

THE IDENTIFICATION OF DESCRIPTIVE VARIABLES RELATED
TO MOBILITY PATTERNS OF THE ELDERLY;
A CASE STUDY OF A MULTI-UNIT HOUSING
RESIDENCE IN MANHATTAN, KANSAS

by

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A handwritten signature in dark ink, appearing to read 'V. J. ...', is written over a horizontal line. Below the line, the text 'Major Professor' is printed.

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CHAPTER I

INTRODUCTION

With the financial independence afforded by social security, increases pension and retirement benefits, many elderly have adjusted comfortably to the life styles of older age. Many elderly own or rent their own homes. There are many elderly, however, who receive low pension benefits and, coupled with an increase in the cost of living over the past decade, simply cannot afford to own, rent or maintain their own homes. The United States Department of Housing and Urban Development initiated legislation in the 87th Congress to help this particular group of low income elderly, by providing residences with rents based on a percentage of the total annual income. In addition to providing low income rental units, the federally sponsored complexes, along with various community groups and organizations, are providing additional services to meet the particular needs of this group of elderly. The central theme for policies concerning these units, developed by the federal government, has involved specific location and design criterion.

Most of the complexes are located reasonably close to major shopping and service centers. In addition, many communities have implemented programs geared towards providing access to recreation and community participation. Many of these programs take place within the confines of the complexes. Transportation services have also been provided for this particular group of elderly. Bus routes or mini-bus services have been routed to these complexes and sidewalks and traffic crossings have, in some cases, been improved to insure the safety of elderly who walk from

these complexes.

Specific design specifications for these units have included features of special lighting, fire protection, temperature control, easy access for handicap individuals and interior design of apartments to meet the special needs of this group of low income elderly.

Of the services provided to these low income elderly, transportation has the greatest implications as to whether or not the elderly residents can complete tasks involved in day to day living. Grocery or general shopping, appointment with service centers, visiting friends or relatives, attending community meetings and going to work cannot be accomplished without physical movement from the complex to the point of destination. The modes of transportation for these "trips" may vary from self-driven automobile, walking, bus, taxi, use of friends car, or having a friend or relative drive. The degree to which these modes of transportation are available and the trips completed may determine the extent of the completion of the tasks of daily living by this group of elderly.

One area of inquiry involves whether or not there are characteristics or factors which may describe the ability of these low income elderly to be physically mobile. Are there factors in an individuals life which, other than accessibility, may hinder or help mobility?

Rohles (1970), in describing the relationship between man and his physical environment has identified three major classes of variables: physical factors such as sound, light, temperature; organismic factors which are used to define the living organism, which include age, sex, psyche, genetics, drive and physical condition; and adaptive factors which are those variables that interact between man and his physical environment

and enable him to adapt to his environment. These adaptive factors include diet, clothing, exposure, social factors and activity.¹ These are the independent variables that must be defined before examining the effects of the environment on the dependent variables of physiology (health), behavior (both learned and innate) and affectivity or feelings.

With minor modifications this paradigm can be employed in studying the mobility behavior of the federally housed low income elderly. The physical factors, by virtue of near identical living conditions are fairly uniform for all occupants in these complexes. However, the organismic variables of age, sex, physical conditions and socio-economic factors of income, marital status, number of living relatives and number of friends are not uniform.

There are very few studies which examined the relationship between these variables and mobility behavior. One of the most significant contributions concerning mobility behavior was done by Frances Carp in 1969.² Carp analyzed the affect these independent variables had on mobility behavior. Carp found that among 14 variables, income, health, sex and marital status were significantly correlated to the number of trips made by the elderly. The study found that those with poor health or who did not own a car were very immobile.

Purpose

Since the relationship between these variables and mobility behavior is unknown, yet to some extent critical from the standpoint of planning, a need exists to examine the relationships. This fact spawned the present study.

