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HOUSING POLICY AND HOUSING SATISFACTION  
IN THE PEOPLE'S REPUBLIC OF CHINA: A BEHAVIOURAL APPROACH  
APPLIED IN THE CITY OF XIAN

By

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THESIS

Submitted to the Department of Geography  
in partial fulfilment of the requirements  
for the Master of Arts degree

Wilfrid Laurier University

1987

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## ABSTRACT

Based on a behavioural approach, this thesis examines housing satisfaction in Xian, The People's Republic of China, and its implications for housing policy. A conceptual framework of housing satisfaction along three dimensions, housing environment system, social structure and housing policy, is presented and discussed. From this framework a set of hypotheses are stated and subsequently tested. The strongest factor found to affect housing satisfaction is people's living space and housing condition is another important factor. Through examining housing policy and housing satisfaction, the centrally controlled Chinese housing policies are shown to need modification and changes in housing supply should be introduced to meet people's housing demands.

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Jidong Zhang  
May, 1987.

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## CHAPTER 1

### INTRODUCTION

Very little is known in the West about the problems created by the rapid urban population growth of China. Similarly, little is studied in the West or even in China about housing problems in relation to allied geographic problems. The general objective of this thesis is to study housing satisfaction in Xian, China, using a behavioural approach and to identify implications for housing policy. This chapter outlines the complexity of the housing problem in China, the detailed objectives of the thesis are stated and the thesis structure is documented.

#### 1.1 Background

After thirty years of seclusion from the western world, China is currently waging an urban, economic, and political reform. Reform in the cities is a highly complex process. It deals with many problems which do not exist in rural areas, such as the questions of how to develop markets, how to adjust urban structure in order to accommodate change, and how to acclimatize the

population to rapid change -- all of these questions are crucial to the success of urban reform. Implementing such a radical and thorough reform in a country with a billion people is very difficult. Moreover, urban reform has never been purely an economic and/or a political matter. Hence, a thorough reform affects not only material life, but also social structure, concept of value, consumption, behaviour, and many other aspects of social life. In particular, reform is a process which will decide China's urbanization future, and the urbanization process will reflect the level of China's economic development. So China's varied urban reform will lead centrally to a change in the urban structure, resulting in increased demand for urban housing and the creation of an urban-based rather than a rural-based social environment.

In many developing countries, the modernization process has resulted in the massive movement of rural people to a few very large cities in a short period of time, creating serious social and economic problems. In China's particular circumstance -- both a socialist and a developing country with a huge population and a determination to modernize its economy as quickly as possible -- the urban population has grown simultaneously with the development and modernization. During the period from 1979 to 1982, China's urban population increased by about 23 million (Liu, 1983). By the end of 1984, China had 300 cities and 621 towns, and 110.72 million people live in cities and 52.28 million in towns. This

rapid growth accelerated the problems of housing supply. The Central Government and its branches at all levels have made great efforts to solve housing development problems with a total of 1.33 billion square metres added which accommodate 93.6 million people (Shang, 1986) in the years from 1950 to the end of 1985.

Housing development in China was rather slow from 1949-1977 owing to lack of the state financial resources. In 1979, the Central Government gave a major impetus to housing construction. From 1979 to 1985 the government invested 115.38 billion yuan (Chinese R-M dollar) to build 800 million square metres of housing (Table 1-1). This investment represents 76 per cent of the total investment in urban housing and 60 per cent of the total housing construction built in the 36 years since the founding of the People's Republic.

However, it should be pointed out that a solution to the housing problem is a long-term process, one that will take many decades to achieve. In general, present housing supply levels in Chinese cities are still very low. Housing units built before 1979 were inadequate, and one third of the urban residents in many cities have applied for housing or need to have their dwelling conditions and living environment improved (Zhang, 1986). A fairly large number of urban dwellers still live in rather simple and crude houses, some of which have either exceeded their service life or face the danger of collapsing owing to lack of repair over

the years. In Xian, for example, at the end of 1984 the living space of the city inhabitants was only 4.55 square metres per capita, and old housing took up 37.4 per cent of the total urban housing stock (HEMBC of Xian, 1984). Not only does this fall well behind the developed capitalist countries, it also falls behind the socialist countries of the Soviet Union and in Eastern Europe (Table 1-2).

Table 1-1 Urban Housing Construction in China (1979-1985)

Year	Investment (100 million R-M Dollars)	Floor Space (10,000 Sq. Metres)	Per-Capita Floor Space (Sq. Metres)	Number of Apartments (10,000)
1979	77.3	6,256	3.7	125
1980	123.7	8,230	3.9	183
1981	135.0	7,904	4.12	188
1982	179.1	9,020	4.4	236
1983	186.0	8,125	---	---
1984	199.9	7,703	4.8	---
1985	215.3	8,813	6.1	---

- Source: 1. China Facts and Figures Annual, 1985 pp.356.  
 2. Extracts of Chinese Statistics: 1984 pp.63, 1985 pp.66.  
 3. Chinese Cities Statistics Year-Book, 1985 pp.239.  
 4. "Ren Min Re Bao" (People's Daily), March 25, 1987.

There are many reasons for the shortage of urban housing and associated social problems. Among them is the the excessively rapid growth of the urban population, and the long one-sided emphasis (prior to 1979) on capital construction to the neglect of residential construction. Another important reason may be an irrational housing system. Owing to the low rent system of state-owned housing, the stock suffers from disrepair and a lack of maintenance.

Table 1-2 Average Living Area Per Person (Sq. Metres) in Selected Countries.

Countries	Sq. Metres/person	Year
Bulgaria	11.9	----
China	3.7	1979
	6.1	1985
France	13	1971-1976
Japan	13	1978
Romania	9.6	1977
Singapore	15	1980
U.S.A.	18	1976
U.S.S.R.	12.7	1978
West Germany	25	1978
Yugoslavia	13.6	1979

Source: 1. Zhang (1986), China City planning Review, Vol.3 pp.5.  
 2. "Ren Min Re Bao" (People's Daily) March 25, 1987.

The reasons mentioned earlier are examples why China needs to adopt powerful measures for urban reform. It is clear, therefore, that Chinese urban problems need to be studied urgently, and geographers should contribute to this goal. Unfortunately, for the last three decades, urban geography in China has been neglected, especially in terms of urban social problems. After 1980, many Chinese geographers issued an appeal for human geography to be studied. They also expressed the need to enhance population research, and encouraged the analysis of urban, political, social, perceptual, and behavioural issues.

## 1.2 Objectives

For Chinese cities, as noted earlier, the housing problem is central to the process of urban reform which focuses on the economy, government institutions, and a wide range of other problems. Given this, this study addresses the following specific questions:

A. To what extent is housing supply or availability perceived as a problem by residents in Xian and China?

B. What is the relationship between an individual's attitude toward their housing conditions and previous and intended relocation?

C. How does an individual's satisfaction with housing relate to housing system attributes in China?

D. What are the sources of satisfaction and dissatisfaction with housing in Xian?

E. How does this satisfaction and dissatisfaction relate to central government housing policy?

F. Does housing satisfaction in Xian vary according to the categories of families?

G. Does housing satisfaction in Xian vary according to the categories of occupations, education levels and age?

H. What is considered the optional type of housing by residents in Xian, and how does this tie to housing policy in China?

Briefly, it is felt that this research will make several general contributions: (1) a housing satisfaction model in China is developed; (2) Chinese urban housing policy since the founding of the People's Republic and its recent changes is described; (3) the housing system in China, including the environment subsystem and residential structure as well as population change in Xian, is analyzed; (4) the results of a 1986 housing survey of 192 randomly selected residents of Xian are discussed and analysed; (5) issues from the survey including satisfaction with present living



arrangements and previous and anticipated residential mobility are reported; and (6) the rationalization, in conformity with the interests of the people, of housing policies from the central government and local governments are discussed and modifications are suggested.

### 1.3 Structure

The structure of this thesis reflects its objectives which are based on an examination of housing satisfaction in terms of policy and behavioural contexts.

Chapter 2 presents an overview of research on housing satisfaction and residential mobility. The literature on urban housing in western countries forms the theoretical basis of this study. A diversity of approaches to studying the problems of urban housing and its policy formulation are discussed. A framework is proposed to characterize housing satisfaction in China along three basic dimensions namely, housing environment system, social structure and policy context. The hypotheses tested in this thesis are then presented.

Chapter 3 is the research design of the study. This chapter presents, first, a background of Xian, introducing the historical, cultural, physical and economic situation, and population change in Xian. A random sampling of housing residents supplies primary data. Some secondary data were obtained from official government sources. The last part of this chapter examines the design of the questionnaire, and indicates the reasons behind of the questions asked.

Chapter 4 concerns the housing system and its political, economic, environmental, and social subsystems. The discussion focuses on: (1) the Chinese urban administrative and the housing management system; (2) policy aspects of the economic and social subsystems; (3) the changing Chinese housing policy; (4) the urban residential environment system in China; (5) and finally, the residential structure of Xian.

Based on the Chinese housing satisfaction model as developed in Chapter 2, Chapter 5 examines stressors related to the satisfaction and/or dissatisfaction with housing and residential mobility. Based on the hypotheses as raised in Chapter 2, relevant social and behavioural issues are analyzed and the tested results are interpreted.

The concluding chapter discusses the housing policy modification required in Chinese society to meet people's housing expectations.

## CHAPTER 2

### THEORETICAL BASIS AND LITERATURE REVIEW

In order to understand urban housing in a spatial context, something of urban geographic housing theory must first be discussed. A large literature on urban housing in western countries, especially those in North America, forms the basis of this discussion. From this discussion a housing satisfaction model is developed and then related to research in behavioural geography and environmental psychology.

#### 2.1 Approaches of Housing Satisfaction and Housing Policy Formulation

##### 2.1.i An Overview of Approaches

A diversity of approaches to studying the problem of urban housing has developed over the past several decades. Buttner (1972) summarizes the approaches to residential studies as follows:

Traditionally, residential areas have been studied within the framework of urban structure (Alonso, 1966; Muth, 1969). Norms and guidelines have been developed for the "rational" allocation of space and service functions throughout such areas (Harvey, 1970). Of late, serious

efforts have been made to explore the problem from the viewpoint of spatial behaviour in microenvironmental settings (Proshansky et al., 1970; Moore, 1970), and several design implications have emerged from such behavioural research (Sommer, 1969; Alpaush, 1970).

At the beginning of the 1970's the behavioural approach was applied to the problem of housing. Such studies also yielded potential implications for the planning of residential environments, but they were not readily translatable at that scale directly into policy. The behavioural approach was based on the premise that in order to understand spatial structure, something of the antecedent decisions and behaviours which arrange phenomena over space must first be known (Cox and Golledge, 1969). Many geographers in the early 1970s subscribed to this approach using the individual household as a basic unit for spatial analysis (Short, 1979). Brown and Moore (1970) remarked that this approach would provide a sounder basis for evaluating a number of decisions related to planning of growth, development and, ultimately, the reorganization of urban studies.

Some studies suggest that there are important relationships between physical design and social behaviour (Young and Willmott, 1957; Rainwater, 1966; Schorr, 1963; Yancey, 1971). In support of this opinion, King and Golledge (1978) summarize the concerns of behavioural investigations regarding the reciprocal nature of the relationship between environment and behaviour. Specifically they note that:

The relationship between ... people and the environment is influenced by the spatial form of the city ... and in turn the spatial form of the city is formed by human behaviour .... By studying patterns of human behaviour in the city, by seeking to comprehend the different mental pictures that people have of the city and its parts and by probing into how these pictures develop and change, we can begin to appreciate the complex interaction between the spatial form of the city and the patterns of human behaviour.

It is clear that behavioural geography and a specific concern with human behaviour in a spatial structure is now of some significance in geographical research (Clark, 1981). In particular, for the area of residential structure and mobility, Bassett and Short (1980) summarize four approaches to housing and residential structure (Table 2-1), namely, (1) ecological; (2) neo-classical; (3) institutional; and (4) Marxist. The diversity of approaches to the study of housing is partially a manifestation of the complex nature of the topic. These approaches differ because they draw their theoretical guidance and sustenance from various wider social theories. These approaches, developed in the context of western capitalist countries, have never been applied to examine the housing question in socialist Chinese society.

The growth of the behavioural approach, which means the explicit focus on perception and decision-making in the analysis of the locational process and spatial form, was paralleled by the growth of research by geographers on the process of residential mobility. Simply defined, this process is a type of intra-urban

Table 2-1 Four Approaches to Housing and Residential Structure

Approach	Wider social theory	Areas of inquiry	Exemplar writers
1. ecological	human ecology	spatial patterns of residential structure	Burgess(1925)
2. neo-classical	neo-classical economics	utility maximisation consumer choice	Alonso(1964)
3. institutional managerialism location conflict	Weberian sociology	gatekeepers, housing constraints  power groupings conflict	Pahl(1975)  Form(1954)
4. Marxist	historical materialism	housing as a commodity reproduction of labor force	Harvey(1973) Castells(1977)

Source: Bassett and Short (1980), pp.2.

movement that involves a change of residence. In the study of residential mobility, the focus is generally to detect empirical regularities in household behaviour related to the fundamental questions of who moves, why households move, and where households move to (Rossi, 1955). Later research, however, extends those three questions to include analysis of the impact of mobility on residential areas and housing markets.

Survey approaches to answering these questions have provided a convenient vehicle for gaining an initial understanding of mobility behaviour of households. Rossi (1955) employed an accounting scheme based on factors of "pushes", "pulls" and a sequence of stages in the decision to move within which three types of move are recognised namely typical, delayed and forced. In addition, two basic types of move, voluntary and forced, can be categorized. Voluntary moves involve a clear choice of the mover's own will. Forced moves may arise from marriage, divorce, retirement, ill-health, death in the family and long-distance job changes (Moore, 1972).

Housing satisfaction, which in the spatial context may be defined as gratifications or pleasure derived from particular living environments, is seen by many as a key variable in urban residential mobility (Gold, 1980). A satisfactory residential environment will vary according to the needs and aspirations of particular individuals and groups, which, in turn, depend on numerous factors. In this context, Onibokun (1974) uses a systems approach to evaluate consumer's satisfaction with housing. Instead of the old approaches which consider in fragmented ways the characteristics of dwellings, neighbourhoods, or the social environment, he proposed a systems approach in which various interdependent factors are studied in relation to one another (Figure 2-1). Using the techniques that he developed, the relative

satisfaction of tenants in public housing projects in certain areas of Canada was identified, analyzed and discussed. He formulated a list of seventy-four variables to give a comprehensive view of satisfactions, of which twenty-seven related to qualities of the neighbourhood.

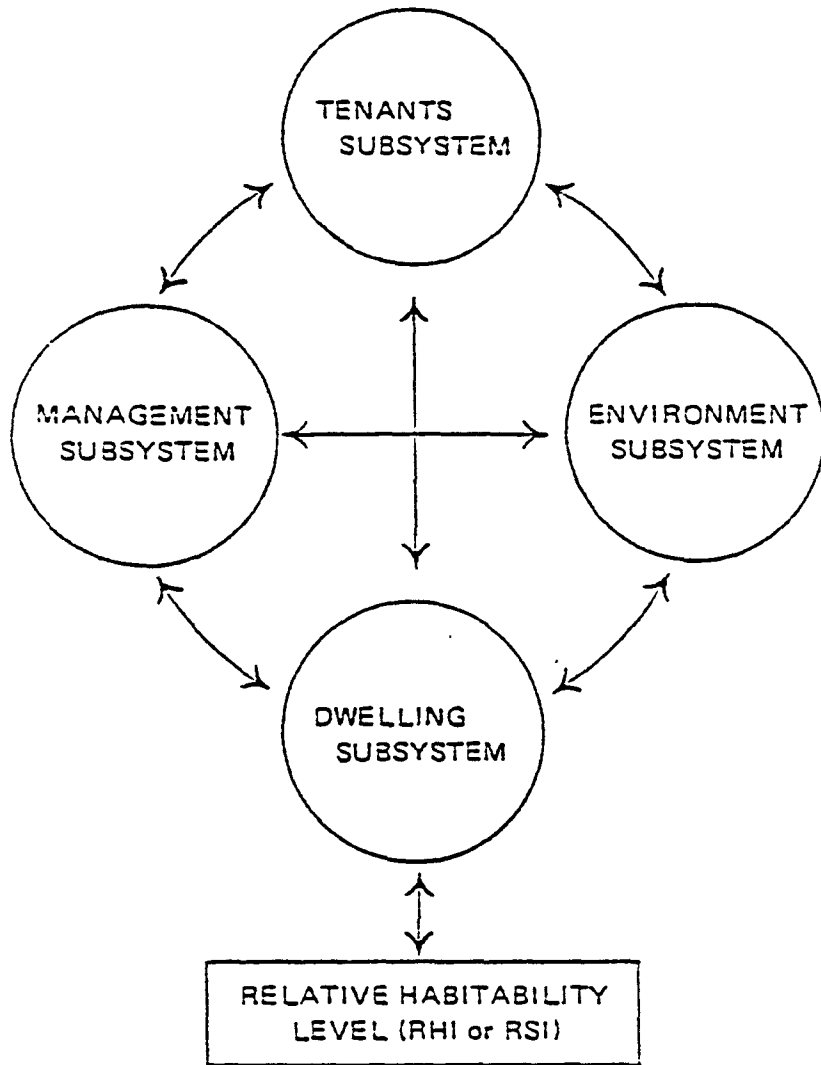
Habitability, as used in Onibokun's study, refers to a type of tenant-dwelling-environment interaction system. This system produces a type of dwelling which is regarded by the tenant component of the system as relatively acceptable or adequate and therefore habitable, in the light of what tenants consider to be their housing needs and expectations. As defined by Onibokun habitability is portrayed as a human concept which involves four interacting subsystems: the tenant; the dwelling; the environment and management subsystems (See Figure 2-1).

The adequacy of a housing unit, as determined by the amount of internal space, the structural quality, the household facilities, and other such housing amenities and qualities within the housing will influence the extent to which the inhabitant is satisfied with the unit (Onibokun, 1974). In Onibokun's public housing study, the housing unit is considered as an important subsystem of a housing habitability system, and also, the housing unit is a part of an environment. The nature of constitutional rules and regulations of housing and the way they are implemented by the officials have an influence on the degree of satisfaction



of the tenants with their housing unit (Lempert and Ikeda, 1985). In the heart of the habitability system is the inhabitant, arbiter of what constitutes habitability because the inhabitant is the recipient of all the feedback from all the subsystems.

Figure 2—1 *Housing Habitability System  
The Proposed Tenant-Dwelling-Environment-  
Management Interactive Model*



RHI = Relative Habitability Index (of dwelling)  
RSI = Relative Satisfaction Index (of tenants)

In a subsequent article, Onibokun (1976) concentrated on social influences on satisfactions. His broad findings are shown in Table 2-2, with selected variables grouped into five categories: stage in life cycle, socio-economic characteristics, familiarity with neighbourhood, life style, and "conceived image" (the individual's schema of personal and neighbourhood status). His research hypothesis tested is that there is an association between the social characteristics of tenants and their assessment of their level of satisfaction with their housing.

Cumulatively this research suggests that numerous factors affect satisfaction levels with housing which, in turn, affect residential mobility. As households move voluntarily to seek higher levels of locational satisfaction, the equilibrium between supply and demand for housing is adjusted. Such adjustments must be considered in housing policy formulation, otherwise market efficiency would be impaired.

