RECENT CHANGES IN FAMILY STRUCTURE AND FERTILITY IN JORDAN

by

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To

My Father

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ABSTRACT

This study seeks to make a contribution to the field of population studies by throwing some light on the explanation of fertility change in developing countries. It hopes to do this by investigating the role of the family and its structure in explaining fertility attitudes and behaviour in Jordan.

Some of the causes - at the level of intermediate variables - of regional variations in fertility levels and fertility preferences in Jordan are examined. The study tries to analyse several aspects of change in the family system in Jordan: social, economic kin-relationships and wealth flow directions within the family. Also, fertility attitudes are examined in relation to contrasting social contexts.

It is assumed that fertility decline will be the result of certain changes in the family's internal and external social and economic structure. In order to test this assumption it is necessary to examine the nature of internal and external family relationships in terms of the following five dimensions:

a) the scale and character of mutual economic obligations (or feelings of financial responsibility) which exist within the families under study

b) the nature of the family budget (to what extent it is a common budget or one divided into separate units related to individual wage earners)

c) relations between the father and his children in terms

of obedience and societal and family norms (even when the family is geographically separated as a result of migration

d) the coherence and structure of the family system (is it a closed or open nuclear family or does it still have elements of the extended family?), and women's roles and status within the family

e) wealth flow direction and its relation to power structure within the family.

Results suggest that changes in the family's internal and external social and economic structure have a significant influence on fertility attitudes which, in turn, tell that fertility decline is an outcome of family change.

CHAPTER 1

The purpose of this chapter is to discuss some of the major conceptual and theoretical demographic issues raised in the thesis: demographic transition theory, Caldwell's theory of fertility decline, the concept of the rationality of fertility behaviour, the concept of the family, women within the Islamic family, and fertility studies in geography.

All these topics are inter-related, and in particular are linked to the central interest of this thesis: namely Caldwell's propositions on fertility change (Caldwell, 1982). Caldwell's theory itself can, in many respects, be considered as an extension of demographic transition theory, since he tried to restate the conditions under which a fertility transition would occur by suggesting some new ideas about the context and mechanisms associated with fertility decline. Given this relationship, it is important to discuss demographic transition theory prior to considering Caldwell's theory. These two theories make different suggestions with regard to the rationality of fertility behaviour.

In reviewing the literature three other key topics are considered as of relevance to this thesis. Firstly, it is necessary to set the analysis of the changing structure of the family in Jordan, in a broader context. Secondly, in order to understand fertility attitudes, it is also very important to discuss the changing role of women in Islamic

society. Finally, it is interesting to examine the experience of different countries and regions with regard to fertility attitudes and behaviour in order to introduce the spatial dimension.

1.1. THEORETICAL ISSUES

1.1.1 The Search for a "Grand Theory"

There has been a tremendous amount of academic research on fertility (levels, trends, determinants, and differentials) (Bongaarts and Potter, 1983; Caldwell, 1982; Easterlin, 1983; Coale, 1986). Some researchers have attempted to formulate an integrated high order theory of demographic change. Examples of this kind of work include the theory of the demographic transition (Notestein, 1945), the related theory of demographic response and change (Davis, 1963) and the theory of fertility decline (Caldwell, 1982). These kinds of theories attempt to produce a comprehensive framework for analysis. The scholars who created these theories probably understood the aim of population analysis in particular and science in general as that of explanation, prediction, and control.

The widely recognised weaknesses of early work on the demographic transition, with all the problems associated with a model implying a unilinear sequence of events for all countries, resulted in a change in the structure of demographic thinking with regard to explanation and prediction. For example Woods (1982:9) has recently noted that: "The interplay of factors which cause population

growth to occur and the influence of that growth on the organization of society makes a full understanding of the demographic system unlikely".

Davis (1963:345) himself recognised the difficulty of achieving "a grand theory" "The subject has a frightening complexity - so much so that the temptation is great to escape from its intricacies. One method of escape is to eschew any comprehensive theory, simply describing computations of working on a single hypothesis at a time". Although he personally did not adopt this route (Davis, 1963: 345), it is one which became popular in the 1970s and 1980s. Such an approach, albeit reductionist, seems preferable to adopting some convenient over-simplification, such as the assumption that population is simply a matter of two capacities- "a reproductive urge" on the one side and a "means of subsistence" on the other or, at the opposite extreme, adopting the view that demographic behaviour is only a function of a "traditional culture" or "value system". Writing more recently, Mosher (1980:57) has also explored the possibilities of achieving a general theory, but considered the explanation of all the diverse situations of demography by one comprehensive theory to be an excessively ambitious goal.

Increasingly scholars have sought to deal with only a small number of variables as sub-systems (Woods, 1982: 2), and have tried to produce more sophisticated mathematical and statistical frameworks to explain short-term changes

(for example, see Bongaarts & Potter, 1983; Easterlin, 1978).

Although this new kind of theory is valuable, because it measures specific demographic positions and the direction of population change, these frameworks do not help greatly in explaining the ultimate nature and cause of demographic change (Caldwell, 1982: 227; Cleland and Wilson, 1987: 28,29).

The problem with these more limited short term analyses was one factor which encouraged the Australian demographer J. Caldwell, to return to the search for a more comprehensive theory of fertility decline. Unlike the more limited studies of Bongaarts and Potter (1983), Caldwell was concerned to investigate the ultimate nature of fertility change. As a result he produced a theory offering insights into long term trends in fertility (Caldwell, 1976; 1978; 1980; 1982), which sought to explore the social and economic environment of change rather than being limited to consideration of only the intermediate determinants of fertility.

1.1.2 Changing Policy Directions

At the beginning of the fifties another change in the emphasis of demographic research took place, which accompanied the switch to theories of short-term change. The majority of researchers, including Notestein and Davis, adopted a more policy-oriented perspective. This trend was most marked in the experience of American researchers (Hodgson, 1983). However it was a perspective

that became dominant all over the world. The great majority of demographers seemed to accept the view that rapid rates of natural increase contributed to reducing the growth rate of income per head (Caldwell, 1982: 83). The shift in emphasis towards policy-orientated research was far from being strictly academic in nature (Hodgson, 1983: 1). Most contemporary researchers dealing with fertility from a policy perspective consider that in relation to economic development in the less developed countries, fertility levels should be lowered by using policy interventions in order to avert human suffering and to improve the quality of life of the population.

In terms of population policies it is interesting to note how they themselves have changed through time. The first world population conference which was organised in Bucharest in 1974 emphasised the need for introducing family planning programmes in order to reduce rates of population growth. The approach advocated was a very direct one, with governments encouraged to set up family planning programmes in order to reduce fertility rates. By the time of the second world population conference, in Mexico in 1984, the emphasis had shifted in favour of integrating population policies with other development programmes (Findlay and Findlay, 1987). Increasingly rapid population growth was viewed as a factor which did not encourage speedy economic development but which also could not be blamed for under-development. Changes in the socio-

economic environment were by now viewed as essential pre-requisites to fundamental change in the demographic regimes of most developing countries. Consequently, policies on fertility were expected to operate indirectly, and in conjunction with other development programmes.

1.1.3 Disciplinary Perspectives

There remain distinct contrasts between the different disciplinary approaches to populations studies. Neo-classical economists still analyse fertility from the purely economic point of view, treating children in the same way as other commodities (Becker, 1960; Schultz, 1973). Others have followed a more inter-disciplinary approach. This can be noticed, for example, in Easterlin's (1983) work which draws on a variety of empirical and theoretical contributions, both from sociological and economic perspectives. He uses these within a statistical framework to undertake fertility analysis (Easterlin, 1983; Leibenstein, 1974). This analytical framework concentrates on choices which reflect the attitudes and norms of society with regard to fertility behaviour (Easterlin, 1978, 1980, 1983).

The main reasons which made some economists like Leibenstein and Easterlin start thinking about the social dimension was the need to account for human decision making. Traditionally, economists had not given adequate attention to the decision making process, only emphasising the influence of income and price determinants on the demand of children (Easterlin, 1978: 130).

It is also fair to say that the contributions of sociologists, anthropologists, and psychologists, with regard to fertility have merited criticism from economists. Becker (1976) considered that sociologists, anthropologists and psychologists did not develop a satisfactory systematic framework for examining people's tastes on such issues as family size. This criticism may reflect the fact that some economists have assumed that tastes are a constant variable. It is worth mentioning here that most economists pay attention to what people do rather than what they say. To quote Easterlin (1986: 522), "behavioural positivism, has been interpreted as saying that the test of a model has nothing to do with the realism of its assumptions, but with how well it "explains" the data".

By reviewing the demographic and sociological literature, one can notice that the rational economic approach has been severely criticised. The mainstream of recent work has adopted other perspectives on socio-demographic and socio-economic issues rather than the positivist views of the neo-classical economic approach. For example, Cleland and Wilson (1987) who concentrate on sociological issues have taken up an "ideational approach" in their attempt at explaining the fertility transition. They note the weakness of economic structure influencing fertility behaviour, and suggest that instead cultural and educational factors have been critical in determining the acceptability of new ideas with regard to family formation,

family size and birth control.

Easterlin (1986) considered that the rational economic approach in explaining fertility behaviour, suffers from a problem of admissible evidence in relation to its assumptions. Similarly, McCloskey (1983: 514) described the way economists deal with admissible evidence as "foolish".

Lesthaeghe and Surkyn (1988) have suggested that economists and sociologists should seek common theoretical ground in their search for an explanation of fertility behaviour, while Levine and Scrimshaw (1983) have argued that the contributions of anthropologists, and their unique methods using "ethnographic data", could also be very useful for the scientific understanding of fertility and its determinants. They suggest that demographers need to increase their awareness of the anthropological evidence.

Although there is a difficulty in knowing the best way to approach the set of causal relationships which affect fertility from an interdisciplinary perspective, such a framework should become a short-range goal for all researchers interested in population issues. Without such a framework, it is difficult to imagine major progress being achieved in the explanation of fertility trends, and current criticisms will remain unanswered.

The strongest criticism raised against current demographic theory and existing frameworks remains the failure to pinpoint the underlying mechanisms behind demographic change (Leete, 1987; Newell, 1988).

Leibenstein (1974: 466) assumed that people of different socio-economic status had different attitudes and decision making processes with regard to child bearing. The reasons for shifts in their attitudes is not clear. He suggested that it was likely to be associated with education, cultural trends and the type of socio-cultural background. He was therefore making a first step towards researching the social dimension. But fifteen years later researchers have still not managed to reconcile the differences in explanation achieved at the micro and macro levels. Many consider that changes in social structure or "socialization" remains the best approach. Others consider the best approach to be through analysis of "social control" which deals with the imposition of values and culture on individual decision makers.

In summary, adequate explanation of the fertility phenomenon has still not been achieved. There is no agreement on the level of analysis, the influence of specific variables or the appropriate interdisciplinary perspective. Since researchers still do not know the exact matrix of variables which sould be included in their analysis, they have not captured the full complexity of fertility change.

1.2. DEMOGRAPHIC TRANSITION THEORY

The term "demographic transition" was first proposed by Thompson (1929). He divided this transition into three phases. Later Blacker (1947) claimed to distinguish five

phases, while other writers have split one of Thompson's phases to produce four phases. The modern formulation of demographic transition theory is usually traced to work by Notestein (1945). This became established as a high order integrated theory of long-term change (Caldwell, 1982: 117). This "theory" defines three phases of demographic transition. The first phase occurs when a modest rate of population numbers are maintained through high fertility and high mortality, with large occasional fluctuations in mortality rates. In the second phase the rate of population increase temporarily moves upward as mortality levels decline, but with little adjustment in fertility levels. In the third phase, the rate of population increase once again moderates, declines or disappears. It is characterized by stable low fertility and mortality levels. A fourth phase can be added, where mortality is at its lowest level and fertility behaviour fluctuates at a low level. This phase is characterised by very low levels of population increase or even decrease. Notestein's theory attempted to link socio-economic development to changes in the pattern of fertility and mortality. It implied the assumption that mortality levels were partially affected by living conditions and socio-economic changes. These caused the mortality rate to decline. This decline of mortality increased the likelihood that the fertility level would also be reduced. The fertility level is influenced also by the urban pattern of life. It tried to

explain culturally, socially, and economically the fertility and mortality levels at each phase of economic development. This attempt was initially seen as a theoretical clarification of the nature of population dynamics. The major relationships suggested by Notestein's theory which were generally considered as inferring causation have been crudely formulated into a model format (Figure 1.1) by Beaver (1975). Another formulation related to the demographic transition theory was made by Easterlin (1983) (Figure 1.2).

Although some causal models relating to the demographic transition have been put forward, as in the Figures 1.1 and 1.2, most commentators still feel that demographic transition theory offers no clear causal explanations. Furthermore, demographic transition theory cannot be easily tested, because it does not offer simple testable empirical statements (Beaver, 1975: 9; Simmons, 1985: 31-32; Hawthorn, 1970: 52; Richards, 1983: 699; Woods, 1986: 24). Its critics considered it either a descriptive model or a tautoligical framework by which trends in birth and death levels have been summarized and labelled (Simmons, 1985: 3; Allman, 1978a: 8).

Demographic transition theory suffers from many theoretical, methodological and empirical problems (Woods, 1982: 164-173). For example, there is no list of specified assumptions, and units of analysis are not stated (Beaver, 1975: 22-23). This has which affected the sufficiency of explanation and prediction, (Newell, 1988; Chung, 1970;

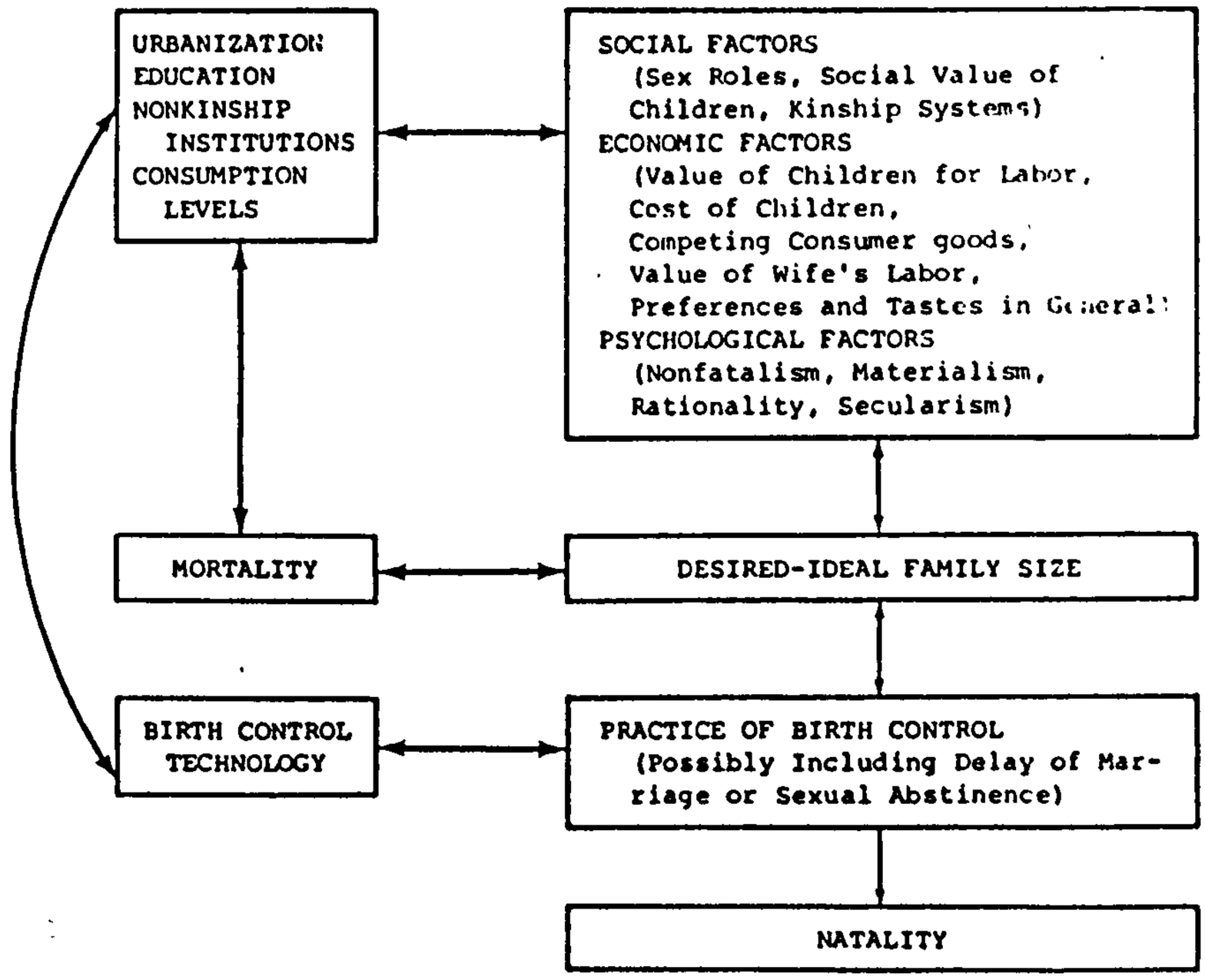

Fig. 1.1: Causal model of demographic transition theory.

