

INFORMATION TO USERS

The most advanced technology has been used to photograph and reproduce this manuscript from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book. These are also available as one exposure on a standard 35mm slide or as a 17" x 23" black and white photographic print for an additional charge.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

U·M·I

University Microfilms International
A Bell & Howell Information Company
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA
313/761-4700 800/521-0600

Order Number 9000141

**Modeling perception of, and response to, suburban land use
change: A case study of Paradise Valley, Arizona**

Peterson, Gary George, Ph.D.

The University of Arizona, 1989

Copyright ©1989 by Peterson, Gary George. All rights reserved.

U·M·I
300 N. Zeeb Rd.
Ann Arbor, MI 48106

MODELING PERCEPTION OF, AND RESPONSE TO,
SUBURBAN LAND USE CHANGE: A CASE
STUDY OF PARADISE VALLEY, ARIZONA

by

Gary George Peterson

Copyright © Gary G. Peterson 1989

A Dissertation Submitted to the Faculty of the
DEPARTMENT OF GEOGRAPHY AND REGIONAL DEVELOPMENT
In partial Fulfillment of the Requirements
For the Degree of
DOCTOR OF PHILOSOPHY
WITH A MAJOR IN GEOGRAPHY
In the Graduate College
THE UNIVERSITY OF ARIZONA

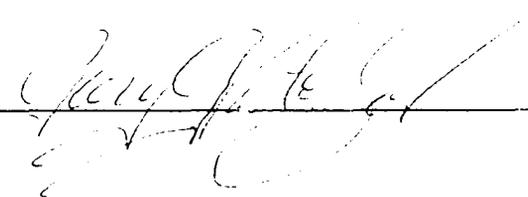
1989

STATEMENT BY AUTHOR

This dissertation has been submitted in partial fulfillment of requirements for an advanced degree at the University of Arizona and is deposited in the University of Arizona Library to be made available to borrowers under the rules of the Library.

Brief quotations from this dissertation are allowable without special permission, provided that accurate acknowledgement of source is made. Requests for permission for extended quotation from or reproduction of this manuscript in whole or in part may be granted by the copyright holder.

SIGNED

A handwritten signature in black ink, written over a horizontal line. The signature is cursive and appears to read "Mary Kate".

ACKNOWLEDGMENTS

I would like to express my sincere thanks to those who provided invaluable assistance and encouragement during the course of this study. I would especially like to thank Professor Ervin H. Zube, dissertation director, whose interest and enthusiasm in the project were instrumental to its completion. I would also like to thank Professors Lawrence D. Mann and Gordon F. Mulligan for their many helpful comments and suggestions. I owe a special debt of gratitude to Dr. Keith E. Meredith who gave freely of his time and advice, and whose constructive approach toward learning was a valuable lesson itself. Finally, I wish to thank my parents George and Antoinette Peterson whose support and encouragement have always been a source of inspiration to me.

TABLE OF CONTENTS

	Page
LIST OF ILLUSTRATIONS	8
LIST OF TABLES	9
ABSTRACT	11
CHAPTER	
1. INTRODUCTION	12
Statement of Problem	13
Case Study Approach	13
Case Study Selection	14
The Town of Paradise Valley	15
Overview of the Proposed Development	18
Summary	20
2. REVIEW OF LITERATURE AND RESEARCH HYPOTHESES	22
Review of Literature	22
Urban Structure and Land-Use Theory Literature	22
Externalities and Urban Land Use Change	26
Psychological Dimensions of Change	28
Environmental and Urban Change Literature	30
Research Hypotheses	35
Construct-Related Hypotheses	35
Perception and Response Model Hypotheses	35
Location Hypothesis	37
Tie-To-Community Hypothesis	37
Activist Hypothesis	38
Expectation-Frustration Hypothesis	38
Sense-of-Threat and Acclimatization Hypothesis	39
Opportunity-to-Express-Views and Sense-of-Control Hypothesis	40
3. RESEARCH DESIGN	41
Introduction	41
Data Collection Procedures	41
Sample Selection	41
Instrument Development	45

TABLE OF CONTENTS -- Continued

	Page
Pretesting the Survey Instruments	47
General Survey Procedures	47
Administering the First Survey	48
Distribution of First Survey Respondents	50
Comparison of Survey Demographics with U.S. Census Data	53
First Survey Item Non-Response	53
Administering the Second Survey	55
Combining Telephone and Mail Survey Data	57
Data Analysis Procedures	63
Developing Key Predictor Constructs	63
Developing Perception and Response Models.	64
Other Data Analysis Procedures	65
4. FINDINGS	66
Developing the Eight Predictor Constructs	66
Factor I	67
Factor II.	68
Factor III	69
Factor IV	70
Factor V.	71
Factor VI	71
Factor VII	72
Factor VIII	72
Factor IX	72
Factor X	73
Eight Predictor Constructs	73
Comparison of Primary Factors with Hypothesized Constructs.	73
Perception Model	75
Perception Subgroup Models.	80
Response Model	84
Response Subgroup Models	88
Other Study Results	92
Opportunity to Air Views.	92
Professed Willingness to Act and Actual Reponse	93
5. CONCLUSIONS AND STUDY IMPLICATIONS	100
Interpretation of Results	100
Location Hypothesis	100
Tie-To-Community Hypothesis	101
Activist Hypothesis	105

TABLE OF CONTENTS -- Continued

	Page
Expectation-Frustration Hypothesis	106
Sense-of-Threat and Acclimatization Hypothesis	107
Opportunity-to-Express-Views and Sense-of-Control Hypothesis	108
Policy Implications	109
Toward a Conceptual Framework of Land-Use Change	112
Prospects for Further Research	115
APPENDIX A: FIRST SURVEY INSTRUMENT	118
APPENDIX B: SECOND SURVEY INSTRUMENT	130
APPENDIX C: FIRST SURVEY DESCRIPTIVE STATISTICS	136
APPENDIX D: FACTORS AND VARIABLES LOADING	138
REFERENCES	140

LIST OF ILLUSTRATIONS

Figure	Page
1. Paradise Valley and the Phoenix Metropolitan Area	16
2. Zube and Sell Process Model of Environmental Change	34
3. Paradise Valley Study Area	43
4. Location of First Survey Respondents	52
5. Location of Second Survey Respondents	60
6. Desirability Rating Map of the Proposed Development	79
7. Smith-Harvey Externality Field and Three Dimensional Externality Cone	102
8. Threshold Effect Externality Sombrero and Smith-Harvey Externality Cone	103

LIST OF TABLES

Table	Page
1. 1980 Demographic and Socioeconomic Data for Paradise Valley and the Phoenix SMSA	19
2. Primary Constructs and Constituent Variables	36
3. Household Count by Subarea	44
4. First Survey Telephone Response Summary	49
5. First Survey Mail Response Summary	51
6. Survey Demographics and 1985 Special Census Data	54
7. First Survey Item Non-Response	56
8. Second Telephone Survey	58
9. Second Mail Survey Response Summary	59
10. Chi-Square Comparison of Telephone and Mail Response	62
11. Ten Factors and Percent of Total Variance Explained	68
12. Minimum, Maximum, Mean and Standard Deviation Values for Predictor Constructs	74
13. Stepwise Regression of Significant Predictor Constructs on Desirability of Proposed Development for the Total Sample Group	77
14. Unpaired T-Test Comparing Mean Desirability for Aware and Not Aware Subgroups	81
15. Stepwise Regression of Significant Predictor Constructs on Desirability of Proposed Development for Aware Subgroup	82
16. Stepwise Regression of Significant Predictor Constructs on Desirability of Proposed Development for Not Aware Subgroup	83
17. Total Group Stepwise Regression of Significant Predictor Constructs on Response to the Proposed Development	85
18. Mean and Standard Deviation Values of Significant Predictor Constructs	87

LIST OF TABLES -- Continued

Table	Page
19. Stepwise Regression of Significant Predictor Constructs on Response to the Proposed Development for Aware Subgroup (N=52)	90
20. Stepwise Regression of Significant Predictor Constructs on Response to the Proposed Development for Not Aware Subgroup (N=31)	91
21. Mean Desirability Level by Opportunity Category	94
22. Mean Number of Actions by Opportunity Category	95
23. Chi-Square Contingency Analysis for Professed Willingness to Respond and Actual Response	97
24. Professed Willingness to Respond and Actual Response	98
C25. Descriptive Statistics for First Survey Variables	137
D26. Factors and Variable Loadings	139

ABSTRACT

Conflicts surrounding newly proposed land-uses can have profound and lasting effects on all stakeholders in the land development process. While considerable attention has been directed toward finding ways to mediate land-use conflict, little is known about why such conflict develops: What are the key factors that produce negative perceptions of land-use change? What are the key dimensions that may effect a response to such changes? What is the nature of that response? This study explores these questions focusing on a case study of a newly-proposed land-use change in the Town of Paradise Valley, Arizona. Two separate questionnaire surveys are employed in the study. The first is used to assess conditions prior to widespread knowledge of the proposed change, and the second to evaluate residents' perceptions and responses once the change is widely known and its full impact has been appreciated. Perceptions and responses to the newly-proposed use are modeled using two stepwise multiple regression models. Residents' land-use expectations, community-level activism, as well as their tie to community and location, are found to be significant predictors in both the perception and response models. A general conceptual framework of necessary and sufficient conditions is advanced that captures a series of threshold effects observed between significant predictor and criterion variables.

CHAPTER 1

INTRODUCTION

Changes in the built environment confront urban residents on a daily basis. The scope and impact of these changes, however, are widely variable: transitions may range from minor amendments such as the placement of a new sign or renovation of a building facade to major alterations of the urban fabric that result from a new roadway or construction of a major new development.

A common yet often controversial urban transition involves changes in the use of land. When proposed in existing residential areas, such changes are particularly prone to controversy and rarely reach fruition without some conflict. Dissension from nearby residents often arises from the perception-- and many times the reality-- that the new use will adversely affect the existing residential character of the neighborhood. Frequently-cited impacts noted by Sell *et al.* (1988) and others (Weinstein 1976; Li and Brown 1980; Zube and Sell 1986) include threats of increased noise, traffic congestion (and related safety concerns), pollution, concerns of declining property values, increased population and its incumbent effects, and an influx of "undesirable" people.

Conflict surrounding proposed changes can also have a profound and lasting effect on other stakeholders in the land development arena including developers, land-use planners, political actors, and others. While a good bit of attention has been directed toward finding ways to mediate land-use conflict (Logan 1982; Lake 1987; Susskind *et al.* 1983; Susskind and Cruikshank 1987), little is known about why such conflict develops: What are the key factors that produce negative perceptions of such changes? What are the key dimensions that may effect a response to land-use change and what is the nature of that response? Finally, how do location and other spatial variables affect these relations?

These questions form the basis of this dissertation. A better understanding of these issues will further the end of an orderly and expeditious land development process by providing a substantive basis for both formulating land-use policy and for improving the tools available to mediate conflict.

Statement of Problem

This study explores the potential for land-use conflict by identifying a number of key spatial, temporal and socio-psychological dimensions that may affect perception of, and response to, land-use changes in a residential community. The main objective of the study is to develop two predictive models; one for exploring aspects of individual perception of change, and a second for examining the kinds and magnitudes of responses to such changes.

The study is designed as a longitudinal investigation, employing two separate questionnaire surveys. The first survey is used to assess conditions prior to widespread knowledge of the proposed change, and the second is employed to evaluate residents' perceptions and responses once the change is widely known and its full impact has been appreciated.

Case Study Approach

Emphasis in this study on probing the dynamics of urban land-use change prompts a case study approach. Focusing on a single change event permits a more in-depth analysis of the factors that affect urban change. Likewise, temporal considerations, often prohibited in research dealing with more than one study group, are manageable within the context of a single case study.

There are limitations of the case study approach, however, and these typically center on concerns regarding the generalization of study findings. Rather than broad scale

applicability, the intent of this exploratory study is to identify key factors and issues affecting perception and response to change, and to provide a framework by which to structure future research.

Case Study Selection

The objectives of this research mandated the selection of a case study in which the prospective development was planned but not widely known by a potentially affected populace. A second requirement was that the case study focus on a development that represented a significant departure from existing uses (whether in terms of scale, density, or type of use). The first condition was essential in order to assess attitudes and expectations about land use in the community without reference to, and widespread knowledge of, a specific new development. The latter stipulation was instituted to increase the prospect that a measurable response to the proposed change would be forthcoming.

After sorting through a series of prospective development projects in Arizona, a proposed development in Paradise Valley was selected as a case study. The proposed development (known as the Fanfol-Scottsdale Road project), was to be undertaken by the Pensus Group of Scottsdale, Arizona, and was scheduled to include a mix of uses with various plan incarnations featuring office buildings, commercial uses and multifamily residential development. All of the inchoate proposals included uses that represented a sharp contrast to the kinds of development historically permitted in the community, extant uses being almost exclusively single-family residences, and of rather low density (typically one residence per acre).

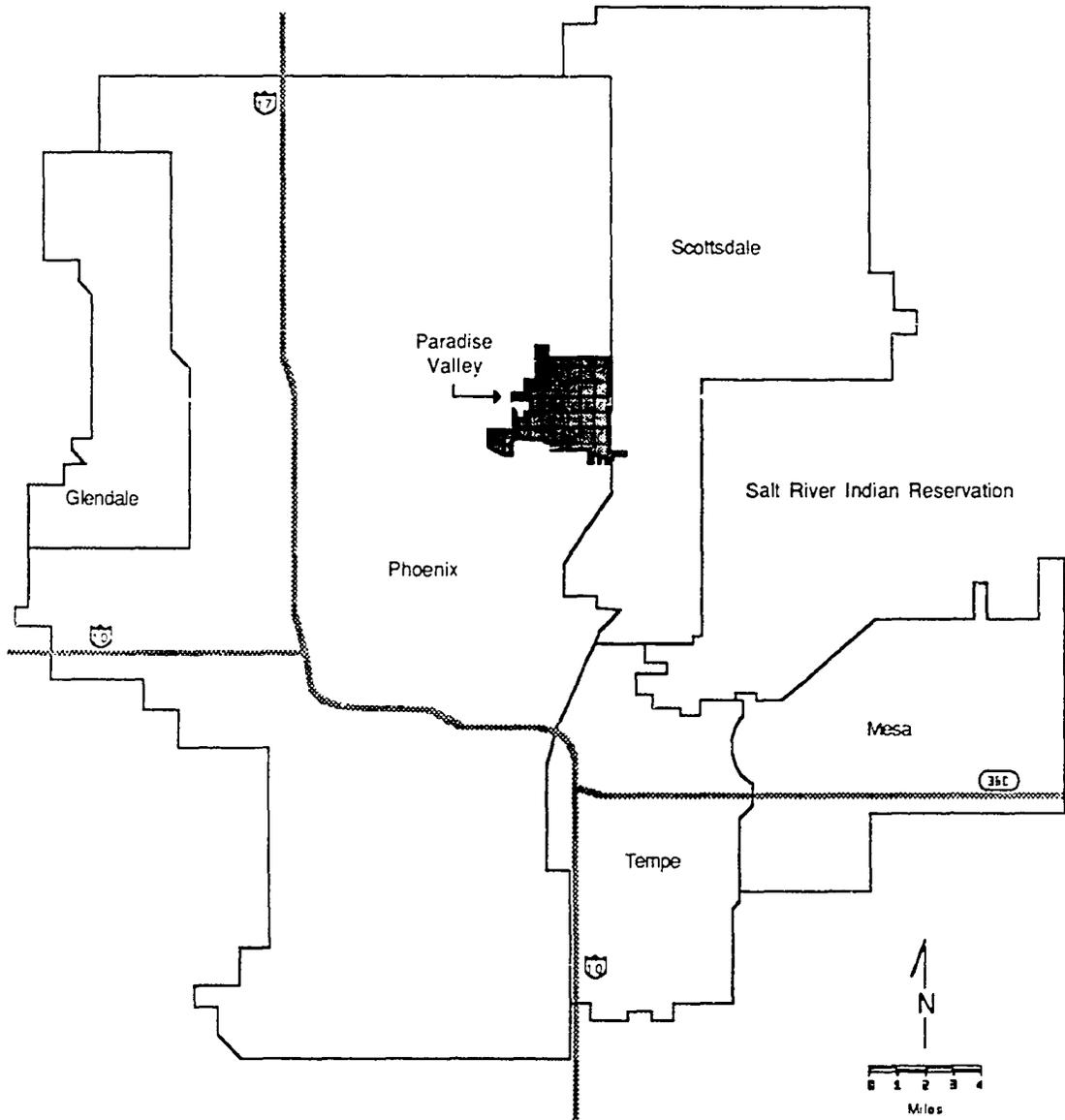
In addition, the prospective development represented a substantial departure from what may be termed the community's "collective land-use expectation," that is, a widely-held view that the community should retain its single-family residential character and that little in the way of significant change should be anticipated. Expressions of this

expectation permeate the community and have been in evidence since the town's very inception. Perhaps the most eloquent expression is found in the town's original charter for incorporation and its first zoning ordinance; the goal of incorporation was to create and maintain a secure residential community, and to that end, the entire municipality was zoned exclusively for residential use. This expectation and the community's fundamental residential character still remain largely intact today. Further background on the emergence of the Town of Paradise Valley and development of its distinctive land-use expectation is presented below.

The Town of Paradise Valley

The Town of Paradise Valley is situated in the north central portion of the Phoenix metropolitan area (Figure 1), some 9 miles from the central business district of downtown Phoenix. In the 1950s, the territory that now comprises the Town of Paradise Valley was a sparsely-settled area, far removed from the main development foci of the Phoenix and Scottsdale urbanized areas. As metropolitan Phoenix expanded in the early and mid-1950s, the area of what was to become Paradise Valley came under continually increasing pressure from developers and land speculators ("Preserving the Desert Lifestyle" 1987). It was these pressures and the perceived loss of the prevailing rural, equestrian-oriented type of lifestyle that spawned the initiative to incorporate the town. A petition to incorporate was unanimously approved by the Maricopa County Board of Supervisors in April, 1961, and a little over a month later incorporation was granted, the charter for the new jurisdiction emphasizing the preservation of the rural, residential character of the community. The new town comprised an area of 16.4 square miles and had a population of some 2,000 inhabitants, equivalent to a density of some 120 people per square mile.

Figure 1. Paradise Valley and the Phoenix Metropolitan Area



As noted, the town's first zoning ordinance clearly reflected the founders' intentions for the community; with provisions for three low-density residential zoning districts at 1 residence per acre (RAC), 1.25 RAC, and 2.5 RAC, as well as a neighborhood commercial development zone. All other uses were handled through a special use permit procedure. At the time of the town's inception, however, the entire jurisdiction was zoned entirely for residential use at a density of no greater than 1 RAC (a few non-conforming uses did exist at the time). Clearly, the residential-only ethic held by the residents of this newly-formed community was not likely to be misconstrued.

In the intervening thirty years, the Town of Paradise Valley experienced rapid growth, not dissimilar from those in evidence in the entire Phoenix metropolitan region, the latter jurisdiction having the distinction of being one of the nation's fastest growing metropolitan areas in recent years. Although development pressures have continued, and perhaps have escalated, the Town of Paradise Valley has been quite successful in deflecting the bulk of this activity.

Planning goals for the town's General Plan, adopted in 1980 and amended in 1985, reaffirmed the community's residential heritage by encouraging high-quality, single-family residential development on "lots with a minimum of one acre or more of land per house." In contemplating selected nonresidential uses (still handled through special use permit), the plan stipulates that they too shall "provide spacious lots, low density land coverage and [an] open desert atmosphere..." (Paradise Valley General Plan 1980).

A function of its strident residential-only ethic, large lot zoning, and attractive rural-like desert setting, Paradise Valley has developed both the image and reality of being an elitist and prestigious community. Recent census data comparing selected demographic components for the community and the entire Phoenix standard metropolitan statistical area (SMSA) (Table 1) confirms this image. Perhaps most revealing are the median family income figures for Paradise Valley (over twice the level of the rest of the Phoenix SMSA).

but data on education level, median age, employment, race and ethnicity are also illustrative.

Overview of the Proposed Development

As mentioned, the proposed development represented a substantial departure from existing uses in the community, and was a clear contrast to the widely held expectation that the community would retain its residential character. A number of different development proposals had been advanced by the developer, the Pensus Group, nearly all of which contained multiple-use plans involving various mixes of two and three-story office buildings, some commercial development (such as boutique-like stores), and multifamily residential use. All of the developer's inchoate proposals included uses for which there were no provisions in the town's special-use permit regulations and, not surprisingly, these early proposals were not favorably received by the town officials. From the developer's point of view, prospects were slim that the parcel could profitably be developed under the existing regulations and in view of the prevailing real estate climate.

These circumstances, combined with frustration with the restrictive special-use permit provisions, prompted the developer and other interested parties to seek to compel the town to amend its zoning ordinance. These efforts even led to legislative action including one resolution that called for the Town of Paradise Valley to provide zoning for their "fair share" of commercial and other nonresidential uses, and another proposal for modifying deannexation procedures from small-sized municipalities (Arizona Senate Bill # 1433). The latter provision, had it passed, would have allowed the developer to deannex the site of the proposed development from the municipality (to come under the jurisdiction of the county) and thereby circumvent the town's stringent development regulations.

Table 1. 1980 Demographic and Socioeconomic Data for Paradise Valley and the Phoenix SMSA

Variable	Paradise Valley	Phoenix SMSA
Population (No. of Persons)	11,085	1,509,052
Median Age (Years)	37.4	29.7
Percent White	98.5	86.6
Percent Black	0.1	3.2
Percent "Other"	1.4	10.2
Percent Spanish Origin	1.6	13.2
Median Family Income (1979)	\$ 49,888	\$ 20,478
Percent Below Poverty Level	3.2	7.5
Percent Completed High School	96.1	75.0
Percent with 4 years or More College	51.9	18.3
Percent Employed in Manufacturing Enterprises	0.0	17.8

 * Figures are in percent unless otherwise indicated

Source: 1980 U. S. Census of the Population

Although still subject to revision and amendment, a cohesive development proposal was advanced by the developer during the period of this research, and it was this incarnation of the proposal that served as the basis for assessing residents' perceptions and responses to change. The proposed development included two main elements. The first component consisted of a group of two-story garden office buildings located along Scottsdale Road, a major arterial which abuts the parcel. Designed to look like residential structures, the garden office buildings were to cover about 25 to 30 percent of the site. The second component of the project was single-family residences (a density of one RAC) to be located adjacent to the existing neighborhood. Placement of the new single-family residences was intended to serve as a buffer between the office development and neighboring residential development. On the whole, the proposed Pensus development project made for a propitious case study; in spite of concessions made by the developer, it still represented a significant departure from existing uses and from the community's well-defined and widely-understood land-use expectation.

Summary

In summary, this study employs a longitudinal, case study approach as a means of assessing key factors that affect residents' views and responses to urban land-use change. The primary goal of the study is to develop two predictive models; one for exploring aspects of individual perception of change, and the other for examining the kinds and magnitudes of responses taken in the face of such changes. Two separate questionnaire surveys are used to gather information on residents' perceptions and responses. The first survey is utilized to assess conditions and individual characteristics prior to widespread knowledge of the proposed change, and the second questionnaire is used to evaluate residents' perceptions and responses once the change has become widely known and its impact has been fully appreciated.

