LIFE CYCLE STAGE AND LENGTH OF RESIDENCE AS DETERMINANTS OF RESIDENTIAL STRESS

By

RICHARD JOHN DiFRANCESCO

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ABSTRACT

Residential stress is a key concept within residential mobility studies. Considerable research, in the past, has been devoted to the task of actually measuring, and quantifying residential stress.

Many factors which affect residential stress have been outlined, however, the absolute effect of these factors, and their relative strengths are not known. Many suggest that this is mainly due to the fact that previous research designs have not provided adequate control over extraneous variance, there by preventing the isolation of the effects of individual factors.

The body of literature in residential mobility studies exhibits this apparent lack of methodological rigidity through the occurrence of certain inconsistencies in the literature. An example of such an inconsistency deals with the relationship between length of residence and residential stress. Studies have been done which actually support the "cumulative inertia hypothesis", that is stress decreases with increasing length of residence, while others have provided evidence for the "cumulative stress hypothesis", that is, stress increases with increasing length of residence.

The present study is designed around the recognition of the need to develop and implement a methodology that would alleviate the seemingly contradictory findings presented in the mobility literature. The problem being addressed is to establish the separate and joint effects of life cycle stage and length of residence on residential stress, these being two factors identified in past studies as potentially important determinants of stress. The main findings of the study were that both life cycle stage, and length of residence have significant separate effects on residential stress. Also, when length of residence was introduced as a covariate with life cycle stage in an analysis of covariance, the variation in stress explained by life cycle stage decreased substantially, with length of residence having the greater predictive power.

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CHAPTER ONE: INTRODUCTION

Residential mobility studies have been primarily concerned with the development of models that explain the relocation of the population as a response to residential stress, where stress is defined as the difference between experienced and expected levels of dwelling satisfaction. A number of hypotheses have been proposed to examine the effects of life cycle stage and length of residence on residential stress.

Life cycle stage and length of residence have been shown to be strong determinants of residential stress, however, studies examining their relative strengths are lacking. The general lack of work done in this area is reflected by seemingly contradictory findings uncovered in the residential mobility literature.

Previous studies in residential mobility have found evidence to support the "cumulative inertia" hypothesis (McGuinness,1969;Land,1969;Huff and Clark,1978;McAuley and Nutty,1985). Others have put forward evidence which supports the "cumulative stress" hypothesis (Brummell,1979,81;Taylor and Aikens,1983;Moore,1972;Huff and Clark,1978). Therefore the recognition that life cycle stage and length of residence both singly and jointly affect residential stress, and the subsequent incorporation of the separate and joint effects within a single model, is required to resolve the apparent contradiction in the existing residential mobility literature.

The cumulative inertia hypothesis suggests that the probability of moving declines for households with higher length of residence values (McGuinness,1968;Land,1969;McAuley and Nutty,1985). The cumulative stress hypothesis subscribes to the opposite belief, that the probability of moving increases for households with higher length of residence values.

These two seemingly contradictory viewpoints are actually simultaneous. They offer very plausible explanations for the decline or rise in the mobility rate of households with increasing length of residence. These two forces, cumulative stress and cumulative inertia operate simultaneously, the net effect of which is dependant upon the relative strengths of each force, and the life cycle stage of a particular household. Huff and Clark (1978), were the first to recognize the need to incorporate both cumulative stress and cumulative inertia within their model of residential mobility behaviour, the eventual result of which was the development of a stochastic model of residential mobility behaviour. This model was able to suggest who would be likely to move by identifying households with high residential stress relative to the inertial forces acting to retard movement. Their model also illustrated how the probability of a household moving was dependant upon changes in either residential stress or, inertial forces over time. They however made no attempt to empirically test the model.

Therefore, it is this need to incorporate both stress and inertia into a single model of residential mobility that sets the context for this research. The main focus of this study is to examine the relative significance of the components in the model proposed by Huff and Clark (1978), and by doing so, examine the separate and joint effects of life cycle stage and length of residence on residential stress, and hence on residential mobility.

1.2 OUTLINE OF THE THESIS

The study consists of five chapters. Chapter two presents a critical review of relevant residential mobility studies. In this review, attention was primarily focused on three concepts; residential stress, length of residence, and life cycle stage effects.

The third chapter outlines the research design. In this chapter, the research hypotheses are put forward, and some operational definitions of key concepts are given. This chapter also describe the sample design and the questionnaire design.

The fourth chapter presents the analysis and results of the hypotheses. It includes a reliability assessment of the stress index used in the subsequent analyses. The second part of the chapter examines the separate and joint effects of life cycle stage, and length of residence on residential stress using both oneway analysis of variance, and analysis of covariance, as well as non-parametric methods.

The fifth and final chapter summarizes the conclusions from the empirical analysis. The main findings are that both life cycle stage and length of residence have separate and joint effects on residential stress with length of residence having a greater effect on stress, when introduced as a covariate with life cycle stage.

CHAPTER TWO: REVIEW OF RELEVANT LITERATURE

2.1 Introduction:

Over the past twenty years a vast amount of research has been devoted to the study of residential mobility. These studies have been at both macro, and micro levels of analysis.

Macro level studies have focused on general trends and patterns in migration flows between regions and cities. The major focus was the description of the origin, and destination of these flows within regions, and cities (Clark,1980). These studies made use of tools like gravity models, entropy models, and regression models, and were useful for describing general patterns of mobility, but they did very little to uncover the processes operating behind the observed patterns (Moore,1970).

However, due to the paucity of data and the lack of specificity the macro "aggregate" approach soon gave way to the micro "behavioural" approach. The micro approach to explaining intraurban migration focused on the understanding of the motivations that caused the migration flows initially. It was generally recognized that emphasis had to be placed on the development of a behavioural framework to further develop analytical models of individual residential mobility behaviour (Rossi, 1955; Goldstein, 1958; Wolpert, 1965).

The behavioural approach focused on the individual households decision making process. Since this process is what gives rise to a decision to move, any and all factors that affect the decision making process are of importance in studies of residential mobility.

A review of relevant literature was conducted to outline various elements of the individual household's decision making process, and also to determine which of these factors are most important in terms of being a precursor to a decision to move. This review uncovered several theoretical and methodological issues which will be discussed in following sections of this chapter.

2.2 The Behavioural Approach Revisited:

The focus on the individual decision making process was refined in many different ways. Bell (1958) provided one of the earliest attempts to develop a framework for analyzing the individual decision making processes of different sub-groups of the population where each group was making decisions which would optimize their particular set of most valued housing characteristics (Bell,1958).

This concept was further refined by the identification of the various stages involved in the individual households decision making process. They were as follows; decision to move based on dissatisfaction with the present dwelling, the search for alternative housing based upon the households set of ideal housing attributes, and thirdly, the evaluation of prospective housing which led to either a decision to stay, or a decision to move (Brown and Moore, 1970).

In summary, the micro approach to the study of residential mobility has focused on the individual household as the unit of analysis. The individual households decision making process, and subsequent search and evaluation procedures have been recognized as the fundamental components of residential mobility, and hence of the urban residential structure (Rossi,1955;Goldstein,1958;Wolpert, 1965). Therefore knowledge of the factors affecting this individual decision making process are fundamental to the complete understanding of residential mobility.

2.3 The Concept of Residential Stress:

The micro behavioural approach to the study of residential mobility has focused on the individual household as the decision making unit. The process whereby an individual household decides to move to alternative housing as opposed to remaining in the existing dwelling is fundamental to the study of residential mobility.

Residential stress is generally accepted as the primary antecedent to voluntary decisions to move. Stress was defined as the difference between the individual household's expected level of satisfaction, and the satisfaction with the characteristics of the housing currently occupied (Moore, 1972). These two levels of satisfaction were measured by Brummell (1979) as two points on an individual household utility function, and named aspiration place utility, and experienced place utility respectively (Brummell, 1979).

