration is a highly repetitive phenomenon and observed mobility rates tend to reflect repeated and frequent moves by the same people rather than single moves by others. Consequently, people with a history of past moves - "the chronic movers" -

show a disposition to move again (Golastain, 1964; Rogers, 1968; Morrison, 1971 and 1975).

In contrast, the same principle can be applied to those people who are "stayers". These people have a limited history of migration experience. They may have lived in the same community for an extended period of time, hence, accumulated residence generates inertia. Moreover, because of their relative inexperience in migration, these people may find it difficult to realize or implement a plan for moving. Consequently, the perceived cost of migration to these individuals will outweigh the potential benefits resulting from a move.

For this study, the head's past migration experience was measured according to the total number of inter-municipal moves which he had made since leaving school. The findings indicated that only a few variables were correlated with the head's previous migration experience. The most significant of these was the heads' propensity to migrate which was found to be positively related to past migration experience, having a correlation coefficient of 0.297. This represents a partial substantiation of the hypothesis that those who are more mobile are also in a better position to visualize and contemplate another move.

Secondly, the average length of residence in the communities and specifically the length of stay in the third community in the heads' migration history were found to be inversely related with past migration experience. The former set of relationship is a logical finding since one who frequently moved around from community to community could hardly be expected to stay in any particular locality for too long a time. With respect to the latter set of relationship, since most of the respondents reported that they had moved an average of three times since leaving school, it might be construed that the third community represented the

present one in which they were staying. If this was indeed the case, the inverse relationship between prospective migration and the length of stay in the third community (the present community), means the longer the stay in the present community, the lower was the propensity to migrate elsewhere in the future.

Finally, the annual family income was positively related to the total number of moves. This implies that the more mobile heads were those earning a higher family income.

F. PRESENT MOBILITY OR TRAVELLING PATTERNS

The nature of the interrelationships between permanent migration, present travelling patterns which do not require a change of residence, and future migration tendency, is not clear. Zelinski's hypothesis of mobility transition (1971) postulates a close association between the stage of modernization and development in a country and the frequency of travelling of its citizens. This hypothesis may be extended to include an examination of a possible linkage between the frequency of travelling and a widened information horizon of an individual with respect to opportunities and conditions existing elsewhere. The assumption here is that with the increased knowledge from travelling, more options for potential places of residence will be available to the individual if he does consider a move to another community in the future. From a social-psychological perspective, it could be postulated that the individuals who are more inclined to travel, irrespective of whether they are considering a change of permanent residence, are subjected to a greater risk (to move). This is because their "awareness space" is more extensive and

they are being influenced by more stimuli from the outside world than those who are less prone to travel. Consequently, it is logical to assume that a higher propensity to migrate is associated with this group of individuals who travel frequently to other communities (Brown and Moore, 1970).

The key variable being analysed in this section is the number of trips over 100 miles which the heads made in the last two years. Those who indicated they made a substantial number of such trips were considered very active in their travelling patterns. Several variables were found to be related to travelling patterns in the correlation analysis. The heads' length of stay in the community was inversely related to the number of trips he had made. This means that those who had stayed in the community for a relatively short period had travelled more frequently during the last two years. The age of head, the levels of educational attainment, family income, and ownership of a vehicle were found to be related to travelling patterns. Generally speaking, the younger and more educated heads, and those who had a higher family income, were among the ones who travelled more frequently than the others. Finally, based on the result of the correlation analysis, the analysis failed to establish any significant relationship between head's present travelling patterns and his propensity to migrate in spite of the fact that the latter was found to be positively related to the following variables:

1. Frequency of trips to Edmonton (correlation coefficient $r = 0.246$)
2. Frequency of social and recreational trips (correlation coefficient $r = 0.230$)
3. Ownership of a vehicle (correlation coefficient $r = 0.145$)

G. FUTURE MIGRATION TENDENCY OF HEADS — A REGRESSION MODEL

Finally, a multiple step-wise regression model, having prospective migration as the dependent variable, and a number of social, economic, behavioural and migration characteristics of the heads as independent variables was constructed. The analysis was very informative and the nine variables identified explained approximately two-thirds of the variance of the dependent variable. The following table summarizes the result of the step-wise regression analysis. The listing of independent variables as well as the number and sequence chosen are specified by the step-wise regression model.

Dependent Variable: Heads' Future Migration Tendency (Propensity to Migrate)

Independent Variables: (extracted by the regression model)

- A Heads' length of stay in community
- B Was head satisfied with community
- C Will head move to city if given a choice
- D Heads' length of stay in community C (third one)
- E Relatives and friends influenced heads' decision to move to community
- F Head intended to buy property in community
- G Total annual family income
- H Community's suitability for raising children
- I Heads' opportunities for advancement in community

RESULTS OF MULTIPLE STEPWISE REGRESSION ANALYSIS

<u>I</u> <u>VARIABLE</u>	<u>II</u> <u>MULTIPLE R</u>	<u>III</u> <u>R SQUARE</u>	<u>IV</u> <u>R SQ CHANGE</u>	<u>V</u> <u>SIMPLE R</u>	<u>VI</u> <u>B</u>	<u>VII</u> <u>BETA</u>
VAR A	0.380	0.144	0.144	-0.380	-0.098	-0.069
VAR B	0.486	0.236	0.092	0.321	0.412	0.101
VAR C	0.623	0.388	0.152	0.316	1.201	0.292
VAR D	0.662	0.438	0.050	-0.206	-0.096	-0.062
VAR E	0.700	0.490	0.052	-0.339	-2.995	-0.829
VAR F	0.741	0.549	0.050	-0.251	-2.298	-0.644
VAR G	0.764	0.584	0.035	0.130	0.237	0.198
VAR H	0.793	0.629	0.045	-0.165	-1.311	-0.308
VAR I	0.818	0.670	0.041	-0.093	-0.574	-0.269
CONSTANT					11.408	

Most of the major factors of prospective migration which were identified at the beginning of this chapter, with the exception of the present travelling patterns, were also represented in the listing. In order of importance as far as explanatory power (according to Column IV - change in R square), VAR C "Will head move to a major city if given a choice?", explained 15.2 percent of the variance of the dependent variable. This is followed by VAR A "Heads' length of stay in the present community", which explained another 14.4 percent of the variance. VAR B "Was head satisfied with community?", was the third most significant independent variable which explained 9.2 percent of the variance. VAR E "Relatives and friends influenced heads' decision to move to community" was found to be the fourth important variable affecting prospective migration, explaining 5.9 percent of the variance. The fifth variable related to whether "Head intended to buy property in the community" (VAR F). Apparently, this was also a good indication of his future mobility tendency, and accounted for another 5.2 percent of the variance.

VAR D "The length of stay in the third community" was also a fairly significant explainable variable for future migration. It accounted for 5.0 percent of the variance. The seventh variable identified in order of importance related to the social, environmental condition of the present community, or more specifically VAR H "Community's suitability for raising children". This variable explained another 4.5 percent of the variance. The head's perception of the "Opportunities for advancement in the community (VAR I) was also identified as one of the nine independent variables which accounted for 4.1 percent of the variance. Finally, an economic characteristic of the head, dealing with the level of "Annual family income" (VAR G) was the last variable identified in our analysis, explaining 3.5 percent of the variance.

Altogether these nine variables explained 67.0 percent of the variance of prospective migration and resulted in a fairly impressive multiple regression coefficient of 0.82. Conceptually, they have provided substantial support to several of the hypotheses dealing with prospective migration as a function of these factors.

CHAPTER 7

SPATIAL DIFFERENTIATIONS OF FUTURE MIGRATION TENDENCY

A. INTRODUCTION

Based on the analysis in the previous chapter, it is possible to identify the characteristics of different types of prospective migrants and non-migrants according to the factors which have been analysed and confirmed as determinants of prospective migration. The extent to which these factors vary spatially among the eight communities in the study area is the main focus of attention in this chapter. This line of investigation is based on the theoretical premise that the spatial structure of a distribution (of migration factors) is a determinant of the spatial process (of migration) as much as process is a determinant of structure, since the two are circularly causal (Ablér et al. 1971). Hence, a comparison of the characteristics of the heads of household as they pertain to future migration tendencies and to the socio-economic and geographic characteristics of the communities should provide some useful indication as to whether certain communities or group of communities in the study area are more susceptible to out-migration or to the retention of their residents. The objective of this chapter, therefore, is to determine whether the eight communities under study can be differentiated according to the future migration tendencies of their heads.

Because several of the communities, namely Stony Plain, Wabamun, Entwistle, Evansburg and Wildwood, had too small a response or coverage in the survey data for effective comparison, it was decided to group them into larger units. Entwistle, Evansburg and Wildwood which had responses of

20, 20, and 25 respectively, were therefore treated as one. These centres are located within ten miles of one another and possess relatively similar socio-economic and demographic characteristics, as the analysis in Chapter II indicated. Stony Plain and Wabamun, which had responses of 25 and 20 respectively, were also grouped together because of their relative proximity to each other. Both centres had recently experienced in-migration due to industrial development, in the case of Wabamun, and suburbanization, in the case of Stony Plain. Consequently, the following five groups of communities were formed as the main units of analysis in this chapter.

<u>COMMUNITY GROUP</u>	<u>NUMBER OF HOUSEHOLDS SURVEYED</u>
1. Stony Plain and Wabamun	45
2. Entwistle, Evansburg and Wildwood	65
3. Edson	56
4. Hinton	66
5. Jasper	41
	<hr/>
TOTAL	273

B. MIGRATION DIFFERENTIALS AND LIFE CYCLE STAGE

Based on the patterns of relationship established between the heads' future migration tendencies and their demographic and socio-economic characteristics, it was observed that those heads who exhibited a high propensity to migrate tended to be relatively young, single or married with no children, fairly well-educated and earning a high family income. Since age, marital status, family size, levels of education and family income are generally regarded as the most significant life cycle and career pattern variables which differentiate migrants from stayers, the

spatial variations of these attributes of the heads will be examined first.

Table 5.1 shows that the heads in Entwistle-Evansburg-Wildwood (EEW) had the highest median age among the five community groups. In comparison, the heads in the other communities were much younger; in fact, they vary between eight years younger in Stony Plain-Wabamun (SPW) and 14 years younger in Hinton. Since it was established that age is inversely related with the propensity to migrate, it can be inferred that the heads in EEW would be less inclined to migrate elsewhere in the future than those in any of the other study towns.

T A B L E 5.1

AGE OF HOUSEHOLD HEADS IN THE COMMUNITY
(Percentage)

AGE GROUP	SPW	EEW	EDSON	HINTON	JASPER	STUDY AREA
UNDER 25	4 (8.9)	3 (4.6)	5 (5.4)	1 (1.5)	1 (2.4)	12 (4.4)
25 - 34	8 (17.8)	8 (12.3)	17 (30.4)	23 (34.8)	9 (22.0)	65 (23.8)
35 - 44	11 (24.4)	13 (20.0)	14 (25.0)	13 (19.7)	12 (29.3)	63 (23.1)
45 - 64	12 (26.7)	21 (32.3)	17 (30.4)	23 (34.8)	16 (39.0)	39 (32.6)
OVER 65	10 (22.2)	20 (30.8)	5 (8.9)	6 (9.1)	3 (7.3)	44 (16.1)
COLUMN TOTAL	45 (100.0)	65 (100.0)	56 (100.0)	66 (100.0)	41 (100.0)	273 (100.0)
MEDIAN AGE	44	52	40	38	42	43

NOTE: SPW = Stony Plain and Wabamun
EEW = Entwistle, Evansburg and Wildwood

The age characteristic of the heads alone, however, is not sufficient to predict future migration tendencies. Two other variables, namely marital status and family size, should be analyzed in conjunction with age in order to utilize the concept of life cycle to describe the heads' propensity to migrate. With few exceptions (e.g. 8.0 percent in Jasper and EEW, 7.0 percent in SPW and 3.5 percent in Edson and Hinton), most of the heads in the study area were married. Moreover, three of the communities, Hinton, Edson and Jasper, had a relatively high proportion of heads in the 25-34 years and 35-44 years age groups (Table 5.1). These are the ages typically associated with family formation and child-rearing, as can be seen in the data on family size by number of children living with the heads at the time of the survey (Table 5.2 and Figure 5.1). Despite the evidence of Table 5.1, then, it can be concluded that the heads in these three communities, especially those who were in the family-rearing stage of life cycle, might not be inclined to move from their present communities to other places in the future.

