PLACE UTILITY AND TWO-DIMENSIONAL UTILITY SPACE:

A CASE STUDY OF VICTORIA

by

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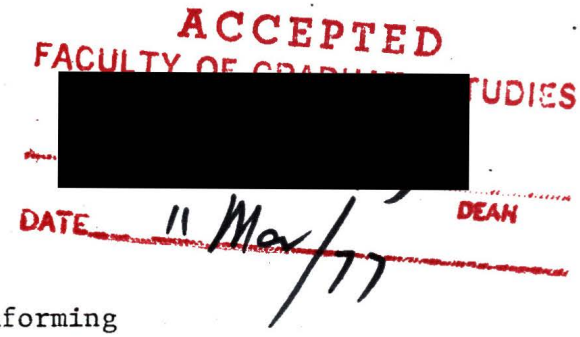

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ABSTRACT

Much attention and effort has been expended by social scientists upon the subject of migration. Many studies confirm that, under conditions of free choice, one of the strongest incentives to migrate is the economic differential between an origin and a destination. However, there are indications both in academic studies and the popular press that there is a growing number of people who are prepared to forego increased economic opportunity in order to avail themselves of the non-economic advantages, or amenities, of a particular place. Under these conditions it would therefore appear that the concept of place utility might be assuming increasing importance.

The concept of place utility was first put forward by Julian Wolpert in 1965 and has been the foundation of a number of studies. The study presented here builds upon the concept of place utility by dichotomizing the utility of a place into an economic component and an amenities component.

After examining contributions from psychology, sociology, economics and geography, the study postulates that places are perceived by people in terms of their ability to satisfy, or "reduce," economic and non-economic needs. When considering a potential destination, a person will evaluate his present need set and the constraints that are placed upon him. A limited number of places will then be perceived to hold the potential to reduce the need set. Upon evaluation of this opportunity set the migrant will choose that place which he perceives will place

him on his highest indifference curve and his rational decision will be to move to that place.

Using the Greater Victoria area as a case in point, new migrants to the region were surveyed to determine the importance of seven sub-groups (containing a total of 62 variables) in the decision to relocate to the region. Additionally, the migrants' attitudes with respect to the non-economic component of utility were surveyed together with their former place experience. A descriptive analysis reports the results obtained from returned questionnaires; an associational analysis examines for significant clusters of variables; and a scattergram analysis dichotomizes the results into an economic score and an amenities score for each respondent and also locates the study area in two-dimensional utility space based upon the respondents' mean scores.

The main conclusion reached after conducting the study is that economic reasons still continue to exert a strong influence upon the choice of a destination, but that amenities are not something that should be ignored or dismissed as being of no importance. Also, the value of locating places in utility space could serve as an indicator fo the relative success of various places in satisfying the needs of their new (and possibly long-established) residents.

Examining Committee: [redacted]

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CHAPTER 1

MIGRATION AND PLACE UTILITY

Introduction

Migration may be operationally defined as a permanent or semi-permanent change of residence that is initiated by the individual in response to some dissatisfaction with his present place, or to some perceived potential increase in satisfaction at another place, or to some combination of these. Thus, the individual--or family unit--makes a conscious decision to move from his present place to another place and can usually state a reason--or reasons--that he feels is the main stimulus for the move. Compared to other movement decisions such as the decision as to which route to take on the journey to work, or the decision to move about the house, the migration decision is a major movement decision and is usually not made without considerable contemplation and reflection.

Migration may take place on a number of levels; these have been summarized in Table 1. Although there are differences between the levels of migration, they all have at least one aspect in common, this being that no matter at which level migration takes place, there will always be an origin and a destination. Consequently, if one focuses upon the destination, it is always possible to ask the question, "For what reason, or reasons, was the specific destination chosen?"

There are a number of general theories about migration which have been contributed by various disciplines in an attempt to explain the

TABLE 1: THE LEVELS OF MIGRATION

International	Regional	Local
Between nations.	Between and within recognized areas of a given nation, including rural-to-urban and inter-urban migration.	Within the boundaries of the most junior level of government, including intra-urban migration.

phenomenon. For example, economists often tend to stress the importance of economic opportunity; sociologists, the importance of kinship and friendship; and psychologists, the importance of the opportunity to satisfy psychological needs. There is also a general acceptance of the influence of age, income and education and their association with the propensity to migrate.

The study presented here confines itself essentially to the regional level of migration--although international migration is not excluded--and to those migrants, or migrant households, who are participating in the work force. The study does not examine in any great detail the characteristics of the migrants, but examines migration from the standpoint that at any point in time a number of people migrate to a specific place; that is, for a specific place, migration may be considered as a many-to-one mapping.[1]

In attempting to contribute to the understanding of the reasons for migration to a point, the study synthesizes theories contributed by economists, psychologists and geographers, and attempts to represent the attractiveness of a place in two-dimensional utility space. Thus, it is initially important to provide a rationale for the study; to examine the

contribution of previous studies; to provide a conceptual framework for the study; and to state the study objectives.

The Rationale for the Study

Many of the human patterns of settlement we see on the landscape today are a result of men making locational decisions based on information that has come through a perceptual filter.[2] That is, the coming together of people and places (or, rather, the congregating of people at places), is a function of information that has been processed through the individual's cognitive networks such that at a given point in time there exists a relationship between the person and the place. The nature of this relationship is such that there is a recognition of certain needs, desires and aspirations on the part of people, and the potential for reduction of those needs by a number of places.[3]

When examining the relationship between people and places, Olsson counsels that the behavioral axioms of location theory belong to the higher levels of the hierarchical structure of the hypothetico-deductive system and as a consequence the behavioral approach can provide more detailed explanations than can a normative approach, particularly if the findings are to be extended into planning applications.[4] The employment of a behavioral approach to the study of human geography and the searching for appropriate methodologies in other disciplines is recognized by Parsons who observes:

> During the decade of the sixties and early seventies, geographers began to look more closely at some of the theoretical work in psychology and sociology for concepts and methodological approaches which might assist in the study of a variety of geographic phenomena.[5]

and he then cites examples of work contributed by Lowenthal,[6] Kates,[7] and Wolpert[8] to substantiate his assertion.

Brown and Moore believe that the understanding of the nature of individual responses to environmental conditions will provide a sounder basis for evaluating a number of decisions related to planning of growth, development and the reorganization of urban areas.[9]

If we recognize individual differences, needs and desires in people and the unique characteristics of places, then we can better accommodate the desires of people in their choice of lifestyle and thereby provide the excitement, stimulation and interest that is manifest in diversity and is ultimately expressed in a richer cultural heritage.

The Contribution of Previous Studies to the Present Study

The migration of people has been a subject of study by many researchers in many disciplines for many years; the accumulated literature is consequently voluminous.[10]

In the social sciences, many studies are descriptive,[11] some are predictive,[12] and others examine the characteristics of migrants.[13] The scale of such studies varies from global[14] to neighborhood;[15] the sectors of the population which form the subject of the studies range from university and college entrants[16] to peasants in a Philippine barrio.[17]

However, the act of migration would appear to involve and be preceded by three identifiable sets of cognitive activity: perception of places; perception of needs and an evaluation of the level of

satisfaction or dissatisfaction in meeting those needs; and a conscious decision to move. The following studies and theories, although they do not all deal specifically with the subject of migration, are thought to have applicability to this present study. They are broken down into three sections: perception and other psychological studies, migration studies dealing with the factors which motivate migration, and studies in decision-making.

Perception and Other Psychological Studies

In their book, *Mental Maps,* Gould and White pose the question, "If you had a completely free choice, where would you live?"[18] Their concern is with the image people have of various places--usually in a national setting, but also in an urban setting--and is essentially an exploration of preference surfaces.

The exploration of preference surfaces was itself an expansion of the concept of cognition of perception fields.

Perception fields in an urban context had earlier been explored by Kevin Lynch in his classic study, *The Image of the City.*[19] In that study Lynch contended that people negotiate their way around the city in response to visual cues such as familiar buildings or intersections, and further, that it was these visual clues that formed part of the perceptual framework of the individual in relation to a particular city.

Our views of the world, and about people and places, are thus formed from a highly filtered set of impressions.[20] We gain these impressions from personal experience, education, personal contacts, the mass media and cultural conditioning. It is not surprising, therefore,

that each individual's perception of the world and of his specific environment is often considerably different from that of the next person. These differences are extremely well documented by Gould and White.[21]

In forming our perception of the world we invariably invoke the act of categorization.[22] Thus, when people perceive, they then tend to classify according to former experiences and, by extension, when they categorize, they then tend to perceive differences which have significance to themselves. These significant differences may or may not reflect an attitude, or they may contribute to the formation or modification of an attitude.

The relationship between perception and attitudes and the manifestation of these cognitive processes in behavior has been well documented. Warr and Knapper note that there are three basic differences between an attitude and a perception: (1) attitudes are generally regarded to be relatively permanent structures whereas perceptions are more transitory and flexible; (2) attitudes may have as their objects more general or abstract entities than do perceptions; and (3) that perception only occurs in response to a stimulus.[23]

Schiff reports a general acknowledgement that perceptions are not as stable or as fundamental as attitudes,[24] whereas Harvey notes that an individual's attitudes and dispositions are affected over time by the constant bombardment of stimuli from the environment around him and by cultural conditioning.[25] Later, he further suggests that the necessary operational concepts for the measurement of human perceptual behavior are provided by stimulus-response psychology.[26]

Thorndike and Woodworth originally put forward the theory that all mental phenomena were responses to stimuli and that both responses and stimuli become connected in an S-R bond.[27] Thus, in the application of this theory to migration studies, migration is seen as the response, the necessary stimulus being provided from some aspect of the present environment. For example, should an individual with, say, aspirations of upward mobility in an organization perceive the opportunity to further his goals by moving to another place, then a stimulus that might trigger the move could be a dissatisfaction with his present place and the response to that stimulus, assuming a lack of constraints, would be to move to the place that is perceived to offer him the greater utility in the pursuit of his goals.

A theory closely related to that of stimulus-response is the theory of "need reduction." Put forward in the 1940's by Charles Hull, this theory postulates that people continually find themselves in a "state of need."[28] Transposed to stimulus-response theory, this "need" could be viewed as a stimulus--the corresponding response is the "reduction" of that need to a level that is deemed satisfactory to the individual.

Thus, Willis contends that the genesis of migration lies in dissatisfaction with the contemporary environment.[29] This, in turn, implies that present needs are not being adequately met by the present environment. (Where present needs are defined as the possessions, desires, aspirations and opportunities, both psychic and economic, that an individual or family unit feel they must have to maintain or enhance their lifestyle at the point in time when a migration decision is

contemplated, and present environment is defined as the geographic location of the individual or family unit at the time when a migration decision is contemplated.)

This view would appear also to be held by Gould and White who state: ". . . the fact that we cannot satisfy all our demands in one place is the root cause of the patterns of exchange."[30] Thus, as our demands and needs change over time, so too does change occur in our level of satisfaction or dissatisfaction with our present environment.

Brown and Longbrake introduce the concept of a "threshold level" for the satisfaction--or reduction--of needs.[31] They suggest that if dissatisfaction with a place is sufficiently great to surpass a given threshold level, then one option open to the individual, or the household, is to move. Another option is to adjust to the situation, shift satisfaction levels downward, and remain in the same place.

When our level of satisfaction dips below the threshold level, then our search for an alternative place is intensified and our present place will be compared to alternative places within our perception field. Such a search may encompass places that are known to us (that is, we have been to the place) or that are perceived to hold attributes deemed attractive to us even though our experience with such places is gathered, at best, through some form of secondary experience. Hence, Dick Whittington travelled to London because he perceived London as a place that held the possibility of satisfying his needs; his experience of London was a secondary experience in that he had only heard that its streets were lined with gold.

Lee observes that the balance in favor of a move must be enough to overcome the condition of natural inertia that always exists.[32] That is, in assessing all other places against the present location it is possible that the present location will have advantages that are disproportionately magnified in terms of the perceived needs. Consequently, the composite attributes of other places must be perceived to be sufficiently great to overcome the magnified attributes of the present place.

As many researchers have studied the phenomena of perception fields and preference surfaces, so have others attempted to formulate theories of migration and have studied factors that influence migration.

Migration Studies

Early Migration Theory. In 1885, Ravenstein set out what he called the Laws of Migration.[33] Although not laws in the physical sense of the word, what Ravenstein proposed was, in fact, perhaps one of the first attempts at developing a migration theory; empirical evidence from early British census data formed the basis for his theory.

Ravenstein put forward five "laws": (1) there is a relationship between migration and distance in that there is an inverse relationship between them, and that migration over long distances tends to be between major centres; (2) that migration takes place in stages in that whenever one group of people move away, another group comes in to take its place; (3) that for each main current of migration a weaker countercurrent is established; (4) that there is a difference between rural and urban persons in the propensity to migrate; and (5) there is a predominance

among females in short distance moves.

To these, Lee adds two more "laws" not explicitly stated as such by Ravenstein:[34] (6) that improvements in transportation technology and increases in manufacturing and commerce lead to an increase in migration; and, (7) that there is a dominance of the economic motive.

A number of studies have considered factors that were highlighted by Ravenstein, and, for the most part, substantiate his theory. However, it is the relationships between migration and distance, and migration and economic motive which appear to have spawned the greater proportion of these studies.

The Theory of Intervening Opportunity. The relationship between migration and distance was considered by Stouffer in 1940.[35] Stouffer's theory of intervening opportunity is based on the following preposition:

> The number of persons going a given distance is directly proportional to the number of opportunities at that distance and inversely proportional to the number of intervening opportunities.[36]

This theory would appear to have validity as evidenced by Bright and Thomas in their study of interstate migration and intervening opportunity.[37] However, as Jansen points out, there is a difficulty in defining the term "opportunity."[38] In Stouffer's original study, opportunity was defined to be the number of vacant houses in a census tract at the destination; any vacant houses between origin and destination were considered to be intervening opportunities. Hence, Stouffer's premise would seem to be based upon the assumption that one of the factors most affecting the decision to migrate is the availability of shelter at the destination, and that such availability could be mitigated by shelter encountered en route being considered an acceptable

substitute for that at the destination. The housing need could therefore be reduced independently of place attributes.

From the above, it is evident that Stouffer was primarily concerned with the volume of migration between two places. Particularly, he was interested in the number of migrants leaving an origin and the number arriving at a destination.

Lee transposes the concept of opportunity by substituting the concept of constraint.[39] Rather than perceiving opportunities, Lee maintains that it is possible that the migrant perceives barriers. These could be distance, physical barriers (for example, the Berlin Wall), migration laws, cost, political boundaries or other impediments such as children, sick dependants, or even household effects.

The Push-Pull Hypotheses. Many migration studies tend to adopt a stance in which the author exhibits an indication that he favors one or other of the "push" or "pull" hypotheses. Thus, there are authors of studies who take the stance that the migrant is compelled to move--that is, the "push" factors are dominant--and those who maintain the contrary.

The push-pull hypotheses maintain that there are socio-economic imbalances between regions. In an area, therefore, there are factors which act to hold people within the area or attract people to it, and there are others which tend to repel them. Thus, from the viewpoint of migration studies, there is pressure to relinquish residence at an origin--or push factors--which are associated with inducements supplied at a destination--pull factors. These factors are the independent variables upon which the variables rate and volume depend.[40]

Although the theory of intervening opportunity and the push-pull hypotheses are not the only bases for many migration studies, they have, nevertheless, formed the conceptual framework of a considerable number. Such studies, in turn, have inevitably been evaluated and a number of criticisms have been offered.

Some Criticisms of Migration Studies. Typically, migration studies make one of two basic assumptions: (a) that the environment is constant and the object of the study is to identify the characteristics of migrants; or, (b) that the population is constant and the object of the study is the variation in migration between places. Thus, in the first instance, knowledge is gained about such variables as sex, age, race, income, education, etc.; and in the second instance knowledge is gained about such variables as distance, economic characteristics, climatic characteristics, rates of flow and volume of flow, etc. Few studies have as their object the study of place attributes.

Schwind criticizes many studies on the grounds that they may have found "economic reasons" to be dominant simply because the questions were posed so as to bring out that result.[41]

Svart agrees.[42] He maintains that the formulation of hypotheses to be tested has structurally biased results of studies in such a way as to minimize the impact of environmental preference factors.

Wolpert criticizes deterministic hypotheses in migration studies on the grounds that they do not correspond to any inherent determinism in migration behavior.[43] Likewise, Lee feels that most studies are concerned with the characteristics of migrants and too few are concerned with the reasons for migration.[44]

Mukherji feels that many migration studies fail to recognize the role of the individual decision-maker in the movement process; that they are partial in explanation, average in predictability, lacking in insight, and offer simplistic solutions and explanations of people under stress.[45]

Similarly, Jackson feels that there has been little attempt to deal with the human decision-making process in migration studies.[46]

Jansen states concisely the deficiencies apparent in the majority of migration studies when he states:

> Perhaps the question most asked and least understood about migration is, "Why do people move?"[47]

This latter question could be extended to, "Why do people move to a particular place?" or, put another way, "What is it about a particular place that is attractive to migrants?"

In response to such criticisms, more recent studies have tended to take a wider perspective in the investigation of motives underlying the decision to migrate.

Contemporary Migration Studies. Migration has been stated to be an individual's response to problems such as age, occupation, housing, marital, or other problems of a social nexus in a given area at a given point in time;[46] it is a process of adjustment to our position in the life-cycle and our level of satisfaction with our present environment.

A model of migration as an adjustment to environmental stress was put forward by Wolpert in 1966.[47] In his paper, Wolpert quotes Engel's operational definition of stress as:

> . . . any influence, whether it arises from the internal environment or the external environment, which interferes with the satisfaction of basic needs or which threatens to disturb the stable equilibrium.[48]

At given points in the life-cycle, therefore, the individual may perceive a set of needs which might emerge as a somewhat radical departure from his present needs. These perceived needs may be real or imaginary, abstract or concrete; they may be aspirations or necessities. The fact that the need is perceived--even though it may not be overtly expressed--is sufficient to examine the behavioral response of the individual to the perception. Once a need is perceived it then acts as a stimulus demanding some form of behavioral response. In a migration context, this response might be in the decision to move or to not move.

The same stimuli are not acted upon equally by all people,[49] hence, there will be some people who are stimulated by the prospect of material gains and others who will be stimulated by the prospect of psychic gains. There will be differentials for occupation, income, age, sex, race, and other variables. Consequently, different factors may or may not affect people differently.[50] For example, a good school system might be important to parents with a young family. The chance of being able to avail themselves of the services of what they consider to be a good school system may be enough to stimulate the family to move. However, in so doing, it is possible that such a family might increase its cost of living or possibly reduce its standard of living in order to compensate for what, to them, is considered a greater need, that is, a better school system. Thus, migration frequently involves a trade-off where the benefits of increasing some component of satisfaction--or need--must be weighed against the costs that will be encountered in achieving those benefits.

A number of factors are therefore seen to affect migration.

Beijer suggests five classificatory reasons for migration, these being: economic factors, ambition, hope, courage, and better opportunity.[51] These reasons, with the exception of economic factors, are somewhat nebulous and are perhaps incomplete. Economic factors are universally recognized as strong inducements to move, although they are not the only inducements and frequently act in combination with other factors.

Gould and White stress the accessibility factor;[52] Lee--and Gould and White--indicate the importance of the stage of the migrant in his life-cycle.[53]

Schwind[54] suggests that many people respond to a perception of environmental quality which includes such variables as the cost of living, ease of communication, climate, available recreation resources, pollution, crime, quality of education and other social indicators. Other factors include geographic location, the desire for proximity to family and friends, political reasons, and factors associated with personality.[55]

If the above are some of the factors which act as stimuli for a move to another place, the question must be asked as to which factors are influential in the choice of a particular place.

Lee[56] asserts--and Willis[57] concurs--that migrants are selective. This fact is substantiated by Schwind who claims that better educated and informed individuals migrate not so much for immediate gain in income as for the prospect of a more rewarding job opportunity (in terms not only of salary but of promotion, challenging tasks, pleasant working

conditions, etc.).[58]

It would therefore appear that when an individual reaches a point in his life-cycle where his income is sufficient to comfortably offset his economic needs, he might then search for places that offer him a lifestyle in keeping with his psychic needs. Alternatively, it could be that a migrant satisfies his psychic needs first by locating in the area of his choice and then seeks to reduce his economic and material needs. This latter case would suggest that the individual would tend to rank psychic utility higher than economic utility and would appear to form the basic thesis of Ullman's paper in 1954,[59] in which he stressed the importance of locational amenities. In this respect, then, places may have attributes that attract migrants or that repel them; for what is perceived as an advantage by one migrant is viewed by another as a disadvantage.[60]

A study by Jansen on the social aspects of internal migration in Britain found that ". . . just under half of the main reasons given for migrating were not directly related to work."[61] Proximity to family and friends and other general advantages were considered by many subjects to be important factors motivating a move.

In his study, Jansen was particularly concerned with the level of satisfaction attained by migrants when the subjects compared attributes of their previous residence to their new residence. Many subjects saw their new residence as an "interesting city" with "good facilities," although some--particularly those who had migrated from areas where these two factors were of a higher standard such as in London--were dissatisfied with the level of interest and the quality of the facilities

in their new residence. Of the migrants moving to Bristol, several maintained that they did not gain substantial economic benefits by the move, but did gain considerable psychic benefits. The conclusion to be drawn from this finding is that there are often intrinsic characteristics of a place which pull people to that location. These place characteristics act in conjunction with economic opportunity to provide a perceived overall place utility for a prospective migrant. Places will therefore be perceived to hold a measure of both psychic utility and economic utility. This proposal would tend to mitigate the general theory that the economic motive is the singularly most influential factor in motivating a move.