The components of residential stress namely aspiration place utility and experienced place utility, as described by Brummell (1981), are considered to be subjectively defined, and hence, reflect a household's housing values which in turn are related to household characteristics such as socioeconomic status, life cycle stage, and general household composition (Moore,1972). Residential stress is therefore affected by these characteristics, and hence, so is residential mobility (Moore, 1972). The probability of a household moving from the present dwelling is a function of overall stress, change in overall stress, and situational variables (Phipps and Carter, 1985).

The work of Phipps and Carter (1985) incorporated the same basic measurement design, but also included a budgetary constraint on aspiration place utility. They referred to affordable levels of these salient attributes (Phipps and

Carter, 1985). This simply introduced a realistic boundary on what a household visualized as being the expected dwelling, based on what the household could afford. Households were theorized not to see a " Buckingham Palace " as their ideal dwelling when there was no chance that such an ideal was attainable. Therefore, households would not compare their dwellings to such an unrealistic goal, and hence, their stress levels would not be as inflated as Brummell's approach, with unconstrained stress, would suggest (Phipps et.al, 1985). Results of empirical tests however do not support the claims made by Phipp's model, for it was not as strong a predictor of mobility intention as was Brummell's unconstrained model (Phipps et.al, 1985).

The work of Huff and Clark (1978) has explored the effect duration of stay on residential stress. This was in response to seemingly contradictory results found in studies where stress was predicted to both increase with duration of stay in one study, and decrease with duration of stay in another study. These two seemingly opposite forces were referred to as the " cumulative inertia hypothesis", and the " cumulative stress hypothesis" (McGinness,1968;Land,1969; Huff and Clark,1978). Huff and Clark (1978) recognized the need for an integrated model which could accommodate both the cumulative stress, and the cumulative inertia hypotheses. Their model allowed them to conclude that stress, and inertia , are two opposing forces that are always present in the decision making process. When the stress caused by dissatisfaction with the present dwelling gets to the point where it is stronger than the inertial forces acting to resist a move, such as sentimentality, financial ties etc, a move will occur. When the stress level is outweighed by the inertial factors causing resistance to moving, no move occurs, and some internal adjustment is made to alleviate the stress (Huff and Clark, 1978). Research has subsequently shown that the level of community integration, and financial obligations increase with duration of stay, and that the willingness to risk a move also decreases with duration of stay,illustrating the concepts of cumulative stress, and cumulative inertia (McAuley and Nutty, 1985).

There is general agreement that residential stress is the primary antecedent to voluntary decisions to move and therefore further study is needed to isolate the determinants of residential stress, and hence, of residential mobility (Taylor and Aikens, 1983).

2.4 Factors Affecting Residential Stress:

The factors affecting stress can be broadly categorized under four headings; housing costs, household income, life cycle stage, and length of residence (Taylor and Aikens, 1983; McAuley and Nutty, 1985). The effect of housing costs, and household income are quite straight forward. Forexample, a rise in household income will cause an increased aspiration place utility, thereby causing a larger stress value, and a higher probability of a relocation decision being made. Conversely, if housing costs rise in excess of household income, there would be a decline in experienced place utility, again causing a higher stress value, and a higher probability of a relocation decision (Taylor and Aikens,1983;Brummell,1979).

The latter two factors, namely, life cycle stage, and length of residence have been identified as very important determinants of residential stress, and each has received much attention in recent years (Brummell,1981;McAuley and Nutty,1985;Taylor and Aikens,1983).

The effect of life cycle stage of a household on residential stress can be described in terms of changing household composition (Quigley and Weinberg,1977; Shaw, 1975). This was further reinforced by Rossi (1955), where mobility was seen as the process whereby households adjust their housing to the housing needs that are generated by shifts in family composition that accompany life cycle changes. Further work concluded that changes in life cycle both precipitate movement, and determine the destination of this movement (Abu-Lughod and Foley,1960). Life cycle is hypothesized to affect residential stress, and hence, mobility via a process of ever changing aspiration place utilities associated with movement through the life cycle (Brummell,1981;Taylor and Aikens,1983).

Further research has shown that the life cycle stage of a household is the most important predictor of various indices of satisfaction with the present housing, and the potentially attainable future housing (McAuley and Nutty, 1985). Life cycle was also seen to affect stress through a constantly changing basis upon which satisfaction is gauged (McAuley and Nutty,1985). Pickvance (1975) concludes that mobility is always a response to some kind of stress, but this stress takes different forms as the household moves through the life cycle. He further illustrated that a primary motivation for moving among young singles, and young marrieds with no children, was ease of access to career and recreational facilities. Mobility amongst older marrieds with children was less frequent, and commonly prompted by the need for more adequate family housing (Pickvance,1975;Davies and Pickles,1985;Doling ,1975;Pickvance,1974).

Length of residence is another strong determinant of residential stress, and hence of residential mobility. There is a large body of literature that subscribes to the belief that stress levels will increase with length of residence due to the fact that the longer a household remains in a dwelling the more likely it is to experience a life cycle change and, experience a declining level of satisfaction with the present dwelling. This is referred to as the cumulative stress hypothesis (Taylor and Aikens,1983;Brummell,1979;Moore,1972; Huff and Clark,1978). There is another body of literature which supports the cumulative inertia hypothesis, which theorizes that stress will decrease as the household moves through the life cycle. Evidence has been provided which concludes that sentimental ties , community involvement and integration, as well as financial and other obligations form, and increase in intensity with longer duration of residence. These inertial influences therefore tend to retard mobility, and promote a stationary residence (McAuley and Nutty,1985; Brummell,1981;Goldscheider,1971).

The work of Huff and Clark (1978) has shown that these two seemingly contradictory results are the two opposing forces that influence the decision making process. The stress factors influence a tendency to consider a move while the resistance or inertial forces tend to reduce the desire to move given certain positive ties to the present dwelling.

The relative effects of stress, and inertia, therefore determine whether or not a decision to move will be made. Therefore, length of residence is also a very important determinant of residential stress, and deserves further study. The key to further productive research into the effects of life cycle stage, and length of residence on residential stress, and hence on mobility, lies in the employment of strict methodological and experimental designs (Taylor and Aikens,1983).

Therefore, this research represents an attempt to assess the consistency of life cycle and length of residence effects on residential stress by employing a replication of the research design, and methodology ascribed to by Aikens,1983.

2.5 Summary:

Residential mobility studies have focused on the individual household as the unit of analysis, representing a shift away from a macro approach to a micro "behavioural " approach. Therefore, the factors affecting the individual household's decision making process have become the target of all recent work in residential mobility studies. A major development in this micro approach was the introduction of the residential stress concept by Wolpert (1965), and the further refinement by Brummell (1979, 1981). The stress concept has become the basis for all subsequent work in mobility studies.

Residential stress has been widely accepted as the primary antecedent of voluntary decisions to move. As a result, residential mobility studies have focused on the determinants of stress in an attempt to understand the processes that underlie intraurban migration behaviour. The literature identifies life cycle stage, and length of residence as primary determinants of residential stress, and hence of mobility. This study examines the effects of each of these determinants on residential stress.

CHAPTER THREE: RESEARCH DESIGN

3.1 HYPOTHESES

The hypotheses are concerned with the separate and joint effects of length of residence, and life cycle stage on residential stress. These hypotheses were developed under the assumption that a fixed set of housing attributes is the basis for rating of individual levels of residential satisfaction (Aikens, 1983). The hypotheses also rest on the assumption that by proper sample design much of the variance in socioeconomic status, and tenure status can be controlled for (Aikens, 1983).

The main hypothesis being put forward is that life cycle, and length of residence singly and jointly affect residential stress, and that it is these separate and joint effects that account for the simultaneous, and seemingly contradictory, occurrences of cumulative stress and cumulative inertia. The operationalization of this rather broad hypothesis required that two sub hypotheses be formulated, they are as follows;

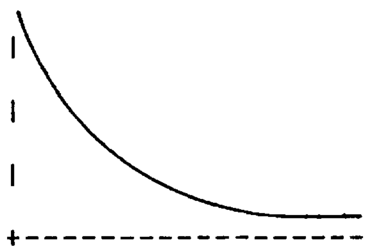
--In the later life cycle stages, the relationship between length of residence and residential stress is consistent with the cumulative inertia hypothesis (See fig 3.1).