Source: Beaver (1975: 10)

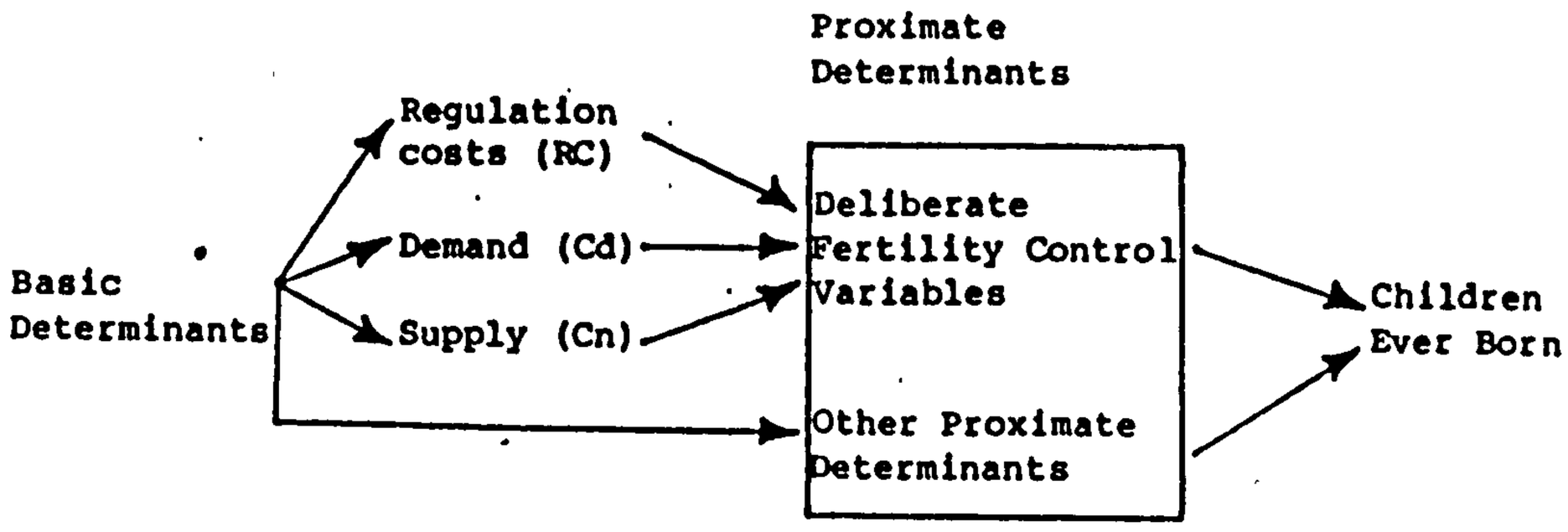

Fig. 1.2: Modernisation and fertility.

Note: The basic determinants comprise modernisation variables (education, urbanisation, etc.), cultural factors (ethnicity, religion, etc.) and other determinants.

Source: Easterlin (1983: 566)

Hodgson, 1983; Leibenstein, 1974; Caldwell, 1982; Taeuber, 1960).

Problems of definition such as what is a "high" or "low" level, and what is meant by initiation, course, speed, and termination, have been raised (Taeuber, 1960: 28). The experience of Japan, the first complete transition outside the Western World was not identical to that anticipated by demographic transition theory (Taeuber, 1960:39). Even its generalization or its validity is not well founded in Western Europe. In England it appears that the demographic transition was not directly dependent upon urbanisation and industrialization. According to researchers, the transition theory over emphasizes the roles of industrialization and urbanization (Woods, 1987: 285; Cleland and Wilson, 1987: 15-18; Jones, 1981: 167).

Mortality change is the key factor, according to Davis' (1963) interpretation of demographic transition theory, in bringing about fertility decline. The assumption suggested by the theory is that a fall in mortality, especially infant mortality, should stimulate and preceed a drop in marital fertility. European experience demonstrated that no such straight forward link existed. The experience of specific countries shows only a weak correlation between trends in infant mortality levels and trends in fertility (Cleland and Wilson, 1987; Caldwell, 1982). Nevertheless, it remains true that there is no country in which fertility decline has been recorded in advance of mortality decline.

It is possible to agree with Hodgson (1983) when he

states that if demographic transition theory lacked predictive capabilities for western countries, it is then not appropriate to be applied to developing countries (Hodgson,1983,19; Chung 1970,221).

Despite the very difficult theoretical problems of explanation, prediction and generalization of the demographic transition, the theory's importance is self-evident. Its weakness has encouraged scholars to continue to seek an explanation of the empirical regularities of demographic change often described as a "transition". For example, Caldwell (1982), in order to restate transition theory, formulated a very important long-term theory to explain fertility decline. He concentrated on the onset of fertility decline. This period (phase) of transition is still debatable and the conditions of this phase still need more work to make it clear-cut. Caldwell explained the conditions prevailing at the time of the onset or shortly before the onset of fertility decline. This will be discussed in the next section. Other examples of seeking a solution based on classic transition theory are the works of Easterlin (1983) and Beaver (1975) who have produced some causal models related to demographic transition.

Davis (1963) raised the larger question of whether the various phases of social and economic modernization could be deliberately transposed and fore-shortened, or whether they need to form a rigidly fixed sequence of necessary steps. By way of answering this question, Davis

formulated a new theory: the theory of demographic response and change. Perhaps the main assumption of this theory is that demographic response is occurring under the increasing pressures of socio-economic circumstances (Davis, 1963; Woods, 1982; Mosher, 1980). Davis (1963: 352) said "My own view is that no society has been geared to a sustained high rate of natural increase except by conquest. Under a prolonged drop in mortality with industrialization, people in northwest Europe and Japan found that their accustomed demographic behaviour was handicapping them in their effort to take advantage of the opportunities being provided by the emerging economy. They accordingly began changing their behaviour. Thus it was in a sense rising prosperity itself, viewed from the standpoint of the individual's drive to get a head and appear respectable, that forced a modification of his reproductive behaviour". The stimulus that caused the massive responses in Europe and Japan was the decline in mortality. Over a brief period many different types of responses - postponed marriage, adoption of contraception, the introduction of sterilization and abortion may be taken by people in relation to fertility (Davis, 1963: 349). It is likely that the specific culture of a society will determine which response or responses are taken. Davis' theory of response and change attempted to explain the nature of the transition in phases 2, 3 and 4, but it avoided dealing with phase 1. This was perhaps inevitable because it's starting point was a mechanism explaining the onset of demographic change.

Easterlin (1983) found that demographic transition theory as outlined both by Notestein and Davis did not focus adequately on the links between fertility decline and the process of modernization in different societies (Easterlin, 1983: 565). He suggested an analytical framework which he claimed would be applicable to a wide variety of historical situations and which could help in the study of ongoing trends, fluctuations, and differentials in fertility (Easterlin, 1978: 120).

In terms of some intermediate variables (marriage, contraceptive use and breastfeeding, etc.) some researchers have found in Europe that change in marriage patterns has been responsible for changes in overall fertility at the onset of decline. In most of Europe marital fertility started to decline in a substantial fashion between the second half of the nineteenth and the first half of the twentieth century (Coale, 1986; Coale and Treadway, 1986; Jones, 1981; Caldwell, 1982). The variant role of intermediate fertility variables, during the different stages of the fertility transition, has been the focus of scholars' attention. It is not surprising, given the higher level of statistical explanation achieved, to find that some researchers give the intermediate variables more attention than ultimate causal forces in their search for explanations of fertility change. Consider for example Bongaarts and Potter (1983), who have developed a mathematical framework to study the so-called "proximate"

determinants of fertility. How these "proximate" determinants relate to the fertility transition is a topic which will be discussed in greater detail in chapter 4.

It can be concluded from the above discussion that demographic transition theory has been one of the most dominant theories in terms of fertility research. Although it has some weaknesses, its propositions have provided the base from which other models and studies have set out. It is interesting in this respect to quote Coale's (1979: 23), conclusion concerning the nature of the demographic transition in different regions of the world: "In spite of the unifying concept that the demographic transition promised, it becomes more complex - and more interesting - the more it is studied".

1.3. THEORY OF FERTILITY DECLINE

1.3.1 Basic Propositions

By reviewing the sociological, economic and demographic literature Caldwell derived his theory, known as the "Theory of Fertility Decline". His theory is really a body of related observations and explanations, rather than a theory in the stricter mathematical or scientific sense of the word.

Caldwell's theory is comprehensive in its scope. He adopts a deductive approach to connect a set of empirical results on topics such as familial modes of production, the traditional extended family, and aspects of economic and demographic transitions.

Caldwell (1982: 115-116) said there are in essence only two types of fertility regime: one in which there is no economic gain to individuals from restricting fertility and another in which there is often or eventually some economic gain from placing a restriction on fertility. To quote Caldwell (1982: 141): " There is then a great divide, a point where the compass hesitatingly swings around 180^{o}, separating the earlier situation in which the net flow of wealth is toward parents and in which hence high fertility is rational and the later situation in which the flow is toward children and in which hence no fertility is rational". The importance of Caldwell's theory is that it is the only recent comprehensive theory which attempts to concentrate on fertility behaviour, before and, at the onset of decline. Its objective is to understand the conditions of stable high fertility, and the nature of destabilisation at this early stage (Caldwell, 1982).

His theory attempts to link family functions and fertility, in order to explain the conditions of fertility transition, especially at the onset of fertility decline. He considers the fertility transition as a product of social rather than economic change (Caldwell, 1982). To quote him: "What is clear is that there is no economic behaviour distinct from social ends. Rational economic behaviour exists only in terms of the structure of the society" (Caldwell, 1982: 111). According to Caldwell the function and structure of the family are affected by social change. His theory identifies the main issue in the

fertility transition as the direction of wealth flows. This flow in primitive and traditional societies has been from the younger to the older generations. The direction of this flow may start to reverse in "transitional" society , as the family begins to become nucleated. This nucleation will firstly be emotional (in the sense of attitudes, values and sentiments) and then economic. This means that in the nuclear family the parents of the family are wholly in charge of their own family economy including the expenditure from any earnings of their offspring (Caldwell, 1982: 143).

The theory attempts to establish a better understanding of the origins and processes of fertility decline by placing emphasis on explanation at the level of the family. This is done by concentrating on the changes in attitudes and values as well as in economic and social behaviour within the family (Caldwell,1982).

1.3.2 Philosophy and background

It is clear that Caldwell's theory is not unrelated to Marxist philosophy, in as far as social changes respond to changes in the economic sphere. In Marxism this is expressed by a change in the superstructure being caused by a change in the infrastructure.

Caldwell (1982: 168) notes that: " A key question in times of social change is how stability is maintained in productive relations (and in reproductive relations). Certainly, old men claim traditional knowledge and the

traditional hallowing of their power over family members, and they claim to be either the owners or the stewards of ancestral family property, similarly, with regard to male domination over females, claims to ownership of land and residence and to control over the means of production are important". However, it should be noticed that the productive relations that Caldwell refers to are not between employer and employee (as in classic Marxism), but are between the owner of the means of production inside the family and the other members of the family. "Power in economic decision-making usually means power in demographic decision-making" (Caldwell, 1982: 161).

Going one step further, Caldwell raises the issue of the relationship between economic power and demographic behaviour. With regards to the demographic decisions of the head of household he states: "Perhaps the most important question is why these decisions are obeyed. Certainly the economic power of the patriarch is important" (Caldwell, 1982: 172).

Smith (1981: 611) in developing Caldwell's argument notes that uncontrolled fertility is a key aspect of the "cultural superstructure" that maintains the relations of production. This is not to claim that gender relations are knowingly and overtly structured to this end, but it is to imply that relations are implicitly structured in this way.

These arguments may offer a possible answer to the question raised by Cain (1982: 165), "If the services and privileges that older males enjoy as a result of their

control over women and children are excessively costly, then why should they not be motivated to limit their fertility?". The answer would seem to be that the superstructure's "social ends" do not change as fast as those of the infrastructure. To refer once again to Smith (1981: 616): "This absence of family limitation under circumstances in which wage labor was so pervasive and in which wealth flows were in no sense upward from younger to older generations raises certain doubts about the applicability of Caldwell's attempts to construct a general theory for the preconditions fertility decline". It is, therefore, important to say that several of Caldwell's propositions can be subjected to question.

The importance given to wealth flow makes measurement and definition of this comprehensive variable particularly critical. It is unfortunate that this key variable in the theory is composite and complex rather than one that can be easily researched. Caldwell's theory does not mention how to measure such a variable nor indeed how to study its direction.

Caldwell's theory stresses that the emotional nuclear family precedes the occurrence of the economic nuclear family. In this respect there therefore seems to be a philosophical contradiction. Since his assumptions state that product relations affect the social ends, one might expect the economic nuclear family to appear first.

Finally, it should be said that product relations or

(mode of production) could never be considered as the only determinant of culture (superstructure). Religion for example has an influence on culture. Caldwell himself makes statements which contradict his own argument, when he shows that education - which is largely independent from the mode of production and mostly dominated by western values - significantly affects the culture of third world countries.

1.4. RATIONALITY OF FERTILITY BEHAVIOUR

The classical view of the demographic transition associates increased rationality of fertility behaviour with advancing urbanism during the second and third stages of the transition (Woods, 1982; Caldwell, 1982). High fertility under conditions of growing urbanisation and industrialisation was considered by Davis (1963: 352) as irrational behaviour.

By contrast, Caldwell's theory suggests that all societies are economically rational in spite of the fact that fertility in primitive societies is high. In other words, from his perspective either society was characterised by economically restricted fertility or by economically unrestricted behaviour. However, fertility behaviour is always viewed as economically rational at a macro-scale. The outworkings of this rationality is essentially the product of social rather than economic forces (Caldwell, 1982: 116). Caldwell's theory suggests that the rationality of decision making dominantly reflects

the satisfaction of the older generation in a kinship group within a society in which extended families are the norm or the dominant person in a household in a society made up mainly of nuclear families. This assumption is the same as the traditional economic assumption related to the intra-family allocation of responsibilities which assumed a parental control model of the household (Parsons, 1984: 41).

Caldwell's theory considers achieved fertility in each society as coming close to a rational response to the circumstances governing wealth flows in that society. His theory points to a fundamental dichotomy between those societies "in which it is economically rational for fertility to be even lower, but in which a floor is interposed by non-economic considerations", and those in which "it is rational for it to be even higher" (Caldwell, 1982: 127).

Research on fertility in some African countries has specifically examined the rationality of high fertility. The results of these studies suggested that in specific contexts high fertility may indeed be a rational form of behaviour (Adepoju, 1977; Mendonsa, 1977). It was found, for example, that high fertility amongst the Yoruba was not incompatible with the tribe's socio-economic structure (Adepoju, 1977).

One other interesting point should be stressed: It is that Caldwell concentrated on the economic rationality of high fertility regimes. This concentration can be

understood by considering Caldwell's philosophical assumption. Culture is viewed as one outcome of the relations of production. Other social commentators, however, view forces such as religion as independent influences (or at least interdependent ones) on culture, especially in the Third World. This introduces the possibility of a range of other factors determining fertility behaviour.

Finally, it should be noted that rationality is not an easy term to evaluate in terms of fertility behaviour. For example, measurement problems still surround many aspects of research on decision making (Hollerbach, 1983; Fawcett, 1983), while some social scientists have advocated the use of the terms "bounded rationality", recognising the difficulty of ever determining in an objective fashion the nature of "complete" rationality.

1.5. THE FAMILY AS A CONCEPT

As noted earlier social science theory has focussed on the one hand at the micro level of individual decision makers and on the other at the macro scale of social units such as the tribe, ethnic group or societal unit. Intermediate in scale is the family. This is a social and biological grouping which has achieved remarkably little attention, yet it is of concern to demographers, sociologists and economists. Attempts to force micro and macro level models to advance analysis of the family have been rather unsuccessful. The micro-economic approach has

taken households as individual decision making units and has tried to relate them to decision making models. These failings of the micro-economic perspective on fertility behavior has highlighted the need for a better understanding of the importance of family structure. Ben-Porath (1980), Burch (1983) and Kelley (1980) have developed several empirical models to study the effect of varying family sizes and structures on savings and income. They have also examined the effect of selected economic influences on decisions about family size.