That moves are often motivated by the intrinsic advantages of a destination in conjunction with potential economic incentives was recognized by Ullman[62] who addressed himself to the proposition that due to advancements in communications and distribution technology, and increasing wealth, Americans could have all of their material comforts and also select the locational environment of their choice. He wrote, "The new 'frontier' of America is . . . a frontier of comfort."[63]

Similarly, Bright and Thomas concluded, "We are of the opinion that an important part of the migration to California has been of a hedonistic rather than a primary economic character and has been motivated more by climate and legend than by superior job opportunities."[64]

Ullman considers climate to be one of the greatest pull factors in migration, stating, "Climate is probably the most important regional amenity, because it can be combined with other amenities, especially . . . where there is a fairly even spread of culture, education, sanita-

tion and creature comforts of all sorts."[65] Thus, although he does consider other factors to exert a pull, he considers climate to exercise the greatest pull.

Commenting on Canada, Ullman notes, "The Vancouver region is no California, but compared with the rest of Canada, it has the best climate and scenery as well as other attractions."[66]

As a result of a drift to warmer climes, Ullman observes that minor economic advantages can be gained in terms of the lower cost of fuel, housing, and other items.[67] This latter point may have been true at the time the article was written, but it is unlikely that people today move to, say, Vancouver for the housing prices. However, Ullman would appear to concur with Aristotle that, "Men seek after a better notion of riches . . . than the mere accumulation of coin and they are right."

Rossi examined the push-pull hypotheses in his study of residential mobility in Philadelphia.[68] He separated reasons for a move into push factors and pull factors and found that approximately one in four residential shifts could be ascribed to push factors, whereas pull factors were evidenced where people had a definite choice of either leaving or staying. Where there was a decision to leave, the factors associated with the motivation to move were the needs of more space, better neighborhoods, or cheaper rents.

Studying the migration of doctors in England, Davies concluded that once the financial inducement to move is standardized, then more doctors would prefer to live in southern England--an area generally regarded to have better "amenities"--than in the rest of the British

Isles.[69]

Bogue, in his paper to the International Population Conference of 1971, put forward as one of his hypotheses:

> . . . where "pull" stimulus is greater, there will be an appreciable selectivity [on the part of the migrant].[70]

A corollary hypothesis would be that where a migrant has deliberately selected a destination, then that destination can be said to possess intrinsic properties which are perceived to reduce and satisfy the needs of the particular migrant at that point in his life.

Thus, there would seem to be two situations upon which a choice of a destination could be made: (1) a migrant is aware of a destination and the advantages that it has to offer, accepts these advantages as an improvement on his present place, and moves to that destination, or; (2) the migrant has a set of criteria which he seeks to optimize and searches for a destination that has the potential to satisfy these criteria.

If the concept of a threshold level of satisfaction is accepted, and dissatisfaction with his present place reaches the point where the individual is motivated to search for an alternate place of residence, or to re-evaluate his present place with respect to other places, then the questions must be posed, "How does one arrive at the decision to move?" and, "How does one choose a particular destination?"

The Contribution of Decision Theory

Locational patterns in human geography are the physical expression of individual human decisions. Locational analysis and, hence, migration studies must therefore incorporate some notions regarding human

decision-making.[71]

Decision-making is the process of selection amongst alternate courses of action,[72] and decisions are affected by attitudes, dispositions, preferences and the like.[73]

Kates identifies four underlying assumptions in decision-making studies:[74] (1) the underlying view of man's rationality, (2) the types of decision processes involved, (3) the conditions of knowledge under which a decision is made, and, (4) the criteria that are used to guide such choice.

In discussing man's rationality, Kates is particularly influenced by the work of Herbert Simon. Although rationality can be defined as the "ability to choose clearly and consistently those alternate courses of human behavior that are most appropriate towards attaining some end or goal,"[75] there is conflict over the assumptions underlying the studies of man's rationality. Simon discusses the extremes of economic man--who is attributed with omniscient rationality--and psycholgical man who is nowhere near as rational as he ought to be.[76]

Of non-rational behavior, Olsson writes:

> . . . there is no way to avoid the conclusion that the so-called Rational, Economic Man can exist only rarely in the real world. This means that non-economic elements must be included in the models.[77]

and later:

> The degree to which human non-rationality is due to imperfect knowledge, multiplicity of goals, or other factors, will of course differ for different individuals and for different types of behavior.[78]

Jackson maintains that the decision to migrate is only partially rational and depends on the variations of personality, information,

emotion, and independence in attitude of the individual. The world view and the perspective of the situation will vary markedly as will the opportunities available to individuals to make moves.[79]

Rational behavior, therefore, must be operationally defined as behavior which is conditioned by the knowledge of the consequence in the long run of that behavior.

Simon's approach to rationality is based upon the concept of "bounded rationality." It is suggested that if such a concept is correct then:

> . . . the first consequence of the principle of bounded rationality is that the intended rationality of an actor requires him to construct a simplified model of the real situation in order to deal with it. He behaves rationally with respect to this model, and such behavior is not even approximately optimal with respect to the real world.[80]

Thus, to the behavioralist, Simon offers a more acceptable alternative concept of rationality than the normative concept of economic man.

Kates points out that the more constraints that are placed on the omniscience of the rational man, the closer such a model moves to that of bounded rationality.[81] The concept of bounded rationality therefore recognizes a finite ability to perceive, calculate and predict from an imperfect knowledge of the environment, yet maintains that man is able to differentiate between alternate courses of action according to their relative or expected utility.

Wolpert, in applying the above concept, observes that man responds to the perception of unequal utility.[82] Such an inequality of utility will thus be recognized between alternate places in the perception horizon of the individual who, in making his decision to migrate, will

relocate to that place affording him the perceived greatest net composite utility. This place may or may not be that which maximizes each of his evaluation criteria, but it will be that place deemed to be the most satisfactory under given circumstances and at a given point in time and, thus, his optimum location and the logical choice of destination.

In discussing the types of choice process, Kates recognizes three types of choices: (1) conscious choices, (2) habitual choices, and (3) unconscious or "trivial" choices.[83] The only one of these choices of interest to a study of migration is that of conscious choice, as the decision to engage in a major move can hardly be considered habitual or trivial.

Conscious choice involves reflection on the part of the chooser, a consideration of ends and an evaluation of the alternative means of achieving those ends. Although there is considerable debate about the nature and degree of freedom involved in conscious choice, there would seem to be agreement that such choice is not made lightly.[84]

No matter what choice or type of choice is made, it will inevitably be made under conditions attached to which is a degree of risk. Although the distinction between certainty, risk and uncertainty is not a clear distinction, there would seem to be general agreement that risk can be defined as operating under conditions where the outcome of the decision has a known probability of occurrence, and uncertainty has an unknown probability of occurrence.[85]

Von Neumann and Morgenstern's study of decision-making under conditions of risk concluded that: (1) risky propositions could be ordered according to their degree of risk, (2) that the concept of

utility was behaviorally meaningful, and, (3) choices among risky alternatives are made in such a way that they maximize expected utility.[86]

Commenting on awareness of pull factors of other places and evaluation with respect to present place, Gould and White note that the former offers unknown amenities which could be perceived as exciting and an escape from the shortcomings of present environment, whilst the latter offers known and valued amenities.[87] Thus, both offer a degree of uncertainty--uncertainty about the future--but the latter could be defined in terms of risk whereas the former must be defined in terms of uncertainty. Few people tend therefore to deliberately increase their level of uncertainty unless the rewards look quite high.

A second condition of knowledge is the subjectivity with which knowledge is interpreted. Two men may receive the same information, but each will perceive the information differently according to his mental set. Consequently, the way in which the information is put to use and the decisions that are based upon the information can vary considerably.

There is an indication that people tend to make choices based upon "maximizing" rules. That is, that a decision will be made in which at least one of the criteria used for evaluating the alternatives will be maximized. However, Simon suggests that this is probably not the case and that instead, human beings are "satisficers."[88]

Simon's "satisficer" model postulates that:

(1) we rank all the alternative courses of action of which we are aware along a preference scale, and,
(2) we select from this set the course that will satisfy a set of needs.[89]

Our choice, therefore, is optimal, but sub-maximum.

In applying this concept, Simon suggests that individuals simplify the outcomes of choice into the dimension of satisfactory or unsatisfactory. Such being the case, Simon suggests that people search the "range of alternatives" until they establish one alternative in which as many of the evaluation criteria as possible are considered to pass the test of achieving a satisfactory level of utility. An alternative, therefore, may not necessarily be optimal in terms of individual component utilities, but the composite utility is optimal. Harvey therefore suggests that there is a need to interpret satisficing behavior as some form of optimizing behavior.[90]

A degree of dynamism may be introduced into the concept of satisficing in that if alternatives fail to achieve a composite utility that is acceptable in terms of being satisfactory, then the evaluation criteria may be shifted downwards. On the other hand, if a satisfactory solution is easily attained then it is possible that the criteria levels will be shifted upwards.

Place Utility: A Conceptual Framework

From the above discussion it will be noted that the concept of utility has been employed in a number of instances. When applied to a place it may be defined as, "the net composite of utilities which are derived from the individual's integration at some position in space."[91]

The concept of place utility was first put forward by Wolpert in 1965.[92] In his paper, "Behavioral Aspects of the Decision to Migrate," Wolpert finds rigidity and basic incapacities with normative and stochastic models for migration prediction. In his view:

> . . . understanding and prediction of migration streams require determining of the constants in migration behavior and distinguishing these from the variables with respect to population composition and place characteristics which evolve differentially over time.[93]

He then offers an analysis framework that he classifies as descriptive, or behavioral, and partially dynamic.

Brown and Longbrake observe that "place utility" is a function of experience or attainments at a present site, and vicarious experience or attainments derived through acquaintances, mass media, and other information sources all of which operate to create a set of expectations.[94]

Simmons describes place utility as ". . . a measure of attractiveness or unattractiveness of an area, relative to alternative locations, as perceived by the individual decision-maker."[95]

Lashman, Polese and Wolpert have an operational definition of place utility.[96] To them it is ". . . the cognitive map for an individual where places (however defined) are ordered with respect to their desirability as job sites and residence locations."

The concept of place utility is based upon the understanding that origin and destination points are significant only in the way in which they are perceived by *the potential migrant* and in terms of the experience of *the person that actually moves* to a destination. Thus, if the experience at a destination is such that expected place utilities are not realized, satisfaction will not be achieved and there is a good chance that secondary migration will take place.

Hence, place utility is a relative measure of satisfaction derived by an individual at one place, measured against all other places within

the experience set of the individual. Therefore, levels of satisfaction or dissatisfaction, real or perceived, will be associated with all places within the perception field of an individual, and, as experience evolves over a time continuum, so too will needs and satisfaction levels evolve. Hence, utilities will vary according to time and experience. As utilities vary, so too will the perception of places and the perception of needs vary and the desire to move or to stay will be magnified or diminished. Therefore, alternative places will continually be evaluated and re-evaluated and compared to the present place as an individual seeks to optimize his net composite utilities.

Taken from this standpoint, migration is viewed as:

> . . . a form of individual or group adaptation to perceived changes in environment, a recognition of marginality with respect to a stationary position, and a flow reflecting an appraisal by a potential migrant of his present site as opposed to a number of other potential sites.[97]

It is the recognition of marginality of place utility that acts as a stimulus to search behavior and the search for a better environment.[98]

In order to measure place utility, Brown and Longbrake suggest that aspirations in terms of residential environment and the environment of present or prospective residence should be considered.[99] However, it is not only the residential environment that should be considered. The residential environment is but one component of need that contributes to the composite utility of a place for an individual or household. It is the "need set"--as expressed in the criteria that people establish for their evaluation frameworks--that acts like a prism through which place attributes of origin and destinations are filtered as place utilities.[100]

The Objectives of the Study

Upon consideration of the above and in an attempt to answer some of the questions that have been raised, this present study has as its objectives: (1) to examine the relative importance of selected variables in the decision to migrate to a specific place; (2) to determine those factors about a specific place which explain the main reasons for migration to the place; and (3) to analyze the utility of a place and to locate that place in two-dimensional utility space.

Footnotes

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CHAPTER 2

A PARADIGM OF THE MIGRATION DECISION PROCESS

Let us initiate the investigation of the migration decision process with the assumption that an individual is attaining a level of satisfaction with his present place and then examine the stages of dissatisfaction and finally the decision to move. Let us assume also that the individual is without the constraints of a family, and is responsible only to himself, and further, that he is in a situation that he has skills that are portable and marketable throughout the world and that the demand for such skills is universal.

Initially, the individual will be gaining a level of satisfaction from all the components of his environment. Some of these components may generage a level of dissatisfaction, but these will be traded off against those components whose utility or satisfaction level is higher than his overall satisfaction level. The composite net place utility is such that the individual engages in a low level of search.

Both the individual and the place develop along a time continuum. The individual gets older, gains more experience, evolves different needs, desires and aspirations. The place grows larger or smaller, governments change, development takes place or fails to take place. The two cannot hope to maintain the status quo at the point at which they both came together. Consequently, the utilities that an individual derives from a particular place will be in a constant state of flux.

Although individual utilities are important, what is more important is the composite utility of the place. The composite utility is the net combination of utilities and disutilities that is afforded an individual by a place. The fact that composite utility cannot readily be quantified is not offered as an excuse for non-qualification; however, it is recognized that such an attempt at quantification will necessarily be crude, will be derived from surrogate variables, and, hence, will be open to criticism.

In a situation immediately prior to making a decision to move, it is suggested here that dissatisfactions have reached the level at which the net composite utility is less than the individual knows he can gain elsewhere. At the same time other places within the individual's perception horizon are being evaluated as potential alternate places to live. Each place will have characteristics--real or imaginary--that will afford him a greater potential composite utility. The point at which the decision to migrate is reached is that point at which present net place utility is less than the individual's perception of alternate place utilities. At this point, the place offering the highest potential utility will be the destination of the move.

The decision to move, in most cases, is probably not an easy decision to make. The decision will involve both risk and uncertainty; the risk will be the risks in staying in the present place, the uncertainty in not understanding the implications of moving. In attempting to make the task of decision-making easier the individual will, consciously or unconsciously, establish criteria that will represent his more important needs, or utilities at a given point in time, and

constraints that the individual knows will limit his search parameter. For example, if an individual wishes to continue doing the same or a similar job because he derives both satisfaction and income from that job, then the utility afforded him by a job would be expected to be comparatively large. At the same time, the individual may consider a political boundary a constraint on his search area (indicating that there is possibly a measure of utility derived from the particular political unit in which he presently resides).

To establish a benchmark against which alternate places can be measured in terms of perceived utility, the potential migrant will establish a set of criteria--a kind of shopping list. Depending upon the strength of the utility of each item on the list, the list may be long or it may be short. The shorter the list, the greater will be the number of places that will satisfy the criteria; the longer the list, the fewer the number of places that will qualify as potential relocation sites. It is possible, indeed probable, that such a set of criteria is never formally recognized, nor that a formal search procedure ever takes place, yet there is an unconscious recognition that the comparative place utilities of origin and proposed destination favor a move to the destination. The process is presented schematically in Figure 1.

Prior to the evaluation of a situation being deemed satisfactory or unsatisfactory, acceptable or unacceptable, adequate or inadequate, there must be a conscious or unconscious perception of need. Such a need might be the need to change jobs; to acquire more living space; to be closer to family and friends.

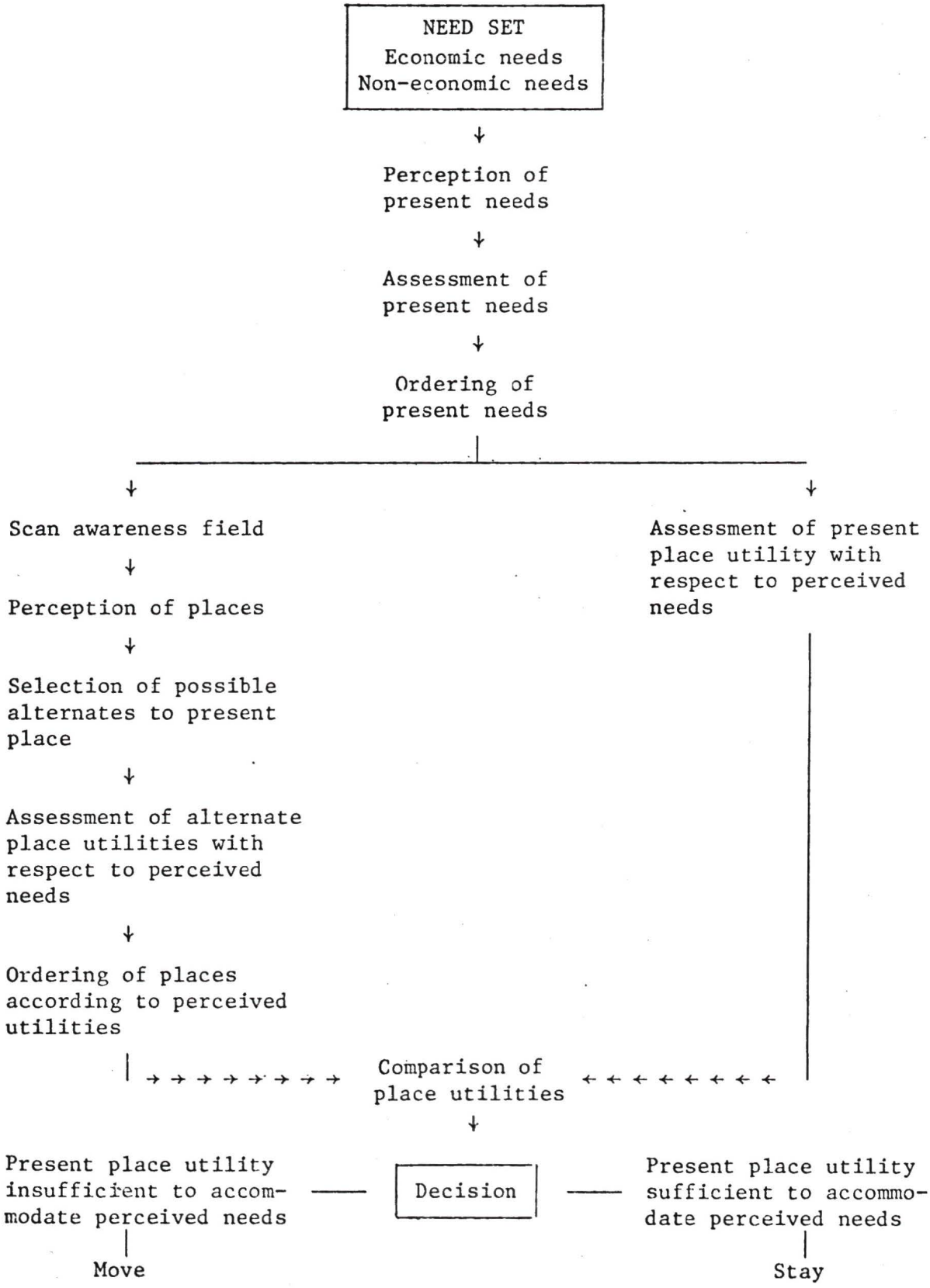


FIGURE 1. A Conceptual Model of the Decision to Move

The circumstances upon which the need is manifest are of more concern to the psychologist than to the geographer at this time; it is sufficient to assume that there is a need. It is probable that some people will consciously perceive this need and can verbalize their need set; others cannot. Also, it is probable that there will be more than one need that has to be reduced.

Once a need or need set has been perceived, it can be assumed that a person will assess the need set and will be able to order those needs in terms of a set of criteria that the individual feels will satisfy, or reduce, his needs. Once the criteria have been established the person will then search for possible places to reduce his needs.

A person's perception of places may be considerably distorted and biased and it is possible that certain places will loom as attractive simply because they have attributes that best satisfy non-primary needs. This in turn suggests that the primary needs might be re-evaluated or re-ordered. For example, suppose a man suffers an industrial accident and can no longer pursue an occupation with which he is familiar. His primary need, presumably, is to find some alternative employment to generate income so that he may resume a semblance of his existence before his accident. However, he feels that he would like to return to the place where most of his family or friends live, but has no idea what his chances are of getting a job in those places. He must re-evaluate his needs and decide which one is more important to him. Consequently, of all places of which a person is aware, only a small number will be selected as possible alternate places to the present place.

Each alternative will then be given closer scrutiny and will be re-ordered. Ultimately, only a handful will be perceived to possess attributes capable of reducing the need set.

At this point each will be compared with the others and with the present place. It is possible that extra needs and constraints will be perceived or created at this point in an attempt to further reduce the number of places to a bare minimum and thus aid the decision to move or to stay.

If, after assessment and reassessment of needs and places, the present place utility is considered to be sufficient to accommodate the need set when compared to other places, then the decision will be made to remain in the present place; if not, the decision will be to move.

CHAPTER 3

THE CONCEPT OF DICHOTOMOUS COMPONENTS IN PLACE UTILITY

Only within the last two decades have social scientists in general, and geographers in particular, considered extra-economic aspects of the relationship between people and places. Consequently, there are few studies which pose the question, "Why are people attracted to a particular place or to a particular region?"