--In the earlier life cycle stages the relationship between length of residence and residential stress is consistent with the cumulative stress hypothesis (See fig.3.2).

FIG.3.1

CUMULATIVE INERTIA

STRESS

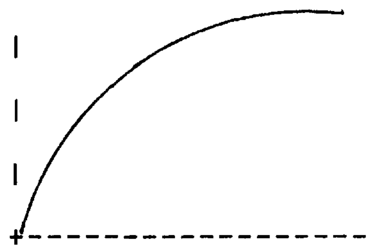


LENGTH OF RESIDENCE

FIG.3.2

CUMULATIVE STRESS

STRESS



LENGTH OF RESIDENCE

The cumulative inertia hypothesis has been put forward as an explanation of why some households do not move as often as one might expect. The basic argument upon which this hypothesis was based is that the probability of moving declines with increasing length of residence in the present dwelling (Aikens,1983;McAuley and Nutty,1985;Huff and Clark,1978). This decline is therefore a result of attachments formed between the household and the present dwelling. These attachments are created by such things as acquaintances, memories, as well as financial obligations, and acquisitions. Therefore, these physical, emotional, and psychological ties are what become stronger, and harder to break, with increasing length of residence (Aikens,1983).

The cumulative stress hypothesis, however, proposes an increase in stress with increasing length of residence. This viewpoint rests on the argument that specific events that occur in the life cycle have a profound impact on the probability of moving (Rossi,1955;Brummell,1979,81;Phipps et.al, 1985). Simply put, as length of residence increases so does the probability of a major life change occurring, therefore causing a mismatch between the current dwelling and present housing needs (Brummell, 1979,1981).

Therefore the cumulative stress hypothesis implies that a change in residence is most often the result of changing housing needs, and desires which naturally accompany the movement of the household through the life cycle (Aikens,1983;McAuley and Nutty,1985;Huff and Clark,1978).

3.2 OPERATIONAL DEFINITIONS:

3.2.1. Definition of Life Cycle Stage:

The life cycle concept is concerned with the changes that households go through from formation to dissolution, the stages include events such as marriage, the establishment of a household, bearing of children, rearing of children, children leaving home, and the latter years of the household (Aikens,1983). Concurrent with this progression from one life cycle stage to another are successive life style changes.

The use of age as the sole indicator of life cycle stage would be of little utility since different people reach the transition points at different times. As a result, the five life cycle stages identified by Harman (1975), and Aikens (1983) were utilized. These five stages were selected based upon the characteristic changes that households go through from their formation to their eventual dissolution.

Life cycle stages were defined in terms of the ages of the adult members of the households, and where applicable, to the age of the youngest child still in the household. The five life cycle stages defined by Aikens (1983), and subsequently used in this study, were as follows;

1. Adult members under 40 years with no children.
2. " "children under 6 years old.
3. " "children between 6 and 17 years.
4. " "children over 17 years.
5. Adult members over 40 years with no children left at home.

(Aikens, 1983).

3.2.2 Model of Stress:

Residential stress has been measured in a variety of ways. Brummell (1979, 1981), forexample measured stress as the difference between two utility levels namely experienced place utility, and aspiration place utility.

This study however employed a model known as the multiple attribute model to calculate stress. The basic form of this model is as follows;

$$Si = \sum Bijp - \sum Bijf,$$ where Si=hhld stress level
Bijp=present level of satisfaction with each household attribute
Bijf=future level of satisfaction with each household attribute

This model has also been used in conjunction with importance weights on each attribute being tested. The results in the mobility literature are conflicting as to whether the incorporation of such weights will either increase, or decrease the models predictive power.

In light of this controversy a model was formulated which did incorporate the importance weights and it appears as follows;

$$Swi = \sum Iij\ Bijp - \sum Iij\ Bijf,$$ where Swi=household weighted stress
Iij=importance placed on each attribute j.

NOTE: Bijp and Bijf are already defined above.

3.3 SAMPLE AND QUESTIONNAIRE DESIGN:

3.3.1 INTRODUCTION:

A questionnaire survey of McMaster University Faculty and Staff was conducted to provide the data required to test the hypotheses previously discussed. The purpose of this segment of the chapter will therefore be to outline the sample design, and the questionnaire construction.

3.3.2 SAMPLE DESIGN:

The sampling frame from which the sample was to be drawn was the McMaster University Faculty and Staff Directory. The sampling process had two main objectives, firstly, to ensure an even distribution across all five life cycle stages, and secondly, to control for the variance of any extraneous factors.

Initially the sample population was to be obtained using a stratified random sampling method. This method was proposed due to the fact that it allowed the sample to be stratified with respect to the five life cycle stages defined by Aikens (1983). The actual stratification was to be carried out by making use of a telephone screening process which would allow each of the five life cycle stages to be filled with an equal number of respondents.

The actual deployment of this strategy, however, did not produce the expected result. After forty respondents had been screened it became obvious that the screening method was not providing an equal distribution across the five life cycle stages. Therefore, in light of the apparent lack of benefit derived from this method it was decided that the remainder of the sample be acquired by using a straight random mail out method.

The straight random mail out method did yield very suprising results in that it provided a relatively even distribution across all five life cycle stages. The composition of the sample population obtained from this sampling strategy are presented in table 1.

The use of the Faculty and Staff Directory allowed for a relatively effective control for socioeconomic status, and tenure status. The final sample population consisted of 116 respondents , and the sample was relatively homogeneous in terms of socioeconomic status (See Table 2). The final sample was also relatively homogeneous with respect to tenure status, approximately 77% of the sample owned their own homes (See table 3).

TABLE 1
DISTRIBUTION OF RESPONDENTS ACROSS THE FIVE LIFE CYCLE STAGES

LIFE CYCLE STAGE	FREQUENCY	PERCENT
1	25	21.6
2	15	12.9
3	21	18.9
4	18	15.5
5	37	31.9
	116	100%

TABLE 2
SOCIOECONOMIC BREAKDOWN OF THE SAMPLE POPULATION

YEARLY HOUSEHOLD INCOME	FREQUENCY	PERCENTAGE
X<$20,000	1	.9
$20,000<X<$30,000	3	2.6
$30,000<X<$40,000	18	15.5
$40,000<X<$50,000	21	18.1
$50,000<X<$60,000	14	12.1
$60,000<X<$70,000	18	15.5
X>$70,000	38	32.8
MISSING DATA	3	2.6
TOTAL	116	100.0%

TABLE 3
TENURE STATUS BREAKDOWN OF THE SAMPLE POPULATION

TENURE STATUS	FREQUENCY	PERCENT
RENT	27	23.2
OWN	89	76.8
TOTAL	116	100%

3.3.3 QUESTIONNAIRE DESIGN:

Data for the analysis were collected by means of a questionnaire (see appendix). The questionnaire was used to obtain information about mobility behaviour, household preferences , characteristics of the households present, and possibly attainable future residence, as well as socioeconomic status.

The questionnaire also provided belief measures, and importance weights. The belief measures involved respondents rating their satisfaction with their present dwelling in terms of the same sixteen attributes used by Aikens and Taylor (1983), drawn from Harman (1975). These beliefs for each attribute were measured on a scale ranging from "very dissatisfied" (1), to "very satisfied" (7). Using the same scales, the respondents were asked to rate the level of satisfaction they would realistically expect to achieve on each of the sixteen attributes if they were to move within the next year.

The importance weights were obtained by asking the respondents to show how important each of the sixteen housing attributes were to them on a seven point importance scale ranging from "not at all important" (1) to "extremely important" (7).

Finally the questionnaire elicited data on household income, and length of residence.

CHAPTER FOUR: ANALYSIS AND RESULTS

The purpose of this chapter is to present the results of the analysis performed on the three hypotheses proposed in chapter three. The main focus of the analysis was to test the hypothesis that life cycle stage and length of residence both singly, and jointly affect residential stress.