#### 2.1.ii Housing Policy Formulation

Housing policies cannot be divorced from politics, nor should they be (McGuire, 1981). This caveat should be kept in mind when examining the number of housing policy alternatives employed in different countries. Policy, of course, is not created in a vacuum. Besides understanding the effects of past and current political processes, a more complete assessment of residential

Table 2-2 *Relationships between selected social system characteristics and residential satisfaction.*

Selected Social System Characteristics	Level of Significance	Interpretation
<b>STAGE IN THE LIFE CYCLE</b>		
Size of households	.01	The larger the size of household the lower the RS.
Age of respondent	N.S.	Age had no relation with RS.
Marital status	.01	One-parent families tended to have lower degrees of RS than two-parent families
<b>SOCIO-ECONOMIC CHARACTERISTICS</b>		
Education of head of household	.01	The higher the socio-economic status the lower the lower the RS.
Occupation of head of household	.01	
Employment of head of household	.01	
Income of the household	.01	
Rent	N.S.	
Source of Income	.05	The employed tenants had higher degree of RS than the dependent tenants.
<b>FAMILIARITY WITH NEIGHBORHOOD</b>		
Length of stay in present dwelling	.01	The longer the length of stay in public housing the lower the RS.
Length of stay in city	N.S.	Length of stay in the city had no relation to RS.
Birthplace of respondent	.01	Immigrants from Britain and Europe tended to have lower degree of RS than those born in North America.
<b>LIFE STYLE</b>		
Rural-urban background	N.S.	Rural-urban background had no relation with RS.
Residential status in last previous house	N.S.	Tenants who moved from owner-occupied dwellings to public housing tended to have a lower degree of RS than tenants from rental houses.
Type of last previous house	.01	Tenants who moved from apartment houses to public houses that were either town, semi-detached or single family houses tended to have higher degrees of satisfaction than tenants who moved to public housing from town, semi-detached or single family houses.
<b>CONCEIVED IMAGE</b>		
Social class of area	.01	Tenants who perceived their neighborhoods to be working or middle class neighborhoods tended to have a higher degree of RS than tenants who perceived their neighborhoods to be lower- or upper-class neighborhoods.
Social status of respondent	.01	Tenants who perceived themselves to belong to the working or middle class in social-status tended to convey a higher degree of RS than tenants who perceived themselves as belonging to the lower or upper class in social status.

N.S. indicates that the result was not significant at  $p < .05$ .

Source: Onibokun (1976, 326-7).

mobility constraints requires an examination of perceptions of housing and neighbourhood and the way in which these perceptions are conditioned by a social structure ordered by race and class. That is, it is important to question the social and political factors that influence housing aspirations and housing policies. In this sense, the question is not what people want, but what shapes and reinforces a housing and neighbourhood culture that makes people want what they do (Rossi and Shlay, 1982).

In recent years an increasing number of scholars have turned to Marxist theories of political economy in response to the need to relate urban structure to the wider organization of society. This has led to the emergence of a "new Urban Sociology", a "new Urban Politics" and a "radical Urban Geography" (Knox, 1982). The principal contributors to this movement include David Harvey (1973, 1975, 1977) as well as members of the French school of urban sociology. It provides a clear break with earlier, narrower conceptions of urban socio-spatial relationships and provided a flexible theoretical framework for a wide range of phenomena. Much of this new work reflects national intellectual traditions as well as differences in the nature of national policies and urban development in various countries.

In every country the population has rising expectations for housing. Many of the western democracies have opted for special schemes that assist moderate-income families to obtain enough money for a housing unit (McGuire, 1981). In China, with a centrally planned economy, the same things are taking place, with the governments at all levels allowing more individuals the flexibility to use their own funds to provide their own housing. So-called housing system reform is a process which will influence China's urbanization future, that will lead, in turn, to a change in urban structure involving an increased demand for urban housing and the creation of an urban-based rather than a rural-based social environment.

Housing can become a fierce ideological battleground. Because of the intimate relationship of housing to the family and to the social structure as a whole, the provision of housing tends to reflect a nation's basic social system. For example, in the centrally planned economy of China, there was no real counterpart to the housing market concept familiar in the West. Housing was not a commodity that was freely bought and sold in organized markets, nor was it the subject of trade and exchange to the extent that it is in the West. But housing policy in China has undergone considerable development over the past ten years. Many of those changes reflect the changes of Marxist ideology in China.

Karl Marx paid scant attention to the problems of housing and most related questions. However, other early Marxists did raise a number of theoretical issues which are important in the socialist countries when examining housing policy. To explain the intellectual context in which housing policies emerged in China, some comments can be found in the writings of Engels (1847). He attacked the view that housing would be provided free of cost to workers after the revolution. Marxists did not propose the abolition of all forms of capital accumulation as such, since accumulation is necessary for investment purposes and for other state programmes. Lenin also clearly advocated public housing policy, and adopted a direct allocation system to meet the people's housing demand (Xiao and Qi, 1986).

Housing and related policies in China and most Eastern European countries subsequently have followed a pattern similar to that in the Soviet Union, although each country also has its individual characteristics. Xiao and Qi (1986) argue that in various Marxist societies socialist practice has raised some problems such as housing which cannot be solved only by empirical Marxist theory.

The concern with policy implications has added another "behavioural" dimension to research in residential mobility (Clark, 1981). Harris and Moore (1980), in particular, have been concerned with assessing the larger impacts of mobility. It is their belief that the impacts of residential mobility are not just confined to individual and household behaviour, but, rather, are experienced in an aggregate form by a whole range of social organizations. They argue that if mobility research wishes to contribute more directly to the debate on public policy it must seek to develop more explicit conceptualizations of the relationship between mobility and public policy. They regard that a household dissatisfied with its present living conditions is faced with a series of possible choices. Firstly, exit implies a relocation involving a departure from the dwelling and neighborhood for either voluntary or involuntary reasons. Secondly, voice involves undertaking an action, based on present residence, to cope with the dissatisfaction. Finally, despite poor or inappropriate living conditions, the household may not relocate, adjust housing consumption or work behaviour. Their concern is to identify the range of demographic, socioeconomic, environmental, and institutional factors that are associated with the exit, voice and inaction options, rather than with the dichotomous move-stay decision, and to evaluate the impacts of these different choices on individual experience as well as on social and spatial organization.

The above discussion emphasizes the importance of the local context to the evaluation of public policy. The perception of unsatisfactory living conditions may stimulate quite different responses depending on particular local and national conditions. It is important to recognize that the problems to which public policy is addressed are defined in the political arena, and unless research can be related to these political issues, then, indeed, it will have little to contribute. Of course, particularly in China, it is important to recognize that satisfaction with housing conditions is conducive to general satisfaction with life. If socialist practice with housing, that is, state allocation system cannot meet the individual level of housing aspirations, then, the allocation system must be modified to accommodate mobility, as the preference structures of urban populations change. If mobility and political voice are indeed competing alternatives that face the household, the analysis of mobility in relation to forms of group action becomes of concern to the policymaker, who in China, is the Central Government. Therefore, accordingly, with the great development of modernization and urbanization in China, great attention to housing policy changes are being made.



## 2.2 A Housing Satisfaction Model and Behavioural Geography

### 2.2.i A Conceptual Framework: The Decision to Move

A behaviouralist perspective on residential mobility emphasizes the individual decision to move, within a general comprehensive model that seeks to conceptualize the behaviour involved in the residential mobility process (Figure 2-2, Brown and Moore, 1970). By means of Wolpert's (1965) concept of "place utility", which is the net composite of utilities derived from the individual's integration of some position in space, and an abstract measure of a household's level of satisfaction or dissatisfaction with respect to a dwelling unit and its neighbourhood environment, the decision to seek a new residence may be analyzed.

The decision to move can be viewed as a function both of the household's present level of satisfaction and of the level of satisfaction it believes may be attained elsewhere. The differences between these levels represent the level of residential stress associated with the present residential location (Clark, 1973). The decision of the household to actually go ahead and seek a new residence can be viewed as an adjustment to that stress. Stimulated by stress, the households will either adjust their subjective needs and expectations or reconstruct the environment in some way, resulting in stability. If this is not possible or more costly than relocating, the household will decide

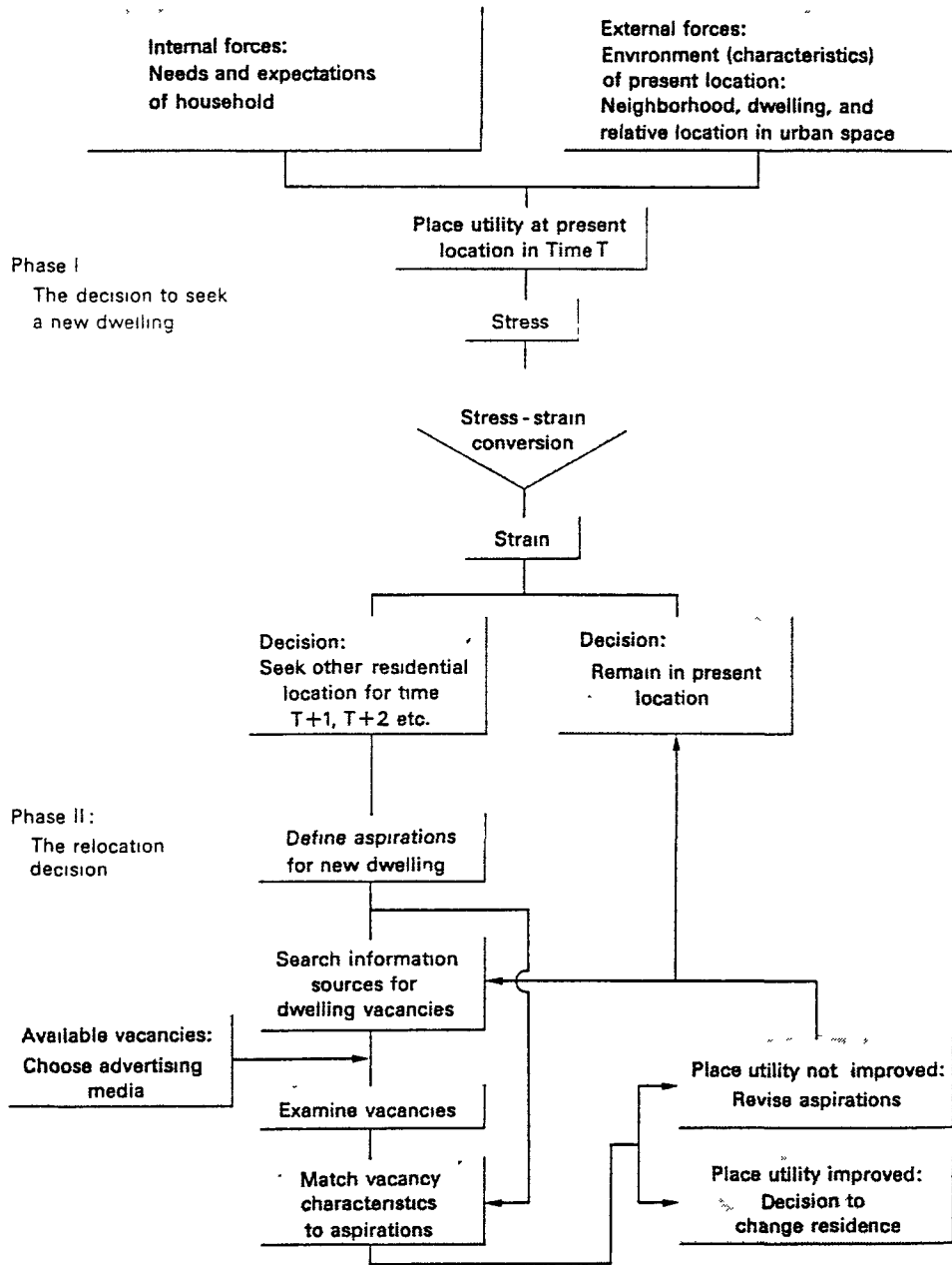


Figure 2-2 A model of the residential location decision process

Source: Brown and Moore (1971, 203).

to move and initiate a search for a more satisfying residence. Thus when the stress level reaches some subjective threshold, the household decides to relocate (Stokols and Shumaker, 1982). One major source of this incongruity involves from the changing needs that occur when life-cycle and status changes occur (Michelson, 1977; Rossi, 1980).

The second stage of the relocation decision includes the two processes of evaluation and search. In the evaluation procedure, criteria of the new residence are postulated based on the household's aspirations. Search behaviour is dependent upon the household's available information which, in turn, depends upon the household's "awareness space" (Brown and Moore, 1970).

A number of theorists, including Ginsberg (1972) and Stouffer (1960) developed models of mobility based on the opportunities available within a potential new locale, perceived obstacles to moving and benefits within the current locale. This conceptualization took into account personal or individual differences and factors associated with the place of origin and destination, as well as intervening obstacles.

Speare (1974; 1978) tested a theory of mobility that represents an elaboration of the previous cost-benefit models. He proposed that it is not necessary to invoke a stress response in order to predict whether or not people will choose to relocate. Rather, people reach a "threshold of dissatisfaction" which leads them to consider alternatives while using their current locale as a standard for comparison. Factors influencing dissatisfaction include changing household needs, amenities in the home and/or the neighbourhood, and a change in evaluative standard.

Huff and Clark (1978) have developed a model of residential mobility that integrates the independent trials process of statistical Markov models, the cumulative inertia hypothesis of McGinnis (1968), and the stage of life cycle aspects of the early residential mobility literature. In Markov models, waiting times between moves are assumed to be geometrically distributed, so that prior residences have no impact on the probability of moving. Alternatively, the cumulative inertia hypothesis posits that the probability of moving declines with increasing duration of stay in the current residence. The life cycle hypothesis states that the probability of moving is normally quite low, but increases sharply in transitions between life cycle stages.

The most recent theories of mobility assume that some sort of semi-rational cost-benefit analysis underlies the relocation decision making processes of individuals (Stokols and Shumaker, 1982). This theory is based on the social and economic benefits derived from moving as well as on the anticipated utilities of alternative places. A few economists have devoted greater attention to the study of residential mobility as a response to "housing consumption disequilibrium" (Hanushek and Quigley, 1978). The basic premise of this kind of model is that relocation incurs both monetary and nonmonetary costs which may or may not preclude the households from continually adjusting their consumption of housing in the course of demand shifts. Whereas equilibrium housing consumption is defined as the utility maximizing consumption that would be chosen by households in a frictionless world of costless mobility, housing consumption in the short run may deviate from an optimal level due to relocation costs and thus produce housing consumption disequilibrium. The basic hypothesis of economic mobility models is that the probability of moving is positively related to the degree and composition of housing consumption disequilibrium.

## 2.2.ii Housing Satisfaction Model in China: Social System Scale

Behavioural studies in residential mobility have moved away from the earlier focus on attributes of movers and moving to a consideration of their role in the broader context of housing market processes, neighbourhood change and wider social contexts (Clark and Moore, 1980). As a consequence, there must be more emphasis on the context of residential mobility than on individual mobility behaviour itself. To examine residential mobility only in an individual-behavioural context would not provide information on the broader social context. To paraphrase Clark and Moore's (1980) argument, it is the behaviour of society and the mobility behaviour within that larger behavioural matrix that are of interest (Clark, 1981):

the differing emphasis in the behaviour matrix between choice and constraint is a question of scale. By assuming away the societal and institutional context, most studies have tended to concentrate on the decision framework and the independent variables explaining mobility patterns. At a higher level of abstraction this represents the changes ... from a variable with independent status to one which is seen to be dependent on a further set of factors.

To construct a housingsatisfaction model in the context of the People's Republic of China poses problems because the available Western behavioural studies which emphasize choice and decision making in free-market societies, are not closely related to social and economic conditions in China. For China, it is more relevant to consider a system that consists of population

components, housing components, and policy control circuits at different scales, such as individual, family, work unit and government. However, China's present housing shortage and its social organizations under a centrally planned economy, hardly allow much variety of mobility behaviour in the Chinese people. Given this, there is not the same level of residential mobility in Chinese cities as in the Western free-market capitalist context. As Moore and Harris (1979) point out, the impacts of residential mobility are not just confined to individual and household behaviour, but, rather, are experienced in an aggregate form by a whole range of social organizations. This comment is very suitable for Chinese society.

The model of the residential location decision making which Brown and Moore (1970) built has been discussed. It is difficult to apply this model directly to Chinese society because residential location and mobility decisions are not made by individuals. Rather, they are made by others in the social system at all scales. Several studies in the West have discussed the ways in which household decisions are constrained and mediated by a variety of groups and institutions who operate in the housing market (Clark, 1981). Although China has not established a complete housing market, the dynamic relationship between

individual and institutional behaviour should be emphasized. Moreover, it should be kept in mind that China is not only a socialist nation that differs from East European nations, but also a developing nation that differs from the majority of third world nations.

Under present conditions, it is unusual for Chinese people to choose the place they live in by themselves, despite the rapid increase in housing construction since 1978. As the residential mobility decision is not made by individuals and also residential mobility behaviour is not common, the main concern becomes levels of satisfaction or dissatisfaction with housing and associated residential stress. For the purpose of this study a housing model has been created for China emphasizing satisfaction rather than mobility (Figure 2-3).

In the analysis of housing stress and satisfaction, the model presents the relations of perception of the overall environment system around the household, the position of social structure and the government housing policy. That is, this satisfaction model specifically introduces a number of main components: people and family by type; housing by type; housing policies; and some related determinants of behaviour, such as a representation of the residential environment including neighbourhood and dwelling unit, and psychological features of the household's expectations and aspirations. The model is dynamic and involves the social



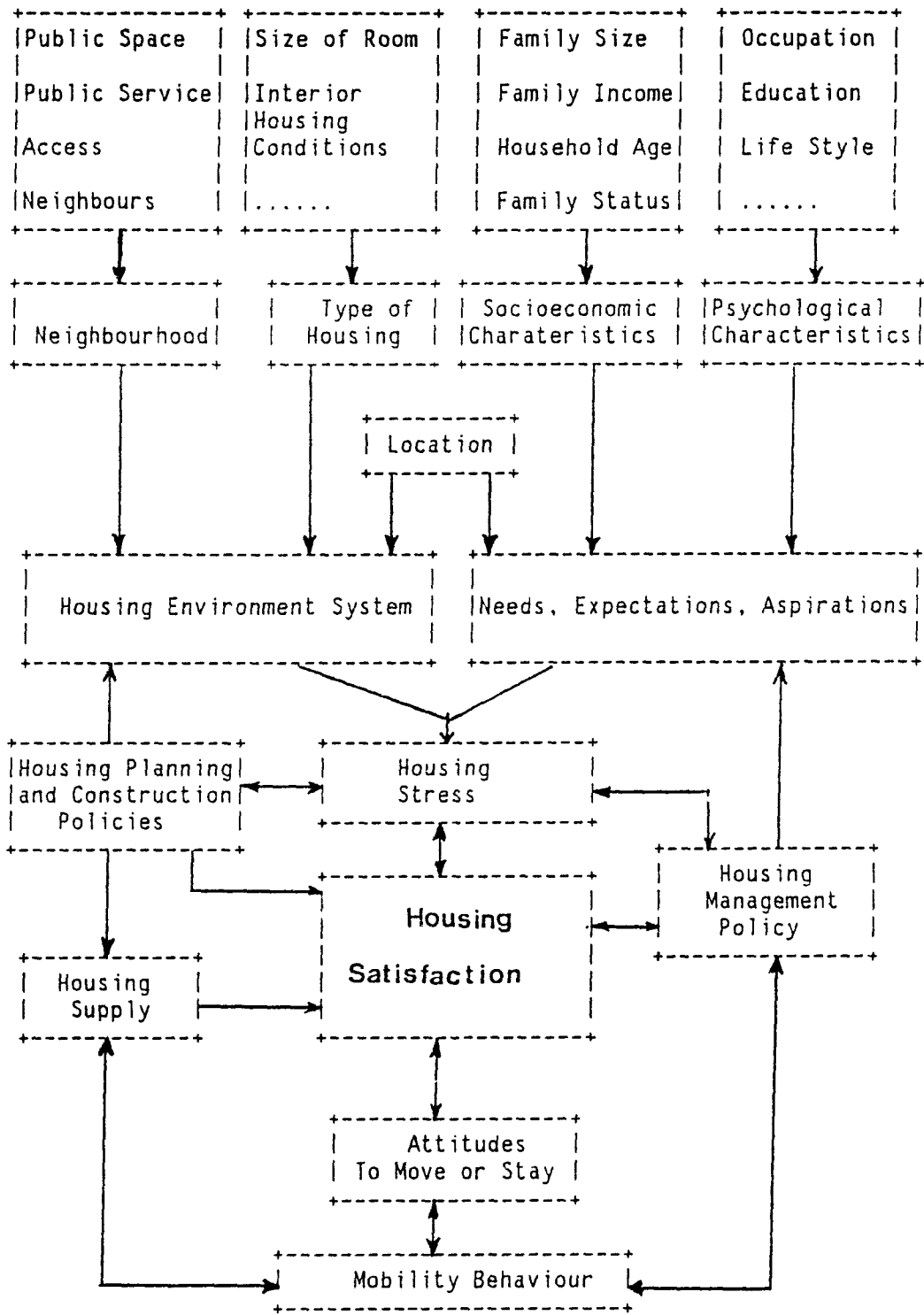


Figure 2—3 A Conceptual Model of Housing Satisfaction in China

organizations responsible for all aspects of housing supply, related features of residential allocation as well as housing stress. As a result of reviewing the residential mobility literature, it is believed that housing stress is a focal point related to the components of housing satisfaction in the model. As a result of the housing survey in Xian, the household's socioeconomic characteristics, housing conditions, housing environment system, present housing satisfaction level, attitudes to move or stay, the households location and anticipated mobility can be tested for the model.