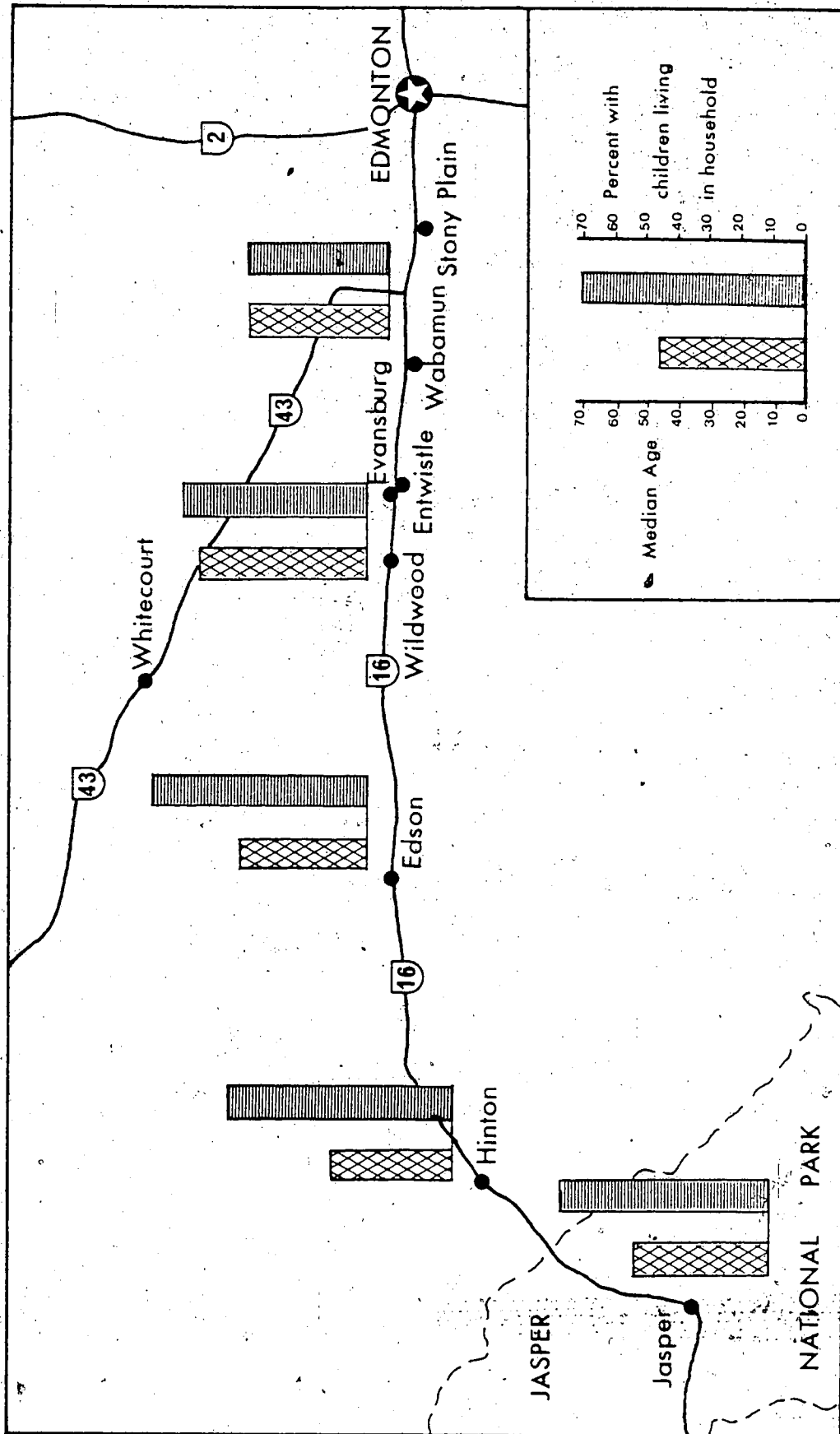
T A B L E 5.2

FAMILY SIZE BY NUMBER OF CHILDREN
LIVING WITH HOUSEHOLD HEADS (in percent)

NUMBER OF CHILDREN	SPW	EEW	EDSON	HINTON	JASPER	STUDY AREA
0	55.6	43.1	33.9	28.8	34.1	39.1
1 - 3	37.8	35.4	55.3	53.0	53.6	47.0
4 +	6.6	21.5	10.8	18.2	12.3	13.9
COLUMN TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

However, this tendency to stay in the present community might, in turn, be counter-balanced by an association with several career-pattern variables,

FIGURE 5.1
AGE AND FAMILY STATUS OF HOUSEHOLD HEADS



namely education level, family income, and occupation, which were found to be positively related with the propensity to migrate. Table 5.3 shows that the heads in Hinton, Jasper and Edson were better educated than those in EEW and SPW. Hinton had the highest proportion of heads who had completed university, whereas EEW had the highest percentage of heads who had not gone beyond elementary school.

TABLE 5.3

FORMAL EDUCATION OF HOUSEHOLD HEADS
(percentage)

EDUCATIONAL ATTAINMENT	SPW	EEW	EDSON	HINTON	JASPER	STUDY AREA
ELEMENTARY	5 (11.1)	9 (13.8)	3 (5.4)	5 (7.6)	2 (4.9)	24 (8.9)
SOME HIGH SCHOOL	24 (53.3)	34 (52.3)	21 (38.2)	35 (53.0)	24 (58.5)	138 (50.5)
FINISHED HIGH SCHOOL	12 (26.7)	12 (18.5)	22 (40.0)	15 (22.7)	11 (26.8)	72 (26.4)
SOME UNIVERSITY	2 (4.4)	4 (6.2)	4 (7.3)	3 (4.5)	1 (2.4)	14 (5.1)
UNIVERSITY DEGREE	2 (4.4)	6 (9.2)	5 (9.1)	8 (12.1)	3 (7.3)	24 (8.8)
COLUMN TOTAL	45 (100.0)	65 (100.0)	55 (100.0)	66 (100.0)	41 (100.0)	272 (100.0)

As a corollary, the heads in Edson, Hinton and Jasper were reporting a much higher average family income than their counter-parts in SPW and EEW, as indicated in the following:

COMMUNITY GROUPS AVERAGE ANNUAL FAMILY INCOME

SPW \$7,800

EEW \$6,400

Edson \$11,250

Hinton \$10,650

Jasper \$9,570

This distribution was obviously related to local employment conditions, since a large proportion of the heads in Jasper, Edson, Hinton and, to a lesser extent, SPW, were engaged in traditionally high-paying occupations, such as managerial, professional, processing and craft activities. These occupations are normally related to a high propensity to migrate. In comparison, a sizeable proportion of the heads in EEW was engaged in occupations which normally reflect low propensity to migrate, e.g. farming and sales. Moreover, EEW also had the highest proportion of heads who had retired (22 percent), compared with Hinton with three percent of its heads in this category.

In summary, this section has revealed some interesting patterns of variation of characteristics of heads of household among the five community groups. In general, the heads in EEW and SPW would show a lower tendency to migrate in the future because of their relatively older age, lower educational attainment and lower family income. Furthermore, many of them had retired from active employment. By contrast, the demographic and socio-economic characteristics of the heads in Hinton, Edson and Jasper would indicate a higher propensity to migrate. Nevertheless, because of their relative youthfulness, many of them were in the family formation stage of the life cycle, which effectively dampened their propensity to migrate in the near future.

C. LENGTH OF STAY IN THE COMMUNITY

From the multiple regression analysis in Chapter IV it emerged that the heads' duration of residence in the community was one of the most significant explanatory variables of prospective migration. The spatial differentiation of several variables dealing either directly with the

heads' length of stay in the community or with functions of heads' length of stay, such as ownership of property, membership in local community organizations and presence of relatives or close friends in the community, will therefore be presented in this section.

Generally, it has been found that the duration of residence is inversely related with the heads' propensity to migrate. As Table 5.4 indicates, the heads in EEW had lived there for a very long time, as compared to those in Hinton and Jasper whose stay averaged ten and thirteen years, respectively. Hence, it could be concluded that the heads in Hinton and Jasper should possess a higher propensity to migrate.

TABLE 5.4

HEADS' LENGTH OF STAY IN THE COMMUNITY
(Percentage)

	SPW	EEW	EDSON	HINTON	JASPER	STUDY AREA
5 YEARS OR LESS	11 (25.6)	13 (24.1)	13 (26.0)	17 (25.7)	15 (38.5)	69 (27.4)
6 - 20 YEARS	19 (44.2)	20 (37.1)	19 (38.0)	47 (71.2)	15 (38.5)	120 (47.6)
OVER 20 YEARS	13 (30.2)	21 (38.9)	18 (36.0)	2 (3.0)	9 (23.1)	63 (25.0)
COLUMN TOTAL	43 (100.0)	54 (100.0)	50 (100.0)	66 (100.0)	39 (100.0)	252 (100.0)
AVERAGE LENGTH OF STAY (IN YEARS)	17.2	23.6	16.2	9.7	12.5	17.9

The heads' duration of residence in a community is actually an answer to the question: "When did the head move to the community?" However, in a situation like that of Hinton, where over 70 percent of the heads have been residents between 0 and 20 years, and only three percent had lived there for longer than 20 years, this variable of head's duration of resi-

ence can sometimes reveal why the heads had moved to the community in the first place. In the case of Hinton, this was, of course, due to the fact that the town did not become an economically viable community until its main employer, Northwestern Pulp and Paper Ltd. was established in 1956. Generally speaking, the relevance of this observation to research on prospective migration tendency depends on whether these "newcomers" who are known to possess characteristics that are highly selective of the migration process would be prepared to stay and establish their livelihood in the community in the future, as a large proportion of the heads in places like EEM and SPW had obviously decided to do. An analysis of several variables which were found to be functions of residential stability might shed some light on this question.

Firstly, the variable "whether head owns the dwelling he was living in", was found to be positively related with his propensity to stay in the community. The result of the cross-tabulation by community groups on this variable indicated 32 percent of the heads in EEM responded affirmatively to this question. This was followed by 77 percent of the heads in Hinton as well as in Edison, 62 percent in SPW and 56 percent in Jasper who also expressed the same affirmative reply. One can conclude that the patterns of interrelationship between migration intentions, length of stay in the community and head's ownership of the dwelling in which he was living have, so far, proven very consistent.

Secondly, as a corollary of the above, even though a positive relationship was identified between propensity to stay and the variable "whether head intends to buy property in the community", the result of the cross-tabulation by community groups was not conclusive in substantiating this set of relationships. This could be attributed to the fact that only 71 heads responded to the question, and only in Edison

and Hinton did slightly over half of the respondents indicate that they intended to buy property in the community.

Thirdly, the variable "whether relatives and/or friends influenced head's decision in moving to the community", also indicated a positive relationship with his propensity to stay in the community. As in the previous situation, only 100 heads responded to this question (the remainder did not have relatives or friends living in the community at the time of their move). And of those who responded, 59 percent of the heads in SPW indicated in the affirmative, followed by 50 percent of the heads in Hinton, 42 percent in Jasper, 41 percent in Edson and 36 percent in EEW.

Finally, the variable "whether head belongs to any community organizations", was found to be directly related with duration of residence. The analysis showed that a large majority (over two-thirds) of the heads responded affirmatively to this question. However, the spatial variation of this attribute by community groups was not pronounced. Among the heads who were members of local organizations, 80 percent of those in SPW reported they belonged to one or two organizations, and there were slightly lower proportions in EEW and in Hinton. The heads in Jasper and Edson were found to be more active, at least with respect to the number of associations and organizations which they belonged to, since approximately 40 percent of them indicated they were members of three or more organizations in the community.

In summary, taking into consideration the positive relationship between the length of stay in the community, ownership of existing dwellings and the head's future migration tendencies, it can be concluded that the heads in EEW, SPW and, to a lesser extent, in Edson, would be more inclined to continue to stay in their communities in the future. The situation in

Hinton was rather unique. There, over 80 percent of the heads owned their present dwellings in spite of the briefest duration of residence among the community groups. Since the latter was chiefly a function of the history of the town, it is probable that the heads in Hinton would show a high propensity to stay as well.

D. HEAD'S DEGREE OF SATISFACTION WITH THE COMMUNITY

A number of variables dealing with the head's relative degree of satisfaction with the community were found to be functionally related with his prospective migration tendency. Some of these variables are: whether the head was generally satisfied with the community since moving there, and his relative degree of satisfaction with the quality and provision of basic social services such as housing, education, shopping and transportation facilities in the community. In general, it was found that those heads who were satisfied with their communities, as well as with the services available there, were more inclined to stay in the future. Since these responses differ quite significantly according to the location of the communities in the study area, this section will present the patterns of spatial variation of some of these variables.

From Table 5.5, it can be observed that an overwhelming proportion of the heads in all communities responded that they were satisfied. Jasper had the highest proportion (95 percent) whereas the lowest, EEW, was almost 86 percent.

T A B L E 5.5

HOUSEHOLD HEADS' DEGREE OF SATISFACTION WITH THE COMMUNITY
(Percentage)

RESPONSE	SPW	EEW	EDSCH	HINTON	JASPER	STUDY AREA
YES	41 (91.1)	55 (85.9)	47 (87.0)	62 (93.9)	39 (95.1)	244 (90.4)
FAIR	2 (4.4)	7 (10.9)	7 (13.0)	3 (4.5)	1 (2.4)	20 (7.4)
NO	2 (4.4)	2 (3.1)	0 (0.0)	1 (1.5)	1 (2.4)	6 (2.3)
COLUMN TOTAL	45 (100.0)	64 (100.0)	54 (100.0)	66 (100.0)	41 (100.0)	270 (100.0)

Apparently, economic factors chiefly explain why the heads in Jasper were pleased with their community, since over half of them considered job opportunities were favourable in the community (Table 5.6). On the other hand, the heads in Hinton gave amenities as the main reason for their satisfaction with the town. Social ties was the key reason for satisfaction with the community in both SPW and EEW, being cited by approximately 40 percent of the heads in each community. Finally, the heads in Edison also gave amenities and job opportunities as the reasons for satisfaction with the towns.