Initially, a reliability test of the stress index was performed. The purpose of this reliability test was to make sure that the sixteen housing attributes incorporated in the stress index were significantly correlated to overall residential stress. Next, descriptive statistics such as means and standard deviations, were obtained for the stress measures. Thirdly , the effect of length of residence on stress, the effect of life cycle on stress, and the joint effect of life cycle stage and length of residence on stress were examined using non-parametric methods, a oneway analysis of variance, and analyses of covariance.

Lastly, the same battery of tests, and analyses were run using a weighted stress index to see if the incorporation of importance weights into the stress model could increase the explanatory power of the model. Other researchers have reported that the inclusion of such weights increases explanatory power, while others argue that such inclusions could have the opposite effect.

The conclusions with respect to the hypotheses, and a general discussion of the findings is presented as a lead into the final chapter.

4.1 RELIABILITY ASSESSMENT OF THE STRESS INDEX

The measures of unweighted stress and weighted stress namely STRESS and WSTRESS, were calculated by summing, over all sixteen housing attributes, the difference between present and future satisfaction levels. In an attempt to ensure that each of the individual stress measures contributed significantly to overall stress, reliability statistics were calculated including item total correlations, and alpha coefficients. This test provided a means of evaluating the contribution of each of the sixteen stress measures to overall stress through the computation of reliability coefficients. The results of the reliability analysis on the unweighted stress index are shown in table 4. The item total correlation shows the degree to which the individual stress measures are correlated with overall stress. The column entitled " alpha if item deleted " shows what the overall coefficient would be if the particular component of the index was deleted. Improvements in the index can be achieved by the deletion of weak items. As table 4

TABLE 4
RELIABILITY ASSESSMENT FOR STRESS INDEX (UNWEIGHTED)

ITEM	ITEM TOTAL CORRELATION	ALPHA IF ITEM DELETED
BUILDING TYPE	.5793	.8083
DWELLING SIZE	.4382	.8141
LOT SIZE	.3903	.8162
PARKING	.4827	.8101
PRIVACY	.3813	.8164
BUILDING CONDITION	.6445	.8001
GREEN SPACE	.4674	.8114
TENURE	.5397	.8058
AMOUNT OF NOISE	.5145	.8078
ACCESS TO WORK	.3024	.8221
ACCESS TO DOWNTOWN	.2829	.8231
HOUSING COST	.3047	.8225
AIR QUALITY	.5040	.8087
PROXIMITY TO SCHOOLS	.3008	.8232
NEIGHBORHOOD UPKEEP	.5859	.8074
ACCESS TO STORES	.3526	.8180

ALPHA=.8232 ;STANDARDIZED ITEM ALPHA=.8338 illustrates, there were no components in the stress index that caused the overall alpha to be lower, and therefore no items were deleted from the index. The overall standardized alpha for the stress index (STRESS) was 0.8223, indicating a strong relationship between the individual stress measures, and the overall stress index (STRESS). An alpha in excess of 0.7 is considered to be acceptable. Therefore, this relatively large alpha coefficient adequately justifies the use of the index " STRESS " in further analyses as an index of overall residential stress.

4.2 DESCRIPTION OF STRESS SCORES

The mean stress scores provide a measure of central tendency, and the standard deviation gives an indication of how much variance exists about the mean. The maximum stress value column shows the upper limit of stress reported on each individual attribute, the minimum stress value column shows the lower limit of stress reported on each attribute.

Stress on each attribute was calculated as the difference between present, and expected future levels of satisfaction with each attribute. Future satisfaction levels were subtracted from present satisfaction levels, and therefore, negative values represent the presence of stress on a given attribute. Similarly, a positive value indicates that the present level of satisfaction with a given attribute is higher that what is reasonably expected in the future.

Therefore, stress ranges from a maximum of -6.00, to a minimum of +6.00, indicating no stress (See Table 5).

TABLE 5
DESCRIPTIVE STATISTICS OF STRESS SCORES

ITEM	MEAN	MAX	MIN	STD DEV'N
STRESS	-4.805	-49.00	40.00	13.812
WSTRESS	-32.766	-309.00	218.00	80.239
BUILDING TYPE	-.5133	-6.00	4.00	1.1582
DWELLING SIZE	-.4336	-6.00	4.00	1.2383
LOT SIZE	-.7522	-6.00	3.00	1.2644
PARKING	-.5841	-6.00	5.00	1.9718
PRIVACY	-.6637	-5.00	4.00	1.4917
BLDG CONDITION	-.2655	-4.00	5.00	1.6203
GREEN SPACE	-1.0442	-6.00	3.00	1.5434
TENURE	.0000	-6.00	6.00	2.0485
AMOUNT OF NOISE	-.3805	-5.00	6.00	1.8240
ACCESS TO MAC	-.0177	-6.00	6.00	1.7977
ACCESS TO CBD	0.1239	-6.00	5.00	1.7634
HOUSING COST	0.2655	-6.00	6.00	1.8757
AIR QUALITY	-.5841	-6.00	5.00	1.7203
PROX. TO SCHOOLS	0.3907	-6.00	6.00	1.9415
NGHD UPKEEP	-.2655	-5.00	4.00	1.2102
ACCESS TO STORES	0.000	-6.00	5.00	1.5411

The attribute showing the highest average stress is GREEN SPACE which indicates that the present level of satisfaction is lower than what could reasonably be expected in the future. The attributes with the lowest average stress are TENURE STATUS and ACCESS TO STORES. The first is probably due to the fact that 76% of the sample owned their own homes and were unlikely to consider altering their status as owners to renters (Table 3). The low stress on ACCESS TO STORES is also probably a result of the samples internal composition in that nearly 70% of the respondents reside within a one half hour drive of the university, and hence had easy access to retail districts in the Hamilton region.

4.3 THE EFFECTS OF LENGTH OF RESIDENCE ON RESIDENTIAL STRESS

The main hypothesis was that life cycle and length of residence singly, and jointly affect residential stress. The single effect of length of residence on residential stress for each life cycle was examined using a non-parametric correlation technique known as a Spearman's Rho.

The relationship between length of residence and weighted stress, computed according to the model described in chapter three, was also examined over all five life cycle groups using the same non-parametric correlation statistic.

Lastly, the effect of length of residence on the sixteen individual stress measures was examined for each of the five life cycle stages.

4.3.1. THE RELATIONSHIP BETWEEN LENGTH OF RESIDENCE AND OVERALL RESIDENTIAL STRESS.

The relationship between length of residence and overall stress for the five life cycle groups is presented in table 6. The results of a Spearman's Rho correlation test indicate that a positive relationship exists between length of residence and stress for every case. Since stress is higher when it is a larger negative value, the positive relationship suggests that stress actually decreases with length of residence from the first stage onwards. These results are only significant however for groups three and four. These conclusions tend to indicate a cumulative inertia effect over all life cycle stages. The overall credibility of this result is questionable due to the limited number of significant results. This therefore offers no support for the second sub hypothesis proposed earlier in chapter three where it was proposed that this inertial effect should only be apparent in the fourth and fifth life cycle stages. Although, the significant relationships were concentrated in the fourth life cycle group, perhaps illustrating that the inertial factor is more influential in the latter groups. The fifth group, however, does not exhibit any of the same concentrations. Also, the trend toward cumulative inertia is witnessed when the mean stress scores of the overall stress measures, and the individual attribute stress measures, are

TABLE 6.

THE RELATIONSHIP BETWEEN LENGTH OF RESIDENCE AND UNWEIGHTED STRESS, WEIGHTED STRESS, AND INDIVIDUAL STRESS MEASURES.