Results in this study are expected to reveal a complex and intricate web of factors that affect perception and response to land-use change. A better understanding of these factors and their interrelations will provide a substantive basis for formulating policy recommendations and for improving the tools available to mediate land- use conflict.

CHAPTER 2

REVIEW OF LITERATURE AND RESEARCH HYPOTHESES

Review of Literature

Surprisingly little has been written about people's perceptions and responses to land-use change. The paucity of research in this area is particularly curious given the impact that such change events have on the various actors of the land development process: land-use planners, the development community, politicians, and indeed, the impacted residents themselves.

While little in the way of comprehensive or integrative research has been done in this area, aspects of the topic have been addressed from a number of disciplinary perspectives, with notable contributions coming from geographers, sociologists, planners, environmental psychologists, and economists. The summary of this body of literature below is structured into four broad themes including: (1) city structure and urban land-use theory, (2) urban land-use change from an economic perspective, (3) psychological dimensions of the experience of change and, (4) environmental and urban change literature centering mainly on the work of environmental psychologists and behavioral geographers.

Urban Structure and Land-Use Theory Literature

Central to any study of land-use change is an understanding of the basic structure of urban places and an appreciation of how various land-use patterns emerge and evolve over time. There is a rich tradition in Geography of examining urban morphology and this interest has yielded a number of very useful descriptive models of city structure. One of the early geographic views on urban form was developed by Burgess (1925) in his concentric zone model of the city. Burgess' adopted an ecological view of the city drawing on work of his sociologist colleagues and mentors Robert Park and R.D. McKenzie. These

sociologists had in turn borrowed heavily from the literature on plant ecology and on Darwinian notions of competition (the "struggle for existence" in the city) in developing their views of urban form. Based on these antecedents, Burgess conceptualized the city as a dynamic adaptive system in which competition served as a principal organizing agent. Burgess' model included six main concentric zones based on the dominant land use within each zone. These were: (1) the central business district, (2) fringe zone around the central business district, (3) a zone of transition, (4) a workingmans' zone, (5) a residential zone and, (6) a commuters zone. Burgess' model emphasized the importance of outward growth in the city which established the concentric pattern of dominant uses. Changes in the urban structure were the product of invasion and succession as wealthier groups moved to peripheral locations and lower-status groups took over expanding inner-city zones.

A second important model of urban structure is Hoyt's (1939) sectoral model of the city. Hoyt's model, concerned mainly with residential structure, emphasized axial patterns of growth in the city. Based on observations of rent patterns in 140 North American cities, Hoyt found that high-rent areas tended to locate in one or more sectoral paths situated on one side of the city. High-rent sectors typically formed a wedge-shaped pattern emanating outward from the center of the city, and were found to locate along "fashionable boulevards," water front areas (except in sectors already occupied by industry) and in areas free of artificial barriers and natural hazards. Middle income sectors in Hoyt's model tended to locate in areas adjacent to the high-rent sectors while low-rent districts were often located at opposite sides of the city, well away from high-rent sectors.

A third notable model of urban structure is Harris and Ullman's (1945) multi-nuclei theory of the city. Harris and Ullman argued that certain specialized uses or activities tend to agglomerate around various nuclei within a city, due largely to the benefits derived from proximity to one another. This grouping of activities resulted in a series of functionally-differentiated nodes including special retail districts, manufacturing areas,

university districts, and so forth. The Harris-Ullman model is appealing since it recognizes both agglomerative forces and, implicitly, land-use externalities as key factors shaping city form.

The three models outlined above provide a number of important insights into the general structure of the city and are particularly useful in describing the location of various land-use activities. Although each model has its shortcomings, work by Smith (1962) on the urban structure of Calgary suggests some empirical evidence and validity for each the three models.

The structure of cities based on notions of the utility of various location choices, and the ability to pay for those locations has also been a much studied and dissected topic. The starting point for much of this research is von Thünen's nineteenth-century work dealing with land use in an agricultural-based urban system (Chisholm 1962). Key elements of the agricultural land use in von Thünen's model were production costs, the costs of transportation, and distance from the central city (market place for the agricultural goods). From these elements von Thünen developed the notion of economic rent, defined as the difference in monetary return from the use of a unit of land compared with the return at the margin of production. Agricultural uses with steeper bid-rent curves located closest to the city, while those with shallower curves occupied more peripheral locations. The notion of economic rent also lies at the heart of much of the subsequent work on land-use theory for urban places. Urban land-use patterns have been modeled as a function of intensity of a use vis-à-vis the structure of urban land values (Hoyt 1933; Muth 1961). Land value, as discussed by Wendt (1957) and Knos (1962) results from a process that Wendt (1957 p.229) describes as a "discounting of future net income attributable to land by virtue of location." Location or convenience becomes a chief factor in determining urban land values (Hurd 1924) and hence various uses-- be they commercial enterprises, governmental institutions, or residential uses-- all bid for the use of that land. From this

perspective, each location represents a trade-off between utility of land located near the center of the city (the assumed location of jobs, market, etc.), and each user's respective rent-paying ability. Since users of land are assumed to maximize their utility, a predictable (general) pattern of urban land use can be estimated. The assumption of utility-maximizing behavior is not only assumed for commercial and institutional uses, but has also been a key factor in a number of residential location models (Alonso 1964; Mills 1969; Muth 1969).

It should be noted that a number of criticisms have been leveled at urban land-use theory (*cf.* Harvey 1973), perhaps most important of which are: 1) concerns regarding the set of unrealistic assumptions typically included in the micro-economic approach and, 2) the application of a static equilibrium framework to a system that rarely, if ever, approximates a state of equilibrium. Rather than dismiss this research thrust out of hand, however, urban land-use theory may, as Harvey (1973) notes, best be considered as a useful characterization of a set of general forces that shape urban land use.

Two innovative studies that have applied a land rent approach in a bit more flexible manner have been Berry's (1963) study of commercial structure and commercial blight and Yeates' (1965) study of Chicago area land values. Both authors conceptualized the city as a multi-nodal structure and each examined land value (and thus land use) over a period of years. Berry identified a urban land value surface that approximated a "circus tent" structure, wherein land values are seen to decline from the city center, but are punctuated by peak value interstices at various transportation intersections. Likewise, Yeates identified a similar distance-decay surface with land value variations explained by transportation corridors, outlying shopping centers, and urban amenity features. These studies produce a more empirically accurate and detailed picture of urban land values and in turn yield greater insight into expected patterns of urban land use.

Externalities and Urban Land-Use Change

Another active area of economic-based research has been the effect of externalities on residential property values as the result of newly-sited, non-residential land uses. The debate in this literature on the effects on land values from such changes has been on-going for at least twenty-five years. This literature is important to the present research since the perception of declining property values is a key concern expressed by residents facing a nearby land-use change (Peterson 1986; Zube and Sell 1986).

Although the property value debate is long lived, no consensus is evident concerning whether newly introduced land uses increase or decrease existing residential property values. A typical approach by economists has been to focus on land values using a hedonic price index, whereby characteristics such as lot size, number of bedrooms, proximity to jobs, shopping or schools, neighborhood characteristics and so forth are used to predict property values. Because of incumbent externalities, new activities (and especially non-residential uses) are likely to significantly affect the hedonic price equations.

An externality may be defined as any side- or spill-over effect emanating from a use that is not reflected in the costs or prices of goods or services produced by that use. Such unpriced or non-monetary effects may be either positive or negative, although the latter are often of greatest consequence. Discharge of the industrial wastes into water and into the air is an often-cited example of a negative externality; the two natural resources being used as a repository for wastes, although that use has not been included in pricing structures. At a neighborhood scale of resolution, negative externalities from new land uses may include increased noise, offensive odors, increases in traffic (and the incumbent air pollution and safety concerns), visual degradation and so forth.

Studies examining the effects of such externalities on hedonic price structures have yielded decidedly mixed results. Studies concluding that there are no major systematic externality effects, *e.g.*, that negative externalities from non-residential uses have no

appreciable effect on housing prices include Crecine, Davis, and Jackson (1967) for Pittsburgh; Maser, Riker and Rosett (1977) for Rochester; Grether and Mieszkowski (1980) for New Haven; and Mark and Goldberg (1981) for Vancouver. Research with findings contrary to the above studies, that is, those finding that externalities do affect prices, include Stull (1975) and Latherty and Frech (1978) for Boston; Rueter (1973) for Pittsburgh; Jud (1980) for Charlotte N.C.; Cao and Cory (1981), (who claim that land values increase with the introduction of non-residential uses) for Tucson; and Crone (1983) for Foster City, CA. It should be noted that the former group of studies are based mainly on central city samples, while the latter (except Jud's study) are based on suburban locations. These differences suggest that there may be a greater sensitivity to the introduction of non-residential uses in suburban settings compared with central city locations.

A slightly different approach to the land-use externality issue is presented in a recent monograph by economist William Fischel (1985). Fischel argues that property rights afforded by zoning laws are alienable, and thus protection from these laws can and should be freely negotiated, with just compensation provided to residents by noxious non-residential users. Although Fischel's assertion of alienability of property rights is open to question, the implications of his work are important insofar as it demonstrates that compensatory factors, when instituted, may play a key role in ameliorating negative reaction to land-use change.

The concept of externalities, and especially those negative, is central to urban land use and land-use change. Indeed, as Harvey (1973 p.65) notes, the fundamental rationale behind traditional zoning regulations is an attempt to limit the external effects from one general land use type from adversely affecting other urban uses. One of the most useful conceptualizations of externalities and their impact on other land uses is Harvey's (1971) notion of an externality field. Externalities have an identifiable spatial field or area of

influence or impact, and the concept of an externality field is used to describe the intensity and extent of an externality's spatial field. Harvey characterizes these spatial fields as a distance-decay function, with the level of utility or disutility decreasing with distance. The spatial fields of externalities can vary widely: steep field gradients are evident in the case of lead poisoning cases reported in populations situated near major urban highways (Michelson 1970), while other spill-over effects exhibit a more gentle gradient as in the case of the gradual diffusion of an air-borne pollution plume (Smith 1977).

Psychological Dimensions of Change

A considerable body of writing has surfaced in the psychological literature on the general issue of change and the manner in which people experience and cope (or fail to cope) with a significant transition in their life. Changes studied have included bereavement over loss of a loved one (Fink 1967; Parkes 1972), the structure of change as one comes to grips with one's own death (Kubler-Ross 1969), career and other work-related changes (Super 1957; Sofer 1970), and a variety of other life cycle changes (Levinger and Snoek 1972; Maizels 1970; Kiel *et al.* 1966).

A number of concepts useful to the present research can be drawn from this body of literature, and particularly since most of these studies are cast at the level of the individual's perception and response to change. First, some consideration must be given to the notion of what constitutes a change or transition event in one's life. Hopson and Adams define a transition as, "a discontinuity in a person's life space." (Hopson and Adams 1977 p.5) This "discontinuity" may be defined either by social consensus, that is, with respect to known social or cultural parameters (Holmes and Rahe 1967), or in terms of individual perception. Dynamics affecting perception and response to land-use change certainly have a broader socio-cultural dimension as well as an individual component. It is unlikely, however, that either of these interrelated contexts can easily be

disaggregated from one another when assessing perception and response to change.

A transactional perspective of change, discussed by Ittleson (1973), and Stokols (1977), and by Zube and Sell (1986) specifically in relation to land-use change, provides another way of viewing individuals vis-à-vis change. The transactional perspective views people as simultaneously embedded in the environment and actively defining and giving form to it (Stokols 1977; Saegert, 1987). Thus, the transactional point of view stresses the reciprocal nature of person-environment relations, implying mutual plasticity and definition.

Another useful perspective on change is Hopson and Adams' (1977) conceptualization of change events in terms of two main dimensions: (1) predictability and (2) voluntary or involuntary association. Each combination of these parameters and an example is outlined below:

- (i) "predictable-voluntary" *e.g.* marriage
- (ii) "predictable-involuntary" *e.g.* military conscription
- (iii) "unpredictable-voluntary" *e.g.* computer dating
- (iv) "unpredictable-involuntary" *e.g.* natural disaster

Perception and response to change, according to the authors, will vary depending on the combination of these parameters; changes which induce the greatest degree of stress are those that are unpredictable and those which are involuntary, while a change event that is both unpredictable and involuntary is likely to produce particularly negative perceptions and strong reactions. The experience of urban change, and particularly that of land-use change, is likely to fit into either the predictable- involuntary grouping or unpredictable- involuntary category, depending on an individual's land-use expectation and the stage of the development process.

Environmental and Urban Change Literature

The research nexus of environmental psychology and behavioral geography has examined many different kinds of environmental changes, much of which is applicable to the experience of land-use change. Associated with Hopson and Adams' dichotomous constructs (voluntary-involuntary; predictable-unpredictable) noted above are more general notions concerning the manner in which people order and make sense of their environment. In particular, it appears that one's ability to develop mental constructs or schemata is essential in functioning and coping in the world (Rosch 1977).

Personal Construct Theory encompasses many of these same notions, and has been found effective in analyzing the manner in which people use mental schemata to order environmental reality (Hudson 1980; Preston and Taylor 1981). Personal Construct Theory suggests that aspects of the perceived environment are ordered and understood based on their similarity or dissimilarity with established poles in an individual's repertoire of mental constructs. Thus, an individual will evaluate events and environmental situations in reference to his or her own mental constructs. Events outside of those which an individual ordinarily encounters (*i.e.*, a significant environmental change), are likely to precipitate a realignment or restructuring of an individual's mental schemata but, in more extreme cases, the change event simply may not be able to be effectively ordered and understood by the individual (Kelley 1955). At a general level, then, Personal Construct Theory provides a useful conceptual framework for evaluating environmental change, and appears to be directly applicable to the issue of land-use change and individual perception and response to it.

Related to this work, a number of studies which have delved into the issue of how an individual's expectations may affect perception and response to change (an expectation construct plausibly serving as one of the reference axes in an individual's repertoire). Studies in this vein have generally found that individuals with higher expectation levels are

most likely to experience greater levels of frustration when confronted with an unsatisfactory outcome or event (Marris 1982; Saegert 1987). In the present study, the term "pre-cognition" is used to refer to a set of general conditions and constructs (including an individual's expectations), prior to the point at which an individual becomes fully aware of the change and its associated costs or benefits. Likewise, the term "post-cognition" is used to express conditions after an individual becomes fully aware of the impending change and its associated ramifications.

Another research direction in this literature has been an investigation of the manner in which variables such as the magnitude and rate of environmental change may affect an individual's perception of the change, as well as an individual's ability to assimilate information about rapidly changing environments. Rapid rates of urban change, for example, have been described as producing a "sensory overload" for many individuals, resulting in decreased levels of sensitivity toward urban environments and other individuals in the environment (Milgram 1970). Much of the literature on gentrification has underscored the importance of maintaining continuity in the face of alterations to the built environment, between the past landscapes (and the multiplicity of associations and remembrances tied to those vestiges of the past) and the new or refurbished environment (Lynch 1972; Relph 1976; Cybriwsky 1978; Lowenthal 1979). Effects due to the rate and magnitude of environmental change may similarly be expected to affect perception and response to introduced changes in land use.

Risk associated with any newly-encountered situation and the notion that environmental change can represent just such an unknown quantity, is a dynamic that may also be expected to affect the manner in which people regard change. Fear of unknown consequences has generally been shown to produce negative responses to proposed changes, and particularly so in the incipient stages of a transition (Canter 1975; Bowonder 1983). As more information about a change is received and assimilated, negative response

from fear of the unknown is likely to subside. It should be noted, however, that better information may still produce a negative response but for different reasons, namely, by providing substantive grounds for a negative response.

Response to land-use change also appears to be affected by a factor involving one's sense of control over, and participation in, the proposed changes (Winkel 1981; Zube and Sell 1986). As might be expected, findings of these studies indicate that individuals who do not believe they have had an adequate opportunity to express their concerns, and who do not believe they have been treated fairly by developers, planners, or elected officials (*i.e.*, they've had only a limited control over the change), tend to take a more negative view of proposed changes. It is interesting to note, however, that fairness and sense of control over one's environment may be largely dependent on socioeconomic status. Winkel (1981), for example, notes that upper- and upper-middle-income groups typically believe that their environment is "presumptively manageable," that is, because of their status and control of resources, they believe they will be able to exert a sufficient level of control over their environment so as to manage changes occurring within it.

Related to a sense of control over a proposed change is the notion of whether changes are perceived to be initiated by those from either inside or outside the community. Similarly intuitive, resistance to changes introduced by those perceived to be "outsiders" has been shown to be stronger than response to changes instigated by individuals from within the community (Wolpert *et al.* 1972).

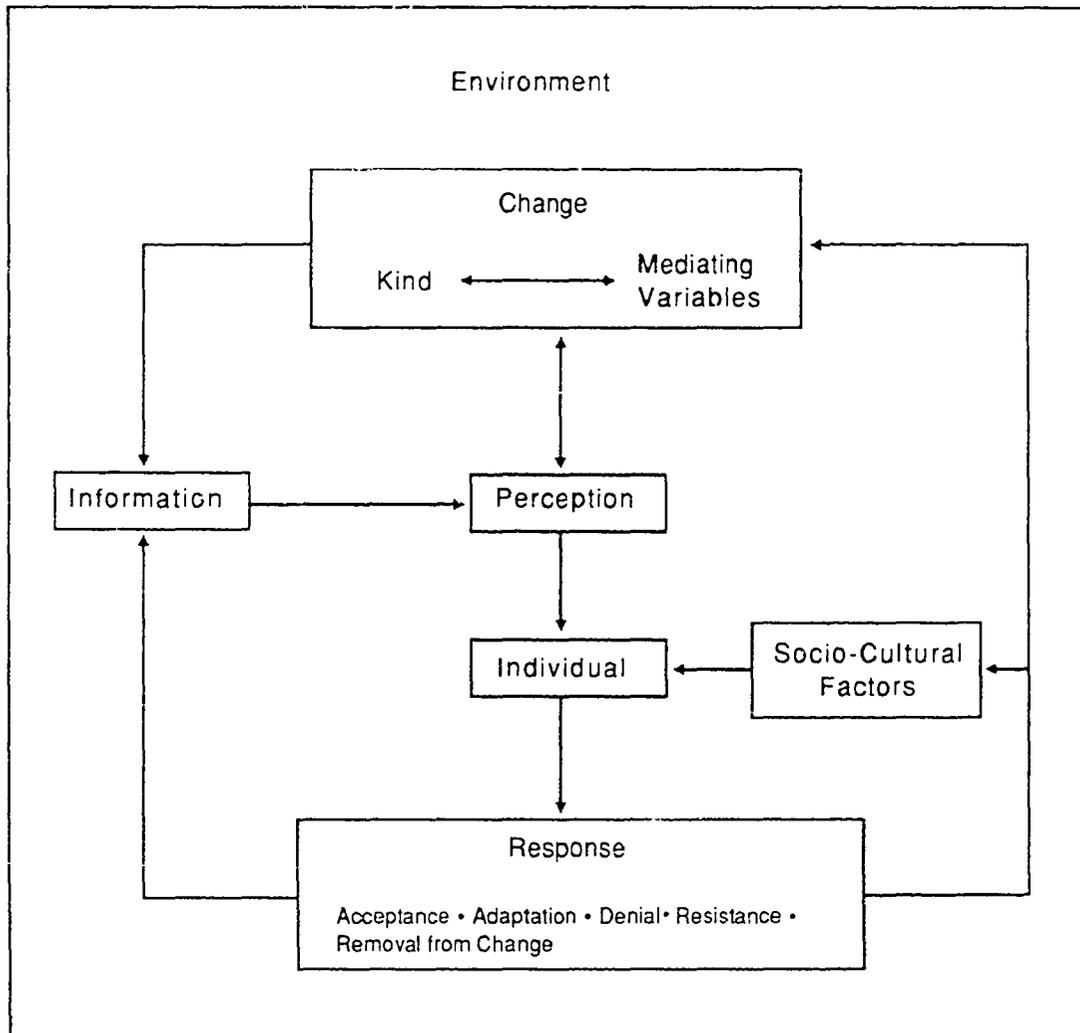
Research perhaps most apropos to the present study draws upon much of the preceding literature, but has an even greater multi-disciplinary flavor to it. Three studies addressing the perceptual and behavioral aspects of environmental change, and particularly land-use change, have recently appeared in several planning-related journals. Focusing on a case study of the "Hills" development (later called "La Paloma") in Tucson, Arizona, Zube and Sell (1986), in the first of a series of studies, explored various dimensions that

appeared to affect perception of and response to environmental change. The set of factors identified by the authors as likely affecting perception and response to environmental change included: proximity to the proposed change, scale of the development, the rate at which the change is instituted, sense of personal control over the change, the perceiver's values and aesthetics, and socio-cultural elements as affecting perception and response to environmental change. The authors developed a process model of perception and response to environmental change (Figure 2) incorporating five main elements: the type and magnitude of change, situational contexts, individual perceptions, characteristics of the individuals experiencing the change, and their behavioral response.

In a more recent work, the authors refine the conceptual model based on a survey of peoples' perception of five major new developments in the vicinity of Tucson, Arizona. (Sell, *et al.* 1988). The model is expanded to include a source of information component, and to identify in more detail the links between various components of the model. Significant variables found to affect perception and response to land-use changes were "personal factors" such as an individual's age and education, his or her length of residence, distance from place of residence to the central business district, the contrast of the proposed development to existing uses (a factor which addresses the degree of compatibility between existing and the newly-introduced uses), and temporal elements. The authors found that behavioral responses to the proposed changes could be fitted into the following categories: acceptance, denial, resistance, adaptation, or removing oneself from the change.

Noting that research of this sort is in an incipient stage, Sell and colleagues call for further research with an expanded temporal perspective, viz., a longitudinal study to examine post-change attitudes and responses to environmental change. Although a pre-cognition or a land-use expectation element is not included in the Zube and Sell model, it serves as another rationale for expanding the temporal perspective of this research.

Figure 2. Zube and Sell Process Model of Environmental Change



Adapted from: Ervin H. Zube and James L. Sell
 (1986) "Human Dimensions of Environmental Change,"
Journal of Planning Literature, vol.1 No. 2 (Spring, 1986)
 pp.161-176.

Research Hypotheses

A series of hypotheses is outlined below which help structure this exploratory study. Research hypotheses are presented in two main sections: the first deals with hypotheses related to the key predictor constructs expected to emerge from factorial grouping of survey data, and the second concerns the factors which are likely to affect perception of land-use change and the kind and magnitude of responses to such changes.

Construct Related Hypotheses

The initial step of this research entailed developing a series of predictor constructs from questionnaire survey data, which are then used to model perception and response to land-use change. Based on the predictor constructs, a series of questionnaire items was developed that were thought to capture most effectively each of the primary predictor constructs. In view of the close conceptual association between the constructs and the items used to measure them, it is expected that the confirmatory factor analytical technique will in turn yield the same primary predictor constructs as originally conceived. Each of these five constructs and the expected constituent questionnaire items is presented in Table 2. It should be noted that the location construct shown in Table 2, was not the result of aggregating a series of questionnaire items, but rather was determined by measuring the straight-line distance of the respondent from the proposed development and then categorizing that distance into one of five increasingly-distant subareas.