By applying the utility concept, it is hereby proposed that it is possible to dichotomize a place utility into an income component and an amenities component.

The Established Rationale for Internal Migration

The traditional rationalization for regional migration is that people are attracted to a place because of its basic economic utility.[1] A place is perceived in terms of its ability to provide an income for those people who are not supported by external funds such as a pension plan or by independent wealth, and who must seek employment in order to provide for basic living requirements. Thus, the settlement of the Canadian prairies was achieved by donating tracts of land to individuals who were able to work the land and provide for their families and were able to export their surplus produce; Montreal was established partly because of its trading advantage at the confluence of the Ottawa and St. Lawrence Rivers; and Vancouver and San Francisco provided excellent

natural harbors and subsequently developed as transportation and distribution centres. Each place has advantages which attract people and enable them to earn a living.

Migration within cities is also a feature of recent urban growth. With the development of transportation technology, and particularly with the advent of the automobile, came the phenomenon of the suburbs. People were released from the relative bondage of the city and could travel greater distances either in a shorter time than was previously possible, or for less cost, or both. Thus people purchased tracts of land and built residences away from the city and travelled frequently between their residences and the city. The commuter was created. Not only was suburban land considerably cheaper than land in the city, but the purchaser of such land was also purchasing greater living space than he could afford in the city. Although it was assumed that the economic motive--in terms of a greater quantity of land for the same, or lower, cost--was the greatest factor in this exodus from the city, it could be claimed that living conditions were improved and thus an environmental, or psychic, motive--in terms of more space, cleaner air, aesthetic appearance, etc.--could also have been a key factor.

The Established Argument in a Contemporary Context

Man thus has an economic need which can be defined in terms of an ability to provide for the basic requirements of living--food, shelter, clothing, etc.--and a non-economic need which can be defined in terms of the characteristics of his living environment. There will be times when one or the other of these needs will dominate. To the young person or

young family starting in a career, the economic motive will probably dominate in that although they will have locational preferences, the location of a source of income will have greater weight in the assigned place utility than the environmental component at the location of the source of income. When economic needs are sufficiently provided for, then the marginal utility of money declines relative to the marginal utility of environmental considerations. Thus, there is evidence to suggest that there is a point at which extra economic income is not sufficient to compensate for a loss of amenities derived from a given place or lifestyle.[2]

We might therefore expect to see developing a system of places that satisfy the different needs and lifestyles of people at different periods in their life-cycle. Moves to different places at different times serve to demonstrate the underlying predominant utility of either income or amenities forces. That is, for any one place at any given time there will be people who move to that place primarily in order to satisfy a non-economic need. For example, a move to Vancouver may be initiated by an employer as a condition of employment and complied with by the employee. Such a move might involve greater financial remuneration, greater responsibility, or just a move to a place of employment. However, in order to maintain employment and thus to satisfy economic needs, the move is undertaken. Such a move might be deemed an economic move as the economic motive dominates and the move to Vancouver exhibits a utility reflecting relatively greater income benefits than it does place amenities. Alternatively, a move to Vancouver may be initiated by an individual and involve a slight loss of monetary income. In this

case, the individual indicates a positive preference for Vancouver (place preference) and it might be assumed that the amenities of the place are of greater utility than the income generating capacities of the place for the particular individual.

Thus, in moving to a place there will be some people who will trade off a non-economic need in order to better satisfy an economic need and others who will trade off income in order to better satisfy a non-economic need.

Where the need for income is dominant it might be expected that the place is perceived primarily as having utility mainly in satisfying material needs, that is, employment and its associated income, and any utility from the intrinsic qualities of the place will be, in effect, a consumer surplus. In this case aspects of employment and income will be considered to be of greater importance than intrinsic place qualities.

Where an amenity factor is dominant it might be expected that the place is perceived primarily as satisfying non-material needs, that is, the intrinsic qualities of the place and the overall living environment will be considered to be of greater importance than the generation of greater income or the possibility of advancement within an area of employment.

For example, a dentist may go to a rather remote area because there are no dentists in the area and he has the possibility to increase his wealth rapidly. Here the income generating capacities of the place are dominant. Alternatively, the dentist may go to the remote area because he enjoys the amenities that the area has to offer in terms of isolation, good hunting and fishing, etc., or because he feels an

obligation to use his skills for the betterment of the local residents. Whatever the reason, in this latter case, the motive is primarily non-economic; the fact that he may also increase his wealth rapidly is of minor concern to him at the point in time at which he decides to move.

Place utility therefore may be summarized as follows:

$$U = f(Y, O)$$

where: U = place utility
Y = income opportunity
O = an amenities factor.

Thus, the utility of each and every place that is perceived by an individual will be a function of the perceived ability of the place to provide a measure of both income and amenities other than income.

A Model for an Income/Amenities Trade-Off

Economics provides two concepts which, in combination, serve as a model for the thesis of a trade-off between the forces of the income benefits and the amenities of a place. These concepts are the concept of the production possibility of places and the indifference map of the individual. Figure 2 illustrates the principle upon which a destination is chosen.

EP represents the production-possibility curve of a number of places (A, B, C & D) which together constitute the individual's opportunity set at a given point in time. It will be noted that place A has the ability to provide the person with more income units and fewer amenity units than all other places in the set. Similarly, place D can offer more amenity units and fewer income units than all other places. The individual will examine all places along the production possibility

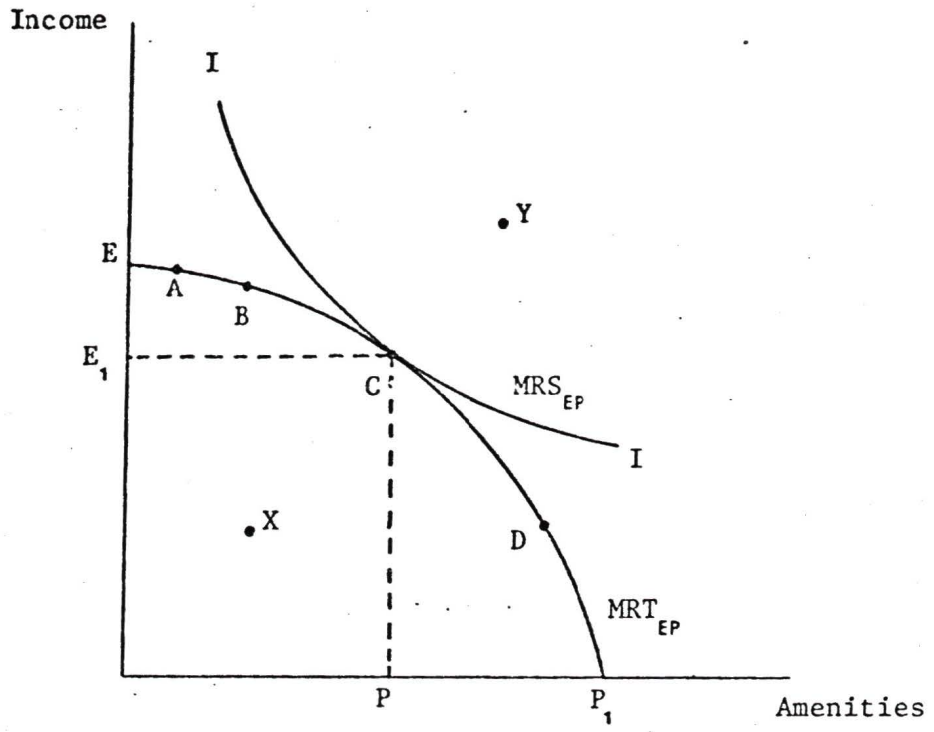


FIGURE 2. The Income/Amenity Trade-Off and the Utility of Places.

curve and will select that place which provides him with his desired combination of income and amenities.

I-I represents one of the individual's indifference curves and is the marginal rate of substitution of income for amenities. That is, I-I represents the willingness of the individual to substitute income for amenities at a given level of utility.

The individual must take into consideration the constraints which are placed upon him. These constraints will be the requirements of such factors as a family or relatives, medical requirements, or any other requirements which limit migration in some way. For example, it might be that a family member must have constant medical attention of

a specialized kind, or that children require a level of tuition in some area such as music studies which can only be expected to be offered in a city above a certain size. Thus, for the purpose of this illustration, let us say that I-I is the highest indifference curve that the individual could attain without a change in the nature of his constraints, and the places A, B, C and D represent the opportunity set of places that will fulfil his needs and yet be consistent with the constraints that are placed upon him.

Place Y is a place that the individual perceives would afford him greater utility, but is beyond his opportunity set and is therefore quickly eliminated as a possible destimation. Place X is a possible alternative to places A, B, C and D, but to move to place X would be to accept a decrease in utility and would therefore be unsatisfactory and irrational; it, too, is therefore quickly eliminated.

Thus, the rational choice of the individual is to move to that place where the marginal rate of transformation is tangential to the highest indifference curve. In the diagram this is place C. At C the individual might expect to receive E_1 units of income and P_1 units of amenities, and thus optimize his place utility.

The study therefore seeks to test the hypothesis that:

> *Each individual is able to assign to a place some estimate of the economic benefits that he perceives he will gain at the place, and some estimate of the amenity benefits that he perceives he will gain at the place, and that the combination of these benefits represent the overall utility of the place for that individual.*

In testing such an hypothesis it is assumed that people whose primary motivations are income considerations will rate such variables as greater responsibility, promotion, opportunity for advancement, job

satisfaction, increase in income, or the opportunity to increase income, higher than variables associated with the intrinsic characteristics of the place.

Although it could be argued that the above mentioned variables are not directly linked to income, such variables are directly linked to employment and indirectly to income. Nevertheless, variables such as job satisfaction are indicative of a utility which is not primarily a place utility, but is an employment utility and, for the purpose of this study, deemed to be in the realm of income benefits.

Amenities are assumed to be indicated by high ratings on variables reflecting the intrinsic qualities of the place; such variables as site characteristics, climatic characteristics, human and environmental qualities as perceived by the migrant.

Thus, by examining the importance of the variables in the decision to migrate, it should be possible to appreciate better the degree of utility that a migrant derives from a destination and, if such an examination were conducted for all places in, say, a region, it should be possible to determine the degree of satisfaction that each place affords its newcomers or residents. If such place utilities were known then they would serve as an indicator of the propensity of people to remain at a place or to move to other places offering higher place utilities and, hence, a better quality of life.

Footnotes

[1]For people on the age range of approximately 17-65 who are in the labor force. Although the statement made here is a generalization, previous evidence would seem to bear out the truth of this statement. However, there is a recognition that the definition of "economic" can include income generation or expenditure reduction or both.

[2]See, for example: Ray Magladry, "The Corporate Transfer Gamble," *Financial Times of Canada Prospect on Money* 1, no. 2(March 29, 1976): 6-12; and Lance Morrow, "Americans on the Move," *Time,* March 15, 1976, pp. 38-44.

CHAPTER 4

THE STUDY AREA

An attempt to test the hypothesis for a number of places would require a considerable outlay of both time and money. Therefore, it was deemed to be more efficient to adopt a case study approach and to chose one area in which testing would take place.

The logical choice of area was Greater Victoria as it was an area with which the author is familiar and also had the advantage of being a city of sufficient size to maintain most of the amenities found in larger centres.

The characteristics of Greater Victoria are described here for the benefit of persons unfamiliar with the area, and also to enable comparisons to be made with other areas. The description also serves as a setting against which the responses of the sample population may be evaluated.

Victoria is the capital of the Province of British Columbia and is situated on the southeastern tip of Vancouver Island on Canada's Pacific coast (see Figure 3). Although the city is the political capital of the province, it is not the economic heart of the province; that distinction being claimed by the city of Vancouver. After having served as a trading post for the Hudson's Bay Company and a staging point for gold seekers from California during the Fraser gold rush of the 1850's, the city was incorporated--in 1862. By comparison, Vancouver was not incorporated until 1886. Hence, Victoria is one of the older

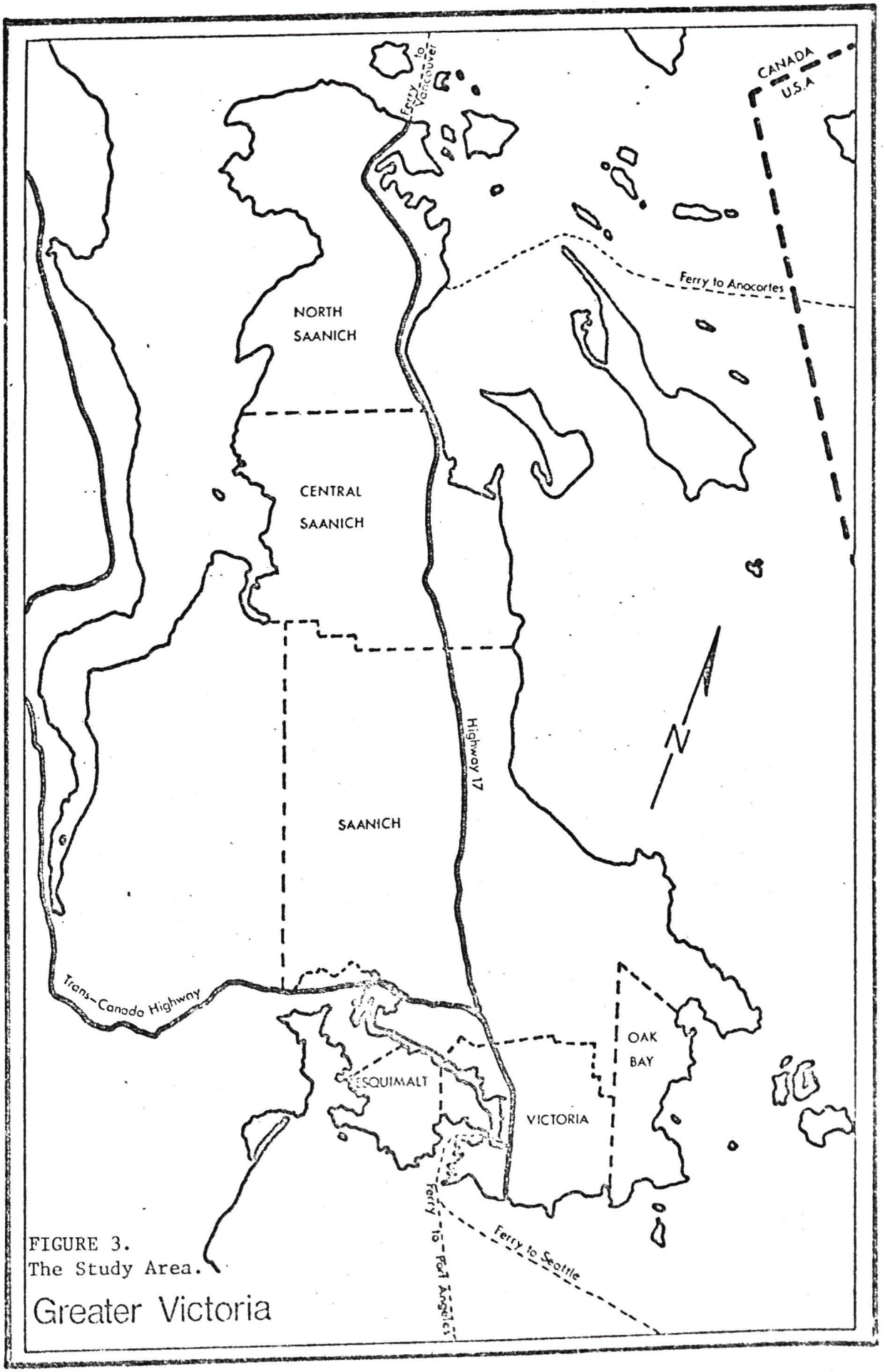


FIGURE 3.
The Study Area.

established settlements of the province and is thus endowed with the trappings of heritage in both its cultural atmosphere and because it is the seat of the provincial government.

The Greater Victoria area comprises the City of Victoria, and the Municipalities of Oak Bay, Saanich and Esquimalt, and outlying unincorporated areas. The 1971 Canadian census established the population of the metropolitan area as 195,805;[1] Victoria could therefore be described as a medium-sized city.[2] Table 2 gives a comparison between metropolitan Victoria and other metropolitan areas in Canada.

TABLE 2: COMPARATIVE SIZES OF CANADIAN CITIES, 1971

City	Population
VICTORIA	195,805
Montreal	2,724,889
Toronto	2,609,638
Vancouver	1,071,081
Ottawa (incl. Hull)	596,176
Winnipeg	534,685
Edmonton	490,811
Quebec City	476,316
Halifax	220,350
Regina	138,956
St. John's	129,304

SOURCE: Census 1971, Statistics Canada.

Being a medium-sized city, Victoria is able to support a wide range of cultural and service functions. All major Canadian department stores have outlets in the city and the city is able to support a number of theatre groups, a symphony, and many cultural and sporting activities. However, the size of the branches of national commercial establishments

and of the cultural and sporting endeavours is such that they satisfy the needs of the citizenry, but are not large enough or of such repute that they could claim national or international recognition. Thus, the selection of goods in, say, Vancouver, Toronto or Montreal is generally greater than it is in Victoria. Similarly, the symphony, although well supported locally, could not claim fame equal to that of, say, the symphonies of Vancouver, Toronto or Boston, and can therefore not usually attract the same calibre of artist.

If population estimates given in Table 3 prove to be accurate, the Victoria metropolitan area could still claim to be medium-sized by the year 2001.

TABLE 3: POPULATION PROJECTIONS FOR THE VICTORIA METROPOLITAN AREA

	1981	1991	2001
Victoria	73,950	86,400	89,915
Saanich	91,800	118,400	143,130
Oak Bay	22,950	28,800	29,360
Esquimalt	16,575	19,200	20,185
Central Saanich	7,650	9,600	14,680
Sidney & North Saanich	11,385	17,000	20,175
Unorganized	30,600	41,600	49,545
Victoria Metropolitan Area	254,910*	320,000*	366,990*

*Capital Regional District 1972

SOURCE: Capital Regional District estimates, 1972.

Together with the distinction of being the seat of provincial government, one of the three provincial universities is situated in the city along with the headquarters of the Canadian Forces Pacific Maritime Command at the naval dockyard in Esquimalt, and an infantry

contingent at Work Point. The economic base of the area is therefore essentially in the tertiary and quaternary sectors--there being no significant manufacturing industries in the area.

The number of manufacturing establishments in the area actually declined in the decade between 1965 and 1976, as evidenced in Table 4. If the trend which appeared between 1961 and 1966 continues (see Table 5) it might reasonably be expected that the number of people employed in manufacturing would also decrease.

TABLE 4: POPULATION AND MANUFACTURING PLANTS, 1965 AND 1976, GREATER VICTORIA

	1965	1976	Change
Population	176,000	222,000	+26%
Trading area population	286,000	400,000	+40%
Number of industrial plants	232	172	-26%

SOURCE: Greater Victoria Chamber of Commerce.

It will be noted in Table 5 that a sizeable percentage of the regional labor force is employed in the "Community, Business and Personal Service" category. This is partly attributable to the fact that the area has a thriving tourist industry in addition to its function as a government and retirement centre. Much revenue is gained by the city from its tourist industry which was estimated to contribute about $140 million to the regional economy in 1975.[3] Much is done by the city to encourage tourism in addition to the efforts of local entrepreneurs. As a consequence, it is estimated that approximately

TABLE 5: PERCENTAGE BREAKDOWN OF REGIONAL LABOR FORCE 1961, 1966, 1971 AND 1975

Industry	1961	1966	1971*	1975
Community, Business & Personal Service	23.0	26.0	28.5	30.6
Public Administration & Defence	26.0	25.0	21.5	18.6
Trade	16.0	17.0	16.5	16.1
Manufacturing	11.0	10.0	8.9	8.1
Transportation, Communication, Other Utilities	8.0	7.0	6.5	6.0
Construction	5.0	5.0	5.8	6.5
Finance, Insurance & Real Estate	4.0	4.0	4.7	5.2
Primary	4.0	3.0	2.7	2.5
Other	3.0	3.0	4.9	6.4
	100.	100.	100.	100.

*Estimate

SOURCE: Economic Survey of Metropolitan Victoria, Capital Regional District, 1971; and Housing Survey, 1976.

31% of all visitors to British Columbia include Vancouver Island as part of their itinerary and, of these, it is conservatively estimated that 50% visit Victoria.[4] If the visitors' book at the Visitors' Information Centre is an indicator of experiences in the area, then many of the visitors are favorably impressed by its characteristics and leave with the intention of returning.

Table 5 gives a breakdown of the regional labor force for the years 1961, 1966, 1971 and 1975. Employment in education is included in the "Community, Business and Personal Service" category, and "Public Administration and Defence" includes all employees at the federal, provincial and municipal levels of government. The breakdown estimate

for the basic and non-basic[5] proportion of employment is given in Table 6.

TABLE 6: PROPORTION OF EMPLOYMENT IN METROPOLITAN VICTORIA SERVING BASIC AND NON-BASIC MARKETS, 1966

Industry	Basic	Non-Basic
Public Administration & Defence	70.6	29.4
Manufacturing	52.8	47.2
Trade	21.3	78.7
Community, Business & Personal Service	19.2	80.8
Transportation, Communications, Other Utilities	19.1	80.9
Primary	17.5	82.5
Finance, Insurance & Real Estate	12.6	87.4
Construction	0.0	100.0

SOURCE: Economic Survey of Metropolitan Victoria, Capital Regional District, 1971.