### 2.3 Hypotheses from Housing Satisfaction Model

From the above discussion of residential mobility, housing policy and residential satisfaction that culminates in Figure 2-3 several hypotheses are now stated for subsequent empirical examination. Considering the importance of housing in Chinese society, residential satisfaction has several potentially important stressors. Actually, each stressor can be regarded at a different level, that is, an individual, a work unit and a city. The question of scale remains of great importance.

One important stressor consists of Central Government housing policies which affect construction development, residential planning, and housing management. Central Government housing policies in China mainly decide people's housing status. In the distribution of urban state-owned housing, allocation is based upon several socioeconomic variables. A consideration of housing stress and residential satisfaction must also include people's responses to the housing policies which decide every aspect of their housing status. According to the model, Figure 2.3, mobility behaviour is influenced by three factors: the housing management policies, housing supply and the individual's attitude to moving. Housing supply is dependent on housing planning policy, whereas an individual's attitude to move or stay is influenced by a diversity of variables such as policy context, housing conditions, housing environmental system and the psychological characteristics of individuals.

The second stressor is housing condition. Because of the level of resources of both government and houseowners, some of the older, owner-occupied houses have become dilapidated. In this kind of housing, people use public water taps, so inevitably there sometimes are disputes because of insufficient public space and in

sanitary facilities. Housing conditions include several other elements, such as the existence or condition of a kitchen, bathroom, the amount of living space per capita, number of rooms, age and type of housing, forms of water supply, and rubbish treatment system.

The third stressor, location is particularly important in China. This can be regarded as the stress experienced by an individual household because of its particular location in space. This stress may be related to location in certain parts of the city, to neighbourhood decay, to job changes and poor transportation services. One of the most important factors that contributes to locational stress is commuting distance from residence to workplace.

Last and perhaps the most important residential stressor in China is housing supply. This is one of the most crucial factors affecting the quality of life in contemporary societies. Because of the serious shortage of housing and residential overcrowding in China, the majority of families need and expect to enlarge their living space. If there were a free choice to move, enlarging their housing area would be a key factor in the decision making involved in the selection of new dwelling.

Given these points, the specific hypotheses to be tested are as follows:

(1) there is an association between the socioeconomic characteristics of residents and their level of satisfaction with their housing.

(2) there is a significant difference in housing satisfaction according to family type by size, structure, and income.

(3) level of housing satisfaction varies according to occupational and educational status.

(4) influence of age on housing satisfaction indicates that older people are happier than young people.

(5) residences without modern sanitary facilities are most unsatisfactory to the people in terms of their housing conditions.

(6) people's satisfaction with housing is strongly influenced by the quality of their housing environment.

(7) the residential location of household is significantly related to their housing satisfaction.

(8) the level of satisfaction with housing varies according to type of housing.

(9) experienced and anticipated residential mobility behaviour is directly related to type of housing.

The purpose of this chapter has been to establish the theoretical basis by reviewing a large literature on housing satisfaction. It has discussed geographic housing theory in Western countries in terms of different approaches, housing policy formulation, and the housing satisfaction model in China including its components, structure and hypotheses. Since this basis has been set up, the next chapter discusses the design of the research.

## CHAPTER 3

### RESEARCH DESIGN

There are two major components to the research design for this thesis ---- field work carried out in Xian, and analysis of the data obtained. The field work mainly included two parts, namely, collecting general housing data, and taking a sample and interviewing residents in Xian. This chapter presents first an overview of the historical, cultural, natural and economic background to the present situation in Xian. It is not the intention to attempt a complete coverage of these themes, but rather to emphasize those aspects which are of special relevance to understanding the contemporary housing problems. Secondary population data sources are then discussed, emphasizing population change over time in Xian. Finally, the sampling methodology is outlined, sample characteristics are reviewed, and the questionnaire developed for this study is discussed.

### 3.1. Background of Xian

#### 3.1.i. Historical Review

Xian, named Changan in ancient times, was one of the best early expressions of the classic Chinese capital city. It has a history of more than 3,000 years, and eleven feudal dynasties had their capitals intermittently in Xian for 1,100 years. Beginning 2,000 years ago, Xian became an important city where economic and cultural interaction was conducted between China and rest of the world. The world famous "Silk-Road" started from Xian.

Xian lies at the centre of the Shaanxi Province, which is the important cradle of Chinese civilization. Situated more or less in the centre of China, it combines the characteristics of both north and south China (Figure 3-1). Mild weather, rich soil and beautiful scenery made this area an ideal place for China's ancestors to live and prosper. At the end of the 2nd millenium B.C., Xian was the homeland of the Chou people, who established some degree of political authority over much of north China from their capital near Xian (Wu, 1984). Later, the Qin, who first established a unified Chinese empire in 221 B.C., had their origins in the Wei valley. Xian remained a powerful centre of



political authority until the end of the 9th century A.D.. After the fall of the Tang Dynasty in 907, Xian gradually declined in importance as the political centre of the empire moved to the east, and eventually became a poor and backward region (Zhu, 1985).

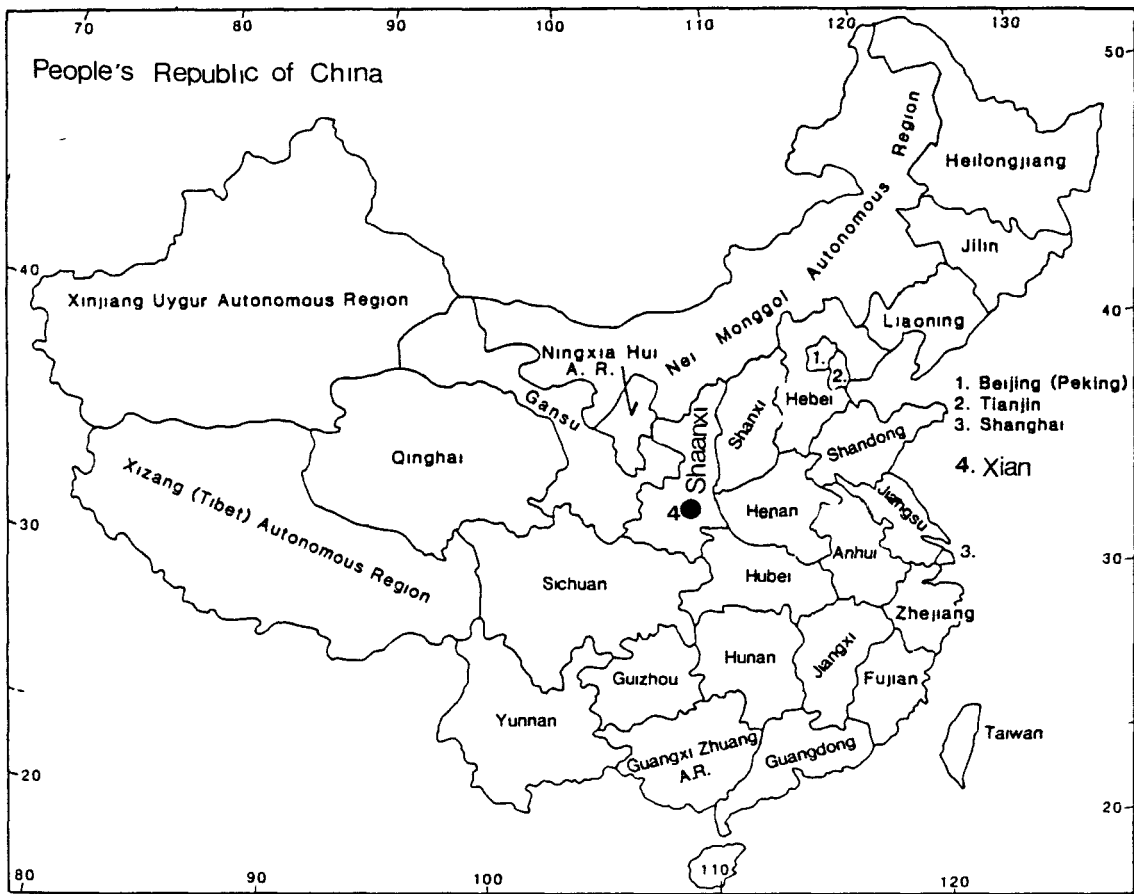


Figure 3-1 Location of Xian in China

### 3.1.ii. Land, Nature and Economy

Xian lies at the centre of Wei Valley. The Wei River, a tributary of China's second longest river, the Yellow River, flows nearby. The area was redefined politically by the Chinese government in 1984 as the capital city of Shaanxi Province. The municipality of Xian covers a total land area of 9,983 square kilometers which accounts for 4.8 per cent of total land area of the Province (Sung, 1985). The urban area of the city of Xian is 861 square kilometres.

The Wei River flows eastward across the province at the foot of the towering Qing-Ling Mountains to the south. Its valley is a major tectonics trough, bounded by a complex zone of faults and fractures along the foot of mountains, which form an area of seismic instability, very vulnerable to earthquakes (Nie, 1981). The northern border of the Wei valley trench is much less abrupt. The valley and the northern face of the Qing-Ling range are deeply mantled with loess, and the plain is largely formed of redeposited loess washed off the Loess Plateau to the north. All the rivers are heavily silted.

The climate in Xian is much less harsh than that of the higher Loess Plateau. The growing season is longer (about 240 days) and winter temperatures higher. The annual rainfall is also heavier, between 500-650 mm. Most of the rain comes between May and October, and spring and early summer are usually dry (Nie, 1981).

The Wei valley is naturally fertile, and has been intensively cultivated since early times. It was the site of the first major irrigation network in China, built in the 3rd century B.C.. Although the irrigation system was neglected after the 9th century, it was rehabilitated in the 1930's and has been further repaired and extended since 1949 (Wu, 1984). Well over half of the land is under cultivation, and the area supports a dense agricultural population. The valley grows rice in irrigable areas, winter wheat, tobacco and cotton (Nie, 1981).

The Wei valley has been an important communication route since prehistoric times. For centuries the Silk Road was China's major connection with the nations to the west. Since 1949, various roads and railroads have been constructed across Xian, and the area has been rapidly and systematically developed into a major regional industrial metropolis. The new industrial growth has involved large textile mills, producing both cotton and woollen

goods, and a large and diversified electrical industry (Tong, 1986). An engineering industry produces agricultural and mining equipment, and there are some chemical plants. Xian is also a very important administrative and cultural centre with some important universities and institutes, libraries and museums.

### 3.2. Population in Xian

Xian is one of the China's oldest cities and from the 6th to 9th centuries A.D. was the world's largest metropolis with a population of more than a million. It declined, however, and at the beginning of this century had a population of only 110,000 (Wu, 1984). In 1935, a railroad was completed to Xian, and during the Sino-Japanese War many refugees fled westward to Xian where they increased the population. When the People's Republic of China (PRC) was established in 1949, Xian had 400,000 people (Zhang, 1986). The discussion of population in Xian will focus on when the new government of PRC began to administrate the whole mainland after 1949.

### 3.2.i. Urban Population in China

China's urbanization patterns and policies since 1949 have been the focus of much attention. The main elements of the "Chinese Model" are the massive "rustication" movements -- i.e., the recruitment of large numbers of city dwellers to work in rural areas -- strict controls on rural-urban migration through food rationing and household registration, and expansion of rural employment through the development of rural industries (Chan and Xu, 1985).

Basically, there are two types of urban places in China: the municipality and the town. A large municipality, which usually also administers a number of counties, can be further sub-divided into two parts: the city and the counties. For example, the municipality of Xian is divided into: (a) city proper ---- officially designated as the urban area, a large part of which is built-up, and (b) suburban counties ---- a much larger area comprising 6 counties which are predominantly agricultural. Accordingly, the population within the municipality (Total Population of Municipality, TPM) is further classified into two parts ---- the Total Population of City (TPC) and the Total Population of Suburban Counties (TPSC).

In China, one can easily determine the urban population as people in cities have registered permanent residence booklets, or so-called "household registers" for the purpose of grain distribution and residence control, while rural people do not. Designation of urban population, therefore, is determined by whether or not there is an entitlement to receive commodity food grain rations from the state. The Chinese household register also distinguishes the "agricultural" and "non-agricultural" population. However, this distinction may not reflect the actual nature of an individual's occupation or residential location. For example, in urban areas, commune members are classified under the household registration as "agricultural" population because they are still tied directly to the communes and as such are not eligible for commodity grain or other rations.

Owing to this multi-level classification, population statistics for a municipality like Xian are quite complicated and may be confusing. For this research, three types of city population are recognized:

NPC: Non-agricultural population of a city proper, a narrow definition of urban population based on household registration.

TPC: Total population of city proper, excluding suburban counties but including the agricultural population within the city proper who do not have household registration.

TPM: Total population of a municipality, the city proper plus the agricultural suburban county population.

### 3.2.ii. Summary of Population Change in Xian

By 1949, the Chinese developmental landscape had become lopsided in terms of the levels of economic achievement in favor of the cities, especially the large cities along the eastern coast. Based on the different definitions, we are able to construct a table for Xian's population growth (Table 3-1).

The urban population growth in Xian can be broadly divided into four major periods: 1949-1957, 1958-1965, 1966-1976, 1977-1986. Each of these periods has distinct characteristics regarding population development (Figure 3-2).

During the first period, 1949-1957, the flow of peasants toward the city greatly accelerated, as did the flow of the migrants from the east to the west. There were two main reasons for this rapid growth. One was the high annual rate of natural increase in population, the other was the rapid economic development in West China. In this period, China's priority for economic development was the west, and the Chinese government sent many technical and professional workers including engineers,

doctors, accountants, teachers, and skilled workers from east coast provinces to the urban northwest of China, especially to Xian, the biggest city in this area. Also, the peasant newcomers came mostly from the counties around Xian to the stated-owned enterprises within the urban area.

In 1958, the second period began with the Great Leap Forward Movement (1958-1960). This period was characterized by exchanging migration between urban and rural areas in terms of development policies. The Great Leap Forward Movement failed rather miserably, and caused a very serious economic depression. Therefore, many city governments, strongly guided by the central government's policies, sent huge number of urban residents to rural areas. The population in Xian in 1961 declined, and the migration rate in the City was characterized by a net loss. After 1963, however, the economic development increased so the flow of migration changed to a net gain whereby city dwellers returned together with newcomers. Because of this and a high rate of natural increase, the population increased rapidly again.

The Cultural Revolution (1966-1976) is often referred to as the ten-years of internal chaos in China. Owing to the well-publicized rustication movements in this period, China's urban population, including that of Xian, had stopped growing or actually decreased. A large number of young people, called



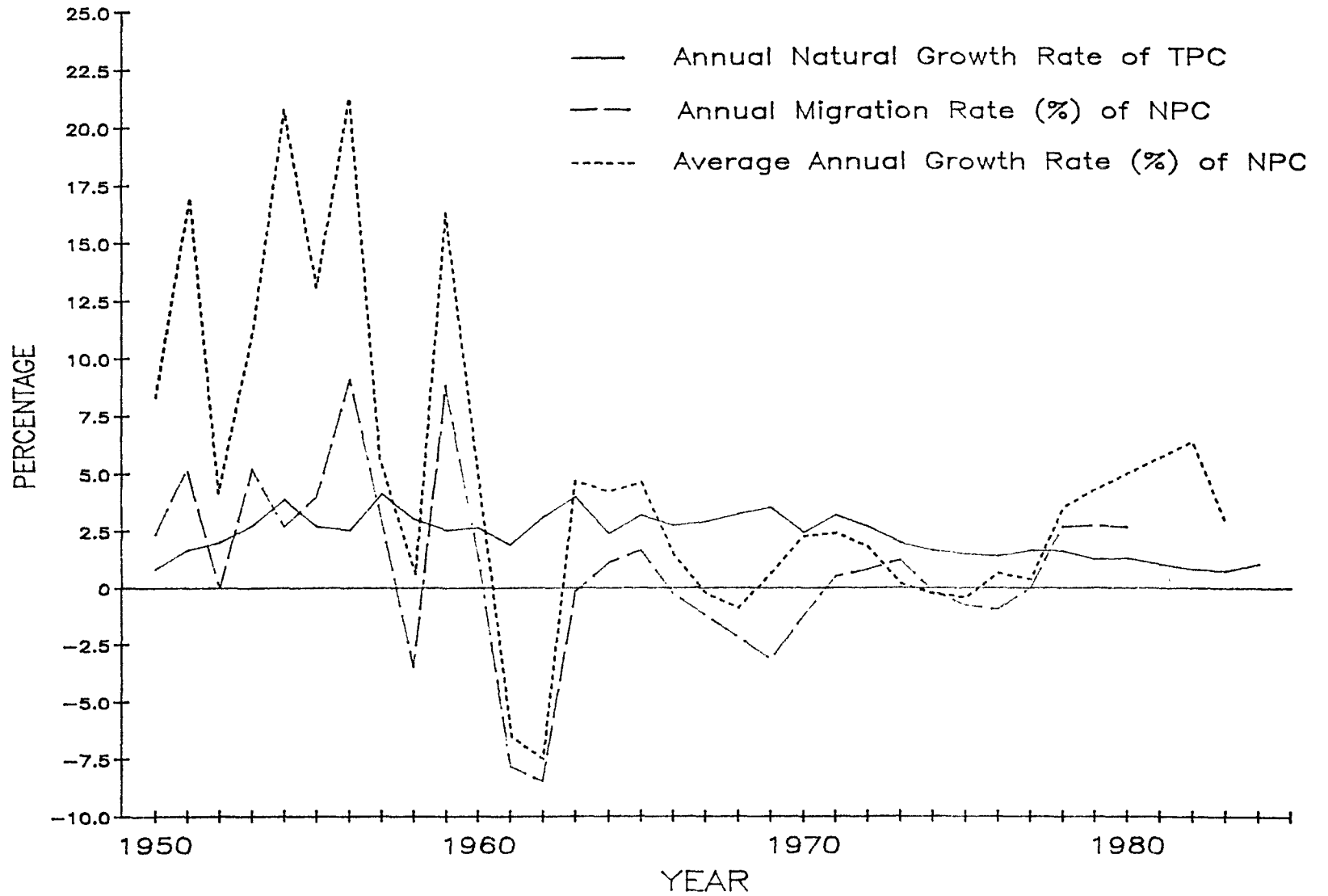
TABLE 3-1 Population of Xian By Years

Year End	TPM		TPC	NPC
	ten thousand	AAGR %	ten thousand	ten thousand
1949	227.87	--	71.45	39.72
1950	234.89	3.08	75.93	43.03
1951	248.04	5.70	83.73	50.34
1952	253.97	2.24	86.45	52.47
1953	262.20	3.26	92.24	58.26
1954	278.36	6.40	104.45	70.01
1955	293.47	5.42	114.49	79.21
1956	316.98	8.01	132.73	96.09
1957	327.27	3.24	139.00	101.47
1958	332.57	1.62	139.60	102.14
1959	353.70	6.35	156.13	118.79
1960	366.71	3.67	164.13	125.05
1961	366.49	-0.06	156.69	116.89
1962	370.42	1.07	151.50	108.04
1963	380.44	2.70	156.37	113.12
1964	390.29	2.59	161.88	117.87
1965	400.03	2.49	167.03	123.32
1966	407.04	1.75	169.33	125.08
1967	412.79	1.41	170.29	125.31
1968	419.86	1.71	171.22	124.99
1969	427.19	1.74	170.98	123.85
1970	435.12	1.86	173.04	124.64
1971	444.17	2.08	176.34	127.46
1972	454.43	2.31	180.14	130.51
1973	466.35	2.62	184.12	132.87
1974	473.12	1.45	185.59	133.10
1975	478.87	1.22	185.92	132.73
1976	483.88	1.05	186.01	132.14
1977	492.15	1.71	187.59	132.99
1978	498.10	1.21	192.92	137.80
1979	504.82	1.35	198.08	142.69
1980	511.93	1.04	203.44	148.86
1981	502.85	1.74	--	--
1982	528.84	1.53	219.65	154.03
1983	535.47	1.25	222.43	163.90
1984	544.56	1.69	227.64	168.63

Source: Chinese Cities Statistics Year Book, and The Geography of Xian

TPM: Total population of the municipality  
 TPC: Total population of the city  
 NPC: Non-agricultural population of the city  
 AAGR: Average Annual Growth Rate (%) of TPM

Figure 3-2 Population Growth Rate in Xian



intellectual youth, were forced under the terms of the cultural revolution to go to the rural areas from every city. Programs of forcing urban youth to migrate to rural or border areas have also been documented during the ten years.