ITEMS	LIFE CYCLE GROUPS 1	2	3	4	5
STRESS	.121	.419	.067	.045*	.250
WGT STRESS	.128	.434	.118	.018*	.406
BLDG TYPE	.029*	.116	.272	.341	.325
DWELLING SIZE	.191	.328	.011*	.232	.394
LOT SIZE	.495	.484	.238	.459	.385
PARKING	.362	.489	.394	.000***	.378
PRIVACY	.214	.445	.342	.102	.064
BLDG CONDITION	.339	.449	.205	.027*	.390
GREENSPACE	.458	.287	.295	.250	.128
TENURE	.415	.465	.452	.124	.302
AMT OF NOISE	.433	.382	.275	.231	.372
ACCESS TO MaC	.020*	.410	.029	.451	.377
ACCESS TO CBD	.104	.322	.070	.168	.399
HSG COST	.058	.167	.039	.154	.478
AIR QUALITY	.475	.390	.120	.000***	.433
PROX TO SCHOOLS	.138	.348	.010**	.467	.129
NGHD UPKEEP	.472	.325	.428	.078	.143
ACCESS TO STORES	.129	.215	.050*	.362	.401

THESE ARE SPEARMAN CORRELATION COEFFICIENTS.
* =P<.05 ,** =P<.01 ,*** =P<.001

examined. The mean values are presented in table 7. Note, this result could be due to the sample characteristics. The sample was purposely biased toward the upper income groups, and as a result, many reside in either Westdale or Dundas, which are both seen as desirable places to live. As a result of their generally high level of satisfaction with their present dwelling, residents may actually decrease stress over time as various modifications are made to the existing dwelling to accommodate life cycle changes (Aikens and Taylor,1983).

4.3.2 THE RELATIONSHIP BETWEEN WEIGHTED STRESS AND LENGTH OF RESIDENCE.

The effects of length of residence on weighted stress were also examined using the same form of analysis as used for unweighted stress. Weighted stress was calculated by multiplying the individual stress scores given by the respondents by the importance they assigned to each individual attribute (See appendix for questionnaire). These values were then summed for each respondent. The use of the weights is designed to take account of the differential importance assigned to individual housing attributes.

The results of this test are shown in table 6. The results show the same results as were previously discussed for unweighted stress. There is a positive relationship between length of residence and weighted stress, indicative

TABLE 7.
THE RELATIONSHIP BETWEEN LENGTH OF RESIDENCE AND UNWEIGHTED STRESS, WEIGHTED STRESS, AND INDIVIDUAL STRESS MEASURES.

ITEMS	LIFE CYCLE GROUPS 1	2	3	4	5
STRESS	-9.913	-10.467	-4.762	.389	-1.806
WGT STRESS	-63.35	-65.267	-28.00	-.778	-17.543
BLDG TYPE	-.760	-.733	-.286	-.167	-.541
DWELLING SIZE	-.760	-.133	-.238	-.333	-.432
LOT SIZE	-.720	-.140	-.762	-.389	-.595
PARKING	-1.64	-1.333	-.476	.056	-.108
PRIVACY	-1.16	-1.200	-.476	-.667	-.243
BLDG CONDITION	-.440	-.667	-.238	.000	.000
GREENSPACE	-.640	-1.600	-1.381	-.944	-.757
TENURE	-.920	-.400	.048	.556	.351
AMOUNT OF NOISE	-.680	-.800	-.571	.500	-.216
ACCESS TO MAC	-.480	.000	.286	.000	.162
ACCESS TO CBD	.320	.000	.286	.389	-.081
HOUSING COST	.360	.333	-.048	.611	.243
AIR QUALITY	-.600	-1.067	-.810	-.056	-.459
PROX.TO SCHOOLS	.000	-.333	-.143	.444	.972
NGHD UPKEEP	-.520	-.667	-.048	.111	-.162
ACCESS TO STORE	.240	-.467	.095	.278	-.081

NOTE:THESE NUMBERS REPRESENT THE MEAN STRESS SCORES.

of an inertial effect of length of residence on weighted stress across all five life cycle groups. As before, the relationship is only weakly significant in stages four and five, the trend however does exist.

4.3.3. TEST SUMMARY

Overall, there are few significant relationships between length of residence and stress, weighted and unweighted, and also with the individual stress measures. In all cases however, the correlations were positive, indicating that stress decreases with increasing length of residence, consistent with the cumulative inertia hypothesis (See fig.3.1). This trend could however be explained by recalling that the sample frame was designed in such a way as to allow life cycle stage, and length of residence to vary while controlling for the effects of any extraneous variance introduced, forexample by, tenure status, socioeconomic status, or residential area location.

4.4 THE RELATIONSHIP BETWEEN LIFE CYCLE STAGE AND RESIDENTIAL STRESS.

The effect of life cycle on stress was examined using a one-way analysis of variance. The results for unweighted stress, and weighted stress, illustrated that life cycle stage had a very significant effect (table 8). The grand mean

TABLE 8.
THE EFFECT OF LIFE CYCLE STAGE ON UNWEIGHTED AND WEIGHTED STRESS

STRESS INDEX	LIFE CYCLE GROUPS 1	2	3	4	5
UNWEIGHTED	-9.913	-.733	-4.762	.389	-1.806
WEIGHTED	-63.348	-1.330	-28.000	-.778	-17.543

	F VALUE	SIG. OF F.
UNWEIGHTED	2.643	0.039
WEIGHTED	2.621	0.038

for unweighted stress over the entire sample was -5.31 which was quite low when compared to a maximum value of -49.00. The range, again due in part to the controls that were built into the sampling procedure to eliminate large variations in socioeconomic status, tenure status, and residential location. In contrast, the mean stress scores for each life stage show that there are some significant between group differences. The contrast between the means for each life cycle group, and the overall mean illustrates the between group differences in stress. The unweighted and weighted stress scores for the first three groups were generally higher than the grand mean. By comparison, the stress scores for the last two life cycle stages were generally below the average. (see table 8).

The trend toward higher stress levels in the first three life cycle stages is consistent with the second sub hypothesis put forward in chapter three, which hypothesized that as one progressed through the first three life cycle stages, stress would increase due to life cycle transitions associated with family formation.

The decreasing stress values in the last two life cycle stages is consistent with the first sub hypothesis, which stated that, as life cycle progressed into stages four and five, stress would decrease as these periods are not associated with major household composition changes requiring housing readjustment.

The sub-hypotheses put forward in chapter three were substantiated further with the use a " Student's T " test. This test tests the following null, and alternate hypotheses;

Ho: the mean stress scores found in the first three life cycle stages were no lower than those found in the last two life cycle stages.

H1: the mean stress scores found in the first three life cycle stages were significantly higher than those found in the last two life cycle stages.

TABLE 9
STUDENTS T TEST RESULTS, TESTING FOR SIGNIFICANTLY HIGHER MEAN STRESS SCORES IN THE FIRST THREE LIFE CYCLE STAGES.

GROUP	MEAN	NO. OF CASES	POOLED VARIANCE ESTIMATE T	DEG. OF FREEDOM	2 TAIL PR.
UNWEIGHTED					
1	-8.2203	59	-2.83	111	0.005**
2	-1.0741	54			
WEIGHTED					
1	-51.8793	58	-2.70	109	0.008**

2	-11.8080	53

** P<0.001

NOTE: GROUP 1=LIFE CYCLE STAGES 1, 2, & 3.
GROUP 2=LIFE CYCLE STAGES 4, & 5.

The results of the t test allow the null hypothesis to be rejected, thereby adding credibility to the hypothesis that residential stress is higher in the first three life cycle stages (stages 1, 2, & 3), and lower in the last two (stages 4 & 5) (See Table 9).

The effects of life cycle stage on the individual stress components were examined using a Kruskal-Wallis non-parametric one way analysis of variance . Only the attribute "lot size" was found to be significantly affected by life cycle stage while all of the other individual stress measures failed to exhibit any significant results.

In the first life cycle stage the attributes with highest average stress values were PARKING availability , PRIVACY of dwelling, and TENURE status followed by BUILDING CONDITION, and DWELLING SIZE. Thus, in the first life cycle stage the attributes most likely to be associated with family formation and household composition change yield far lower stress scores than do attributes associated with personal convenience (see Table 10).