Tables 4, 5, and 6 serve to emphasize the fact that Victoria could hardly be classified as a manufacturing city, but that it could be classified as a government centre, having a large proportion of its labor force employed in the government sector.

The population breakdown by age given in Table 7 indicates that the greater percentage of Victoria's population is below both the national and provincial averages in all age categories until the 50-64 category. Above age 50, Victoria has a greater percentage of its population in both the 50-64 group and in the 65+ group than the national and provincial average. This fact helps to substantiate the area's claim to being a retirement centre.

TABLE 7: POPULATION BY AGE GROUP: VICTORIA, BRITISH COLUMBIA AND CANADA, 1971

Age Group	Victoria	%	B.C.	%	Canada	%
0-4	12,615	(6.4)	175,445	(8.0)	1,816,155	(8.4)
5-9	16,055	(8.2)	212,225	(9.7)	2,254,005	(10.5)
10-14	18,440	(9.4)	222,300	(10.2)	2,310,735	(10.7)
15-19	17,890	(9.1)	201,120	(9.2)	2,114,345	(9.8)
20-24	16,220	(8.3)	185,150	(8.5)	1,889,405	(8.8)
25-34	21,125	(10.8)	293,075	(13.4)	2,889,545	(13.4)
35-49	32,120	(16.4)	384,875	(17.6)	3,765,435	(17.4)
50-64	31,750	(16.2)	305,420	(14.0)	2,784,275	(12.9)
65+	29,590	(15.2)	205,010	(9.4)	1,744,410	(8.1)
	195,805	(100)	2,184,620	(100)	21,568,310	(100)

SOURCE: Statistics Canada Census, 1971.

TABLE 8: POPULATION CHARACTERISTICS OF GREATER VICTORIA, 1971

ETHNIC GROUP		
Total Population	195,805	
Asian	5,315	2.7%
British Isles	146,660	74.8%
French	6,155	3.1%
German	9,320	4.7%
Hungarian	840	.4%
Italian	1,840	.9%
Netherlands	4,500	2.2%
Polish	1,760	.8%
Russian	590	.3%
Scandinavian	6,900	3.5%
Ukrainian	2,615	1.3%
Other		5.3%

SOURCE: Statistics Canada Census, 1971.

Ethnically, the greater percentage of Victoria's population is of British extraction as indicated in Table 8. British origin or ancestry

is greater than all other extractions combined and this fact is evidenced in the character of the city which tends to reflect British or pseudo-British traditions, lifestyles and dispositions and extends to the city an atmosphere which is unique on the Pacific seaboard of North America.

The Capital Regional District--which forms the effective boundary of the study area--is located at the southeastern tip of Vancouver Island where the Strait of Juan de Fuca meets the Strait of Georgia. Here, the rugged Island Mountains which, in places, rise to over 8000 feet, give way to the low fertile Saanich Peninsula. Opposite the City of Victoria, across the narrow Straight of Juan de Fuca, rise the imposing Olympic Mountains in the State of Washington. Thus, the area is protected from the Pacific Westerlies by the Island Mountains and from southerly winds by the Olympics. In addition to the uniqueness and beauty of the particular physical environment of Victoria, the island provides variety in climate, vegetation and topography which offer island residents diversity in leisure opportunities.

Being in a coastal situation, Victoria experiences a maritime climate. Comparative statistics are given for Victoria and other metropolitan areas in Table 9. From these statistics it will be observed that Victoria experiences milder winters and cooler summers than most places in Canada, and has only a moderate amount of rainfall which occurs mainly in the winter months. On average there are only 20 days per year on which the temperature dips below freezing, and the vegetation growing season averages 236 days per year. These climatic statistics are largely attributable to the location of the city.

TABLE 9: COMPARATIVE CLIMATIC STATISTICS

City	Mean Jan. Temp. F°	Mean July Temp, F°	Total Precip. (inches)	Median Days with Snow Cover 1"+
VICTORIA	37.9	61.6	33.52	8
Edmonton	6.6	63.1	18.64	117
Halifax	26.0	65.3	54.39	63
Montreal	22.9	70.8	41.19	117
Ottawa	12.6	69.1	33.55	117
Quebec	11.9	66.8	41.67	140
Regina	1.6	66.7	15.53	135
St. John's	24.3	59.7	60.98	129
Toronto	25.0	71.5	30.56	59
Vancouver	37.2	63.8	41.12	7
Winnipeg	0.1	68.3	20.35	122

SOURCE: *Facts from Maps: A Geographical Handbook,* Ottawa, Dept. of Energy, Mines and Resources, 1972.

Table 10 gives the 1973 income distribution for families in Victoria compared to British Columbia and Canada in the same income groupings. It can be seen from this table that Victoria has a greater percentage of families in the $8,000-$11,000 income group and in the $17,000-$25,000 income groups than either the province or the country, but the average and median incomes of the city are lower than the province, but higher than the nation. Table 11 gives comparative urban income statistics for the country for 1973 and establishes Victoria as in thirtieth place in terms of average income. The discrepancy between the Statistics Canada figures and the Revenue Canada figures is accounted for as follows: the Revenue Canada figures are an average of all persons

TABLE 10: FAMILY INCOME DISTRIBUTION, VICTORIA, BRITISH COLUMBIA AND CANADA, 1973

Income Group	Victoria		British Columbia		Canada	
	% in Grp	Cum %	% in Grp	Cum %	% in Grp	Cum %
- 1,999	2.4	2.4	2.0	2.0	2.3	2.3
2,000- 2,999	1.1	3.5	1.9	3.9	2.3	5.0
3,000- 3,999	1.8	5.3	2.7	6.6	3.9	8.9
4,000- 4,999	1.9	7.2	4.3	10.9	4.9	13.8
5,000- 5,999	3.9	11.1	3.9	14.8	4.6	18.4
6,000- 6,999	4.5	15.6	3.1	17.9	4.6	23.0
7,000- 7,999	3.6	19.2	3.6	21.5	5.3	28.3
8,000- 8,999	10.1	29.3	4.5	26.0	5.9	34.2
9,000- 9,999	8.0	37.3	6.2	32.2	6.0	40.2
10,000-10,999	8.0	45.3	6.5	38.7	6.5	46.7
11,000-11,999	4.3	49.6	6.0	44.7	6.0	52.7
12,000-12,999	4.3	53.9	6.3	51.0	6.2	58.9
13,000-13,999	6.2	60.1	6.4	57.4	5.3	64.2
14,000-14,999	6.1	66.2	6.2	63.6	5.2	69.4
15,000-16,999	6.2	72.4	9.4	73.0	8.3	77.7
17,000-19,999	12.4	84.8	11.2	84.2	9.0	86.7
20,000-24,999	10.8	95.6	9.1	93.3	7.3	94.0
25,000+	4.4	100.	6.7	100.	5.9	100.
	100.		100.		100.	
Average	13,257		13,942		12,716	
Median	12,084		12,827		11,533	

SOURCE: Statistics Canada Catalogue 13-207.

filing tax returns for 1973, whereas the Statistics Canada figures are based upon a sample of *family* incomes. Individual incomes and average per capita incomes are considerably lower.

TABLE 11: TAXABLE INCOME OF CANADIANS IN SELECTED CITIES, 1973.

City	Order of Average Income	Average Income
CANADA		$7066
Victoria	30	8803
Alberni	10	9455
Calgary	21	9086
Edmonton	37	8691
Fredericton	61	8265
Halifax	39	8597
Kamloops	22	9083
Kelowna	50	8474
London	24	8964
Montreal	15	9212
Nanaimo	34	8729
New Westminster	26	8902
Ottawa	4	9982
Prince George	11	9451
Quebec	18	9142
Regina	64	8229
Saskatoon	59	8294
Thunder Bay	35	8719
Toronto	12	9315
Vancouver	16	9195
Vernon	45	8511
Winnipeg	71	8126

SOURCE: Revenue Canada, 1975.

Table 12 gives average weekly wages and salaries for various sectors of the economy and compares them to other centres. It can be seen from this table that although wages and salaries are the highest of all the areas, they have actually declined relative to 1961 when adjustments for inflation have been made. It will also be observed that wages and salaries in the service sector are the lowest for the centres listed and that the industrial composite is also the lowest, although only slightly below that of Edmonton.

TABLE 12: AVERAGE WEEKLY WAGES AND SALARIES, SELECTED CITIES, NOVEMBER 1975 (INDEX 1961 = 100)

City	Manufact.	Trans. Comm. Other Util.	Trade	Service	Industrial Composite
Victoria	272.55 (97.1)	260.70 (132.5)	183.61 (163.6)	122.74 (229.0)	206.88 (151.5)
Vancouver	257.68 (123.3)	287.12 (153.9)	198.20 (185.7)	175.66 (241.8)	235.65 (165.5)
Edmonton	233.63 (147.3)	259.78 (197.2)	168.60 (179.5)	135.39 (276.4)	206.97 (184.4)
Toronto	227.25 (126.1)	274.60 (130.2)	178.22 (168.4)	178.22 (230.8)	217.72 (151.3)
Montreal	213.06 (110.0)	254.24 (123.2)	168.73 (158.0)	164.60 (202.9)	211.49 (131.4)

SOURCE: Statistics Canada Catalogue 72-002, December 1975.

Although average income in the Victoria area tends to be higher than the national average, regional unemployment and the cost of living in the area also tend to be above the national average.

Table 13 gives the regional unemployment rates for July 1975 and January 1976. It can be seen from this table that the maritime provinces and the Vancouver-Victoria region are above the national average while all other regions are below. Although there is a tendency for Vancouver to have a slightly higher unemployment rate than Victoria, Victoria's rate is affected considerably by fluctuations in government hiring policies. In times of provincial government expansion of the civil service the rate can be close to or below the national average. In times of government hiring "freezes" or austerity programs, there is a tendency for the area to be well above the national average.[6]

TABLE 13: REGIONAL UNEMPLOYMENT RATES, JULY 1975 AND JANUARY 1976

Region	July 1975	January 1976
CANADA	6.5	7.0
Vancouver-Victoria	6.9	7.4
Alberta	3.2	3.6
Saskatchewan	2.7	2.9
Manitoba	3.6	3.9
Hamilton-Toronto	5.1	5.6
Montreal	6.3	6.7
New Brunswick-Prince Edward Island	10.3	10.9
Nova Scotia	7.6	8.0
Newfoundland	17.6	17.8

SOURCE: Statistics Canada Catalogue 73-001.

In terms of the cost of living, the Canadian west coast tends to have higher food and housing costs than anywhere else in the country, with the possible exception of Newfoundland and the Yukon and Northwest Territories. Table 14 indicates the average weekly cost of a nutritious diet for a four-person family in various cities across Canada for the period October 1975-July 1976. Whilst no figures are gathered for Victoria, prices are considered to be as high as, or higher than, prices in Vancouver[7] and are mainly attributable to higher transportation costs to the island.[8]

As an indication of the comparative costs of housing in Victoria, Vancouver and Canada, the average housing costs for single family detached dwellings financed by the National Housing Act are given in Figure 4. This graph shows that for most of the decade 1965-1975 the cost of a single detached dwelling in the Victoria metropolitan area was above that for Vancouver and considerably higher than the Canadian

TABLE 14: AVERAGE WEEKLY COST OF A NUTRITIOUS DIET FOR FOUR PERSONS, SELECTED CITIES, OCTOBER 1975 AND JULY 1976

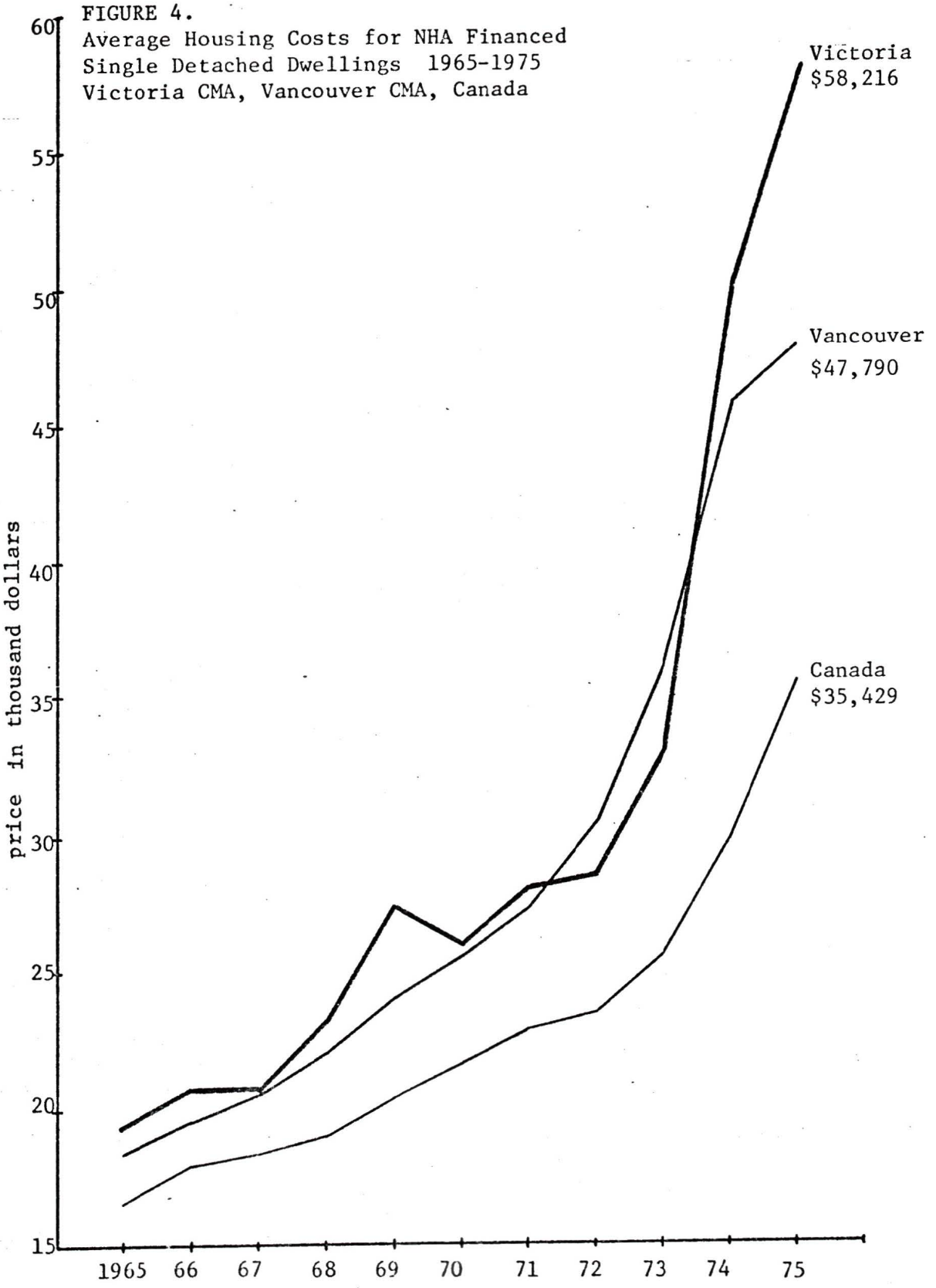
City	October 1975	July 1976
Vancouver	45.10	46.98
Edmonton	43.70	44.76
Regina	41.80	44.19
Winnipeg	43.40	44.06
Toronto	42.70	42.67
Ottawa-Hull	41.60	42.45
Montreal	41.40	42.26
Quebec City	40.30	40.82
St. John (N.B.)	44.70	45.81
Halifax	41.80	43.08
Charlottetown	43.30	44.84
St. John's	46.50	47.86
12-City Average	42.50	43.29

SOURCE: Anti-Inflation Board Weekly Bulletin

average. Over the decade, average Canadian house prices for single family dwellings, financed under the NHA, have increased by 11.4% nationally, yet in Victoria the equivalent price increase has been 20.1%.[9]

Being situated on an island makes it slightly more difficult to reach the city than it would be had the city been situated on the mainland. However, the transportation links, both sea and air, operated by both private and public corporations, are of such frequency that there is usually little difficulty getting to or from the mainland from the city. Nevertheless, travel between, say, Vancouver and Victoria does require some form of travel planning in the form of scheduling, and does take longer than would normally be expected of a journey of approximately 70 miles.

FIGURE 4.
Average Housing Costs for NHA Financed
Single Detached Dwellings 1965-1975
Victoria CMA, Vancouver CMA, Canada



Source: Capital Regional District Housing Survey 1975

In summary therefore, Victoria is a medium-sized city which could be classified as a retirement, tourist and government centre. It enjoys a degree of isolation from the mainland of North America, but is reasonably well served by air and sea links to the mainland. Not the most affluent city in Canada in terms of average income, it is, nevertheless, above the national average. Although wages and salaries are somewhat higher than in other parts of the country, they are by no means the highest in the nation or in the province. The benefits of higher wages and salaries in certain sectors of the economy of the area are offset by a higher than average cost of living, particularly in housing and food costs.

The city does not share the focus of provincial or national attention that is enjoyed by Vancouver, yet there would seem to be many people who are aware of the city through its fame as a tourist centre and provincial capital, and who are prepared to migrate to the area and to make it their home.

Footnotes

[1]Statistics Canada, Census, 1971

[2]Niles M. Hansen, *Intermediate-Size Cities as Growth Centers* (New York: Praeger, 1971), pp. 80-84.

[3]Interview with Mr. Don Nixon, Manager, Victoria Visitors' Information Centre, July 27, 1976.

[4]Ibid.

[5]Basic employment is understood to mean that employment which is essentially allocated to generating revenue for a city or region. Non-basic employment is that employment which is allocated to servicing the needs of the city or region.

[6]Telephone interview with Mr. Freeburg, Canada Manpower Centre, Victoria, July 29, 1976.

[7]*Victoria Times,* August 24, 1976, p. 2.

[8]Interview with Mr. Chapman, Anti-Inflation Board representative, Revenue Canada, Victoria, August 3, 1976.

[9]Capital Regional District, *Victoria Metropolitan Area Housing Study, Phase I* (Victoria: CRD Planning Department, July 1976), p. 40.

CHAPTER 5

DATA COLLECTION: METHODOLOGICAL CONSIDERATIONS

The nature of the study was such that the data needed to test the hypothesis did not exist in any published form such as a census. It was therefore necessary to rely upon field work for data collection. This presented three problems: (a) to determine what data were needed; (b) to locate a sample population; and (c) to determine the most efficient method of data collection.

The Data Needed for the Study

The hypothesis dictated that information was needed on the importance of a number of variables (which could be classified as either income variables or amenities variables) in influencing a move to the area. By phrasing a question in such a form as to enable examination of both the applicability and importance of each variable, it was assumed that information could be gained on (a) those variables which were considered to be influential in the move to Victoria, and (b) the relative importance of each of these selected variables.

It was recognized that a number of variables could be classified as belonging to a group of variables (for example, air quality could be classified as belonging to the quality of environment group) and that results could be aggregated to give a group score. Ultimately, group scores could be further aggregated into the dichotomous variables of income and amenities. Consequently, each specific variable was assigned

to a general group of similar variables.

The second objective of the study was to attempt to isolate those variables which were the main factors influencing a move to the area. Previous studies have indicated that other factors are influential in the decision to migrate in addition to factors associated with the chosen destination. The more important of these extra-territorial variables being: attitude, previous experience, age and income. It was also thought that marital status and the number of children in a family could have an impact in migration decisions and the choice of destination. Information was therefore desirable on these additional variables.

The Location of a Sample Population

In some countries, whenever a person or a household relocates, it is required that they register the move with an appropriate authority. Thus, it is simple to compute and locate the number and whereabouts of persons entering or leaving a city or region. Unfortunately, for the purpose of this study, Canada has not adopted such a procedure, with the result that locating newcomers to a city or region is extremely difficult. Consequently, a problem to be overcome was the identification of recent immigrants to the study area.

This problem was overcome by procuring a list of names from the Victoria Welcome Services--a commercial organization whose purpose is to welcome recent migrants to the area on behalf of local businesses with the intention of advertising the existence and services of such establishments.

Victoria Welcome Services compiles a list of names of 30 newcomers to the area each week. Any household within the local free-calling area of the Victoria telephone network qualifies for inclusion on the list. The list comprises the names, addresses, telephone numbers (if a telephone is installed and if the number is known),and where the newcomer is from--if this is known. Friends, neighbors, relatives, acquaintances, employers and others supply VWS with the names of newcomers. Additional sources of information include: the local newspapers (when newcomers become subscribers); real estate agents; moving companies; and local garages. The lists are not confined to homeowners, but include people who are renting apartments and houses, or who might be in other types of accommodation such as university halls of residence. Also, it is not necessary to be a family group to be included in the lists; single people, retired couples and family households are all included.

However, VWS does not claim that its lists are comprehensive. As there is no knowledge as to how many people are entering the area each week, it is impossible to say what percentage are "captured" by the Welcome Services. Additionally, it is possible that a household may have been established for some time prior to being included on a list of newcomers, although there is an impression that most of the people on the lists are included shortly after arrival in the area. Thus, the lists of the Victoria Welcome Service provide, at best, only a sample of the total incoming population.

The sample itself contains considerable bias. The fact that certain real estate firms concentrate in a defined geographical area, or cater to specific clientele or income category introduce an areal

bias to the sample. Similarly, there appeared to be a tendency for people at the lower end of the income spectrum to be underrepresented. Likewise, there appeared to be an underrepresentation of single people in the sample. Consequently, certain localities, income groups and types of people tended to be better represented than others. However, in the absence of feasible alternatives, the VWS approach seemed to provide the best, if somewhat crude, method of locating new residents to the area.