Two conclusions can be drawn from these data. Firstly, because of the high general level of satisfaction, most heads could be expected to continue to live in their communities. Secondly, since there was little spatial variation among the heads who expressed some dissatisfaction with their communities, it would be rather difficult to relate these findings with their migration tendencies by community groups. Even though the reasons for the heads' satisfaction with their communities were available, it is evident from the migration literature that social ties,

amenities and quality of life are as important as economic factors in their respective effects on the future migration tendencies of heads. In fact, recent studies have concluded that while economic conditions might be most influential as "pull" factors, social psychological reasons are the most crucial factors which determine whether people will continue to stay in a community or not (e.g. Toney 1976, 1978; Magladry, 1978). This suggests that Jasper's residents would be more likely to act against the evidence of Tables 5.5 and 5.6 with respect to their general satisfaction with the community. If better opportunities emerge elsewhere, there will be little to hold them in Jasper.

T A B L E 5.6

PRIMARY REASONS WHY HEAD WAS SATISFIED WITH THE COMMUNITY
(Percentage)

REASONS	SPW	EEW	EDSON	HINTON	JASPER	STUDY AREA
JOB OPPORTUNITIES AND PERSONAL ADVANCEMENT	10 (23.8)	13 (24.1)	16 (34.0)	16 (25.4)	20 (55.6)	75 (31.0)
SOCIAL TIES	17 (40.5)	22 (40.7)	11 (23.4)	12 (19.0)	4 (11.1)	66 (27.3)
AMENITIES AND QUALITY OF LIFE	12 (28.6)	17 (31.5)	19 (40.4)	34 (54.0)	11 (30.6)	93 (38.4)
OTHERS	3 (7.1)	2 (3.7)	1 (2.1)	1 (1.6)	1 (2.8)	3 (3.3)
COLUMN TOTAL	42 (100.0)	54 (100.0)	47 (100.0)	63 (100.0)	36 (100.0)	242 (100.0)

The analysis in Chapter IV also found that the propensity to migrate was inversely related to the head's perceptions of the quality and provision of basic services in the community. In particular, the head's reaction towards four specific services - namely, housing, shopping,

TABLE 5.7

HOUSEHOLD HEAD'S REACTION TO QUALITY AND PROVISION OF
SELECTED BASIC SERVICES
(Percentage)

SERVICES	RESPONSE	SEW	EM	EDSCH	HINTON	JASPER	STUDY AREA
HOUSING	GOOD	16 (36.4)	19 (30.2)	25 (44.6)	53 (30.3)	6 (15.0)	119 (44.2)
	FAIR	23 (52.3)	35 (55.6)	26 (46.4)	11 (16.7)	7 (17.5)	102 (37.9)
	POOR	5 (11.4)	9 (14.3)	5 (8.9)	2 (3.0)	27 (67.5)	49 (17.8)
	TOTAL	44 (100.0)	63 (100.0)	56 (100.0)	66 (100.0)	40 (100.0)	270 (100.0)
SHOPPING	GOOD	16 (35.6)	16 (25.4)	33 (58.9)	30 (46.2)	0 (24.4)	104 (38.7)
	FAIR	19 (42.2)	29 (46.0)	21 (37.5)	28 (43.1)	13 (31.7)	110 (40.9)
	POOR	10 (22.2)	18 (28.6)	2 (3.6)	7 (10.8)	13 (43.9)	55 (20.5)
	TOTAL	45 (100.0)	63 (100.0)	56 (100.0)	65 (100.0)	31 (100.0)	269 (100.0)
TRANSPORTATION	GOOD	24 (55.8)	41 (66.1)	48 (85.7)	33 (50.3)	31 (77.5)	177 (66.5)
	FAIR	14 (32.6)	18 (29.0)	6 (10.7)	23 (43.1)	6 (15.0)	72 (27.1)
	POOR	5 (11.6)	3 (4.8)	2 (3.6)	4 (6.2)	3 (7.5)	17 (6.4)
	TOTAL	43 (100.0)	62 (100.0)	56 (100.0)	65 (100.0)	40 (100.0)	260 (100.0)
EDUCATION	GOOD	27 (71.7)	44 (71.0)	48 (85.7)	48 (72.7)	23 (60.5)	190 (73.1)
	FAIR	9 (23.7)	18 (29.0)	8 (14.3)	15 (22.7)	14 (36.8)	64 (24.6)
	POOR	2 (5.3)	0 (0.0)	0 (0.0)	3 (4.5)	1 (2.6)	6 (2.6)
	TOTAL	38 (100.0)	62 (100.0)	56 (100.0)	66 (100.0)	38 (100.0)	260 (100.0)

transportation and education - resulted in significantly high correlation coefficients with prospective migration tendencies.

It can be observed from Table 5.7 that the heads were generally more satisfied with the provision of transportation and educational services than with housing and shopping. In particular, those in Jasper were more critical of these latter two services. This could be due to Parks Canada's policy of restricted growth which resulted in a chronic shortage of residential lots and a service expansion which failed to satisfy the growth pressures of Jasper's population. To a lesser extent, the heads in EEW were also not pleased with the quality of these two services. A small population and a relatively poor economic base could be the responsible factors in these communities. By contrast, the heads in Hinton and Edson were generally satisfied with the quality and provision of basic services, while those in SPW reacted in a manner which approximated the average condition among the five community groups.

Finally, the overall reaction of the heads on the quality of these four basic services in their communities can be synthesized and differentiated according to their scores on a Composite Index of Satisfaction (CIS)* specially designed for this purpose. The scores of the communities on the CIS are derived from the following formulae:

$$CIS = \sum_{i=a}^d (\% \text{ good}_i \times 3 + \% \text{ fair}_i \times 2 + \% \text{ poor}_i)$$

WHERE a = housing, b = shopping, c = transportation,
d = education

This resulted in the following ranking for the community groups:

RANK	COMMUNITY	SCORE
1	Edson	1 053
2	Hinton	1 027
3	SPW	948
4	EEW	944
5	Jasper	850

Obviously, the scores allotted to the community groups represent an arbitrary way of differentiating the communities. The absolute values of the scores calculated for the community groups in this instance are not as significant as their positions relative to one another, i.e. the ranking of the community groups. Since the heads' degree of satisfaction with the quality of basic services was found to be inversely related with their propensity to migrate, the ranking of the communities by means of the CIS could therefore be used as a surrogate to describe prospective migration tendencies. Accordingly, it can be concluded that the heads in Edson would exhibit the highest propensity to stay, whereas those in Jasper would show the highest tendency to move elsewhere in the future, and the heads in Hinton, SPW, and EEW would show varying propensities to stay (in descending order) according to their respective scores on the CIS.

E. HEAD'S PERCEPTION OF THE COMMUNITY

The analysis in Chapter IV also revealed a close association between prospective migration and the head's perception of changes in population

and business activities, the general economic conditions of the community (at the time of the survey), and the future prospect for personal advancement in the same community. Generally, if the head has a favourable perception of these macro-environmental conditions in his community, there is a higher probability that he will continue to stay there.

Based on the response to the question: "whether there have been any major changes in the population size and business activities of the community since their arrival?" (Table 5.3), it was found that more than half of the heads in Hinton, Jasper and Edson felt that the population size and the business activities of their communities had undergone significant growth since they moved there, whereas only 20 to 30 percent of the heads in EEW and SPW felt the same.

T A B L E 5.3
PERCEPTION OF CHANGES IN POPULATION AND BUSINESS
ACTIVITIES SINCE MOVING TO THE COMMUNITY
(Percentage)

	SPW	EEW	EDSON	HINTON	JASPER	STUDY AREA
A. POPULATION:						
Significant Change	13 (31.0)	11 (17.7)	30 (55.6)	46 (75.4)	23 (57.5)	123 (47.5)
Moderate Change	14 (33.3)	25 (40.3)	14 (25.9)	12 (19.7)	10 (27.5)	76 (29.4)
Limited Change	15 (35.7)	26 (41.9)	10 (18.5)	3 (4.9)	6 (15.0)	60 (23.2)
COLUMN TOTAL	42 (100.0)	62 (100.0)	54 (100.0)	61 (100.0)	39 (100.0)	259 (100.0)
B. BUSINESS ACTIVITIES:						
Significant Change	11 (26.3)	13 (20.6)	33 (67.3)	48 (80.0)	26 (66.7)	131 (52.0)
Moderate Change	12 (29.3)	21 (33.3)	9 (18.4)	9 (15.0)	9 (23.1)	60 (23.3)
Limited	18 (43.9)	29 (46.0)	7 (14.3)	3 (5.0)	4 (10.3)	61 (24.2)
COLUMN TOTAL	41 (100.0)	63 (100.0)	49 (100.0)	60 (100.0)	39 (100.0)	252 (100.0)

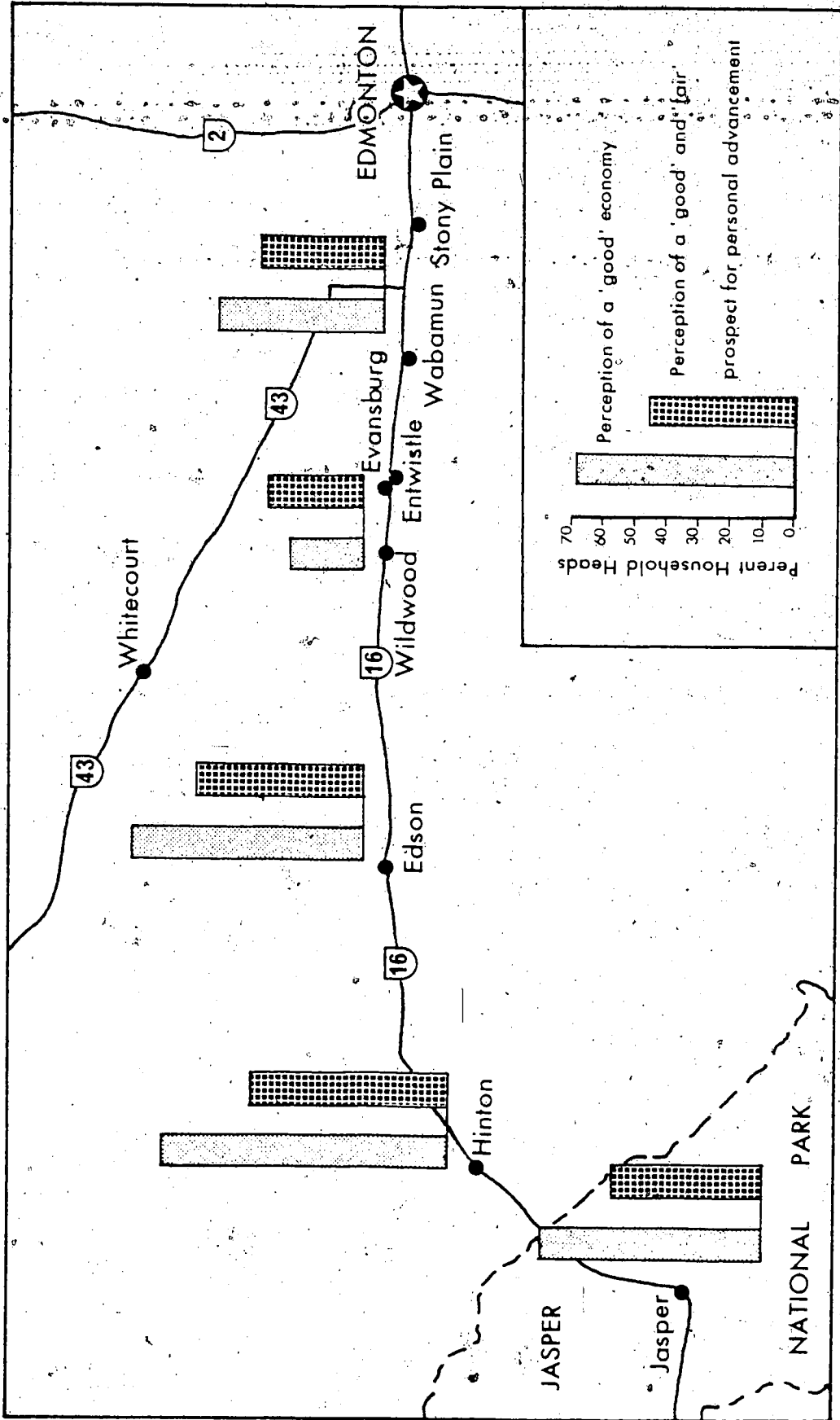
With respect to the perception of economic conditions in the community, (Table 5.9) Hinton had the highest percentage of heads (91 percent) who felt that the economy of the community was "good". The heads in Edson (74 percent) and Jasper (70 percent) also expressed positive sentiments, whereas only 23 percent of the heads in BEM and slightly over half of those in SPW indicated that the economic condition of the communities was "good". A similar pattern emerged when the heads were asked to comment on the perceptions of their own prospects for future advancement in the communities (Table 5.10).

T A B L E 5.9
PERCEPTION OF ECONOMIC CONDITIONS OF THE COMMUNITY
(Percentage)

RESPONSE	SPW	BEM	EDSON	HINTON	JASPER	STUDY AREA
GOOD	22 (53.7)	14 (23.0)	39 (73.6)	59 (90.8)	27 (69.2)	161 (62.2)
FAIR	3 (7.3)	13 (21.3)	8 (15.1)	5 (7.7)	6 (15.4)	35 (13.5)
POOR	16 (39.0)	24 (55.7)	6 (11.3)	1 (1.5)	6 (15.4)	63 (24.3)
COLUMN TOTAL	41 (100.0)	51 (100.0)	53 (100.0)	65 (100.0)	39 (100.0)	259 (100.0)

At the same time, however, a comparison of the results in Tables 5.9 and 5.10 reveals that the numbers and proportions of heads who perceived "good" prospects for personal advancement in the community were substantially lower than the number and proportion who considered that the economic condition in the community was "good", 22 percent and 62 percent, respectively (Figure 5.2). This apparent discrepancy is interesting because it implies that what was perceived on a general scale by the heads,

FIGURE 5.2
PERCEPTIONS OF ECONOMIC CONDITIONS AND PROSPECT FOR PERSONAL ADVANCEMENT



i.e., the economic condition of the community, could be very different from their perception at a personal level, i.e., the prospect for their own future advancement.