The family as a demographic topic of study has become a controversial subject. Some demographers like Caldwell (1982) and Ryder (1983) have studied family transformation, both structurally and functionally, in order to analyse fertility change. By contrast Burch (1983) has claimed that the determinants of fertility in less developed nations cannot be examined at the familial level. Analagous to arguments about the intermediate determinants of fertility, he claimed ultimate explanations could not be found at the level of the family. He considered that the family institution was shaped by ecological, economic, demographic, and socio-cultural factors. Smith (1981) too has ignored the effects of family structure and kinship networks and has sought explanation in terms of the broader cultural context.

Caldwell's theory is unlike most others in that it does consider changes in the family as being of causal

significance for fertility (Caldwell, 1982; Cain, 1982). This occurs because of Caldwell's concern with the mode of production. From Caldwell's perspective the mode of production may be split into two cases: the familial and non-familial modes of production. In pre-capitalist society the familial mode is of course of greatest significance. Generally in this society networks of relatives affect the fertility decision . The children are considered to belong primarily to the group rather than to individual parents. Usually net inter-generational wealth flows occur from younger to older generations. Secondly Caldwell examines the non-familial mode of production which operates in capitalist society. Here the nuclear family is dominant and decisions on fertility, are taken almost exclusively by the parents (Caldwell, 1978). Most developing countries experience both of these two modes of production, but to varying degrees. In general the transformation from familial to capitalist production is a gradual process rather than a sudden change, and the two modes may exist in parallel for long periods (Caldwell, 1978: 555).

While most researchers have tried to link fertility and family structure, Caldwell's theory,in contrast, concentrates on fertility as a function of kin networks, and economic exchanges (Burch, 1983: 554). Transformation of family relations and the appearance of the nuclear family in the West prior to industrialization, meant that there was no necessary connection between the emergence of

the nuclear family and industrialization. Perhaps the association between them was a matter of historical accident (Thadani, 1978: 464). Thus the context of family change in the West become mostly a matter of ideology. These ideological influences were indigenous in the West while in the developing countries they were exogenous (Caldwell, 1982; Thadani, 1978; Goode, 1963).

Caldwell's theory minimizes the role of social and structural elements, in terms of the pre-conditions for the emergence of emotional and economic nucleation. He has been accused of exaggerating the role of changes in attitudes and sentiment (Dow and Werner, 1983: 79), and as a result of placing his theory very close to the approach of those sociologists who analyze the family at the macro level (Stone, 1977, Ryder, 1983). In particular his conceptualization of the process of the fertility transition has more to do with the transformation of the family than with the economic cost and benefits of children to parents (Cain, 1982: 159).

There can be no doubt that Caldwell's theory is affected by what happened to the family in Europe before industrialization. As noted above cultural conditions affected family form before industrialization took hold in the West. There is as a result no agreement on the relative importance of these cultural factors in bringing about economic and demographic change.

Thadani (1978: 488) has discussed the idea that

emotional nucleation may follow economic nucleation rather than the reverse sequence as suggested by Caldwell. Thadani's position would seem to be supported by the Marxist point of view, which provides a sound logic for the sequence of events with regard to family nucleation being the inverse of that proposed by Caldwell.

Given this possible inconsistency in Caldwell's theory it therefore becomes pertinent to pay greater attention to other research on the family. While demographers have traditionally concentrated on family structure, it is noticeable that sociologists have, for example, researched other aspects of the family such as women's status, conjugal relations and kin-network relations. Goode (1963) has hypothesised that family patterns all over the world are moving towards the so-called "ideal" typical western model of the conjugal family. This hypothesis of global convergence could underline the importance of spatial analysis of family change, in order to derive other ideas about the nature of social and geographic change. This might lead to a greater understanding of mechanisms of change operating within the family with all the potential that this holds for explaining variations in demographic patterns and most notably in fertility in different parts of the world.

Where research of this kind has been undertaken it has produced interesting and potentially fruitful results. For example, consider the work of Khatri (1977) on the Hindu family: "It is hypotheized here that the nature and

direction of social change in the Hindu family during the last hundred years or so have been influenced considerably by contact with the British culture, specifically exposure to British education, their family organization their ideology of democracy, liberty, and equality" (Khatri, 1977: 69). In the Arab world "Islam remains the basis and dynamic force of the Arab family" (Salman, 1987: 7). These two examples raise the importance of studying different cultures in order to enable scholars to understand more fully the nature of the social and cultural ideologies which underpin family change, and which help to explain the nature of family transition toward the conjugal family.

1.6 WOMEN WITHIN THE ISLAMIC FAMILY

It is important when talking about the family to also talk specifically about the role of women within the family. Women's status in the Arab world has been considered by anthropologists, demographers and geographers.

Anthropologists seem to stress the ideological, or cultural factors which affect the status of women. They have studied the honour system in order to understand the status and role of women in the society (Myntti, 1978), where the traditional values by which honour is determined are derived mainly from Islamic law.

Some analysts have suggested that Arab women are still suffering from sex segregation and female seclusion. They go further to suggest that Islam or Islamic law is

responsible for their suffering (Salman, 1987), while other analyses hold the contrary view and argue that Islamic law allows a woman to own property and carry out business transactions albeit at her husband's discretion. There can be little doubt, however, about the general male dominance of Arab society concerning matters such as divorce and the family (Botman, 1987; Weeks, 1988). It is worth mentioning here when talking about the role of Islam in influencing women's status that some Muslims practice Islam as a social ideology and do not necessarily claim to understand the spiritual meaning associated with their religion. For example, Mernissi (1976: 315) highlights differences between the theoretical and the practical outcomes of Islamic belief with regard to matters such as sexual inequality. The concept of such inequality is utterly alien to traditional Islamic law which indicates, for example, that there should be equal punishment for both adulterous men and women. In practice there is a great inequality in the application of such laws. Myntti (1978) also illustrates this with reference to the legal rights of the Muslim wife. She does tend, however, to emphasise what people perceive to be the nature of gender relations rather than what is actually stated in either Islamic law, or the Christian canons with regard to women's roles.

Women's status in the Arab world appears to be changing but it is difficult to provide evidence to consistently substantiate this view for all Arab countries.

There seems to have been some progress in terms of a substantial increase in the access of women to education and employment. Traditional patterns of sex segregation and female seclusion are beginning to change (Allman, 1978b: xl), and there is some evidence of increased joint decision making by both husband and wife concerning household organization (Myntti, 1978: 287; Altorki and Cole, 1989).

Although traditional Islamic Arab culture still strongly affects the family (Faour, 1983: 31; Salman, 1987: 7), all the findings of recent studies on the Arab family indicate the increasing dominance of the nuclear family form in the cities of the region. With this change, there has also been a change of attitude and decision making processes on a wide range of demographic issues. The Arab family as the cornerstone of the region's social organization merits much further research and holds many answers to intriguing demographic questions.

Many of the traditional traits of the Arabic family are diminishing (Allman, 1978b: XI) (e.g polygymous marriages, marriage between cousins, etc) due to the effects of continuous western influence and the spread of external ideologies involving greater individualism and egalitarianism. These influences are propagated by mass communications systems which are supported by the forces favouring so-called "modernization". Some other traditional family traits still persist strongly, such as patrilinearity, family allegiance and the authority of

elder kinsmen. As a result cultural factors in social control remain forceful in resisting further change.

1.7 FERTILITY STUDIES IN GEOGRAPHY

Before drawing this chapter to a conclusion, it is useful to comment finally on the importance of the spatial analysis of fertility. Fertility studies are still relatively neglected by geographers by contrast with other aspects of population geography (Coward, 1986: 58; Jones, 1981: 90). Nevertheless they are important in developing an understanding of the changes described above. Undoubtedly several reasons are behind this neglect. It may be because of the absence of basic geographical data sources, especially in developing countries (Woods, 1979: 152), but this explanation is becoming progressively less convincing now that this sort of data are becoming increasingly available at the national and sub-national level for most developing countries. The world fertility survey, for example, provides a useful source for studying the spatial pattern of fertility by giving a reliable data source, for no less than 41 developed and developing countries. Some suggest that the real reason for lack of progress lies in the absence of an agreed definition of the content of population geography (Woods, 1986: 17; Schnell and Monmonier, 1983: 7).

The awareness of the need for a spatial analysis of fertility has increased as the study by other disciplines of fertility-related variables has progressed. It is

necessary to explain why universal models do not apply and to seek more accurate geographical explanations of variations in demographic structures between and within cultural regions. Differences in fertility trends relate notably to the historical development of regions (Pacione, 1986: 4; Woods, 1979: 130-164) but also to their contemporary socio-economic composition.

Allman (1978a: 8) notes that: "A major weakness in all theories of fertility change is the almost complete absence of attention to the phenomenon of differential fertility". It can be considered that the spatial analysis of fertility is one instrument by which the role of general models of fertility change could be assessed (Pacione, 1986: 4) and greatly improved. Geographers, like other social scientists, have still much work to do, if an adequate and robust theory of fertility change is to emerge.

CHAPTER 2

THE CONTEXT OF POPULATION CHANGE IN JORDAN

2.1. THE GEOGRAPHIC SETTING

Jordan (East Bank) was established in 1923 under the name of Transjordan. In 1950 the West Bank,which is part of Palestine, was annexed to Transjordan, and the name of state became the Hashemite Kingdom of Jordan. This annexation lasted up to 1967 when Isreali forces occupied the West Bank.

The East Bank, which is the current Kingdom of Jordan, has an area of 89200 square kilometers. The Badia (semi-desert) occupies 89 percent of this area (Department of Statistics, 1983a: 1). Average annual rainfall ranges from 500 mm in the north - west, where the most fertile land is to be found, to 100 mm in the east and south where most of the area is arid desert (Fisher, 1972: 204). Although Jordan is not rich in natural resources, it leads the world in producing phosphate. It also produces other minerals such as potash, Dead Sea brines, oil shale, and cement (Ministry of Planning, 1986: 471).

Jordanian society according to the census of 1961 consisted of three main social groups, urbanites, a settled rural population and Bedouins (nomadic tent dwellers). In the census of 1979 the main social groups were classified slightly differently ; urbanites, settled rural population and semi-nomads (Fisher, 1972: 206; Ministry of Planning, 1986: 1). The majority of semi-nomads inhabit Badia which

is the eastern and southern parts of the kingdom. The nomads used to move seasonally between grazing lands and watering points. The Jordanian government has, however, introduced some projects to encourage them to settle (Ministry of Planning, 1986). Sedentarization has occured both voluntarily and as a result of government policies. Settlement is evident in permanent dwellings among scattered villages such as Wadi-Musa in the south of the country. It is expected that sedentarization will continue because the government's policy remains in place, with the 1986-1990 plan containing some new sedentarisation projects (Department of Statistics, 1983a: 1; Samha, 1984: 92). Some nomads have left rural life altogether and have migrated to live in Jordan's larger cities.

Transition in the character of the nomadic population from a mobile to a sedentary existence, as well as the use of several definitions of the terms "rural" and "urban", make the enumeration of populations difficult. Rural populations are often defined using the residual method of specifying the urban and nomadic population and subtracting them from the total population, with the remainder being "rural". Since the 1950's rural areas in Jordan have witnessed out-migration to urban areas, and especially to the large cities (Samha, 1980). This has eroded the role and functions of key rural units such as the family farm, and has contributed amongst other factors to the need to import non-Jordanian labour (Ministry of Planning, 1986:

533).

Table 2.1 shows that the population of Jordan is unevenly distributed with most people living in the north-western corner of the country (Figure 2.1). This pattern can be accounted for mainly by three factors. The first is the natural environment. Desert occupies the east and south of Jordan where the low and infrequent rain and infertility of the soil make permanant settlement difficult except in areas such as Azraq and Aqaba. The second factor is proximity to the West Bank. The Palestinian refugee influx of the late 1940's and late 1960's overwhelmingly affected the north west of Jordan (East bank). It was in these regions that most refugees remained after the Arab-Israeli war of 1967. The third is that social and economic forces have focussed development mainly in the major cities of the north-west. The lack of adequate regional planning has meant that many rural areas are deficient in basic services and has strengthened the existing urban bias favouring population redistribution towards the cities of the north-west. Spatial uneveness in the socio-economic characteristics and opportunities offered by urban and rural areas is considerable. The economic system is most notably biased towards the two largest cities (in the north west) relative to the rest of the country (Ministry of Planning, 1986: 163; Faour, 1983: 41). This imbalance has encouraged considerable rural to urban population migration, as well as inter-regional flows towards the north-western region of Jordan.

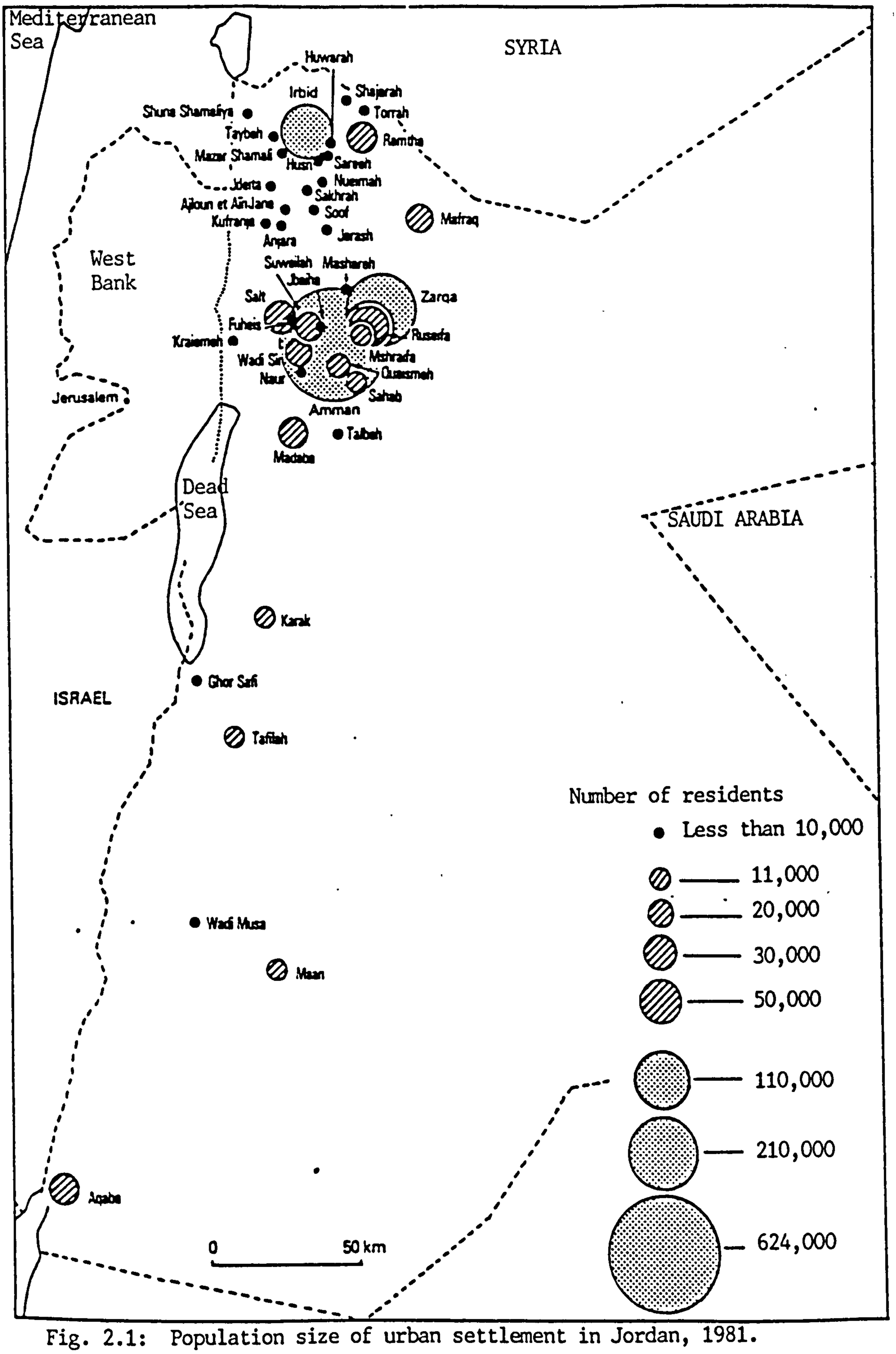

Fig. 2.1: Population size of urban settlement in Jordan, 1981.
(Adapted from Findlay and Seccombe, 1986).