The purpose of this study was to analyze the relationship between variables of age, sex, marital status, income, number of living relatives, number of friends and attitudes towards traveling and variables of mobility in order that conclusions and recommendations can be made about low income elderly housing. Mobility behavior will be measured as the number of trips, length of trips, mode of transportation and the type of trip or trip purpose. The study pertains to low income elderly residents located in a federal housing project in Manhattan, Kansas.

Key Concepts

For the purposes of this study, the following concepts are classified as the nonmobility variables: age, sex, income, marital status, length of residence, number of living relatives, number of friends, attitudes towards traveling and health. These are defined as follows:

Age: The chronological years of each subject.

Income: The yearly annual money income from all sources for each subject.

Length of Residence: The total number of years as a resident in the study area.

Number of Living Relatives: All living relatives residing in the study area at the time of the study.

Health, Perceived: The type of health the subject believes himself or herself to be in (excellent, good, fair, poor).

Health, Actual: The number of trips to medical service areas for treatment of varying degrees of illnesses over a one year period.

Attitudes Towards Traveling: The specific feelings towards certain aspects of physical mobility, expressed in regard to these statements

("I can travel rain or shine," "I like to travel," "It is best for me to take a bus").

For purposes of this study mobility will be divided into four dependent variables: trip frequency, trip length (time), trip purpose and mode of transportation.

Trip: The movement from an origin to a point of destination.

Trip Frequency: The number of trips taken during the study period outside the complex.

Length of Trip: The total number of hours spent away from the complex, both during the trip, at the trip destination and return trip.

Trip Purpose: The reason given by respondent for taking each trip, including but not limited to such measures as shopping, service appointments, visitation of friend or relative, just to get out of the complex, and the attendance of meetings.

Mode of Transportation: The type of transportation used in each trip; car, bus, taxi, foot, friend car, or relatives car.

CHAPTER II

PROCEDURE

Residential Location

The case study was taken from the Apartment Tower, located at 300 North Fifth Street in Manhattan, Kansas. The Tower was built in April, 1973 through bonds established by the United States Department of Housing and Urban Development. The Apartment Tower is designed for persons over sixty-two years of age with the second floor especially designed for the handicapped. The units are managed by the Housing Authority of the City of Manhattan. The facility is located one block from Manhattan's downtown business district and one-half block from the main city post office. Major bus routes have scheduled stops within a block of the complex.

Preliminary Testing

Following three and one-half months of weekly visitations, with approximately 15 elderly occupants it was determined that the optimum time for maximum occupant contact was during the first week of each month. The reason for this time is due to the fact that social security and pension checks are mailed and delivered on or around the first of the month. It was observed that occupants were home around these dates most likely to pick up their checks and deposit or cash them. Five of these fifteen elderly residents were used to pre-test the questionnaires.

Instrument

To study the mobility behavior of this group of elderly two questionnaires were developed. The first questionnaire asked specific questions

about nonmobility behavior variables, while the second asked for responses on the actual mobility patterns of frequency, length, purpose and mode used in each trip. (The questionnaire used to collect data on these variables is attached in Appendix I,

Data Collection

The survey took place over a seven day period, March 2 through March 9.

The first questionnaire on the nonmobility behavior variables was asked on Monday only. The questionnaire on the mobility behavior was asked on Monday and repeated every day over the seven day period.

At the time of the survey, only 85 of the 88 apartments were rented. A total population of 89 existed at the time of the survey.

The first questionnaire took approximately five minutes to administer. Except for a few respondents who were not available Monday, the data on the nonmobility variables were collected by late Monday night. The questionnaire on mobility behavior was asked for trip patterns of the day before, since it was found to be impossible to get all respondents patterns the same day they occurred. It was impossible for respondents at 8:00 in the morning on Monday to tell the surveyor what trips occurred on Monday.

The survey started at approximately 8:30 in the morning and was completed by 10:00 in the evening of the same day.