The Data Collection Method[1]

Considering the type of necessary data and the area to be surveyed, two methods of data collection were apparent: an interviewer-administered questionnaire, and a self-administered mail questionnaire.

The main advantage of the interviewer-administered questionnaire is that it permits a researcher to clarify points of misunderstanding or misinterpretation; it permits a rapport to be established with the interviewee which facilitates spontaneity; it allows for a wide range of information to be sampled and for personal assessments to be made; and it is usually associated with high response rates. However, the two main disadvantages with interviewer-administered questionnaires are their time-consuming aspects, and, hence, the low number of responses that can be sampled by one person in a given time period, and they are subject to interviewer bias.

Self-administered questionnaires, although they are associated with poor response rates and a lack of control over the person answering the questions or the order in which the questions are answered, offer

the distinct advantages of being inexpensive, enabling a large number of people to be sampled in a short time period, and exclude any interviewer bias.

Consideration was given to the advantages and disadvantages of both types of questionnaire and for the purposes of this study the self-administered mail questionnaire was chosen as the most appropriate method of data collection.

The Questionnaire

Previous studies led to the conclusion that information was required on the following subjects: the importance of selected variables to a migrant when he moved to Victoria; the attitude of a migrant with respect to the utility of places of residence; the previous experience of places of the migrant; and certain personal information about the migrant. A questionnaire was drafted and pre-tested with these criteria in mind (see Appendix 1).

It was decided that a questionnaire format which utilized various information gathering techniques should be adopted to accommodate the various types of information desired. The resultant questionnaire consisted of five sections

Section 1. Two, direct, open-ended questions were asked in this section. The respondent was asked to list and rank his main reasons for coming to the area and his main reasons for leaving his former residence. The purpose of this section was to elicit the major "pull" and "push" factors in the respondent's decision to migrate without being prompted to think about the specific variables that would follow.

Section 2. The applicability and importance of 8 group variables containing 62 specific variables were tested in this section. The 8 groups were generalized reasons for migration to a place and the 62 specific variables constituted the main variables which contribute to each of the groups. Hence, attention can be directed to specific reasons for migration.

Respondents were asked to consider the variables. If a variable was not applicable as a decision criteria, this could be indicated. If a variable was given consideration, the respondent was asked to indicate how important it was thought to be in influencing the move. By placing an X on a line whose ends represented the extremes of "very important" and "not important" and whose centre is assumed to indicate neutrality or indifference, the migrant could indicate the relative importance of each variable that was applied in some way to the decision to migrate. A continuous line was chosen as opposed to a segmented line because it was thought that such a procedure would produce interval level measurement as opposed to ordinal level measurement and could therefore be used for greater accuracy if such accuracy was required in the analysis phase of the study.[2]

Section 3. In order to obtain a measurement of attitude, 11 statements were chosen from an original list of 115 statements, 25 of which were pre-tested on a group of 28 summer school students at the University of Victoria. Those statements which were judged to be good statements and which provided for a wide range of responses were selected for the final questionnaire.

The respondent, in this section, was asked to indicate--by putting a mark in the appropriate cell--his degree of agreement or disagreement with the attitude statement.

Section 4. The purpose of this section was to gain an appreciation of the past experience of the individual. The underlying assumption here is that the greater number of places in which a person has lived, or which he has visited, the more discriminating he becomes, and, by extension, the more rigorous his assessment in evaluating places.

The last question in this section asked the respondent to assess his present place against all other places. In this way a crude estimate of his satisfaction with his present place could be ascertained.

Section 5. The final section of the questionnaire was designed to gather background information on such variables as age, income, marital status and number of children. These, it was felt, would provide potentially useful correlates with the other variables on the questionnaire when the data were analyzed.

Pre-Test. The questionnaire was pre-tested on a group of summer school students. It was felt that summer school students would approximate the sample population in that they have a choice of universities which they can attend. Also, such students frequently have to make a migratory move in order to attend the universities, albeit for a relatively short period.

Questions which proved to be ambiguous or irrelevant were eliminated from the final draft. Others that were judged to be reasonable but in need of modification were so modified, and the final draft questionnaire was evaluated by colleagues in the Department of Geography

before being distributed.

The Sampling Procedure

It was only possible to obtain lists commencing with the week of 10 May 1976, due to management changes at VWS. Therefore, 16 lists covering the period 10 May-27 August 1976 were procured. This provided a population of 480 names.

Prior to commencement of testing it was decided that only households with residents in the work force should be included in the study. Persons who had come to the area to retire were rejected because it was assumed that the area would provide them primarily with increased amenity benefits. Similarly, persons coming to the area to attend an educational institution were also excluded.

Because of financial constraints it was possible to survey only a sample of the population on the lists. It was therefore arbitrarily decided that a sample of close to 100 residents should be selected for testing.

Several of the lists obtained from VWS had the notation "retired" by the side of a name, indicating that it was verified that those residents had retired to the area. These residents were automatically eliminated from the population from which the sample was to be drawn. Forty-seven names were eliminated in this way.

It was expected that not all persons who had retired to the area had been identified on the original lists. Similarly, it was expected that several people on the lists had come to the area with the intention of attending an educational institution. It was therefore decided that

a randomly selected number of newcomers should be telephoned in order to establish their eligibility for inclusion in the sample. A second--and important--reason for telephoning was to attempt to increase the number of responses to the questionnaire by obtaining a verbal commitment from recipients to complete and return the questionnaire. Thus the purpose of telephoning was to gain information from, and to establish a relationship with, potential recipients. Consequently, all households on the lists which did not have a telephone were eliminated from the population. Forty-two names were so eliminated.

All residual households on the lists were assigned numbers and a list of 175 numbers was randomly generated from which it was hoped to mail questionnaires to all eligible households. Of the 175 households on the list, it was impossible to contact 24 after at least four attempts on different days and at different times. Of the 151 that were contacted, 23 were retired persons and were therefore excluded and 21 were excluded for other reasons such as attendance at an educational institution, wrong name and/or address, changes in address, telephone not in service, or refusal to participate. Ultimately, 107 were found to be eligible and agreed to accept a questionnaire and return it. The above data are summarized in Table 15.

Every effort was made to contact the randomly selected households. If there was no contact during the day, a call was made in the early evening; if contact was still not established, an attempt was made on a different day at a different time. A minimum of four attempts were made to contact selected potential recipients. In this way it was hoped to include single person households where the person may be working during

TABLE 15: SAMPLE SELECTION STATISTICS

Number of households on 16 lists			480 (100%)
Excluded: Known retirees	47 (10%)		
No phone	42 (9%)	89 (19%)	
Residual household population			391 (81%)
Randomly selected			175 (36%)
Eliminated: Retired	23 (13%)		
No contact	24 (14%)		
Other reasons	21 (12%)	68 (39%)	
SAMPLE POPULATION			107 (22%)

the day, and households where both the husband and wife work during the day. Whoever answered the telephone--male or female in a multi-person household--was the person to whom the questionnaire was addressed.

Footnotes

[1]For a discussion of data collection techniques, see: L. Kish, *Survey Sampling* (New York: John Wiley & Sons, 1965); and A. N. Oppenheim, *Questionnaire Design and Attitude Measurement* (New York: Basic Books, 1966). Reference was also made to Philip Dearden, "Questionnaires and Interviews: An Investigation into a Research Technique," Victoria, University of Victoria Department of Geography, December 1975. (Typewritten.)

[2]See also: Chapter 7, "The Likert Scale."

CHAPTER 6

THE ANALYSIS STRATEGY

The strategy by which the results were analyzed is given in Figure 5.

The Preliminary Analysis

The preliminary analysis was a subjective analysis of the responses to Section 1 of the questionnaire and was completed as each questionnaire was received. This analysis consisted of reading the responses to the section (that is, what respondents considered to be their main reasons for coming to Victoria, and what they considered to be the main reasons for leaving their former residence), and classifying these responses. If, for example, a respondent indicated that he came to Victoria (a) to take up a job, (b) to be near relatives, and (c) because of the climate, a count was made against the categories: "economic-job," "people" and "climate" on a "pull" tally sheet. Similarly, if a respondent indicated that he had left his former residence because of (a) unfriendly people, and (b) a fear of crime, then a count was made on a "push" tally sheet. The category on each of the pull and push tally sheets receiving the highest number of counts was then assigned the rank of 1; the category with the second highest number of counts was assigned the rank 2; and so on. Occasionally, reasons given were somewhat obscure and a judgement had to be made as to which tally sheet and against which category

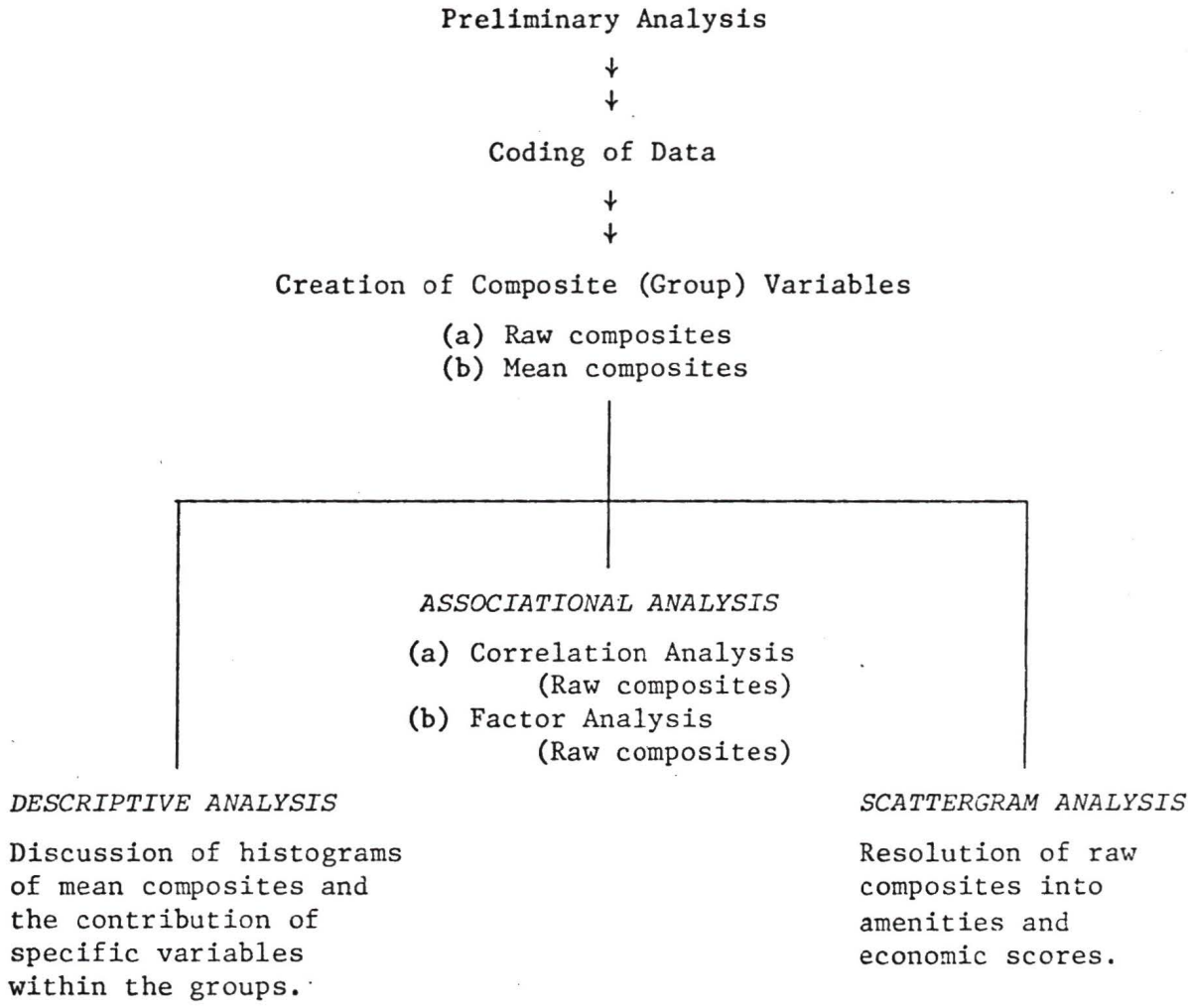


FIGURE 5. Analysis Strategy.

a response should be counted. Hence the description of this analysis as being "subjective." Nevertheless, by completing this exercise, a crude indication of the pull and push factors operating on migrants to the Victoria area was obtained.

Following the preliminary analysis, the data were coded and transferred to punched cards for computer processing.

In addition to the individual variables within each variable group on the questionnaire (e.g., employment, income, location, etc.) two composite variables were created for each group.[1] The composites were created primarily to assign to each respondent a score on the group variables, these group scores--which were essentially an aggregation of the raw data--could then be analyzed. Raw composites were created by summing all variables that had scores on the "not important-very important" scale ("not applicable" scores were excluded), and were created for greater accuracy in the associational analysis. Mean composites, which were derived as follows:

$$\text{Mean composite} = \frac{\text{Raw composite}}{\text{Number of variables comprising the raw comp.}}$$

were created for descriptive purposes as it was felt that a mean score was a more informative measure than the raw score and also facilitated inter- and intra-composite comparisons.

Following the coding of the data and the creation of the composite variables, the data were analyzed using the Statistical Package for the Social Sciences[2]--a computer software package available at the University of Victoria's computing centre. This program package provides statistical procedures and data management facilities tailored to the

particular needs of empirical social researchers and considerably reduces the time that is needed to organize and analyze data. The sub-programs that were used in the study were:

(1) Frequencies: a program to produce one-way frequency distributions and descriptive statistics.

(2) Crosstabs: a cross-tabulation program where cases are tabulated according to two or more classificatory variables and statistically analyzed for significance.

(3) Nonpar Corr: a computation of Spearman rank-order correlation coefficients for selected variables.

(4) Scattergram: a program to print a two-dimensional plot of data points where the co-ordinates of the points are the values of the two variables being considered, and to produce two-variable regression statistics.

(5) Factor: a program to perform a variety of factor-analytic techniques.

The Descriptive Analysis

The descriptive analysis consisted of the production of histograms for each variable and for the composite variables (mean composites). Responses that were missing or which indicated that the variable was not applicable were treated as missing data. The principal purpose of the descriptive analysis was to examine the mean composite variables and the main contributive variables to the composite. Thus, aggregated group responses could be analyzed for both the composites and the separate variables.

Other Analyses

The purpose of the associational analysis was to examine relationships between the created raw composites. This was done using two types of analysis: (a) a correlation analysis, and (b) factor analysis.

Finally, a scattergram analysis was conducted to examine the pattern of points when the raw composites were further aggregated and dichotomized into two variables which represented an economic utility and a psychic utility of the area.

Spearman's Rank-Order Correlation Coefficient

Bivariate correlation is a method of analysis by which a single number summarizes the relationship between two variables. The number (the correlation coefficient) indicates the degree to which change (variation) in one variable is related to, but not necessarily explained by, the change (variation) in another variable.

Spearman's rho (r_s) is a non-parametric correlation computation that requires that the measurement of data be at least ordinal. Being non-parametric means that no assumptions are made about the data--that is, for example, the data need not necessarily be normally distributed. The computation is basically designed to determine whether two rankings of the same case are similar, and the degree to which they are similar. Thus, the summary of the strength of the relationship frequently conveys information that is of use for hypothesis testing or for prediction in simple regression models.[3]

Spearman's r_s is defined as the sum of the squared differences in the paired ranks for two variables over all cases, divided by a quantity

which can perhaps best be described as follows: it is what the sum of the squared differences in rank would have been had the two sets of rankings been totally independent.[4] The quotient is then subtracted from one to produce the standardized coefficient which is defined by

$$r_s = 1 - \left(\frac{6 \sum_{i=1}^{N} d_i^2}{N^3 - N} \right)$$

where: N is the number of cases, and

d is the difference in ranks for each case.

In order to test the significance of the r_s coefficient, the quantity

$$r_s \left(\frac{N - 2}{1 - r_s^2} \right)^{1/2}$$

is compared with the Student's *t* distribution with N - 2 degrees of freedom.

Factor Analysis

Factor analysis is a method by which many variables examined in a large number of cases may be studied simultaneously in order that complex interrelationships between the variables may be reduced and summarized to yield the basic patterns within the variables. These patterns are the basic factors. Such a method is particularly useful when examining data relating to psychological aspects of human behavior and perform a complex sorting function, isolating the more significant variables. Thus, factor analysis enables a researcher to test many subjects on a wide range of variables which are thought to influence behavior, and then to collapse those variables to the fundamental

factors. Hence, the single most distinctive characteristic of factor analysis is its data reduction capability.[5]

The more common applications of the method are: (1) for exploratory uses--pattern detection and the discovery of new concepts; (2) hypothesis testing, and (3) as a measuring device where indices are constructed to be used in later analyses. The use to which the method is applied here is as a method for exploration.

The Nature of Factor Analysis

There have been many books and papers written on the subject of factor analysis, therefore only the essentials of the process are presented here.[6]

In a typical factor analysis there are three basic steps: (1) the preparation of a correlation matrix between all variables, (2) the extraction of the initial factors, and (3) the rotation to a terminal solution to exhibit simple and interpretable factors.

The preparation of a correlation matrix is quite straightforward and is in no need of further elaboration here.

The second step is the exploration of data reduction possibilities by constructing a set of new variables which may be defined as exact mathematical transformations of the original data. This procedure is known as principal-component analysis. The component which accounts for the greatest percentage of variation is initially extracted; that component accounting for the greatest percentage of variation after the first component has been extracted is next extracted, and so on until all the variation has been accounted for. In this way, each factor is

independent from all other factors (orthogonal) and data are reduced to a number of factors considerably less than the number of original variables.

Principal component analysis makes no assumption about the underlying structure of the variables,[7] but poses the question of which particular combination of variables accounts for more of the variance in the data as a whole than any other linear combination of variables. The first principal component may be viewed as the single best summary of linear relationships exhibited in the data.[8]

The principal component model may be expressed as:

$$z_i = a_{i1}F_1 + a_{i2}F_2 + \ldots\ldots a_{jn}F_n$$

where each of the n observed variables is described linearly in terms of n new uncorrelated components $F_1F_2F_3\ldots\ldots F_n$, each of which is in turn defined as a linear combination of the n original variables.[9]

The final step is to resolve the factors into simpler and theoretically more meaningful patterns. This is done by rotating the factor axies to enhance the factor loadings of variable clusters.

The output from a factor analysis that is of interest to the researcher is:

1. The initial factor matrix reducing the data to more singularly meaningful factors (sometimes known as the factor loading matrix). This matrix also establishes the variance accounted for by each of the common factors (the eigenvalues) and the total variance accounted for by all the common factors for each variable (the communality of the variable).

2. The rotated factor matrix which crystallizes the main variables contributing to a particular factor.

Scattergram Analysis

A scattergram is a graph of data points based on two variables, one variable defining the vertical axis, and the other defining the horizontal axis. Thus, a point on a scattergram represents the intersect of a score on each axis. By examining the pattern of points on a scattergram it is often possible to define a relationship between the two variables in terms of some mathematical formula which describes the general pattern of the points. The closer data points fall to the line that best summarizes the relationship of the variables, the stronger is the correlation between the variables.

The most common method for fitting a line to a scattergram based on interval level variables is the least-squares regression process. The underlying assumption of the method is that the best fitting line through the points is the one in which the vertical distance of all points from the line are minimized. The squared distances of each point from the line are summed and this is a measure of the total error involved when a regression line is used for predictive purposes.

A linear regression line is the most common type of regression line that is used and gives a simple summary of the relationship between the two variables in the form of:

$$Y = a + bX$$

where: a is the intercept of the line with the vertical axis, and

b is the slope of the line.

The value of b may be positive or negative depending upon the nature of the relationship between X and Y. A positive value indicates that X and Y increase together, whereas a negative value indicates that as X increases, Y decreases. A regression coefficient of zero would denote the absence of a linear relationship.

However, the object of the scattergram analysis in this study was not to attempt to predict scores on one or the other variable, but to examine the pattern of points when raw composite variables were further aggregated into two variables called an economic score and an amenities score which were taken as surrogates for economic and non-economic utility.

Ultimately, from the myriad of points on the scattergram it is intended that one point should be derived that will represent the position of Victoria in the utility space of a group of migrants at a particular point in time. This can be achieved by examining each point on the scattergram (which represents the economic and non-economic utility of the place for each migrant) and deriving the mean centre of the utility field.

Footnotes

[1]The variables in the "employment" and "income" groups were combined under the group heading "economic."

[2]Norman H. Nie et al., *Statistical Package for the Social Sciences*, 2nd ed. (New York: McGraw-Hill, 1975).

[3]A more powerful correlation computation is Pearson's product-moment correlation coefficient. However, this computation, being a parametric test, is only valid if it is known, or it may be assumed, that the data being used is approximately normally distributed. As no assumptions were made about the data in this study, it was considered prudent to employ the non-parametric Spearman test.

[4]Nie, *Statistical Package*, p. 289.

[5]Ibid., p. 469.

[6]See, for example: Raymond F. Cattell, "Factor Analysis: An Introduction to the Essentials," *Biometrics* 21(1965):190-215, 405-435; Andrew L. Comrey, *A First Course in Factor Analysis* (New York: Academic Press, 1973); R. J. Rummel, *Applied Factor Analysis* (Evanston: Northwestern University Press, 1970).