T A B L E 5.10

PERCEPTION OF PROSPECT FOR FUTURE ADVANCEMENT
IN THE COMMUNITY
(percentage)

RESPONSE	SPW	EEW	EBSON	HINTON	JASPER	STUDY AREA
GOOD	8 (18.6)	11 (16.9)	14 (25.9)	15 (23.1)	10 (25.0)	58 (21.7)
FAIR	9 (20.9)	8 (12.3)	15 (27.8)	26 (40.0)	9 (22.5)	66 (25.1)
POOR	26 (60.5)	46 (70.8)	25 (46.3)	24 (36.9)	21 (52.5)	142 (53.2)
COLUMN TOTAL	43 (100.0)	65 (100.0)	54 (100.0)	65 (100.0)	40 (100.0)	266 (100.0)

Possibly, the heads were implying that, in spite of a generally favourable economic condition in the communities, their personal advancement would not be enhanced to any appreciable extent by staying there. This means that most of them had already reached the upper limit for future advancement in their particular areas of work in the communities and only migration to some other localities might result in an improvement. Alternatively, it might also mean that personal advancement or improvement was not important to them. For instance, a large majority or 70 percent of the heads in EEW considered that the prospect for future advancement in the communities was poor. In view of the relatively limited economic opportunities and the aging population structure in EEW, such a finding was to be expected. In contrast, only 37 percent and 46 percent of the

heads in Hinton and Edson, respectively, considered the prospect for advancement in their communities was poor.

To summarize, the observations presented in this section tended to favour the communities of Hinton, Edson and Jasper with respect to the head's perception of the general economic conditions, and the extent of changes in population and business activities. Based on the relationships established between head's prospective migration tendency and his perception of various phenomena pertaining to the community, everything being equal, one can expect the heads in these three communities to demonstrate a higher propensity to stay in their communities, than those living in SPW and EEW.

F. PAST MIGRATION EXPERIENCE OF HEADS

The spatial variation of the head's past migration experience might exert a significant influence on the future migration tendencies by community groups.

In general, approximately 60 percent of the heads in the study area had moved three or less times since leaving school (Table 5.11). The residents of Jasper exhibited the highest degree of migration experience, according to the average number of moves made by the heads since leaving school. Edson was second while SPW, EEW and Hinton were clustered at the bottom of the range. Based on the established association that the propensity to migrate is positively related with the head's past migration experience, it can be concluded that the heads in Jasper and Edson would exhibit a higher tendency of prospective migration than those living in SPW, EEW and Hinton.

TABLE 5.11

PAST MIGRATION EXPERIENCE OF HOUSEHOLD HEADS
(Percentage)

NO. OF MOVES	SPM-	BEW	EDDON	HINTON	GASPER	STUDY AREA
1 OR LESS	16 (35.6)	16 (24.6)	12 (21.4)	19 (23.3)	8 (19.5)	71 (26.0)
2 - 3	12 (26.7)	26 (40.0)	21 (37.5)	23 (34.3)	12 (29.3)	94 (34.4)
4 - 5	9 (20.0)	17 (26.1)	11 (19.6)	17 (25.3)	13 (31.7)	67 (24.6)
6 OR MORE	3 (17.7)	6 (9.2)	12 (21.4)	7 (10.6)	8 (19.5)	41 (15.0)
COLUMN TOTAL	45 (100.0)	65 (100.0)	56 (100.0)	66 (100.0)	41 (100.0)	273 (100.0)
AVERAGE NUMBER OF MOVES	3.0	2.9	3.3	2.9	3.5	3.1

G. SUMMARY

The preceding sections have examined the spatial variations of a number of factors which were found to be functionally related with prospective migration tendencies of heads. The objective of the analysis was to differentiate the communities under study according to their residents' future migration intentions. As a summary, a synoptic table with rank-orderings of communities according to several key factors of prospective migration was prepared (Table 5.12). The magnitude of the rank or score on each migration factor is positively correlated with the propensity to migrate. This means that comparatively, the higher the score for a community, the more likely it is for its heads to move. For example, a score of 5 on the factor - age of heads - indicates relatively

youthful population which is an attribute directly related to a high migration propensity, and conversely, a score of 1 on this factor means aging population, and low propensity to migrate.

T A B L E 5.12
RANK-ORDERING OF COMMUNITIES BY SELECTED FACTORS OF PROSPECTIVE MIGRATION: A SYNTHESIS

MIGRATION FACTORS	SPW	EEW	EDSON	HINTON	JASPER
AGE OF HEAD	2	1	4	5	3
MARITAL STATUS AND FAMILY SIZE	5	4	2	1	3
EDUCATIONAL LEVEL AND FAMILY INCOME	2	1	5	3	4
LENGTH OF RESIDENCE	3	1	2	5	4
SATISFACTION WITH SERVICES AND AMENITIES	3	4	1	2	5
PERCEPTION OF THE LOCAL ECONOMY	4	5	2	1	3
PAST MIGRATION EXPERIENCE	3	2	4	1	5
TOTAL	22	18	20	13	27

The result of the rank-orderings of communities suggests that the residents in Jasper were characterized by the highest propensity to migrate, since that community received the highest score of those factors which were found to be positively related with prospective migration.

For example, among the community groups Jasper possessed the largest proportion of its heads who indicated the following characteristics:

- a) they were relatively young, well-educated and earning a high family income;

- b) they had stayed in the community for a relatively brief period;
- c) though very satisfied with their move to the community, they were least happy with the quality and provision of basic services and facilities, such as housing and shopping;
- d) they had the most extensive experience in migration according to the number of moves since leaving school.

The heads in SPW (Stony Plain-Wabamun) "scored" second according to the same variables. They were followed by Edson, in third place, and Hinton and EEW (Entwistle-Evansburg-Wildwood), sharing fourth.

Finally, this rank-ordering of communities by the key determinants of prospective migration was compared with data which directly describe the heads' stated migration intentions (Table 5.13).

TABLE 5.13

FUTURE MIGRATION TENDENCIES OF HOUSEHOLD HEADS (Percentage)

RESPONSE	SPW	EEW	EDSON	HINTON	JASPER	STUDY AREA
<u>WILL STAY IN COMMUNITY</u>						
2 YEARS HENCE	6 (13.3)	13 (20.0)	3 (14.3)	11 (16.9)	3 (7.7)	41 (15.2)
5 YEARS HENCE	6 (11.1)	5 (7.7)	5 (14.3)	6 (9.2)	3 (20.5)	33 (11.9)
10 YEARS HENCE	8 (17.3)	4 (6.2)	9 (16.1)	7 (10.3)	7 (17.9)	35 (13.3)
PERMANENTLY	17 (37.3)	34 (52.3)	22 (39.3)	33 (50.3)	13 (33.3)	119 (44.1)
<u>WILL NOT STAY</u>						
2 YEARS HENCE	9 (20.0)	7 (10.3)	7 (12.5)	5 (7.7)	3 (20.5)	36 (13.3)
NOT SURE	0 (0.0)	2 (3.1)	2 (3.6)	3 (4.6)	0 (0.0)	7 (2.6)
<u>COLUMN TOTAL</u>	46 (100.0)	65 (100.0)	56 (100.0)	65 (100.0)	39 (100.0)	271 (100.0)

To facilitate this comparison, a Composite Index of Prospective Migration (CIPM) based on information presented in Table 5.13 and derived according to the following formulae was developed:

$$\text{CIPM} = (3A \times 2 + 3B \times 5 + 3C \times 10 + 3D \times 30) - (3Y \times 20 + 3Z \times 10)$$

- WHERE A = Will stay in community two years hence,
 B = Will stay in community five years hence,
 C = Will stay in community ten years hence,
 D = Will stay in community permanently,
 Y = Will leave community 2 years hence,
 Z = Not sure of migration plan.

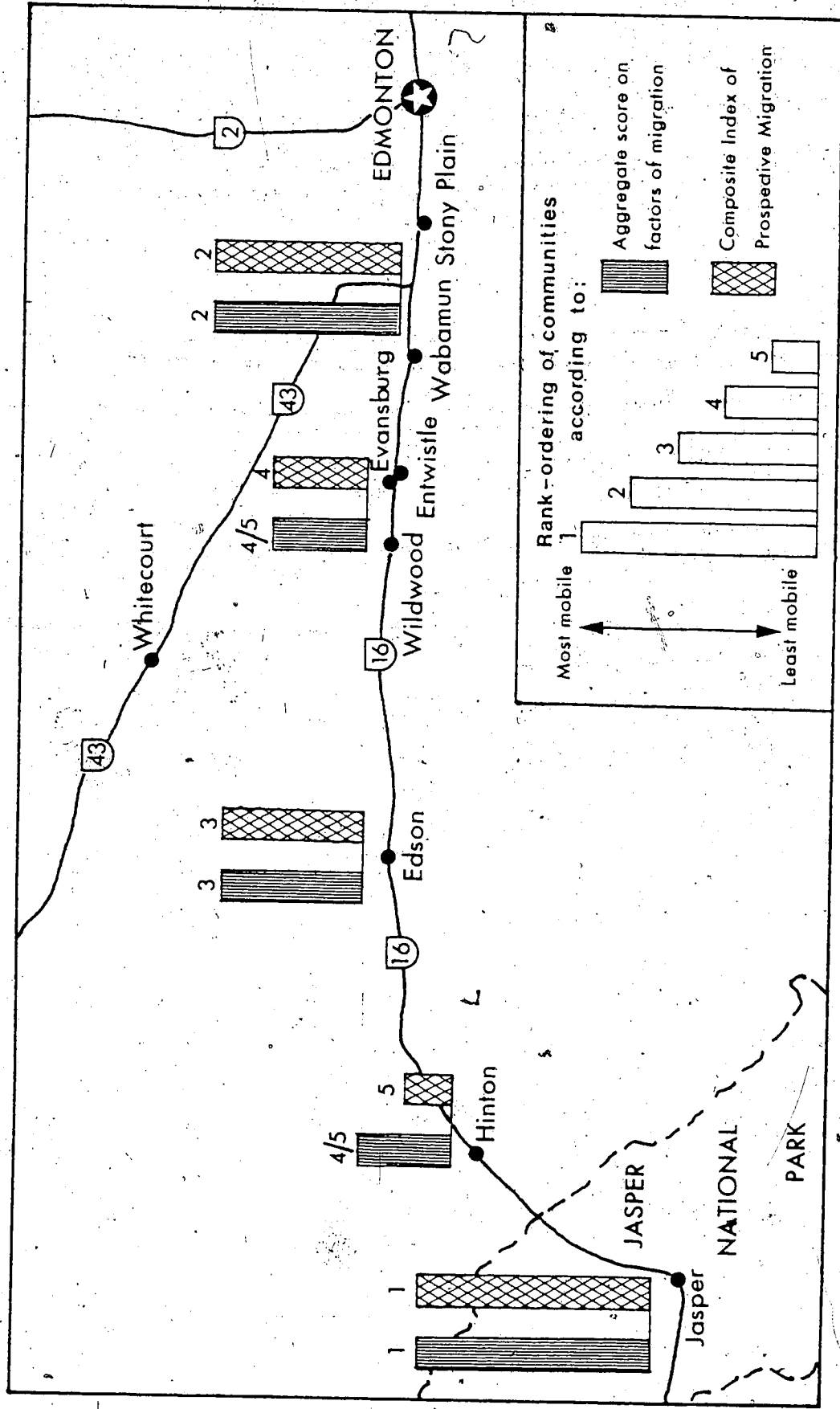
The resulting scores of the community groups on the CIPM as well as their relative positions (or rank-ordering) on the continuum of prospective migration which ranges from most mobile to least mobile compared very well with the previous set of rank-ordering of communities based on the key determinants of prospective migration (Table 5.14 and Figure 5.3).

T A B L E 5.14
 RANK-ORDERING OF COMMUNITIES BY COMPOSITE INDEX
 OF PROSPECTIVE MIGRATION

RANK	COMMUNITY	SCORE
1 (most mobile)	Jasper	365
2	SPW	995
3	Edson	1 150
4	EEW	1 453
5 (least mobile)	Hinton	1 926

In conclusion, the analysis in this chapter has come up with some

FIGURE 5.3
FUTURE MIGRATION TENDENCIES OF HOUSEHOLD HEADS



consistent findings which differentiate the communities according to their residents' future migration tendencies. More specifically, it was found that residents living in Jasper, Stony Plain, Wabamun and to a lesser extent, Edson, would be more susceptible to out-migration in the future than those living in Hinton, Entwistle, Evansburg and Wildwood. It should be noted, however, the factors which influence prospective migration tendencies tend to exert differential effects on different segments of the population in these community groups, to the extent that the impacts of these factors sometimes counter-act one another in affecting future migration tendencies. Therefore, it is quite possible that while certain evidence might point to a high propensity to migrate (e.g. the heads' unfavourable perceptions of the economy in EEM), other more convincing evidence (e.g. migration differentials and life cycle stage of the heads in EEM) would support an opposite conclusion with respect to the heads' future migration tendencies in the community.