The post-1977 period can be seen as a period of rapid urban development in China. After 1977, the fourth major period, China opened the door to the world as part of its Four Modernization program which is the national goal of industry, agriculture, science, and military modernization. The policies, however, not only open China to the world, but also open the cities within China. In terms of urban population, the national policies for controlling net urban in-migration to large cities have been relaxed, and the policy of transferring urban youth to the countryside has been terminated. During this period, Xian has experienced stable growth in its urban population, even though the Chinese government has since 1977 pushed very strongly a family planning policy.

### 3.3. Secondary Data Sources

In order to document the residential and economic structure of Xian as background to the analysis presented in this thesis, secondary data were obtained from several official sources in China. Since no data of any type were collected during the Cultural Revolution, there is a gap of information between 1966 to 1976. Moreover, quantitative data are not widely documented, and so to trace the urban social and housing development is very difficult. For example, there is no residential mobility data at all available in Xian.

An initial intention of this research was to emphasize urban spatial behaviour, but the available data are not so much geographic, as economic. In terms of housing policy in China, economic development, which includes residential development under state planning, does not differ much among Chinese cities. China's basic policy is one of planned urbanization, and therefore, the majority of data about housing policies are from the governments at all levels of social organization. In particular, housing data are published by the "Ministry of Urban and Rural Construction and Environmental Protection (MURCEP)", the "State Capital

Construction Commission", and the subdivisions of a city or a provincial government, such as the "City Planning Management Bureau of the City (CPMBC)", and the "Housing Estate Management Bureau of the City (HEMBC)", and so on. But these data are not systematic and not useful for research work.

Other main sources of published data are the statistical year-books, namely Chinese Cities Statistics Year Book, published by the "State Statistics Agency", Xian Housing Estate Statistics from HEMBC of Xian, and China Facts and Figures Annual published by Academic International Press.

#### 3.4. Primary Data

Published data do not supply certain kinds of desired information, so a sample of the population of Xian was questioned in the summer of 1986. The primary data used in the analysis come from a random sample of 280 households. The sample was partly derived by randomly choosing household addresses of employees from several work units. The work unit, a very common phrase in China, is best described as any kind of labour-based collective including a factory, an enterprise, an official organization, a hospital, a school or university, or a retailing store. In order to obtain a representative response to the housing satisfaction of the whole urban population, several different work units were chosen as the basis for sampling. They are:

- (1) Shaanxi Light Industrial Research Institute
- (2) Xian Teachers College
- (3) Xian Jiao Tong University
- (4) Shaanxi Province Federation of Trade Unions
- (5) Tax Bureau of Xian City
- (6) Xian Hardware For Daily Use Industrial Company
- (7) Shaanxi Construction Industrial General Company
- (8) Shaanxi Installing Company
- (9) Shaanxi Architectural Design Institute
- (10) Xian Hotels and Motels Bureau
- (11) Xian Oil Exploration Equipment General Factory
- (12) Shaanxi Wood Processing Factory

Additional household addresses of the sample were provided by HEMBC of Xian, These were obtained in order to sample from different subareas or streets in the whole city. Figure 3-3 shows the work unit locations and where the households in the sample are located, and Table 3-2 shows the socioeconomic characteristics of the sample.

In the Table 3-2-a, basic family information about households' family size, age and income of the sample are shown. From the table, it can be seen that the percentage of three and four person family takes up nearly two thirds of the total, which means two thirds of families in the sample are either a one child

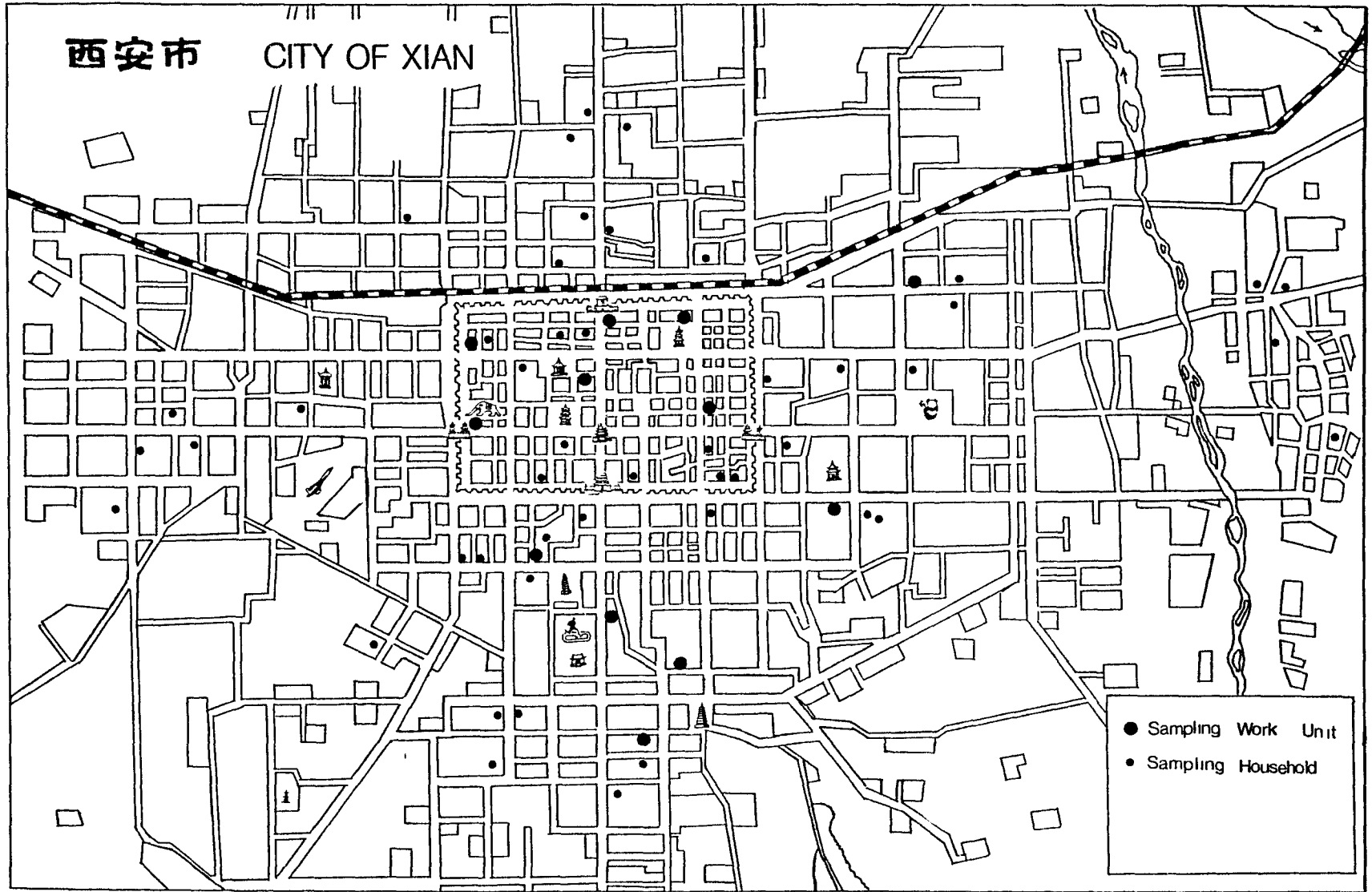


FIGURE 3-3 SAMPLING LOCATIONS IN XIAN

family or a two child family. Also, the percentage of one or two child households is identical with the percentage of 20-40 age groups. The mean numbers of persons per household in the sample is 4.45. This figure is almost the same as the secondary data (4.42). Another fact shows that the population control policy in urban China has played an important role.

Of the 280 households contacted, 88 did not respond to the survey, hence, the completed sample size is 192 or 68.7% of the original sample. The reasons this number failed to respond perhaps are that (1) some households cannot fill in the questionnaire because of their low education; (2) such a questionnaire survey in China appears very infrequently so people don't know what will happen if they fill in the questionnaires; (3) since the survey was of a mail back form it is also possible that some individuals either forgot to return mail the instrument or decided that they could not afford the cost. The basic housing conditions of the sample are shown in Table 3-3.



Table 3-2-a Socioeconomic Characteristics of the Sample

1. Persons Per Household		
Number	Total %	Daily living %
1	---	0.5
2	4.3	6.8
3	30.3	34.2
4	29.8	33.2
5	13.8	14.2
6	9.8	5.8
7	5.3	2.6
8	2.1	2.1
9 and over	4.8	2.6
2. Children Per Household		
Number	Total %	Daily Living %
0	---	1.1
1	37.7	46.0
2	33.1	36.8
3	14.9	10.3
4	6.9	4.0
5	5.7	1.1
6 and over	1.8	0.6
3. Age		
Category	Husband	Wife
20-30	11.6	16.3
31-40	33.2	33.6
41-50	24.8	29.8
51-60	25.4	20.7
61 and over	5.0	0.6
4. Family Structure		
Number of Generations	% in category	
1	4.4	
2	71.7	
3	23.3	
4	0.6	
5. Family Average Monthly Personal Income		
Chinese R-M Dollar	% in category	
10-25	0.5	
26-40	20.0	
41-55	41.1	
56-70	24.3	
71 and over	14.1	

Source: Fieldwork, 1986.

Table 3-2-b Social Characteristics of the Sample

6. Education		
Category	Husband %	Wife %
Undergraduate and over	27.9	14.2
College	17.5	13.1
Technical School	14.2	11.9
High School	19.7	25.0
Junior Middle School	13.1	22.7
Primary School	6.6	7.4
Below Primary School	1.1	5.7
7. Occupation		
Category	Husband %	Wife %
Worker	15.1	32.0
Engineer	19.0	8.4
Manager	7.3	10.7
Driver	2.2	0.6
Employee for Third Industry	1.1	10.1
Medical Staff	0.6	1.7
Teacher and Professor	9.5	7.3
Researcher	7.8	5.1
Office Functionary	33.5	16.3
Other	3.9	7.9

Source: Fieldwork, 1986.

Table 3-2-b shows that in the sample husbands have higher education levels and better jobs than wives. In table 3-3, comparing primary data with secondary data of 1984, the sample can be seen as representative of housing conditions in the whole of Xian. The figures in the sample are a little higher than those in the secondary data because of great improvement in housing conditions in recent years. Almost half of the families in the sample have only two rooms, used just for sleeping. The table gives us a basic description of housing conditions in Xian.

Table 3-3 Housing Conditions

1. Personal Average Living Area		
Square Metres	Primary	Secondary(1984)
Below 2	1.2	
2-3	3.7 }15.5	24.7
3-4	10.6	
4-5	12.5	
	}29.4	26.0
5-6	16.9	
6-8	16.2	28.0
Over 8	38.7	20.7
2. Number of Rooms		
		% in the Sample
1		24.5
2		45.7
3		25.5
4		3.8
5		0.5
3. Kitchen		
	Primary	Secondary(1984)
Yes	75.4	83.2
No	17.9	13.2
Pitched	6.6	---
Shared	---	3.0
4. Bathroom and Toilet		
	Primary	Secondary(1984)
Own Toilet with Bath	15.1	3.2
Toilet only in Own Apt.	15.1	13.3
Public	33.5	44.7
Shared	50.5	38.0
5. Water Supply		
	Primary	Secondary(1984)
In the Kitchen	62.0	50.7
In the Courtyard	18.2	
On the Street	10.4 }33.3	49.0
In the Water Room	4.9	
6. Type of Housing Ownership		
	Primary	Secondary(1984)
State-owned	92.0	86.5
Private-rented	3.2	2.3
Private-owned	4.8	10.7

Source: Xian Housing Estate Statistics (1984).  
Fieldwork, 1986.

### 3.5 Questionnaire Design

#### 3.5.1 Psychological Techniques

Given the fact that behavioural geography has drawn heavily upon psychological theory and methods in the course of its early development (Gold, 1980), environmental psychology parallels the growth of behavioural geography. Both subareas share four characteristics--namely, they deal with the environment defined and ordered through human actions, they include people as an integral part of every problem, they grow out of pressing social problems, and they are multi-disciplinary in outlook (Proshansky, 1976).

One way of understanding the influence of the urban structure on the population and of the population on the development of the quality of the urban environment is to develop methods which implicitly or explicitly take into account the stresses created by aspects of urban structure, and to view the flows of population within the city as a response to these stresses. Some of the behavioural researchers, such as Clark (1973), have attempted to develop an operational handling of stress and to examine stress in relation to the desire to move. A central problem in this research concerns the method of best recovering data.

According to the social psychologists Baron and Byren (1982), it is clear that in order to study attitudes in a systematic manner, special methods for measuring both their presence and anticipated strength must be employed. Many techniques, involving the use of attitude scales or questionnaires, have been developed by social psychologists, sociologists and behavioural geographers. All of these techniques are designed to aid in the selection of items that will permit accurate and efficient measurement of responses concerning housing satisfaction.

Likert (1932) proposed a simple method of attitude scale construction which does not require the use of judges to rate an items' favourability. His method measures the "extent" of the respondent's agreement with each item, rather than simply obtaining a "yes-no" response. In this method, a large number of opinion statements on a given topic are collected, but each one is phrased in such a way that it can be answered on a 5 or 7-point rating scale. For instance (Table 3-4), the subject who rated these national groups in terms of his preferences expressed neutrality toward Chinese, including that he neither liked nor disliked them. This may be taken to mean that he really has no attitude toward Chinese since there is neither content nor strength. He also indicated that he disliked the French more than he liked the English. Such Likert rating scales were incorporated in the questionnaire used in this thesis.

Table 3-4 A Rating Scale

	Like Intensely	Like	Neutral	Dislike	Dislike Intensely
English		*			
French					*
Chinese			*		
	"	"	"	"	"

### 5.3.ii The Questionnaire

The questionnaire (see Appendix) was purposefully designed to collect basic information about the residential unit and its occupants, and information on housing satisfaction. It is divided into four basic sections:

Section I Socioeconomic Characteristics of the Households

Section II Housing Conditions of the Households

Section III Housing Environment

Section IV Housing Satisfaction and Residential Mobility

In section I, the questions are concerned with age, occupation, family size, locational address, and education level. In China these factors are likely to be related to housing conditions and satisfaction because of state housing allocation policy. This is examined in more detail in Chapter 4 but at this

point it suffices to say that in Chinese society with traditional opinions, age and length of standing at work are significant for people's benefits and welfare, including housing. So dwelling units are allocated on the basis of family size among middle-aged and old people who have a good education level and occupation.

Section II is concerned with the housing conditions of the households. In this section data concerning present room conditions, living area, number of rooms, kitchen, bathroom, water supply and rubbish treatment system are obtained. Section III obtains information about the neighbourhood, housing environmental quality, and the variety of public services residents have in their community. Housing conditions and environment were hypothesized in Chapter 2 to be the main elements of housing satisfaction; thus, considering the Chinese situation, an emphasis is to ask feasible questions which may be unlike those in North America. The Chinese consumer is on a lower level, so there is no point in asking question related to a problem such as parking. The Chinese urban housing system is very different from that in developed countries, so the questions to ask people in China should be different from those in the west.

The most important section of the questionnaire is last one, which concerns housing satisfaction and residential mobility. The questionnaire asks (1) prior moving decision factors; (2) present housing satisfaction; (3) intended residential mobility and (4) the most desired mode of housing. The techniques which are used in this study provided by social psychologists, are mentioned earlier.

This chapter has discussed the background of Xian which involves its history, land, nature, economy and population, secondary data and primary data obtained in the fieldwork and questionnaire design. Emphasis is on specific characteristics of population in China and its change in Xian since 1949 and methodological themes about where and how to obtain the basic data, and questionnaire. It has described the socioeconomic information, housing conditions and some basic figures of housing environment from the sample. Before housing policy and housing satisfaction are discussed, a general picture of the situation related to housing in Xian is presented.