Perception and Response Model Hypotheses

Presented below are six main hypotheses concerning the two main predictive models of perception and response to land-use change. The hypotheses address the following issues: (1) location, (2) tie to community, (3) community and generic activism,

Table 2. Primary Predictor Constructs and Constituent Variables

I.	DISTANCE
	Physical Distance from the Proposed Development
II.	TIE TO COMMUNITY
	Years in Paradise Valley
	Years in Residence
	Number of Neighbors Known Well
	Number of Neighbors Acquainted
III.	LAND USE EXPECTATION
	General Attitude Toward New Development
	Office Development Desirable
	Resort or Hotel Development Desirable
	Boutique Development Desirable
	Shopping Mall Development Desirable
	SFR Development Desirable
IV.	GENERIC ACTIVISM
	Vote in Last City Election
	Vote in Last State Election
	Vote in last Federal Election
	Frequency of Political Contributions
	Civic Activity Level
	Social Activity Level
V.	COMMUNITY ACTIVISM
	Total Number of Actions Willing To Take
	Believe Actions Will Have an Effect
	Member of Homeowners Association
	Frequency of Attending P.V. Government Meetings
	Initial Satisfaction
	Level of Satisfaction Now

- (4) an expectation-frustration dimension, (5) sense of threat and acclimatization and, (6) an opportunity to express views or sense-of- control component.

Location Hypothesis

Relative location is expected to play a key role in both the perception of the proposed development as well as individuals' responses to it. A sharp distance-decay relationship is expected in both cases wherein, as distance away from the proposed development increases, the magnitude of influence or impact of the dependent variable is expected to decrease rapidly. This expectation is supported by past research that has demonstrated that negative externalities (whether real or perceived) associated with non-residential uses are more directly experienced by those individuals located in the immediate vicinity of the proposed changes (Aitken 1988; Brown 1976; Harvey 1973; Lafferty and Frech 1978; Smith 1977).

In the perception model, a steep distance-decay gradient of the externality field will likely mean that those individuals closest to the new development will view the proposed development in more undesirable terms, while those at greater distances are expected to view the change in less negative terms. It should be noted, however, that the desirable-undesirable continuum is likely to be skewed toward the undesirable end of spectrum, the result of the community's very *raison d'etre*: it was chartered, planned and developed to be a community with a low-density, rural residential character.

Tie-to-Community Hypothesis

It is expected that variables tapping an individual's involvement with, and attachment to, the community will affect his/her views and responses to the proposed change (Sell *et al.* 1988; Aitken 1988). Specifically, it is posited that a greater degree of attachment and involvement with community, as measured by length of residence and

number of people known in the community, will produce more negative perceptions and more vehement (negative) responses to the proposed change.

Activist Hypothesis

As noted above, the activism construct is likely to manifest two distinct dimensions. First is a community activism factor measured in this study by membership in the local homeowners association, attendance at local governmental meetings, level of satisfaction with the community, hypothetical response in the event of a new development proposal in the community, and an assessment of whether respondents believe the actions they take will have an effect on the outcome of the proposal. The second activist factor is of a generic nature, measured in this study by levels of civic and social activity, voting behavior, as well as other measures of broader political activism. It is expected that individuals who exhibit greater propensity toward activism, whether on a community or generic level, will hold more polarized views of the proposed development and, similarly, will be more likely to take action in response to the prospective change. Insofar as land-use change is functionally a community-specific issue, it is expected that the community activist dimension will be a better predictor in both the perception and response models.

Expectation-Frustration Hypothesis

Another main expectation centers on what generally may be conceived of as an expectation-frustration hypothesis (Marris 1982; Saegert 1987). In broad terms, the expectation-frustration hypothesis operates as follows: individuals who hold high expectations in anticipation of an outcome or an event of some importance are frequently frustrated when those high expectations are either not met or are only partially fulfilled. In turn, a high degree of frustration is likely to spawn negative perceptions with regard to the

event or outcome, once viewed with high expectations. Increased frustration is likely to produce a heightened response as a means of ameliorating or rectifying the unplanned and unsatisfactory outcome. Conversely, those who hold more modest expectations are less likely to be frustrated with an outcome which they may view as being less-than-ideal. Such individuals are likely to exhibit a degree of fatalism concerning a marginal outcome and thus perceive it in less negative terms. Under such circumstances they will be much less prone to respond to an unsatisfactory outcome.

In this study, the expectation component of this hypothesis relates to the issue of the resident's view of what the community should be like in terms of land use (hence the term: "land-use expectation"). Accordingly, a high land-use expectation translates into what is in essence a "status quo" view of community development. In Paradise Valley, residents with a high land-use expectation are those who believe the community will (and should) continue to permit only single-family residential development, consistent with the community's charter for incorporation and its historic development trends. All other uses, including higher density residential development, are likely to be viewed as undesirable. Once high expectation levels are violated (or even threatened) by land-use proposals contrary to them, frustration levels are expected to increase, as will the prospects that some response will be taken to effect a different outcome.

Sense-of-Threat and Acclimatization Hypothesis

Two factors, difficult to disaggregate, are expected to affect temporal dimensions of perception and response to change. The issue of a sense of threat addresses a concern dealing with the fear of unknown consequences surrounding change. In the case of land-use change, the factor taps the issue of both perceived and real negative externalities expected to accompany the proposed change. As noted above, mistrust and negative reactions often surface when little is known of a proposed change (Canter 1975; Bowonder

1983). As more information about change is received and assimilated, negative response stemming from fear of the unknown is likely to subside.

Accompanying this dynamic, work by Brown (1976) and others has documented that vehement reactions in the early stages of a change event will often dissipate over time. Although the reasons for either of these phenomena are not completely understood, it appears that over time an adjustment or "acclimatization period" takes place which serves to ameliorate negative perceptions and lower frustration levels.

Although it is difficult to separate the effect of this factor from the sense-of-threat element, both are expected to produce an effect in the same direction. Thus, it is hypothesized that initial reaction to the proposed change will likely be more pronounced (polarized) than that those in later stages of the development.

Opportunity-to-Express-Views and Sense-of-Control Hypothesis

Again focusing on a significant variable identified in previous work by Wolpert and colleagues (1972) and Zube and Sell (1986), notions relating to an individuals' sense of control and opportunity to express views were examined in this study. This factor was included in this study since, generally, the opportunity of respondents to express their views about a proposed development is believed to affect perception and response to change: those who believe that they have been denied such opportunities tend to perceive the proposed change in more negative terms than those who believe they have had a sufficient opportunity to express their views.

Characteristics specific of Paradise Valley, however, are expected to mitigate this effect. Since sense of control is often taken for granted by upper-income groups (Winkel 1981), and since the majority of residents of Paradise Valley easily fit that description, it is expected that neither the perception nor response models will be significantly affected by the opportunity-to-air-views variable.

CHAPTER 3 RESEARCH DESIGN

Introduction

Land-use change is very much a dynamic process, itself subject to change and amendment. Perception of and response to such transitions, then, have an overt temporal dimension which must be considered in any attempt to model that process. To capture this dimensionality, a longitudinal case study approach was adopted, wherein pre-cognition attitudes and dispositions toward land-use change were surveyed first, followed by a post-cognition analysis of respondents' perceptions and responses to a proposed change. A series of predictor constructs based on pre-cognition attitudes were developed and used to model post-cognition views and responses with respect to the proposed change. Procedures used for data acquisition, questionnaire development and administration, and data analysis are presented below.

Data Collection Procedures

Sample Selection

Special consideration was given to the sampling strategy used in this study. One such consideration centered on the location of prospective respondents relative to the proposed development site. Specific concerns were twofold. First was to determine the maximum distance from the development site in which respondents would be selected, that is, delimitation of the study area. Previous work by Zube and Sell (1986) aided in this decision. In a study of five development projects in the Tucson metropolitan area, the authors found that respondent awareness sharply diminished at distances greater than 1 mile. In view of this finding, the same criterion was adopted, such that the study area

was delimited as that area inside the municipality's corporate limits, that was located within a 1 mile radius of the proposed development (Figure 3). A second issue that arose early in the sample selection process entailed identifying distance intervals by which to stratify the study area population. A stratification technique was first instituted so that equal numbers of households could be selected from each of five successively distant subareas: adjacent to 1/8 mile, 1/8 to 1/4 mile, 1/4 to 1/2 mile, 1/2 to 3/4 mile, and 3/4 to 1 mile. This concept was made operational with a three-step process consisting of: 1) demarcating on an addressed aerial photograph the site of the proposed development and each of the five distance increments, 2) determining the ranges of street addresses associated with each of the subareas and, 3) compiling lists of household addresses corresponding to each area. This last step was accomplished by consulting a Cole's Cross Directory (1988), which lists all households (and their telephone number) by street address. This procedure yielded a total of 301 Paradise Valley households that were located within 1 mile from the site of the proposed development. A count of households located in each of the five subareas is summarized in Table 3. Perusal of the compiled lists led to the decision to use the entire population of the study area as the survey pool, rather than selecting a sample of subarea households. This choice was made since the total number of households within the 1-mile study area was less than originally anticipated-- the total pool itself a manageable number for surveying purposes. In addition, the arc of the radius used to delineate area boundaries describes a smaller total area for those subareas nearer the development site compared to those at greater distances. Thus, the maximum number of households available for any of the sample subgroups was limited to the number situated within the subarea located closest to the development site. Because of these two circumstances, the strategy of selecting a sample consisting of equal numbers for each subarea was discarded in favor of a study area census approach.

Figure 3. Paradise Valley Study Area

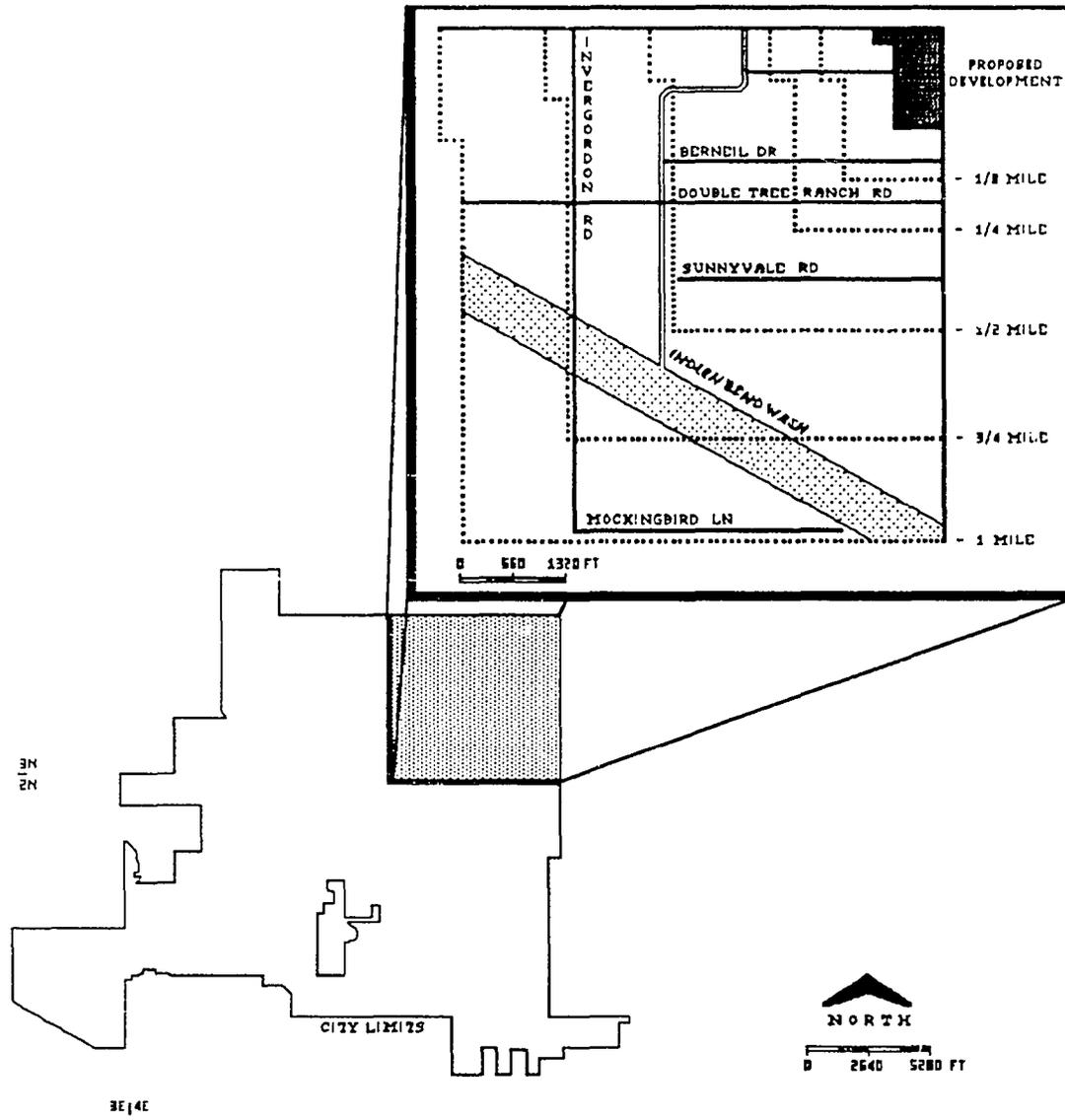


Table 3. Household Count by Subarea

Study Subarea	Count
Subarea 1 (adjacent to 1/8 mile):	15
Subarea 2 (1/8 to 1/4 mile):	24
Subarea 3 (1/4 to 1/2 mile):	75
Subarea 4 (1/2 to 3/4 mile):	99
Subarea 5 (3/4 to 1 mile):	88
Total:	301

Instrument Development

Two separate survey instruments were developed in this study: one to assess pre-cognition attitudes and a second to evaluate respondents' post-cognition perception and response. Objectives of the first survey (Appendix A) were to solicit information on the respondents' land-use expectation, their tie to community, their level of community activism and general activism level. In addition to these key predictor constructs, information was sought on a series of demographic attributes, mainly for the purpose of comparing survey respondent demographics with larger community demographic profiles.

Key constructs in the first survey were made operational by using a number of questionnaire items to measure each of the broader constructs. The land-use expectation construct, for instance, was measured by assessing respondents' views on the desirability of various types of prospective development in the community. A six-point desirability scale was used for this assessment. The kinds of development rated included office development, commercial shopping mall, boutique stores, resort-hotel development and single-family residential development. In addition, a three-point assessment of the overall desirability of any new development in the community was included. The construct of tie-to-community was measured by items assessing respondents' length of residence, both in their present home and in the community, the number of neighbors known well and the number with which respondents were acquainted. The construct of community-level activism was measured by such items as membership in the homeowners association, frequency of attending local governmental meetings, number of actions the respondents indicated they would be willing to take in the event of a new development proposal in their neighborhood, and degree to which they believed their actions would be effective. The construct of general activism was measured by respondents' assessments of their degree of social and civic activity, their voting behavior in city, state and federal elections, and frequency of making contributions to political parties, either for candidates or specific

political issues. Finally, although not directly measured in the survey instrument, an assessment of the distance from the proposed development site was obtained for each respondent by locating their residence in one of the five successively distant subareas.

The principal objective of the second survey instrument (Appendix B) was to gather information on the criterion variables of the study, and specifically, respondents' perceptions and responses to the proposed Pensus development project. The two second-survey criterion variables were made operational as follows. Residents' perceptions of the proposed development were measured using a six-point desirability rating scale. The criterion variable of response to the proposed development was measured as the number and kinds of actions that respondents took either in support of, or opposition to, the proposed development project.

It should be noted that as originally conceived, the post-cognition survey was scheduled to be administered only after the proposed development had received official approval. Due to delays in the development process, however, and the likelihood that progress would be rather delayed, a simulation technique was implemented to emulate post-approval conditions. The simulation procedure was used as a vehicle to articulate specific aspects about the project (proposed mix of uses, densities and so forth) that without final approval, could not be exactly determined. Further, the simulation effort was undertaken since it could not be assumed that all respondents would be aware of the development proposal, irrespective of official approval. The simulation technique was implemented with a two-step procedure. First, a branching mechanism in the instrument was used to separate those respondents that were aware of the proposed development and those who were not aware of it. Second, those aware of the development proposal were presented with a description of the project, so that even though they were aware of the project, they would have an up-to-date understanding of the proposed mix of uses, densities and so forth. Respondents were then asked their views of the development

proposal, followed by an inquiry as to the kinds of actions they had taken in response to it. Last, those respondents aware of the development were asked to rate the overall opportunity they believed they had had in expressing their views pursuant to the development.

A comparable procedure was used for respondents who were not aware of the proposed development. Respondents were first given a synopsis of the development proposal (similar as that presented to the aware group) and then asked to rate the desirability of the development, and then the kinds of actions they were likely to take in response to it. The question regarding the respondent's opportunity to express their views about to the proposed development was not presented to this subgroup since that item could only be answered by those who were aware of the project.

Pretesting the Survey Instruments

Questions included in each survey were pretested prior to the initial survey dates. A draft of the first survey instrument was pretested approximately a week prior to beginning actual survey work, it being administered to eight residents located just outside the boundary of the 1-mile study area. Based on pretest results, modifications were made to the draft instrument including minor wording changes and alterations in the sequence in which the questions were asked. Pretesting of the follow-up survey was limited to just two contacts since the wording and structure of the questions were essentially identical to those asked in the first survey.

General Survey Procedures

The telephone was chosen as the primary vehicle for administering each of the survey, a method favored over either personal interviews or a mail survey. The telephone survey procedure had the principal advantage of cost effectiveness, a consideration which

made door-to-door interviews prohibitive. Accessibility to Paradise Valley homes was a second concern associated with a personal interview approach as many residences in the community have either security gates or other forms of property security. Finally, none of the questions mandated visual representation, all being amenable to an oral format.

Although the main method of data collection centered on telephone survey procedure, a mail version of both instruments, consisting of questions identical to the telephone instrument, was also developed. Several circumstances prompted this approach. First, there were a number of individuals contacted by telephone in the first survey who, for various reasons, elected not to participate at the moment of the call. A number of these individuals indicated that they would be willing to take part in the study if a mail version of the survey could be sent to them. Second, while selecting the original pool of households from the Cole's Cross Directory (1988), it was found that nearly 35 percent of the households had either telephones with unlisted numbers or had no telephone in their residence. Since addresses for such households were included in Cole's Directory, they were included in the mail survey group. With the addition of these households, all known households within 1 mile (regardless of telephone accessibility) were included in the sampling frame.

Administering the First Survey

The first survey was administered on four consecutive evenings, March 6th through March 10th, 1988, from 6:00 to 9:30 PM. The actual survey work was performed by four employees (one male and three female) of the Survey Research Center at the University of Arizona. A total of 84 completed interviews was obtained from the original pool of 301 households. Details on response rates for the telephone survey are presented in Table 4.

Table 4. First Survey Telephone Response Summary

Original Pool:	301
Completed Interviews:	84
Requested Mailer:	20
Ineligible Respondent:	8
No Answer/Not At Home:	91
Refusals:	98
Telephone Survey Response Rate (based on # of successful contacts):	46.1 %

In addition to those households reached via telephone, a total of 118 mail questionnaires were sent: 20 to individuals who, when contacted by telephone, had requested that a mail version be sent to them, and 98 households in the study area with either an unlisted telephone number or no telephone at the residence. Mail surveys were sent concurrently with the telephone survey work, and all responses were received within twenty days following. Response rate information for the mail survey portion of the data collection effort is outlined in Table 5.

Distribution of First Survey Respondents

The location of first-survey mail and telephone respondents is shown in Figure 4. Use of the population based survey approach raises the concern of whether individuals responding to the questionnaire were randomly distributed, insofar as this condition has bearing on inferential statistical procedures used in this study which rely on the assumption of independence or randomness of responses. Although no systematic locational biases are evident from visual inspection of the mapped locations, a spatial autocorrelation procedure was undertaken to test the randomness of responses. A two-color spatial autocorrelation test, based on early work by Moran (1948 and 1950) as summarized by Thomas and Huggett (1980) and Barber (1988), proceeds by examining the number of different types of "joins" between contiguous cells (parcels in the present case) to determine whether the observed pattern is significantly different from a random pattern. Thus, the null hypothesis in this test is that there is no significant difference between the observed autocorrelation and the expected autocorrelation in a random pattern. Calculating the frequency of each type of join (in the nominal, two-color map joins can be either black/black, white/white, or black/white) between parcels in the map (N = 301), yielded probability values for each type of join as follows: $p(\text{black/black}) = .123$; $p(\text{white/white}) = .171$; and $p(\text{black/white}) = .242$. These values indicate that at any common level of

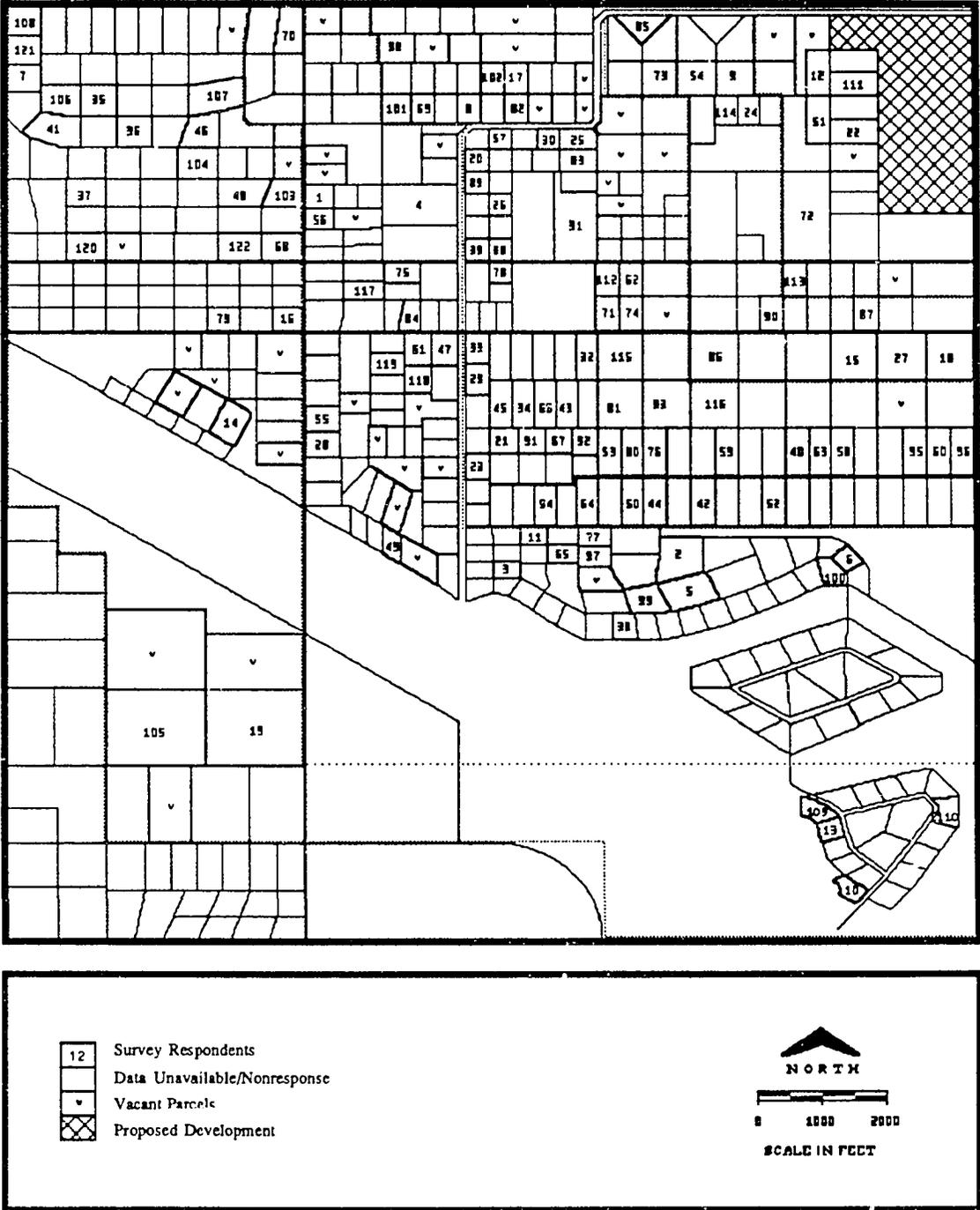
Table 5. First Mail Survey Response Summary

Original Pool:	118 *
Completed Surveys:	38
Returned by Post Office: **	21
Ineligible Respondent:	6
Refusals:	53
 Mail Survey Response Rate (based on # of successful contacts):	 41.8 %

* Includes 20 contacts from the original telephone survey pool requesting a mail questionnaire, and 98 households listed in Cole's Directory as having either no telephone or an unlisted telephone number.