In the second life cycle stage GREENSPACE availability, and PROXIMITY TO SCHOOLS have the highest average stress scores, although LOT SIZE and PARKING availability are still causing some stress. This illustrates that people in the

TABLE 10.
EFFECTS OF LIFE CYCLE STAGE ON INDIVIDUAL RESIDENTIAL STRESS COMPONENTS.

ITEMS	LIFE CYCLE STAGE 1	2	3	4	5
BLDG TYPE	-.760	-.733	-.286	-.167	-.541
DWELLING SIZE	-.760	-1.33	-.238	-.333	-.432
LOT SIZE	-.720	-.140	-.762	-.389	-.595
PARKING	-1.64	-1.333	-.476	.056	-.108
PRIVACY	-1.16	-1.200	-.476	-.667	-.243
BLDG CONDITION	-.440	-.667	-.238	.000	.000
GREENSPACE	-.640	-1.600	-1.381	-.944	-.757
TENURE	-.920	-.400	.048	.556	.351
AMOUNT OF NOISE	-.680	-.800	-.571	.500	-.216
ACCESS TO MAC	-.480	.000	.286	.000	.162
ACCESS TO CBD	.320	.000	.286	.389	-.081
HOUSING COST	.360	.333	-.048	.611	.243
AIR QUALITY	-.600	-1.067	-.810	-.056	-.459
PROX.TO SCHOOLS	.000	-.333	-.143	.444	.972
NGHD UPKEEP	-.520	-.667	-.048	.111	-.162
ACCESS TO STORE	.240	-.467	.095	.278	-.081

NOTE:THESE NUMBERS ARE THE MEAN STRESS SCORES GIVEN BY EACH LIFE CYCLE GROUP.

second stage, those having children between zero and six years old, begin to demand more family oriented characteristics from their present dwelling (Table 10).

The results for the third life cycle stage are similar to those for the second stage. The attribute GREEN SPACE is again the attribute exhibiting the highest amount of stress followed by PROXIMITY TO SCHOOLS and LOT SIZE. This life cycle stage has also exhibited a relative change as compared to group one, reflecting to some extent a shift in priorities from individually oriented needs to family oriented needs (See table 10).

The fourth life cycle stage represents the post children stage of the household. The children are in excess of twenty one years of age, if still at home, and are theoretically nearing the point of separation from the family. The household is therefore experiencing less and less internal pressure due to the fact that by this stage most of household transitions have taken place , and the likelihood of further such events taking place is low. This trend is witnessed by the positive stress scores both on the overall measures and on the individual attribute measures. This group had a mean stress value of .389 compared to a value of -9.913 in the first life cycle stage. (see table 8).

The fifth life cycle stage shows a slightly higher stress value -1.008, but still significantly lower than the scores seen in the first three stages (See table 10).

The overall trend illustrates that stress is generally increasing in the first three life cycle stages and decreasing in the last two stages. These results support the two sub hypotheses proposed in chapter three. Curiously, housing cost was never a real significant cause of stress for any of the life cycle groups. This was probably another artifact of the socioeconomic, tenure status, and residential location controls used in the sampling procedure.

4.5 THE JOINT EFFECTS OF LENGTH OF RESIDENCE AND LIFE CYCLE ON RESIDENTIAL STRESS.

The next stage of the analysis involved the testing of the joint effects of life cycle stage, and length of residence on residential stress. This was done using an analysis of covariance, with life cycle stage as the main factor, and length of residence as a covariate.

The analysis of covariance had the primary purpose of finding out if there was a significant interaction between life cycle stage and length of residence in their effects on residential stress.

Initially, a one way analysis of variance determined that life cycle stage did have a significant separate effect on stress. However, when length of residence was introduced as a covariate in the analysis of covariance, it was found to have a very significant effect on stress, while life cycle stage effects became insignificant. This result implies that there is no significant joint effect of life cycle stage, and length of residence on residential stress.

Therefore, this result suggests that the effect of life cycle on residential stress may in fact be the effect of length of residence manifesting itself in the form of a life cycle effect. It is intuitively reasonable for people in the later life cycle stages to have longer length of residence values (See table 12).

The same type of test was run on weighted stress, and as would be expected the results were nearly identical to those obtained in the unweighted stress case (see Table 13).

As part of the analysis of covariance, a multiple classification analysis was performed. The multiple classification analysis illustrated the reduced effect of life cycle stage on residential stress once length of residence was introduced as a covariate. This is illustrated in table 11.

TABLE 11.
MULTIPLE CLASSIFICATION ANALYSIS FOR UNWEIGHTED STRESS

LIFE CYCLE GROUP	UNADJUSTED DEV'N	ETA	ADJUSTED FOR INDEPENDANT +COVARIATE	BETA
1	-5.110		-2.270	
2	-5.660		-4.230	
3	0.040		0.530	
4	5.190		2.810	
5	3.090		1.540	
		0.300		0.170

R^2 =0.152
MULTIPLE R =0.390

The results in the multiple classification table illustrates two points. The adjusted deviation scores show considerable deviation around the grand mean for the different life cycle groups. After length of residence was introduced as a covariate with life cycle stage , the effect of life cycle on the deviations was drastically decreased (see adjusted deviation scores in table 11).

Secondly, the results in the multiple classification table provides some support for the two sub hypotheses proposed in chapter three. The multiple classification table provides a listing of the mean stress score deviations around the overall grand mean stress score of the

TABLE 12.
ANALYSIS OF COVARIANCE FOR UNWEIGHTED STRESS BY LIFE CYCLE WITH LENGTH OF RESIDENCE.

SOURCE OF VARIATION	F RATIO	SIG. OF F RATIO
COVARIATES	16.032	0.0000
LENGTH OF RESIDENCE	16.032	0.0000
MAIN EFFECT	0.744	0.5640
LIFE CYCLE STAGE	0.744	0.5640
EXPLAINED		0.0030

sample. By adding the deviations in each group to the grand mean, we get a measure of the average stress experienced by each group. This therefore shows us that stress increases in life cycle stages one and two, it begins to decrease in stage three, and it is positive in stages four and five. This therefore provides further support for the hypothesis that stress increases with length of residence in the first three stages, and decreases with length of residence in the last two.

The multiple classification analysis provides measures of the strengths of the effects in terms of eta, beta and multiple correlation coefficients. The eta coefficient , a measure of the unadjusted effect of life cycle on stress, is 0.30. The beta coefficient 0.17 , shows the strength of the adjusted effect. Due to the fact that the beta coefficient is lower than the eta coefficient we can say that the effect of life cycle is reduced when length of residence is introduced.

The multiple R, 0.390 indicates the overall relationship between the dependant variable, the factor (life cycle), and the covariate (length of residence). The multiple R squared, 0.152 represented the proportion of the variation in stress explained by the combined effects of all factors, and covariates. This result allows one to conclude that length of residence performs as the primary factor affecting residential stress.

This pattern of results is very similar to the results of an identical analysis performed on weighted stress as shown in tables 13 and 14.

TABLE 13.
ANALYSIS OF COVARIANCE FOR WEIGHTED STRESS BY LIFE CYCLE WITH LENGTH OF RESIDENCE.

SOURCE OF VARIATION	F RATIO	SIG. OF F RATIO
COVARIATES	15.762	0.000
LENGTH OF RESIDENCE	15.762	0.000
MAIN EFFECTS	0.781	0.540
LIFE CYCLE STAGE	0.781	0.540
EXPLAINED	3.777	0.003

TABLE 14.
MULTIPLE CLASSIFICATION ANALYSIS FOR WEIGHTED STRESS

LIFE CYCLE GROUP	UNADJUSTED DEV'N	ETA	ADJUSTED FOR INDEPENDANT+COVARIATE	BETA
1	-30.58		-14.03	
2	-32.49		-24.06	
3	4.12		6.86	
4	31.99		18.45	
5	15.66		6.30	
		0.30		0.17

MULTIPLE R^2 =0.154
MULTIPLE R =0.392

4.6 SUMMARY

Overall life cycle had a significant effect on stress both unweighted and weighted. As hypothesized, the first three life cycle stages did show higher levels of stress than groups four and five. The first three groups show a relationship between length of residence and stress that resembled the cumulative stress hypothesis. In the last two the relationship resembled the cumulative inertia hypothesis. These conclusions were derived via an inspection of the group mean stress scores.