## CHAPTER 4

### POLICY CONTEXT

#### 4.1 The Housing Policy and Housing Management System in China

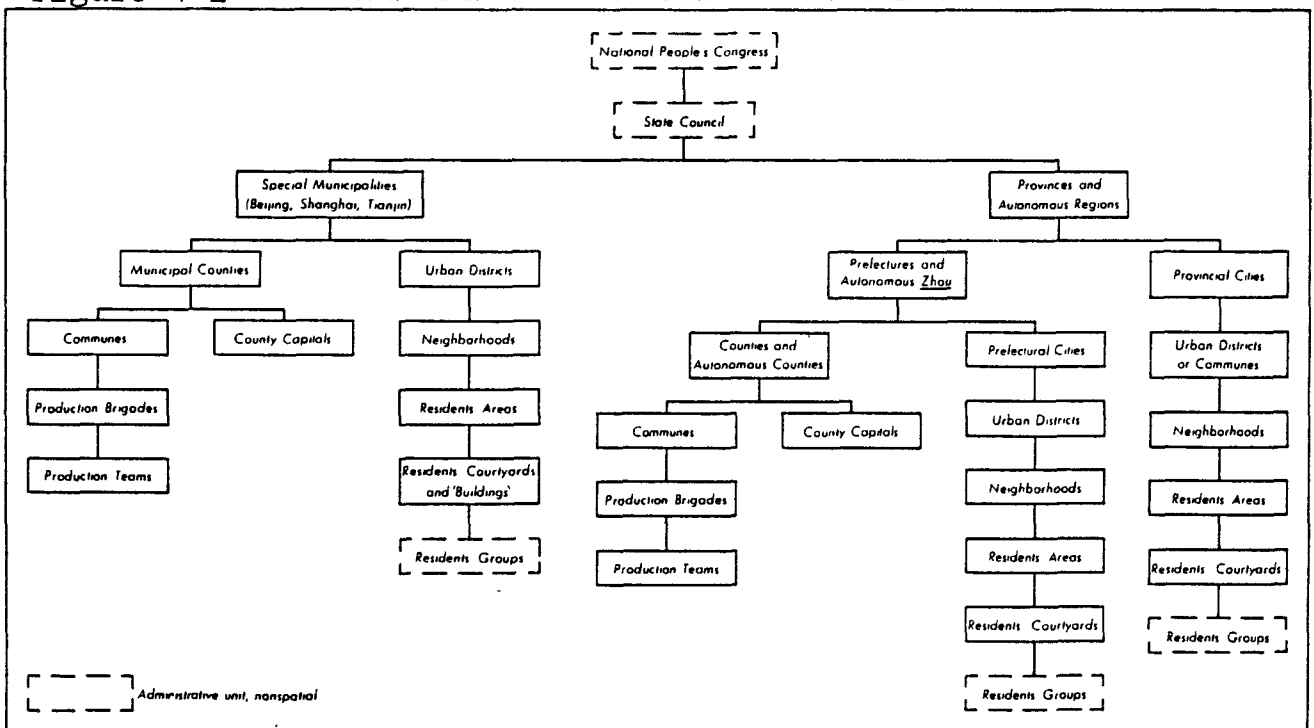
The housing management system of any political and economic administration is always related to the political system itself, or, in other words, housing is a subsystem of the administrative system. In order to draw the outline of the housing management system in China, the urban administrative system is considered first in this chapter. Subsequently, the housing system is combined with the political, economic, and social subsystems.

##### 4.1.i. The Chinese Urban Administrative System

In terms of administration and spatial division, the built-up areas of most of the large and medium-sized cities in China are divided into Urban Districts. In 1984, many cities, including Xian, were subdivided by a process of urban area redefinition into counties under the jurisdiction of indirect city government. The

counties, however, are not real urban areas and exist specifically to serve the city with agricultural supplies. The urban district, governed by a District People's Government, is divided into urban neighbourhoods, created in 1954. A neighbourhood is governed by a neighbourhood office which directs the work of Residents' Committees that operate immediately below the neighbourhood level (Figure 4-1). The neighbourhood office is a basic organ of political power and the lowest level of government administration in a city.

Figure 4-1 CHINA'S SPATIAL AND ADMINISTRATIVE HIERARCHY



Source: Panell & Ma, 1983.

Several tens of thousands of people usually reside in urban neighbourhoods. The city of Xian has 32 neighborhoods, each with more than 50,000 residents (SSA, 1986). A neighborhood office has a director, a deputy director, and a number of office workers, all appointed by the People's Committee of the district above the office. One of the major functions of the neighborhood office is to mobilize the residents for housing and social work, and neighborhood shops, restaurants, factories, schools, nurseries, clinics and recreation facilities (Ma, 1979).

Although the neighborhood is the most basic official urban administrative unit, it is further subdivided into Residents' Committees, which are so-called "mass organizations" at the lowest level in urban areas. An important function of such partially autonomous organizations under the neighborhood is involved in directing public health campaigns to improve the urban environment, in organizing social work, in actively promoting family planning and distributing contraceptives, and in making recommendations to housing authorities on housing allocation. This function is especially important for newlywed couples and housing adjustment (Pannell and Ma, 1983).

Under the residents' committee are second-order mass organizations known variously as "residents' courtyard" or "residents' building". These mass organizations at the grass-roots level appear to have been established mainly to organize and serve housewives, children, the retired, and students after school hours and during school vacation periods (Jeffrey, 1977). They do not directly affect the working residents, who are generally organized in some way at their place of employment.

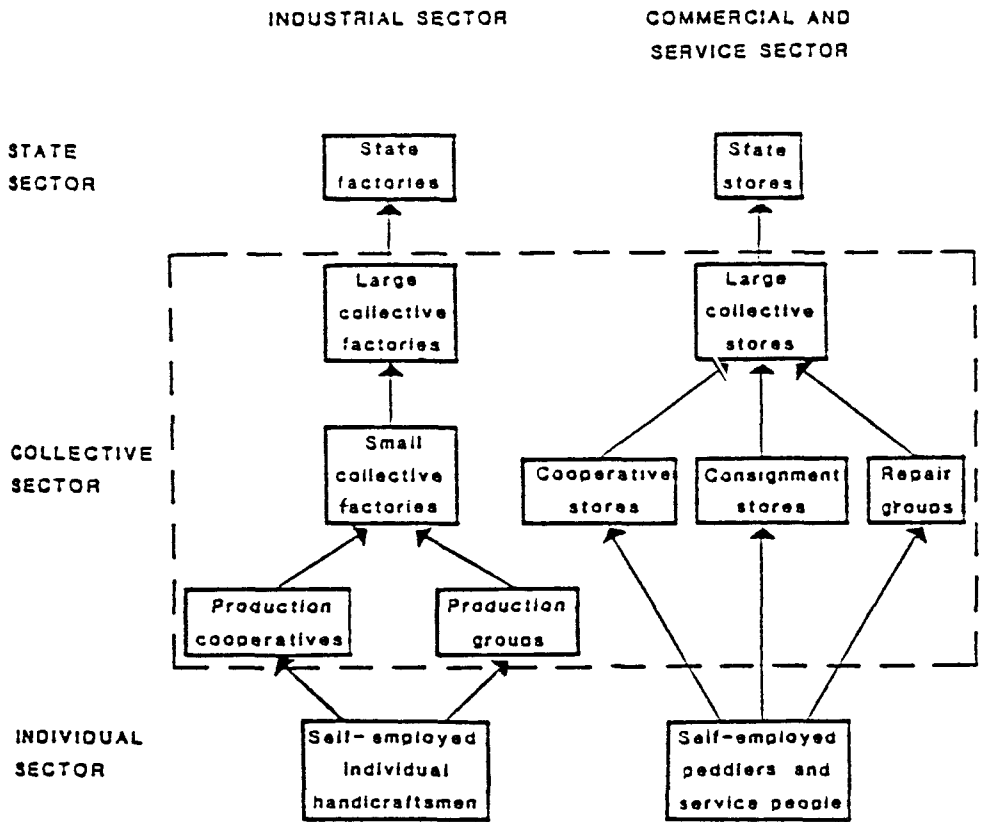
#### 4.1.11 Structure of the Chinese Urban Economy

The Chinese economic system can be separated into three major branches on the basis of the ownership: state-owned, collectively-owned and individually-owned enterprises.

Chinese state-owned enterprises, such as large factories, have always been managed as administrative organs of government ministries and they are owned, operated, and supported entirely by the state. The collectively-owned system is generally viewed as a transitional form between the private and the state-ownership of the means of production. It includes all forms of collective enterprise found in Chinese cities, including co-operative and collective groups, stores, factories and various service-oriented establishments. The collectively-owned unit is partially operated and managed by the city government, but in terms of economic

structure, is solely responsible for its profits or losses. Figure 4-2 is a highly simplified model of the Chinese urban economy based only on the industrial, commercial and service sectors. It shows the paths of upward transformation from lower forms of enterprises to state ownership (Tang and Ma, 1985).

**Figure 4-2 A Structural Model of China's Urban Economy**  
 (Arrows indicate paths of upward transformation)



#### 4.1.iii Types of Housing Ownership in Urban China

There are three types of housing tenure possible in Chinese urban areas. The first type and major source of housing is the workplace that administers and owns houses supplied to the work unit. All workers and office staff apply for housing to most large and many small enterprises, and to government bureaus. This kind of housing is managed by the production units and other centers of employment. In Xian, this type of ownership controls 75.5 percent of the city's housing stock (HEMBC of Xian, 1985). The major pattern of constructing urban housing areas is linked closely with the development of centers of employment, especially industrial centers. Generally this type of housing belongs to state-owned enterprises, which are entirely supported by the governments, and housing investment comes directly from the planning department of the governments at all levels.

Housing estates are commonly located close to factories, offices, or research centers in order that workers and cadres may be within walking distance or a short ride away from their workplaces. Housing estates are developed with a broad set of available local goods and services. Large residential estates, which comprise administrative units and urban residents' committees, would include schools, a medical clinic, a post office, and a variety of low level consumer services. Larger and more populous administrative units would include larger stores and

markets as well as more recreational facilities. The main goal is to satisfy demand for goods and services at the neighborhood local level and so reduce the need for people to travel throughout the city for schooling, medical attention, food, clothing, and other services. The supply of urban transportation is poor. Thus, the planning strategy incorporated in China's urban housing appears to be logical and appropriate for current income levels.

Secondly, many apartment buildings and other types of dwelling units are municipally owned, and a city may plan and construct its own housing, either as new estates, or to replace old substandard housing. It appears that municipally-owned housing serves mainly the needs of the relatively few old persons who never have had a job and others who are working in the individual-owned sector of the economy, such as self-employed people, who apply to the municipal housing bureau for space. Enterprises and other work units without their own housing, which usually are small collectively-owned factories and stores, also refer their employees to the housing bureau. Such city government-run housing still plays an important role in China today. In Xian, it is 14.5 percent of the total housing stock (HEMB of Xian, 1985).

The third sector of housing is privately-owned. The extent of owner-occupied housing for the nation as a whole is difficult to assess. The different cities have different amounts. It is known that 24 percent of houses in Wuhan and 22 percent in Shanghai are privately owned (MacQueen, 1981). For the private section of Xian the figure is 10 percent (HEMB of Xian, 1985). Also, there is still a very small proportion of landlord controlled housing which can be rented out. This kind of housing usually is located in the old business core and is shaped by the traditional central courtyard. Such housing has been built by persons who are self-employed or by relatively well-to-do suburban dwellers who produce food for the adjacent city.

#### 4.1.iv Allocation and Prioritization of Housing

When we try to understand the housing situation in China, it is easy to pose questions, such as, how do people actually receive their housing? what factors are considered in allocating the wide range of housing types all over the city? is there an effort made to provide people with housing near their workplace? and what about the housing preferences and satisfaction of the people?

Almost all urban inhabitants, irrespective of their occupation, are provided with housing meets their minimum needs by the units in which they work. When looking at China's housing policies, firstly it is useful to understand who decides on allocation and priorities. In the distribution of urban



state-owned housing, the current system is that whoever needs a dwelling can apply to their unit leaders or the local authorities. Then the unit leaders or the local housing authorities will work out an allotment program according to the current supply and demand conditions, and hand it to the distribution groups for discussion (Liu, 1983). Thus, two keys of allocation and priorities of housing are the allotment program and the leaders of units and the municipal housing bureau.

According to the Central Government's distribution policies, China's thrust in housing is an integral part of its national policy of political and economic decentralization and localized self-reliance (Bacon, 1977). As such it emphasizes mass participation in decision making, worker identification with his or her workplace, and workers' control of decisions regarding their living environments. The members of the housing distribution group should be representatives elected by the general public, but many units are not, or do not have housing distribution groups at all. The leaders usually work out the allotment program without the participation of the public, and sometimes directly allocate the housing to the people who have good relations with the leaders. For this, Chinese people use the term "going through the back door".

The second concern with housing allocation is working out an allotment program which for factory workers and other associated enterprises has to be submitted to the workers' and staff members' representative congress for discussion and approval. In the allotment program, housing priorities are made and influenced by several factors. In the first instance, housing units are naturally allotted to those people whose need is greatest, such as those who need additional space because of expanded family size or extended family occupancy in overcrowded homes; young newlywed couples living with their parents or in a single dormitory; persons who are dislocated because their former residences were designated for demolition and reconstruction or who live far from their work, and so on.

The following factors are considered for housing allocation of the employees at any kind of unit, such as factories, schools, hospitals, enterprises, and government offices:

(1) Age and Length of Standing. In China, the length of time one has worked is very significant for benefits and welfare, including housing. The time is expected to reflect work skills, that is, the longer the time worked the better the skills. Applicants who have worked longer usually have higher priority for housing than those who are only recently employed. Priority is also related to age and family size, since old employees are generally skillful and have large family size, because they were married in the 1950's

and 1960's when the government did not have family planning policies. Therefore, in Chinese society, people who are middle-aged or old and have worked for a long time always have more children and so have greater housing demands than young couples.

(2) Locality. Applicants for state-owned housing apply at the units or housing management bureau where they wish to reside. Applicants are processed on the basis of established criteria. To be eligible an applicant must either work or live in the area of the units in the city. Preference is given to those working in the locality. Applicants who work elsewhere within the city, but live in the area must conform to the requirements of the housing management bureau. Applicants who live elsewhere, but work in the area of the unit within the city always get priority for housing because of the transportation problems mentioned earlier.

(3) Marital Status. Housing priority also goes to newlywed couples to help them establish their new family unit. Before they get married, young couples who live with their parents or in the unit residences are placed on a waiting list and admitted according to priorities. However, in many cases unit do not have any space at all for their newlyweds. Under these circumstances, the waiting list of housing priority indicates a further position for newlywed couples who are older among young people.

It should be pointed out that there are two types of singles in urban units in China. One is a real single who is not married. Another is a person who got married but whose spouse is not working and living in that area, but rather in a suburban county or in another city or town. People in China name this situation "husband and wife living between two places", and the number of "two place families" is quite large. Recently, the government has attempted to solve this problem by arranging for them to live and work together in one city. If they move, a high housing priority goes to them.

(4) Family Size. Dwelling units are allocated on the basis of family size among middle-aged and old people who need additional space because of expanded family size. It was pointed out above that in the 1950's and 1960's there was no population control policy for family planning. At this time when people were permitted to have several children, the population grew rapidly. Now the children are around twenty to thirty years of age. Thus these families need more space without overcrowding, whether their children are married or not.

In order to encourage family planning, one-child families are treated as two-children families in allotting dwelling housing (Liu, 1983). The priorities are just opposite with old couples who have more children, while young couples have one child.

(5) Position and Education Level. If someone in the unit has a good education, he or she will get housing priority over others. This policy is meant to give priority for benefits, including housing, to the intellectuals.

Political leaders also get housing priority because of their contributions to society. But a few privileged officials, taking advantage of their position and power, have built better or occupy more houses than other people.

#### 4.1.v Chinese Housing Management Policies

In China, the national government has assumed responsibility for the improvement of housing conditions in urban areas. Present policies give priority to increasing the housing supply and to maintaining and improving the older housing stock. Urban housing developments are financed primarily with public capital construction funds. Future development is guided by an overall housing plan of replacement housing and renovation and decentralization of new residential communities. Such development is usually in the context of the large heavy industrial concerns, and housing is financed from the factory welfare fund, in collaboration with the city planning authorities, in which is one of the large number of municipal divisions.

Policies governing land ownership and control are incorporated into China's constitution. Basically, the land in urban China is owned by the state. Provisions of land use in the constitution of China states: "All organizations and individuals who use land must make rational use of the land .....(citizens are allowed) to own houses and other lawful property and to inherit private property" (Liu, 1983). The Central Government has consistently attached great importance to land use of housing construction, and the governments at all levels have adopted vigorous measures to provide land for the planned construction of housing. The unit or individual only has the right to use the land for housing; illegal seizing of land is not permitted.

Rents are low and stable, accounting generally for only 2-3 percent of a family's monthly wages. This expenditure plus a charge for water and electricity amounts to only 5 percent of income. Rent in housing developments includes the shelter rent and any special management fees. Because this does not cover operating and replacement expenses, the deficit is made up by subsidies. Also, the shelter rent system varies. Rents may be based on a system that takes into account the size of the dwelling unit, the amenities and type of development, or on a system that charges a flat rate for the number of square meters of space occupied.

Special management charges vary and may include charges for damage or property breakage not due to normal wear and tear. There may also be special fees to cover the salaries of bicycle lot attendants, akin to automobile parking lot attendants, or for other special services. If a resident uses the attended bicycle lot, there is a monthly charge for security.

Management is responsible for maintenance. This includes janitorial services, repairs and replacements, and "outside work", such as repairs to the buildings and scheduled painting of public spaces. Major repairs and replacements are handled by utility companies of the city or the utility division of the unit. Garbage is picked up by an outside garbage disposal company. The residential management committee inspects the buildings and grounds for cleanliness and maintenance. Usually, residents are required to clean only the area in front of their doors. The salaried cleaners are assigned to each building to clean garbage disposal areas and grounds in the units.

#### 4.2. Changes in Housing Policy in Recent Years

One of the major problems Chinese society has faced in urban reform is the ability to solve its housing crisis without changing substantially the national housing policy. Since 1977, the Chinese Government has been looking for some ways to reduce housing stress. This is becoming increasingly important in the urban reform of Chinese cities.

#### 4.2.i Construction Policies

In 1983, the Chinese government appointed several experts in architecture and urban studies to design new urban housing construction and new development policies. These policies were intended to make progress toward reducing the problem of housing shortage and housing demand.

The first objective for construction development is to control the size of housing units and the size of land used for housing (Xu, 1986). Chinese urban land use problems significantly affect urban structural change in terms of saving land. Therefore, by setting up state owned apartment buildings, a set of apartments can be centrally controlled by regulation to cover a maximum of 50 square metres floor area. According to the perspective of increasing population growth and housing investment, if each apartment is controlled by the above size, China can realize its housing goal whereby each family will have an apartment by the end of this century (Shang, 1986). This policy comes from the socialist idea of providing similar housing for every family and avoiding the possibility that some families may have too much space while others have no space to live in. It is also trying to enlarge peoples' living space, while on the other hand, cutting down the expansion of urbanization. This is consistent with the Chinese Government policy of controlling the size of large cities within the context of overall urban planning.



China is a country with a huge population but comparatively limited cultivated land, only 1.5 "mu" (Chinese area unit, equal to 29.6 acre) per capita on average. In housing construction, the government stresses the utilization of waste and poor land and the avoidance of construction on cultivated and good farmland. In order to economize the urban land, the policy tries to control the size of housing land use, which suggests that every apartment building in a city should have five or six floors. In some big cities, high-rise buildings are set up for the purpose of saving land. Most new urban housing in China appears to be large mid-rise apartment buildings, five or six stories without elevators. In Beijing and Shanghai, some buildings of 10-15 stories in height with elevators have been constructed but these are exceptions. The national standards reflect a desire for high density to ration land and to reduce commuting distances for urban residents.

The second objective of Chinese construction policy concerns population control, which restricts families to one child per couple. Thus the trend in family size is toward three person households or less. This trend requires newly built urban housing to suit the typical family. A family with three persons lives in a flat which includes two rooms, plus a bathroom and a kitchen. So the changed policy for construction development suggests that urban housing should be designed to have a medium or small size of flat in which a family lives.

The third objective of construction policy concerns technical and engineering considerations, which include the study and making of new building materials and large-scale manufacture of prefabricated parts as well as the introduction of advanced technology to the industrialization of housing construction. This also includes improving architectural design, using high quality materials and reducing the drain on consumption of energy (Zhou, 1979). The purpose of this policy is to change, as quickly as possible, China's traditional building methods, that is, methods involving a great deal of manual labour, and requires the designers to pay attention to the well-developed housing patterns which people like and prefer.

#### 4.2.ii Planning Policies

Many cities in China in the years before 1949 were labelled by Chairman Mao as "consumer-cities", in that their functions were viewed essentially as parasitic rather than generative, especially in terms of economic production (Mao, 1949). Since the 1950's, the overall goals of Chinese urban planning were aimed at the correction of "the ills inherited from the era of capitalism" (Ma, 1979). Thus, city planning was charged with two general responsibilities in the above quotations, namely to increase production first and then to facilitate people's livelihood.