** Reasons for Post Office returns include: "No Such Number", "Vacant" and "No Mail Receptacle".

Figure 4. Location of First Survey Respondents



significance, the number of different types of joins could occur in a random pattern and thus the null hypothesis that there is no spatial autocorrelation can not be rejected. It must be concluded that the pattern of respondents is not spatially autocorrelated and are independent.

Comparison of Survey Demographics with U.S. Census Data

Although the original pool of potential respondents focused only on households located within one mile from the proposed development, a procedure was undertaken to compare characteristics of the survey group with the Paradise Valley community as a whole. This procedure was employed to assure that survey respondents were generally comparable to Paradise Valley residents as a whole, and not skewed in any one demographic dimension. Table 6 presents demographic data for survey respondents and 1985 Special Census data for the Town of Paradise Valley. Data for the race and ethnicity variables, as well as for gender and housing characteristics are comparable, pointing to a high level of congruence between each group. The only significant difference seen is in age cohort data for these groups. This difference was can be attributed to an intentional screening sequence employed in the questionnaire survey, limiting valid respondents only to male or female heads-of-household. As may be expected, the age cohort 0-20 years of age does not include many heads-of-household, and particularly so in a community where high housing costs prohibit easy entry.

First Survey Item Non-Response

An item non-response analysis was undertaken on the first survey results to examine whether, in spite of careful questionnaire construction and pretesting, specific items may have been in some way confounding or problematic for respondents.

Table 6. Survey Demographics and 1985 Special Census Data

Variable	Survey Respondents N=122 (Percent)	1985 Special Census Data (Percent)
<u>Race/Ethnicity</u>		
• White	96.8	98.3
• Black	0.0	.1
• Asian/P.I.	1.6	1.2
• Other	.8	.4
• Spanish Origin	.8	2.0
<u>Gender</u>		
• Male	45.9	49.6
• Female	54.1	51.3
<u>Age</u>		
• < 20 years	0.0	28.8
• 20 to 39 years	12.3	17.8
• 40 to 59 years	61.5	36.1
• ≥ 60 years	26.2	17.3
<u>Occupied Housing</u>		
• Owner Occupied	95.1	96.1
• Renter Occupied	4.9	3.9

The results of this analysis are presented in Table 7. Non-response rates for most items on the telephone and mail survey versions are acceptable, with only a few items on each version falling outside expected average non-response rates of 3.5 to 4.6 percent discussed by Dillman *et al.* (1976). The scaling of liberal and conservative political affiliation appeared slightly more difficult for telephone respondents than mail respondents, but not excessively so. Relatively higher item non-response for the last two items in the telephone version, income and gender, are largely definitional, the result of deeming the telephone interview "complete" with the successful answering of questions preceding the demographic items.

Slightly higher non-response rates for items on the mail questionnaire can be attributed to several respondents missing questions printed on the back side of pages of the mail instrument. Although less than optimal, the expedient of double-sided printing was mandated by the costs associated with copying and mailing single-sided survey forms.

Administering the Second Survey

Administration of the second, follow-up survey was analogous to that of the first survey; a bifurcated telephone and mail procedure was implemented, wherein those individuals contacted by telephone in the first survey were similarly contacted, and those individuals without listed telephone numbers as well as those who chose to participate through the mail were again sent mail versions of the questionnaire. A pool of 84 first-survey telephone respondents were contacted via that medium, while 39 mail surveys were sent to mail survey participants. The telephone survey work, again undertaken by the Survey Research Center of the University of Arizona, was performed on three consecutive evenings, September 25th through September 27th, 1988 between the hours of 6:30 to 9:30 PM. Mail survey forms were posted concurrently with the administration of the telephone survey and responses were received over the ensuing two weeks.

Table 7. First Survey Item Non-Response

Variable	Telephone	Mail	Combined
Years in Paradise Valley	0.00	0.00	0.00
Years in Residence	0.00	0.00	0.00
Initial Satisfaction	0.00	0.00	0.00
Satisfaction Now	0.00	2.63	0.82
Attitude Toward Development	0.00	0.00	0.00
Office Desirable	0.00	0.00	0.00
Resort/Hotel Desirable	0.00	0.00	0.00
SFR Desirable	0.00	2.63	0.82
Boutique Desirable	0.00	2.63	0.80
Shopping Mall Desirable	0.00	2.63	0.81
Action: Get More Info	0.00	0.00	0.00
Action: Attend Public Hearing	0.00	0.00	0.00
Action: Call/Visit Public Official	0.00	0.00	0.00
Action: Call Developer	0.00	0.00	0.00
Action: Sign Petition	0.00	0.00	0.00
Action: Write A Letter	0.00	0.00	0.00
Action: Enlist Neighbor	0.00	0.00	0.00
Action: Donate Money	0.00	0.00	0.00
Action: Other Action	0.00	0.00	0.00
Aware of New Development	0.00	0.00	0.00
Aware Pensus Development	0.00	0.00	0.00
Believe Actions Effective	5.95	0.00	4.10
Civic Activity Level	0.00	2.63	0.82
Social Activity Level	1.19	2.63	1.64
No. of Neighbors Known Well	0.00	10.52	3.28
No. of Neighbors Acquainted	0.00	10.52	3.28
Aware of H.O. Association	0.00	2.63	0.82
Member of H.O. Association	0.00	2.63	0.82
Vote in Last City Election	0.00	0.00	0.00
Vote in Last State Election	0.00	2.63	0.82
Vote in Last Federal Election	0.00	0.00	0.00
Frequency of Political Contributions	2.38	5.26	3.28
Attendance at P.V. Gov. Meetings	0.00	0.00	0.00
Age	0.00	0.00	0.00
Education	0.00	0.00	0.00
Political Affiliation	2.38	0.00	1.64
Liberal/Conservative	8.33	0.00	5.74
Own/Rent	0.00	0.00	0.00
Race/Ethnicity	1.19	0.00	0.82
Employment Status	0.00	0.00	0.00
Income	9.52	5.26	0.82
Gender	9.52	0.00	6.56

 Telephone Survey: N=84; Mail Survey: N=38; Combined: N=122

Follow-up reminder letters were sent to mail respondents one week following the initial questionnaire mailing. Response rates for both the telephone and mail follow-up surveys are presented in Tables 8 and 9.

A total of 83 individuals, or just under 70 percent of the combined pool of 122 first-survey respondents, was successfully reached in the second survey effort. The rate of attrition of respondents was somewhat higher than expected, although non-response was more a function of no answer (all telephone respondents were tried at least five times), or because the respondent had moved out of Paradise Valley, rather than direct refusals to participate. The location of the second-survey respondents is shown in Figure 5.

Respondents did not appear to have any difficulty answering any of the items on either version of the follow up instrument. Likely a function of its brevity, all items were answered by every respondent equating to a zero item non-response rate for all items on both the mail and telephone survey instruments. Similarly, the intervening period of over six months between the first and second surveys appeared to be of sufficient duration to preclude respondents from remembering answers given in the first survey, or for that matter, that they even participated in that canvassing; none of the respondents mentioned participation in the previous survey.

Combining Telephone and Mail Survey Data

The use of two separate methods of collecting data was approached with caution in this study, in view of preliminary concerns relating to data comparability and the potential for introducing error associated with each method. A mixed design was chosen, however, since potential limitations are usually minor compared to the advantages accruing from its use. Noted advantages stem from increases in sample size (Dillman 1978), and from enhanced survey response rates, with increases from as much as 20 to 65 percent (Dillman 1978; Goudy 1976; St. Louis 1976). Past research on survey methods has also

Table 8. Second Telephone Survey Response Summary

Original Pool * :	84
Completed Interviews:	61
Ineligible Respondent ** :	3
No Answer/Busy/Not At Home:	12
Refusals:	8
Telephone Survey Response Rate	
(based on # of successful contacts):	88 %

* Telephone completes from first survey

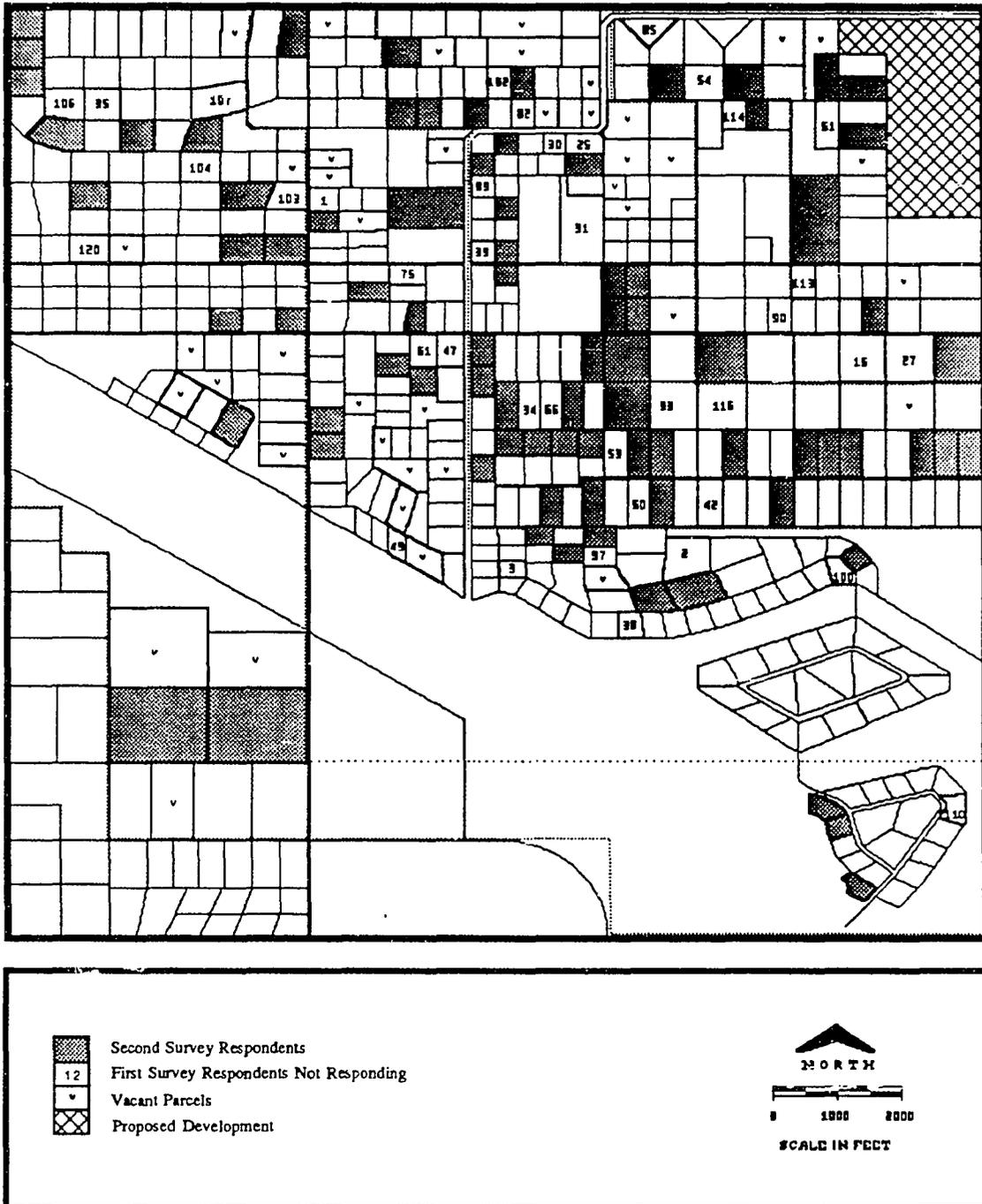
** Respondent moved from Paradise Valley or no longer a working number

Table 9. Second Mail Survey Response Summary

Original Pool*:	38
Completed Surveys:	22
Returned by Post Office:	0
Ineligible Respondent:	0
Refusals:	16
Mail Survey Response Rate (based on # of successful contacts):	58 %

* Mail "completes" from first survey

Figure 5. Location of Second Survey Respondents



demonstrated that qualitative differences in responses obtained from different survey methods are usually minor (Hochstim 1967; Rogers 1976; Wiseman 1972). In spite of these assurances, procedures were implemented in this study to ascertain whether or not significant qualitative differences existed between mail and telephone responses.

A chi-square statistic was used for this procedure, the null hypothesis being that no significant difference existed between mail and telephone responses. The results of this procedure (Table 10), confirm that mail and telephone responses are quite congruent, with no significant differences found in responses for the majority of questionnaire items. Variables that do exhibit an apparent difference, however, warrant further consideration. They include: years in Paradise Valley, income, membership in the homeowners association, the number of actions willing to take, the perceived effectiveness of that action, the number of neighbors known, and activity in civic affairs. It will be recalled that the mail respondent group included a large percentage (nearly 70 percent) of households with unlisted telephone numbers. Research on differences between those with listed and unlisted telephone numbers indicates that although there is a convergence in these two groups (Kildegaard 1966), notable differences still exist; people with unlisted telephones tend to be younger, less educated, more mobile, poorer, and generally belong to fewer organizations (Brunner and Brunner 1971).

Examination of the descriptive statistics for the mail and telephone groups (Appendix C), however, paints a slightly different picture, perhaps owing to the relative prosperity of the community. Mail respondents were relative newcomers to Paradise Valley, (8 years on average versus 13 years for telephone respondents), with higher incomes, with fewer ties to the community (in terms of the number of neighbors known), and less active in regard to civic activity, the homeowners association, and the willingness to respond to new development in the community. Thus, in a broad sense, the mail respondents may be viewed as representing relative newcomers to a community.

Table 10. Chi-Square Comparison of Telephone and Mail Responses

Variable	df	Chi-Square	P =
<u>First Survey Variables</u>			
Location	3	1.786	.6180
Years Lived In P.V.	3	8.816	.0318 <
Years Lived In Residence	3	5.381	.1459
Initial Satisfaction	4	3.423	.4897
Satisfaction Presently	5	7.581	.1809
Civic Activity Level	5	15.442	.0082 <
Social Activity Level	5	7.941	.1595
Attendance At P.V. Gov. Mtgs.	3	1.495	.6834
# Neighbors Known Well	2	6.356	.0417 <
# Neighbors Acquainted	2	0.332	.8469
New Development Desirable	2	0.914	.6333
Office Desirable	5	0.283	.9979
Resort/Hotel Desirable	5	4.364	.4983
Boutique Desirable	5	0.762	.9794
Shopping Mall Desirable	5	5.346	.3751
SFR Desirable	4	6.840	.1446
Total # Actions Willing To Take	9	37.027	.0001 <
Perceive Action To Be Effective	3	10.180	.0171 <
Aware Home Owner's Assoc.	1	.003	.9562
Member Home Owner's Assoc.	1	.003	.9548
Frequency of Political Contrib.	3	8.522	.0364 <
Vote Federal Election	1	.057	.8106
Vote State Election	1	.692	.4053
Vote City Election	1	.366	.5453
Aware of New Development	1	.041	.8402
Aware of Pensus Development	1	.341	.5591
Age	2	3.574	.1675
Gender	1	.832	.3616
Race/Ethnicity (White/NonWhite)	1	.096	.756
Education	5	3.972	.5534
Income	5	12.006	.0347 <
Political Affiliation	3	5.944	.1144
Liberal/Conservative	5	6.273	.2806
<u>Second Survey Variables</u>			
Aware of Pensus Development	1	.048	.8270
Desirability of Pensus-Commun.	30	31.044	.4132
Desirability of Pensus-Personally	30	12.804	.9974
Total # Actions Taken	4	5.425	.2464
Opportunity to Air Views	1	.365	.5460

 < = Variables with a significant difference

Because of escalation in land values in the area, entrance into the community becomes increasingly restricted to those with higher incomes, further accentuating the image and reality of a prestigious enclave of elite, prosperous residents (Veblen 1899).

Data Analysis Procedures

Developing Key Predictor Constructs

Main predictor constructs in this study were developed using a "summative model" procedure, similar to that conceived by Likert (1932) in his study of attitudes dealing with international relations, race relations and economic conflict. A key factor underlying the summative construct model is the recognition that the full dimension of conceptual variables is rarely captured with a single questionnaire item. In Likert's summative model, a series of items, formulated as rating scales, is used to measure general conceptual constructs. Scores from each of these items are then summed (negative response items are reversed) to produce a scale or index of the construct.

The summative approach was chosen in this study since it produces an easy to understand and more interpretable index of the hypothesized construct. Summative scales have a number of virtues to recommend them. Some of the advantages, as noted by Nunnally (1967), include their ease of construction, a higher degree of reliability, utility in analyzing a wide variety of "sentiments" and beliefs, and a "demonstrated effectiveness in a number of previous studies". It should be mentioned here that a number of strategies for formulating construct scales have been devised, ranging from Likert's summative approach to more sophisticated schemes for weighting variables using the coefficients derived from a confirmatory factor analysis of questionnaire items (Kim and Mueller 1978). Factor coefficient weighting schemes, while perhaps more sophisticated, are often conceptually obtuse since the derived scales are not the same as the underlying factors; correlations

between the factor and the scale are likely to be much less than 1, and relationships among scales typically differ from relationships among the underlying factors (Kim and Mueller 1978).

The summative constructs developed in this study, however, departed in several ways from those used by Likert. First, nominally- scaled behavioral questions were used in conjunction with rating scale items in developing predictor constructs. An example of one such behavioral question was the item used to assess respondents' recent voting activity (Did you vote in the last city election ? Yes___ No___). Second, prior to the summative procedure a factor analysis of the questionnaire items was undertaken as a means of determining whether the items intended to measure broader conceptual constructs were in fact tapping a common conceptual issue. Once questionnaire items for each main construct were identified, the summative constructs were constructed in a straightforward manner by simply adding scores for constituent questionnaire items.

Developing Perception and Response Models

Both the perception and response models developed in this study take the form of a multiple regression equation. A stepwise regression procedure was used to identify significant predictor variables for each model. The stepwise procedure is useful in an exploratory study of this nature since each of the predictor constructs are successively introduced (and removed) in a series of "steps" to determine whether their presence in the regression equation significantly improves prediction of the criterion variable. Significance level for the F-to-enter criterion was 4.0 and the F-to-remove value was set at 3.9 (equivalent to an alpha significance level of .05), a criterion commonly used in stepwise analyses (Afifi and Azen 1979). None of the predictor constructs was forced into any of the stepwise regression equations.

Other Data Analysis Procedures

A variety of ancillary statistical procedures were employed as necessary, primarily including t-test procedures and chi-square significance tests. An alpha significance level of .05 was used for all additional statistical procedures.

CHAPTER 4

STUDY FINDINGS

The findings of this study are presented in four main subsections. First, eight Likert-like predictor constructs derived from confirmatory factor analyses are discussed. Second, results of the perception model, specifically examining the manner in which respondents view the desirability of the newly-proposed development, are reported. The perception model is based on a stepwise multiple regression analysis in which the eight predictor constructs are introduced to predict desirability of the proposed land-use change. Third, results of the response model are presented wherein the same eight predictor constructs are used to model the magnitude of response to the development proposal. The independent response variable is measured as the number of actions the respondent took after learning of the new development. Finally, results of several other analyses are discussed which serve to augment findings of the two main models.

Since the study was structured to include respondents who were both aware and not aware of the new development, results for both the perception and response models are reported for each subgroup in addition to the total sample group findings.

Developing the Eight Predictor Constructs

Eight main predictor constructs were derived from seventeen first-survey questionnaire items based on a confirmatory factor analysis procedure. Following on work done by Nunnally (1967), parameters for the factoring procedure were as follows. A principal axis factoring procedure was stipulated wherein the initial factoring process begins by estimating variable communalities, resulting in an estimated coefficient for the diagonal in the correlation matrix. This parameter was selected rather than assigning coefficients of 1 on the diagonals of the matrix, since such a procedure is predicated on the

unlikely assumption that input variables are perfectly reliable. The number of initial factors to be extracted was stipulated using the Kaiser cut-off criterion (Kaiser 1956; Kaiser 1970), beginning the process with eigenvalues greater than or equal to 1. Corresponding communalities are then estimated iteratively using the multiple R-squared coefficient between a given variable and all other variables. An orthogonal rotation with a varimax criterion was selected for the initial factor solution; the extracted factors are assumed to be orthogonal. Table 11 shows the total variance explained and the percent variance explained for each of the rotated factors.

Figures of the proportional variance explained, and especially the modest variance explained by the initial factor extracted indicate that the factors extracted are, in all likelihood, independent. Factors and loadings for each of the constituent variables are included in Appendix D. In view of the factor structure that emerged, only variables with rotated loadings of .500 or greater were retained as significant contributors to each of the factors. Individual factors and constituent variables are discussed below.

Factor I

The first factor extracted was a dimension relating to familiarity with one's neighbors. High-loading variables on this construct include the "number of neighbors known" and the "number of neighbors acquainted with". Also loading on this factor is the variable assessing desirability of single-family residential development. Although the loading of this last variable on the factor may prima facie seem incongruous, it is likely that these more gregarious individuals are also longer term residents who have broader and more established ties to the community. Thus, these residents may have elected to move to the community because of its then rural, residential character and in turn would likely favor retaining that character. Only added single family residential development would, in all probability, be viewed favorably by these respondents. In any case, only the "neighbors

Table 11. Ten Factors and Percent of Total Variance Explained

Factor	Variance Explained
I	5.892
II	10.649
III	6.904
IV	6.269
V	7.405
VI	7.50
VII	6.424
VIII	7.212
IX	5.300
X	4.758

Total percent variance explained: 62.0 %

known" and "neighbors acquainted with" variables are retained in establishing this construct.