CHAPTER VI

SUMMARY AND CONCLUSION

A. INTRODUCTION

This thesis has utilized an interdisciplinary approach to study the past migration patterns and the future migration tendencies of a selected group of heads of household in eight communities of west-central Alberta. The main objectives of the study have been: i) to identify the characteristics of the migrants, including prospective migrants and non-migrants, ii) to identify the relationship between past migration and future migration, iii) to identify the reasons or causes of past migration and the determinants for future migration, and iv) to identify the patterns of spatial variations of the determinants of prospective migration among the communities in the study area. This chapter will summarise the main findings and discuss their policy implications. Finally, a few recommendations will be made as guidelines for future research.

B. SUMMARY OF FINDINGS

1. The Move to the Communities - Generally speaking, the results of this aspect of the research illustrated a remarkable consistency with the findings of more previous works in migration studies. With respect to the origins of the migrants, it was found that a significant proportion of them came from places within the province. Many of them, in fact, had lived in the vicinity of these communities for a number of years. Only the larger centres of Hinton, Edson, Jasper and Stony Plain were able to attract in-

migrants from large urban and metropolitan centres such as Edmonton and Calgary. By the same token, migrants from out-of-province and overseas tended to migrate to these places.

Secondly, with respect to the time when the migrants moved to the communities, it was found that the average move was made about eighteen years ago. Only eight percent of the migrants had lived in the study area for two or less years. Generally speaking, the timing of the moves corresponded with the history of economic and industrial development in the study area, consequently, distinguishable "waves" of in-migration can be identified. For instance, many of the "old-timers" who came twenty or more years ago to take up homesteads in the rural areas had since retired and moved to the surrounding villages and towns such as Wildwood, Entwistle and Stony Plain. Those who came within the last fifteen years tended to settle in places like Hinton, Edson, Jasper and Wabamun because of new employment opportunities in these places. More recently, the trend to suburbanization resulted in a large number of migrants to Stony Plain, which is located within commuting distance of metropolitan Edmonton.

Thirdly, the demographic and socio-economic characteristics normally associated with the selectivity of migrants were found to hold true in the analysis. A sizeable percentage of roughly two-thirds of the migrants were under 35 years of age at the time of their move. Many of them were married and came with a small family. The age of the migrants was found to be inversely related with their educational attainment. Those with technical and professional training were attracted to the larger centres such as Hinton, Edson and Jasper where employment opportunities in their fields of specialty were more plentiful. Furthermore, approximately 42 percent of the migrant heads were in managerial, professional

and technical processing types of occupations. In comparison, the migrants destined to smaller centres were characterised by an older age, a larger number of dependants, a lower level of educational attainment and employment in non-professional occupations. An exception to the last case was found in Evansburg where a number of teachers had settled.

Finally, with respect to the reasons for moving to the communities, it was found that two-thirds of the moves were related to employment. Three sub-categories were identified: i) those who were transferred by their employers to one of the communities in the study area (they accounted for 40 percent of the group), ii) those who came to a pre-arranged employment (45 percent), and iii) those who came in search of a job (15 percent). It was interesting to observe that an overwhelming majority of those in the first and the third sub-categories were destined to the four towns in the study area.

The second most important reason for moving to the communities related to locational and environmental factors. These factors included such things as the heads' familiarity with the place of destination, place utilities and amenities, and the location of the community of destination in relation with other urban centres (e.g. Edmonton) and major scenic attractions (e.g. Jasper National Park). This particular reason accounted for about 20 percent of the moves.

Thirdly, social ties (i.e. the presence of relatives and friends at the place of destination) were reported as the explanation for about 11 percent of the moves. It was found that more of the heads in the villages tended to favour this as their migration reason. Lastly, retirement led roughly three percent of the heads to move to the communities. Again, the villages took in a relatively larger proportion of this class of migrants.

Based on the analysis, the characteristics of an "average" migrant and a typology of migrants have been presented as a synthesis. Five key factors i) migration differentials, ii) reasons for moving, iii) places of origin and destination, iv) distance travelled by migrants, and v) the duration of residence in the present community were used as basis for the formulation of a typology which includes five migrant profiles: a) young professionals, b) retirees and pensioners, c) local businessmen, d) blue-collar workers, and e) former local residents.

2. Determinants of Prospective Migration - In analysing the future migration tendencies of the heads of household according to theoretical constructs and propositions of various disciplines in the social sciences, many of the propositions have been confirmed and new insights gained regarding factors affecting prospective migration. Essentially, it was found that different segments of the population are likely to vary considerably in their propensity to migrate. The main factors which are functionally related to prospective migration are: i) migration differentials and life cycle, ii) duration of residence in the community, iii) perception and satisfaction with the community, and iv) past migration experience. More specifically, the following findings and validations of theoretical propositions can be enumerated:

a) The propensity to migrate varies inversely with age, i.e. the older the head is, the less likely it is for him to move to another community.

b) In conjunction with age, marital status and family size, generally, the middle-aged head of household, who is married and at the child-bearing or rearing stage of his life cycle tends to exhibit a lower propensity to migrate.

c) Generally, the head's educational attainment and level of family income are directly related to propensity to migrate. In addition, those of professional and managerial occupations and those who are skilled craftsmen are more migratory than their counterparts in other occupations such as sales, clerical, farming and in retirement.

d) Generally, the length of residence in a community varies inversely with propensity to migrate. Furthermore, the length of residence was found to be directly related with ownership of dwelling, degree of satisfaction with the community, presence of friends and relatives, and membership in local community organizations.

e) Generally, the propensity to migrate varies inversely with the head's degree of satisfaction with the community, particularly with respect to the quality and provision of basic services such as housing, shopping, medical services and communication media. In addition, the head's perceptions of the conditions of the economy, the rate of population increase and the prospects for personal advancement in the community were found to be inversely related with propensity to migrate.

f) Generally, the propensity to migrate varies directly with the past migration experience of the head. This means the probability for someone who has moved many times in the past to move again in the future is very high.

g) Even though the frequency of social and recreation trips made by the head, as well as the frequency he visited Edmonton, were positively related with propensity to migrate, the present traveling pattern measured by the number of trips of over 100 miles the head made in the past two years was not substantiated as a function of prospective migration.

Based on the analysis it is possible to describe the typical profile

of a prospective migrant in the following generalized manner. A prospective migrant is relatively young. He is either single or married with no children. He is fairly well-educated, employed in a professional or managerial capacity and earning a good income. He has lived in the community for a relatively brief period of time, and was initially attracted to the community for job-related reasons. He does not own the dwelling which he presently occupies and is not planning to purchase a dwelling in the community. He is not an active participant in local events and is not a member of any local organizations. He owns a vehicle and travels out-of-town frequently. Generally he is pleased with the community but considers the opportunities for future advancement rather limited for himself. Moreover, he considers the community to be located too far away from a major city and would not mind moving to the city if given a choice.

3. Spatial Variations in Heads! Propensity to Migrate - The results of the analysis on the determinants of prospective migration were applied to the eight communities under study. This approach was based on the assumption that the communities differ in the composition of population. For instance, some of them have a higher proportion of potentially more mobile people, and may, therefore, be subject to a higher degree of out-migration of their residents in the long run.

In general, the residents of Jasper tended to display the highest propensity to migrate, followed by those living in Stony Plain and Wabamun. The middle position in this mover-stayer continuum was occupied by the residents of Edson. The residents of Hinton followed closely in the fourth position while those living in Entwistle, Evansburg and Wildwood displayed the highest tendency to stay in their communities by

occupying the position at the opposite extremity of this continuum.

More specifically, the analysis indicated that the residents in Jasper were relatively young, well-educated and earning a high income in comparison with the residents of the other communities. A sizeable proportion had lived in the community for a relatively brief period of time. In spite of the fact that they generally expressed satisfaction with the prosperous state of the local economy, the pace of industrial development and population change which had taken place in Jasper, many of them were critical of the lack of adequate housing as well as the quality and provision of shopping facilities there. In addition, many of the residents in Jasper considered their community to be located too far from a metropolitan centre such as Edmonton. They also exhibited the highest degree of past migration experience. The cumulative effects of these attributes led the author to believe that they would possess the highest propensity to migrate among the residents of the eight communities.

In comparison, the residents of Hinton revealed a rather different set of attributes which rendered them very stable. Firstly, they expressed a generally high degree of satisfaction with their move and with Hinton's amenities and basic services. Their perception of the economic outlook of the town was most optimistic. Even though they had not stayed in the town for too long (which was mainly due to the relatively brief history of Hinton) the majority indicated that they planned to stay there in the near future. A large proportion of Hinton's residents were married with young families. Most of them owned the dwelling which they were occupying. Like the residents of Jasper, the average levels of educational attainment and family income of the heads in Hinton were

high. Their respective degree of migration experience, however, was much below that of Jasper.

Thirdly, the residents of Stony Plain, Wabamun, and Edson possessed attributes which reflected an average propensity to migrate. Those living in Stony Plain and Wabamun, in particular that segment of population who migrated to the communities during the past 10-15 years, indicated a more critical view towards the provision of basic services and a less optimistic outlook on the economic future of their towns. These attributes lead to the expectation that, generally, the residents of these two places would possess an even higher propensity to migrate than the residents of Edson.

Fourthly, the residents of Entwistle, Evansburg and Wildwood displayed the least propensity to migrate. This is because the residents of these villages were comparatively old, rather poorly-educated and earning a low family income. Their average length of stay in the communities was long. An overwhelming proportion of them were not considering moving elsewhere in the foreseeable future, in spite of the fact that they were not particularly impressed or satisfied with the economic prospects, the amenities, and the quality and provision of services in their communities. In general, it could be said that the residents in the villages possessed a higher decision threshold which rendered them less likely to respond to opportunities existing elsewhere through migration.

Finally, the above conclusions regarding the heads' propensity to migrate among the communities were reinforced by the responses of the heads to the question concerning their future migration plans. This consistency of findings in turn justified the approach of this thesis to employ both objective and subjective evaluative criteria to measure the

heads of household's future migration tendencies.

C. CONCLUDING REMARKS

1. Policy Implications - Some of the findings in this thesis, particularly those dealing with migration differentials, reasons for moving, determinants of future migration in general, and their spatial variations among different types of settlements in the province, can be adopted to assist the formulation of regional development policy and programmes. In view of the present provincial government's goal of decentralization, it is important to realize that migration is an important means through which this policy objective can be accomplished. The finding of this thesis pertaining to the selectivity of migrants could therefore be used to plan for the construction of infrastructure and capital facilities and for the provision of social services in centres which are about to experience large increase in population through in-migration as a result of pending industrial development, e.g. Grande Centre, Cold Lake, Ft. McKay, and Lloydminster.

Secondly, most resource centres in Alberta, e.g. Ft. McMurray, Whitecourt, Slave Lake, and Fox Creek, are experiencing a high degree of population "turn-over" or gross migration. The findings pertaining to the determinants of prospective migration, especially those factors which are related to residential stability and satisfaction with the quality of life in the community, could be employed to recommend direction in which further development and improvement of the community should go. For instance, it was found that even though people might have been attracted by economic conditions to move to a certain town, in many cases, it is

the local social milieu and amenities that keep them from moving elsewhere. It is particularly important for households or families with young children to be satisfied with the quality and provision of basic social services, since they generally represent a strong stabilizing factor in the community because of their relatively low propensity to migrate.

Finally, the findings on spatial variations of future migration tendencies among the communities can be employed as a proxy of out-migration to forecast population change in these communities. By the same token, the reasons which initially attracted the migrants to the communities can be assessed for their current relevance and subsequently employed to estimate in-migration trends. A cursory analysis of population change in the eight centres between 1971 and 1976, based on the 1976 Census and vital statistics, revealed that Hinton has continued its relatively rapid rate of population growth through both natural increase and implied net-migration. Stony Plain also experienced a high rate of growth mainly through migration. Jasper's population, though, has grown marginally and so has Edson's. Among the villages, Wildwood continued its trend of decline, mainly as a result of attrition, while Entwistle and Wabamun experienced only slight increases. Evansburg was the only village which grew at a steady rate.

2. Theoretical and Conceptual Development - It is generally recognized that the main criticism about the state of migration research is that it is characterised by diverse empirical evidence which often reflects the disciplinary bias or orientation of the researchers. Consequently, there is a lack of conceptual models and theoretical statements to integrate the determinants of migration and to explain the

nature of this process in a more systematic manner. In response to this criticism, this thesis has employed theoretical constructs and propositions of various disciplines in the social sciences to analyse migration patterns and tendencies in west-central Alberta.

The decision to use an interdisciplinary approach was made because migration can best be studied as a spatial process, a temporal process, and as a behavioural process. Firstly, as a spatial process, the focus of analysis was on the nature of the move between the places of origin and destination, the relative location of these places vis-a-vis important urban centres and physical features, the distance travelled and directional orientations, etc. Secondly, as a temporal process, the focus of analysis was on two types of migration: i) the (past) move to the eight communities in the study area, and ii) the future migration tendencies of the residents in these places. In addition, the past migration histories and the length of residence in the present community was also subject to analysis. Thirdly, as a behavioural process, the focus of analysis was on the determinants of migration, especially prospective migration, as well as the spatial variations of these determinants among the residents of the eight communities.

In analysing the interrelationships between the spatial, temporal and behavioural dimensions of migration, this thesis has employed a conceptual schema - "a theoretical network structure of prospective migration" - adapted from Abler, Adams and Gould (1971), to integrate the determinants of migration and to explain the nature of the interrelationships in a more systematic manner. The results of the analysis confirmed a number of theoretical propositions and hypotheses pertaining to prospective migration.