In fact, however, many problems have continued to exist in residential areas under this type of policy. The difficulties were largely a result of inadequate infrastructure facilities and the lack of co-ordination in commercial services development and cultural amenity provision in satellite towns or suburbs. These policies which have emphasised high economic output for the country's urban centres and minimal development of inner-city services have expanded the cities' geographical boundaries but failed to develop the new surrounding areas into supportive urban satellites. Moreover, these policies have caused discontent in that people did not like to move to newly-built housing areas and consequently the government failed in this area of housing development.

In order to solve these problems, the new housing planning policies require unified development and provision of a residential conveyance system of housing (Wu, 1985). In this context, unified development involves planning, designing, taking over land for urban use, demolition of slums, construction of new building, and relocating the population. Residential conveyance of housing means, under the requirement of overall planning, to construct a full range of services that people need in their daily lives. This includes setting up public schools, hospitals,

commercial services, constructing water supply and sewage systems, laying gas pipes, building the supply of electricity, heating and communication network, paving paths, providing refuse stations, public lavatories and green areas. This has the advantages of low cost, high efficiency and convenience for the population.

Another planning policy change after the Cultural Revolution was to replace slums and shack houses in old urban areas. There are many areas in which half of the urban housing stock has long been out of repair (Ye, 1986) and renovation of existing housing has also been seriously neglected. The policy gives priority to the worst shacks for renovation and seeks to speed up the reconstruction of old living areas in total. Since 1.75 million square metres of floor area of urban old housing were demolished in 1977 and this figure increased to 10.79 million square metres in 1982 (Lian, 1983). With such widespread housing renewal the living conditions of the residents in the former shacks would improve.

#### 4.2.iii. Economic Management Policies

Between 1949 and 1978, the Chinese Government built living quarters covering a floor area of 531.5 million square metres for the residents of cities, towns and industrial and mining areas. The greater part of this housing expansion was in the form of reconstruction (Zhou, 1979). Despite this rapid growth in housing supply the housing shortage is, however, still widespread particularly in big cities with large populations and in areas of rapid industrial development.

During these years, all urban residential buildings were constructed with state investment and then distributed to individuals. The households pay the state very low rent----about 0.12 R-M yuan (Chinese dollar) per square metre per month (Lin, 1985). This housing system has helped the people maintain certain living standards. However, it has many serious disadvantages. For example, it violates economic laws. Funds used to build residential quarters, as investment for construction, should be recoupable. Only in this way can new construction projects be undertaken smoothly. The low rents collected under the present system are not enough even to cover maintenance and management fees, let alone build new houses. Therefore, the state must continually make new investment in new houses. The more houses built, the more funds become tied up in construction costs.

Moreover, the state has to allocate increasing subsidies to maintain and manage the houses. This only adds to financial difficulties at a time when the state faces the extremely difficult task of economic development, and adversely affects the development of urban housing construction.

Since 1978, China has carried out a reform in its urban housing system under the great umbrella of Chinese economic and political reform. It has tried to solve the problems of (1) serious disrepair and neglect of maintenance owing to the system of low rent; (2) low rent stimulating an overly strong desire for more dwelling space and better living standards; (3) imperfections in the present housing distribution system; (4) unreasonable institution of housing construction investment, and (5) the few housing estates invested in and built by private individuals.

The fundamental change in the housing system associated with ideological considerations is the commercialization of housing ---- that is, using the law of value to make the connection between housing demand and family income, to establish a housing market, and to open up more sources of housing investment. Therefore, the Chinese government since 1978 has adopted major policies on housing construction under the initiative of the central authorities, the localities, enterprises and individuals. The initiatives may be summarized as follows:

(1) To build housing for sale by the state or by enterprises. In 1979, the city of Xian had the first apartment sales since 1949 in urban China. Owing to the low wages of the staff members in China and the low rent of housing owned by the state, the government encouraged individuals to purchase their own housing, adopting a subsidized-purchase procedure.

In 1982, China extended this experiment in the marketing of apartment sales to four other cities----Changzhou in Jiangsu Province, Zhengzhou in Henan, Shashi in Hubei and Siping in Jilin (Lin, 1985). This practice has since been gradually expanded to other areas including Beijing and Shanghai. Under the commercialization scheme buyers pay one-third of the price and the rest is paid by the government or by the buyers' work units. This is a major change to the existing state monopoly on housing supply. A 50 square metre, two room flat costs 10,000 R-M yuan, and a buyer needs only to pay 3,300 R-M yuan. He can get a 15 to 30 per cent discount if he pays the total outright. If he wants to buy the flat in installments, he makes a 1,100 R-M yuan down payment and pays the rest of the money over 20 years, at a rate about 10 R-M yuan every month. In 1984, 1.9 million square metres of housing was sold to private buyers in 111 cities across China (Beijing Review, 1985).

The flat sales also show that people have the financial ability to buy housing. The first batch of flats for sale in the four cities actually fell short of demand. Of those who bought houses, 73.74 per cent paid the money outright in the subsidized sales of housing, and 26.26 per cent paid by installments. The outright payment retrieved were 72.3 per cent of the total investment of construction (Wu, 1985), and hence this money can be used to build more housing.

The policy permits ownership of the housing to the private owner who built or purchased it. The owner is allowed to sell, transfer and inherit the property. Because of possible changes in family composition, there might be a few vacant rooms. Given this, it is also permitted for owners to lease rooms after going through a procedure for admission and determining the rent standards by the housing management authorities.

(2) To adopt the measure of building houses for use with state assistance. This means giving permission to people to build houses for themselves with their own money (Lin, 1986). To further stimulate housing development in the cities, the Chinese government is urging local governments to take the initiative and invest their funds in innovative housing projects. A new program started in some cities, including Xian, attempts to expand the



housing supply using private instead of public funds by permitting enterprises such as factories, colleges, and individuals to build housing. State assistance comes in the form of aid from the housing agency and includes planning and administrative details and the supply of necessary building materials.

To expand private housing, the policy also encourages people to build their own houses. The government at all levels assigns a certain amount of land to individuals for building their own houses under the state unified land acquisition, unified planning and design as well a unified construction of infrastructure facilities and auxiliary services (Liou, 1983).

(3) To increase urban housing rental. Most urban housing is owned by the state, factories or work units in China. The policy for rental is to maintain low prices on basic items, including rent. In the early 1950s, the policy was to rent housing for exactly the cost of regular maintenance plus enough to build new houses to replace the old ones which were no longer habitable. At that time urban housing rented for an average of 6-7 per cent of family income (Zhang, 1982).

In the latter 1950s, the state decided that rent of workers and staff in state-owned houses should cover depreciation as well as maintenance and management, and planned to raise rents accordingly. But the higher rents were never instituted. During the "Cultural Revolution" rents were reduced to the present rate.

Chinese urban dwellers pay exceptionally low rent, but as noted earlier it is too low to improve housing shortages. Zhang Zeyu (1982), a responsible member from the Bureau of City Housing under the Ministry of Urban and Rural Construction and Environmental Protection, listed the following reasons for rent increases.

First of all, low rents are an added burden on state revenues. In 1979, for instance, the average monthly rent was 0.10 R-M yuan per square metre, while the monthly costs of depreciation, maintenance and management were 0.38 R-M yuan. The remaining 0.28 R-M yuan had to be covered by the state and enterprises funds.

Low rents also intensify conflicts over the allocation of housing. All housing except that owned by individuals is subsidized by the state on a per-square-metre basis. Therefore, for a family, increased living area requires a relatively small increase in payment, since the bulk of the bill is picked up by the state. This is irrational and motivates some people to cheat the system in order to acquire more and better housing. In times of severe housing shortages, this sometimes causes unfair housing allocations that in turn adversely affect unity among workers.

Furthermore, low rents discourage people from buying housing. It is much less costly to rent than to buy. Some people actually have sold their homes in order to live in rented flats.

The Chinese government thinks it will be necessary to gradually raise rents after the housing system is reformed so that the state will have more funds for residential construction and maintenance (Xin, 1986). At same time, the disadvantages resulting from the current low-rent system such as some people demanding more housing than they actually need, will be overcome. Workers are entitled to low-rent housing as part of their benefits package, and housing is an important component of the country's economy. But it should be administered efficiently and rents should be determined according to business accounting methods. People who have more space than others should pay more, and better housing with better facilities should cost more.

#### 4.3 The Urban Residential Environment System in China

When we ask whether Chinese people are satisfied or not with their residential environment, the answer should not only be concerned with individuals in terms of their attitudes and the policy context, but also with the housing system in China as a whole. In order to accommodate this, the Chinese residential environment system is now discussed.

#### 4.3.i A Conceptual Model of Urban Residential Environment System

The housing environment in China comprises a system that consists of population components, of physical and social components as well as of political and economic components at different levels, including personal, architectural, neighbourhood and communities and the city as a whole. Such a housing environment system is described in Figure 4-3. In this model all the factors and their relation to one another are presented as part of a single system.

The residential environment system can be derived from the natural environment and artificial environment. The structural components of the natural environment are soil, water, air, plant and animal, mineral and energy resources as well as the food-chain and so on. The artificial environment is a complex mixture including the population, the built environment, behaviour patterns and human activities, culture, and the political-economic system. The population factor can be described by size, age and sex structure, social organization and societal groupings. The built environment can be described by the architectural environment, which is one of the most important constituent parts, including types of dwellings and scale of buildings. The behaviour pattern includes physical work, practice of skills, personal creative behaviour, and trip making. The human activities includes migratory movements, daily mobility, decision-making, the exercise



of authority, administration, farming, industrial, commercial activities, transportation, and recreational activities. The culture component includes beliefs, attitudes, knowledge, social customs, technology, and information. All components of the environments both artificial and natural go into the city as a total environment, but may play different important roles at the different scales mentioned earlier.

#### 4.3.ii Types of Urban Housing in China

##### (1) Public Multistory Housing

Since the founding of the People's Republic, the urban housing built has been mainly public apartment buildings funded by the government through the state-owned work units. Design of this kind of housing is standardized, and almost all such housing is multistory.

The apartments built in the 1950's and 1960's were usually buildings of three stories. There were two kinds of designs for dwelling units at the beginning of the 1950's: one without any vestibule but only a short corridor, the other with a large vestibule which could also serve as a living room. Towards the end

of the 1950's, there tended to no vestibules. The vestibule idea began to come back again by the end of the 1950's, and to get larger. Individual apartment units do not have their own kitchen and toilet facilities but share them with several neighbouring families on the common balcony.

The apartments built after the 1970's are midrise buildings of from four to six stories, and are constructed of precast concrete panels and a precast concrete floor system. Openings for windows are placed in the panels at the factory. The windows themselves are steel casement. A typical apartment contains two or three rooms, a small kitchen, a toilet and one or two balconies. Some toilets have a bath included, and some do not. The total area is from 30 to 50 square metres. In Xian, most apartment buildings do not have a central heating system.

Usually, every work unit has some single-staff residence buildings without any kitchen facilities and with public water-supply rooms and toilets on each floor. Some couples live in these residences in only one room as there is no other housing available.

## (2) Traditional Housing

The traditional form of housing in Northern China's cities is the courtyard house or walled compound. A courtyard house has the main rooms to the north, the secondary rooms to the south, and side rooms to the east and west, all enclosed by walls.

Traditional compounds vary in size. Small ones are very simple rooms on 3 or 4 sides with a central courtyard. In the large and medium-sized ones there is generally a decorated gate and a door-way between the main rooms, forming several courtyards in succession.

As a building type, the courtyard house can be as elaborate as the imperial palace or as simple as a few rooms tightly clustered around a small single court. Usually this kind of house is located in or near the central business zones of the old urban areas. A water tap is shared by the several families in the same compound. The main rooms are connected on the side by a cramped kitchen. Public toilets are located in the nearby narrow street outside the courtyard. Sometimes a single family occupies a courtyard house, but in many cases it is shared by as many as 10 unrelated families.

Courtyard houses have many disadvantages. Most of them lack modern sanitary facilities and human waste is deposited in honey pots and then taken to a common dumping station where it is collected for field fertilizer. If a house has water service it is a cold water line only. In China, there is no hot water line in any type of housing, and all water must be boiled for drinking purposes. There are no modern kitchen facilities to store



perishable foods, to clean and wash fresh vegetables, or to prepare and cook food. Heat is supplied by potbellied stoves which burn a dirty, unhealthy charcoal. This is also true of apartments buildings, so a kitchen in Xian and in the majority of Chinese cities is only a small room without modern conveniences.

### (3) Public Single-storied Houses

This type of housing is composed of several rooms, simply built and arranged in rows. It does not show the careful concern for directional orientation, unlike the courtyard house. Yet its crowded living and lack of modern conveniences are like the courtyard house. Usually it is state-owned by the local HEMBC or work units.

### (4) Private Two-storied Houses

After 1978, owing to changing housing policies to encourage people to build their own houses, some urban residents and suburban farmers have built new private two-storied houses. These dwellings are constructed of a precast concrete floor system and bricks. They still do not have modern facilities, and a special problem is that dirty water collects at the front of these dwellings on the road. Because this problem has only recently appeared, there is no organization to manage and set up a public drainage system for them.

#### 4.3.111 Family Structure and Spatial Activities

The family remains the fundamental unit in Chinese society, taking care of the elderly and raising children with minimum apparent conflict. So the family is the cell of society, and most family life is spent in dwellings and residential districts. In a sense, homes are the physical cells while families are the social cells of residential districts, which in their turn, may be seen as clusters of cells forming an urban society.

Chinese urban families may be classified into four categories: (1) The nuclear family, consisting of a husband and wife and their unmarried children. Nowadays, a great majority of families in the cities belong to this type since most of the family members have jobs and a steady income, and young people prefer to be on their own. (2) The lineal family, consisting of one or both parents living with a married child and their offspring. This type of family exists because young people need their parents' help in housework, child care and, in some case, financial assistance. Old people like to live with their sons or daughters because they want to have more participation in life and enjoy the happiness of family life (3) The extended family, made up of parents living with several married children and their offspring. (4) Others (Pan and Pan, 1983). There are also families encompassing brothers and sisters, or old people and their grandchildren.

Also, it is possible to classify Chinese urban families by location: (1) The family living in an apartment building constructed by the HEMBC, usually located far from the place where the family members work. (2) The family living in an apartment building or public single story house built by the state-owned work unit and located close to the place where the family members work. (3) The family living in a courtyard house or a slum built by themselves, and located within or near the city wall. (4) The family living in any type of housing located at the husband's or wife's work unit but far from the spouse's work unit. (5) Others.

Generally speaking, family members of different occupations also have different space requirements. After a long strenuous day, workers need to relax and have some rest when they return home. Some individuals work on the two-shift or three-shift system, so they will have a daily schedule different from the other members of the family, and they need to have a bedroom where they can sleep without being disturbed. This kind of family needs its space divided into small bedrooms. Families of cadres and intellectuals generally have regular work schedules and do reading and studying in the evening after work. Families of this type would appreciate a small study in their dwelling units which their children may also use for doing homework.

A quiet environment is essential for either studying or sleeping, but when people are doing housework or entertaining they will inevitably make noise. This is the main source of conflict among family members of different ages, occupation and generation. Usually designers in China treat the bedroom as the main space while the kitchen, lavatory, and the vestibule are service areas. But Chinese urban residents spend lots of their time at home in the service space because housework facilities are not efficient.

#### 4.4 Residential Structure of Xian

Lo (1980) has suggested a multicentered model described in Figure 4-4 that captures most of the contrasts apparent in the above discussion of urban residential structure in China. Lo's model suggests the importance of accessibility as a factor in determining land use and its resultant spatial form. The model indicates centers at the neighbourhood level, but it is possible to find smaller centers at the lower residential area level. The inner area around the old core is deliberately divided into similar sized polygonal patches to impart some sense of irregularity. The new housing estates form neighbourhoods encircling the old city area as a distinctive outer ring. This is followed by a vegetable belt. Lo pointed out that the model is particularly applicable to old Chinese cities such as Xian.

All traditional Chinese cities had city walls. Now only the 600-year-old city walls in Xian are even remotely intact. The present Xian city wall was built from 1368 to 1376, during Ming dynasty times, so it is called the Ming city wall. It was constructed on the base of the former Tang city. It is 11.9 metres high, 13 metres wide on top and 15 metres at bottom (Ni, 1984). It was originally built of clay and had a brick face. Facing the four different directions are the four towers, each with a variety of fortifications.

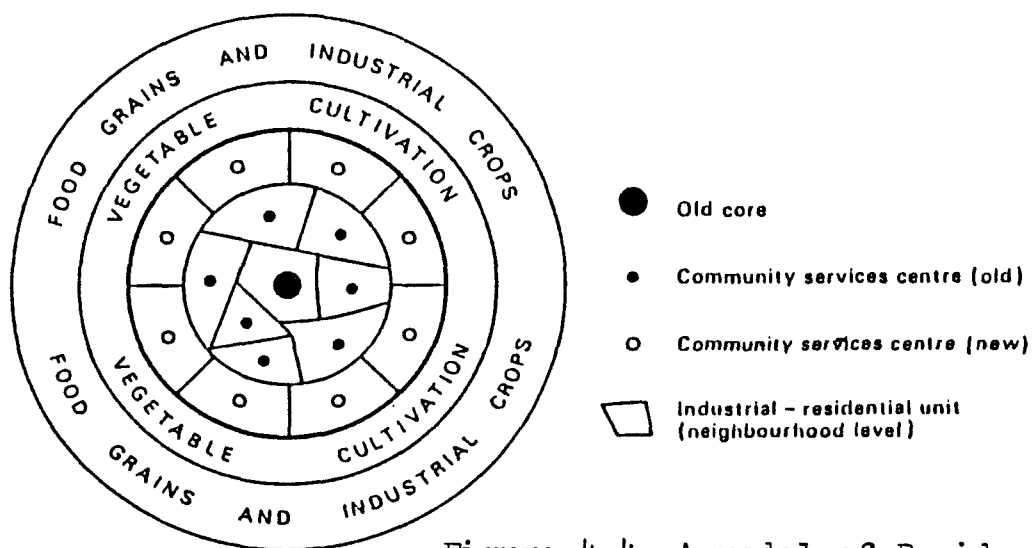


Figure 4-4 A model of Residential Structure in China

Source: Lo, 1981.

The regular grid pattern of streets and the rectangular shape of the old city of Xian confined within the walls have been described as representing architectural symbolism (Williams, 1983). Xian was regarded as a microcosm of a highly formalized morphology the interrelationships of man and nature (Figure 4-5).