Factor II

Factor II comprises four variables that assess the desirability of selected types of new development, and a variable that measures, in a more general sense, the acceptability of new development in Paradise Valley. This factor equates conceptually to the land-use expectation construct, it being an aggregation of the variables that assess the desirability of new development in the community. All variables are positively correlated; individuals who view one type of development as undesirable similarly tend to take a negative view of other types of development (except single family residential), and vice versa.

Factor III

This factor is composed of two measures of community satisfaction: present satisfaction with the community, and residents' change in satisfaction between first moving to Paradise Valley and their present level of satisfaction. Signs on variable coefficients indicate that the less satisfied individuals also tend to have a high negative change in satisfaction, and vice versa. On one end of this continuum are individuals who are considerably less satisfied and have become so since they first moved to Paradise Valley.

Several potentially confounding issues arise concerning this factor, however. First, there is a strong potential for social desirability bias in this sort of satisfaction question (Dillman 1978 p. 62). Responses are frequently skewed toward the positive, since those respondents are likely to be uncomfortable admitting dissatisfaction with the community in which they are living (Why would you move to a community you didn't like?). Also contributing to bias on this question may be the effect of selective memory, wherein positive associations of the past are recalled more readily than are negative

remembrances. Perusal of the original data confirm this suspicion: only one of the respondents (less than 1 percent of the total) indicated they were either "dissatisfied" or "very dissatisfied" with Paradise Valley upon first moving to the community.

Factor IV

Factor IV includes two variables dealing with awareness of new development in the community and location of the respondent in terms of distance to the proposed development. It should be noted here that this factor was not retained as a predictor construct; the location or distance variable was used by itself as a predictor in the response to land-use change equation. In addition, each of the questions dealing with respondents' awareness of new development was included in the instrument principally to assess empirically whether a true "pre-cognition" state (concerning the proposed development) prevailed among the respondents.

In any event, the factor reveals several associations that are not unexpected, and which require further consideration. First, the awareness of development variables are positively correlated as was expected. Second, the location variable displays a negative correlation sign indicating that residents located further from the proposed development are less aware of its existence. The same circumstance prevails with the "awareness of any new development" variable; likely attributable to the fact that the proposed development is located on the edge of the political jurisdiction and thus an increase in distance likewise translates into a move from the periphery to the core of this residential community. The apparent association, then, derives from the fact that recent development in the community (as with the Pensus development project) has taken place in peripheral locations, and the expected distance decay function can be assigned here as it can with the "awareness of the Pensus development project" variable.

Factor V

The fifth factor to emerge taps into one aspect of the tie-to-community construct, namely, one based upon the number of years the respondent has lived in Paradise Valley, and the number of years they have resided in their present home. Positive signs on the variables indicate that long-term residents in the community have generally remained in the first home they purchased. Examination of the original data reinforces this notion: nearly 83 percent of all respondents have stayed in their first home since moving to the community. It should be noted, however, that these two variables are ipsative in nature (Cattell 1944), that is, the scores for any observation on these two variables sum to a constant (in this case 1), producing bias toward intra-association (Rummel 1970 p. 291). As applied to these two variables, we find that at one end of the continuum newcomers to the community cannot, by definition, have lived for long periods in their present house, rather, they must be relatively short-term residents in their present home. In any case, a certain residential stability within the community is evidenced by the high positive correlation between the two variables and from the descriptive statistics for these items.

Factor VI

Factor VI appears to relate to a political activist kind of construct, in this case one derived from three voting behavior variables. All of the voting activity variables, at city, state, and federal levels, are positively correlated with the highest loadings appearing for state and federal voting activity. Positive correlations on these variables are expected; high voter participation at one level of government typically equates to a similar propensity to vote at other jurisdictional levels (Dillman 1978).

Factor VII

Two variables dealing with awareness of, and membership in, the local homeowners association load strongly on this factor. Tautological problems, however, surface in this factor since awareness of the homeowners association is a necessary condition for membership, that is, all who are members certainly are aware of its existence. Because of the ipsative nature of these two variables, the homeowners association awareness variable is dropped and only the membership variable is used in formulating this construct.

Factor VIII

This factor reflects a community activist dimension as variables loading here include social activity level, civic activity level, willingness to take action in the event of proposed land-use changes, and a variable that measures the degree to which individuals believe their actions will have an effect on the outcome of proposed development projects. All variables subsumed under this factor have negative loadings, indicating that those who are least active in social and in civic affairs are also those least willing to take action in response to proposed development, and vice versa. Belief that actions taken in response to a proposed development will have a demonstrable effect is a direct corollary to the activism element; those who have experienced tangible results from past actions are also likely to take additional actions to achieve their ends.

Factor IX

As with Factor VII, Factor IX is derived from variables dealing with an awareness of, and membership in, the Paradise Valley homeowners association. The two variables loading here are: 1) "membership in the homeowners association" and, 2) "awareness of the association but not a member", the latter variable derived from the two

primary homeowners association questions in the survey instrument. As with factor VI, this factor also emerges from ipsative variables; specifically, those who are not members of the homeowners association will, by definition, automatically be associated with the "aware of the association but not a member" group. It should be noted here that the "aware of the association but not a member" variable was initially created to complete the continuum of awareness of and membership in the homeowners association. Because of the noted definitional association and the inclusion of Factor VII corresponding to the same basic dimension, this factor is not included in the eight main predictor constructs.

Factor X

Common among many factorial procedures are the emergence of end factors that are not directly interpretable vis-à-vis the reasons for instituting the factorial procedures, and in relation to the input variables. Factor X is just such a factor. Only one variable loads highly on this factor: the variable of "initial satisfaction upon first moving to the community". Thus, this factor is not included in the main predictor constructs.

The Eight Predictor Constructs

It will be recalled from the previous chapter that the eight predictor constructs which emerged from the confirmatory factor analysis were constructed by summing the values from questionnaire items which loaded together on each factor. Table 12 lists the eight resulting Likert-like predictor constructs, an "X" symbol designation, and the minimum, maximum, mean and standard deviation values for each of the constructs.

Comparison of Primary Factors with Hypothesized Constructs

On the whole, the variables that were selected a priori to measure broader conceptual constructs were confirmed by the factorial procedure. Primary differences

Table 12. Minimum, Maximum, Mean and Standard Deviation Values for Predictor Constructs

Predictor Construct	Symbol	Min.	Max.	Mean	Std. Dev.
Activist	X1	10	20	15.229	2.461
Non-SFR desirability	X2	5	27	22.108	5.051
Change in Satisfaction	X3	-4	5	-.386	1.369
Neighbors known	X4	1	70	16.735	15.380
Years in Community	X5	2	70	21.807	15.646
Location	X6	1	5	3.458	1.051
Voting Behavior	X7	0	3	2.169	0.973
Homeowners Member	X8	0	1	0.446	0.500

emerged in variables that were chosen to measure the tie to the community and activism constructs. In each of these cases the factor procedure identified more specific dimensions of the broadly-conceived hypothesized constructs. Specifically, the factoring procedure split into two subgroups those variables assumed to reflect an individual's tie to community. The two dimensions that emerged included a "length of residence in home and community" and a "number of neighbors known" dimension.

A similar circumstance developed with the general activism construct. It was anticipated that activism would evince two separate dimensions, one a generic activism, and the other a community-specific activism element. Instead of the generic-community specific axis, however, two different sub-dimensions related to an activist construct emerged from the factorial procedure. First, was a dimension that may be viewed as the direct activist dimension, comprising variables measuring levels of social and civic activity, willingness to take action in response to land-use change, and the belief that actions taken would have a tangible effect on the outcome of the proposed development. The second activist dimension to emerge was one of overt political activism, reflecting voting behavior at city, state and federal levels.

The eight main constructs derived through the factor procedure are used to model both "post-cognition" perception of the proposed development project as well as response to it. Each of these models is developed below.

Perception Model

The perception of land-use change model takes the following form:

$$Y = a + b(X1) + b(X2) + b(X3) + \dots b(Xn)$$

where:

Y = scale of desirability of the proposed development

a = Y-intercept

b = regression coefficient

X_n = significant predictor constructs

Findings of the stepwise multiple regression perception model are summarized in Table 13. The stepwise procedure, in an iterative process, first identifies the predictor variable that explains the largest amount of variation in the dependent variable, and then introduces the remaining predictor variables iteratively to determine whether their addition to the regression equation significantly increases the explained variation in the criterion variable. Two steps were performed in the stepwise regression procedure for the perception model, meaning that two of the eight predictor constructs were significant at the .05 alpha level. They were: (1) the non-SFR desirability construct (X2), an expression of the overall desirability of non-single family residential land uses in the community (or the respondents' land-use expectation) and, (2) the homeowners member construct (X8), a construct describing activity in Paradise Valley homeowners association (one of the activist measures). Specifically, the perception of land-use change model takes the form of:

$$Y = .518 + .139(X2) + 1.217(X8)$$

where:

Y = 1 to 6 desirability scale of the proposed development

(where 1="highly desirable" and 6="highly undesirable")

X2 = Non-SFR desirability

X8 = Homeowners member

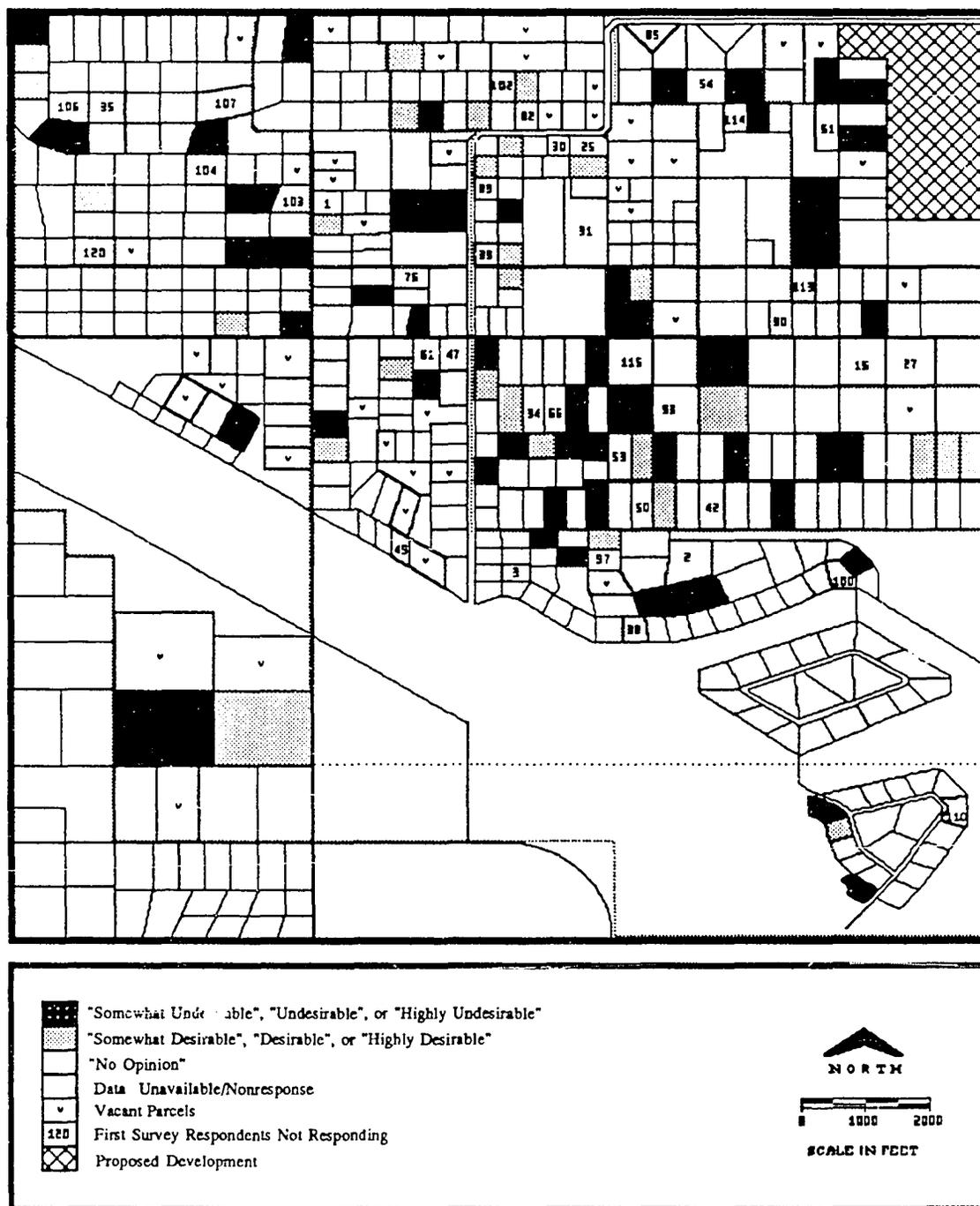
Table 13. Stepwise Regression of Significant Predictor Constructs on Desirability of Proposed Development for the Total Sample Group (N=80)

Independent Variables	Coefficient	Std. Error of Coefficient	Cumulative R	R2	F-to-Enter
(Y-Intercept: .518)					
X2 Non-SFR desir.	0.139	.029	.498	.248	25.731
X8 Homeowners mbr.	1.217	.287	.625	.390	17.933
<u>Variables not in the equation</u>					
X1 Activist					.024
X3 Change in satisfaction					.136
X4 Neighbors known					.124
X5 Years in community					.981
X6 Location					2.158
X7 Voting behavior					.050

Final coefficient of determination value for the equation was .390 with a standard error of estimate of 1.261. Both of the significant predictor constructs are positively correlated with the dependent variable, desirability of the proposed development project. It will be recalled that the criterion variable, perceived desirability of the proposed development, was measured on a scale of 1 to 6, where a rating of 1 was "highly desirable" and a rating of 6 was "highly undesirable". Not unexpectedly, those who believed that the introduction of new non-single family residential development in the community was undesirable (a high land-use expectation), similarly viewed the proposal of an actual non-single family development in negative terms, and vice versa. The positive correlation with regard to the member of the homeowners association variable reflects a circumstance where those who are members tend to view the proposed development in less desirable terms than do those who are non-members and vice versa.

Although other construct variables were not significant, mapping the scaled desirability variable (Figure 6) reveals that the location construct (X6) may warrant further consideration in the perception model. Inspection of the spatial variation of the desirability variable (for mapping purposes the six-point desirability scale was collapsed into a nominal "desirable" and "undesirable" scale) reveals that those closest to the development regard it in only undesirable terms. Increasing distance brings more favorable regard, although respondents at greater distances still generally hold a negative view of the proposed development. This observation suggests that the relationship between location and desirability may not be linear, and specifically that the desirability component is skewed toward the negative end of the continuum; desirable and highly desirable ratings of the proposed development are rare irrespective of location. This relationship preempts an otherwise reasonably consistent negative correlation between the location and desirability variables, where propinquity equates to an increase in the perceived undesirability of the proposed project.

Figure 6. Desirability Rating Map of the Proposed Development



Perception Subgroup Models

An unpaired t-test (Table 14) comparing the mean desirability rating of the proposed development (the dependent variable in the perception model) for those respondents who were aware of the project versus those who were not, reveals that significant differences exist in the perception ratings of these two subgroups. Those who were aware of the development regarded it as significantly more undesirable with a mean desirability rating of 4.45 (on a scale of 1 to 6 where 1=highly desirable and 6=highly undesirable) compared to those who were not aware of it, with a mean desirability rating of 3.65.

Stepwise multiple regression results for the subgroup of respondents who were aware of the proposed development (N=51) are presented in Table 15. The results closely mirror those of the total group model; the stepwise regression goes through two steps or iterations, first entering the non-SFR desirability construct (X2) and stopping after entering the homeowners member construct (X8). Coefficient of determination for the aware subgroup model is .324 with a standard error of 1.226.

Minor differences are seen in the not aware (N=29) subgroup model (Table 16). As with the aware subgroup, the same predictor constructs enter the equation although in reverse order (the homeowners member construct (X8) entering first) of that of the aware subgroup and total group models. R-squared value for the not aware model is .543 with a standard error of 1.205.

On the whole, the perception model appears relatively stable between the total group and subgroup permutations. The same two variables enter the equations for all three models with the same order retained in the total group and aware subgroup models. Explanatory power, while slightly higher for the not aware subgroup, is generally comparable for each of the three models.

Table 14. Unpaired T-Test Comparing Mean Desirability for Aware and Not Aware Subgroups

Subgroup	"N" *	Mean	Std. Deviation	Std. Error
Aware	51	4.451	1.460	.204
Not Aware	29	3.655	1.717	.319

df: 78

t-value: -2.197

Probability: .031

* Three respondents, one from the aware group and two from the not aware group, responded "Don't Care".

Table 15. Stepwise Regression of Significant Predictor Constructs on Desirability of Proposed Development for the Aware Subgroup (N=51)

Independent Variables	Coefficient	Std. Error of Coefficient	Cumulative R	R ²	F-to-Enter
(Y-Intercept: .934)					
X2 Non-SFR desir.	.138	.038	.474	.224	14.168
X8 Homeowners mbr.	.924	.348	.569	.324	7.060
<u>Variables not in the equation</u>					
X1 Activist					.001
X3 Change in satisfaction					.651
X4 Neighbors known					2.801
X5 Years in community					1.552
X6 Location					1.998
X7 Voting behavior					1.173

Table 16. Stepwise Regression of Significant Predictor Constructs on Desirability of Proposed Development for the Not Aware Subgroup (N=29)

Independent Variables	Coefficient	Std. Error of Coefficient	Cumulative R	R2	F-to-Enter
(Y-Intercept: .305)					
X8 Homeowners mbr.	.114	.647	.647	.419	19.477
X2 Non-SFR desirab.	1.858	.465	.737	.543	7.023
<u>Variables not in the equation</u>					
X1 Activist					.005
X3 Change in satisfaction					.353
X4 Neighbors known					2.560
X5 Years in community					.013
X6 Location					.085
X7 Voting behavior					.226

Response Model

The same eight constructs employed in the perception model above were used to model the magnitude response to the proposed development project. The dependent or predicted variable in this case is the respondent's magnitude of response to the proposed development as measured by the number of different kinds of actions taken in response to the proposed change. As with the findings for the perception model, results are presented for the total sample group and for the aware and not aware subgroups.

The total group response model takes a similar form as that of the perception model, namely:

$$Y = a + b(X1) + b(X2) + b(X3) + \dots b(Xn)$$

where:

Y = The number of actions taken in response to the proposed development

a = Y-intercept

b = regression coefficient

Xn = significant predictor constructs

Findings of the stepped multiple regression response model are summarized in Table 17. For the total sample group, the stepwise regression procedure performed three iterations, meaning that three significant predictor constructs (at the .05 level) were included in the regression equation. Significant variables were: (1) location (X6), (2) the neighbors-known construct (X4) and, (3) the non-SFR desirability construct (X2). Specifically, the response to land-use change model for all respondents takes the following form:

Table 17. Total Group Stepwise Regression of Significant Predictor Constructs on Response to the Proposed Development (N=82)

Independent Variables	Coefficient	Std. Error of Coefficient	Cumulative R	R ²	F-to-Enter
(Y-Intercept 1.216)					
X6 Location	-.691	.223	.306	.094	8.372
X4 Neighbors known	.047	.015	.415	.172	7.616
X2 Non-SFR desir.	0.129	.031	.489	.239	6.901
<u>Variables not in the equation</u>					
X1 Activist					.071
X3 Change in satisfaction					.252
X5 Years in community					.522
X7 Voting behavior					3.700
X8 Homeowners member					1.512

$$Y = 1.216 - .691 (X6) + .047(X4) + .122(X2)$$

where:

Y = The number of different kinds of actions taken in response to the proposed development

X6 = Location construct (measured as the distance of the respondent's house from the development)

X4 = Neighbors known construct

X2 = Non-SFR desirability construct

The final coefficient of determination value for the response equation was .239 with a standard error of estimate of 2.104. The first predictor variable to enter the equation, the location construct (X6), is negatively correlated with the predicted variable of the number of actions taken. This association indicates, as expected, that those respondents located closer to the proposed development took a greater number of actions in response to it while those at greater distances tended to take less action.

Table 18 shows the number of observations, means and standard deviations for the three significant predictor constructs classified into four categorical levels of response: no action, 1 to 2 actions, 3 to 4 actions and 5 or more actions taken. Examination of the means for the location variable (X6) across the four levels of response confirms the negative correlation between it and the predicted variable: those who live closer to the proposed development tend to take more actions (either in support or opposed to it, but in this case, probably in opposition) than those residing at greater distances. An unpaired t-test on the location variable means reveals significant differences exist between the location means for both the moderate response levels (3-4 actions taken) and high response levels (5 + actions taken) compared to the mean location of those who took no action.

Table 18. Mean and Standard Deviation Values of Significant Predictor Constructs

Predictor Construct (by Level of Action)	"N"	Mean	Standard Deviation
<u>Location (X6)</u>			
0 Actions	25	3.880	0.971
1-2 Actions	24	3.500	1.022
3-4 Actions	18	3.167	0.857
5 + Actions	16	3.062	1.237
<u>Neighbors known (X4)</u>			
0 Actions	25	15.920	15.903
1-2 Actions	24	13.500	12.411
3-4 Actions	18	14.944	15.513
5 + Actions	16	24.875	17.060
<u>Non-SFR desirability (X2)</u>			
0 Actions	25	19.600	5.788
1-2 Actions	24	22.833	3.841
3-4 Actions	18	22.556	5.742
5 + Actions	16	24.438	2.920

The other two significant predictor constructs, the neighbors known (X4) and the non-SFR desirability (X2), are positively correlated with the dependent response variable. This association for the neighbors known (X4) construct may be translated as those respondents who knew or were acquainted with more of their neighbors (conceptually, one aspect of tie-to-community dimension) tended to take a greater number of actions in response to the proposed development and vice versa. Data in Table 18 reveal that this same relationship exists in the mean number of neighbors known across each of the four categories of response. Significant differences in the mean number of neighbors known construct are found between the high-level response category and the low-level responders, *i.e.*, those taking 1-2 actions, as well as the group taking no action.

The positive correlation between the non-SFR desirability variable (X2), the last variable to enter the equation, and the dependent response variable may be interpreted as follows: those respondents who held a negative view of new non-single family residential development in the community (those with higher land-use expectations) similarly took a greater number of actions in response to the proposed development and vice versa. Significant differences in means for the non-SFR desirability construct across the four levels of response (Table 18) are again found between the highest-level responders (5 + actions) and those taking no action, but are also found at lower response levels, *viz.*, between the low-level response group (1-2 actions taken) and those who took no action.