In addition, the dependent variable of the propensity to migrate was analysed by means of a multiple regression model. The results indicated that the main determinants and correlates of prospective migration were able to explain two-thirds of the variance of the dependent variable. Given the present state of knowledge on migration, it is possible to apply the knowledge based on this set of statistical relationships between the dependent variables and independent variables to estimate the probability or likelihood that a certain migration event will occur in the future, within certain limits of statistical reliability (Shaw 1975, p. 15).

3. Limitations of Current Study and Suggestions for Future Research

Since the research design of this thesis was formulated in 1972, numerous advances have been made in the theoretical, conceptual and methodological aspects of migration research. As a result, this study suffered from a paucity of recent conceptual schema and theoretical constructs which could be employed to study migration in a more holistic fashion. It is recommended that future research in prospective migration should attempt to integrate more recent concepts such as "awareness space", "search space" and "subjectively satisfying place utilities" (Pryor 1975, 1976), and "place preference" and "residential preference" (Fuguitt and Zuiches 1972, 1975) in the research design. If more emphasis were given to studying these concepts, specific questions would have to be asked relating to how migrants obtain information on prospective destinations, how are migration plans actually formulated and carried out, what subjective and objective criteria are used in determining "preferred destinations", etc.

Secondly, as a corollary of the above suggestion, this thesis failed

to analyse the causal mechanisms underlying the migration decision-making process. It is recommended that future research could emphasize the causes and motivation of migration, and the decision threshold, instead of merely questioning why the migrant head of household decided to move to a certain community as this study has done.

Thirdly, since this thesis, to a certain extent, adopted a behavioural frame of reference to analyse the perceptions and attitudes of respondents, it was felt that the measurement techniques and procedures employed for this purpose were inadequate. Future research should utilize recognized and established scaling methods such as Likert and Thurstone scale to accomplish this end (Moser and Kalton, 1971).

Finally, in view of the policy implications of this research, it would be useful to undertake a large scale survey of prospective migration tendencies of residents living in different functional types of settlements in the province of Alberta (e.g. i) large-scale resource centres such as Ft. McMurray, Cold Lake, ii) smaller resource centres such as Hinton, Drayton Valley, Swan Hills, iii) regional cities such as Red Deer, Medicine Hat, iv) smaller service centres such as Lacombe, Taber, Barrhead, v) two metropolitan cities, and vi) dormitory communities such as Spruce Grove, Airdrie). The purpose of the recommended study is to assess the nature of the relationship between a typology of prospective migrants and a typology of settlements in order to assist the formulation of policies, plans and programmes. From a theoretical perspective, such a study can serve to better relate different environmental conditions with migration behaviour and intention.

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APPENDICES

APPENDIX A
SELECTED POPULATION AND LABOR FORCE
CHARACTERISTICS, 1971

TABLE A.1
AGE AND SEX STRUCTURE OF POPULATION, 1971
(Percentage of Totals)

LOCALITY	SEX		TOTAL POPULATION	AGE					
	MALE	FEMALE		0 - 14	15 - 24	25 - 34	35 - 44	45 - 64	65 +
STONY PLAIN	870 (49.2)	900 (50.8)	1770 (100.0)	430 (24.3)	260 (14.7)	200 (11.3)	175 (9.9)	355 (20.1)	350 (19.8)
WARMAN	190 (55.9)	150 (44.1)	340 (100.0)	120 (35.3)	55 (16.2)	40 (11.8)	55 (16.2)	55 (16.2)	30 (8.8)
ENTWISTLE	180 (51.4)	170 (48.6)	355 (100.0)	110 (31.0)	50 (14.1)	30 (8.5)	35 (9.9)	65 (18.3)	60 (16.9)
EVANSBURG	260 (49.1)	275 (51.9)	530 (100.0)	175 (33.0)	85 (16.0)	70 (13.2)	45 (8.5)	85 (16.0)	75 (14.2)
WILLIAMS	195 (50.0)	195 (50.0)	385 (100.0)	130 (33.8)	55 (14.3)	30 (7.8)	50 (13.0)	65 (16.9)	60 (15.6)
ELSON	1940 (50.8)	1875 (49.1)	3820 (100.0)	1285 (33.6)	730 (19.1)	470 (12.3)	460 (12.0)	535 (14.0)	335 (8.8)
HINTON	2545 (51.8)	2370 (48.3)	4910 (100.0)	1885 (38.4)	890 (18.1)	790 (16.1)	650 (13.2)	635 (12.9)	65 (1.3)
JASPER	1630 (53.2)	1430 (46.7)	3065 (100.0)	870 (28.4)	645 (21.0)	455 (14.3)	425 (13.9)	510 (16.6)	155 (5.1)
TOTAL	7810 (51.5)	7365 (48.5)	15,175 (100.0)	5005 (33.0)	2770 (18.3)	2085 (13.7)	1895 (12.5)	2305 (15.2)	1130 (7.4)
VILLAGES 500-999	14210 (49.6)	14435 (50.4)	28654 (100.0)	8415 (29.4)	4390 (15.3)	3225 (11.3)	2810 (9.8)	5570 (19.4)	4225 (14.7)
TOWNS 2500-4999	50880 (50.1)	50640 (49.9)	101520 (100.0)	31255 (30.8)	17760 (17.5)	13020 (12.8)	10615 (10.5)	17625 (17.4)	11230 (11.1)

SOURCE: Statistics Canada, 1971 Census

NOTES: Paris may not add up to totals due to rounding

TABLE A.2
POPULATION, AGED 15 YRS. AND OVER
BY MARTIAL STATUS AND SEX, 1971

(Marital Status Totals as Percentages
of Total Population Aged 15+)

LOCALITY		SINGLE	MARRIED INCLUDING SEPARATED	WIDOWED OR DIVORCED	TOTAL POP. 15 AND OVER
STONY PLAIN	M	140	415	25	590
	F	95	390	120	610
	T	235 (19.5)	805 (66.8)	145 (12.0)	1205 (100.0)
WABAMUN	M	35	95	5	140
	F	25	90	5	120
	T	60 (23.1)	185 (71.2)	10 (3.8)	260 (100.0)
ENIWISTLE	M	35	75	10	120
	F	20	70	30	120
	T	55 (23.4)	145 (61.7)	40 (17.0)	235 (100.0)
EVANSBURG	M	65	115	15	190
	F	35	115	40	185
	T	100 (26.7)	230 (61.3)	55 (14.7)	375 (100.0)
WILDWOOD	M	30	95	10	130
	F	15	85	25	120
	T	45 (18.4)	180 (73.5)	35 (14.3)	245 (100.0)
EDSON	M	360	860	60	1275
	F	265	880	150	1285
	T	625 (24.5)	1740 (68.2)	210 (8.2)	2550 (100.0)
HINTON	M	430	1085	35	1555
	F	235	1095	70	1395
	T	665 (22.5)	2175 (73.5)	105 (3.5)	2960 (100.0)
JASPER	M	385	720	25	1125
	F	235	665	90	975
	T	620 (29.5)	1385 (66.0)	115 (5.5)	2100 (100.0)
TOTAL		2405 (24.2)	6845 (68.9)	715 (7.2)	9930 (100.0)

SOURCE: Statistics Canada, 1971 Census, Enumeration Area Series, Economic Characteristics File (long form) Table 4.

NOTES: Parts may not add up to totals due to rounding.

T A B L E A.3
 FAMILIES BY NUMBER OF UNMARRIED CHILDREN
 AGED 0 - 24 YEARS, 1971
 (Percentages)

LOCALITY	NUMBER OF FAMILIES		NUMBER OF UNMARRIED CHILDREN				TOTAL NO. OF CHILDREN	AVERAGE NO. OF CHILDREN PER FAMILY	
	WITH CHILDREN	WITH CHILDREN	TOTAL NO. OF FAMILIES	UNDER 6 YRS.	6 to 14 YRS.	15 to 18 YRS.			19 to 24 YRS.
STONY PLAIN	205 (45.1)	245 (53.8)	455 (100.0)	155 (26.7)	275 (47.4)	115 (19.8)	35 (6.0)	580 (100.0)	1.3
WABAMEN	25 (27.8)	65 (72.2)	90 (100.0)	40 (28.6)	65 (46.4)	25 (17.9)	5 (3.6)	140 (100.0)	1.6
ENWISTLE	40 (32.0)	50 (55.6)	90 (100.0)	40 (32.0)	55 (44.0)	30 (24.0)	10 (8.0)	125 (100.0)	1.4
EVANSBURG	40 (32.0)	90 (72.0)	125 (100.0)	70 (29.2)	110 (45.8)	40 (16.7)	20 (8.3)	240 (100.0)	1.9
WILLHOOD	40 (42.1)	50 (52.6)	95 (100.0)	50 (30.3)	75 (45.5)	30 (18.2)	10 (6.1)	165 (100.0)	1.7
EISON	289 (31.8)	621 (68.2)	910 (100.0)	455 (27.4)	800 (48.2)	310 (18.7)	95 (5.7)	1660 (100.0)	1.8
HINTON	210 (18.4)	935 (82.0)	1140 (100.0)	695 (29.2)	1200 (50.4)	370 (15.5)	115 (4.8)	2380 (100.0)	2.1
JASPER	195 (28.3)	500 (72.5)	690 (100.0)	265 (26.5)	485 (48.5)	155 (15.5)	95 (9.5)	1000 (100.0)	1.4
TOTAL	1044 (29.0)	2556 (71.1)	3595 (100.0)	1770 (28.1)	3065 (48.7)	1075 (17.1)	385 (6.1)	6295 (100.0)	1.7

SOURCE: Statistics Canada, 1971 Census, Enumeration Area Series, Family Long Form Files, Table 2.
 NOTE: Parts may not add to totals due to rounding.
 Only children living at home are included in the data.

T A B L E A.4
FAMILY HEADS BY LEVEL OF SCHOOLING
1971

(Schooling Level as Percentage of Total Family Heads)

L O C A L I T Y	S C H O O L I N G L E V E L O F F A M I L Y H E A D S										TOTAL
	NO SCHOOLING	LESS THAN GR. 9	GR. 9 to 10	GR. 11	GR. 12	GR. 13	SOME UNIVERSITY	UNIVERSITY DEGREE(S)			
STONY PLAIN	15 (3.3)	195 (42.5)	120 (26.4)	30 (6.6)	65 (14.3)	5 (1.1)	25 (5.5)	25 (5.5)	455 (100.0)		
WABAMUN	0 (0.0)	45 (50.0)	25 (27.8)	5 (5.6)	10 (11.1)	0 (0.0)	0 (0.0)	0 (0.0)	90 (100.0)		
ENWISTLE	5 (5.6)	40 (44.4)	35 (38.9)	10 (11.1)	15 (16.7)	0 (0.0)	0 (0.0)	0 (0.0)	90 (100.0)		
EVANSBURG	10 (8.0)	50 (40.0)	15 (12.0)	10 (8.0)	20 (16.0)	5 (4.0)	5 (4.0)	15 (12.0)	125 (100.0)		
WILLOWOOD	5 (5.3)	50 (52.6)	15 (15.8)	10 (10.5)	5 (5.3)	5 (5.3)	0 (0.0)	5 (5.3)	95 (100.0)		
EDSON	20 (2.2)	235 (25.8)	200 (22.0)	135 (14.8)	235 (25.8)	35 (3.8)	35 (3.8)	75 (8.2)	910 (100.0)		
HINTON	0 (0.0)	375 (32.9)	320 (28.1)	150 (13.2)	195 (17.1)	20 (1.8)	50 (4.4)	80 (7.0)	1140 (100.0)		
JASPER	0 (0.0)	140 (20.3)	200 (29.0)	145 (21.0)	140 (20.3)	15 (2.2)	35 (5.1)	25 (3.6)	690 (100.0)		
T O T A L	55 (1.5)	1130 (31.4)	930 (25.9)	495 (13.8)	685 (19.1)	85 (2.4)	150 (4.2)	185 (5.1)	3595 (100.0)		

SOURCE: Statistics Canada, 1971 Census, Enumeration Area Series, Family Long Form File, Table 5.

NOTE: Parts may not add to total due to rounding.

T A B L E A.5
POPULATION AGED 15 YEARS AND OVER BY LABOUR FORCE STATUS AND SEX
1971

SOCIAL AREA	EMPLOYMENT RATE			UNEMPLOYMENT RATE			LABOUR FORCE	PARTICIPATION RATE	TOTAL POP. 15+
	M	F	T	M	F	T			
STONY PLAIN	M	405 (69.2)	20	435	74.4	585			
	F	205 (31.6)	10	215	35.3	610			
	T	610 (51.0)	30 (4.6)	650	54.4	1195			
NABAMUN	M	95 (70.4)	5	95	70.4	135			
	F	25 (21.7)	5	30	26.1	115			
	T	120 (48.0)	10 (8.0)	125	50.0	250			
ENWISLIE	M	65 (54.2)	15	75	62.5	120			
	F	30 (25.0)	5	35	24.2	120			
	T	95 (39.6)	20 (18.2)	110	45.8	240			
EVANSBURG	M	125 (64.1)	25	150	76.9	195			
	F	60 (32.4)	10	70	32.3	185			
	T	185 (48.1)	25 (11.9)	210	55.3	380			
MILLBRIDGE	M	75 (57.7)	5	80	61.5	130			
	F	25 (21.7)	1	26	21.3	115			
	T	100 (40.8)	5 (4.8)	105	42.9	245			
EDISON	M	930 (72.4)	65	985	76.7	1285			
	F	515 (39.8)	65	580	44.8	1295			
	T	1445 (56.0)	130 (8.3)	1565	60.7	2580			
HILTON	M	1305 (83.9)	90	1395	89.7	1555			
	F	515 (37.1)	40	560	40.3	1390			
	T	1820 (67.8)	130 (6.6)	1955	66.4	2945			
JASPER	M	930 (82.3)	70	990	87.6	1130			
	F	440 (44.7)	40	470	47.7	985			
	T	1370 (64.8)	110 (7.5)	1460	69.0	2115			
TOTAL	M	3930 (34.8)	295 (1.0)	4205	80.1	5250			
	F	1875 (27.2)	165 (8.4)	1975	41.0	4815			
	T	5705 (51.1)	460 (7.5)	6170	61.3	10065			

SOURCE: Statistics Canada, 1971 Census, Enumeration Area Series, Economics Characteristics File. (Long Form), Table 10.
NOTE: Parts may not add to totals due to rounding.