CHAPTER III

RESULTS

The Subjects

The study sampled 66 subjects, 59 females and 7 males. Of the respondents surveyed, the mean age was 72.56. Only ten respondents were 65 years or younger, while 40 respondents were 70 years and older. Fifty-one respondents were widows or widowers. The mean annual income for male respondents was between \$2,000.00 and \$3,000.00 with three male respondents reporting earnings less than \$1,000.00 annually. Thirty-six females and three males reported finishing high school, nine females attained formal college education. Thirty-eight females and three males indicated they had lived in Manhattan ten years or more. In general, male respondents indicated fewer living relatives in the community than females. Most male and female respondents indicated their health to be in good (no major hospitalization) condition. Additional demographic characteristics are provided on the following page in Table 1.

Attitudes Towards Traveling

In general, the respondents have a variety of feelings towards traveling. Thirty-seven females and five males indicated they strongly agreed with the statement "I like to travel" while twelve said they strongly disagreed. On the statement "traveling is not for me" twenty-two respondents indicated strong disagreement while twenty indicated strong agreement.

In terms of general mobility patterns, only one female and no males indicated getting out more than twice a day, on an average day. Twenty-five females and three males indicated traveling just twice a day. Both

Table 1. Summary of Demographic Characteristics

	Male	Per cent	Female	Per cent
Marital Status				
Single	1	14	3	5
Married	2	29	3	5
Widow-widower	4	57	47	80
Divorced	0	0	6	10
Income				
\$1,000	3	43	6	10
\$1,000 - \$3,000	3	43	27	46
\$3,000 +	1	14	26	44
Education				
Grade School	4	57	13	22
High School	3	43	36	61
Vocational	0	0	1	2
Advanced	0	0	9	15
Living Relatives				
5	6	86	31	53
5 - 9	1	14	12	20
10 - 14	0	0	6	10
15 - 20	0	0	10	17
Health, Perceived				
Excellent	1	14	15	25
Good	2	29	13	22
Fair	1	14	20	34
Poor	3	43	11	19
Health, Actual				
No. of trips for:				
Minor Checkups				
5	7	100	56	95
6 - 10	0	0	3	5
Suggested Prescriptions				
5	7	100	46	78
6 - 10	0	0	13	22
Minor Hospitalization				
5	7	100	59	100
Major Hospitalization				
5	7	100	58	98
6 +	0	0	1	2

Table 1. (cont.)

	Male	Per cent	Female	Per cent
Friendship Association				
Inside Complex				
4	3	43	11	19
5 - 9	0	0	17	29
10 - 14	2	29	13	22
15 - 19	0	0	4	7
20 - 24	1	14	6	10
25 +	1	14	8	14
Outside Complex				
4	3	43	23	39
5 - 9	1	14	8	14
10 - 14	1	14	13	22
15 - 19	0	0	5	9
20 - 24	0	0	6	10
25 +	2	29	6	10

male and female mean responses indicate that most of the sample travels more than twice a week, but, on the average, less than once a day. In addition, twenty-six respondents indicated trips for shopping at least once a week while twenty-six respondents also indicate trips for shopping between two and four times a week. Meeting, church, doctor, school and work had very low frequencies and were not used in the analysis. Additional data summaries on perceived trip patterns and attitudes are found on the following page in Table 2.

Actual Trip Patterns

Over the seven day period, 241 trips were taken. The highest number of trips occurred on Saturday (97 or 39 per cent). Sunday was the second highest with 51 or 21 per cent of the trips taken that day. Sunday was followed by Monday, Tuesday, Wednesday, Thursday and Friday in order of