Although the three factors mentioned above could directly or indirectly have affected the pace of urbanisation in the country, it can be said that rural-urban and refugee migration are the main processes responsible for the high rates of growth of urban areas in the north. Rural-urban and refugee migration have had a far stronger effect on the rate of urban growth than the rate of natural increase. Despite this one should not ignore the fact that urban areas have witnessed sustained high levels of fertility and a rapid decline of mortality in the 1970's and 1980's. These processes, when taken together have raised the rate of natural increase (Samha, 1984: 90). The wars between Israel and surrounding Arab nations, and the related political situation have caused waves of Palestinian refugees to enter Jordan in 1948 and 1967. There have been several distinct geographical as well as historical stages in these refugee movements (Rowley, 1984). Some of the refugees went directly to the main cities in the north, other refugess farmers went first to the Jordan valley in the hope of finding agricultural work. Because of the continuation of the war in Jordan valley between 1967-1970, commonly known as the war of attrition, the refugees also left that area and resettled in the towns to the east and especially in Amman (Harris, 1978).

During the last three decades Jordan has experienced substantial social and economic development. Jordan has sought to set up a basic national infrastructure. It has

established some industries, plus national education, social and health services. The education system has progressed considerably and its services have been widely distributed throughout Jordan. As a result the illiteracy rate declined from 67% in 1961 to 28% in 1985 (Ministry of Planning, 1986).

Industry in Jordan has also grown significantly (Ministry of Planning, 1986; Khamees, 1987). Although there are few large industries such as phosphates, potash, cement, and petroleum refining, industry is still characterised by a prevalence of small-scale and medium-sized industries such as is found in food products, textiles and clothing, and building materials. Several problems face the further development of industry in Jordan; for example, the small size of the domestic market (Bader, 1987; Ministry of Planning, 1986). Recently, especially in the 1980's, industry in Jordan has been hard hit by shortages of foreign exchange. This has been a particularly acute problem for those industries which depend on imported raw materials.

Since 1948 the structure of the labour market has substantially shifted from agriculture towards services. The percentage of manpower in the agricultural sector was 33.5% in 1961, 11.5% in 1979, and only 7.8% in 1985. In the service sector it was 34.2% in 1961, 46.7% in 1979, and 46.7% in 1985 (Ministry of Planning, 1986). Considerable expansion of the service sector has permitted an increasing

participation of women in the labour force, from 3.1% in 1961, to 7.7% in the 1979, and to about 12.5% in 1985.*

Some of the basic traits of the traditional Jordan household have begun to change. The influence of the tribe on household structure has progressively weakened over the last three decades. Fewer marriages are arranged by families between cousins, and there has been a strong tendency for the nuclear family to replace the extended system. These changes in family pattern have been encouraged by a continuous western influence and the spread of an ideology of individualism and egalitarianism, propagated by the mass media. Neverthless family loyality remains relatively strong and should not be ignored in evaluating how the individual relates to society (Faour, 1983: 31,32).

2.2 THE DEMOGRAPHIC SETTING

2.2.1 Population growth

The population of Jordan (East Bank) numbered 680,000 in 1952**, 900,800 in 1961. It rose to 2.13 million in 1979, and 2.67 million in 1985. Most of the population of Jordan lives in just two cities, Amman (capital) and Zarka, which in 1961 accounted for 48.2% of population,rising to 54.9% and 57% in 1979 and 1985 respectively (Table 2.4).

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* Source of these percentage is Ministry of Planning, 1986: 59, 63, 65.

** Housing census in 1952 (Department of Statistics, 1983a: 3)

Table 2.1 indicates that a regional imbalance in the population is also evident with almost two thirds of the population living in Amman governorate.

Table 2.1

Jordan's population according to governorate and sex.

	Amman (central-north)	Irbid (north)	Balqa (north-west)	Karak south	Maan (south)
1961					
Male	230762	137524	40277	34680	26164
Female	202856	136452	38780	32531	20750
Total	433618	273976	79057	67211	46914
1979					
Male	596793	307043	75699	65108	41948
Female	555146	295171	70707	59944	32460
Total	1151939	602214	146406	125052	74408
1985					
Male	788825	369850	93121	77659	52180
Female	733777	355550	86797	91499	40377
Total	1522602	725400	179918	149158	92557

Source: Ministry of Planning, 1986: 62.

The beginning of the seventies was a period of high natural population increase. The period witnessed a rapid decline of the death rate and at the same time the continuation of high fertility. This created a demographic environment in which high rates of natural increase were apparently unavoidable. Without fertility decline this regime of rapid population growth seemed likely to continue. During the second half of the seventies fertility did, however, start to decline which in turn led to reduction in the rate of natural increase (Table 2.2).

One should note that the researchers who have tried to measure the level of fertility have not ended up with the same figure for the same year. These differences in results are due to variations in the techniques used by different researchers. For example, Abu-Jaber et al (1980) measured the total fertility rate for 1961 by using Brass's method, while the total fertility rate for 1972 was calculated by using Trussell's method in spite of reservations about the accuracy of this method (Table 2.2). They also carried out a measurement for 1976 by using parity changes between 1972 and 1976, and arrived at a total fertility rate of 7.8. The Department of Statistics in Jordan gave a total fertility rate of 7.7 for the year 1976, and 6.6 for the year 1983 by using Bongaarts method (Department of Statistics, 1983a: 104). Hill (1985: 193) gave a total fertility rate of 7.5 for the year 1976, by using the Brass method. Given the assumption upon which Brass's method was based (that fertility should be constant) and the fact that fertility in Jordan was clearly declining during the 1970s, it is inevitable that considerable problems arise in basing any analysis on figures derived using this method. Also there are some reservations about using Bongaarts technique, which will be discussed in the next chapter. In this study the total fertility rates (TF) for 1976 and 1983 were measured by using the direct method as outlined in Newell (1988). The results confirm a rapid drop in fertility during the late 1970s and early 1980s.

Table 2.2

Some demographic indicators in Jordan between 1961 -1983.

	1961	1972	1976	1983
Crude birth rate (per 1000)	49	49	43*	33*
Crude death rate (per 1000)	19	10	9	-
Natural increase (per 1000)	30	39	34	-
Total fertility rate	7.3	7.6	7.5*	6.6*

Source: Abu-Jaber et al, 1980: 35.
* Calculated by the researcher from the 1976 survey and the 1983 survey.

Table 2.3 shows that the percentage of the population in urban** areas is increasing. Two main factors increased the rate of growth of urban areas. One of them was forced migration in the form of a large influx of Palestinians. In 1967 the number of refugees who left the West Bank and came to the East Bank was estimated to be 385,273 (Samha, 1984: 82). The other factor was voluntary internal migration from rural areas and small cities to the larger urban centres (Table 2.4).

** The definition of urbanization used in Jordan is not constant (see Department of Statistics, 1984: xi; Department of Statistics, 1979: 7; Findlay and Seccombe, 1986: 562; Fisher, 1972: 207), so differences in comparative figures quoted by researchers arise simply due to lack of a standard definition as well as being a result of urban growth.

Table 2.3

Percentage of population living in urban areas by sex and selected years.

	1961*	1972*	1976*	1979***
Male	49.4	52.9	56.4	58.9
Female	48.9	52.7	55.8	58.8
Total	49.1	52.8	56.1	58.8

*Faour, 1983: 29
***Calculated by researcher, from census 1979.

Table 2.4

Growth rate of the governorates of Jordan, 1961 - 1979

	Annual growth rate 1961-1979	Net annual growth rate 1961-1979 due to migration.
Amman		
Total	5.60	1.80
Urban	5.61	1.81
Rural	5.54	1.74
Irbid		
Total	4.46	0.66
Urban	5.33	1.53
Rural	4.10	0.30
Balqa		
Total	3.61	-0.19
Urban	4.52	0.72
Rural	3.35	-0.45
Karak		
Total	3.49	-0.31
Urban	6.15	2.35
Rural	2.71	-1.09
Maan		
Total	2.64	-1.16
Urban	5.64	1.84
Rural	0.20	-3.60
East Bank		
Total	4.84	1.04
Urban	5.55	1.75
Rural	3.91	0.11

Source: Samha, 1984: 87

2.2.2 Demographic data

Since the Department of Statistics was established in 1949, it has undertaken three censuses in 1952, 1961, and the 1979. Several fertility and mortality surveys have also been carried out in the 1970s, and 1980s. These surveys were urgently needed because of the under registration of births and deaths, and the inaccuracy and incompletenss of other data sets. Even so, indirect methods are still necessary in order to measure the level of mortality and fertility.

Data on fertility in Jordan is available mainly from the following sources:

1- Census 1961.

2- National fertility survey 1972.

3- Jordan fertility survey (WFS) 1976.

4- Census 1979.

5- Jordanian demographic survey 1981.

6- Fertility and family health survey 1983.

One cannot use all of the above mentioned sources to analyse fertility characteristics in depth. The surveys of 1976, and 1983, both held on a magnetic tape, were the only two surveys to which the researcher had access which offered detailed information relevant to his research.

Data on mortality is seriously under reported. Recent surveys mostly provide data on infant and child mortality. Thus mortality analysis in Jordan remains more difficult than fertility studies.

2.2.3 Age Sex structure

The age structure of a population is one of the most important demographic variables. "There is hardly an aspect of individual or communal life which is not affected by age; economic and social activities, military service, political propensities, social attitudes, mobility. Furthermore age structure is directly influenced by three variables mortality, fertility, and migration" (Clarke, 1972: 66).

Data on age in Jordan has been secured both by asking a direct question on age and by asking about date of birth. In standard statistical sources, it is tabulated and published for single year and five year cohorts. Table 2.5 shows the very youthful nature of the Jordanian population. One can note a very slight reduction in the proportion under 15 years and above 65 years between 1979 and 1983, and an associated increase in the proportion of the group in the 15-64 years age cohorts. This trend may have happened on the one hand because of a decline in fertility and on the other hand because of a return migration.

The overall reduction in the proportion of the population over 65 years of age is more surprising. It would appear that better medical services and improved hygiene conditions have mainly served to reduce child mortality rather than in greatly raising life expectancies amongst the older population. The government's efforts

have apparently been directed mainly towards the reduction of infant mortality levels. Infant mortality was 151 per thousand in 1961. In 1984 it was only 60 per thousand (Ministry of Planning, 1986: 215), so the proportion of children would tend generally to rise unless similar improvements in life expectancy were being experienced by other age cohorts. Despite the reduction of infant mortality in Jordan the proportion of children is decreasing. This may be because of the recent reductions in fertility levels. This would suggest that the number of births and the birth rate have had a quite dominant role in determining the proportion of young children.

In assessing the social and economic consequences of high fertility and demographic ageing, the dependency ratio is an important measurement. In terms of the dependency ratio Table 2.6 reveals that the dependency ratio in Jordan as a whole and in its governarates - in particular Amman, Irbid, Balqa and Karak+Maan - was low in 1961 compared with later dates. This may be interpreted in two ways: first reporting may have been incomplete or inaccurate in 1961. Second emigration was low in 1961, while the emigration level was very high in the 1970s, thus reducing the proportion of the active population present within the country.

The highest dependency ratio was found in Irbid during 1970s which probably reflects the high level of internal and international migration. Emigration - internal and international- may cause the high level of dependency

in all cities except Amman. As capital, Amman received most of the country's internal migration thus offsetting international emigration.

At the end of the 1970s and begining of the 1980s the dependency ratio started declining in Jordan and in the cities shown in Table 2.6. This may have been because of return migration, it should be noticed that most of the dependency burden came from the youth, because of the high percentage of the children in the population.

Comparison of the population age structure in 1979 and 1983 suggests that there was a slight increase in the median age,from 14.6 to 15.8 years. The trend is most marked in Amman and Balqa.

Table 2.5

Percentage of population according to age groups

	Under 15	15-64	65+	Total
Jordan				
1961	45.1	50.1	4.5	100
1979	51.6	45.6	2.8	100
1983	48.5	49.1	2.4	100
Amman				
1961	45.4	51.6	3.0	100
1979	50.7	46.8	2.5	100
1983	46.4	51.4	2.2	100
Irbid				
1961	46.7	48.7	4.6	100
1979	53.1	43.7	3.2	100
1983	49.9	47.2	2.9	100
Balqa				
1961				
1979	51.5	45.2	3.2	100
1983	48.3	49.4	2.4	100
Karak+Maan				
1961	43.5	52.7	3.8	100
1979	52.2	44.8	3.0	100
1983	51.2	47.2	1.6	100

Source: Calculated by researcher from censuses 1961,1979 and survey of 1983.

Table 2.6

Dependency ratio, youth dependency ratio and old age dependency ratio.

	Dependency ratio	Youth dependency ratio	Old age dependency ratio
Jordan			
1961	99.4	90.5	8.9
1979	119.5	113.3	6.2
1983	101.4	96.7	4.8
Amman			
1961	93.6	87.8	5.7
1979	113.8	108.5	5.3
1983	94.5	90.3	4.2
Irbid			
1961	105.0	96.0	9.5
1979	129.1	121.7	7.4
1983	111.9	105.7	6.2
Balqa			
1961			
1979	121.1	114.0	7.2
1983	102.5	97.8	4.7
Karak+Maan			
1961	95.9	87.4	8.5
1979	123.2	116.5	6.7
1983	111.9	108.4	4.7

Source: Calculated by researcher, from the censuses 1961 and 1979 and the survey of 1983.

Table 2.7

Median age in Jordan

	1979	1983
Jordan	14.6	15.8
Amman	14.8	16.3
Irbid	13.9	14.0
Balqa	14.5	15.6
Karak+Maan	14.3	14.5

Because Jordan has witnessed changes in age structure, the median age is a more sensitive indicator of these changes in age structure than the ratio of population above age 65/population under age 15. This is because the median reflects the absolute age distribution of the entire population in a way that the dependency ratio does not. Since the age structure is skewed the median is also a preferable measure.

Even although shifts in the annual number of births, deaths, and migration do produce important fluctuations in a national population pyramid from one age cohort to another, the year to year fluctuations observed in Figure 2.2 are more likely to reflect faulty reporting. Despite the age-heaping displayed in Figure 2.2, the preference to register ages ending in 0 or 5 appears to be decreasing. The Myers index of digit preferences (ages 10-79 on a scale from 0-180), was 12 for males and 15 for females in the survey of 1983, which compares favorably with previous

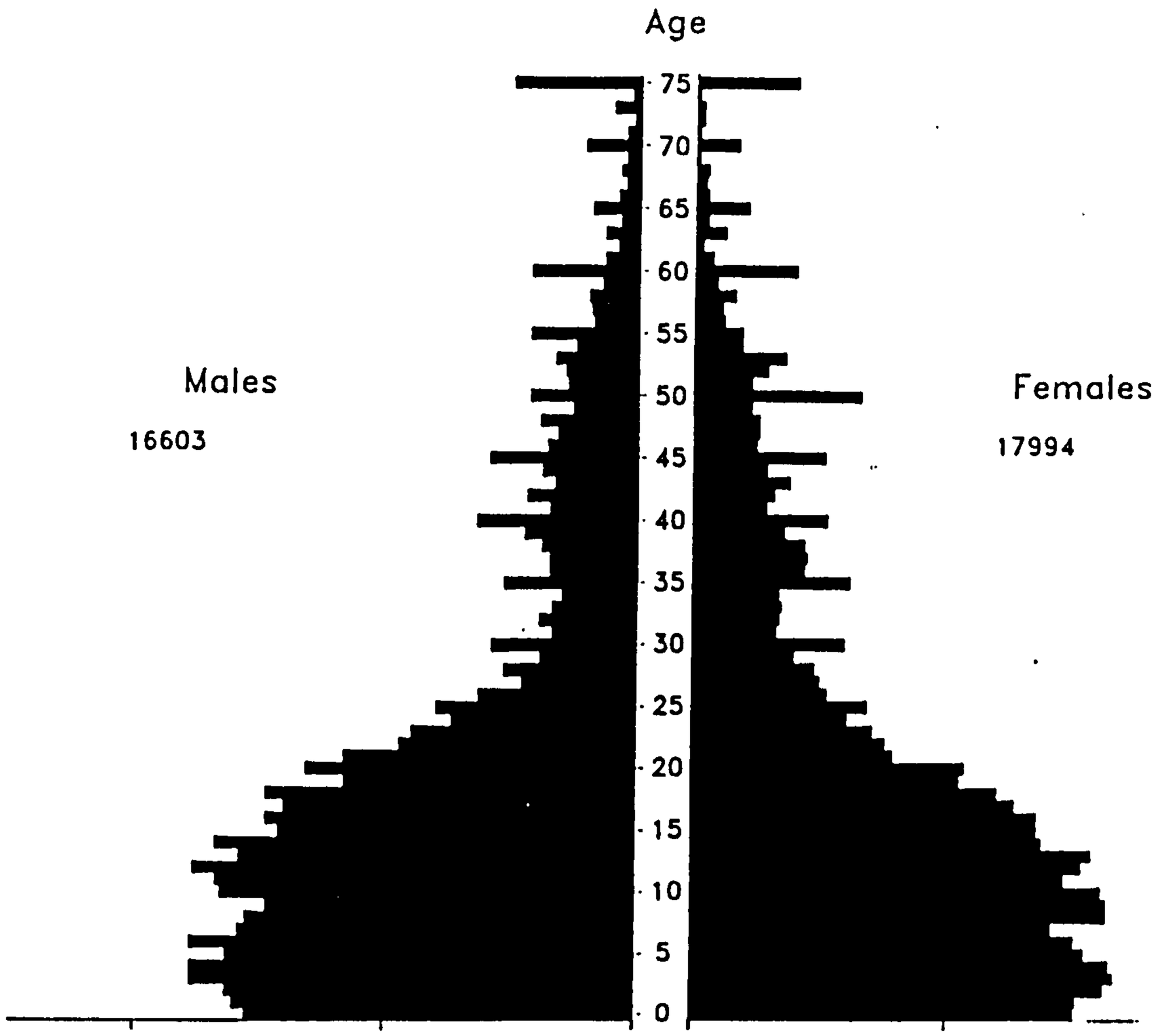


Fig. 2.2: Population pyramid for Jordan, 1983.

surveys. The same index was 42 and 49 for men and women respectively for the Jordanian fertility survey of 1976 (Department of Statistics, 1983b: 17). Despite this heaping, the general shape of population pyramids for Jordan (Figures 2.2, 2.3, 2.4, 2.5) have not been affected by age mis-reporting.