TABLE A.6
LABOUR FORCE BY CLASS OF WORKERS AND SEX
1971

(Percentages)

LOCALITY		CLASS OF WORKERS					
		TOTAL LABOUR FORCE	SELF EMPLOYED	UNPAID FAMILY WORKERS	WAGE EARNERS	WAGE EARNERS	
						WORKED 40-52 WKS.* IN 1970	WORKED MAINLY FULL TIME*
STONY PLAIN	M	420	60	0	360	280	255
	F	205	10	15	180	110	55
	T	625 (100.0)	70 (11.2)	15 (2.4)	540 (86.4)	390 (72.2)	310 (57.4)
WABAMUN	M	95	0	0	95	75	75
	F	25	0	5	20	10	5
	T	120 (100.0)	0 (0)	5 (4.2)	115 (95.8)	85 (73.9)	80 (69.6)
ENIWIISTLE	M	80	20	0	60	35	30
	F	35	0	5	30	20	5
	T	115 (100.0)	20 (17.4)	5 (4.3)	90 (78.3)	55 (61.1)	35 (38.9)
EVANSBURG	M	150	20	10	120	85	85
	F	65	5	5	55	20	10
	T	215 (100.0)	25 (11.6)	15 (7.0)	175 (81.4)	105 (60.0)	95 (54.3)
WILDWOOD	M	80	5	0	75	50	50
	F	25	5	0	20	5	5
	T	105 (100.0)	10 (9.5)	0 (0)	95 (90.5)	55 (57.9)	55 (57.9)
EDSON	M	985	90	0	895	635	605
	F	575	25	35	515	320	250
	T	1560 (100.)	115 (7.4)	35 (2.2)	1410 (90.4)	955 (67.7)	855 (60.6)
HINTON	M	1385	120	0	1265	995	995
	F	545	10	50	485	250	200
	T	1930 (100.0)	130 (6.7)	50 (2.6)	1750 (90.7)	1245 (71.1)	1195 (68.3)
JASPER	M	1000	25	10	965	705	690
	F	485	5	20	460	235	195
	T	1485 (100.0)	30 (2.0)	30 (2.0)	1425 (96.0)	940 (66.0)	885 (62.1)
TOTAL	M	4195	340	20	3835	2860	2785
	F	1960	60	135	1765	970	725
	T	6155 (100.0)	400 (6.5)	155 (2.5)	5600 (91.0)	3830 (68.4)	3510 (62.7)

SOURCE: Statistics Canada, 1971 Census, Enumeration Area Series, Economic Characteristics File (Long Form), Table 11.

NOTE: *The percentages in these two columns are expressed as that of wage earners only.

Parts may not add to total due to rounding.

T A B L E A.7.

LABOUR FORCE BY INDUSTRY AND SEX, 1971
(Percentages)

LOCALITY	AERL.	HUSBANDRY	FISHING & TRAPPING	MINE QUARIES OIL WELLS	MANUF.	CONST.	TRANSP. COMMUN. & UTILS	TRADE	FINAN. INSUR. & R. ESTATE	COMP. BUS. & PERSONAL SERVICE	PUBLIC ADMIN. & DEFENSE	UNSPECIFIED OR UNDEFINED	TOTAL
STONY PLAIN	M	0	0	5	10	70	35	110	0	75	55	25	410
	F	10	0	0	5	45	0	25	5	110	10	25	235
	T	35	0	0	5	15	35	135	5	185	65	50	645
		(5.4)		(0.8)	(2.3)	(17.8)	(5.4)	(20.9)	(0.8)	(28.7)	(10.1)	(7.8)	(100.0)
HABAMUN	M	0	0	30	10	20	20	0	0	0	5	0	85
	F	0	0	0	0	0	0	10	0	10	0	0	20
	T	0	0	30	10	20	20	10	0	10	5	0	105
				(28.6)	(9.5)	(19.0)	(19.0)	(9.5)			(4.8)		(100.0)
ENWISTLE	M	0	0	5	5	25	0	20	5	15	5	5	85
	F	0	0	0	0	0	0	10	5	15	5	5	40
	T	0	0	5	5	25	0	30	10	30	10	10	125
				(4.0)	(4.0)	(20.0)		(14.0)	(8.0)	(24.0)	(8.0)	(8.0)	(100.0)
CHASSIS	M	10	0	5	5	20	40	10	10	30	15	10	155
	F	0	0	0	10	0	0	10	10	25	10	5	75
	T	10	0	5	15	20	40	20	20	55	25	15	230
		(14.3)		(4.3)	(6.5)	(8.7)	(17.4)	(8.7)	(8.7)	(23.9)	(10.9)	(6.5)	(100.0)
WILDWOOD	M	0	0	10	15	25	5	20	0	10	5	0	90
	F	0	0	0	0	0	0	5	5	20	5	0	35
	T	0	0	10	15	25	5	25	5	30	10	0	125
				(8.0)	(12.0)	(20.0)	(4.0)	(20.0)	(4.0)	(24.0)	(8.0)		(100.0)
EDSON	M	10	45	0	25	170	145	195	30	165	90	60	1050
	F	0	0	0	15	20	40	105	20	310	35	45	600
	T	10	45	0	40	190	185	300	50	475	125	105	1650
		(0.6)	(2.7)		(2.4)	(11.5)	(11.2)	(18.2)	(3.0)	(28.8)	(7.6)	(6.4)	(100.0)
HINTON	M	0	50	0	155	140	130	150	10	100	50	60	1335
	F	0	5	0	5	10	20	85	20	260	25	55	515
	T	0	55	0	160	150	150	235	30	360	75	115	1850
			(3.0)		(8.6)	(8.1)	(8.1)	(12.7)	(1.6)	(19.5)	(4.1)	(6.2)	(100.0)
JASPER	M	5	0	10	5	85	350	105	10	230	120	45	1025
	F	5	0	0	15	0	45	75	45	250	40	30	505
	T	10	0	10	5	35	435	180	55	480	160	75	1530
		(0.7)		(0.3)	(2.3)	(5.6)	(28.4)	(11.8)	(3.6)	(31.4)	(10.5)	(4.9)	(100.0)
TOTAL	M	65	100	10	350	630	870	935	175	1625	470	370	6260
	F	10	100	0	50	100	100	100	100	100	100	100	100
	T	75	200	10	400	730	970	1035	275	2625	570	470	7260
		(1.0)	(1.6)	(0.2)	(5.6)	(10.0)	(13.9)	(14.9)	(2.8)	(26.0)	(7.5)	(5.9)	(100.0)

SOURCE: Statistics Canada, Enumeration Area Series, Economic Characteristics (File Long Form, Table 13.)
NOTE: Parts may not add up to totals due to rounding.

T A B L E A.8
LABOUR FORCE BY OCCUPATION AND SEX, 1971
(Percentages)

LOCALITY	OCCUPATIONS											TOTAL				
	MET. & REL.	TEACH & REL.	MED. & HEALTH & RELIG.	CLER. & REL.	SALES	SERVICE & REL.	FARM & REL.	OTHER PRIM.	PROCESS	MECH. FAB & REL.	CONST. & REL.		TRANS. & REL.	OTHER	NOT STATEL.	
STONEY PLAIN	M	15	5	0	0	40	60	20	10	5	50	60	30	25	375	
	F	0	20	0	40	20	5	0	0	0	0	0	0	20		185
	T	15	25	0	40	60	120	25	10	5	50	60	30	45		
		(2.7)	(4.5)	(4.5)	(7.1)	(10.7)	(21.4)	(4.5)	(1.8)	(0.9)	(8.9)	(10.7)	(5.4)	(8.0)	(100.0)	
WABAMUN	M	0	0	0	10	0	10	0	15	0	10	20	15	0	85	
	F	0	5	0	0	5	0	0	0	0	5	0	0	0		20
	T	0	5	0	10	5	15	0	15	0	15	20	15	0		
		-	(4.8)	(4.8)	(9.5)	(4.8)	(14.3)	-	(14.3)	-	(14.3)	(19.0)	(14.3)	-	(100.0)	
ENWISTLE	M	0	0	0	5	25	0	0	5	0	5	20	15	0	95	
	F	5	0	0	5	10	0	0	0	0	0	0	0	5		35
	T	5	0	0	10	35	10	0	5	0	5	20	15	5		
		(3.8)	(7.1)	(7.1)	(26.9)	(7.1)	-	(3.8)	-	(3.8)	(15.4)	(11.5)	(11.5)	(3.8)	(100.0)	
EVANSBURG	M	15	15	0	15	10	20	10	5	0	5	25	15	10	160	
	F	0	5	0	35	10	15	0	0	0	0	0	0	5		70
	T	15	20	0	50	20	35	10	5	0	5	25	15	10		
		(6.5)	(8.7)	(8.7)	(15.2)	(4.3)	(2.1)	-	(2.2)	(10.9)	(6.5)	(4.3)	(4.3)	(8.7)	(100.0)	
MILLWOOD	M	5	5	0	0	15	5	5	5	5	15	10	5	20	95	
	F	0	10	0	10	0	5	0	0	0	0	0	0	5		30
	T	5	15	0	10	15	10	5	5	5	15	10	5	25		
		(4.0)	(12.0)	(8.0)	(12.0)	(8.0)	(4.0)	(4.0)	(4.0)	(4.0)	(12.0)	(8.0)	(20.0)	-	(100.0)	
EDSON	M	65	30	5	60	125	85	20	75	30	90	145	60	125	1065	
	F	10	15	35	165	95	145	0	0	0	5	5	10	5		615
	T	75	45	40	225	220	230	75	75	30	95	150	70	130		
		(11.5)	(16.3)	(12.4)	(13.4)	(13.1)	(13.7)	(11.2)	(4.5)	(1.8)	(5.7)	(8.9)	(4.2)	(7.7)	(100.0)	
EDMONTON	M	25	30	5	60	105	60	0	160	135	165	165	130	65	1310	
	F	5	40	15	160	60	175	0	0	0	5	5	5	50		525
	T	30	70	20	220	165	235	0	160	135	170	170	135	115		
		(1.6)	(3.8)	(1.1)	(4.6)	(9.0)	(12.8)	-	(8.7)	(7.4)	(9.0)	(10.4)	(6.0)	(7.4)	(100.0)	
JASPER	M	50	10	10	90	65	195	45	10	0	75	115	225	65	1080	
	F	10	25	30	160	80	145	5	0	0	5	5	5	5		520
	T	60	35	40	250	145	340	50	10	0	80	120	230	70		
		(3.8)	(2.2)	(2.5)	(15.6)	(9.1)	(21.3)	(3.1)	(0.6)	-	(5.0)	(7.5)	(14.4)	(4.4)	(100.0)	
T.O.T.A.L.		205	275	125	815	665	995	110	235	175	430	595	495	430	6265	
		(3.3)	(4.4)	(2.0)	(13.0)	(10.6)	(15.9)	(1.8)	(3.8)	(2.8)	(6.9)	(9.5)	(7.0)	(6.9)	(6.6)	

SOURCE: Statistics Canada, 1971 Census, Enumeration Area Series, Economic Characteristics File (Long Form), Table 12.
NOTE: Parts may not add up to total due to rounding.

T A B L E A.9
F A M I L Y I N C O M E , 1 9 7 1

LOCALITY	AGGREGATE INCOME (\$)	TOTAL NO. OF FAMILIES	TOTAL NO. OF INCOME RECI.	AVERAGE INCOME PER FAMILY (\$)	AVERAGE INCOME PER RECIPIENT (\$)
STONY PLAIN	3,504,365	455	820	7,702	4,272
WABAMUN	780,645	90	150	8,674	2,204
ENTWISLE	557,070	90	145	6,190	1,842
EVANSBURG	808,590	125	200	6,469	4,043
WILDWOOD	625,280	95	150	6,582	4,169
EDSON	8,904,125	910	1675	9,785	2,376
HINTON	11,684,595	1140	2100	10,250	2,564
JASPER	7,335,340	690	1325	10,631	2,536
TOTAL	34,200,010	3595	6565	9513	2,209

SOURCE: Statistics Canada, 1971 Census, Enumeration Area Series, Long Form File, Tables 3 & 4.

NOTE: Parts may not add to totals due to rounding

APPENDIX B

SURVEY QUESTIONNAIRE

William H. Wong
Ph.D. Candidate
DEPARTMENT OF GEOGRAPHY
TELEPHONE (403) 432-3274



274
THE UNIVERSITY OF ALBERTA
EDMONTON, CANADA T6G 2H4

September 15, 1972.