Table 2. Summary of Perceived Trip Patterns and Attitudes

	Male	Female
Attitudes Towards Traveling		
I Like to Travel		
Strongly Agree	5	32
Agree	1	9
Disagree	0	6
Strongly Disagree	0	11
Traveling is Not For Me		
Strongly Agree	2	18
Agree	1	10
Disagree	2	11
Strongly Disagree	2	20
I can Travel Rain or Shine		
Strongly Agree	0	13
Agree	2	17
Disagree	2	19
Strongly Disagree	3	9
I Travel Best Alone		
Strongly Agree	0	6
Agree	1	13
Disagree	2	26
Strongly Disagree	4	14
I Like Company when I Travel		
Strongly Agree	4	13
Agree	2	24
Disagree	1	20
Strongly Disagree	0	2
It is Best for me to Take a Bus		
Strongly Agree	1	11
Agree	3	18
Disagree	2	24
Strongly Disagree	1	6
Perceived Weekly Trips		
How many times do you get out a week?		
+ Twice a day	0	1
Twice a day	0	5
Once a day	3	25
More than twice a week	2	12
Twice a week	1	12
Once a week	0	4
Can't say	1	0

Table 2. (cont.)

	Male	Female
Perceived Trip Purpose		
Just To Get Out		
0 - 4	7	59
5 - 10	0	0
To Visit A Friend		
0 - 4	7	55
5 - 10	0	4
To Shop		
0 - 4	6	52
5 - 10	1	7
To Church		
0 - 4	7	59
5 - 10	0	0
To Meeting		
0 - 4	7	59
5 - 10	0	0
Perceived Transportation Used Most Often		
Own Auto	3	18
Rent Auto	0	1
Friends Car	1	2
Relatives Car	0	12
Taxi	2	24
Bus	1	0
Walk	0	2

decreasing number of trips.

Four distinct categories of types of trips were taken: 38 per cent to the grocery store, 17 per cent to service centers, 17 per cent to a friends house, and 90 per cent to eating establishments. The remaining four per cent were taken over a wide range of destinations.

Respondents spent a total of 484 hours in trips, Saturday and Sunday had the largest number of hours. More hours were spent with friends and

shopping than eating or going to a service area.

Over the 241 trips taken during the seven day period, eighty-seven were taken by ones own auto, eighty-four were taken in a friends car and thirty-three were taken in a taxi. Additional data summaries on actual trip patterns are found in Table 3.

Table 3. Summary of Actual Trip Patterns

Actual Daily Trips	Totals
March 2	66
3	51
4	36
5	23
6	24
7	16
8	92
	<u>241</u>
Destination	
Shop	92
Service	42
Friends	78
Eating	21
	<u>241</u>
Mode	
Auto	87
Friends	84
Taxi	53

Significant Nonmobility Variables

Nonmobility variables were cross-tabulated with each of the four mobility behavior variables. Table 4 illustrates the incidence of association with statistical significance of $p = .05$ or less. Health, friendship associations inside and outside the complex, length of residence, relations in Manhattan, income and attitudes towards traveling have significant

Table 4. Chi Square Values of Association Between
Nonmobility Variables and Mobility Characteristics

Nonmobility Characteristics	Frequency of Trips		Type of Trip		Length of Trip		Mode of Trip	
	df	x ²	df	x ²	df	x ²	df	x ²
Health	33	53**	18 15	28* 25***	57	85***	18	34**
Friends Outside	264	331***	120	152*	456	537**		
Friends Inside			88	115*				
Length of Residency					171	113***		
Relatives in Manhattan					285	355**		
Income							24	36*

Note: Significance levels 5 per cent, 1 per cent and 0.1 per cent or less are denoted by one, two, or three asterisks respectively.

associations with the frequency type, length and mode in mobility behavior.

Health

Of the seven independent variables, health has significant associations with the frequency, type, length and mode of transportation.

The direction of the relationship is critical in this particular association. It appears that as health improves, the frequency of trips and hours in trips increase. In addition, as health improves the incidence of trips to a friends house or the grocery store also increase. Those subjects who reported being in good health were more apt to use their own car in transportation.

This finding supports the results of Leon Pastalon, who determined that activity is higher among healthier than unhealthier elderly.³ It is also supported by Greenbaum (1972) who found that self-perception of health affects the degree of association between the elderly.⁴

Health had the highest number of associations with the dependent variables. Health has a significant relationship with mobility behavior to the extent that it is associated with the frequency, type, length and mode of transportation in trip behavior. This result does not allow the prediction of mobility based on health or any other variable but does allow the investigator to describe the problems of elderly mobility more vividly.