The sub hypothesis that residential stress actually increases in stages one through three, and decreases in stages four and five, was statistically supported by a student's T test. This test illustrated that the mean stress scores reported in the first three stages were significantly greater than those reported in the last two life cycle stages. A trend toward overall cumulative inertia is suggested due to a positive relationship between stress, and life cycle stage, indicating that as life cycle stage increases, residential stress decreases. The second sub hypothesis that stress decreases in stages four and five was again not supported by significant relationships between stress and length of residence for the later stages. The trend was visible when the group means on stress scores were examined for all life cycle stages. The results of the student's T test provide some substantiation for this claim (See table 9).

Lastly, there was little interaction effect between life cycle stage and length of residence when used as a factor and a covariate respectively in an analysis of covariance on unweighted stress and weighted stress. It was also shown that only length of residence had a significant effect on stress both weighted and unweighted. Life cycle loses nearly all of its effect on stress when length of residence is introduced. The same general trend was witnessed when weighted stress was used in place of unweighted stress in an identical battery of tests. The similarity is indicative of other research results which have reported that the inclusion of importance weights in this model of stress will have very little effect on results. Many argue that this is so due to the fact that the satisfaction measures used in the calculation of unweighted stress already incorporate an importance weight. The results for the weighted stress model are therefore consistent with earlier studies.

CHAPTER FIVE: CONCLUSIONS

5.1 CONCLUSIONS REGARDING RESEARCH HYPOTHESES

The purpose of this research has been to identify the separate and joint effects of life cycle and length of residence, on residential stress. Previous studies have outlined that life cycle stage and length of residence are both very powerful determinants of residential stress, and hence, of residential mobility (Huff and Clark,1978). However, there was little evidence as to the relative strengths of each of these determinants. This gap in the literature was mainly due to the fact that previous research designs had not adequately controlled for the effects of certain other extraneous independent variables. Therefore, this study was designed so as to control for the influences of socioeconomic status, tenure status and to some extent residential location, by limiting the sampling frame to the faculty and staff of McMaster University. Also, measures were taken within the analysis to control for extraneous variance, forexample, an analysis of covariance allowed the effects of life cycle, and length of residence to be adjusted to account for the covariation between the two variables.

The analysis showed that both life cycle, and length of residence have significant separate effects on residential stress. Mean stress levels are higher for the first three life cycle stages, and lower for the last two. The analysis also provides support for the cumulative inertia hypothesis. There is a positive correlation existing between stress and length of residence indicating that as length of residence increases, stress decreases, even in the early stages when increasing stress was hypothesized. Aikens (1983) suggested that this may be due to the fact that many households have decided against family formation, and hence, have no reason to be concerned about their home being adequate as a family dwelling. Aikens (1983) also suggests that, since most of her respondents were home owners, they were less sensitive to changes in housing demands created by changes in the life cycle.

The effect of length of residence on residential stress was illustrated through the use of a nonparametric correlation coefficient known as the Spearman's rho. This test, although yielding very few significant correlations, did provide support for the cumulative inertia hypothesis (table 4).

The effect of life cycle on residential stress was examined using a oneway analysis of variance. This analysis illustrated that significant between group differences in stress did exist, confirming that life cycle does have a significant effect on residential stress.

The joint effects of life cycle and length of residence on residential stress were examined using an analysis of covariance with length of residence as a covariate. A multiple classification analysis was also performed. This series of tests failed to confirmed the hypothesis that life cycle stage and length of residence jointly effect residential stress. The analysis showed that after length of residence was introduced as a covariate, the contribution of life cycle stage was not significant (table 11). The multiple classification analysis also illustrated that life cycle stage and length of residence jointly account for only 15.2 of the variance in residential stress (table 12).

The first sub-hypothesis, that the relationship between stress and length of residence resembled the cumulative inertia hypothesis in the later life cycle stages, was not strongly supported by the results. Life cycle stage four did exhibit a significant positive correlation between length of residence and stress, but it was not repeated in the fifth stage.

The second sub-hypothesis, that the relationship between length of residence and stress in the first three life cycle stages is consistent with the cumulative stress hypothesis, was also not confirmed. The positive Spearman correlation coefficients indicate that stress is decreasing with length of residence, although again there were no significant correlations.

The Spearman correlation test was also applied to each of the individual attribute stress measures to see if any significant relationships existed between the attribute stress measures and length of residence (table 3). The first life cycle group shows a positive correlation on all sixteen attributes, implying cumulative inertia. Building type, and access to McMaster University, were the only stress measures to yield a significant correlation. In the second life cycle stage no significant correlations were found, although, again , the positive coefficients suggest cumulative inertia. In the third life cycle stage dwelling size, proximity to school, and access to stores show significant coefficients. Proximity to schools shows by far the strongest correlation with length of residence. In the fourth life cycle stage, parking availability and air quality are very significantly correlated to length of residence, with weaker significant correlations on building condition. In the fifth life cycle stage there were no significant correlations between any of the individual attribute stress measures and length of residence. Overall, there was a lack of significant correlation between length of residence and the individual attribute stress measures, however all coefficients were positive indicating a definite trend towards cumulative inertia.

As table 9 illustrates, the mean stress scores given by respondents in the first three life cycle stages are significantly higher than those reported in the last two life cycle stages. This provides statistical substantiation for the claim that a household experiences higher stress in the family formation years, and less in the family dissolution years.

The stress model employed in the analysis represents an extension of the multiple attribute attitude model (Rosenberg,1956;Fishbein,1967). The analysis was also conducted using an alternative form of the stress model which included weighting factors to take into consideration the relative importance assigned to the individual attribute stress measures by each household. The literature has a split opinion as to whether or not such an inclusion would increase, or decrease the explanatory power of the model (Wilkie and Pessemier,1973). Their primary argument against such an inclusion is that the belief measures in the unweighted stress model may in fact have importance weights included in them. The results obtained for weighted stress illustrated that almost no differences existed between the two sets of results, implying that the inclusion of the importance weights in the model will yield very little utility.

Therefore, the overall results obtained are generally consistent with current behavioural research in residential mobility. The mobility process occurs in response to residential stress which results from a mismatch between housing aspirations and present housing characteristics. These disparities are often linked to transitions occurring in the life cycle. Concurrent with this, the pressure to move is reduced by various social, psychic, and financial costs of moving which tend to increase with length of residence (McAuley and Nutty,1985).

The contribution of this research to the existing body of literature on residential mobility lies in the quantitative methods used to estimate the strengths of the separate and joint effects of life cycle stage and length of residence on stress. The need to perform such an analysis was suggested by Huff and Clark (1978), when they developed a model of residential mobility that emphasized the coexistence of the cumulative inertia, and cumulative stress hypotheses.

Huff and Clark (1978) recognized that changes in the probability of moving will occur if either residential stress or resistance to moving change over time. Their model integrated two seemingly contradictory concepts to try and alleviate some of the conflicting results obtained by previous residential mobility research. This thesis represents an implementation of the model proposed by Huff and Clark (1978).

There are some limitations to this research that must be kept in mind when considering the results obtained in the analysis. The first, which was also noted in similar work done by Aikens (1983), is associated with the definition of life cycle in terms of stages, and not in terms of the gradual changes which occur throughout the life cycle. It has been suggested that future research should try and use a stronger research design that would emphasize household life cycle changes over time.

The present study was purposely designed to be biased in terms of socioeconomic status, tenure status, and residential location, in an attempt to control for any large variations in any of these extraneous influences. These control measures allowed the variation in life cycle, and length of residence to be isolated, however in doing so, generalization beyond the sample frame is not feasible.