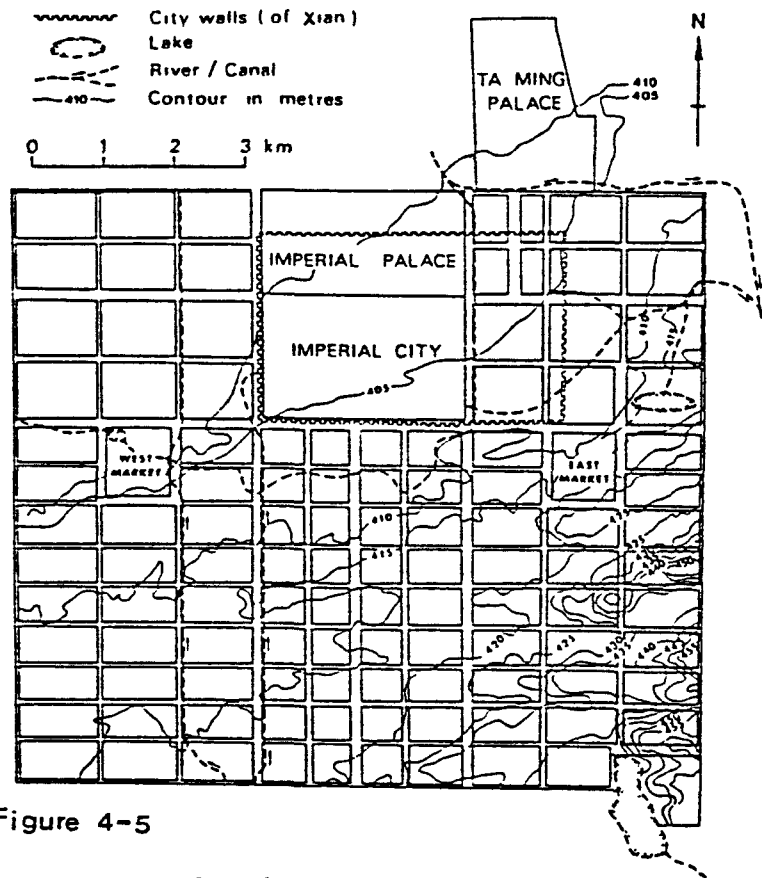


Figure 4-5

Old Tang City of Xian

Source: Wu, 1983, pp.245

The arrangement of its parts are the visible expression of cosmological beliefs, which were those of an agricultural people. The city is laid out in a grid pattern of four main quadrants translated into the four directions or the four seasons. Also,

each side of the square enclosed by the city wall can be identified with the four seasons. The spatial pattern of Xian is roughly a semi-circle centered on the Bell Tower, which conforms generally to Lo's model (Figure 4-6). The streets extend outside the walled city area and continue to run in regular north-south and east-west directions.

It is extremely crowded both in the residential and commercial sectors within the city wall or "old core". There are many department stores, office buildings, and large public facilities along the main streets, while there are many courtyard houses along the narrow side streets. More and more apartment buildings lived in by the cadres of the governmental bureau have recently been constructed in this area. People living in the traditional courtyard houses are mainly Xian natives who have lived in Xian for several generations.

This area has the highest population density, some 32,400 per square kilometre (Sung and Li, 1984). Such crowding and the many neighbourhood workshops have caused a decrease in the urban environment quality. Neighbourhood workshops have been encouraged to spread and take root in every residential neighbourhood of the city of Xian (Tong, 1984). The location of neighbourhood workshops alongside residential units has created serious problems, however, especially a competition for space with residential functions, and environmental pollution.

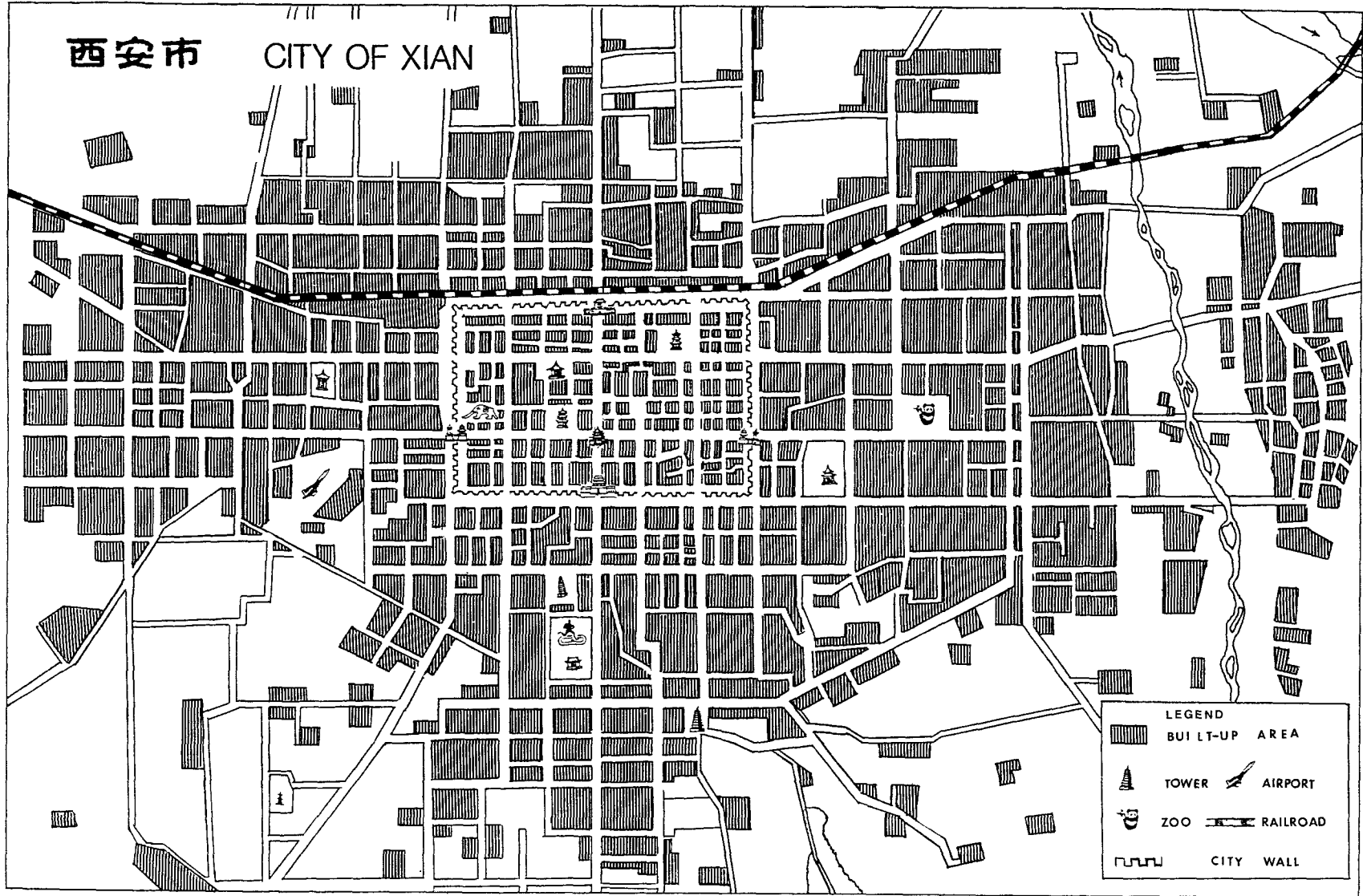


Figure 4-6 Residential Structure in Xian



At the time of the creation of the People's Republic in 1949, Xian was a backward consumer city with few industrial activities. The city had by then spread outside the walled areas. Today in Xian, the eastern suburb is a textile satellite town and an industrial machinery area. The western suburb is an electric equipment industrial town, and the southern suburb is a cultural and educational area. The northern suburb lying beside the railway is a warehouse area for goods and materials. The southwestern suburb is developing as an electronic engineering town.

In terms of housing policy context, this chapter has discussed the whole urban housing system in China, which includes urban housing administrative and management systems, housing environmental system and their changes. In particular, a significant housing policy change has been taking place since 1978 encouraging urban residential commercialization or urban housing privatisation. However, these changes are still modest in terms of housing system reforms that should be developed further in practice. That is, housing policy modification should be not only based on economic development, but also on housing needs that are influenced by socioeconomic, psychological and other aspects of human beings. These influences, as a case study of Xian, are discussed in the next chapter.

## CHAPTER 5

### BEHAVIOURAL ANALYSIS

The major goal of this research is to measure the respondent's attitudes toward their present housing and to determine what factors are important in influencing their attitudes. The preceding chapters have established the basis of measurement. In this chapter certain factors which relate to housing satisfaction among Xian city residents are analyzed. The first section deals with the social factors that are hypothesized to account for housing satisfaction, and the second section concerns with housing conditions and the environment system. Since there is a lack of consensus about residential mobility selectivity with housing satisfaction in China, the third section examines satisfaction with location and whether residential relocation status has any significant effect on individual's housing satisfaction. The last section examines housing stress.

Cross-tabulation analysis achieves an initial understanding of the relationship between the variables of interest and delineates the most relevant factors affecting housing satisfaction. However, since a series of two-way tables do not permit the study of the simultaneous effect of several independent variables on housing satisfaction, alternative methods of statistical analysis are used for more detailed analysis.

The question "are you satisfied with your present housing?" produces the main dependent variable in this study. Responses are as follows: very dissatisfied 21.4%; dissatisfied 40.1%; neutral 26.0%; satisfied 9.9%; very satisfied 0.5%; others 2.1% (valid n=192). Thus, 61.5 per cent of respondents indicate some levels of dissatisfaction with their housing, while only 10.4 per cent of the sample are satisfied. The remaining 26 per cent are neutral, being wether satisfied nor dissatisfied.

## 5.1 Satisfaction and Social Structure

In this section, the objective is to determine which social factors best explain housing satisfaction. In order to test the null hypotheses of no relationship between degree of satisfaction with housing and social factors characterizing the respondents, twelve social system variables are considered (see Table 5-1). The first six variables relate to family types, the next two are

demographic and the last four are socio-economic variables. The selection of this particular set of variables was guided by the model of housing satisfaction in China as developed in Chapter 2. In Table 5-1, the results of cross-tabulation analysis show which of the various social structure variables are statistically significant.

Table 5-1 Test of Association: Level of Significance in Housing Satisfaction with Social Structure Variables

Variables	Chi-Square	D.F.	Level of Significance
Total Size of Family	11.32	12	N.S.
Size of Family Living in Daily	8.80	12	N.S.
Total Number of Children	13.02	12	N.S.
Number of Children Living in Daily	8.66	12	N.S.
Number of Generations	11.60	12	N.S.
Family Income	8.63	12	N.S.
Husband's Age	15.07	12	N.S.
Wife's Age	10.77	9	N.S.
Husband's Education	17.73	9	0.0384
Wife's Education	12.46	12	N.S.
Husband's Occupation	37.04	15	0.0012
Wife's Occupation	36.43	20	0.0137

N.S. means that the result is not significant at level of 0.05.

The evidence presented in Table 5-1 rejects the general hypothesis that there is no association between degree of satisfaction with housing and social structure variables, and shows that certain characteristics of respondents are related to their satisfaction with their housing. The analysis indicates that respondents with different social structure characteristics assess and perceive differently their relative satisfaction.

However, Table 5-1 also presents evidence which cannot reject the hypothesis that "there is no significant difference in housing satisfaction according to family type by size, structure and income". The variables which are used as indicators of respondents' family size are the number of family members and the number of children. There is no significant association between the size of family and housing satisfaction according to these variables. This does not mean that, in Xian, the larger the size of families, the higher is the degree of dissatisfaction. The reason perhaps is that housing shortages appear everywhere, even in the new typical nuclear family (one couple with one child). Moreover, because there is not much difference in family incomes and given the low rents resulting from the housing policy in China, there is no significant relationship between satisfaction and family income.

Four variables are used in the analysis as indicators of the socio-economic status of the respondents. As shown in Table 5-1, three of the four variables are significantly varied by according to the housing satisfaction of the respondents. This is tested by the null hypothesis that "there is no significant difference in level of satisfaction according to occupation and education level". The higher the husband's educational level and the higher the couple's occupational status, the lower their degree of satisfaction with their housing.

The lack of association between the wife's education and housing satisfaction is interesting. Perhaps it reflects statistical logic: a factor which does not vary, such as the wife's educational level which is almost inevitably low, can hardly be the cause of a factor which does vary, such as degree of satisfaction with housing. Alternatively, this result may reflect actual housing policy, discussed in Chapter 4. The process of assigning housing to people varies, and because the husband is considered the household head, his qualifications and needs take precedence over his wife's.

## 5.2 Satisfaction with Housing Conditions and Environment

The discussion of research findings examines the relationships between satisfaction with housing and the variables measuring housing conditions as well as housing environment. The size of the physical living area is measured by the total family living area, the average living area per person, and the number of rooms per dwelling unit. The total family living area and average living area per person are divided into five groups for analysis. A subset of variables are concerned with housing facilities, namely kitchen, bathroom, toilet, water supply and rubbish treatment. The environmental factors tested are type of housing, perception of living space crowding, perceived level of noise, industrial pollution, public green land and public space in the neighbourhood.

Those variables concerned with housing facilities describe the variety of housing conditions found in Xian. The questions "do you have your own kitchen?" and "do you have your own bathroom?" are basic facility variables. The other three facility variables are concerned with water supply, toilet and rubbish treatment system. The variables are measured by the locations of these facilities. For example, "do you have a tap in your kitchen?", "taps in the courtyard?", "toilet in your own apartment?", "public toilet on the street?", "rubbish drum in your courtyard?", and "rubbish box in your apartment building?".

The results of crosstabulation and correlational analysis shown in Table 5-2 indicate that those variables selected as indicators of the respondents' housing condition and environment are significantly associated with their housing satisfaction.

One environmental factor that contributes significantly to housing satisfaction is the perception of living space crowding. The question ---- "What do you think of your living space", with possible responses being "very crowded", "crowded", "not enough; not crowded", "general enough", "comfortable", and "very comfortable", had the largest correlation coefficient ( $r=.718$ ) with housing satisfaction of all these variables (see Table 5-2). Thus the larger the living space the more satisfied respondents are with their housing circumstances. This environmental factor is directly associated with total family living area and several other housing conditions.

Of the social variables perception of living space varies significantly according to husband's occupation. The distribution of the data suggests that higher occupational groups are more satisfied with housing. In particular, government functionaries are the only occupational group with more than 50 per cent of their responses indicating satisfied to some degree. This provides further evidence that most people in Xian deem crowding



undesirable and that inadequate living space functions as an important psychological motive for housing dissatisfaction. It is believed that perception of living space depends not only upon actual living area, but also upon the subjective feelings of different occupation groups.

Table 5-2 Differences of Satisfaction with Housing According to Housing Conditions and Environment

Variables	Chi-Square	D.F.	Level of Significance Alpha
Family Total Living Area	70.30	16	.0000
Average Living Area Per Person	64.26	16	.0000
Number of Rooms	48.37	16	.0000
Age of Building	37.78	16	.0016
Kitchen	46.93	8	.0000
Bathroom	42.08	4	.0000
Water Supply	40.00	12	.0001
Toilet	49.12	12	.0000
Rubbish Treatment	29.18	12	.0037
Crowded Living Space	167.25	20	.0000
Type of Housing	32.95	20	.0341
Noise	32.89	16	.0076
Pollution	34.60	24	N.S.
Trees, Grass Land	21.57	16	N.S.
Public Space	20.55	16	N.S.

N.S.: Not Significant at level of 0.05.

The results of the analysis show that the overall relationship between satisfaction with housing and important independent variables is largely, size of living areas. Those with larger total family living area are in general more satisfied than those with smaller dwellings. More area per person within the dwelling unit is also very significantly related to satisfaction with housing.

However, these housing condition and environment variables also vary according to the degree of living space crowding ( $\chi^2 = 167.25$ , D.F.=20). Thus, when the degree of living space crowding is controlled, five of the coefficient in Table 5-3 decrease to zero. There is a big difference between two types of correlation analysis in the results (Table 5-3).

The finding that social variables interact with housing condition and environmental variables is also of substantial interest. The number of rooms, for example, is significantly correlated with age ( $r(\text{husband})=.48$ , and  $r(\text{wife})=.55$ ,  $p < .001$ ), and satisfaction with housing ( $r=.43$ ,  $p < 0.001$ ). This indicates that younger respondents and those with less housing satisfaction perceive their dwellings to be more crowded than do the elderly and those with a greater need to have several rooms. To some degree then, the level of housing satisfaction is more stringent

Table 5-3 Correlations between Housing Satisfaction and Housing Conditions and Environment, Controlling for Crowding of Living Space

Variables	Pearson Corr. Coefficients r	Level of Significance P
Family Total Living Area	.5267	.000
Average Living Area Per Person	.5388	.000
Number of Rooms	.4283	.000
Age of Building	-.2492	.001
Kitchen	.3632	.000
Bathroom	.4026	.000
Water Supply	.4100	.000
Toilet	.4043	.000
Rubbish Treatment	.2153	.002
Type of Housing	.1381	.031
Noise	.0465	N.S.
Pollution	.2168	.002
Trees, Grass Land	.1106	.073
Public Space	.0636	N.S.
Crowding of Living Space	.7183	.000

	Partial Corr. Coefficients R	Level of Significance P
Family Total Living Area	.3585	.000
Average Living Area Per Person	.0116	N.S.
Number of Rooms	.2370	.006
Age of Building	-.0329	N.S.
Kitchen	.0094	N.S.
Bathroom	.3042	.001
Water Supply	.1916	.022
Toilet	.1820	.029
Rubbish Treatment	.1532	N.S.
Type of Housing	.0969	N.S.
Noise	.0693	N.S.
Pollution	.2906	.001
Trees, Grass Land	.0427	N.S.
Public Space	.1917	.022

N.S.: Not significant at level of 0.05.

for the younger respondents. So the hypothesis adopted is that the influence of age on housing satisfaction indicates that older people are happier than younger people and it suggests that objective housing environment factors influence housing satisfaction, dependent upon personal characteristics.

Interior conditions of housing are strongly associated with housing satisfaction as well (Tables 5-2, 5-3). In general, those with good housing facilities tend to be more satisfied than those lacking good interior conditions. Thus, the type of housing by housing condition variables and social variables are significantly associated with housing satisfaction. However, when crowding of living space is controlled for, the relationships all decrease in magnitude.

The variable type of housing is concerned with not only physical housing characteristics but also with housing ownership in terms of social factors and housing policy. It provides a comprehensive indicator to understand the relationship between many social, housing condition and environmental variables and satisfaction with housing. It appears that not all of the housing environment variables are significant in their association with housing satisfaction (Tables 5-2, 5-3). However, type of housing does have a significant association with noise ( $r=.172$ ,  $P=.009$ ) and environmental pollution ( $r=.154$ ,  $P=.019$ ).

### 5.3 Satisfaction with Location

The analysis in this section is designed to test the degree of relationship of satisfaction with locational factors including household location, work unit location for both husband and wife, and access to work, shopping and school. It seems that there is no relationship between housing satisfaction and locational variables, except for two variables "location of husband's work unit" (Alpha = .0549) and "distance to husband's work" (Alpha = .0498). In other words, the relationship between locational variables and housing satisfaction is weak. This is surprising.

A possible explanation for the weak relationship between location and housing satisfaction is perhaps the improper design of questions asked about location. In the whole questionnaire, there is no direct question related to location. In other words, locational variables were neglected by the questionnaire design. Existing variables about location in the sample do not reflect the respondents' subjective assessments of a desirable household location. Unfortunately, the questionnaire did not raise adequate questions about location.

Despite the above problem in research design the hypothesis that the residential location of households in China is significantly related to housing satisfaction is adopted informally by virtue of special statements made about location by respondents. An example selected from the questionnaires is that of a respondent who chose both answers of satisfaction and dissatisfaction to the question "are you satisfied with your present housing?" He also wrote in explanation: "I am satisfied with my present housing conditions, but I am dissatisfied with my housing location". In the interview with this person it turned out that his small family lives with his parent and is far from his work unit.

Another interesting example in the sample is a household head who works at a different work unit than his wife but who has two residences, one in each work unit, for himself and his wife. However their two housing units are very far from each other. Thus his housing conditions look quite good, but he is dissatisfied with his housing. In explaining the reasons for dissatisfaction with housing he noted the location problem. Many such examples exist in the sample.

In the sample, there are a few households who rent their housing from a private landlord or from a suburban farmer. In this case, the situation is similar to a free-market society. Through interviewing these subjects it appeared that the first factor they considered when they made their decision where to live was rent and the second factor was location. One of the most important findings in the interview for these people is that there is a behavioural pattern to their housing location, namely that wives' work closer to home than their husbands, and when they freely choose their housing they always want to locate in or close to the wife's work unit. Even the households who don't have much power to decide their housing location still try to locate their housing close to the wife's work unit because wives find it harder to get on crowded buses, and it is easier for wives to look after their children than for the husbands.