Friendship Association

The number of friends the elderly have in Manhattan, both inside and outside the complex had significant associations with the frequency of trips, trip types, length of trip and mode. Friendship association outside the complex had a greater number of associations than friendship associations inside the complex. One result was that the greater the number of friends outside the complex the greater the frequency of trips, trips taken only to the grocery store, and length of trip. The greater the number of friendship associations inside the complex the greater the number of hours in length of trip and the greater the use of a friends car. More often than not, those who had more friends inside the complex, tended to "catch a ride" in a fellow tenant's car than use any other form of transportation. Among the groups who had high inside friendship associations were two distinct groups of "travelers": (a) those who drove "most of the time" and (b) those who "rode most of the time." Friendship

associations may describe adaptive factors involved in the mobility patterns of the elderly.

Relatives in Manhattan

Kirson Weinberg found that the closer an elderly person is to relatives the more active that elderly person is with those people.⁵ This fact may be described by a result of this study. The number of relatives in Manhattan was significantly associated with a high frequency of general shopping and a greater number of hours spent in trips. It was observed that trips to shopping areas over the seven day period were taken with company in the form of relatives or friends. Those who had more relatives in Manhattan tended to spend more time (length of trip) at the point of destination than those with fewer relatives.

A case in point involves one on the most interesting aspects of this study. The investigator discovered during the survey that a great length of time was spent shopping, and at the same time little money was spent at these shopping areas. Of the trips taken to shop, twenty-eight were taken "without friends" or were taken alone. Of these twenty-eight trips to shop, greater than five dollars was spent, with a mean time of 27 minutes for each trip. Fifty-one trips to shop, spending less than one dollar, had a mean trip time of one hour and nineteen minutes. These later trips involved either picking a friend up on the way or being picked up by a friend. Thirteen trips varied on time spent, amount of money used and the presence or non-presence of friends or relatives. The incidence of relatives in the subjects trip tended to increase the time spent on the trip.

Length of Residence

The length of residence in Manhattan was related to the actual number of hours spent in trips. The greater the length of residence in Manhattan the longer the trips. Conversely, the shorter the length of residence the shorter the trips. This result may be due, in part, to such elements as how quick the elderly learn street patterns, names and major service and business outlets, and friendship or community association. As time increases so also does the amount the elderly have learned about the community, its patterns and business areas. This fact may or may not mean longer trips but could possibly mean that the elderly person is a little more at ease with the surroundings and can take a little more time in trips.

Income

Income was highly associated with the weekly frequency of the use of a friends car. Apparently, as income increases the use of a friends car also increases. Income has some bearing on the amount of social participation on the part of the elderly. Apparently, a decrease or increase in the amount of income affects social participation.

CHAPTER IV

DISCUSSION

Planning is a method used by the public to appraise, anticipate and direct human behavior in the development of urban areas. More explicitly planning attempts to inventory and collect information, develop goals and objectives concerning the problem, develop a list of alternatives for review, involve citizen and non-citizen input into the selection of one alternative and follow through the implementation process.

The problem of mobility or transportation of the elderly must include an analysis of planning and planning policies that have attempted to deal with the problem. In addition, planning should be reviewed as to how it attempts to approach, develop and implement programs for the disadvantaged in general.

Transportation Policies and the Disadvantaged

The United States Department of Transportation has concluded that adequate transportation is an important factor in affording disadvantaged citizens access to opportunities of employment, recreation and other services.

In the Urban Mass Transportation Act of 1970, Congress stated that it was the national policy that elderly and handicapped persons should have the same right as other persons to use mass transportation facilities and services, that special efforts should be made to make mass transportation services available to these groups and that federal programs in mass transportation assistance should contain provisions for implementing this policy.