Response Subgroup Models

Significant differences were expected between the aware versus not aware subgroups with regard to the dependent response variable. It will be recalled that a branching technique was employed in the second survey instrument, wherein those respondents that were aware of the development were asked what actions they had actually taken, while those who indicated that they were not aware of the development proposal

were presented details of the project and then asked what actions they were likely to take in response to it. Differences were expected between actual response and potential response, and specifically there was the expectation that the magnitude of response (number of actions) people claim they are likely to take would be exaggerated over the number of actions that they actually take. A t-test of these subgroup means, however, suggests that no significant differences are evident between the number of actions taken by either subgroup. In any event, a regression model for each subgroup was developed since the possibility existed that a comparable number of actions taken by each group could be explained by a different set of predictor constructs; in short, people may respond at comparable levels but for different reasons.

The stepwise regression modeling procedure for the aware group (N=52) yielded two significant variables that entered the regression equation: (1) location (X6) and, (2) non-SFR desirability (X2) (Table 19). Explanatory power declined slightly for this subgroup model when compared to the total group with a coefficient of determination of .254 and a standard error of 2.071. The two variables, location (X6) and non-SFR desirability (X2), that emerge in the aware subgroup model were also significant in the total group model; the neighbors known variable (X4), however, significant in the total group equation drops out in the aware subgroup model. Predictor constructs are correlated in the same direction (location negatively with the number of actions taken; non-SFR desirability variable positively) as was seen in the total group model.

A two-predictor-variable model, shown in Table 20, emerged for those who were not aware of the proposed development project (N=31). Predictor constructs that entered the equation were: (1) the neighbors known (X4) and, (2) the non-SFR desirability (X2). Coefficient of determination for this subgroup was .311 with a standard error of 2.079. The equation for this subgroup also includes the two variables that entered the total group model: the neighbors known construct (X4), and the non-SFR desirability variable (X2).

Table 19. Stepwise Regression of Predictor Constructs on Response to the Proposed Development for Aware Subgroup (N=52)

Independent Variables	Coefficient	Std. Error of Coefficient	Cumulative R	R ²	F-to-Enter
(Y-Intercept: 1.958)					
X6 Location	-.799	.254	.437	.191	11.778
X2 Non-SFR desir.	0.130	.064	.504	.254	4.129
<u>Variables not in the equation</u>					
X1 Activist					1.971
X3 Change in satisfaction					2.278
X4 Neighbors known					2.462
X5 Years in community					0.909
X7 Voting behavior					3.003
X8 Homeowners member					0.262

Table 20. Stepwise Regression of Predictor Constructs on Response to the Proposed Development for Not Aware Subgroup (N=31)

Independent Variables	Coefficient	Std. Error of Coefficient	Cumulative R	R2	F-to-Enter
(Y-Intercept: -1.867)					
X4 Neighbors known	.081	.025	.451	.203	7.401
X2 Non-SFR desir.	.144	.068	.558	.311	4.397
<u>Variables not in the equation</u>					
X1 Activist					2.863
X3 Change in satisfaction					.908
X5 Years in community					.010
X6 Location					.047
X7 Voting behavior					3.720
X8 Homeowners member					.968

Both constructs enter the equation in the same order as the total group model, and both are positively correlated with the predicted variable. Conspicuously absent in this model, however, is the location construct (X6) which played a key role in both the total group and aware subgroup models.

Notwithstanding these differences, there is (as might be expected) a basic structural consistency between the response subgroup models and the total group model. No new predictor constructs appear in any of the three equations and the order in which variables enter the subgroup models is retained from the total group sequence.

Other Study Results

Opportunity to Air Views

A second series of analyses were undertaken to examine the effect of sense of control and respondents' opportunity to air their views on perception and response to land-use change. Based on previous survey work by Zube and Sell (1986), respondents in the follow-up survey were asked to rate the opportunity they had in expressing their views concerning the proposed development. This variable was handled outside the eight main predictor constructs since, by its very nature, only the aware subgroup could effectively respond to it, and then only in the second follow-up survey; it could not be included with the set of "pre-cognition" predictor constructs.

The opportunity-to-express-views variable, which relates to the element of control as discussed by Wolpert *et al.* (1972) and Zube and Sell (1986), was measured using a four-option scale with response categories including: (1) "a great deal of opportunity", (2) "some opportunity", (3) "only a limited opportunity" and, (4) "no opportunity at all". In view of Winkel's (1981) findings, this variable was not expected to figure as a prominent predictor in either the perception or response models, and indeed, when it was included with the eight other predictor constructs, it did not emerge as significant in either

of the equations. The variable did not significantly increase explanatory power in the perception model (N=52) with an F-to-enter value of .379, well below the minimum F-to-enter threshold of 4.0. Examination of the mean desirability level when grouped by opportunity categories is shown in Table 21. A test of means between each of the category means confirmed the observation that no direct systematic relationships exists, that is, no significant differences were evident between any of the opportunity categories.

Neither did the opportunity-to-express-views variable figure significantly in the response model. When included with the eight main predictor constructs, the variable opportunity to express views was not significant, with an F-to-enter value of .988. Table 22 shows the mean number of actions taken at each of the aforementioned levels of opportunity. As with the desirability model, a t-test of the mean number of actions taken by opportunity category revealed no significant differences in the number of actions taken for any of the categories.

Professed Willingness to Act and Actual Response

The number of actions respondents indicated they would be willing to take in the event of a new non-SFR development in the community (their willingness to act) was found to be substantially inflated over the number of actions they actually took in response to such a proposed development. A comparison of these differences lends insight generally into the kinds of actions typically taken, the likelihood that any one action will in fact be taken, and provides documentation concerning the propensity to inflate the level of professed response over an actual response.

Respondents were presented with the same set of actions in both surveys, thereby permitting the comparison of professed versus actual response. Certain circumstances limit this comparison, however, since the proposed change had not yet gained official approval and there would still have been opportunities to respond to the change. On the other hand,

Table 21. Mean Desirability Level by Opportunity Category

Level of Opportunity	"N"	Mean Level of Desirability	Standard Deviation
"A great deal of opportunity"	13	4.769	1.739
"Some opportunity"	16	4.312	1.352
"Only a limited opportunity"	14	4.357	0.372
"No opportunity"	6	4.333	1.528

Table 22. Mean Number of Actions by Opportunity Category

Level of Opportunity	"N"	Mean # of Actions Taken	Standard Deviation
"A great deal of opportunity"	13	2.769	2.522
"Some opportunity"	16	1.812	2.228
"Only a limited opportunity"	14	2.857	2.627
"No opportunity"	6	1.167	1.472

it can be argued that the level of activism and publicity arising from the project, coupled with the intervening period of some six months between surveys would have provided the impetuous and adequate opportunity for response from those electing to do so.

Analysis of the magnitude of professed willingness to respond versus respondents' actual response reveals a distinct association. For this analysis, the number of actions, both professed and actual, were grouped into four principal categories: (1) No Action, (2) one to two actions, (3) three to four actions and, (4) five or more actions. Table 23 presents the observed frequency table for professed willingness to act versus actual response. A chi-square analysis reveals that there is an association between professed and actual response.

Table 24 shows the series of possible actions presented in both survey instruments and the percent of respondents (N=52) in each of four categories: those indicating they would be willing to take the action and actually did (Yes/Did), those who said they would take an action but had not done so (Yes/Didn't), those who indicated they would not take an action but did (No/Did), and those who said they would not take an action and in fact did not (No/Didn't). The list of actions shown in Table 24 is ordered according to what might be termed a "truth" hierarchy, where actions at the top of the list are those with the highest percentage of respondents who said they would take an action and who actually did (Yes/Did).

The most evident feature of these data is the inflation of professed levels of response over actual level of response. This inflation is manifested in both the "Yes/Did" column, (where the highest percentage value does not exceed 60 percent) or, as well, the "Yes/Didn't" column, where many actions have greater than 50 percent of the respondents indicating that they would take the action but who in fact had not. The kinds of actions with the highest "truth" quotient (the "Yes/Did" column) were: (1) got more information (2) enlist neighbors, and (3) called a public official. Those actions exhibiting the highest

Table 23. Chi-Square Contingency Analysis: Professed Willingness to Respond and Actual Response

		Professed Willingness to Respond				<u>Row Totals</u>
		<u>No Action</u>	<u>1-2 Actions</u>	<u>3-4 Actions</u>	<u>5+ Actions</u>	
Actual Response	No Action	1	4	4	16	25
	1-2 Actions	0	0	9	15	24
	3-4 Actions	0	0	2	16	18
	5+ Actions	<u>0</u>	<u>0</u>	<u>0</u>	<u>16</u>	<u>16</u>
Column Totals:		1	4	15	63	83

 Chi-square: 22.705

df = 9

p = .0069

Table 24. Professed Willingness to Respond and Actual Response

Response *	Yes/Did (percent)	Yes/Didn't (percent)	No/Did (percent)	No/Didn't (percent)
Got Information	54	36	4	6
Called Official	29	48	2	21
Enlisted Neighbors	29	56	0	15
Attended Hearing	27	65	0	8
Signed Petition	25	67	2	6
Wrote Letter	17	70	0	13
Donated Money	6	61	2	31
Other Action	6	17	14	63
Called Developer	2	34	4	60

 * Rows (combinations of hypothetical and actual response) sum to 100 percent

"false positive" values (the "Yes/Didn't column) were: (1) wrote a letter, (2) signed a petition and, (3) attended a hearing. Finally, several kinds of actions that were not often taken are seen in the "No/Didn't" category. They include: (1) took "other" action, (2) called developer and, (3) donated money.

CHAPTER 5

CONCLUSIONS AND STUDY IMPLICATIONS

Results reported in the preceding chapter reveal the complex and intricate web of factors that affect perception and response to land-use change. The intent of this chapter is fourfold. Study findings are first interpreted using the six main research hypotheses to structure this discussion. Results (and their interpretation) provide an empirical basis for formulating a series of policy recommendations, and these recommendations follow the interpretive discussion. Although the linear regression equations developed in Chapter 4 are themselves basic structural models of perception and response, a greater level of abstraction is contemplated in this chapter borrowing from the early sociological paradigm of analytical induction. The chapter concludes with some prospects and directions for further research under the rubric of environmental change.

Interpretation of Results

Location Hypothesis

Impacts stemming from a change in land use, whether real or perceived, are likely to be experienced most directly by those located closest to the proposed change. Increased traffic and the incumbent noise and pollution, visual incompatibilities, declining property values and other perceived negative externalities are often relatively localized. Thus, a fairly sharp distance decay function was anticipated in this study between the location variable and the independent desirability and response variables.

While the findings of the response model clearly supported the expected relationship, results from the perception model were less clear. In the response model, the location variable and the number of actions taken by respondents were negatively correlated, meaning that those located closer to the development site had taken more actions

in response to it than those located at greater distances and vice versa.

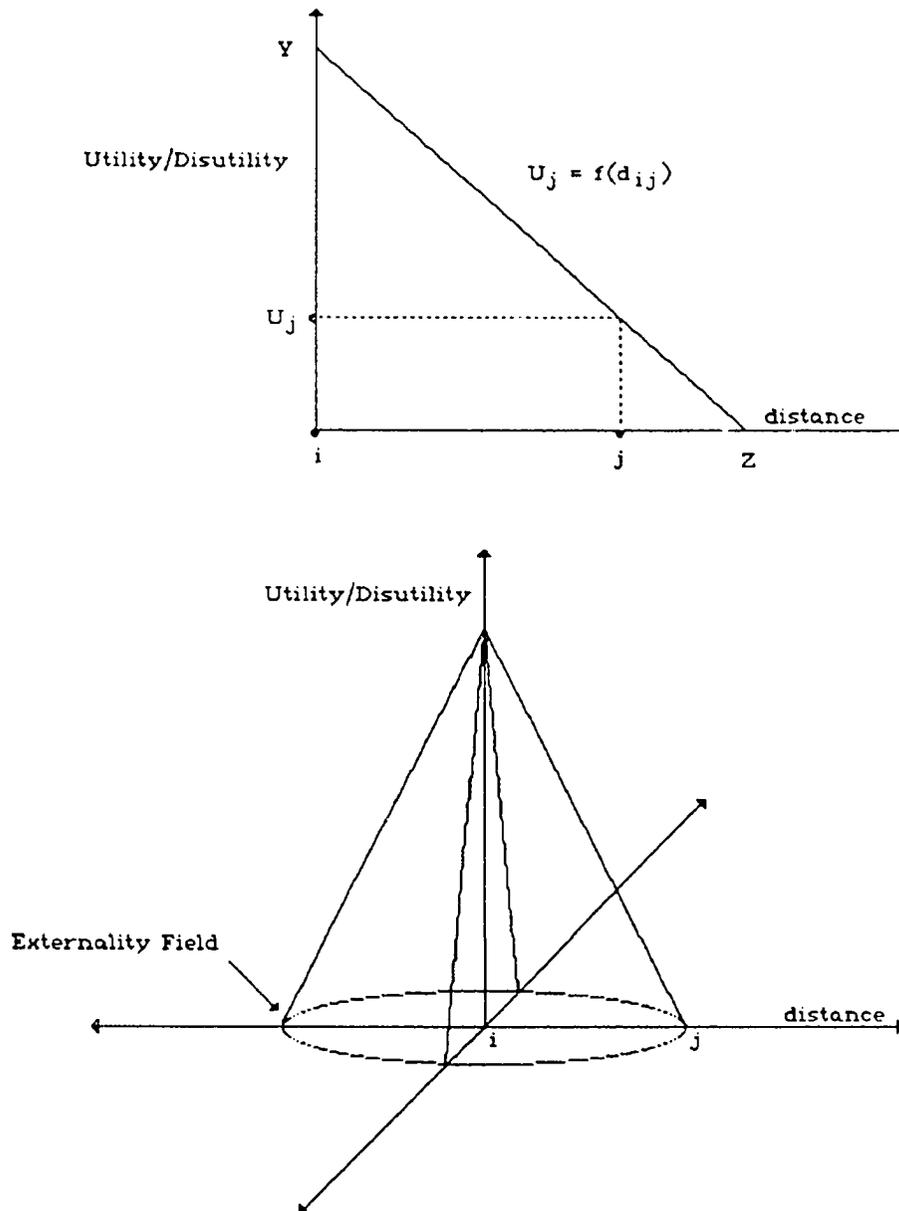
Although the location variable did not enter the stepwise equation in the perception model, mapping the desirability variable revealed that individuals located closest to the development regarded it exclusively in undesirable terms. In addition, the distribution of desirability responses was noticeably skewed toward the negative end of the continuum: "highly desirable" ratings of the proposed change were rare, irrespective of location. The distance-decay function, then, appears to more closely approximate a threshold concept: perceptions were widely variable at greater distances but at a distance threshold of approximately 1/4 mile, residents hold only negative views concerning proposed change.

Levels of utility or disutility emanating from the externalities from new land uses have been nicely modeled by both Harvey (1971; 1973) and Smith (1977). Harvey's notion of an externality field, as well as Smith's development of an externality cone (the three dimensional adaptation of Harvey's externality field) is shown in Figure 7. Rather than a smooth linear utility/disutility function suggested by these conceptualizations, the findings of this study suggest a land-use externality relationship that seems to more closely approximate a bell or "sombbrero" shape as shown in Figure 8. The "externality sombrero" reflects the observation that little in the way of perceived utility/disutility is seen at distances greater than 1 mile. Then, a heightened externality effect is in evidence at a 1 mile radius from the proposed development, followed by a relatively flat (but gradually increasing) externality effect until a distance threshold of approximately 1/4 mile. At the 1/4 mile juncture, a sharp jump in utility/disutility is seen and the high level of externality effect continues to the point of adjacency.

Tie-to-Community Hypothesis

Tie to community proved to be a significant factor in this study and, as anticipated, the stronger the tie to one's community, the more the proposed development

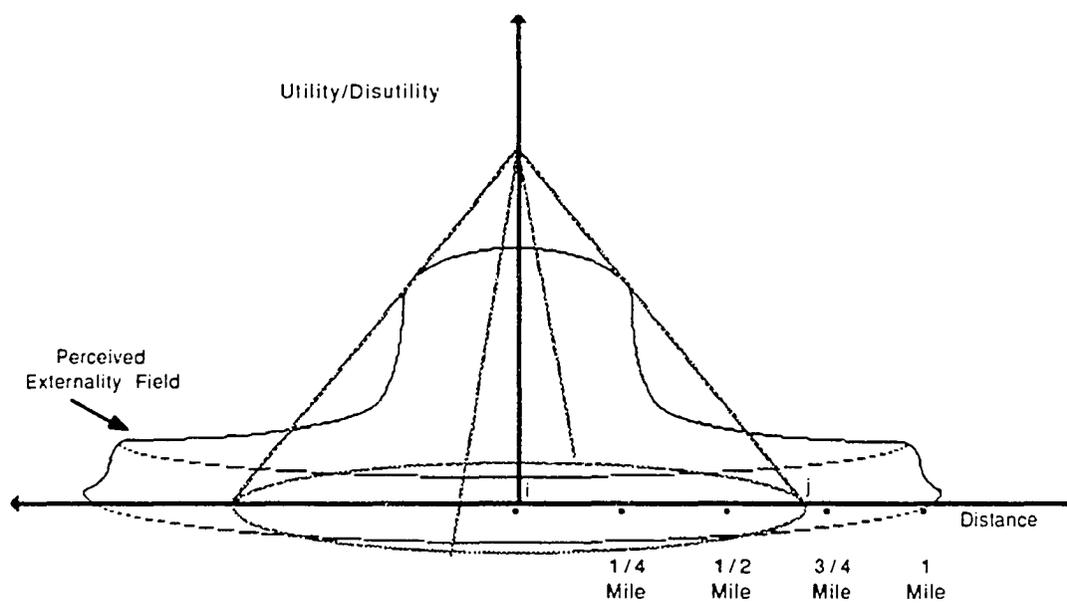
Figure 7. Smith-Harvey Externality Field and Three Dimensional Externality Cone



Adapted from:

David M. Smith (1977) Human Geography: A Welfare Approach
 London: Edward Arnold Publishers Ltd.

Figure 8. Threshold Effect Externality Sombrero and Smith-Harvey Externality Cone



was viewed in negative terms. Tie to community also affected response, with closer ties producing greater number of actions taken in regard to the proposed change.

It should be noted, however, that the broader tie-to-community construct was originally conceived of as comprising two main variables: (1) the length of residence in the community and, (2) the number of neighbors respondents knew well and the number with whom they were acquainted. The results of the factor analytical procedures, however, did not suggest a single, coherent dimension and thus each variable was included separately. Just one of these elements, the neighbors known construct, was found to be significant in this study. Those with closer ties to their community in terms of the network of neighbors known were more likely to take action in response to the proposed development.

There are a number of plausible dynamics that may underlie this association. First, those individuals who know a greater number of neighbors are more likely to be exposed to information about the proposed development. Similarly, the more neighbors one knows the more likely it is that one of those friends or acquaintances would be located closer to the site of the proposed development, and hence those outside of an area of immediate impact may learn of the latter's concerns. There may be a dynamic of "shared concerns" between neighbors wherein, because of their friendship, the concerns of one become the concerns of the other. Thus, a network of informal relationships with one's neighbors may be one of the main avenues by which people are exposed to, and learn of, their neighbors' beliefs and behaviors. This network may also play a role in sanctioning more radical views, and converting others to a more polarized point of view and a more strident response (Sell *et al.* 1988). Individuals otherwise not predisposed may be pressed into action, either from the forces of social approval, a sense of obligation or even overt coercion.

Activist Hypothesis

The findings of this study produced mixed results regarding expectations of the activist construct. This construct was originally conceived as a two-tiered factor, one tier tapping community-level activism and the other a more general predisposition toward activism. It was expected that a greater degree of activism, both at a community level and at a broader scale of resolution, would produce more polarized views of the proposed development (mostly negative) and increased potential for actual response. None of the items associated with the general activism component, however, was found to increase the explanatory power of either model. This finding was not entirely unexpected since land-use issues are typically handled at a local level, and thus propensity toward community-based activism was expected to be of greater significance.

Community activism factors, on the other hand, were found to be significant in this study. In particular, membership in the Paradise Valley homeowners association was found to affect the manner in which residents view the proposed change. Members of the homeowners association tended to view the proposed change in significantly more undesirable terms than did non-members. A number of reasons may be advanced to help explain this association. First, there may be an element of peer sanction or approval similar to that suspected in more informal neighborhood networks. As with more informal neighborhood linkages, the neighborhood association may well serve as a forum for airing views, and for garnering group support and approval for various ideas and positions.

It is interesting to note that while community activism variables play a role in the perception model, they do not significantly affect individual response to change. This may be because membership in the homeowners association itself is viewed as a vicarious response to the proposed change, that is, certain members may believe that their membership replaces the need for immediate response; the organization itself represents their views and thus serves as a vehicle for responding to change.

Results that dealt separately with the respondents' professed willingness to respond compared with their actual response are also significant here. It was noted that those who indicated that they were not likely to take action universally did not respond after learning of the development project. Levels of actual response for those individuals who indicated they were likely to take some action were more variable; some took a great many actions, others took only a few. In view of these results, professed willingness to respond may be viewed as a necessary, but not fully sufficient, condition to precipitate response to change.

Expectation-Frustration Hypothesis

Results of this study provide a good deal of evidence to support the expectation-frustration hypothesis. It was posited that those with higher expectations were more likely to be frustrated with unsatisfactory outcomes, and thus were expected to hold more negative views and take more actions in response to the newly-introduced change. In this study, the expectation component was measured in terms of perceived desirability of differing types of prospective land uses. Negative perceptions of the proposed development and propensity to respond to it were in turn conceived as manifestations of the frustration component of the hypothesis.

The expectation variable indeed proved to be a significant predictor construct in both the perception and response models. In the former, individuals exhibiting higher expectations tended to view the proposed development in more negative terms, and in the latter, high land-use expectations corresponded to a heightened response to the proposed change.

It should be noted here that the expectation-frustration hypothesis may very likely be associated with other conceptual issues developed in this study, and particularly hypotheses concerning a perceived sense of threat and sense of control. It will be recalled

that expectations were not violated in the strictest sense, but rather only threatened. While a threat alone may be adequate to evoke a negative view and response to changes, it does not strictly represent a bona fide transgression against held expectations. While disaggregating these issues makes it at least potentially easier to grasp their role vis-a-vis perception and response, it is essential to keep in mind that they are, in all likelihood, closely associated concepts.

Sense of Threat-Acclimatization Hypothesis

The sense of threat-acclimatization factor represents another dimension which, in addition to relationships with other key constructs, is itself a composite dimension. The two elements of this hypothesis were grouped together because they were viewed as conceptually analogous, and because both were expected to produce comparable effects in both the perception and response models.

The sense of threat-acclimatization hypothesis posited that less polarized views and a diminished response could be expected over time, once more information about the change was transmitted and, likewise, as residents became more accustomed to the change event. The hypothesis was articulated only at a very general level since it was tested only peripherally in this study.

Data on the professed willingness to respond appears to support the hypothesis. Respondents in the first survey were presented with a simple one-or-two word description of types of development (*e.g.*, office complex and shopping mall), containing no detail regarding coverage, density, architectural design, landscaping and so forth. These descriptions may be viewed as representing an indistinct and rather nebulous change. Descriptions of the actual proposed development, on the other hand, were reasonably detailed with information provided on the number of stories, design elements, elements of parking landscaping and so forth (See Appendix B). Residents' desirability assessments

and their professed willingness to respond to the nebulous and general development proposal were significantly different from the same evaluation of a detailed and specific proposal for a new non-single family use. The trends toward moderated views and fewer actual actions than originally professed suggests that the advent of more information about a proposed change produces a less threatening and more tenable situation. In short, when confronted with an unspecified change, residents are more likely to feel threatened and in turn respond more vehemently. Presentation of more detailed changes, however, appears to produce a less threatening situation and in turn evoke more positive perceptions and fewer responses aimed at effecting a different outcome.