Many studies have shown that women work closer to home than men in North America (Hanson, 1985). Similarly in China; the results of this analysis show that the husband's mean journey-to-work distance ( $\bar{X}=7.5$  units) is greater than the wife's mean ( $\bar{X}=6.3$  units). But the difference is not statistically significant ( $t=1.04$ ; D.F.=149; Alpha=.301). The data also show that in the sample 41.1 per cent of husbands work at the same place as their residence in contrast to 34.4 per cent of wives.

#### 5.4 Housing and Residential Mobility

Although housing and residential mobility in China is quite different from western countries, a regularity exists in that housing satisfaction does indeed play a role in explaining the effect of crowding on anticipated mobility. The results of analyzing the relationship between housing satisfaction and anticipated mobility show that there is a strong significance (Alpha = .0000) and correlation ( $r = 0.58$ ). However, there is no association between experienced and anticipated mobility, and there is a negative association between housing satisfaction and experienced mobility (see Table 5-4).

The more that people have moved since 1978, the higher their level of satisfaction with their housing. The majority of respondents failed to fill in these questions asking reasons for their moves probably because such rating scale questions are strange and difficult for Chinese people to understand. Another reason why these questions were unanswered may be that actual mobility is assigned by the work units or the housing authority rather than caused by neighbourhood problems or improper housing conditions. Many respondents wrote statements to this effect in their questionnaires.



The hypothesis that experienced residential mobility is directly related to type of housing is adopted. The results of this aspect of the analysis (Table 5-4) indicate that experienced mobility is significantly associated with type of housing. However, it should be pointed out that anticipated mobility is not related to type of housing. In other words, both types of mobility behaviour are influenced by housing satisfaction, but in different ways. The relationship between experienced mobility behaviour and type of housing is caused by housing ownership. Those who live in state-owned housing have greater residential mobility than those who live in privately-owned housing. From the interviews with residents in the old core of the city it appears that some families have lived in courtyard houses for several generations, so they have very limited experienced mobility. Another important reason they have not moved is that they have a good location.

The relationship between anticipated mobility and the improvement of moving is caused by housing conditions. The reasons respondents wish to move again concerns satisfaction with housing conditions. Table 5-4 shows the relationships between satisfaction and mobility variables.

Table 5-4 Relationships between Satisfaction and Experienced and Anticipated Moving

Relationships of Variables	Correlation Coefficients r	Level of Significance P
Satisf. with Experienced Moving	-.1727	.013
Satisf. with Times of Moving	.2023	.018
Satisf. with Improvement of Moving	-.3560	.000
Satisf. with Anticipated Moving	.5830	.000
Anticipated Moving with Improvement	-.3249	.000
Anticipated Moving with Willing of enlarging Living Space	.3061	.000
Experienced with Anticipated Moving	-.0797	N.S.
Experienced Moving with Type of Housing	-.1297	.047
Anticipated Moving with Type of Housing	.0065	N.S.

N.S.: Not Significant at level of 0.05.

Anticipated mobility does not have a relationship with type of housing according to Table 5-4. This means that moving expectations do not vary according to type of housing. And people who live in either state-owned or privately-owned housing both want to move according to their housing satisfaction. Furthermore, moving expectations are also influenced by housing policy and housing supply, according to the conceptual model presented in Chapter 2. But people's attitudes to housing policy and housing supply cannot be determined from the questionnaire. Therefore, attitudes toward housing satisfaction are just a type of feedback of the housing policy, which is related to anticipated mobility.

## 5.5 Housing Stress

Housing stress is generated by discordance between the household's needs, expectations and aspirations on the one hand and its actual housing conditions and environmental setting on the other hand. As developed earlier in the Chinese housing satisfaction model housing stress is a focal point associated with housing conditions and environment. Housing stress is also related to the idea of people's housing expectations and aspirations, residential location, and housing policy. Based on the analyses presented in the above sections, housing stress in Xian is discussed in this section.

### 5.5.1 Problem of Housing Ownership

In China the majority of housing units are state-owned. With the development of housing commercialization, people expect to have their own housing. The questionnaire's last question asked residents about housing type by ownership. Although 69.3 per cent of respondents answered that they want state-owned rather than privately-owned housing, it is still expected that there will be a trend toward privatization of housing. There are many reasons why respondents prefer state-owned housing, but given China's present situation the most important reason is low household income. Despite this dominance of state-owned housing it is supposed that many people would prefer to own their own home. Several

respondents indicated their reasons for this preference in response to the question "what sort of housing would be your most perfect mode?" One official actually chose state-owned housing, but for the privately-owned option he stated: "this choice for me is hopeless and impossible, but it is my most perfect mode of housing!" Other statements were "of course, it would be most perfect to buy or to build my own house, but at present I do not have the economic power" and, "I want a single house with a little green yard". As noted above there are, however, several factors that attract people to state-owned housing. First, state-owned housing has very low rent. Second, it is close to work because of the work unit allocation system. Third, it is convenient to have children looked after in the state-run nurseries. Fourth, neighbourhoods are usually better because people know each other in the same work unit.

All in all, the problem of housing ownership in urban China has been a disputed question since the founding of the People's Republic. According to a Marxist perspective, housing cannot be a commodity, but in 1980, Deng Xiaoping pointed out that: "we must tackle the question of providing urban housing. This would involve a series of policies in relation to housing allocation. I mean the

urban residents can buy or even build their own house." Under socialist conditions in China, people are used to depending on the government for solutions to their housing problems. This has formed an attitude and behaviour of dependency among the Chinese people.

#### 5.5.ii Housing Condition Stress

It seems that almost every family wants to enlarge their living space in Xian. It is understandable that because of the serious housing shortage the majority of families need more living space. The majority of families in the sample do not have adequate interior facilities for daily life. This is the strongest housing stressor to make people in Xian dissatisfied with their housing. Many statements were made in the questionnaires to indicate respondent's attitudes. For example:

"Living space for my family is so-so, but there is not enough rooms."

"There is no kitchen in my dwelling other than the bathroom."

"In the winter it is cold; in the summer it is hot; when raining the water is leaking in."

So it can be seen that the housing in Xian is both of a low standard and inadequate.

### 5.5.iii Growth of Population and Housing Supply

China had an urban population of 58 million in 1949. By the end of 1985, China's urban population had reached 191 million. Housing construction could not catch up with the rapid population growth. In particular, people born in the baby boom periods (1953-1957, 1962-1973) grew up, bring a corresponding marriage boom, thus becoming a major factor responsible for housing shortages (Shang, 1986).

The goal of China's urban housing development by the year 2000 is to ensure that each family has an apartment with an average living space of no less than eight square metres (16 square metres of floor space) per person (Lin, 1986). It is expected that China's urban population will reach 240 million by 2000. Projections based on relevant data show that 48 million units of apartments with a total floor space of 2.6 billion square metres will be needed (Shang, 1986).

Housing supply may be the most important residential stressor. The level of housing satisfaction will be basically dependent upon housing supply. Also, housing conditions, location, and environmental stresses all contribute to the level of housing satisfaction. All of these housing stressors together are clearly related to housing policy.

This chapter has tested and discussed the hypotheses and housing stressors raised in chapter 2. The results of the analysis show that the most important factor affecting housing satisfaction is living space which, in turn, related to the housing supply. When they have enough space to live in, people then turn to considering housing facilities, location and environment as secondary stressors. All of these stressors vary in a complicated social system involving family, age, education and occupation. Experienced and anticipated residential mobility are shown to be are a reflection of the level of satisfaction with housing.

## CHAPTER 6

### CONCLUSIONS

This research has investigated many aspects of the housing problem in Xian, as a case study in China. Despite the fact that the provision of more housing for the urban population is given the highest priority by the Chinese government and city planners, serious urban crowding is likely to continue for many years to come. Based on a behavioural approach, observations concerning the problems facing and generated by China's housing policy have been discussed in this thesis. The results of the research are summarized in this concluding chapter and recommendations for housing policy change are presented.



## 6.1 Summary

Much progress has been made in the development of housing policy in China since 1978 (Zhang, 1986; Wang, 1986; Shang, 1986; Zhang and Zhao, 1986; Lin, 1986; Xu, 1986). However, some of the problems which past policies have produced, especially social and geographic problems, remain unattended.

From the western literature on housing satisfaction and residential mobility discussed in this thesis, a conceptual model of housing satisfaction along three dimensions, namely housing system, social structure and national housing policy, applicable to China was developed in Chapter 2. Central to this model is the concept of housing stressors created by poor housing environmental conditions combined with the general inability of households to move easily due to the policy of allocation and public housing ownership. With these policies the central government in China has had to invest a great amount of fund to build housing, but collects only a nominal sum of rent from the residents. The distribution of housing is done on a purely welfare basis. As a result, the more the government invests in housing development, the heavier its financial burden is. It is difficult to ensure a steady and long-term development of housing construction if these policies remain unchanged.

The reform of economic and political structures in regard to housing have been undertaken since 1978. Now, the solution which the Chinese government has decided to take to solve the reform problems is to implement gradually a policy to have first a part and then all of the housing sold and purchased in the market as a commodity. This process is termed the commercialisation of housing in China.

From empirical analyses presented in this thesis, it has been shown that size of living space, interior quality and location are three significant stressors affecting people's satisfaction with housing. In this study, the size of living space appears to be most strongly related to housing satisfaction when each relationship is examined separately in correlation and crosstabulation analysis. The specific results show that more living space and better interior quality are all positively associated with higher levels of housing satisfaction. In contrast, housing location with respect to the household's workplace has a negative association with housing satisfaction. Interior housing conditions and housing environment are shown to be very important influences on the level of housing satisfaction. Therefore, to improve satisfaction with housing in China, priority

should be given to providing more housing, and, at the same time to improving the conditions, facilities and general environment of housing. Findings on locational stressors show that the pattern of journey-to-work behaviour is to choose locations close to the wife's work unit.

China's residential mobility is more related to housing policy decision-makers than to the residents themselves. There is no relationship between experienced and anticipated mobility, but there are significant relationships between experienced mobility and housing satisfaction, between housing satisfaction and anticipated mobility, and between type of housing and experienced mobility. In particular the results show that more frequent movers are more satisfied with their present housing; households who expect to move are less satisfied with present housing, and households living in state-owned housing are more satisfied than those housing in privately-owned housing. The last finding is gratified by the fact that most present privately-owned housing is extremely old and relatively run down. These provide evidence that housing satisfaction and residential mobility are strongly controlled by housing policy. Therefore, modifying housing policy is the most important issue in China in order to solve the problems of housing shortage and housing quality.

Reform of the housing system is a very complicated problem relating to economic, political, cultural and behavioural considerations. It is directly connected with the national economy, urban reform, and various relevant political and economic policies. With the development of housing in all aspects, changes are bound to occur in the future.

## 6.2 Recommendations for Housing policy Modification in China

Based on this study, housing policy modification emphasizes that policy changes must meet people's needs. General recommendations for future Chinese housing policy that stem from this thesis are listed below:

(1) Housing commercialisation is, in itself, a logical outcome of the recognition of housing as a commodity. In this sense, however, the process of recognition of housing as a commodity among urban residents, who are used to thinking of housing as a form of welfare from the government, will be complicated and rather long. In order to encourage urban residents to buy and build their own housing, people should be guided in housing consumption. Housing welfare policy, under which the

government makes large investments in housing and provides large subsidies in housing rent, should be changed. Psychologically, thus, people will no longer think living cheaply in state-owned housing is natural, but rather that the most perfect mode of housing should be privately-owned housing.

(2) To meet the need of the retired old, newly wed young couples, and intellectuals as well as those in many occupations, consideration should be given in planning to dwelling types, to controlling the number of storeys per building, to the composition of dwelling units, to the arrangement of support facilities, and to community services. For example, high rise apartments built for newly married young couples could have the middle storey devoted to public activities. An apartment for middle-aged and old people should facilitate community help and make it possible for them to participate in life.

(3) In order to improve housing conditions, the government should invest in infrastructure construction such as installing water supply and sewage systems for traditional courtyard houses, laying gas pipes, installing bathroom facilities in the old, simple structures and those without modern sanitation.

(4) To change the housing allocation system, give residential decision-making power to individuals. The present irrational urban housing system is a very important reason for underlying the failure of the previous housing policy. The analysis shows that the key factor of urban housing satisfaction is focussed upon the Chinese housing policy and its change. In the behavioural aspect, housing consumer demands are complicated and subject to change. Every family has different socioeconomic characteristics and housing conditions, so the behavioural patterns are hard to generalize for people's housing demands. However, it is possible for the government to establish a housing market in order to meet people's various housing needs and choices.

(5) Reform the low-rent housing system which is heavily subsidised by the government and tends to widen the gap between price and value. In order to turn over quicker capital investment and to increase economic and social benefits, reforming the low-rent policy should be a part of a package to facilitate housing commercialisation. However, since rental reform is a matter of national policy which would involve a variety of confrontations, it is proposed that the reform of increasing housing rent should be combined with reforms in salary, finance, tax and credit systems. As a result of the long-term, stable,

low-rent system, sometimes even with decreasing housing rent, a housing system reform of increasing rent is a matter which will affect the well-being and interests of most urban residents. The housing question in China is therefore not only an economic, and political problem, but basically a social and behavioural one.

APPENDIX

QUESTIONNAIRE SCHEDULE

I. Socio-economic Characteristics of the Household

(1) Name \_\_\_\_\_

(2) Household Address \_\_\_\_\_  
\_\_\_\_\_

(3) Native place \_\_\_\_\_

(4) Total number of people in your family:

10, 9, 8, 7, 6, 5, 4, 3, 2,

(5) Number of people living in daily at this residence

10, 9, 8, 7, 6, 5, 4, 3, 2,

(6) Number of generations in your family:

4, 3, 2, 1,

(7) Family average monthly personal income(in Chinese R-M dollar):

10-25, 26-40, 41-55, 56-70, over 71

(8) Husband's age: \_\_\_\_\_

(9) Wife's age: \_\_\_\_\_



(10) Education level:

Education Level	husband	wife
Post graduate and undergraduate		
College		
Techniquecal school		
high school		
junior middle school		
primary school		
below primary school		
	"	"

(11) Occupation:

Occupation	husband	wife
worker		
engineer		
manager		
driver		
employee for third industry		
medical staff		
teacher or professor		
researcher		
government functionary		
others		
	"	"

(12) Address of husband's work unit:

---

---

(13) Address of wife's work unit:

---

---

(14) Number of children in your family:

5, 4, 3, 2, 1, 0,

(15) Number of children living in daily in your family:

5, 4, 3, 2, 1, 0,

(16) Number of married children in your family:

5, 4, 3, 2, 1, 0,

(17) Number of children of independent status:

5, 4, 3, 2, 1, 0,

\_\_\_ working

\_\_\_ learning in school

\_\_\_ others

## II. Housing Conditions

(1) Family total living area (square metres):

10-20, 21-30, 31-40, 41-50, over 51

(2) Average living area per person (square metres):

below 2, 2-3, 3-4, 4-5, 5-6, 6-8, over 8

(3) Number of rooms (excluding kitchen):

5, 4, 3, 2, 1,

(4) What time did you move to this residence?

month \_\_\_\_\_ year \_\_\_\_\_

(5) Age of this residence:

\_\_\_\_\_

(6) Do you have your own kitchen?

\_\_\_ yes

\_\_\_ no

\_\_\_ pitched a kitchen by yourself

(7) Do you have your own bathroom?

\_\_\_ yes

\_\_\_ no

(8) How do you obtain your water supply?

\_\_\_ tap in your kitchen

\_\_\_ taps in courtyard

\_\_\_ tap on public place or street

\_\_\_ taps in public water-supply room

(9) Where is the toilet that your family use?

\_\_\_ in your courtyard

\_\_\_ public toilet on the street

\_\_\_ in your own apartment

\_\_\_ in the building shared with other families

(10) How about your rubbish treatment system?

\_\_\_ rubbish drum or platform in your courtyard

\_\_\_ rubbish drum or platform on the street

\_\_\_ rubbish box in your apartment building

\_\_\_ others

(11) Do you have space for study?

yes

no

(12) What do you think of your living space?

very crowded

crowded

not enough, but not crowded

general enough

comfortable

very comfortable

(13) What type of housing do you live in?

a house built or bought by yourself

a house assigned by the unit manager

an apartment assigned by the unit manager

a house rented from the Bureau of Housing Management

an apartment rented from the Bureau of Housing Management

a room rented from farmer

### III. Housing Environment

(1) A great majority of your neighbours' occupations are:

- workers
- farmers
- managers
- intellectuals
- employees for third industry
- mixed

(2) A great majority of your neighbours' are:

- natives of Shaanxi
- Southerners of China
- Northerners of China
- Xianness
- natives of Henan
- mixed

(3) A great majority of your neighbours' education levels are:

- very high
- high
- general
- low
- very low

(4) Relationship between you and your neighbours is:

- getting on well
- generally so-so
- not harmonious

(5) Noise around your housing is:

- very strong from Streets or roads
- strong because of close to an airport or a train station
- general
- little noise
- quite

(6) Pollution around your residence is:

- too much dirty water on the ground
- too much dusty near your residence
- muddy air
- haevy industry pollution
- pollution of water quality
- general
- clean environment

(7) Trees, grass land around your residence are:

- very good
- good
- general
- less green land
- almost no trees and grass

(8) Public spaces around your residence are:

- very large
- large
- general
- small
- almost no public space

(9) Listed below are several factors concerned with the convenience in your family life. Please indicate the convenient degree of them.

Access to	1 very convenient	2	3 general	4	5 not convenient
public transportation service					
see doctor					
grocery service	"	"	"	"	"

(10) Of what importance are the following factors in your access?

Access to	1 very near	2	3 general	4	5 very far
place of employment					
children going to the school					
access for shopping	"	"	"	"	"

IV. Housing Satisfaction and Residential Mobility

(1) Please indicate the importance of following factors in the decision to move from other residence.

Factors	1 very important	2	3 average important	4	5 not important
prior housing too small					
prior rent too high					
admission of applying new housing					
bought or built a new housing by yourself					
prior housing too far from the work					
bad relationship with prior neighbours					
prior housing too much pollution					
poor quality of the prior housing physical environment					
prior access too far from school kids going to					
prior poor medical care					
changing the unite of employment					
getting married					
other reasons? (please gave more detail)					



(2) Do you satisfy with the present housing in which you are living?

- i) \_\_\_ very dissatisfactory
- ii) \_\_\_ dissatisfactory
- iii) \_\_\_ neutral
- iv) \_\_\_ satisfactory
- v) \_\_\_ very satisfactory

(3) If you chose i) or ii), why are you unhappy? Please indicate the important degree of following factors.

Factors	1 very important	2	3 neutral important	4	5 not important
housing too small					
no own kitchen					
no own toilet					
can not have a bath					
environment too much pollution					
very bad public transportation service					
far from the place of the work or school					
others? (please describe)					

(4) Have you moved since 1978? If yes, how many times?

\_\_\_ yes

\_\_\_ no

5      4      3      2      1

(5) When you moved before, did you have good improvement in your housing conditions and environment?

\_\_\_ yes

\_\_\_ no

\_\_\_ almost same

(6) Do you want move again?

\_\_\_ yes

\_\_\_ no

(7) If you want to move, what following factors are important in the decision to move?

Factors	1 very important	2	3 average important	4	5 not important
enlarge housing					
improve housing facilities					
make easy to live conveniently					
go near to work or to school					
buy a new housing					
cheaper rent	"	"	"	"	"

(8) What sort of housing would be your most perfect mode?

\_\_\_ to buy an apartment, a house, or build a house by yourself

\_\_\_ rent a big enough apartment with good facilities in your  
unite of employment

\_\_\_ obtain a rented housing from Bureau of Housing Estate  
Management

others (please describe) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(End of Questionnire Schedule)

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