In addition, federally sponsored housing units for the elderly have been tied to federal policies encouraging the availability of transportation to the elderly. The Department of Housing and Urban Development has required detailed studies as to the proposed location of each housing complex sponsored with federal money. One of the prerequisites for the location of these units is that their location should be reasonably accessible to shopping and service areas by major transportation routes and transportation services.

The location criteria of federally sponsored housing units has attempted to alleviate the major transportation problems of the disadvantaged by making service and business areas more accessible by locating the units so as to make their access reasonable in terms of safety, time and distance and bring mass transit services closer to these units.

Both the location criteria and programs implemented to provide immediate transportation for the handicapped and the elderly attempt to make the task of physical movement from federal units to service and business areas less burdensome and more safe. The question of the effectiveness of the programs to provide access to services and business areas can best be answered by an examination of transportation, in general.

Transportation: Physical and Economic Factors

The entire notion of transportation is affected by physical and economic factors. Both of these elements may affect the overall performance of transportation systems and policies.

One basic economic premise concerning transportation is that externalities in consumption and production is accomplished only by communication between business firms, the labor force and consumers. A major part

of this interaction is performed by transportation and transportation networks. The use of transportation, either public or private, may affect the extent to which those who are disadvantaged may be able to "move up" out of poverty by providing access to jobs, service areas and business, which were otherwise inaccessible due to time in travel and distance. The use of transportation may affect consumer choice to the extent that transportation provides access to numerous competitive businesses and service areas. Transportation is affected by and affects the economics of urban areas by providing access to production and consumption markets.

Transportation is also affected by physical geographic factors. The greater the distance in time and space between a point of origin and a point of destination the less intense that destinations use. Conversely, the shorter the distance in time and space the greater the intensity of use. The time and space in physical dimensions of transportation may affect the intensity of use of those areas of production and consumption.

Physical and economic factors may affect the effectiveness of transportation. For the elderly, physical and economic dimensions in transportation take on new and more critical roles, in their ability to be mobile.

The Elderly: Transportation or Mobility

The physical and economic factors become more critical in determining the extent of the use of transportation and transportation systems among the elderly. Because of this fact, policies and programs for the elderly become more difficult to determine and create.

To begin, the economic factors in consumption and production among the aged are negligible due to retirement and subsequent lower incomes.

Therefore, physical mobility among this particular age group should become less intense. Retirement obviously causes a reduction in the amount of trips previously taken to work and due to a decrease in incomes causes a decrease in consumption patterns and purchasing power, thus lowering the number of trips to service and business areas.

Physical factors of time and space become even more critical as age increases. Due to health and financial cost, the elderly may be less able to travel great distances to shop or visit friends and relatives. In addition, safety factors involved or hazards may discourage the elderly from continuing previous travel patterns.

Much of transportation planning has been geared around the physical and economic factors which may affect and are affected by transportation. The entire realm of transportation for the elderly has been concerned with making transportation facilities and services accessible and safe, rather than concerning itself with making this age group maintain the patterns of mobility previously made when they were younger, employed and had families. There is an important distinction between providing accessibility to transportation and making the elderly more mobile.

First, we know that mobility tends to decrease as income decreases. Most of the elderly are subject to drastic reductions in income at the time of their retirement, thus forcing a decrease in their standard of living and a corresponding decrease in the necessity of the use of transportation resources. Social Security benefits and pensions, in most cases, only provide "subsistence" incomes and disallows the full consumer patterns previously enjoyed before retirement.

Second, as evidenced by this study, health may have a significant

effect on the ability of the elderly to be physically mobile. The study found that the better the health the greater the intensity of mobility and use of transportation facilities. The degree of health of the elderly is related to income or, in this case, the ability to pay for medical services. The Federal Government has attempted to make significant changes in elderly health care but the financial burden incurred by poor health is still unattended by policies and programs. We may conclude that we may increase elderly mobility if we correspondingly better the health of the elderly by providing adequate and inexpensive health care. We can design all the buses, transport systems and facilities we can, but if our prospective passengers are sick, we will be financing empty buses, and transportation facilities.