[7]Although principal component analysis makes no assumption about the underlying structure of the variables, the correlation test upon which the principal component analysis is based does make assumptions about the structure of the variables (see footnote 2). Hence, the output matrix from the Spearman rho correlation test was used as the input matrix to the factor analysis.

[8]Nie, *Statistical Package*, p. 470.

[9]Ibid.

CHAPTER 7

ANALYSIS OF THE RESULTS

Introduction

Of the 107 questionnaires distributed, the return results are summarized below:

Questionnaires distributed		107
Returned: Wrong address	2	(1.9%)
Late	2	(1.9%)
Usable	64	(59.8%)
Not returned	39	(36.5%)

Thus, the results reported in this section are based upon the responses of 64 cases. It should be noted, however, that a small number of the questionnaires contained no responses to the questions asked, but contributed comments about their move. Also, several respondents did not answer every question. Missing data, either by variable or by case are reported where there is value in such reporting and are deleted where they would give erroneous results. Where a respondent indicated that a question was "Not Applicable," such a response is treated as though it is a missing case.

Of the respondents who contributed comments to their questionnaires, or who contributed comments only, most explained that they had been transferred to the area either by the armed forces or by their companies. Many felt that the questions were inappropriate for that reason. One respondent indicated that she had moved here because of personal marital problems and another because her family had previously lived in Victoria.

Most of the comments were adverse, concentrating mainly upon the high cost of living and the lack of quality or degeneration of services. One particular lady complained of high food and housing prices compared to her former residence in Nova Scotia, and of aloofness of store-keepers. Another complained of the frequency of encountering meat and vegetables that were not properly preserved, and of changed attitudes in the area--government and residents--that she had observed since she had last lived here. A number of respondents who appended comments indicated that Victoria would not be their first choice of residence, but that it might be their second or third choice.

Of those people that added comments, all, with the exception of one, completed other sections of the questionnaire, but some omitted some of the questions or tended to indicate that the question was not applicable.

Preliminary Analysis

Analysis of the responses to Section 1 of the questionnaire (open-ended responses) is given in Table 16. Where residents indicated that their move was in response to either a particular aspect of Victoria or an aspect of their origin, this was noted on an appropriate tally sheet as either a pull factor (if attracted by particular aspects of the area), or a push factor (if compelled to move from the place of origin). Where people indicated that they were transferred by an agency or organization and had no choice in their decision to move or in the destination of their move, this was recorded as a push factor in the category "economic-job" as it was assumed that the economic component of utility of the

TABLE 16: RESULTS OF PRELIMINARY ANALYSIS OF SECTION 1 OF THE QUESTIONNAIRE

Pull Factors	Rank	Push Factors	Rank
Climate	1	Economic-job	1
People (incl. relatives)	2	Climate	2
Economic-job	3	Size	3
Environment-physical	4	People	4
Sentiment	5	Employment-condition	5
Quality of life (incl pace)	6	Economic-living	6
Size	6	Quality of life	7
Education	8	Language/minority	8
Environment-aesthetic	9	Environment-physical	9
Economic-living	9	Crime	9
Positive previous experience	11	Isolation	11
Location	12	Environment-aesthetic	11
Amenities	13	Location	13
Environment-quality	13	Education system	13

NOTE: Environment--physical was recorded when specific site characteristics were mentioned.
--quality was recorded when such characteristics as "little air pollution" were mentioned.
--aesthetics was recorded when the respondent made a comment such as "beautiful setting."

place was greater than the non-economic component. That is, maintaining a job was more important than the location of the job, and the respondent was prepared to be "pushed around."

It will be noted in Table 16 that climate, a job, and people all fall within the top four ranks on both the pull and push factors. This is sometimes accounted for by a form of double counting in that respondents indicated that it was, say, the people and/or the climate at their origin that were push factors in their move and that it was because of these same factors that they chose to come to this area.

Descriptive Analysis

Characteristics of the Sample Population

Before examining the reasons respondents gave for moving to Victoria, it is useful to know something about the characteristics of the sample from which the results were obtained.

In this study, people who came to the area primarily to retire or to attend an educational institution were eliminated from the sample. Thus, only persons coming here to work were sampled. Of these, there appeared to be a division into two specific groups: (1) persons who were transferred to the city, and (2) persons who came on their own initiative. Of the first group, not surprisingly, the greater proportion appeared to be armed forces personnel, although there were also those who were transferred by their companies or government departments. It is not possible to give exact figures as to which respondents fell into which group as the occupation of the respondent was not requested. However, this observation is included because the type of occupation could frequently be inferred from the responses to the open-ended questions. The second group--the rest of the sample population--was much harder to identify as their reasons given for moving were much more varied.

A brief summary of the sample characteristics follows.

There were an equal number of respondents of each sex (32 males; 32 females). Of the 64 respondents, 55 (86%) were married, 7 (11%) were single, one was divorced, and one was separated. Of the sample, 65% were between the ages of 20-40; 30% were over 40 years old, and 5% were

under 20 years old. Only 3% were older than 60. The average age of the sample was 35.5 years.

Within the sample, 75% had lived in no less than two and no more than six other places for a period of at least 6 months, and 9% had lived in at least nine places for a period of at least 6 months. The vast majority (88%) had visited Victoria prior to locating here, although they had not necessarily lived here.

The majority (92%) did not have any children over the age of 18 living with them, and 42% did not have any children under the age of 18 living with them, although there was a marked decline in the number of families in a subgroup as the number of children increased (see Table 17).

TABLE 17: NUMBER OF RESPONDENTS WITH CHILDREN UNDER 18 YEARS LIVING AT HOME

Number of Children	Absolute Frequency	Relative Frequency	Cumulative Frequency
0	27	42.9%	42.9%
1	17	27.0%	69.8%
2	11	17.5%	87.3%
3	6	9.5%	96.8%
4	2	3.2%	100.0%

NOTE: Valid cases = 63; Missing cases = 1.

Income statistics are given in Table 18. It will be noted from this table that a majority of respondents had a household income of less than $20,000 and that the modal class was $15,000 to $20,000.

Table 19 indicates the last place of residence of the respondents immediately prior to moving to Victoria. Two provinces, Ontario and

TABLE 18: INCOME STATISTICS OF SAMPLE POPULATION

Income	Absolute Frequency	Relative Frequency	Cumulative Frequency
Under -$ 9,999	9	14.5%	14.5%
$10,000-$14,999	14	22.6%	37.1%
$15,000-$19,999	18	29.0%	66.1%
$20,000-$24,999	9	14.5%	80.6%
$35,000-$29,999	6	9.7%	90.3%
$30,000 & above	6	9.7%	100.0%

NOTE: Valid cases = 62; Missing cases = 2.

TABLE 19: FORMER RESIDENCES OF SAMPLE POPULATION

Former Residence	Absolute Frequency	Relative Frequency	Cumulative Frequency
Nova Scotia	4	6.3%	6.3%
Quebec	3	4.7%	10.9%
Ontario	17	26.6%	37.5%
Manitoba	2	3.1%	40.6%
Saskatchewan	2	3.1%	43.8%
Alberta	5	7.8%	51.6%
British Columbia	26	40.6%	92.2%
Yukon & NWT	1	1.6%	93.8%
USA	2	3.1%	96.9%
Europe	2	3.1%	100.0%

NOTE: Valid cases = 64; Missing cases = 0.

British Columbia, contributed the greatest proportion of newcomers to Victoria (27% and 41% respectively), with the greater proportion of the rest coming from the other provinces of Canada. Only 8% had lived outside Canada prior to moving to the area.

Previous Place Experience of the Sample Population

In order to gain an appreciation of the place experience of the sample, respondents were asked to indicate whether they had lived in or

visited other areas within and beyond Canada. The results of the inquiry are summarized in Figure 6.

Most of the respondents had lived in other places in British Columbia and over 50% had previous lived in Ontario: 38% had previously lived on the prairies and 28% had previously lived in Europe. Over 50% of the sample had visited[1] Quebec, Ontario, the prairies, other places in British Columbia, and Europe, and 92% had either lived in or had visited the United States. Very few had either lived in or had visited Australia or Central America.

Each respondent was given an experience score which wes derived by summing a person's experience according to the following weights: 2 points for having lived in a place, and 1 point for having visited a place. Thus, the maximum experience score was 20 and the minimum was 2. For convenience, the scores are grouped and presented in Table 20.

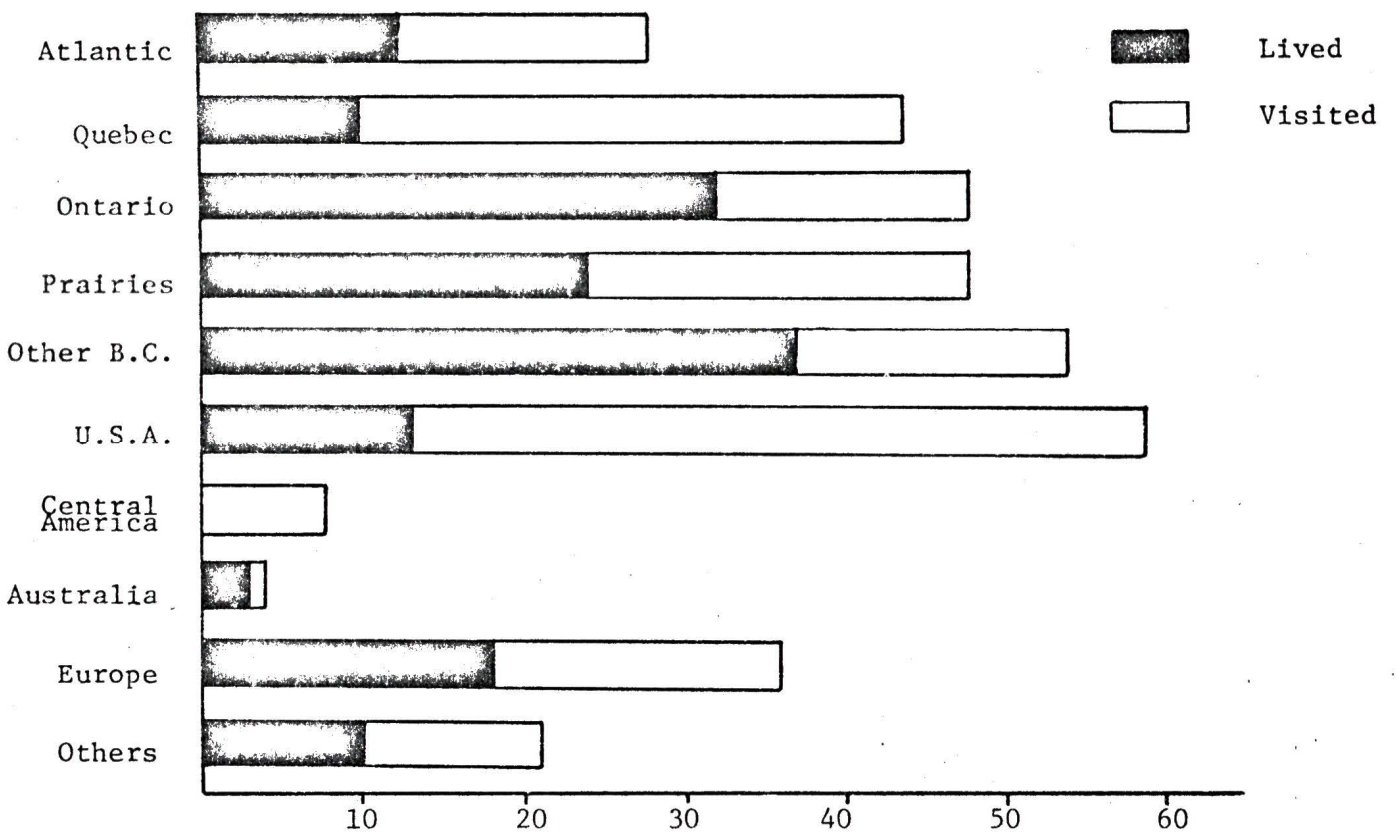
TABLE 20: EXPERIENCE SCORES FOR THE SAMPLE POPULATION

	Absolute Frequency	Relative Frequency	Cumulative Frequency
Little experience	6	9.5%	9.5%
Some experience	29	46.0%	55.6%
Considerable experience	23	36.5%	92.1%
Much experience	5	7.9%	100.0%

NOTE: Valid cases = 63; Missing cases = 1.

It will be noted that the majority of the respondents fell into the second category (experience scores 5-8). The basic value of the experience score was that it assigned some measure of experience to a person which could then be used as a correlate for other variables in

FIGURE 6. Previous Place Experience of Sample Population.



other forms of analysis.

The Victoria Score

Based upon their previous experience, respondents were asked to compare and rate Victoria to other places in which they had lived. In this way an estimate of satisfaction could be obtained of their present place compared to other places. The result of the ratings for Victoria are given in Table 21.

TABLE 21: VICTORIA RATING BY THE SAMPLE POPULATION

	Absolute Frequency	Relative Frequency	Cumulative Frequency
Great dislike	3	4.8%	4.8%
Dislike	2	3.2%	7.9%
Neutral	7	11.1%	19.0%
Liking	32	50.8%	69.8%
Great liking	19	30.2%	100.0%

NOTE: Valid cases = 63; Missing cases = 1.

There is a marked skewness in these scores towards the higher end of the range indicating that, based upon the experiences in other places in which they have lived, Victoria is rated highly. However, it should be borne in mind that the respondents were, in most cases, new arrivals to the area and that a "newness" factor possibly influenced their scores. In this respect, it would be interesting to conduct a longitudinal survey to examine the change of scores over time.

Attitudes and Place Utility

The basic thesis of the study is that each and every place of which a person is aware is perceived to afford that person a measure of

utility. Such utility has two essential components: (a) an income component, and, (b) an amenities component.

Section 3 of the questionnaire was designed to examine attitudes that, at the time the study was undertaken, influenced the migrant in moving to a specific place, viz. Victoria.

The Likert Scale. The Likert scale, developed by Rensis Likert in the 1930's, is a method of measuring the attitude of a person to a specific attitude object.[2]

In the case of this study, the attitude that was being measured was the attitude that a person adopted towards the place to which he had migrated in terms of the non-economic utility of the place. Information was desired as to whether a person adopted an attitude towards the place that was influenced by the place characteristics or the job characteristics. By examining this attitude it was thought that it might be possible to obtain an impression of the utility that a place might be perceived to hold for new migrants. For example, a person might hold an attitude that money was the most important thing in the world. If this was the case, then the person would be expected to score highly on statements that compared the ability of the place to produce revenue for the individual, and low on statements which stressed the intrinsic qualities of the place.

In selecting the statements that are to be included in an attitude survey of this type, Likert recommends that each statement should be of such a nature that persons with different points of view, so far as the particular attitude is concerned, will respond to it differentially. Each statement should be as simple and as straightforward as possible to

avoid ambiguity. It is also desirable to have a modal response to some questions towards one end of the attitude continuum.

To construct the scale, more statements should be tested than will be finally selected. In the case of this study, 115 statements were originally considered of which 25 were pre-tested and 11 were finally chosen.

There is also a need for consistency in assigning numerical values to the attitude to be measured. Thus, in the case of this study, where a respondent indicated that he was in agreement with a statement and this statement was a reflection of the attitude being measured, he was assigned a score of 5--this being the maximum score. Where an attitude statement was the converse of the attitude being measured, then agreement with such a statement was assigned the value of 1, that is, the assigned values are reversed. Thus, the numerical assignments were reversed in the case of statements 2, 4, and 7 on the questionnaire.

In order to perform an objective test (a) to see if numerical values are properly assigned and (b) to see if statements are, in fact, differentiating for the group under test, Likert suggests that an item analysis be performed. Item analysis requires that a correlation coefficient be obtained for each statement when correlated against the battery average. A negative correlation coefficient indicates that numbers are not properly assigned and should therefore be reversed. A zero or low correlation coefficient indicates that a statement fails to measure the same attitude that the other statements measure and the statement should therefore be dropped from the survey.[3]

When an item analysis was applied to the statements of this survey, using a Spearman's rho correlation technique,[4] all correlation coefficients were positive and all--with the exception of statement 7--were significant at the 0.05 level with the majority (9 statements) being significant at the 0.01 level (see Table 22). It was therefore concluded that 10 of the 11 statements measure a particular attitude and that the numerical assignments to the responses to these questions were correct. Statement 7 was dropped from further analysis.

TABLE 22: ITEM ANALYSIS TEST RESULTS: BATTERY AVERAGE WITH INDIVIDUAL SCORES

Statement	Correlation* with Mean Score	Statement	Correlation* with Mean Score
1	0.57	7**	0.12
2	0.56	8	0.53
3	0.46	9	0.53
4	0.52	10	0.45
5	0.24	11	0.33
6	0.58		

NOTE: Valid cases = 57; Missing cases = 7.

*Spearman Rank Correlation.
**Not significant at the 0.05 level.

Likert finally suggests that when a series of statements form a unit or cluster when used with one group of subjects, then there is justification for combining the reactions to the different statements into a single score.[5] Thus, a single score was derived for each respondent to the attitude survey by summing the scores on each statement (with the exception of statement 7). The single score was determined to be the respondent's "Likert" score.

TABLE 23: AGGREGATE ATTITUDE (LIKERT) SCORES

	Absolute Frequency	Relative Frequency	Cumulative Frequency
Disagree	5	8.6%	8.6%
Neutral	27	46.6%	55.2%
Agree	24	41.4%	96.6%
Strongly Agree	2	3.4%	100.0%

NOTE: Valid cases = 58; Missing cases = 6.

The results of the aggregated groupings given in Table 23 indicate that although the modal group was group 3 (indicating neutrality or indifference), there are more respondents in agreement with the attitude statements than there are respondents in disagreement with the statements. This would seem to indicate that the perceived amenities of a place are an important consideration when a move is contemplated. Also, for approximately 40% of the sample, the possibility of gaining greater income would appear to be not necessarily the most attractive feature of a place.

Of particular interest are the responses to statement 1 and statement 6, given in Figures 7 and 8 ("I am prepared to earn a lower salary if I can live in the place of my choice," and, "I could earn more money elsewhere, but I wanted to come here"). To a degree, these variables compare the income component of utility of place to the amenities component of utility of place. It will be observed that the majority of respondents were in basic agreement with statement 1, indicating that to many people coming to this particular area, the amenities component of this place and its locational characteristics were more important than

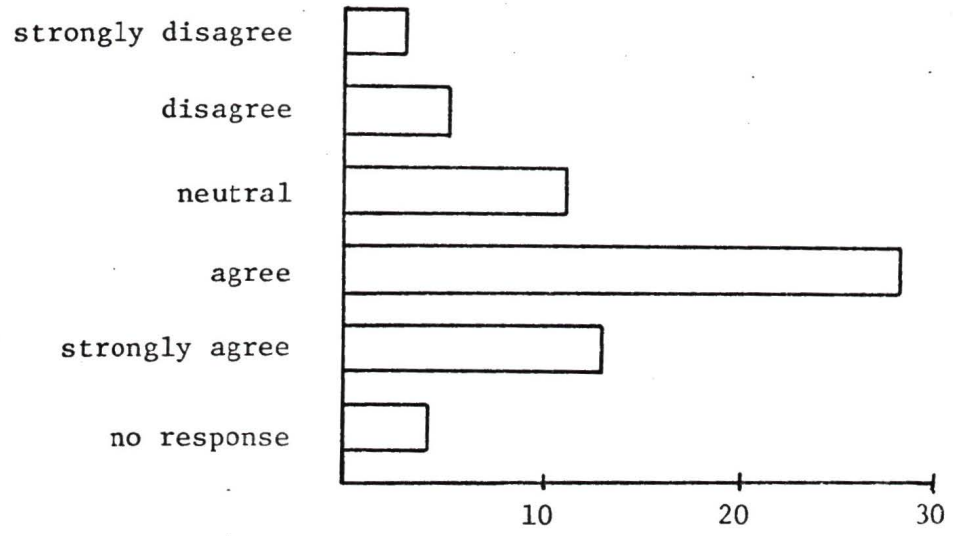


FIGURE 7. Responses to Section 3, Statement 1.

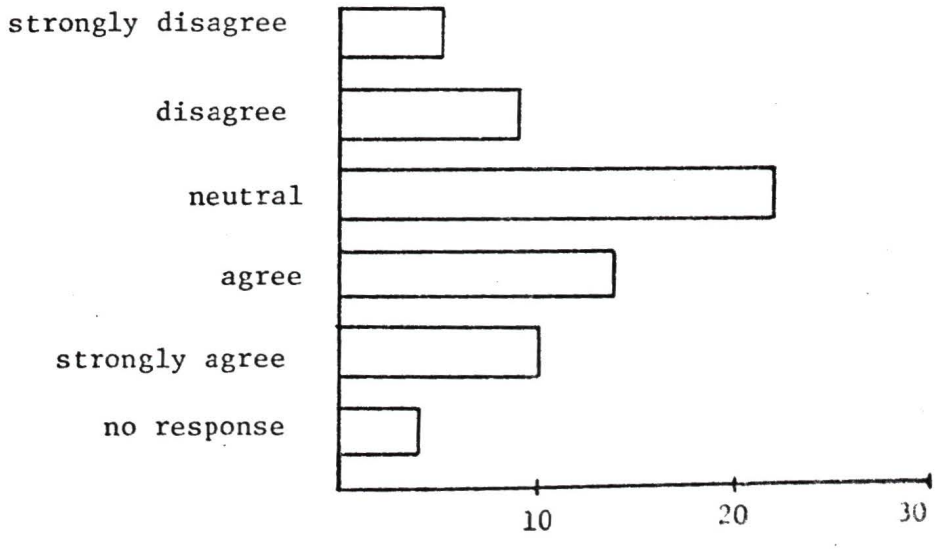


FIGURE 8. Responses to Section 3, Statement 6.

the income component of the place. If this is indeed the case, then one might reasonably expect that wage rates and employment fringe benefits would be less than they are in other parts of the country or province.