Dear Sir or Madam:

As part of the requirements for my Doctor of Philosophy degree at the University of Alberta, I am conducting a study on the movements of people into and out of the towns and villages located along Highway 16 West. The purpose of the study is to determine the extent of the influence of migration patterns of local residents on the population growth and development of these communities.

Your assistance in the successful completion of this Project is earnestly needed. Please take a few minutes of your time to answer the accompanying questionnaire and return it in the envelope provided at your earliest convenience. Your answers will be treated as confidential and anonymous. Please do not sign your name.

Thank you in advance for your cooperation.

Yours sincerely,

William H. Wong,
Ph.D. Candidate.

P.S. Please return the Questionnaire before October 31, 1972.

William H. Wong
Ph.D. Candidate
DEPARTMENT OF GEOGRAPHY
TELEPHONE (403) 432-3274



Number _____
THE UNIVERSITY OF ALBERTA
EDMONTON, CANADA T6G 2H4

M I G R A T I O N Q U E S T I O N N A I R E

To be answered by the HEAD of the household, or by his wife on his behalf

Sex of Respondent _____ Relationship with HEAD _____

A. M I G R A T I O N E X P E R I E N C E

1. Were you (HEAD) born in _____ ? _____

(If yes, skip to Q. 14)

2. If no, when did you move here? 19____

3. Were you married when you moved here? _____

4. Did you come here alone? _____ or with others? _____

5. If you came with others, who did you come with? (Please check)

- wife alone _____ wife and _____ number of children
- relatives _____ number in party
- friends _____ number in party

6. Were you unemployed and looking for work at the time of moving? _____

7. If no, what was your occupation at the time of moving? _____

8. Did you have a job waiting for you in this community when you moved here? _____

9. If yes, how did you hear about this job? (Please check)
 through Manpower _____ job transfer _____
 friends and relatives _____ Newspapers' advertisement _____
 other sources (specify) _____

10. Why did you leave your previous community? _____

11. Why did you choose to move to this community? _____

12. Did you also consider moving to other communities before moving to this one?
 _____ If yes, please name the communities and the most important
 reason which attracted you to move there.

COMMUNITY

REASON

a. _____
 b. _____

13. Did you have any relatives or friends living in this community before you
 moved here? _____ If yes, did they in any way influence your
 decision to move here? _____

14. How many of your relatives or close friends moved into this community
 after you did? _____

15. How many of your relatives and close friends moved elsewhere after you
 moved here? _____

16. If so, where did they move to? _____

17. Do you know why they left this place? _____

18. Now I would like to know something about your past migration experience.

Could you list all the communities that you have lived in since leaving school?

<u>COMMUNITY</u>	<u>PROVINCE / COUNTRY</u>	<u>LENGTH OF STAY</u>	<u>OCCUPATION</u>
------------------	---------------------------	-----------------------	-------------------

a _____

b _____

c _____

d _____

e _____

f _____

g _____

B. IMPRESSIONS AND OPINIONS ABOUT THE COMMUNITY AND FUTURE MIGRATION TRENDS

19. Now that you have lived in this place for sometime, are you satisfied with your move? _____ Why do you say so? _____

20. Are the economic opportunities for the average individual working in this community good? _____ Why? _____

21. Please rank the quality and provision of the following services in the community.

<u>SERVICE</u>	<u>GOOD</u>	<u>FAIR</u>	<u>POOR</u>	<u>FURTHER COMMENTS</u>
Housing	_____	_____	_____	_____
Education	_____	_____	_____	_____
Medical Services	_____	_____	_____	_____
Shopping	_____	_____	_____	_____
T.V. and Radio	_____	_____	_____	_____
Transportation	_____	_____	_____	_____
Newspaper	_____	_____	_____	_____
Recreation	_____	_____	_____	_____
Others (specify)	_____	_____	_____	_____

22. Are the people of the community generally friendly and sociable? _____

23. Do you consider the community suitable for raising your children? _____

(if no children, skip to Q. 24). If no, why? _____

24. Do you think that this community is located too far away from larger towns and cities? _____

25. If you have a choice, would you rather stay in a larger urban centre, for instance, Edmonton? _____ Why? _____

26. Has there been any major changes in the community with respect to the population size and the business activities after your arrival?

Population size: _____

Business activities: _____

27. I would like to know something about your future mobility trends. Do you expect to live in this community 2 years from now? _____
 5 years from now? _____ 10 years from now? _____
 Permanently? _____

28. If you have already made plans to leave to other places, where are you moving to? _____ Why do you want to move there?

29. Why do you want to leave this community? _____

C. SOCIAL AND ECONOMIC INFORMATION OF HEAD OF HOUSEHOLD

30. What is your (Head's) age? _____ Sex _____

31. Where were you born? _____

32. How long did you live there? _____

33. What ethnic origin do you or your ancestor belong to? _____

34. What is your marital status? (Please check one)

single _____ married _____

widowed _____ divorced _____

35. How many children do you have? (If none, skip to Q. 38) _____

How old are they? _____

36. How many of them are living with you? (If all are, skip to Q. 38) _____

37. If some of your children are living elsewhere, where are they now? How long ago have they left the family? What are their occupations and ages?

	<u>LOCATION</u>	<u>YEARS LEFT</u>	<u>OCCUPATION</u>	<u>AGE</u>
a	_____	_____	_____	_____
b	_____	_____	_____	_____
c	_____	_____	_____	_____
d	_____	_____	_____	_____

38. How many years of formal education did you have? _____

Additional years in technical training? _____

39. What is your present occupation? _____

40. What kind of a company or employer are you working for? _____

41. Do you have to commute to other places to work? (If no, skip to Q. 43) _____

If yes, where and how far do you have to commute? _____

How often do you commute? daily? _____ weekly? _____

42. Have you ever changed your occupation since moving here? _____

If yes, how many times? _____

43. Have you ever been unemployed since you moved here? _____ If yes, how many times and for how long each time? _____

44. What are the opportunities for advancement in your line of work in this community? _____

45. Do you hold any part-time job? _____ If yes, where and what kind? _____

46. How many years of formal education did your wife have? _____
 Additional years of technical training? _____
47. Does your wife work? _____ If yes, what is her occupation? _____
48. If you or your wife have to commute to work, have you ever considered moving to the place of work? _____ If yes, any specific plan? _____
49. Approximately how much is your total family (husband and wife) annual income? (Please check one)
- | | | | |
|---------------|-------|-------------------|-------|
| below \$3000 | _____ | \$3000-\$5999 | _____ |
| \$6000-\$9999 | _____ | \$10,000-\$14,999 | _____ |
| over \$15,000 | _____ | | |
50. What type of housing do you occupy? (Please check one)
- | | | | |
|-----------------|-------|------------------|-------|
| single detached | _____ | duplex | _____ |
| apartment | _____ | trailer | _____ |
| room | _____ | others (specify) | _____ |
51. Do you own this dwelling? _____ If no, do you plan to buy any property in the community? _____ If yes, what type? _____
52. Do you own any other property beside this dwelling? _____ If yes, what type and where? _____
53. Do you own a car? _____ a trailer? _____ a truck? _____
54. Do you belong to any community club or church organizations in the community? _____ If yes, how many organizations do you belong to? _____

D. PRESENT TRAVELLING PATTERNS

55. I would like to know something about the way you and your family members travel. In the past two years how often have you taken trips to places 100 miles away from your local community? (Please check one)

never _____ once or twice _____
3 - 5 times _____ 6 - 9 times _____
over 10 times _____

56. How often do you travel outside the community for the following reasons and what are the most frequent destinations?

<u>PURPOSE</u>	<u>FREQUENCY</u>	<u>DESTINATIONS</u>
Social calls	_____	_____
Business	_____	_____
Shopping	_____	_____
Recreation	_____	_____
Others (specify)	_____	_____

57. How often do you visit the following places? How long do you usually stay? and for what particular purposes? (Please skip your own community)

<u>PLACE</u>	<u>FREQUENCY</u>	<u>LENGTH OF STAY</u>	<u>PURPOSE</u>
Edmonton	_____	_____	_____
Calgary	_____	_____	_____
Grande Prairie	_____	_____	_____
Grande Cache	_____	_____	_____
Drayton Valley	_____	_____	_____
Edson	_____	_____	_____
Hinton	_____	_____	_____
Jasper	_____	_____	_____

APPENDIX C

SELECTED CHARACTERISTICS OF RESPONDENTS

(Based on Household Survey, 1972)

TABLE C.1 AGE OF RESPONDENTS

	UNDER 25	25-34	35-44	45-64	65 AND OVER	TOTAL
NUMBER	12	65	63	89	44	273
PERCENT	4.4	23.8	23.1	32.6	16.1	100.0

TABLE C.2 SEX AND MARITAL STATUS OF RESPONDENTS

	MALE	FEMALE	SINGLE	MARRIED	WIDOWED	DIVORCED
NUMBER	247	21	16	227	21	9
PERCENT	90.5	8.3	5.9	83.2	7.7	3.2

TABLE C.3 ETHNIC ORIGIN OF RESPONDENTS

	BRITISH	FRENCH	GERMAN	UKRAINIAN	SCANDINAVIAN	DUTCH	OTHERS
NUMBER	132	20	39	23	20	12	27
PERCENT	48.4	7.3	14.3	8.4	7.3	4.4	10.0

TABLE C.4 NUMBER OF CHILDREN IN FAMILY

	0	1	2	3	4	5	6 AND OVER
NUMBER	38	31	68	49	41	23	23
PERCENT	13.9	11.4	24.9	17.9	15.0	8.4	8.4

TABLE C.5 EDUCATIONAL ATTAINMENT OF RESPONDENTS

	ELEMENTARY OR LESS	SECONDARY	SOME UNIVERSITY	UNIVERSITY DEGREE
NUMBER	24	147	69	24
PERCENT	3.3	53.8	25.3	3.8

TABLE C.6 OCCUPATION OF RESPONDENTS

	MANAGERIAL	PROFESSIONAL	SALES	SERVICES	TRANSPORTATION
NUMBER	18	59	17	22	28
PERCENT	6.6	21.6	6.2	8.1	10.3

TABLE C.6 (CONTINUED)

	CRAFTSMAN	FARMER	MINER	LABOURER	OTHERS	RETIRED
NUMBER	64	9	5	9	14	28
PERCENT	23.4	3.3	1.8	3.3	5.2	10.3

TABLE C.7 ANNUAL FAMILY INCOME OF RESPONDENTS

	\$3,000 OR LESS	3,000- 5,999	6,000- 9,999	10,000- 14,999	15,000 OR OVER
NUMBER	34	31	30	39	39
PERCENT	12.4	11.4	29.3	32.6	14.3

TABLE C.8

LENGTH OF STAY IN PRESENT COMMUNITY

	LESS THAN 2-YEARS	2-5 YEARS	6-9 YEARS	10-20 YEARS	OVER 20 YEARS	BORN IN COMMUNITY
NUMBER	21	48	60	60	63	21
PERCENT	7.7	17.6	22.0	22.0	23.1	7.7

TABLE C.9

MAIN REASON FOR MOVING TO COMMUNITY

	JOB OPPORTUNITY	SOCIAL TIES	AMENITIES	FINANCIAL	LOCATIONAL/ ECOLOGICAL
NUMBER	150	32	46	14	10
PERCENT	52.0	11.7	16.8	5.1	3.7

TABLE C.10

RESPONDENTS' DEGREE OF SATISFACTION WITH BASIC SERVICE
(IN PERCENTAGES)

SERVICES	GOOD	FAIR	POOR
HOUSING	44.2	37.9	17.8
EDUCATION	73.1	24.6	2.3
MEDICAL	53.2	22.3	24.5
SHOPPING	38.7	40.9	20.1
T.V./RADIO	50.6	31.8	17.6
TRANSPORTATION	66.5	27.1	6.0
NEWSPAPER	54.0	35.8	10.2
RECREATION	68.8	21.8	9.4

TABLE C.11 PAST MIGRATION EXPERIENCE OF RESPONDENTS
(BY TOTAL NUMBER OF MOVES SINCE LEAVING SCHOOL)

	0	1	2	3	4	5	6	7 AND
NUMBER	12	59	60	34	36	31	19	22
PERCENT	4.4	21.6	22.0	12.5	13.2	11.4	7.0	8.0

TABLE C.12 DISTANCE TRAVELLED BETWEEN MOVES

	LESS THAN 200 MILES	200-500 MILES	500-1000 MILES	OVER 1000 MILES	TOTAL
NUMBER OF MOVES	315	232	139	158	844
PERCENT	37.3	27.5	16.5	18.7	100.0

TABLE C.13 PRESENT TRAVELLING PATTERNS OF RESPONDENTS
(BY NUMBER OF TRIPS OVER 100 MILES IN LAST 2 YEARS)

	0	1	2	3	4	5 OR MORE
NUMBER	2	12	45	42	33	139
PERCENT	0.8	4.4	16.5	15.4	12.1	50.9

TABLE C.14 FUTURE MOBILITY TENDENCY OF RESPONDENTS

	WILL NOT STAY 2 YEARS HENCE	NOT SURE	WILL STAY			
			2 YRS. HENCE	5 YRS. HENCE	10 YRS. HENCE	PERMAN- ENTLY
NUMBER	36	11	41	31	35	119
PERCENT	13.2	4.0	15.0	11.4	12.8	43.6