Friendship association has a significant impact on elderly mobility. It is clear that the fewer the friends the elderly have the less intense their mobility patterns. It is true that we cannot force friendship formations, but we can provide community services which otherwise do not exist, that make associations for this age group more accessible.

These elements, in addition to economic and physical factors, may make clearer the changes necessary to optimize elderly mobility. The rational policy of transportation for the elderly should be modified to include not only the right to access of transportation, but the right to maintain mobility patterns previously held before retirement. The planner's and administrator's inability to plan for the maintenance of previous patterns of mobility by the elderly may have caused several critical problems concerning this age group.

For example, the lack of adequate health care followed by increasing

dependence by the elderly on the purse strings of their children and relatives. The lack of inexpensive health care has additionally caused severe health problems for many elderly who cannot afford hospital expenses.

Second, the lack of income above subsistence levels has caused starvation and evictions from housing among the elderly. This age group is particularly susceptible to inflationary cycles, due to their low fixed incomes.

Third, upon retirement a great number of elderly move to areas in the United States with particular climates for their health. One only needs to look at urban areas like Miami, Florida and Sun City, Arizona to get a description of this mass exodus. These areas become "final homes" for the elderly.

These three factors could have caused a great deal of stress and strain on the part of planners and governmental officials in efforts to devise programs to deal with the problems.

Planning Implications

Effective planning of transportation for the elderly should include careful analysis of physical and economic factors affecting transportation. More importantly, are studies and policies concerning elements indirectly related to elderly transportation including health, income and friendship association. Such an analysis should attempt to view transportation by the elderly as an effort to maintain previous mobility patterns.

If such an analysis is to be made the federal and state governments should examine present policies and programs which deal with the health and incomes of this age group. New legislation should be encouraged in the support of incomes and inexpensive and adequate health care.

Legislation of these two factors probably the most critical element of planning. Present legislation on National Health Insurance should be encouraged and additional monetary support and an evaluation of the effectiveness of the present social security system should take place.

In addition, planning at the local level should include intense participation by elderly citizens in an effort to receive as much input for policy formulation as possible. Citizen participation should be encouraged for the location of federally sponsored complexes, transportation facilities and programs that will encourage community participation by the elderly.

Efforts should be made to include the elderly in all studies of planning.

Most importantly, planners should begin to reassess preconceived notions about the elderly. Planners and plans should be encouraged to make policies that protect previously established life styles and in particular, mobility patterns. Planners should be encouraged to study inter-related elements which might affect such maintenance.

CHAPTER V

CONCLUSIONS

The case study involved an analysis of variables related to the trip patterns of 59 residents at the Manhattan Tower. The independent variables were analyzed using the Statiscal Package for the Social Sciences computer program, utilizing Chi-Square statistics.

Summary of the Data

The data indicates that health, number of living relatives, number of years in Manhattan and friendship associations are related to the degree of mobility patterns among the elderly. In particular, health was found to be very descriptive as to the frequency and types of trips taken by the elderly. It was found that the better the perceived and actual health the greater the frequency of varied trip patterns. In addition, the data indicates that recreational trips were taken more frequently among residents in good health. Residents in poorer health tended to take shorter trips in terms of time spent on the trip and at the destination and spent more money than those elderly who were in good health and spent more money.

Implications For Planning

It is concluded that all efforts should be made to maintain previously established mobility patterns by the elderly. This fact should change policies and programs for health care and income levels of the elderly. All plans should be concerned with dealing with indirectly related elements such as income and health when making policies for the elderly.

Recommendations

Federal and state governments should re-evaluate current policies and legislation on elderly health care and income levels. Specific legislation and programs should be developed to encourage the maintenance of previously established life styles and mobility patterns.

Plans and planners should change or be re-evaluated so as to remove "retirement" from notions about the elderly and replace them with notions of "maintenance".