Responses to statement 6, however, indicated a weaker general agreement with the given statement. This could be because people do not know what they could earn elsewhere and were content to live in ignorance of other opportunities. Thus, poor question design is probably the reason for a response that does not adequately indicate one particular dimension.

The Aggregate Component Variables

It will be noted in Section 2 of the questionnaire that variables are grouped under eight sub-headings. Scores on each variable were summed and averaged to give a component score (group score). When a respondent replied with "Not Applicable" for a variable, this variable was treated as a missing variable and excluded from the summing and averaging.

After consideration it was decided to include the "Income" component with the "Employment" component as it was thought that both were measuring different aspects of the same dimension, that is, an economic dimension.

The Economic Component. The aggregate economic scores given in Table 24 indicate that to the majority of respondents (64) the variables attributable to this index were considered to be "important" or "very important" when they were making their move to Victoria. Only 13% had scores which indicated that they considered the economic variables to be either of little importance or not important at all. It is also

TABLE 24: ECONOMIC GROUP SCORE MEANS

	Absolute Frequency	Relative Frequency	Cumulative Frequency
Not important	2	3.4%	3.4%
Of little importance	6	10.2%	13.6%
Neutral	10	16.9%	30.5%
Important	21	35.6%	66.1%
Very important	20	33.9%	100.0%

NOTE: Valid cases = 59; Missing cases = 5.

interesting to note that 23% of the respondents considered this component to be not applicable or else failed to answer the questions.

Of the variables that comprise this component, the weakest variables (those to which a respondent indicated that the variable was not applicable, or who failed to respond to the question) were: all the variables with the exception of "A job for you" (39% indicated that this was very important); "A job for your spouse" (36% indicated this to be very important); "Greater job satisfaction" (38% indicated this to be very important; and, "Opportunity for advancement" (although the modal response--33%--were missing responses, 31% indicated this to be very important).

The Locational Component. The aggregated locational scores given in Table 25 indicate that the modal response (30%) was a neutral score on this component. Also, an almost equal proportion of respondents considered this composite as either important or not important (34% and 28% respectively). Only 8% either failed to respond or indicated that the factor was not applicable.

TABLE 25: LOCATION GROUP SCORE MEANS

	Absolute Frequency	Relative Frequency	Cumulative Frequency
Not important	7	11.9%	11.9%
Of little importance	11	18.6%	30.5%
Neutral	19	32.2%	62.7%
Important	12	20.3%	83.1%
Very important	10	16.9%	100.0%

NOTE: Valid cases = 59; Missing cases = 5.

Of the component variables of the factor, the two single most important variables were: "A comparatively small town," and "By the sea/by water," of which 34% and 48% respectively of the respondents indicated that these variables were very important to them. The modal score for all the other variables was "not important."

The Climate Component. Examination of the aggregate climate scores in Table 26 indicates that 39% of the respondents had scores above the neutral position and could therefore be considered to find this factor to be important or very important; 20% were neutral; and 30% of the climate factor to be of little or no importance.

TABLE 26: CLIMATE GROUP SCORE MEANS

	Absolute Frequency	Relative Frequency	Cumulative Frequency
Not important	9	15.8%	15.8%
Of little importance	10	17.5%	33.3%
Neutral	13	22.8%	56.1%
Important	14	24.6%	80.7%
Very important	11	19.3%	100.0%

NOTE: Valid cases = 57; Missing cases = 7.

Of the component variables, the single most important variable was the fact that the area has short winters. Of the respondents, 50% considered this to be either important or very important. The second most important variable appeared to be the fact that Victoria had warm winters (52% responding that this fact was either important or very important).

Respondents were divided on the question of snowfall, 44% finding it of little or no importance; 42% considering it to be important or very important.

Further examination by cross-tabulation was conducted on the variables "warm winters," "short winters," and "little snow" with the variable "Where was your last place of residence?" The results of this examination are given in Tables 27, 28 and 29.

TABLE 27: CROSS-TABULATION OF "WARM WINTERS" WITH FORMER RESIDENCE

From	Not Important	Important	Row Total
Eastern Canada	6 (10.9%)	14 (25.5%)	20 (36.4%)
Prairies	3 (5.5%)	5 (9.1%)	8 (14.5%)
BC, Yukon, NWT	11 (20.0%)	12 (21.8%)	23 (41.8%)
Outside Canada	2 (3.6%)	2 (3.6%)	4 (7.3%)
Column Total	22 (40.0%)	33 (60.0%)	55 (100.0%)

NOTE: Number of missing observations = 9.
Chi square = 1.61 with df = 3 significance = 0.66.

With respect to the importance of warm winters, people from Nova Scotia generally considered it to be unimportant whereas the people from Quebec and Ontario rated it, generally, as important or very important. Prairie people were more or less divided on the issue, as were people

TABLE 28: CROSS-TABULATION OF "SHORT WINTERS" WITH FORMER RESIDENCE

From	Not Important		Important		Row Total	
Eastern Canada	6	(11.3%)	13	(24.5%)	19	(35.8%)
Prairies	3	(5.7%)	5	(9.4%)	8	(15.1%)
BC, Yukon, NWT	10	(18.9%)	12	(22.6%)	22	(41.5%)
Outside Canada	2	(3.8%)	2	(3.8%)	4	(7.5%)
Column Total	21	(39.6%)	32	(60.4%)	53	(100.0%)

NOTE: Number of missing observations = 11.
Chi square = 1.02 with df = 3 significance = 0.80.

TABLE 29: CROSS-TABULATION OF "LITTLE SNOW" WITH FORMER RESIDENCE

From	Not Important		Important		Row Total	
Eastern Canada	7	(13.7%)	11	(21.6%)	18	(35.3%)
Prairies	3	(5.9%)	4	(7.8%)	7	(13.7%)
BC, Yukon, NWT	12	(23.5%)	11	(21.6%)	23	(45.1%)
Outside Canada	2	(3.9%)	1	(2.0%)	3	(5.9%)
Column Total	24	(47.1%)	27	(52.9%)	51	(100.0%)

NOTE: Number of missing observations = 11.
Chi square = 1.24 with df = 3 significance = 0.74.

from other places in British Columbia. The sole northerner considered it to be very important.

The table, however, proved not to be significant at the 0.10 level when subjected to a chi-square test of significance.[6]

The cross-tabulation of former residence with short winters showed a remarkable similarity to the previous distribution but was again found to be not significant at the 0.10 level.

The cross-tabulation of former residence with the amount of snowfall was similarly not significant.

The conclusion that is to be drawn from the examination of this component is that climate is one of the variables which is generally considered to be important or very important when making a move to another location. However, because of the small sample size and the large number of variable cells to be filled, the actual significance of these findings cannot be ascertained from this study.

The People Component. The overall scores on the people component, seen in Table 30, can be likened to a normal distribution in that there were as many people gaining scores which put them into a classification of little or no importance as there were who had scores which put them into the categories of important or very important.

TABLE 30: PEOPLE GROUP SCORE MEANS

	Absolute Frequency	Relative Frequency	Cumulative Frequency
Not important	8	14.5%	14.5%
Of little importance	13	23.6%	38.2%
Neutral	13	23.6%	61.8%
Important	13	21.8%	83.6%
Very important	9	16.4%	100.0%

NOTE: Valid cases = 55; Missing cases = 9.

Of the individual variables, no one variable was outstanding and respondents tended to be polarized between considering each of the variables to be either very important or not important, with quite a large number either not responding or maintaining that a variable was not applicable. The variable to which there was the single largest response in the important and very important classes was "among friendly people."

Perhaps the large class of missing scores on the people factor can be attributed to the fact that a number of people are transferred here and therefore consider the factor to be not applicable.

The Facility Component. The facility component was similar in aggregate to the people component although the tendency was for the majority of scores to be in the little to no importance categories (see Table 31).

TABLE 31: FACILITY GROUP SCORE MEANS

	Absolute Frequency	Relative Frequency	Cumulative Frequency
Not important	9	16.1%	16.1%
Of little importance	13	23.2%	39.3%
Neutral	14	25.0%	64.3%
Important	12	21.4%	85.7%
Very important	8	14.3%	100.0%

NOTE: Valid cases = 56; Missing cases = 8.

Individually, the two variables with the highest number of respondents indicating that they considered them to be important or very important were "good educational facilities for children," and "good health care facilities."

Another interesting variable was "good educational facilities for adults." Here, 34% of the respondents thought this to be of little or no importance; 39% considered it to be important or very important; and 22% considered it not applicable or failed to respond to the question. This result would seem to indicate that approximately one-third of the migrants to Victoria might be influenced in their choice of residence by the fact that there is provision for continuing education of some kind.

The Cost-of-Living Component. Forty-five percent of the respondents gained scores on the variables comprising the cost-of-living component which put them into the "important" or "very important" categories (see Table 32). Of these, 26% were grouped into the "important" category and 19% into the "very important" category. However, 19% of the respondents either failed to respond to the questions or considered them to be not applicable. This large "missing" group is surprising when one considers the fact that Victoria had one of the highest costs-of-living in Canada when the survey was conducted, and that most of the respondents came from places where the cost-of-living was somewhat lower. A partial explanation for this large group could be that people who were transferred to the area were resigned to paying the appropriate cost-of-living no matter where they were posted, or that they receive cost-of-living allowances or adjustments. Alternatively, it could be that respondents were prepared to pay whatever the area cost-of-living was as long as they were able to live in the area of their choice.

TABLE 32: COST-OF-LIVING GROUP SCORE MEANS

	Absolute Frequency	Relative Frequency	Cumulative Frequency
Not important	11	21.2%	21.2%
Of little importance	7	13.5%	34.6%
Neutral	5	9.6%	44.2%
Important	17	32.7%	76.9%
Very important	12	23.1%	100.0%

NOTE: Valid cases = 52; Missing cases = 12.

The two component variables having a high number of responses in the "important" and "very important" categories were "food prices" and "housing prices" (45% and 55% respectively).

It was thought that there might be a regional difference in attitudes towards the cost-of-living, but a cross-tabulation of former residence with the aggregate cost-of-living variable proved to be insignificant (see Table 33). However, this could again possibly be accounted for by the small sample size and the large number of classificatory variable cells.

TABLE 33: CROSS-TABULATION OF FORMER RESIDENCE WITH COST-OF-LIVING

From	Not Important	Important	Row Total
Eastern Canada	7 (13.5%)	12 (23.1%)	19 (36.5%)
Prairies	2 (3.8%)	5 (9.6%)	7 (13.5%)
BC, Yukon, NWT	13 (25.0%)	10 (19.2%)	23 (44.2%)
Outside Canada	1 (1.9%)	2 (3.8%)	3 (5.8%)
Column Total	23 (44.2%)	29 (55.8%)	52 (100.0%)

NOTE: Number of missing observations = 12.
Chi square = 2.67 with df = 3 significance = 0.45.

The Quality of Environment Component. Examination of this component (see Table 34) illustrates that 59% of the respondents gained scores which placed them in the "important" and "very important" categories. Only 3% of the respondents gained overall scores which placed them in the "not important" category.

The variables comprising the quality of environment component were relatively easy to group as there was a marked distinction between those variables which were considered to be important and those considered to

TABLE 34: ENVIRONMENT GROUP SCORE MEANS

	Absolute Frequency	Relative Frequency	Cumulative Frequency
Not important	2	3.6%	3.6%
Of little importance	7	12.5%	16.1%
Neutral	9	16.1%	32.1%
Important	20	35.7%	67.9%
Very important	18	32.1%	100.0%

NOTE: Valid cases = 56; Missing cases = 8.

be not important. Those variables with a high percentage of respondents indicating that they considered them to be "very important" were: "air pollution" (55%), "water pollution" (48%), "crime" (52%), "a feeling of space" (45%), "a slower pace of life" (48%), "beautiful scenery" (55%), "less crowding" (50%), "ease of travelling within town"--important and very important combined--(52%), and "ease of access to the countryside"--important and very important combined--(61%). Variables having a high number of respondents indicate that they considered them to be unimportant were: "a sense of history" and "the political climate."

Thus, the conclusion must be reached that migrants to this area in particular are extremely conscious of environmental considerations when making a move. If reference is made back to the preliminary analysis of Section 1 of the questionnaire, it will be noted that there are many environmental reasons given by respondents when they were considering a destination. Reasons which appear to be cited most often seemed to pertain to size and the pace of life.

The Correlation Analysis

In order to investigate the relationships between the variables created by summing scores on the individual variables within a group, a Spearman rank correlation test was conducted on all the created raw composite variables plus the variables Victoria score, age, income, experience score, and children under 18.

The Spearman test was chosen because it is a non-parametric test and makes no assumption about the variables or the distribution to be tested. The only condition that must be fulfilled in order to apply the test is that data should be measured at the ordinal level. As the data in use were interval level data, but no assumptions were made about the distribution, the Spearman test seemed appropriate. The additional variables that were included in the test were included because it was felt that there were possible relationships between these variables and the created variables.

A two-tailed test of significance was chosen as positive or negative association was unimportant, but the strength and significance of the association was important. The null hypothesis was that there was no significant relationship between the variables and the level of rejection was set at 0.05. The variable pairs for which the null hypothesis can be rejected and an alternative hypothesis adopted are given in Table 35.

Although there are certain well established relationships such as age and income, and age and experience, what is perhaps more interesting is the *lack* of significant relationships between certain variables. One

TABLE 35: CORRELATION COEFFICIENTS FOR GROUP VARIABLES

	Children under 18	Experience score	Attitude score	Victoria score	Age	Income	Environment score	Cost-of-living score	Facility score	People score	Climate score	Location score
Economic score	-0.04	-0.15	-0.15	0.09	-0.25	0.08	-0.19	-0.27	0.07	-0.03	0.02	0.01
Location score	-0.03	0.06	0.37†	0.14	0.11	-0.10	0.52†	0.35*	0.10	0.39†	0.40†	
Climate score	-0.12	0.22	0.39†	0.23	0.31*	0.06	0.45†	0.24	0.09	0.36†		
People score	-0.13	-0.14	0.25	0.18	0.02	-0.09	0.42†	0.18	0.32*			
Facility score	0.18	-0.17	0.14	-0.05	0.19	-0.01	0.11	0.47†				
Cost-of-living score	0.18	-0.07	0.21	-0.18	0.41†	-0.08	0.20					
Environment score	-0.17	0.07	0.28*	0.14	0.18	-0.07						
Income	0.07	0.26*	-0.03	-0.06	0.46†							
Age	0.06	0.42†	0.26*	0.04								
Victoria score	0.04	0.00	0.15									
Attitude score	-0.11	0.19										
Experience score	0.00											

NOTE: *significant at .05 level
†significant at .01 level

might have expected, for example, that a relationship might have existed between experience and the Victoria score, but in fact there were no significant correlates between the Victoria score and any other variable. Similarly, it would seem reasonable to suspect a significant relationship between the created economic or cost-of-living variable and income, but this would appear not to be the case.

Those variables having the greatest number of significant relationships with other variables were: location, climate, people, environment, Likert and age.

The Factor Analysis

The factor analysis was undertaken to explore the underlying factors which might explain the variation within the variables that were employed for the correlation test. (The Spearman correlation matrix was used as input to the sub-program "Factor.") The variable "number of children under 18 years" was included as it was felt that this could be an added constraint upon a family in addition to other variables and might possibly explain a proportion of the variation.

The results of the factor analysis are given in Tables 36 and 37.

Three factors explain over 80% of the variation, and five factors were extracted altogether. The first factor, explaining over 40% of the total variation, is essentially explained by five variables. These variables--location, climate, environment, people and Likert (attitude)--are essentially non-economic group variables and can be designated to be variables associated with amenities and attitude. In other words, the variables accounting for the greatest proportion of residual variation

TABLE 36: FACTOR MATRIX (INCLUDING COMMUNALITY AND EIGENVALUES)

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Communality
Economic	-0.23	-0.24	0.10	0.62	0.27	0.58
Location	0.62	-0.29	0.12	-0.03	0.25	0.54
Climate	0.62	-0.08	0.31	0.11	0.11	0.52
People	0.53	-0.44	0.03	0.13	-0.32	0.60
Facility	0.37	-0.06	-0.49	0.35	-0.19	0.54
Cost	0.66	0.16	-0.69	-0.11	0.23	0.99
Environ.	0.61	-0.24	0.21	-0.15	-0.07	0.50
Income	0.04	0.48	0.18	0.31	-0.07	0.37
Age	0.57	0.73	0.08	0.14	-0.11	0.89
Vic. Sc.	0.13	-0.16	0.26	0.11	-0.03	0.13
Likert	0.50	-0.03	0.17	-0.06	0.03	0.29
Exper.	0.18	0.45	0.38	-0.08	0.96	0.39
Kids 18M	-0.03	0.16	-0.25	0.09	0.05	0.10

Factor	Eigenvalue	% of Variation	Cumulative %
1	2.67	41.5	41.5
2	1.45	22.6	64.1
3	1.22	18.9	83.1
4	0.72	11.1	94.2
5	0.37	5.8	100.0

TABLE 37: ROTATED FACTOR MATRIX

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Economic	-0.06	-0.05	-0.08	0.75	0.05
Location	0.72	-0.10	0.12	0.04	0.00
Climate	0.68	0.22	-0.03	0.07	0.05
People	0.52	-0.13	-0.10	-0.04	0.55
Facility	0.11	0.02	0.44	0.09	0.57
Cost	0.35	-0.01	0.90	-0.24	0.14
Environ.	0.66	-0.02	-0.09	-0.19	0.14
Income	-0.10	0.59	-0.01	0.12	0.02
Age	0.24	0.84	0.29	-0.22	0.08
Vic. Sc.	0.24	0.03	-0.22	0.12	0.06
Likert	0.50	0.13	0.02	-0.12	0.04
E per.	0.16	0.50	-0.09	-0.13	-0.30
Kids 18M	-0.16	0.07	0.26	0.04	0.04

TRANSFORMATION MATRIX

Factor	1	2	3	4	5
1	0.85	0.25	0.31	-0.21	0.27
2	-0.32	0.83	0.28	-0.24	-0.26
3	0.33	0.34	-0.81	0.11	-0.32
4	-0.06	0.34	0.05	0.82	0.45
5	0.24	-0.14	0.40	0.45	-0.75

are psychic variables.

The second factor--accounting for 22% of the total variation after the first factor had been extracted--could be termed a socio-economic factor as its main component variables are age, income and experience.

The third factor is essentially represented by one variable, the cost-of-living, whereas the fourth factor is essentially accounted for by the variable "economic."

It should be pointed out that the direction of a score is not taken into account when a factor analysis is performed and all that is gleaned from such an analysis is the variable or variables that explain varying amounts of variation in order that further investigation of a particular factor or variable cluster can be undertaken. What the first factor tells us therefore is the best linear combination of variables to explain the greatest amount of variance, and is the single best summary of linear relationships exhibited in the data.

From the results we therefore gain some appreciation of the relative importance of the variables. It will be noted here that the suspicion that the variable "children under age 18" would seem to be relatively insignificant as it is of marginal importance in the factor structures and has a low communality coefficient for each of the five factors extracted--which tends to suggest that the variable is largely explained by a unique factor.

Thus, the combinatorial nature of the relationships extracted in the correlation test is brought more into focus by the factor analysis. What is questionable at this stage is the implicit assumption of factor analysis that the combinatorial relationship is linear.

In this particular study, factor analysis contributes little to what knowledge has already been gained from the descriptive analysis of the data, except perhaps to indicate a hierarchical ordering of factors for people moving to the Victoria area at the time the study was undertaken. This hierarchy, in descending order, would seem to be a factor combining the mental set of the sample group with the amenities of the area; a socio-economic factor; a cost-of-living factor; an economic utility factor; and a facilities/amenities/size/expensiveness factor. The fifth factor, however, would appear to be of marginal significance.

The Scattergram Analysis and Utility Field

The thesis requires that there be a plotting of an economic score with an amenities score for each migrant to the region in order that an examination of such a distribution can be made.

Consequently, each person was assigned an economic score and an amenities score based upon their average component scores which were created from the responses to questions in Section 2 of the questionnaire. For this to be achieved there had to be some criteria as to which variables should be assigned to the economic score and which to the amenities. It was decided that anything that was not specifically related to a place should be assigned to the economic score with those specifically relating to the place being assigned to the amenities score.

The cost-of-living variable was therefore assigned to the economic score as it was felt that the cost-of-living in a place is related more to the income component of utility of the place than to the amenities component of utility. All other composite variable scores were assigned

to the amenities score.