The population pyramids for Jordan, Figures 2.2, 2.3, 2.4, 2.5, show that there is an excess of males under 15 years of age in 1961 and 1979, and also at the older ages. This excess is likely to be due to a combination of a higher female mortality rate, which is often recorded in societies with a strong child preference in favour of males over females, and differential age misreporting and possibly female under-enumeration. There was a deficit of males between ages 20 and 40 in 1961, and ages 20 to 30 in 1979. This deficit can be attributed in the pyramid for 1979 to the massive emigration of Jordanian males. Return migration may offer some explanation for the reversion to an excess of males at age 30 and above in 1979 and 1983 (Figures 2.4, 2.5). The increasing percentage of males at ages 20 to 25, evident when Figure 2.5 is compared with the other figures, may reflect the increased difficulty being experienced by young men in finding emigration opportunities especially in the Arab Gulf region, where migration policies adopted in the early 1980s have been increasingly selective. The oil-rich labour importing economies have looked more and more for skilled rather than unskilled workers (Seccombe, 1984: 14).

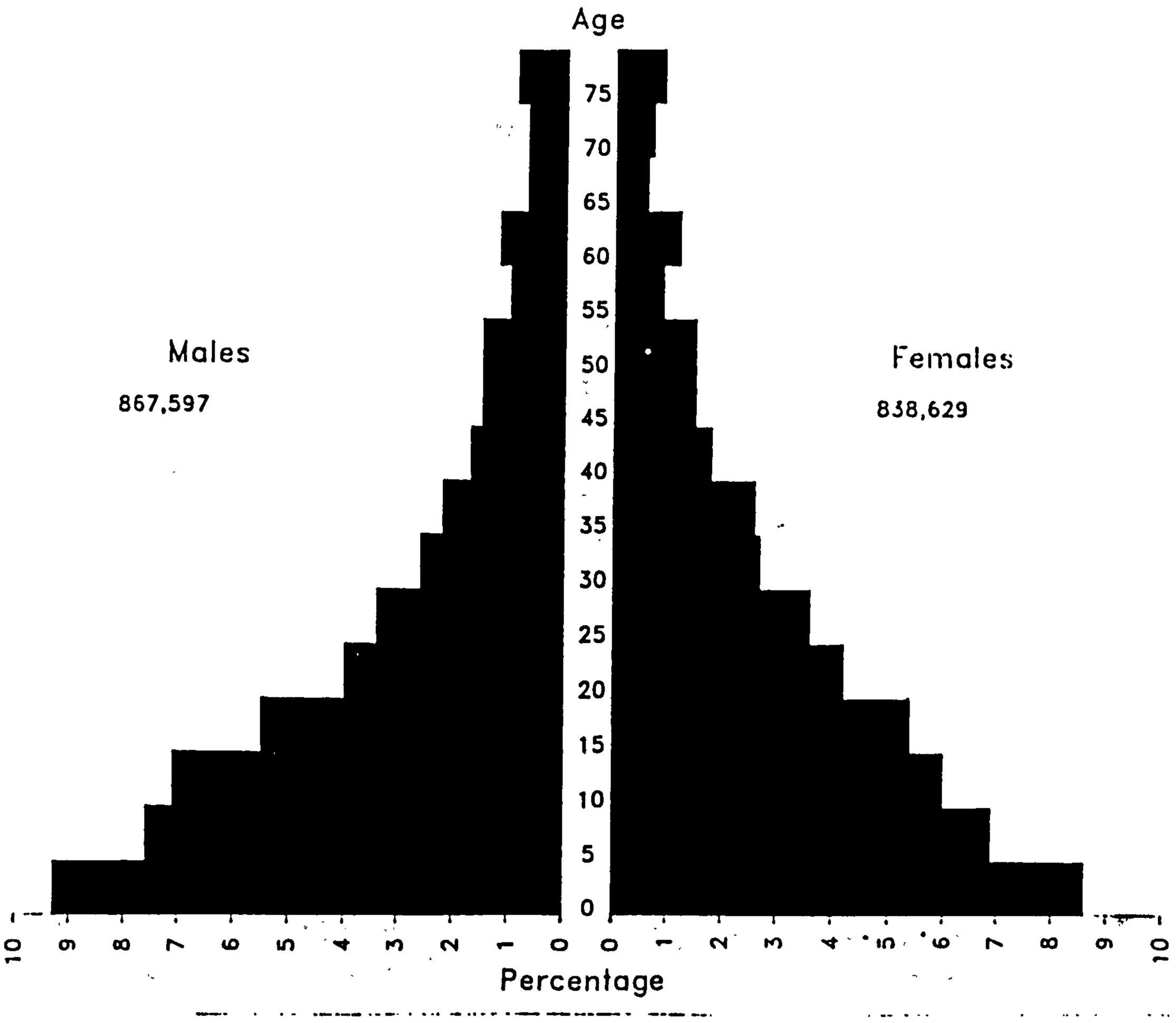


Fig. 2.3: Population pyramid for Jordan, 1961.

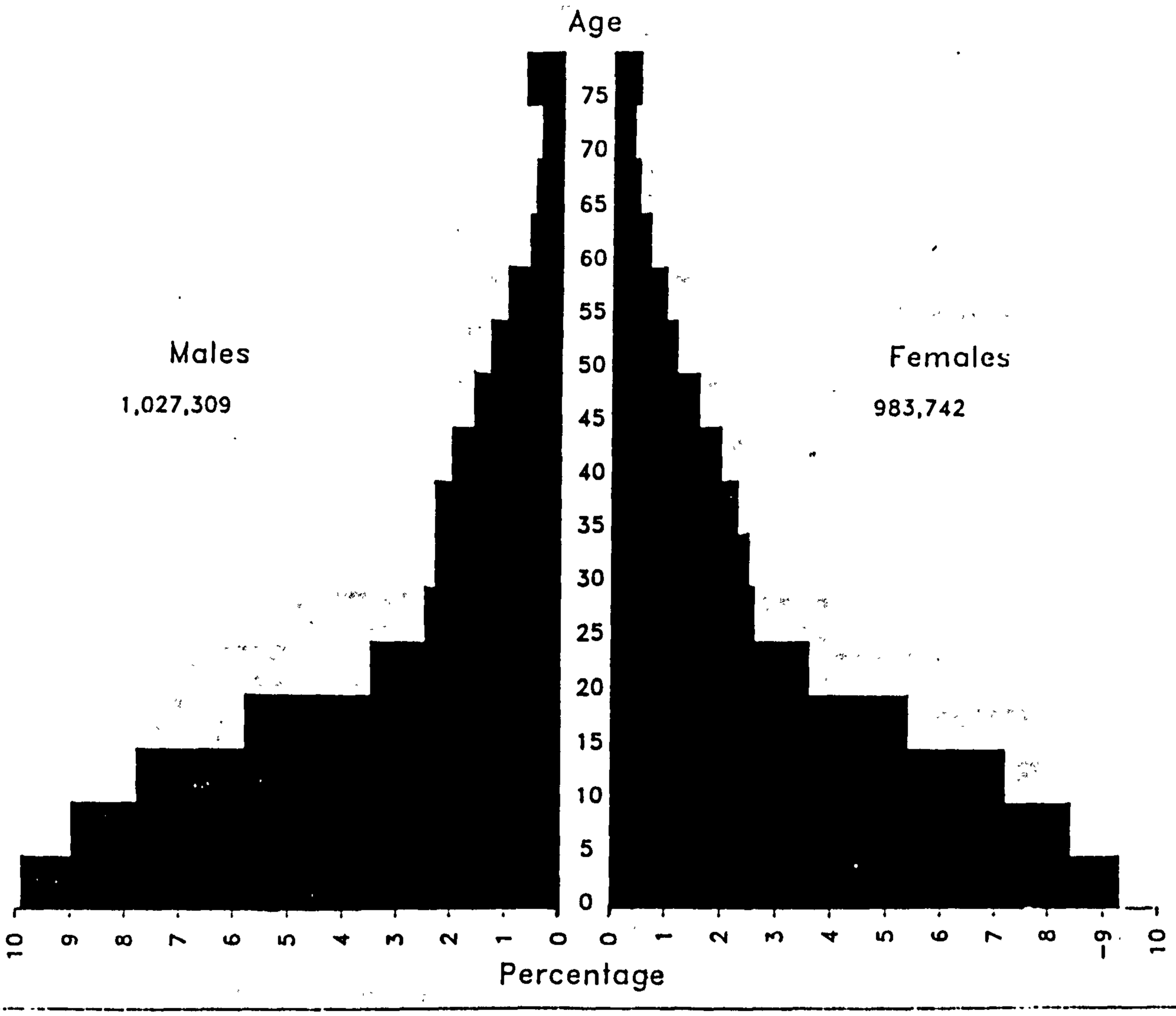


Fig. 2.4: Population pyramid for Jordan, 1979.

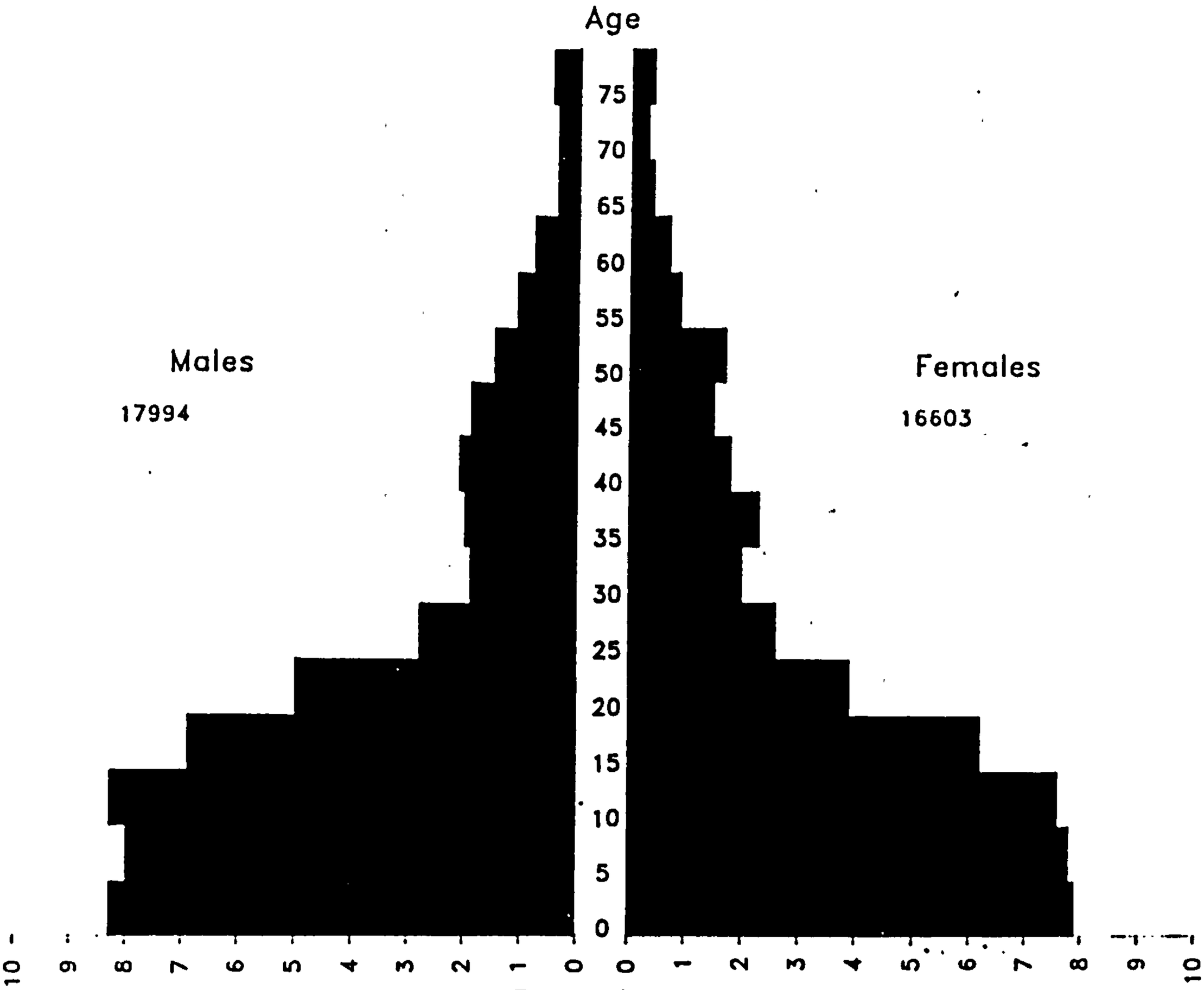


Fig. 2.5: Population pyramid for Jordan, 1983.

CHAPTER 3

METHODOLOGY CHAPTER

It was noted in the literature review of chapter 1 that Caldwell's (1982) theory of fertility decline made a number of important propositions in relation to the fertility transition. These propositions, amongst other suggestions, identified the study of change in the family system as a priority area for research.

Some of these propositions involve multi-facetted dimensions, such as those relating to wealth flows. This makes them difficult to test. Caldwell (1982: 337) remarks: "How comprehensive wealth flows are. The ability of a man not to lift a finger in the house and to have his every whim satisfied immediately has been a fundamental type of wealth in most societies". In spite of the measurement difficulties, it is possible to develop general frameworks to examine some of these propositions. The analytical part of this study will attempt to do this.

3.1. THE MAIN AIMS OF THE STUDY

The main part of this thesis tries to analyse the following key issues:

1. Aspects of change evident in the 1980s in the family system in Jordan, and in particular:-

    a - social and economic kin-relationships.

    b - wealth flow directions within the family.

2. Fertility attitudes in relation to contrasting social contexts.

3. Some of the causes of regional variations in fertility levels in Jordan.

3.2. IMPORTANCE OF THE STUDY

It can be said that the majority of fertility studies in Jordan have concentrated mainly on measurements of fertility levels. This study seeks to make a distinctive contribution by throwing some light on the explanation of fertility change by investigating the role of the family and its structure in explaining fertility attitudes and behaviour. This is done using a framework based on Caldwell's theory to derive some specific propositions relating to fertility trends which can be examined.

It is assumed that fertility decline will be the result of certain changes in the family's internal and external social and economic structure. In order to adopt this approach it is necessary to examine the perceived internal and external family relationships which exist in terms of investigating a) the scale and character of mutual economic obligations (or feelings of financial responsibility) which exist within families, b) the nature of the family budget (to what extent a common household budget exists as opposed to a budget divided into separate units related to individual wage earners), c) relations between the father and his children in terms of obedience, societal and family norms (even when the family is geographically separated as a result of migration), d) the coherence and structure of the family system (is it a closed or open nuclear family or does it still have

elements of the extended family?), women's roles and status within the family, e) wealth flow directions (or family power structure).