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**THIS BOOK
CONTAINS
NUMEROUS PAGES
WITH MULTIPLE
PENCIL AND/OR
PEN MARKS
THROUGHOUT THE
TEXT.**

**THIS IS THE BEST
IMAGE AVAILABLE.**

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Non-Mobility Variable Questionnaire

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1. Age. (specific) _____
2. Sex. Male (1) Female (2) _____
3. Marital Status Single (1)
Married (2) Widow/widower (3)
Divorced (4) _____
4. Income (per year) _____
Less than 1,000 (1)
1,000 - 2,000 (2)
2,000 - 3,000 (3)
3,000 - 4,000 (4)
5,000 + (5)
5. Education Level
Only Finished Grade School (1)
High School Graduate (2)
Vocational Graduate (3)
College - 4 Years (4)
Post graduate degree (5)
6. Occupation (specific) _____
7. Previous Residence
How long have you lived in
Manhattan?
Less than a Year (1)
One Year (2)
Two Years (3)
Three Years (4)
Four Years (5)
Five Years (6)
Six Years (7)
Seven Years (8)
Eight Years (9)
Nine Years (10)
More than Ten Years (11)
8. Number of Living relatives in
the City of Manhattan.
(specific number) _____
9. Perceived Health
In an average year have you
seen your health to be:
(1)Excellent, only minor
Check-ups
(2)Good with no major hospi-
talization
(3)Fair with minor complica-
tions, no prolonged treat-
ment
(4)Not good, major treatment
(5)Don't Know

- B. How many times have the
following conditions of health
may be said to be true of you
in the last year?

You had minor check-ups without
any suggested prescriptions,
treatment or further examination.

You had check-ups with suggested
prescriptions or out-patient care.

You were taken ill which required
hospitalization from a few weeks to
a month or two.

You were ill and had to be hospital-
ized for more than a month within
a year but not more than six months.

10. Attitudes towards traveling.
Tell me if you strongly agree, agree,
have no opinion, disagree or strongly
disagree with the following statements:

I like to travel ()
Travelling is not for me ()
I can travel anytime rain or
Shine
I travel best alone
I like company when I travel
It is best for me to take a bus

- B. In an average week how many tim
would you say you travel out of
your apartment.
(1)+ twice a day
(2)twice a day
(3)once a day
(4) more than twice a week
(5)twice a week
(6)once a week
(7)can't say
(8)not ascertained

- C. In an average week, how many
times do you travel for the
following reasons?

Just to get out of the building
To visit a friend or relative
To shop
To go to meeting
To go to church
To see a doctor
To school

Actual Weekly Patterns - Questionnaire

Day: MONDAY () TUESDAY () WEDNESDAY () THURSDAY ()
FRIDAY () SATURDAY () SUNDAY ()

How many times did you travel outside your apartment
today? _____

Where did you go during each trip? (specific)

How many times did you use your car ()
walk () bus () taxi () friends
car ().

How long were you away from your apartment in each
trip today? _____ (hours, minutes)?

THE IDENTIFICATION OF DESCRIPTIVE VARIABLES RELATED
TO MOBILITY PATTERNS OF THE ELDERLY:
A CASE STUDY OF A MULTI-UNIT HOUSING
RESIDENCE IN MANHATTAN, KANSAS

by

FREDERICK H. ROHLES III

B. S., Kansas State University, 1973

AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF REGIONAL AND COMMUNITY PLANNING

Department of Regional and Community Planning

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1975

A case study of 59 elderly residents at the Manhattan Tower and their mobility patterns, attempted to determine and discover any independent variables which could describe the frequency of trips, types of trips (trip purpose), mode of transportation and length, in time, of trips. Health, length of residence in Manhattan, number of living relatives in Manhattan and friendship associations were the variables which described the trips taken by the sample population. Recommendations for planning and transportation planning were made with emphasis on making the elderly more "mobile" rather than making transportation facilities more accessible.