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APPENDIX
(QUESTIONNAIRE)

McMASTER UNIVERSITY
DEPARTMENT of GEOGRAPHY
1280 Main Street West, Hamilton, Ontario, L8S 4K1
Telephone: (416) 525-9140 Ext. 4535
Telex: 061-8347

Dear Sir/Madam:

My name is Richard DiFrancesco and I am a fourth year student in the Department of Geography. For my Honours thesis research I am examining the factors affecting housing satisfaction among McMaster faculty and staff.

You have been randomly selected to participate in this study. I would greatly appreciate your taking a few minutes to complete the enclosed questionnaire.

All information will be strictly confidential. No names will be retained or associated in any way with the results.

Thank you for your time and cooperation in completing and returning the questionnaire. For your convenience a return addressed envelope is included in the questionnaire kit.

Appreciatively yours,

R. Difrancesco

Richard J. DiFrancesco, B.A.

Please indicate your response to the question either by placing an "X" in the appropriate space or by providing a written answer when required , thankyou.

1. For each permanent member of your household, starting with yourself, please indicate their relationship to you and their year of birth.

Relationship to respondent	Year of Birth
a.------RESPONDENT--------------	---------
b.------------------------------	---------
c.------------------------------	---------
d.------------------------------	---------
e.------------------------------	---------
f.------------------------------	---------
g.------------------------------	---------
h.------------------------------	---------

2. Could you please state when you moved into your current residence. (i.e.year and month)

<u>DESCRIPTION OF CURRENT DWELLING AND NEIGHBORHOOD</u>

3. Please indicate the type of dwelling you are currently living in.

Single family house	----------
Attached house (duplex or town house)	----------
Low rise apartment	----------
High rise apartment	----------

4. Tenure status: Rent ---------

Own ---------

5. Number of bedrooms. -------------

6. How would you rate the privacy of your dwelling?

Very Private (no intrusion from neighbor) ---------

Fairly private (occasional intrusion) ---------

Not at all private (much intrusion) ---------

7. Do you have your own private parking area or driveway?

Yes --------

No --------

8. What is the approximate age of the building? --------

9. Travel time to the University: ------------ (minutes)

10. How would you evaluate each of the following aspects of your neighborhood? Please circle appropriate number.

very quiet	1	2	3	4	5	6	very noisy
very clean	1	2	3	4	5	6	very untidy
old	1	2	3	4	5	6	new
buildings well kept	1	2	3	4	5	6	buildings run down
people very friendly	1	2	3	4	5	6	people not friendly

<u>HOUSING SATISFACTION</u>

11. On each of the following scales, please indicate your level of satisfaction with your present dwelling by placing a " P " over the appropriate number where 1 is very dissatisfied and 7 is very satisfied.

e.g. size of dwelling

			P					
very dissatisfied	1	2	3	4	5	6	7	very satisfied

-This rating shows that the respondent is slightly dissatisfied with the size of his/her present dwelling.

a. BUILDING TYPE(apartment/house)

VERY DISSATISFIED 1 2 3 4 5 6 7 VERY SATISFIED

b. TENURE

VERY DISSATISFIED 1 2 3 4 5 6 7 VERY SATISFIED

c. DWELLING SIZE

VERY DISSATISFIED 1 2 3 4 5 6 7 VERY SATISFIED

d. LOT SIZE

VERY DISSATISFIED 1 2 3 4 5 6 7 VERY SATISFIED

e. PARKING

VERY DISSATISFIED 1 2 3 4 5 6 7 VERY SATISFIED

f. PRIVACY

VERY DISSATISFIED 1 2 3 4 5 6 7 VERY SATISFIED

g. BUILDING CONDITION

VERY DISSATISFIED 1 2 3 4 5 6 7 VERY SATISFIED

h. GREEN SPACE

VERY DISSATISFIED 1 2 3 4 5 6 7 VERY SATISFIED

i. NOISE

VERY DISSATISFIED 1 2 3 4 5 6 7 VERY SATISFIED

j. <u>ACCESS TO UNIVERSITY</u>

VERY DISSATISFIED 1 2 3 4 5 6 7 VERY SATISFIED

k. <u>ACCESS TO DOWNTOWN</u>

VERY DISSATISFIED 1 2 3 4 5 6 7 VERY SATISFIED

l. <u>HOUSING COST</u>

VERY DISSATISFIED 1 2 3 4 5 6 7 VERY SATISFIED

m. <u>AIR QUALITY</u>

VERY DISSATISFIED 1 2 3 4 5 6 7 VERY SATISFIED

n. <u>PROXIMITY TO SCHOOLS</u>

VERY DISSATISFIED 1 2 3 4 5 6 7 VERY SATISFIED

o. <u>NEIGHBORHOOD UPKEEP</u>

VERY DISSATISFIED 1 2 3 4 5 6 7 VERY SATISFIED

p. <u>ACCESS TO STORES</u>

VERY DISSATISFIED 1 2 3 4 5 6 7 VERY SATISFIED

If you were to move within the next twelve months, what level of satisfaction would you realistically expect to achieve in your new home? <u>Using the same scales ABOVE,</u> place an " F " over the appropriate number. (N.B. Where present and future satisfaction levels are equal, place either the F or the P Directly above the other over the appropriate number.)

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12. Now could you please indicate on the following scales the level of importance you would assign to each attribute <u>if you were to move within the next year.</u> (place an " X " over the appropriate number.)

a. <u>BUILDING TYPE</u>

NOT AT ALL IMPORTANT 1 2 3 4 5 6 7 EXTREMELY IMPORTANT

b. <u>TENURE</u>

NOT AT ALL IMPORTANT 1 2 3 4 5 6 7 EXTREMELY IMPORTANT

c. <u>DWELLING SIZE</u>

NOT AT ALL IMPORTANT 1 2 3 4 5 6 7 EXTREMELY IMPORTANT

d. <u>LOT SIZE</u>

NOT AT ALL IMPORTANT 1 2 3 4 5 6 7 EXTREMELY IMPORTANT

e. <u>PARKING</u>

NOT AT ALL IMPORTANT 1 2 3 4 5 6 7 EXTREMELY IMPORTANT

f. <u>PRIVACY</u>

NOT AT ALL IMPORTANT 1 2 3 4 5 6 7 EXTREMELY IMPORTANT

g. <u>BUILDING CONDITION</u>

NOT AT ALL IMPORTANT 1 2 3 4 5 6 7 EXTREMELY IMPORTANT

h. GREEN SPACE

NOT AT ALL IMPORTANT 1 2 3 4 5 6 7 EXTREMELY IMPORTANT

i. NOISE

NOT AT ALL IMPORTANT 1 2 3 4 5 6 7 EXTREMELY IMPORTANT

j. ACCESS TO UNIVERSITY

NOT AT ALL IMPORTANT 1 2 3 4 5 6 7 EXTREMELY IMPORTANT

k. ACCESS TO DOWNTOWN

NOT AT ALL IMPORTANT 1 2 3 4 5 6 7 EXTREMELY IMPORTANT

l. HOUSING COST

NOT AT ALL IMPORTANT 1 2 3 4 5 6 7 EXTREMELY IMPORTANT

m. AIR QUALITY

NOT AT ALL IMPORTANT 1 2 3 4 5 6 7 EXTREMELY IMPORTANT

n. PROXIMITY TO SCHOOLS

NOT AT ALL IMPORTANT 1 2 3 4 5 6 7 EXTREMELY IMPORTANT

o. NEIGHBORHOOD UPKEEP

NOT AT ALL IMPORTANT 1 2 3 4 5 6 7 EXTREMELY IMPORTANT

p. ACCESS TO STORES

NOT AT ALL IMPORTANT 1 2 3 4 5 6 7 EXTREMELY IMPORTANT

13. Would you please indicate the category that most accurately describes the total income of your household before taxation.

<=$20,000	----------
$20,000-$30,000	----------
$30,000-$40,000	----------
$40,000-$50,000	----------
$50,000-$60,000	----------
$60,000-$70,000	----------
>= $70,000	----------