The theoretical importance of this study lies in the fact that it is the first study to carry out such a comprehensive analysis in Arab society based on Caldwell's theory.

3.3. HYPOTHESIS

Although many ideas are tested in this thesis, one is more important than all the others in terms of its significance in understanding the relation between family structure and fertility attitudes and behaviour. This relates to the sequence by which family structure changes. The evolution of the family from an extended to a nuclear form has been well documented in many anthropological studies, but more important than the change in the physical size and structure are the social and economic mechanisms within the family which produce this transition. It is hypothesized here that the so-called "economic nuclear family" will emerge first and then at a later stage the "social nuclear family" will be formed. This sequence is correct, and evidence to support this position in Jordan is presented later in the thesis. If this sequence can be substantiated, then it implies that economic links within the family, and between the family and its broader economic context, will initiate demographic changes. Only at a later stage will social linkages become of importance in

influencing fertility behaviour. It is assumed therefore that fertility attitudes are significantly affected by social and economic kin-relationships, and wealth flow directions.

3.4. DATA

3.4.1. Secondary data

First of all a number of secondary data sources will be used in order to satisfy the third aim of this study: namely to provide a context for field research by evaluating fertility differentials in Jordan at a regional scale. Two main data sources exist which provide recent insights on Jordanian fertility. These are a) the Jordan fertility survey (1976) carried out as part of the World Fertility Survey (WFS). This survey consists of two samples: one sample included responses from 3,612 ever-married women. It was an individual survey. Other samples included 14,493 households, b) the other major national survey is the Jordan fertility and family health survey (1983). It also consists of two samples, one sample included 3,939 ever married women (again an individual survey). The other one included 5,049 households.

3.4.2. Primary Data

3.4.2.1 Sample Design

With regard to the data of the 1988 survey carried out by the author, three areas were selected for study. These areas represented the three major physical and social environments which exist in Jordan:-

1. An environment dominated by nomadic culture. This

environment consists of bedouin societies, or sedenterised people who were originally bedouins. These people are found mainly in the east and south of the country.

2. An environment which is mainly dominated by peasant agriculture. These peasant societies are mainly found in western Jordan and especially in the north-western corner of the country.

3. An environment mainly dominated by modern culture or urban life. This sort of environment is found in the main cities and especially in the capital city of Amman.

The author's sample was drawn from the following areas:-

a) Amman (the capital). From this area a sample was selected, representing the urban area. An attempt was made to cover both middle and lower class residential areas. In the context of Jordan it is difficult to apply the concept of class in the same way as in Western Europe, given the country's distinctive history and political economy. Unlike most of Western Europe, Jordanian society has not experienced the structuring influence on the division of labour introduced by an Industrial Revolution and subsequent economic development. Nevertheless, any social scientist studying change within urban society in Jordan quickly becomes aware of the differentiation of society. Wealth and access to new sources of income undoubtedly have

had a strong influence in structuring urban society in Jordan. In the context of this thesis the terms "middle" and "lower class" are therefore used in recognition of the division of society on the basis of income, but not necessarily on the same basis as in Western Europe.

b) Ketm, a village selected from the peasant societies of the north-west. Within this village a systematic sample of 78 households was drawn by interviewing at every third house. This gave a coverage of 33% of the village population.

c) Basta, a village from the south of Jordan representing sedentarised bedouin society. Since this was quite a small village the entire population of the village which was present was included in the survey. This yielded 96 households responses. Figure 3.1 shows the location of the survey areas.

Ketm and Basta were selected at random from the Jordanian settlement system. This was achieved as follows:-

A co-ordinate system covering all possible locations in Jordan was placed over a map of Jordan. A random number table was then used to select the specific locations. The villages lying closest to the randomly selected locations were chosen for study.

In Amman it was decided that site selection should be influenced by the morphological and social structure of the city (see Findlay and Samha, 1986). In total, five sites within the built up area were selected using maps of the

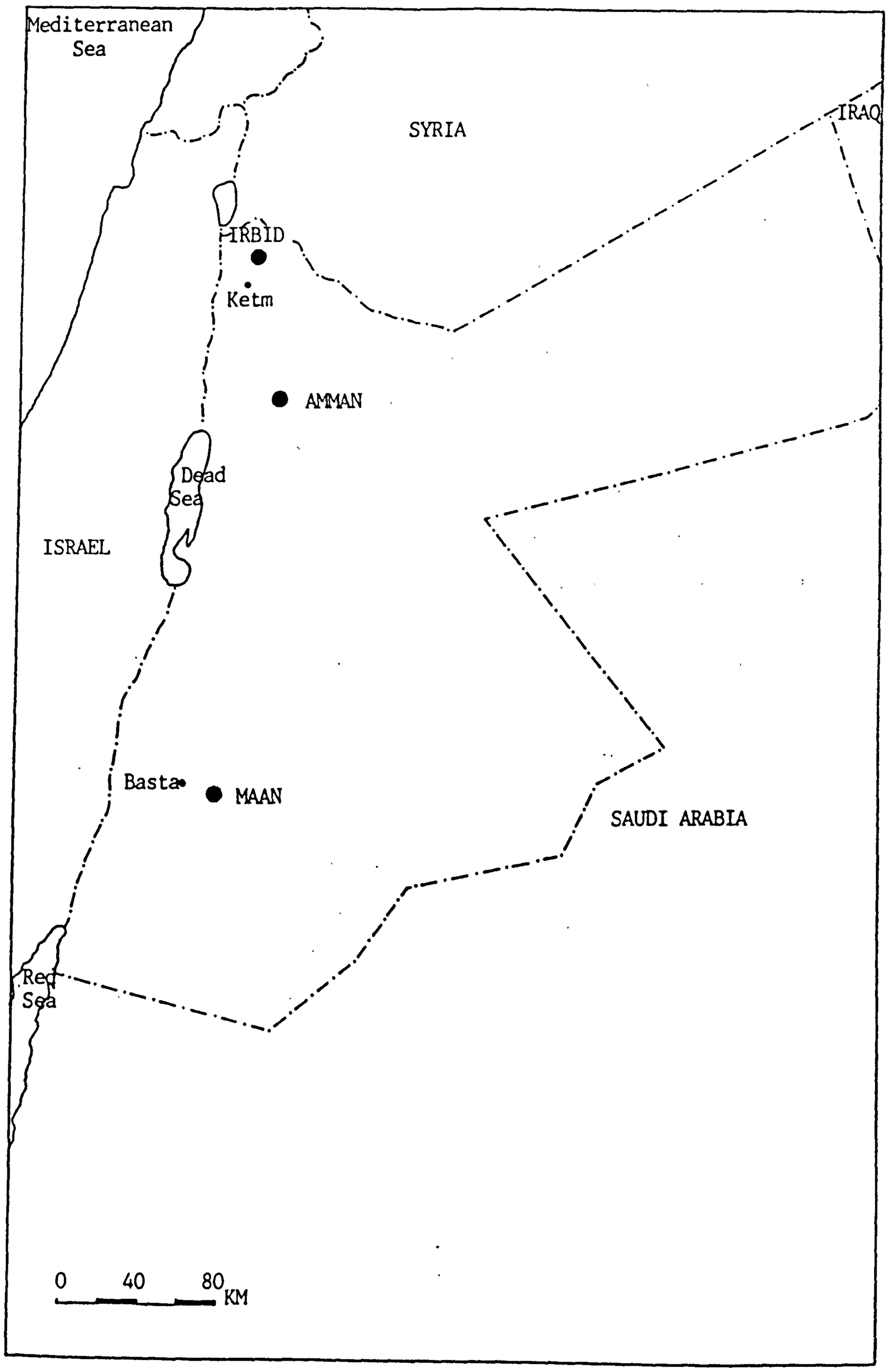


Fig. 3.1: Areas of interview.

urban areas prepared by the Amman Balqa Urban Planning Authority from aerial photographs. The first site was selected using random numbers from the urban area as it existed in 1936. The procedure was repeated for the area of urban growth between 1936-1956. Further sites were selected at random from the areas of urban growth which emerged in the 1960s, 1970s and 1980s. This method of site selection produced sample areas in the west, east, south and south-east of the city, in addition to one in the central areas (see map, Figure 3.2). The five sites as selected on a chronological basis described above can be re-grouped into two main social categories, middle and lower class.

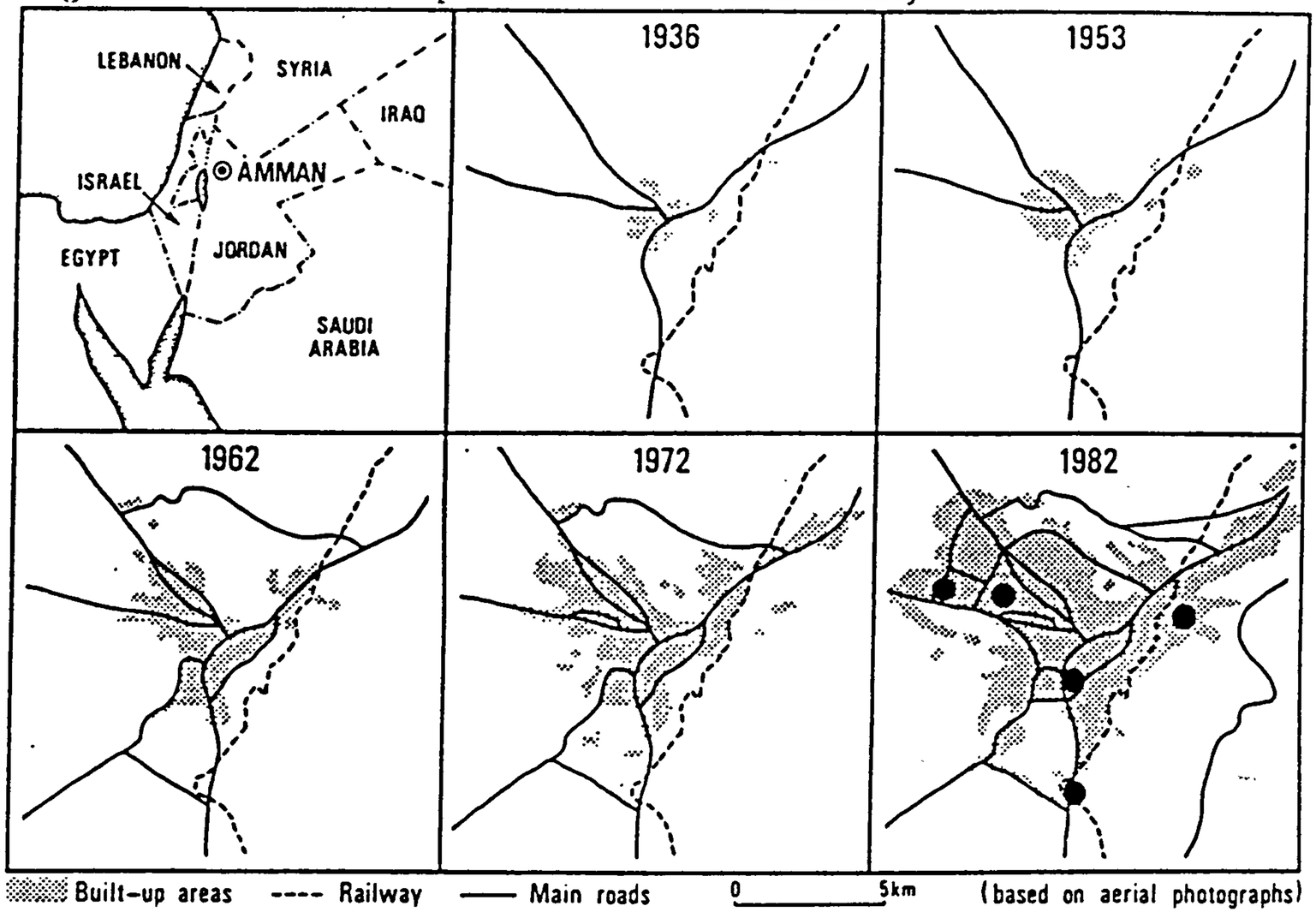
The total urban sample of 418 households, was divided as follows; 178 of the households which had been selected were located in middle class areas in the west of Amman, 240 households were located in lower class areas in the east and south east of Amman. Households were selected by interviewing all households in an area of 15,000m^2 around the co-ordinate location chosen using random numbers.

3.4.2.2 Questionnaire

The questionnaire, which was in Arabic, had 3 main parts:

1. Basic information about household members. This part covered age, sex, educational attainment, marital status, work status, etc.
2. Social and economic relationships, both within the family and externally.

Fig. 3.2: Location and spatial extension of Amman City



● Location of survey work in Amman.

3. Information about fertility attitudes, including the desired number of children and the social and economic motivations influencing fertility.

Appendix I lists the questions included in the survey.

3.4.2.3 Questionnaire pre-test

In the urban area (Amman) a pretest of the questionnaire was carried out between 25th and 27th January, 1988. Covering 30 households in two sites (15 households from the middle class, and 15 households from the lower class).

In the villages, Ketm and Basta, another pretest of the questionnaire was carried out; 29th - 30th January 1988 in Ketm, and 2nd - 3rd February 1988 in Basta. This pretest covered 12 households in Ketm and 12 households in Basta.

After only minor modifications to the questionnaire the full survey was launched on 5th February, 1988. The field work for the pretest was carried out by the author and by a research assistant in Amman, while in the two villages it was carried out by the author himself.

3.4.2.4 Recruitment and Training of Field Staff and Representativeness of the Survey

11 interviewers were deployed for the field work. 4 of those recruited were school teachers from the village of Basta. The importance of local area recruitment was great given the need for familiarity of the staff with local conditions. It also reduced travel and per diem costs. The interviewers were given a brief training. The

training centred around the questions, purpose of the study, and objectives of the study, etc.

With regard to the middle class in Amman there was a problem of low response rates. Many households refused to participate in the interviews. For example, one day an interviewer visited 43 households but only found 8 households willing to cooperate and answer questions. To overcome this problem interviewers had to extend the survey area in middle class areas.

It was not possible to draw an entirely representative sample from Amman, for several reasons. Amman has more than one million people yet there is no recent reliable sampling frame available. Therefore, a representative sample would have been very costly in terms both of time and money. Many areas of the city have been built and occupied since the time of the last national census in 1979. For example, one of the sites selected for survey was in west Amman, known as Shmaisani, has grown dramatically and changed in character since the last census. The population size of this area is not accurately known, even by the municipal authorities, and the same is true for some of the other sites where the survey was undertaken.

3.4.2.5 Field work

The main questionnaire phase of the field work began on 5th February 1988 and was completed on 10th March, 1988. The head of the household (male) was the preferred respondent.

Several reasons lie behind the choice of interviewing the head of household rather than other members of the family. Social and economic kin-relationships and the power structure of families, involving wealth flow, were key issues in the study and in Arab society it is the man who claims to be responsible for structuring family relationships. In Jordan there can be little doubt that society is characterised by a male dominated culture (Weeks, 1988; Findlay, 1987a; Ghazwi, 1985). This is especially true in rural areas, and to a lesser extent in urban areas. Therefore, it was considered appropriate to collect data from those who are assumed to dominate family life, even although women's attitudes and preferences are clearly also of great importance in understanding fertility trends.

It is worth mentioning that most other previous fertility surveys in Jordan were directed towards women. This was maybe necessary because these fertility surveys focussed on fertility measurements requiring detailed information from the female population. Only one of the surveys was directed towards husbands. This was the survey conducted in 1985 which was based on a sample drawn from the previous fertility survey of 1983. Results of the 1985 survey reveals, not surprisingly, that there are some differences between the answers of husbands and wives in terms of fertility attitudes and behaviour. The survey reveals that husbands are, in general, more traditional.

It was therefore considered useful in the context of the author's work to collect more data about fertility from the perspective of husbands in order to get a better understanding of fertility behaviour.

The fieldwork was carried out by three teams:-

1. A team of 6 interviewers (including 1 supervisor) was selected for the survey in Amman. The author worked with them whenever he was in Amman.
2. The team in Basta consisted of 4 interviews (teachers) under the direct supervision of the author.
3. A team of 2 interviewers worked in Ketm, under the direct supervision of the author.

3.5. CAUSAL MODELS

More than one type of causal model will be used in order to analyse fertility attitudes and wealth flow. There are four general models which are investigated:

a) Model 1 studies the determinants of wealth flow direction.

b) Model 2 studies the determinants influencing the perception of the best number of children to have.

c) Model 3 studies the determinants of transition in social and economic motivations underpinning fertility behaviour.

d) Model 4 studies the determinants of using contraceptives.