In order for a valid comparison to be made, each score--economic and amenities--was converted into percentages of the maximum possible score. The score for each individual was computed as follows:

$$\text{Score for each sub-group} = \frac{\text{Sum of individual variable scores}}{\text{Number of variables to which response was valid}} \times 100$$

$$\text{Economic score} = \frac{\text{Score on economic sub-group raw composites}}{\text{Number of economic sub-group composites}}$$

$$\text{Amenities score} = \frac{\text{Score on non-economic sub-group raw composites}}{\text{Number of non-economic sub-group composites}}$$

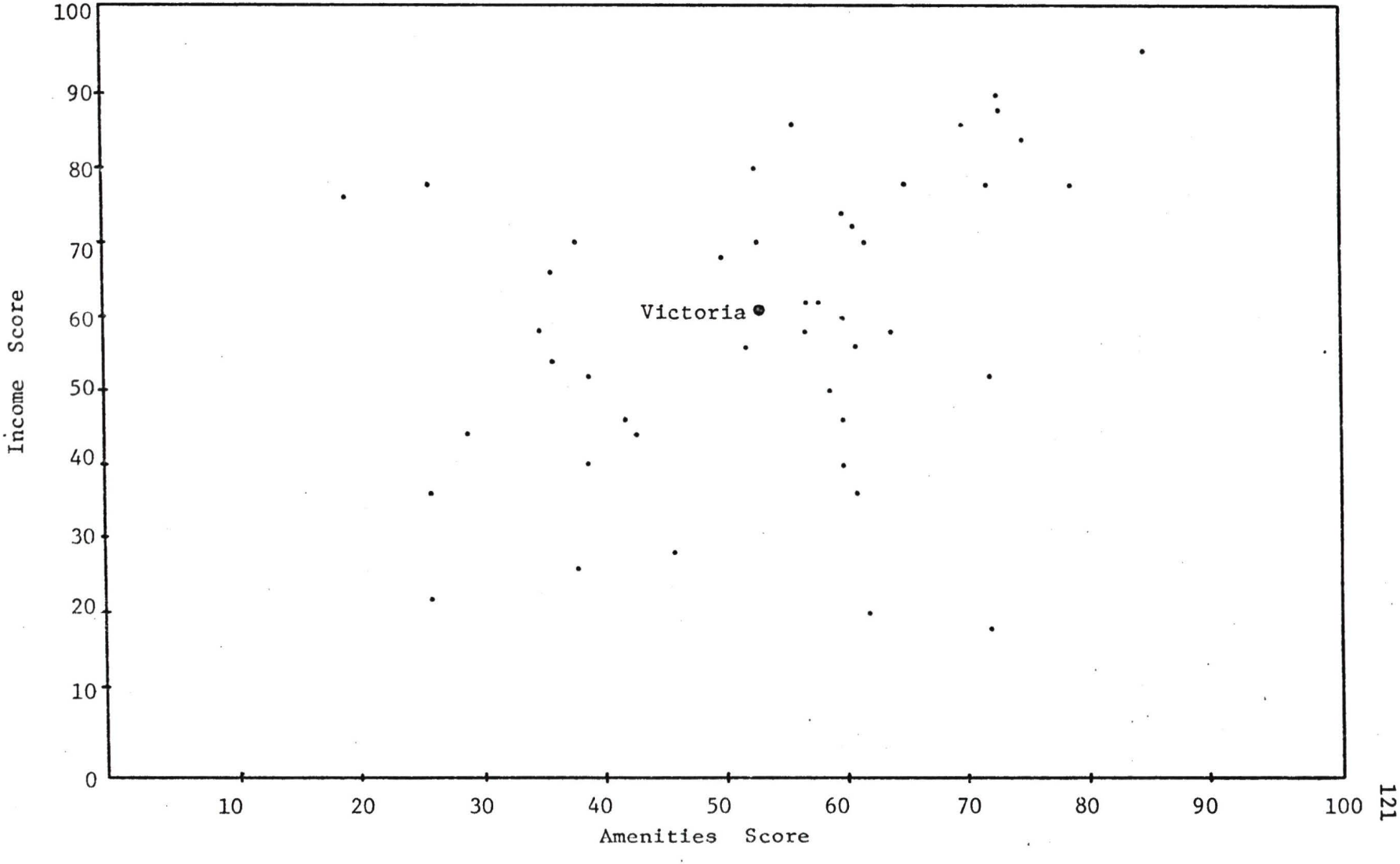
The economic and amenities percentages were then plotted and a scattergram analysis was performed. The resulting scattergram is given in Figure 9.

The slope of the resulting regression equation was positive, indicating that persons achieving a high economic score also tended to achieve a high amenities score, and vice-versa.

It is also possible to derive from the scattergram the number of cases in which one or other of the scores is higher than its counterpart. When this exercise was accomplished it was found that in 31 out of the 45 cases on the scattergram (69%), the economic score was higher than the amenities score. This indicates that for the majority of the respondents in this study, motives relating to the income component of the place were possibly more important than motives relating to the intrinsic qualities--amenities component--of the place.

An extension of this procedure is to locate the mean centre of the graph which may be taken to be an overall score for the particular place

FIGURE 9. Scattergram Analysis Results and the Position of Victoria in the Utility Field.



(Victoria). The mean centre is located by averaging the individual economic and amenities scores. This highly aggregated co-ordinate represents Victoria's position in utility space at the time this study was conducted.

Footnotes

[1]Respondents who indicated that they had lived in a region were also counted as having visited that region as, logically, to live in a region means that, of necessity, one must have visited the region. The converse, however, is not true.

[2]Rensis Likert, "The Method of Constructing an Attitude Scale," in *Readings in Attitude Theory and Measurement,* ed. Martin Fishbein (New York: John Wiley & Sons, 1967), p. 90.

[3]Ibid., p. 92.

[4]A non-parametric test was employed because no assumptions were made about the underlying structure of the distribution of the data.

[5]Likert, *Readings in Attitude Theory,* p. 95.

[6]The cross-tabulation table, as produced by the sub-program "Crosstabs" contained many cells with no observed frequencies. In order to employ the Chi-square test, the following conditions must be Met:

(a) the data must be in the form of frequencies;
(b) the total number observed must exceed 20;
(c) not more than 20% of the expected frequencies in any one fraction must not normally be less than 5, and in no case must the expected frequencies be less than 1;
(d) the observations must be independent.

Consequently, the table was compacted by combining variable classes until the requirements of the Chi-square test were met. It was upon completion of this exercise that the significance was then determined.

CHAPTER 8

SUMMARY AND CONCLUSIONS

The study hypothesized that a place utility could be assigned to every place of which a person is aware, and that this place utility could be described in terms of an income component and an amenities component. A person would move to that place where the production-possibility curve connecting those places which together constituted the opportunity set was tangential to that person's highest indifference curve at a given point in time and within given constraints. The chosen destination was therefore the optimum and most rational destination if the objective of the individual was to increase net utility. Such a place would then afford the individual with a satisfactory measure of both income and amenities.

Using the city of Victoria as an example, the study first presented an objective overview of the area in terms of traditional socio-economic and locational characteristics, and then proceeded to examine the characteristics of the city which were important to new migrants to the area. Thus, it was able to identify those characteristics--not necessarily traditionally accepted--that newcomers to the area considered to be important and, secondly, to create variables from which it was possible to locate the city in two-dimensional utility space.

Analysis of the results indicated that, in the economic variable group, a job for the respondent, or for the spouse of the respondent, was generally considered to be one characteristic of the city which was

very important. Also, greater satisfaction in the type of work being pursued was considered to be very important. These findings are consistent with other studies on migration and are generally accepted as being one of the prime motives for making a move. Also significant under the general heading of economic utility was the importance of food and housing prices in the area.

Location, climate, local people, facilities and the quality of the environment were subsumed under the general heading of amenities.

The size of the city and its position by the sea were the important variables in the location sub-group, while the severity and the duration of the winters were generally considered to be the important variables in the climatic sub-group.

It is sometimes found that people migrate to a place to be close to relatives or to be among friends. Although these were important to some respondents, the general response in terms of importance was in connection with being amongst friendly people.

Although respondents were asked for their last place of residence, this was frequently given as the province only. However, from examination of comments and responses to the open-ended questions in the first section of the questionnaire there would seem to be some relationship between the size of the place from which a person came and his/her desire to be among friendly people. It could be that the generally held view that large cities are lonely and/or unfriendly places may well be borne out by evidence from studies similar to this. Alternatively, it could be that people from large cities are more independent and self-reliant.

Of the facilities sub-group, only the health care facilities and the educational facilities for children were considered to be important by the majority of respondents. This conclusion is similar to that reached by Brown and Gustavus on a study of migrants to Columbus, Ohio.[1]

The quality of environment sub-group proved to be one that was considered important by most of the respondents. Only two variables in this sub-group were considered to be not important--a sense of history, and the political climate. This could suggest that people now discriminate between places more on the basis of the intrinsic qualities that a place has to offer in terms of the quality of life that they can expect, than upon the superficial qualities which are essentially represented by the facilities sub-group. This hypothesis would require further testing, but is not one that can be dismissed lightly.

The examination of attitudes indicated that people are concerned about the amenities a place has to offer and that they do discriminate between places on this basis, but, presumably, within the constraint of the need for a job. However, there would seem to be limits to the extent to which people are prepared to go to find a job as indicated by the responses to the first question on the attitude sub-section.[2]

The attitude sub-section also explored the level of information and discrimination that a respondent exhibited in his/her move to the area. It was found that most people had considered the move very carefully--with the possible exception of persons who were transferred to the area by the armed forces--and usually had a previous knowledge of the place to which they were moving. Thus, people (or families) within the labor force would appear not to move on impulse or without prior

knowledge of the place to which they are moving. This conclusion is probably different from one which might be arrived at were the reference group to be people leaving school and moving to a new location for, say, further education. Again, further comparative study is needed. A larger, more extensive and comprehensive sample would be required if conclusions are to be drawn about the needs of, and trends within, the population of the region.

The correlation analysis indicated those composite variables and selected sample characteristic variables for which a significant degree of interrelationship existed and could possibly provide the basis for future study on the nature of these interrelationships.

Five factors were extracted from the factor analysis of which three factors accounted for over 80% of the total variation. Of these three factors, the principal factor (accounting for 40% of the total variation) was a factor relating to the inherent characteristics of the place and the mental set of the migrant, and a second factor would appear to be a socio-economic factor. Again, this finding could be verified by further study.

The scattergram analysis was, in essence, the practical application of the thesis. Contrary to the original expectation that there would be a negative relationship between income and amenities, the analysis indicated that the relationship was positive. That is, as the income component of utility increased at a place, so too did the amenities component. Further study would substantiate whether this conclusion is true for all places or is specific to the particular study area.

Ultimately, by aggregating component scores to a high degree, it was possible to locate the Victoria area in two-dimensional utility space. The combinatorial process of additive aggregation was used in this study. It is possible, however, that the best method of combining the variables is not additive. Alternative methods of combining the variables, such as component weighting, need further investigation.

The thrust of this thesis has been that of description based upon a theoretical foundation. That is, a concept of two-dimensional utility space was propounded and the research endeavored to (a) extract variables that were important to migrants to the study area, and (b) to describe the position of the study area within two-dimensional utility space.

The fact that Victoria has been assigned a position in this two-dimensional utility space is testimony that such a placement is possible. The value of the exercise is such that, if repeated for many centres within a region or country, the relative position of settlements within the perceptual space (utility space) of incoming residents, or established residents, to the particular settlement can be ascertained and, by extension, some measure of the overall utility of each place for new residents. Thus, in terms of development policies, those places approaching the upper right-hand corner of the scattergram--the utility field--may be considered to be places whose residents are satisfied with whatever the place has to offer, and those approaching the lower left-hand corner of the field may be considered to be places whose residents find little overall utility at the place and will be more apt to search for another place offering higher place utility.

If it is deemed to be in the interest of development that certain places become, say, growth poles, then the approach outlined in this study will contribute one index of the chances of development policies succeeding. This latter statement is particularly applicable if studies are undertaken over a period of time.

The value of longitudinal studies similar to the approach undertaken here lies in the fact that all places will be in a state of continual movement within the utility field, and, if such longitudinal studies are undertaken, place utility shifts could be highlighted. In this way, places that become attractive to people will be highlighted as their attractiveness occurs and appropriate contingency planning could be initiated. Conversely, places that become less attractive will also be highlighted and appropriate strategies can similarly be implemented.

This is not to say that this procedure is the ultimate index of regional planners. On the contrary, it is in need of considerable refinement, re-testing, adaptation and improvement. However, it does provide the basis of yet another index to be used with other indices that provide additional information to the decision-maker.

Upon completing this study two primary conclusions can be drawn.

First, the study provides further evidence that the income motive in migration is indeed perhaps the most powerful motive, but that the income motive does not operate in isolation from amenity factors. Thus, this study contributes further evidence to the theory put forward by Ullman[3] that people are drawn to an area by climatic and other amenities and not always by the perception of greater financial rewards.

Secondly, people in the work force upon whom constraints will probably be greater than people leaving school or about to retire, will consider moves very carefully and probably move to places of which they have prior knowledge and, usually, prior experience. Thus, in terms of normative human behavior, the decision to relocate might be considered rational.[4]

A weakness in this study is that it only examined the degree and not the direction of importance of the variables tested. Also, the study asked respondents the importance of each of a number of variables when they moved to Victoria. In this way it was possible to determine which variables (characteristics) of Victoria were important to the majority of respondents. What is not examined, and what could be an extension of this study, is an examination of the importance of each variable relative to all other variables. This examination of the relative importance of the variables could be achieved by pair-wise comparison (as used by Brown and Gustavus, and Var et al.).[5] In this way a ranking of the importance of variables could be achieved. This ranking could provide a weighting system for the variables and by refining the methodology in this way a more accurate location for a place in utility space could be achieved. Unfortunately, such a refinement would probably incur considerable expenses in both time and money as the self-administered questionnaire would have to be replaced by an interviewer-administered questionnaire.

Finally, the study provides evidence that, in a developed country where basic societal needs are provided with a high degree of adequacy, people differentiate between, and move to, a place which is perceived

to afford them the best possible combination of both income and amenities and not necessarily that place which affords them the greatest utility in income terms only.

Footnotes

[1]Lawrence A. Brown and Susan O. Gustavus, "Place Attributes in a Migration Decision Context," Columbus, Ohio, 1976, p. 20. (Mimeographed.)

[2]Responses to the statement, "I am prepared to earn a lower salary if I can live in the place of my choice," indicated that 41% of the respondents agreed or strongly agreed with the statement.

[3]Edward L. Ullman, "Amenities as a Factor in Regional Growth," *The Geographical Review* 44(1954):119-132.

[4]Use of the term, "normative human behavior" here is not intended to imply that such behavior is optimal. It is intended to imply that the relocation decision is made after due consideration of a number of factors and, possibly, a number of alternatives. Hence, such consideration precludes, in most cases, relocation being defined as an irrational act.

[5]See, for example: Brown and Gustavus, "Place Attributes"; Turgut Var et al., "Determination of Touristic Attractiveness of the Touristic Areas in British Columbia," Vancouver, Simon Fraser University, 1976. (Mimeographed.)

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APPENDIX 1

UNIVERSITY OF VICTORIA
P.O. BOX 1700, VICTORIA, BRITISH COLUMBIA, CANADA V8W 2Y2

Department of Geography

Welcome to Victoria.

Mobility is a recognized characteristic of North American society. A great deal is known about areas that tend to lose people and those that tend to gain people. Also, much is known about the age at which people are most mobile and about how often they move. Unfortunately, relatively little is known about why people move to a particular place at a particular point in their life cycle. This study addresses itself to that question.

Because you are a recent migrant to this city your assistance is here enlisted. It is hoped that this survey will give insight into why people are coming to this city as opposed to going elsewhere.

Some of the questions are of a personal nature. It is necessary to ask such questions so that the characteristics of newcomers can be ascertained. It should be pointed out, however, that respondents are asked NOT TO IDENTIFY THEMSELVES in order that strict anonimity can thereby be achieved.

Your time and effort in completing this questionnaire is appreciated. A stamped, addressed envelope is enclosed for your reply.

If you have any questions or comments about the survey please feel free to contact me at the Department of Geography.

Yours sincerely,

[redacted]

Stephen Taylor

Section 1

There are probably many reasons why you came to Victoria. Please list as many reasons as you can think of that influenced your decision to move here.

_____

_____

_____

_____

Of the reasons that you have listed above, please rank the influences on your decision to move to Victoria. (Place a "1" beside the most important; a "2" by the next most important; and so on.)

Now think of your last place of residence. Again list and rank the main reasons for leaving that place.

_____

_____

_____

_____

Section 2

Below you will find some reasons that are given for relocation. Some of these reasons will apply to you, some may not. What is being examined is the importance of each reason in your decision to move to Victoria.
It is quite possible that some reasons have not been included. If this is the case, please add these reasons at the end and evaluate them on the importance scale. It is also possible that certain reasons do not apply in your case, or that you gave no consideration to them. If this is the case, check the box marked N/A.

Here is an example:-

"How important are the following to you?"

	Not Important	Very Important	N/A
Health foods	X		☐
Eight hours sleep		X	☐
Vacations abroad			☒

Please evaluate all criteria

"When you moved to Victoria how important were the following reasons?"

1. Employment

- a job for you
- a job for your spouse
- greater job responsibility
- a promotion
- desire for a change of job
- first place to make a job offer
- greater job satisfaction
- nearness to place of work
- opportunity for advancement

2. Income

- increase in your income
- increase in spouse income
- more opportunities to increase income

3. Location

- on an island
- close to a larger city
- rural atmosphere
- comparatively small town
- by the sea/by the water
- nearness to mountains
- ease of access to other places
- isolation from the mainland

	Not Important	Very Important	N/A
4. Climate			
warm winters	———		☐
cool summers	———		☐
low rainfall	———		☐
little snow	———		☐
many hours of sunshine	———		☐
not too windy	———		☐
relatively short winters	———		☐
low humidity	———		☐
5. People			
close to relatives	———		☐
close to friends	———		☐
close to people with similar outlook	———		☐
among friendly people	———		☐
with people of a similar age	———		☐
not in a minority	———		☐
far away from relatives	———		☐
6. Facilities			
many shops	———		☐
many entertainment facilities	———		☐
many restaurants	———		☐
many speciality stores	———		☐
ease of acquiring items	———		☐
many sports facilities	———		☐
many cultural activities	———		☐
good educational facilities for children	———		☐
good educational facilities for adults	———		☐
good health care facilities	———		☐
7. Cost of living			
food prices	———		☐
housing prices	———		☐
property taxes	———		☐
land prices	———		☐
utility rates	———		☐

	Not Important	Very Important	N/A
8. Quality of environment			
level of air pollution			☐
level of water pollution			☐
not much serious crime			☐
a feeling of space			☐
slower pace of life			☐
a sense of history			☐
beautiful scenery			☐
the political climate			☐
ease of travelling within town			☐
ease of access to countryside			☐
less crowding			☐
higher property maintenance standards			☐

9. Other reasons (please list)

_____

_____

_____

_____

Section 3

Below you will find statements which are often made by people. Read each statement and indicate your response to the statement.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	1	2	3	4	5
1. I am prepared to earn a lower salary if I can live in the place of my choice.					
2. A job is more important than the location of the job.					

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	1	2	3	4	5
3. I considered my move here very carefully.					
4. I could live almost anywhere and enjoy it.					
5. I do not mind commuting long distances as long as I can live in the place of my choice.					
6. I could earn more money elsewhere, but I wanted to come here.					
7. I am always searching for better places to live.					
8. The climate of the place where I live is very important to me.					
9. I was aware of most of the amenities this place had to offer before I moved here.					
10. When I was considering a move, I had a set of conditions that I tried to fulfill and then searched for places that best fulfilled those conditions.					
11. I am a city person.					

Section 4

In this section we would like you to indicate your experiences of this and other places.

Check which of the following apply to you:

I have lived in		I have visited
☐	The Atlantic Provinces	☐
☐	Quebec	☐
☐	Ontario	☐
☐	The Prairies	☐
☐	Other places in B.C.	☐
☐	The U.S.A.	☐
☐	Central America	☐
☐	Australia	☐
☐	Europe	☐
☐	Other areas	☐

In how many places have you lived (i.e. resided more than 6 months)? If you have lived in a town or city on more than one occasion, only count the place once. _____

Compare Victoria to all the other places in which you have lived. On a scale of 1-10, how many marks would you give this place? (10 is the highest mark). _____

Section 5

Finally, to investigate the possibility of differences within and between groups of people it is necessary to ask you for some factual information about yourself.

1. Are you male or female? _____

2. What is your marital status? _____

3. How many children do you have living with you? (18 and over) ____ (under 18) ____

4. Had you visited Victoria before you moved here? YES/NO

5. In which year were you born? _____

6. In which income group does your household fall?

Less than $9,999 per year	☐	$20,000 - $24,999 per year	☐
$10,000 - $14,999 per year	☐	$25,000 - $29,999 per year	☐
$15,000 - $19,999 per year	☐	More than $30,000 per year	☐

7. Where was your last place of residence? _____

Thank you for your time and assistance

VITA

Surname: TAYLOR Given Names: STEPHEN ROGER

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Date of Birth: JUNE 24, 1947

Educational Institutions Attended,
with Dates of Entering and Leaving:

STOCKWELL COLLEGE OF EDUCATION, BROMLEY, ENGLAND	1965 to 1968
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UNIVERSITY OF VICTORIA, BRITISH COLUMBIA	1975 to 1977
	____ to ____

Degrees, Diplomas, Etc., Awarded,
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PLACE UTILITY AND TWO DIMENSIONAL UTILITY SPACE:

A CASE STUDY OF VICTORIA

Author [redacted]

Signature

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10 MARCH 1977

Date