Whether a process of acclimatization takes place, that is, whether affected residents simply become accustomed to a change event over time was not directly evaluated in this study. Indeed, a distinction between this process and the sense-of-threat issue may well be one of semantics. In any event, it is noted here since if it is an independent factor, it is likely to produce a synergistic effect to that of the sense-of-threat construct. More work is clearly needed to determine whether an acclimatization dimension is functionally different from the sense-of-threat issue or whether they are simply semantic variations of a single dimension of change.

Opportunity to Express Views-Sense of Control Hypothesis

Respondents' opportunity to air views and their perceived sense of control is another multifaceted dimension that may be related to several of the aforementioned hypotheses. It is likely, for example, that sense of control and sense of threat would be negatively correlated, that is, as residents' perceived sense of control over a proposed change increases, their sense of threat from it would likely diminish. Similarly, whether frustration is solely the result of violated expectations or whether loss of control and greater perceived threat would produce comparable levels of frustration remains to be seen.

In this study, the sense-of-control issue was operationalized as residents' opportunity to air their views about the proposed change. Although sense of control could arguably be manifested in many other ways, the opportunity to express one's opinion is clearly one important measure of control. Opportunities to express one's point of view are indeed held in high regard in this country and viewed as an inalienable right. Moreover, public opinion, the collective expression of views, is certainly one of the fundamental forces shaping the public policy and decision making process.

Inclusion of the opportunity-to-air-views variable did not significantly add to the explanatory power of either the perception or response model. Although this might not be expected in light of the argument of interrelatedness advanced above, the strong sense of control common to elite individuals may come into play here. As Winkel (1981) and others have noted, economic elites are often accustomed to allocating their ample resources to effect desired outcomes. Thus, the sense-of-control issue, which otherwise might well be expected to affect resident perceptions and responses, does not factor in significantly in this case study. A more in-depth analysis of this issue is warranted; additional measures of sense of control need to be developed and applied in communities with greater socioeconomic variability, to fully evaluate any possible effect.

Policy Implications

Results with perhaps the most direct implication for formulating land-use policy are those dealing with the location variable. In particular, findings for the location variable underscore the rationale for notification procedures that are already commonly required in rezoning cases or other major property and building modifications. Results from both the perception and response models suggest that some vehicle should be implemented to ensure notification of all residents within 1/4 mile radius of an impending change. Although there clearly are cost trade-offs with an extended notification policy, this study

suggests that those individuals within the 1/4 mile distance are those who at least believe that they will be potentially affected by the proposed change and thus some procedure for notifying them is clearly advisable.

It should be noted here that the need for notification is probably very much dependent on such circumstances as the existing mix of land uses and densities, scale of the proposed change and so forth. Thus, the 1/4 mile recommendation is probably most appropriate in contexts when new land uses are proposed in existing residential communities. Other change contexts such as central business districts or areas of clearly mixed use may call for other, and presumably less stringent, notification requirements.

Several policy recommendations are suggested by the issues of sense of threat and perceived sense of control over community change. A heightened sense of threat (or perhaps conversely, a lack of control) emanating from fear of an unclear or poorly-articulated change speaks to the need for providing detailed and specific information concerning the proposed change. More generally, maintaining better lines of communication between all stakeholders appears to be an essential element in the development process. Accordingly, land-use regulations should be implemented that stipulate a rezoning pre-application conference wherein the developer would lay out in specific terms the details of the planned development, even though these are subject to change. Likewise, the formal application process should include provisions mandating the developer to submit specific details of the proposal to include expected densities, mix of uses, and so forth. In addition, an assessment of the potential impacts on neighborhood traffic patterns, levels of pollution and noise, and the effects on residential property values (among other possible impacts) should be required. Evidence from this study suggests that these regulations would also likely benefit the developer since better information tends to minimize the sense of perceived threat and, in turn, reduce the potential for negative perceptions and corrective responses. Outside of any formal requirements, it would appear

to be in the interest of developers to make available to potentially impacted residents detailed information about the proposed development. Such efforts by the developer are likely to foster a greater sense of involvement and control in the community and thereby minimize potential negative reactions.

Contact with the neighborhood homeowners association is also recommended if the developer wishes to garner support of the project. It will be recalled that significant in the perception model was the variable of membership in the homeowners association. Although contact with such organizations does not necessarily guarantee their support, they clearly serve an important role in formulating community opinions, and should be included in the expanded communication efforts.

Provision of meaningful public input has long been recognized as an essential element in any planning process and, land-use change as a microcosm of that process, should likewise provide ample opportunities for individuals to express their views. Although the opportunity-to-air-views variable did not emerge as significant in this study, circumstances specific to the case study may have affected this result, and thus policies ensuring adequate citizen input probably remain fundamental to the planning process.

Findings related to awareness of the proposed change suggest another policy recommendation, albeit one that may be self-evident. On the whole, the awareness variable did not produce marked effects in either the perception or response models; structural similarities were evident between the total group iterations and the aware and not-aware subgroup models. This finding suggests that the tight-lipped approach adopted by many developers is probably counterproductive and that sharing information about a prospective development will likely result in greater benefit than withholding such information.

Another policy implication stems from findings related to the land-use expectation variable. Prospects for an unencumbered development process where high land-use expectations prevail are, on the whole, probably rather slim. Clearly, considerably more

effort will be required by developers who initiate land-use changes in areas characterized by high land-use expectations. A knowledge of a community's zoning history and other land-use regulations, and residents' sentiments toward new development will permit the developer to make allowances and contingency plans in the likely event of complications in the development process.

Toward a Conceptual Framework of Land-Use Change

The incipient nature of research on this subject mandates caution in any attempt at broad nomothetic or conceptual formulation. Preliminary conceptual models of environmental change developed by Zube and Sell (1986) and others (Aitken 1988; Sell *et al.* 1988) have been very useful in enumerating the various personal, situational and mediating factors that may affect views and responses to such transitions. Little in the way of empirical evidence, however, has been gathered to identify which of these model's components are the best predictors, nor has much attention been given the manner in which various elements of the model affect one another. The composite perception and response model advanced by Zube and Sell (1986) and others was disaggregated in this study with the intention of developing linear estimation models to reveal those factors which are the best predictors of each separate component. The findings of this study support the separate treatment of the perception and response components; a different set of predictive constructs emerged for each of these components of the composite model.

While the linear regression models presented in the preceding chapter give a level of specificity and richness helpful in explicating the full dimensionality of change dynamics, it is tempting to try to formulate a more generalized and abstract conceptual framework. Generalization beyond the operational correlates in these two exploratory models is also prompted by observed dynamics of the location variable in the perception

model, and in the variable of the professed willingness to respond in the response model. In each case, association with the dependent variable did not appear to approximate a linear relationship, but rather was best characterized as a threshold function. For instance, respondents' perceptions of the proposed change were widely variable at more distant locations but, at a threshold of approximately 1/4 mile, only negative perceptions were encountered. Likewise, no response was taken to the proposed Pensus development by respondents unless they had expressed a prior willingness to respond, or in other words, only when they had reached a certain hypothetical response threshold.

The notion that reaching a particular threshold will trigger specific types of attitudes or behavioral responses suggests parallels to a method of inquiry known as analytical (and enumerative) induction (Znaniecki 1934). The analytical inductive method, used mostly by sociologists over the past five or six decades, centers on identifying a set of necessary and sufficient conditions that precede or effect certain types of behaviors. The method seeks to identify a universal relationship or "practical certainty" of conditions as a means of explicating the phenomena under investigation.

Work by Cressey (1953), focused on identifying the necessary conditions that precede the act of embezzlement is illustrative of a classic analytical induction study. Through a series of personal interviews with convicted embezzlers, Cressey found that the act of embezzlement (defined as the crimin.¹ violation of financial trust), was preceded by a set of three general conditions. They were: (1) existence of a non-shareable financial problem (*e.g.*, a gambling debt or an expensive vice), (2) awareness that the problem could be secretly solved by a violation of the financial trust and, (3) a process of pre-theft rationalization that separated the embezzlers' transgressive behavior from the reality of their position of fiduciary trust. The three conditions were "necessary" for embezzlement to occur and existence of the three conditions was viewed as "sufficient" to cause a violation of the position of trust.

A number of criticisms have been leveled at this method, all with some degree of legitimacy. First, the method by its very nature is tautological; explanation proceeds by enumerating and describing the ingredients or characteristics of the phenomenon it is attempting to explain. A second criticism is that the approach is inefficient, inflexible and overly deterministic. In classical analytical induction, existence of the "necessary conditions" must yield the behavior under examination, and discovery of a single contrary example mandates revision of the entire conceptual framework. In spite of these criticisms, the method has produced useful theoretical explanations and, at a minimum, the method is useful in building a general framework from which to derive a series of testable hypotheses (Znaniecki 1934).

Although the present study was not conceptualized or designed as an analytical or enumerative induction study, the general framework of the method or, at minimum, its argot of "necessary and sufficient" conditions, is useful in formulating a broad conceptual framework of perception and response to land-use change. With regard to the response model, it appears that a certain threshold in any one of the three predictor constructs, individually, may be a sufficient condition to trigger response. In the response model, the requisite conditions were propinquity, and the land-use expectation and tie-to-community parameters. Failure to reach individual predictor thresholds, however, does not necessarily preclude response; an adequate threshold may also be obtained through different combinations of the three predictor constructs.

Examination of correlates identified in the response model serve to illustrate the mechanics and structure of this framework. The proximity threshold in the response model operated as follows: residents situated adjacent to the proposed development responded to it even though they do not know many of their neighbors (an element of the tie-to-community construct) and had relatively low land-use expectations. Thus, in this case propinquity alone is a sufficient condition for response. The composite threshold

dynamic in regard to individual response could take several forms. For instance, individuals located at some distance from the proposed development were seen to respond, presumably in view of their average level of land-use expectation and their moderate connections with a network of neighbors. Thus, in the absence of sufficient conditions for any one variable, response could still be generated by a threshold of collective moderate-level conditions.

The response threshold model outlined above is one example of how the basic framework of necessary and sufficient conditions can be developed; an analogous framework could likewise be applied to correlates of the perception model. The approach is useful insofar as it effectively summarizes the basic relationships observed in this study and provides a convenient and accessible framework for conceptualizing the dynamics affecting perceptions and responses to environmental change.

Prospects for Further Research

This exploratory study represents an initial attempt to lend added insight into the complex dimensions underlying perception of, and response to, urban land-use change. The case study approach proved useful in the preliminary identification of key factors which may affect perception and response to change, and was especially propitious for evaluating the role that certain pre-cognition dispositions and attitudes play in this process. A full understanding of the many interrelations of factors underlying the phenomenon, however, will require much additional work. While we may not have illuminated the full dimension of this research, we should not be censorious of these inauspicious beginnings. To insist on methodological and conceptual perfection in beginnings of exploratory research is, as Sudman (1976) notes, "to misunderstand how knowledge grows. Where no searchlight is available, it is better to light a candle than to curse the darkness" (Sudman 1976 p. 23).

Use of a case study approach, and one focusing on an elite community, raises questions of whether the identified predictive constructs will be equally important and applicable in other communities. Nonetheless, there is no obvious reason to suspect that the predictive constructs developed in this study are factors exclusive to elite communities: location, tie to community and land-use expectation are factors not likely to be class-, race-, or culture-specific. Replication of this study in communities with differing socioeconomic characteristics, however, is ultimately needed for the sake of completeness and to ensure wider generalization. Expansion of this investigation (or comparable studies) to other cultural contexts is also needed if we are to fully understand these dynamics in minority neighborhoods in this country, or in developing communities outside of a North American context.

Exigencies related to completing this research in a timely manner mandated a much more abbreviated temporal perspective than was originally contemplated. Additional longitudinally-based studies would thus be a welcome addition, and indeed, later stages in the development process in Paradise Valley are eagerly awaited for such study. Several specific opportunities predicated on this baseline research come to mind. For example, it would be desirable to evaluate perceptions and responses at several future stages in the development process including: (1) once official approval has been granted, (2) after construction is completed and, (3) after full occupancy of the development, perhaps at a point several years hence when the impacts and effects of the land-use change have been fully absorbed and synthesized by the community.

The manner in which people perceive and respond to urban change is, of necessity, a complex and involved process. While this area of research is still very much in its incipient stages, there is ample motivation for arriving at a better understanding of this phenomenon. Perhaps foremost are the practical benefits which accrue from an orderly and non-confrontational process of land development. It is hoped that this study has

provided some added insight into this process, and that the methodological approach and conceptual framework developed in this study will aid in structuring future efforts. Most importantly, it is hoped that the ideas here will generate sufficient interest to spur others in an effort to gain a better understanding this complex and consequential problem.

APPENDIX A

PARADISE VALLEY

LAND DEVELOPMENT QUESTIONNAIRE

The Roy P. Drachman Institute at the University of Arizona in Tucson is currently conducting a research project looking at different attitudes toward new growth and land development in Paradise Valley. As part of the project, we're asking Paradise Valley residents to share their views on development issues in the community. All information will be held in the strictest of confidence and will be used only for research purposes. Please have either the male or female head of household take a few minutes to complete the questionnaire and return it to us in the postage paid envelope. Your help is very much appreciated!

1. How many years have you lived in Paradise Valley ? _____ YEARS

2. How many years have you lived in your present residence ? _____ YEARS

3. What was the most important reason for your first moving to Paradise Valley ?

4. Were there any other reasons for first moving to the community ?

5. How would you rate your overall satisfaction with Paradise Valley when you first moved there ?

1. VERY SATISFIED _____
2. SATISFIED _____
3. SOMEWHAT SATISFIED _____
4. SOMEWHAT DISSATISFIED _____
5. DISSATISFIED _____
6. VERY DISSATISFIED _____

6. How would you rate your overall satisfaction with Paradise Valley at the **present** time ?

1. VERY SATISFIED _____
2. SATISFIED _____
3. SOMEWHAT SATISFIED _____
4. SOMEWHAT DISSATISFIED _____
5. DISSATISFIED _____
6. VERY DISSATISFIED _____

If there is a 2 point difference or more between your level of satisfaction in questions # 5 and # 6 please go on to question # 7, if not skip to question # 8.

7. What are the main reasons for the difference in your satisfaction with Paradise Valley between then and now ?

8. What you think of as the edges or boundaries of your own neighborhood within Paradise Valley ?

What do you consider to be the **northern** boundary ? _____

What do you consider to be the **southern** boundary ? _____

What do you consider to be the **eastern** boundary ? _____

What do you consider to be **western** boundary ? _____

9. Generally speaking, would you like to see Paradise Valley (Check one of the following):

- PERMIT MANY DIFFERENT TYPES OF NEW LAND DEVELOPMENT IN THE COMMUNITY
- PERMIT ONLY CERTAIN TYPES OF DEVELOPMENT
- PERMIT NO NEW DEVELOPMENT IN THE COMMUNITY

10. At some point in the future, proposals to develop vacant land in Paradise Valley are likely to arise. Suppose that a developer wanted to develop a major parcel of land in or very near your neighborhood. Please consider the following list of possible types of development, and then circle the number corresponding to your opinion of the overall desirability of that type of development in your neighborhood.

You would consider an **office complex** development to be ?

- HIGHLY DESIRABLE
- DESIRABLE
- SOMEWHAT DESIRABLE
- SOMEWHAT UNDESIRABLE
- UNDESIRABLE
- HIGHLY UNDESIRABLE
- DON'T CARE

A hotel or resort complex ?

- HIGHLY DESIRABLE
- DESIRABLE
- SOMEWHAT DESIRABLE
- SOMEWHAT UNDESIRABLE
- UNDESIRABLE
- HIGHLY UNDESIRABLE
- DON'T CARE

Single family homes ?

- HIGHLY DESIRABLE
- DESIRABLE
- SOMEWHAT DESIRABLE
- SOMEWHAT UNDESIRABLE
- UNDESIRABLE
- HIGHLY UNDESIRABLE
- DON'T CARE

A group of a few small boutique stores ?

- HIGHLY DESIRABLE
- DESIRABLE
- SOMEWHAT DESIRABLE
- SOMEWHAT UNDESIRABLE
- UNDESIRABLE
- HIGHLY UNDESIRABLE
- DON'T CARE

A large **commercial shopping mall** ?

- HIGHLY DESIRABLE
- DESIRABLE
- SOMEWHAT DESIRABLE
- SOMEWHAT UNDESIRABLE
- UNDESIRABLE
- HIGHLY UNDESIRABLE
- DON'T CARE

11. Listed below is a series of possible actions someone might take in the event any of these development proposals did arise. Please read through the list of actions and then place a check mark next to those actions you would be likely to take if development proposals did arise in or near your neighborhood.

- TRY TO GET MORE INFORMATION
- ATTEND A PUBLIC HEARING
- CALL OR VISIT A PUBLIC OFFICIAL
- CALL OR VISIT THE DEVELOPER
- SIGN A PETITION EITHER FOR OR AGAINST THE PROPOSAL
- WRITE A LETTER TO A PUBLIC OFFICIAL OR AGENCY SUCH AS THE PLANNING DEPARTMENT
- ACTIVELY ENCOURAGE YOUR NEIGHBORS TO EITHER SUPPORT OR OPPOSE THE DEVELOPMENT
- DONATE MONEY TO EITHER OPPOSE OR SUPPORT THE DEVELOPMENT
- TAKE NO ACTION
- TAKE OTHER ACTION (PLEASE SPECIFY) _____

12. How effective do you think any of the actions you might take would be in influencing the final decision about a development proposal ? Do you think your actions would be:

- VERY EFFECTIVE
 SOMEWHAT EFFECTIVE
 NOT VERY EFFECTIVE
 NOT AT ALL EFFECTIVE

13. Are you aware of any actual new land development proposals in Paradise Valley ?

- YES (If "YES" please specify below)
 NO (If you checked "No" please skip to question # 15.)

If YES, which are they ? _____

14. What do you think will be the most important positive or negative effects on you and your neighborhood from this specific development ?

POSITIVE : _____

NEGATIVE: _____

15. On the average, how often do you participate in community or civic affairs in your area ?

- ALMOST EVERY DAY
 ONCE OR TWICE A WEEK
 ABOUT ONCE A MONTH
 SEVERAL TIMES A YEAR
 ABOUT ONCE A YEAR
 NEVER

16. On the average, how often you get together socially with any of your neighbors ?

- ALMOST EVERY DAY (OR EVENING)
- ONCE OR TWICE A WEEK
- ABOUT ONCE A MONTH
- SEVERAL TIMES A YEAR
- ABOUT ONCE A YEAR
- ALMOST NEVER

17. How many of your neighbors would you say you know well and how many would you say you were acquainted with ?

_____ NUMBER KNOWN WELL

_____ NUMBER ACQUAINTED WITH

18. Are you aware of whether there is a home owner's association in your area ?

- YES
- NO (If "No" please skip to question # 20)

19. Are you a member of that organization ?

- YES
- NO

20. Did you vote in the last **City** election ?

- YES
- NO

21. Did you vote in the last **State** election ?

YES

NO

22. Did you vote in the last **Federal** election ?

YES

NO

23. On the average, how often would you say you attend meetings of the Paradise Valley city council or planning and zoning commission ?

NEVER

1 OR 2 TIMES A YEAR

3 TO 5 TIMES A YEAR

6 OR MORE TIMES A YEAR

24. How often would you say you make financial contributions to political candidates ?

NEVER

1 OR 2 TIMES A YEAR

3 TO 5 TIMES A YEAR

6 OR MORE TIMES A YEAR

25. Which of the following age groups do you belong ?

UNDER 20 YEARS

20 TO 39 YEARS

40 TO 59 YEARS

OVER 60 YEARS

26. Your gender:

- MALE
- FEMALE

26. Which of the following would you say describes your highest educational level ?

- GRADE SCHOOL
- SOME HIGH SCHOOL
- HIGH SCHOOL GRADUATE
- SOME COLLEGE
- COLLEGE GRADUATE
- MASTERS, DOCTORATE OR PROFESSIONAL DEGREE

27. Generally speaking, do you usually think of yourself as:

- REPUBLICAN
- DEMOCRAT
- INDEPENDENT
- NO AFFILIATION
- OTHER

28. On the average, how would you describe yourself in terms of being either liberal or conservative. Would you say that, overall, you are:

- VERY LIBERAL
- LIBERAL
- SLIGHTLY LIBERAL
- SLIGHTLY CONSERVATIVE
- CONSERVATIVE
- VERY CONSERVATIVE

29. Which of the following best describes the type of home you live in ?

- SINGLE FAMILY RESIDENCE
- TOWNHOUSE OR CONDOMINIUM
- APARTMENT

30. Do you own or rent your home ?

- OWN
- RENT

31. Which of the following best describes your racial or ethnic heritage ? Do you consider yourself to be:

- WHITE/CAUCASIAN
- ASIAN
- BLACK
- HISPANIC
- NATIVE AMERICAN
- OTHER

32. Which of the following best describes your employment status ?

- EMPLOYED FULL-TIME
- EMPLOYED PART-TIME
- SELF-EMPLOYED
- STUDENT
- NOT EMPLOYED
- RETIRED

33. Please indicate which of the following income groups listed below best describes your 1987 family income from all sources before taxes ?

- UNDER 25,000
- 25,000 TO 50,000
- 51,000 TO 75,000
- 76,000 TO 100,000
- 101,000 TO 200,000
- OVER 200,000

* * * Additional comments or questions on any issue in the questionnaire:

THANK YOU VERY MUCH FOR YOUR HELP !!!

APPENDIX B

PARADISE VALLEY LAND DEVELOPMENT QUESTIONNAIRE

The Department of Geography at the University of Arizona in Tucson is currently conducting research project looking at different attitudes toward new growth and development in Paradise Valley. As part of the project, we're asking Paradise Valley residents to share their views on development issues in the community. All information will be held in the strictest of confidence and will be used only for research purposes. Please have the male head of household take a few minutes to complete the questionnaire and return it to us in the postage paid envelope. Your help is very much appreciated.

1. Are you aware of the proposed development project by the Pensus Group located on Scottsdale Road between Fanfol Drive and Berneil Drive ? (The project has also been called the development by Richard Shaw, head of the Pensus Group. It is also the development that spawned the deannexation issue.)