It should be said that each of the general models mentioned above was subsequently disaggregated into two

sub-models. One of these related to urban areas and the other to rural areas.

3.6. DEPENDENT VARIABLES

In parallel with the four causal models listed above, there are four dependent variables which had to be extracted from the survey data:

1. Wealth flow direction (WEALTH). Change in wealth flow direction is crucial in terms of fertility change. As long as the wealth flow direction is upward, family size norms can be assumed to favour high stable fertility. If it is downward, this will serve to destabilise relationships and to reduce fertility levels.
2. Best number of children (BESTNC). Respondents were asked what they considered to be the best number of children to have. One can ask this question in different ways, using the words "ideal" or "desired" or "wanted" instead of "best". The author chose to use the term "best" to come as close as possible to Caldwell's terminology.
3. Social and economic motivation underpinning high fertility (MOTIV). It was considered that family size-norms will tend to correspond to several motivations (social and economic) that maximise the net utility from having high fertility.
4. Contraceptive use (CONUSE). It was considered that the family system and family relationships were fundamental issues in influencing contraceptive use

(Caldwell, 1982). Therefore, it was very important to examine family characteristics in terms of contraceptive use.

The first and third dependent variables were constructed from a number of surrogate variables included in the survey. Since these dependent variables, and the scores of different groups in the population in relation to these variables, form a major part of the analysis of later chapters, it is important to discuss in detail here their construction and interpretation.

Firstly, what measures were used to examine the transition in the social and economic motivations underpinning fertility levels (MOTIV). Respondents were asked about their perception with regard to their social and economic motivations. Respondents who answered that they did not believe that their social and economic status would be guaranteed by high fertility, were given a score of 1. Those who were unsure but thought that it might be, were given a score of 2. If respondents agreed strongly that there was an association of status and high fertility were given a score of 3 (Table 3.1). This scoring procedure was applied to five different categories of motivations in relation to fertility.

- Family name
- Prestige
- Security in old age
- Economic benefits from children

- Happiness (contentment resulting from having a large family)

Applying this scoring system meant that a minimum score of 5, and maximum score of 15 was attained for each household. The above scores were then grouped into four categories as follows:

- Traditional familes were defined as those with scores of 14 or 15
- Early "transitional" familes scored 11-13
- Advanced "transitional" familes scored 8-10
- "Modern" familes were defined by scores of 5 -7

Table 3.2 shows the spread of scores which were achieved. It can be seen that events are adequately spread between the four categories, identified above. It is noticeable that the distribution of scores around the mean has a U-shape (Figure 3.3).

The distribution does not, unfortunately, conform to the parameters of a normal or Gaussian curve. Nevertheless, in the absence of either a positive or negative skew, it was decided to analyse the data in an untransformed manner. This means that care is required when parametric statistics are used, but in practice most of the statistical modelling which was used involved non-parametric techniques suitable for handling categorical data.

With regard to wealth flow direction, the same procedure of scoring was used, but diferent variables were used (see Table 3.3).

Applying this scoring system meant that a minimum score of 10, and maximum score of 26 could be achieved. These scores were regrouped into two categories:

- Upward wealth flow direction defined by scores of 10-15
- Downward wealth flow direction defined by scores of 16-26

Table 3.1

Scores for social and economic motivations for having high fertility.

Variables	Score of possible answer	Minimum possible score	Maximum possible score
Motivations for having high fertility:			
*Keep family name -			
Strongly agree	3		3
Possibly true	2		
Do not accept	1	1	
*Security in old age -			
Strongly agree	3		3
Possibly true	2		
Do not accept	1	1	
*Prestige -			
Strongly agree	3		3
Possibly true	2		
Do not accept	1	1	
*Economic benefits from children -			
Strongly agree	3		3
Possibly true	2		
Do not accept	1	1	
*Happiness -			
Strongly agree	3		3
Possibly true	2		
Do not accept	1	1	
TOTAL		5	15

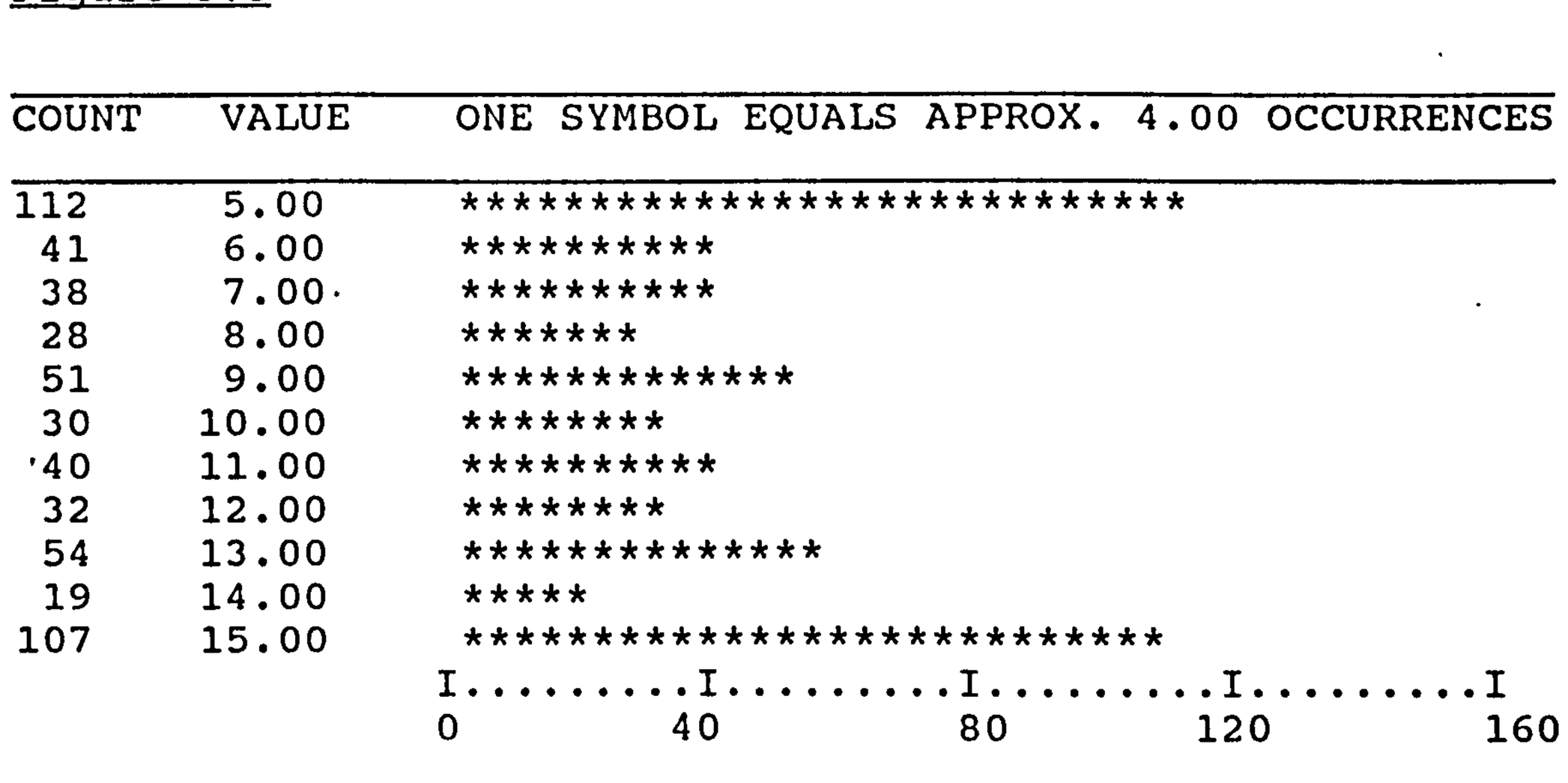
Table 3.2

Spread of scores in terms of motivations for high fertility and group definition.

Score	Frequency	Percent	Category
5-	112	20.3	
6-	41	7.4	Modern
7-	38	6.9	
8-	28	5.1	Advanced
9-	51	9.2	Transitional
10-	30	5.4	
11-	40	7.2	Early
12-	32	5.8	Transitional
13-	54	9.8	
14-	19	3.4	Traditional
15-	107	19.4	

Mean = 9.9
S.D. = 3.7

Figure 3.3



HISTOGRAM OF MOTIVATIONS FOR HIGH FERTILITY

Table 3.3

Construction of the wealth flow direction.

Variables	Score of possible answer	Minimum expected scores	Maximum expected scores
*Economic help from children to parents and family -			
Not available	3		3
Available to a certain degree	2		
Available	1	1	
*Economic help among brothers -			
Not available	3		3
Available to a certain degree	2		
Available	1	1	
*Economic help among relatives -			
Not available	3		3
Available to a certain degree	2		
Available	1	1	
*Wife's work -			
Working	2		2
Not working	1	1	
*Nature of family's budget -			
Separated family budget	2		2
One common family budget	1	1	
*Wife's responsibility for economic decisions -			
75% of decisions made by wife	3		3
30% - 75% of decisions made by wife	2		
0% - 30% of decisions made by wife	1	1	

Table 3.3 (Contd.)

Construction of the wealth flow direction.

Variables	Score of possible answer	Minimum expected scores	Maximum expected scores
*Husband's responsibility for economic decisions -			
0% - 30% of decisions made by husband	3		3
30% - 75% of decisions made by husband	2		
75% of decisions made by husband	1	1	
*Earning from children -			
No earning from children	2		2
Yes earning from children	1	1	
*Expected earning from children -			
Not expected	2		2
Yes expected	1	1	
*Relation between father and children -			
Weak relation	3		3
Average relation	2		
Strong relation	1	1	
TOTAL		10	26

Table 3.4 gives the spread of scores which were achieved in terms of wealth flow direction. The distribution of scores around the mean shows a very slight skew towards scores with low values. No transformation of the data was considered necessary. It can be seen from Figure 3.4 that the division of the population into two categories based on a score of 15.5 is somewhat arbitary, but no natural break occurs in the distribution.

Table 3.4

Spread of scores in terms of wealth flow direction.

Score	Frequency	Percent	Category
10-	00	0.0	
11-	20	3.6	
12-	23	4.2	Upward wealth flow
13-	28	5.1	
14-	32	5.8	
15-	52	9.4	
16-	56	10.1	
17-	67	12.1	
18-	63	11.4	
19-	81	14.7	
20-	56	10.1	
21-	34	6.2	Downward wealth flow
22-	23	4.2	
23-	12	2.2	
24-	4	0.7	
25-	0	0.0	
26-	1	0.2	

Mean = 17.3
S.D. = 3.0

Figure 3.4

COUNT	VALUE	ONE SYMBOL EQUALS APPROX. 2.00 OCCURRENCES
	10.00	
20	11.00	**********
23	12.00	**********
28	13.00	**********
32	14.00	**********
52	15.00	**********
56	16.00	**********
67	17.00	**********
63	18.00	**********
81	19.00	**********
56	20.00	**********
34	21.00	**********
23	22.00	**********
12	23.00	******
4	24.00	**
0	25.00	
1	26.00	*

I.....I.....I.....I.....I.....I....
0 20 40 60 80

HISTOGRAM OF WEALTH FLOW.

3.7 INDEPENDENT VARIABLES

Table 3.5 shows the independent variables which will be used in the different causal models. Two of the independent variables, "transition in social kin-relations", and "transition in economic kin-relations", are composite variables derived from a scoring system of the kind described above.

Table 3.6 shows how these two independent variables were constructed:

a) With regard to the transition in social kin-relations a new variable was constructed from five other variables. These five variables measured the strength of the social kin-relationships between the respondent household and five other related groups.

The scoring was as follows:

A respondent who answered that he had weak social relations with brothers and sisters was given a score of 4. If he answered that he had a normal relationship he was given a score of 5, and if the answer was that he had a strong relationship he was given a score of 6. In terms of a respondent's social relationship with uncles and aunts, scores of 3, 4 and 5 were given for weak, normal and strong relationships respectively. Similarly, with regard to social relations with other relatives, scores of 2, 3 and 5 were given for weak, normal and strong relations respectively.

Table 3.5

Explanatory variables.

Explanatory variables	No. of Categories
Social kin-relationships (RELSOC)	3
Economic kin-relationships (RELECO)	3
Area of interview (AREAINT)	3
Wealth flow direction (WEALTH)	2
Education level of husbands (R1EDUC)	3
Education level of wives (R2EDUC)	3
Source of income (INCSOU)	2
Age of husbands (RIDOBYR)	3
Actual number of children (CHILD)	3

It should be noted that these values were not allocated in an arbitary fashion. The researcher investigated and tested several different scoring systems prior to selecting the one described above, because it offered what seemed to be appropriate weights to each type of relationship. Since the strength of relationships were not considered of equal importance for all five groups of relatives, it was decided to give greater weighting to brothers and sisters, lower weighting to uncles and aunts and the lowest weighting to relationships with other relatives.

Applying this scoring system meant that a minimum score of 16, and maximum score of 26 was attained. Scores were then grouped into four categories as follows:

- Traditional social kin-relationships: 25-26
- Early transitional social kin-relations: 22-24
- Advanced transitional social kin-relations: 19-21
- Modern social kin-relations: 16-18

Table 3.7 shows the spread of scores which are achieved in terms of social kin-relations. This spread indicates a marked skew with distinctly more households falling into the early transitional and traditional categories than into the other two classes.

b) With regard to economic kin-relationships, a composite variable was constructed by using the same scoring procedure as above. The same five groups of relatives were used. Therefore, the same minimum and maximum scores

resulted (Table 3.8). These scores were grouped into four categories as follows:

- Traditional economic kin-relationships: 25-26
- Early transitional economic kin-relations: 22-24
- Advanced transitional economic kin-relations: 19-21
- Modern economic kin-relations: 16-18

Table 3.9 gives the spread of scores which are achieved in terms of economic kin-relations. The values are spread across the scoring range but appear to cluster on particular scores such as 18, 20, 23 and 26. This makes justification of the division of the distribution into four discrete categories much easier. The mean score of 20.6 (Table 3.9; Figure 3.6) shows that on average households remain in the advanced transitional phase of their economic development.

The type of approach adopted here is helpful when variables are needed to measure abstract concepts of the kinds described. A similar type of scoring system has been used by other researchers (Dow and Werner, 1983; Weeks, 1988).

Table 3.6

Construction of transition in social kin-relationships.

Variables	Score of possible answers	Expected minimum scores	Expected maximum scores
*Social relationships with brothers -			
weak & no relation	4	4	
ordinary relation	5		
strong relation	6		6
*Social relationships with sisters -			
weak & no relation	4	4	
ordinary relation	5		
strong relation	6		6
*Social relationships with uncles -			
weak & no relation	3	3	
ordinary relation	4		
strong relation	5		5
*Social relationships with aunts -			
weak & no relation	3	3	
ordinary relation	4		
strong relation	5		5
*Social relationships with far relatives -			
weak & no relation	2	2	
ordinary relation	3		
strong relation	4		4
TOTAL SCORES		16	26

Table 3.7

Spread of scores of social kin-relationships.

Score	Frequency	Percent	Categories
16-	14	2.5	Modern social
17-	2	0.4	kin-relationships
18-	52	9.4	
19-	1	0.2	Advanced transitional
20-	68	12.3	social
21-	47	8.5	kin-relationships
22-	57	10.3	Early transitional
23-	116	21.0	kin-relationships
24-	19	3.4	
25-	60	10.9	Traditional social
26-	116	21.0	kin-relationships

Mean = 22.6
S.D. = 2.7

Figure 3.5

```
COUNT    VALUE     ONE SYMBOL EQUALS APPROX. 4.00 OCCURRENCES
 14      16.00     ****
  2      17.00     *
 52      18.00     *************
  1      19.00
 68      20.0      *****************
 47      21.00     ************
 57      22.0      **************
116      23.0      ******************************
 19      24.0      *****
 60      25.0      ***************
116      26.0      ******************************
                  I.........I.........I.........I.........I
                  0         40        80        120       160
```

HISTOGRAM OF SOCIAL KIN-RELATIONSHIPS

Table 3.8

Construction of transition in economic kin-relationships.