- ___ NO IF "NO" Please turn to P 4 (p. 143) and continue with question # 8
 ___ YES IF "YES" continue with question # 2

2. As the proposal now stands, the project will include two types of development: first is a group of two-story garden office buildings located along Scottsdale Road. The buildings will cover about 25 to 30 % of the site and be designed to look like residential structures. Parking for the office development will all be on the surface. The second part of the development will be single family residences at a density of one residence per acre. These will be located in areas adjacent to the existing neighborhood and serve as a buffer to the office development. How would you rate the overall desirability of this development for the community of Paradise Valley ? Would you say the development was (Check One):

- ___ HIGHLY DESIRABLE
 ___ DESIRABLE
 ___ SOMEWHAT DESIRABLE
 ___ SOMEWHAT UNDESIRABLE
 ___ UNDESIRABLE
 ___ HIGHLY UNDESIRABLE
 ___ DON'T CARE

3. How about you personally, how do you feel about the desirability of this development in Paradise Valley? Would you say the development was (Check One):

- HIGHLY DESIRABLE
- DESIRABLE
- SOMEWHAT DESIRABLE
- SOMEWHAT UNDESIRABLE
- UNDESIRABLE
- HIGHLY UNDESIRABLE
- DON'T CARE

4. What do you think will be the most important **negative** effects on you and your neighborhood from this particular development? _____

5. What do you think will be the most important **positive** effects on you and your neighborhood from this particular development? _____

6. The next question concerns the kinds of actions you took after learning of this development. Below is a list of possible actions someone might take after learning of a development project. Please read through the list of actions and place a check mark next to those actions you took after learning of the development.

- TRIED TO GET MORE INFORMATION
- ATTENDED A PUBLIC HEARING
- CALLED OR VISITED A PUBLIC OFFICIAL
- CALLED OR VISITED THE DEVELOPER
- SIGNED A PETITION EITHER FOR OR AGAINST THE PROPOSAL
- WROTE A LETTER TO A PUBLIC OFFICIAL OR PUBLIC AGENC
- ACTIVELY ENCOURAGED YOUR NEIGHBORS TO EITHER SUPPORT OR OPPOSE THE DEVELOPMENT
- DONATED MONEY TO EITHER OPPOSE OR SUPPORT THE DEVELOPMENT
- TOOK NO ACTION
- TOOK OTHER ACTION (PLEASE SPECIFY) _____

7. How would you describe the opportunity you've had to express your views about this development. Would you say that you've had (Check One):

- A GREAT DEAL OF OPPORTUNITY
- SOME OPPORTUNITY
- ONLY A LIMITED OPPORTUNITY
- NO OPPORTUNITY AT ALL
- NO OPINION

• ADDITIONAL COMMENTS OR QUESTIONS ON ANY ISSUE IN THE QUESTIONNAIRE:

THANK YOU VERY MUCH FOR YOUR HELP !!!

Only for those who answered "NO" on Question # 1 on Page 1.

8. The development project in question is located on Scottsdale Road between Fanfol Drive and Berneil Drive; the western border of the development is 71st Street. The development is on a 20 acre site and has two main elements: First, is a group of two-story garden office buildings that will be located along Scottsdale Road. The buildings will cover about 25 to 30 % of the site and be designed to look like residential structures. Parking for the office development will all be on the surface. The second part of the development will be single family residences at a density of one residence per acre. These will be located in areas adjacent to the existing neighborhood and serve as a buffer to the office development. Actual development of the land is expected to begin in four to six months.

How would you rate the overall desirability of this development for the community of Paradise Valley? Would you say the development was (Check One):

- HIGHLY DESIRABLE
- DESIRABLE
- SOMEWHAT DESIRABLE
- SOMEWHAT UNDESIRABLE
- UNDESIRABLE
- HIGHLY UNDESIRABLE
- DON'T CARE

9. How about you personally, how do you yourself feel about the desirability of this development in Paradise Valley? Would you say the development was (Check One):

- HIGHLY DESIRABLE
- DESIRABLE
- SOMEWHAT DESIRABLE
- SOMEWHAT UNDESIRABLE
- UNDESIRABLE
- HIGHLY UNDESIRABLE
- DON'T CARE

10. What do you think will be the most important **negative** effects on you and your neighborhood from this particular development ? _____

11. What do you think will be the most important **positive** effects on you and your neighborhood from this particular development ? _____

12. Below is a list of possible actions someone might take after learning of a proposed development. Now that you know about this development, please read through the list and place a check mark next to those actions you are most likely to take either in support of, or opposed to, the new development.

- ___ TRIED TO GET MORE INFORMATION
- ___ ATTENDED A PUBLIC HEARING
- ___ CALLED OR VISITED A PUBLIC OFFICIAL
- ___ CALLED OR VISITED THE DEVELOPER
- ___ SIGNED A PETITION EITHER FOR OR AGAINST THE PROPOSAL
- ___ WROTE A LETTER TO A PUBLIC OFFICIAL OR PUBLIC AGENCY
- ___ ACTIVELY ENCOURAGED YOUR NEIGHBORS TO EITHER SUPPORT OR OPPOSE THE DEVELOPMENT
- ___ DONATED MONEY TO EITHER OPPOSE OR SUPPORT THE DEVELOPMENT
- ___ TOOK NO ACTION
- ___ TOOK OTHER ACTION (PLEASE SPECIFY) _____

ADDITIONAL COMMENTS OR QUESTIONS ON ANY ISSUE IN THE QUESTIONNAIRE:

THANK YOU VERY MUCH FOR YOUR HELP !!!

APPENDIX C

Table C25. Descriptive Statistics for First-Survey Variables

Variable	"N"	Mean	Std. Dev.
Location	122	3.410	1.081
Years in P.V.	122	11.443	8.844
Years in Residence	122	9.721	7.752
Initial Satisfaction With P.V.	122	1.418	0.759
Satisfaction Level Now	121	1.843	1.197
Change in Satisfaction Level	121	-.421	1.334
Attitude Toward New Development	122	2.303	0.573
Office Desirable	122	5.041	1.381
Resort/Hotel Desirable	122	4.746	1.567
SFR Desirable	121	1.587	0.928
Boutique Desirable	121	4.926	1.427
Shopping Mall Desirable	121	5.446	1.251
Total No. of Actions Willing To Take	122	5.869	2.260
Believe Actions Would Be Effective	117	1.709	0.821
Aware of Any New Development	122	0.549	0.500
Aware Pensus Development	122	0.197	0.399
Perceive Develop. in Neighborhood	118	0.475	0.501
Civic Activity Level	121	3.860	1.306
Social Activity Level	120	3.875	1.435
# Neighbors Know Well	118	6.076	6.993
# Neighbors Acquainted	118	10.576	11.858
Aware of H.O. Assoc.	121	0.719	0.451
Member H.O. Assoc.	121	0.471	0.501
Aware of H.O. Assoc. But Not a Member	121	0.471	0.501
Vote in Last City Election	122	0.566	0.498
Vote in Last State Election	121	0.818	0.387
Vote in last Federal Election	122	0.869	0.339
Frequency of Political Contributions	118	1.644	0.768
Nominal Political Contrib. Variable	118	0.500	0.502
Attend P.V. Government Mtngs.	122	1.762	0.793
Attend P.V. Gov.Mtngs., Nominal	122	0.566	0.498
Age	122	3.139	0.607
Education	122	5.000	1.029
Political Affiliation	120	1.658	0.957
Liberal or Conservative	115	4.183	1.152
Dwelling Unit Type	122	1.000	0.000
Own or Rent	122	0.951	0.217
Race/Ethnicity	121	1.140	0.699
Employment Status	122	3.107	1.889
Income	112	4.107	1.384
Gender	114	0.491	0.502

APPENDIX D

Table D26. Factors and Variable Loadings

	Variable Loading
FACTOR I	
Number of Neighbors Known	0.804
Number of Neighbors Acquainted	0.572
SFR Development Desirable	0.538
FACTOR II	
Resort or Hotel Development Desirable	0.840
Office Development Desirable	0.824
Boutique Development Desirable	0.809
General Attitude Toward New Development	0.636
Shopping Mall Development Desirable	0.611
FACTOR III	
Satisfaction Now	0.903
Change in Satisfaction	-0.862
FACTOR IV	
Aware of Any New Development	0.831
Aware of Pensus Development	0.701
Location	-0.651
FACTOR V	
Years in Paradise Valley	0.868
Years in Residence	0.865
FACTOR VI	
Vote in last Federal Election	0.834
Vote in Last State Election	0.830
Vote in Last City Election	0.617
FACTOR VII	
Aware of Home Owners' Association	0.890
Member of Home Owners' Association	0.677
FACTOR VIII	
Civic Activity Level	-0.733
Total Number of Actions Willing To Take	-0.679
Believe Actions Will Have an Effect	-0.654
Social Activity Level	-0.550
FACTOR IX	
Aware of H.O. Association but not a Member	0.943
Member of Home Owners' Association	-0.623
FACTOR X	
Initial Satisfaction with Community	0.874

REFERENCES

- Affi, A.A. and S.P. Azen (1979) Statistical Analysis: A Computer Oriented Approach, New York: Academic Press.
- Aitken, Stuart C. (1988) "Perceiving and Responding to Neighborhood Change: A Transactional Perspective," Discussion Paper # 88-2, Department of Geography, San Diego State University.
- Alonso, W. (1960) "A Theory of the the Urban Land Market," Papers and Proceedings of the Regional Science Association, vol. 6, pp. 149-158.
- Barber, Gerald M. (1988) Elementary Statistics for Geographers, New York: The Guilford Press.
- Berry, Brian J.L. (1963) "Commercial Structure and Commercial Blight," Department of Geography Research Paper No. 85., Chicago: The University of Chicago.
- Bowonder, B. (1983) "Environmental Management Conflicts in Developing Countries: An Analysis," Environmental Management, vol.7, pp. 211-222.
- Brown, M.H. (1976) Perception of Change in a Residential Setting, M.L.A. Thesis, University of Massachusetts, Amherst.
- Brunner, James A., and G. Allen Brunner (1971) "Are Voluntary Unlisted Telephone Subscribers Really Different?" Journal of Marketing Research, 8:121-124.
- Burgess, E. W. (1925) "The Growth of the City: An Introduction to a Research Project," in Robert Park, Ernest Burgess, and R.D. McKenzie eds., The City, pp. 47-62, Chicago: The University of Chicago Press.
- Canter, D. (1975) "Coping with Environmental Change," in Basil Honikman,ed., Responding to Social Change, pp.164-171, Stroudsburg, PA.: Dowden, Hutchinson & Ross, inc.
- Cao, Than Van and Dennis C. Cory (1982) "Mixed Land Uses, Land-Use Externalities and Residential Property Values: A Reevaluation," Annals of Regional Science, vol. 16 (March 1982), pp. 1-24.
- Cattell, R.B. (1944) "Psychological Measurement: Normative, Ipsative, Interactive," Psychological Review, vol. 51, pp.293-303.
- Chisholm, M. (1962) Rural Settlement and Land Use, London: Hutchinson University Library.
- Cole's Cross Reference Directory for Phoenix and Suburbs (1988), Lincoln: Cole Publications.

- Crecine, John P., Otto A. Davis, and John E. Jackson (1967) "Urban Property Markets: Some Empirical Results and Their Implications for Municipal Zoning," Journal of Law and Economics, vol. 10 (October 1967), pp.79-100.
- Cressey, D. R. (1953) Other Peoples' Money, Glencoe, IL: The Free Press.
- Crites, J.C. (1969) Vocational Psychology, New York: McGraw-Hill.
- Crone, Theodore M. (1983) "Elements of an Economic Justification for Municipal Zoning," Journal of Urban Economics, vol. 14 (September 1983), pp. 168-183.
- Cybrivsky, R. (1978) "Social Aspects of Neighborhood Change," Annals of the Association of American Geographers, vol. 68, pp. 17-33.
- Dillman, Don A. (1978) Mail and Telephone Surveys: The Total Design Method, New York: John Wiley & Sons.
- Dillman, Don A., Jean Gorton Gallegos and James H. Fry, (1976) "Reducing Refusal Rates for Telephone Interviews," Public Opinion Quarterly, vol. 40, pp. 66-78.
- Fink, S.L. (1967) "Crisis and Motivations: A Theoretical Model," Archives of Physical Medicine and Rehabilitations, vol. 48, pp. 592-597.
- Fischel, William A. (1985) The Economics of Zoning Law: A Property Rights Approach to American Land Use Controls, Baltimore: Johns Hopkins University Press.
- Goudy, Willis J. (1976) "Interim Nonresponse to a Mail Questionnaire: Impacts on Variable Relationships," Public Opinion Quarterly, vol. 40, pp. 360-369.
- Grether, David M., and Peter Mieszkowski (1980) "The Effects of Non-residential Land Uses on the Prices of Adjacent Housing: Some Estimates of Proximity Effects," Journal of Urban Economics, vol. 8 (July, 1980), pp. 1-15.
- Harris, C.D. and E.L. Ullman (1945) "The Nature of Cities," Annals of the American Academy of Political Science vol. 242, pp. 7-17.
- Harvey, D. (1971) "Social Processes, Spatial Form and the Redistribution of Real Income in an Urban System," in M. Chisholm *et al.*, editors, Regional Forecasting, London: Butterworth, pp. 270-300.
- Harvey, D. (1973) Social Justice and the City, Baltimore: The John Hopkins University Press.
- Hochstim, Joseph R. (1967) "A Critical Comparison of Three Strategies of Collecting Data from Households," Journal of the American Statistical Association, vol. 62, pp. 976-989.
- Holmes, T.H. and R.H. Rahe (1967) "The Social Readjustment Rating Scale," Journal of Psychosomatic Research, vol. 11, pp. 213-218.

- Hopson, Barrie, and John Adams (1977) "Towards an Understanding of Transition: Defining Some Boundaries of Transition Dynamics," in John Adams, John Hayes and Barrie Hopson Transition: Understanding and Managing Personal Change, Monclair, N.J.: Allanheld, Osmun & Co. Publishers.
- Hoyt, H. (1933) One Hundred Years of Land Values in Chicago, Chicago: University of Chicago Press.
- Hoyt, H. (1939) The Structure and Growth of Residential Neighborhoods in American Cities, Washington, D.C.: Federal Housing Administration.
- Hudson, R. (1980) Personal Construct Theory, the Repertory Grid Methodology and Human Geography", Progress in Human Geography, vol. 4, pp. 346-359.
- Hurd, R.M. (1924) Principles of City Land Values, New York: The Record and Guide.
- Ittleson, W.H. (1973) "Environmental Perception and Contemporary Perceptual Theory," in Environment and Cognition, ed. W. H. Ittleson, New York: Seminar Press.
- Jud, G. Donald (1980) "The Effects of Zoning on Single-Family Residential Property Values: Charlotte, North Carolina," Land Economics, vol. 56 (May 1980), pp. 142-154.
- Kaiser, H. F. (1956) "The Varimax Method of Factor Analysis," unpublished doctoral dissertation, University of California, Berkeley.
- Kaiser, H. F. (1970) "A Second Generation Little Jiffy," Psychometrika, vol.35, pp. 401-415.
- Kelley, G. (1955) A Psychology of Personal Constructs, vols. 1 & 2, New York: Norton Press.
- Kiel, E.T., D.S. Riddell, and B.S.R. Green, (1966) "Youth and Work: Problems and Perspectives," Sociological Review, vol. 14, No. 2, pp.117-137.
- Kildegaard, Ingrid C. (1966) "Telephone Trends," Journal of Advertising Research, vol.6, pp.56-60.
- Kim, Jae-on, and Charles W. Mueller (1978) "Introduction to Factor Analysis," Sage University Paper Series on Quantitative Applications in the Social Sciences, Beverly Hills: Sage Publications.
- Knos, D. S. (1962) Distribution of Land Values in Topeka, Kansas, Lawrence: The University of Kansas Press.
- Kubler-Ross, E. (1969) On Death and Dying, New York: Macmillan.
- Lake, Robert W., ed. (1987) Resolving Location Conflict, New Brunswick, N. J. : Center for Urban Policy Research.

- Latherly, Ronald N., and H. E. Frech III (1978) "Community Environment and the Market Value of Single Family Houses: The Effect of the Dispersion of Land Uses," Journal of Law and Economics, vol. 21 (October 1978), pp. 381-394.
- Levinger, G, and J. D. Snoek (1972) Attraction in Relationships: A New Look at Interpersonal Attraction, Morristown, N.J.: General Learning Press.
- Li, Mingche M., and James H. Brown (1980) "Micro-Neighborhood Externalities and Hedonic Housing Prices," Land Economics, vol 56 (May 1980), pp. 125-141.
- Likert, R. A. (1932) "A Technique for the Measurement of Attitudes," Architectural Psychology, No. 140.
- Logan, Carolyn J. (1982) Winning the Land-Use Game, New York: Praeger Publishers.
- Lowenthal, D. (1979) "Age and Artifact: Dilemmas of Appreciation," in D.W. Meinig, ed., Interpretation of Ordinary Landscapes: Geographical Essays, pp. 103-128, New York: Oxford University Press.
- Lynch, K. (1972) Time Is This Place ?. Cambridge, MA.: The MIT Press.
- Maizels, J. (1970) Adolescent Needs and the Transition from School to Work, London: Athlone Press.
- Mark, Jonathan H., and Michael A. Goldberg (1981) "Land Use Controls: The Case of Zoning in Vancouver," American Real Estate and Urban Economics Association Journal, vol. 9 (Winter 1981), pp. 418-435.
- Marris, P. (1982) Community Planning and Conceptions of Change. London: Routledge and Kegan Paul.
- Masser, S. M., W. H. Riker, and R. N. Rosset (1977) "The Effects of Zoning and Externalities on the Price of Land: An Empirical Analysis of Monroe County, New York," Journal of Law and Economics, vol. 20 (April 1977), pp. 111-132.
- Michelson, W. H. (1970) Man and His Urban Environment: A Sociological Approach, Reading, MA.: Addison-Wesley.
- Milgram, S. (1970) "The Experience of Living in Cities," Science, vol.167 (June 1970), pp. 1461-1468.
- Mills, E. S. (1969) "The Value of Land," in H. Perloff, ed., The Quality of Urban Environment, Washington, D.C.: Federal Housing Administration.
- Moran, P. (1948) "The Interpretation of Statistical Maps," Journal of the Royal Statistical Society, vol. 10, pp. 243-251.
- Moran, P. (1950) "Notes of Continuous Stochastic Phenomena," Biometrika, vol. 37, pp. 17-23.

- Muth, R.F. (1961) "The Spatial Structure of the Housing Market," Papers and Proceedings of the Regional Science Association, vol. 7, pp. 207-220.
- Muth, R.F. (1969) Cities and Housing, Chicago: The University of Chicago Press.
- Nunnally, Jum C. (1967) Psychometric Theory, New York: McGraw-Hill Inc.
- Paradise Valley General Plan, (adopted 1980) Paradise Valley, Arizona.
- Parkes, C.M. (1972) Bereavement: Studies of Grief in Adult Life, New York: International Universities Press.
- Peterson, Gary G. (1986) "Neighborhood Goals and Planning Concerns," John Spring Neighborhood Plan Inventory, PSM and Associates, Tucson, AZ., October, 1986, pp. 39-44.
- "Preserving the Desert Lifestyle" (1987) Publication for the 25th Anniversary of the Town of Paradise Valley.
- Preston, V. and S. M. Taylor (1981) "Personal Construct Theory and Residential Choice," Annals of the Association of American Geographers, vol. 21, pp. 437-461.
- Relph, Edward (1976) Place and Placelessness. London: Pion Limited.
- Rogers, Theresa F. (1976) "Interviews by Telephone and in Person: Quality of Responses and Field Performance," Public Opinion Quarterly, vol. 40, pp.51-65.
- Rosch, E. (1977) "Human Categorization," in N. Warren, ed., Advances in Cross-Cultural Psychology, London: Academic Press.
- Rueter, Frederick (1973) "Externalities in Urban Property Markets: An Empirical Test of the Zoning Ordinance of Pittsburgh," Journal of Law and Economics, vol. 16 (October 1973), pp. 313-349.
- Rummel, R. J. (1970) Applied Factor Analysis, Evanston: Northwestern University Press.
- St. Louis, Alfred (1976) "The Texas Crime Trend Survey," Statistical Analysis Center, Texas Department of Public Safety.
- Saegert, S. (1987) "Models of Environmental Psychology and Social Change," in Daniel Stokols and Irwin Altman, eds., Handbook of Environmental Psychology, pp. 161-187, New York: John Wiley and Son.
- Sell, James L., and Ervin H. Zube (1986) "Perception of and Response to Environmental Change," Journal of Architecture and Planning Research, vol. 3 (February 1986), pp. 33-54.

- Sell, James L., Ervin H. Zube, and Christina L. Kennedy (1988) "Perception of Land Use Change in a Desert City," Journal of Architecture and Planning Research, Vol. 5, No. 2, pp. 145-162.
- Smith, David M. (1977) Human Geography: A Welfare Approach, London: Edward Arnold.
- Smith P. J. (1962) "Calgary: A Study in Urban Pattern," Economic Geography, vol. 38, pp. 315-329.
- Sofer, C. (1970) Men in Mid-Career, Cambridge: Cambridge University Press.
- Stokols D. (1977) "Origins and Direction of Environment-Behavior Research," in D. Stokols, ed., Perspectives on Environment and Behavior, New York: Plenum, pp. 5-36.
- Stull, W. J. (1975) "Community, Environment, Zoning, and the Market Value of Single-Family Homes," Journal of Law and Economics, vol. 18 (October 1975), pp. 535-557.
- Sudman, Seymour (1976) Applied Sampling, New York: Academic Press.
- Super, D. E. (1957) The Psychology of Careers, New York: Harper.
- Susskind, Lawrence, L. Bacon, and M. Wheeler (1983) Resolving Environmental Regulatory Disputes, Cambridge, MA.: Schenkman Publishing Co.
- Susskind, L., and J. Cruikshank (1987) Breaking the Impasse: Consensual Approaches to Resolving Public Disputes, Boston, MA: Basic Books.
- Thomas, R. W. and R. J. Huggett (1980) Modelling in Geography: A Mathematical Approach, Totowa, N.J.: Barnes and Noble Books.
- Veblen, Thorstein (1899) The Theory of the Leisure Class, New York: Macmillan Company.
- Wendt, P. F. (1957) "Theory of Urban Land Values," Land Economics, vol. 33, pp. 228-240.
- Weinstein, N. D. (1976) "Human Evaluations of Environmental Noise," in K. H. Craik and E. H. Zube eds., Perceiving Environmental Quality. New York: Plenum Press.
- Winkel, G. H. (1981) "The Perception of Neighborhood Change," in J. H. Harvey, ed., Cognition, Social Behavior, and the Environment, Hillsdale, N.J.: Lawrence Erlbaum Associates, 1981.
- Wiseman, F. (1972) "Methodological Bias in Public Opinion Surveys," Public Opinion Quarterly, vol. 36, pp. 105-108.

- Wolpert, J., A. Mumphrey, and J. Seley (1972) Metropolitan Neighborhoods: Participation and Conflict Over Change. Resource Paper # 16. Washington, D.C.: Association of American Geographers.
- Yeates, M. H. (1965) "Some Factors Affecting the Spatial Distribution of Chicago Land Values:1910-1960," Economic Geography, vol. 41, pp. 55-70.
- Znaniecki, F. (1934) The Method of Sociology, New York: Farrar and Rinehart, Inc.
- Zube, Ervin H., and James L. Sell (1986) "Human Dimensions of Environmental Change," Journal of Planning Literature, vol.1 (Spring 1986), pp.162-176.