Variables	Score of possible answers	Expected minimum scores	Expected maximum scores
*Economic relationships with brothers -			
weak & no relation	4	4	
ordinary relation	5		
strong relation	6		6
*Economic relationships with sisters -			
weak & no relation	4	4	
ordinary relation	5		
strong relation	6		6
*Economic relationships with uncles -			
weak & no relation	3	3	
ordinary relation	4		
strong relation	5		5
*Economic relationships with aunts -			
weak & no relation	3	3	
ordinary relation	4		
strong relation	5		5
*Economic relationships with far relatives -			
weak & no relation	2	2	
ordinary relation	3		
strong relation	4		4
TOTAL SCORES		16	26

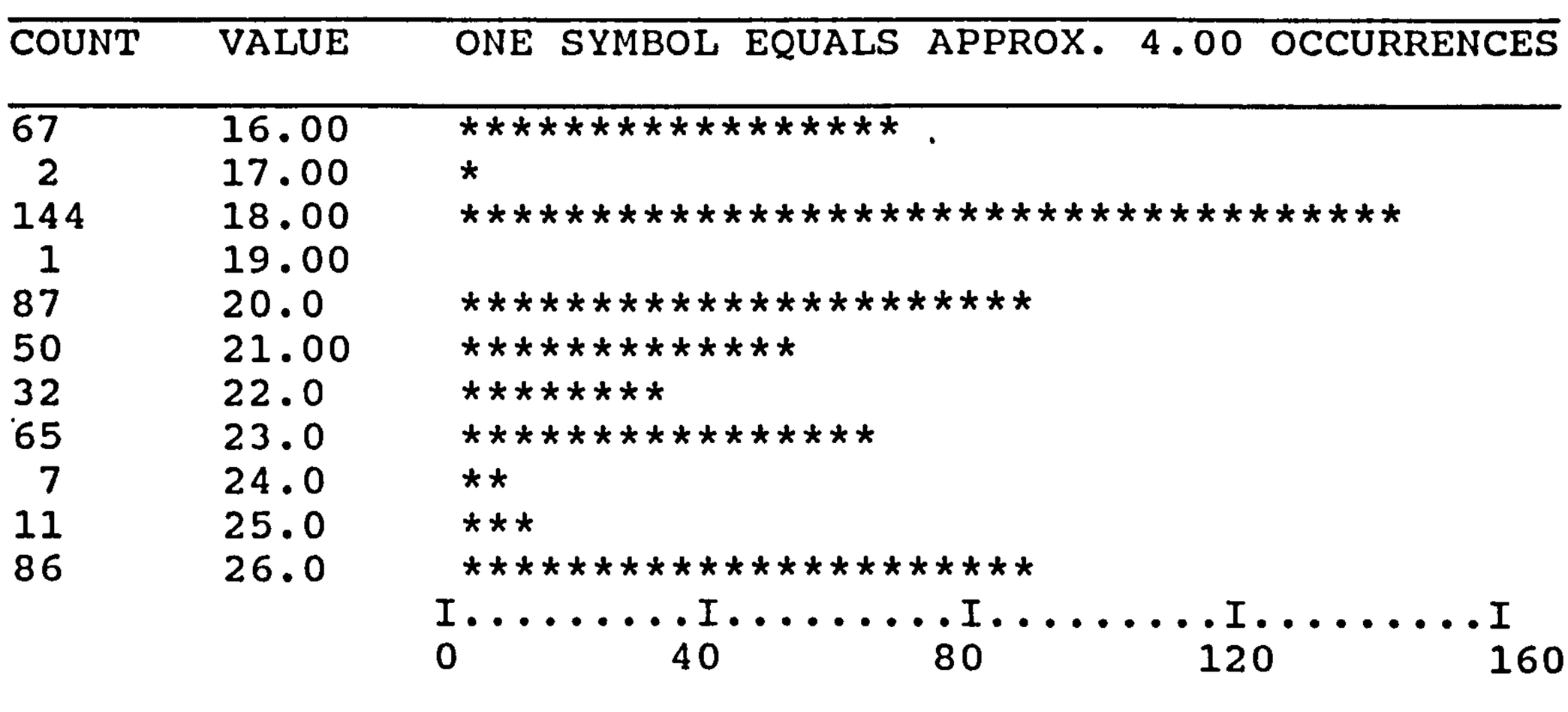
Table 3.9

Spread of scores of economic kin-relationships

Score	Frequency	Percent	Categories
16-	67	12.1	Modern social
17-	2	0.4	kin-relationships
18-	144	26.1	
19-	1	0.2	Advanced transitional
20-	87	15.8	social
21-	50	9.1	kin-relationships
22-	32	5.8	Early transitional
23-	65	11.8	social
24-	7	1.3	kin-relationships
25-	11	2.0	Traditional social
26-	86	15.6	kin-relationships

Mean = 20.6
S.D. = 3.2

Figure 3.6



HISTOGRAM OF ECONOMIC KIN-RELATIONSHIPS

3.8 STATISTICAL METHODS

Some descriptive statistics are used throughout the dissertation (such as mean, percentage, etc.), which need no further comment here. In addition, inferential statistics such as chi-square are used in order to examine whether significant differences can be detected between sub-populations of the sample survey.

In order to study the above mentioned causal models advanced categorical statistical methods are also used. All of the respondent variables derived from the survey were categorical in nature (e.g. dichotomous response variables) and were therefore unsuitable for conventional parametric statistics. Therefore, a statistical model which is capable of handling dichotomous response variables was used. There are three possible models which can be used in the circumstances: logistic, logit and probit (Wrigley, 1985; Bowlby & Silk, 1982). The logit model is produced from a cumulative logistic probability function. Probit produces very similar results to the logit model in the case of dichotomous response variable (Wrigley, 1985: 28-30). Thus these statistical methods are similar.

Stepwise logistic regression will be used in order to examine the proposed causal models. By this stepwise method, the most significant explanatory variables can be selected and explored. To get the most significant explanatory variables using non-parametric stepwise regression involves parameter elimination within a hierarchical structure. Those explanatory variables which

account for the greatest amount of variation in terms of the response variables amongst the sub-population are then selected. Therefore, selection of explanatory variables is based on an asymptotic covariance matrix. As a result "F-statistics" are used to judge the significance of the results. The use of "F-statistics" is somewhat similar to the "inclusion and termination" statistics involved in chi-square analysis (Wrigley, 1985: 144).

Finally, it is important to consider one assumption of conventional regression. This is that circularity between dependent and independent variables should be avoided if possible. This is the case both for statistical and explanatory reasons. On a statistical basis it is important simply because one wants to maintain independence between the variables under study (one of the assumptions of many inferential tests). For explanatory reasons, circularity is a problem since clearly causal modelling is greatly weakened if dependent and independent variables are constructed using the same or similar data source.

In social studies, and particularly in demographic ones it is often very difficult to avoid circularity, because of the complex inter-relationships between the social phenomena being analysed. In this study there are some composite variables, for example, wealth flow, and kin-relationships in which there is a danger of circularity. It is, therefore, important for the reader to note from the outset that there are some similar elements used in these two composite variables which introduces the possibility of circularity between the two sides of the logistic regression equation in some of the research reported later in the thesis. In the author's view this does not, however, undermine the main findings of the research reported in later chapters.

CHAPTER 4

DIFFERENTIALS IN FERTILITY LEVELS AND FERTILITY PREFERENCES IN JORDAN

4.1 FERTILITY LEVELS AND DIFFERENTIALS

In Jordan both urban and rural areas are experiencing a downward trend in fertility.

Table 4.1 shows that the total fertility rate for Jordan varied between 6.7 (urban) and 9.2 (rural) in 1976 and 6.0 (urban), and 8.0 (rural) in 1983. The results also show both in urban and rural areas that age specific fertility rates between 1976 and 1983 declined at ages below 30, while women above 30 years of age experienced an increase. This type of pattern is usually observed in populations during the early stages of fertility decline. A possible interpretation of this pattern is that natural marital fertility increased (see Table 4.2) and that contraceptive use is still not effective among women over 35 years of age. Srinivasan et al (1984) noticed in India that greater use of contraceptives would imply lower fertility, but greater use of contraceptives would be accompanied by a high natural marital fertility. The relation of use to actual marital fertility is not evident a priori. This is also suggested by Bongaarts (1985) who found that marital fertility decreased only slightly during the early stages of the fertility transition because increase in contraceptive use did little more than offeset any increase in natural marital fertility. As noted later

in the chapter in relation to Bongaarts' model, there is strong evidence that some countries such as South Korea and Taiwan have experienced a major increase in marital fertility prior to fertility decline, and this follows historical patterns set in Europe where this feature was explained by a decline in breastfeeding (Dyson and Murphy, 1985: 425).

The decline in the level of fertility among women below 30 years of age reflects the increase in age at first marriage (Table 4.1). At the first stage of fertility transition overall fertility decreased mainly as a result of changes in the pattern of marriage,this was the experience of Europe (Caldwell, 1978: 82; Jones, 1981: 95).

Although there have been some attempts to control fertility, fertility levels suggested that uncontrolled natural fertility still prevail in Jordan. In Jordan the level is quite consistent with that of a natural fertility pattern. Therefore, one can conclude that the period between 1976-1983 was almost entirely characterized by a regime of natural fertility within marriage, with only very limited effective family planning taking place.

Table 4.1

Observed age specific fertility rates and total fertility rates

Region	Year	TFR	Age specific fertility rates (per 1000)						
			15-19	20-24	25-29	30-34	35-39	40-44	45-49
Jordan									
Urban	1976	6.7	63	271	342	312	215	98	38
Urban	1983	6.0	31	162	291	317	224	120	48
Rural	1976	9.2	85	407	484	366	272	165	62
Rural	1983	8.0	33	228	337	373	323	212	98
Amman	1976	6.1	61	270	323	270	181	87	29
	1983	5.8	32	157	271	313	226	100	52
Irbid	1976	7.5	73	273	358	369	256	122	44
	1983	6.4	31	178	327	319	231	154	34
Balqa	1983	6.8	0	95	299	499	243	220	0
Urban	1983	6.4	45	262	438	238	130	158	18
Other Urban*	1976	7.1	57	270	366	346	244	84	48
	1983	6.4	45	262	438	238	130	158	18

* Urban (1976) are Salt, Karak,Maan,and some small towns.
* Urban (1983) Karak, Maan.

Source: Jordan fertility survey 1976,fertility and family health survey 1983.

Table 4.2

Observed total marital fertility rates and proportion of total marital fertility accounted for by women after their 30th birthday

Region	1976 TMF	1976 Fertility accounted for by women after their 30th birthday %	1983 TMF	1983 Fertility accounted for by women after their 30th birthday %
Jordan				
Urban	10.1	36	9.8	41
Rural	11.4	40	11.6	48
Amman	9.5	33	9.6	40
Irbid	11.0	39	10.6	40
Balqa			8.3	60
Other urban	10.2	39	10.3	28.1
Trussell*	10.3	50.5	10.3	50.5

* Schedule of natural fertility derived from empirical data by Coale, Trussell, 1974, 1978.

Source: Jordan fertility survey 1976, fertility and family health survey 1983.

As can be seen in Figure 4.1 the strength of marital fertility is extremly great. This becomes more appearnt when the value for the age group 20-24 in each schedule is taken as 100. Figure 4.1 shows also the similarity of values for different geographical environments. There would appear to be a relatively homogenous pattern of age specific marital fertility rates. This is supported by the conclusion of Abdel-Aziz, about the remarkably homogeneity

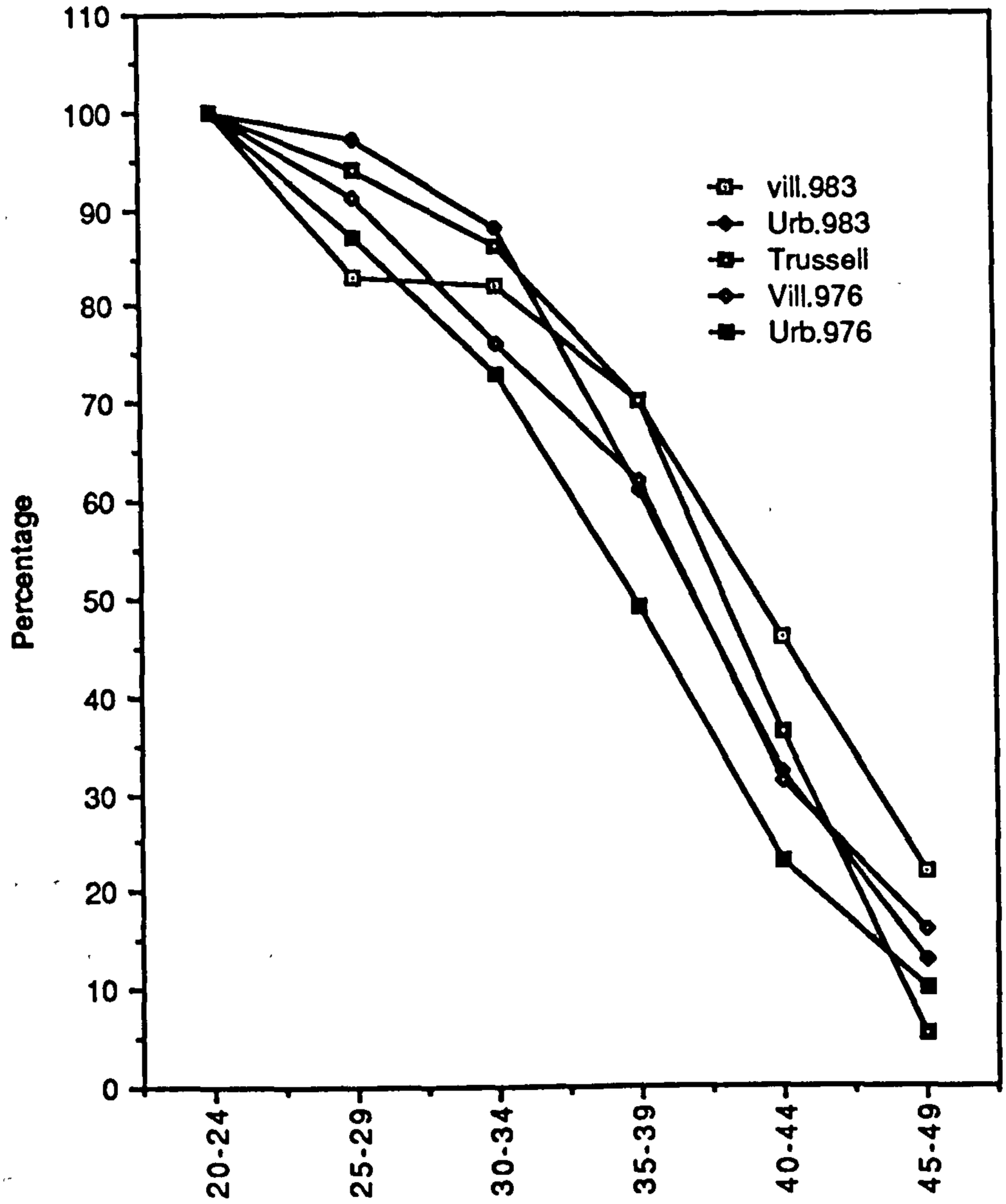


Fig. 4.1: Index values of ASMFRS of Jordan 1976-1983 (villages and urban areas)

of Jordanian women with respect to their aspirations concerning family size and family planning (Abdel-Aziz, 1983: 20).

Table 4.2 expands on the data presented in Figure 4.1 by considering in greater detail the fertility characteristics of women after their 30th birthday. Table 4.2 shows the proportions of total marital fertility which is accounted for by women of 30 years of age and above. In populations where family limitation is widespread the proportion drops to a very low level, while in societies which are characterised by natural fertility, it stays not surprisingly close to 50 per cent (Wilson, 1984: 230).

Several theories have been proposed in attempts to explain fertillity change in relation to urbanization, education, community customs and other factors. As outlined in Chapter 1 demographers, social historian and economists have made a lot of efforts to explain the fertility transition examining the initiation, course, speed, and termination.

An explanation of the context which surrounds the fertility changes in Jordan will be discussed in the following chapters, by throwing light upon some family aspects. The remainder of this chapter will concentrate on describing at the macro scale fertility changes and changes in proximate determinants of fertility by using Bogaarts' Model. The need for examining the differentials and changes of proximate determinants of fertility over the course of

the fertility transition is very necessary, especially at the onset of fertility transition when fertility rates increase through the erosion of traditional restraints, such as prolonged lactation and nuptiality ...etc. So it is important at this step to evaluate the effect of proximate determinants on fertility by using the available data from the surveys of 1976 and 1983.

4.2 INTERMEDIATE VARIABLES

4.2.1 Pattern of marriage

There is an indication of changes in the pattern of marriage in Jordan. These changes have been both in the age at marriage and in the proportion married. These changes are expected during the onset of the fertility transition and have been recorded in the demographic experience of Latin America in the twentieth century, and in Western Europe in the nineteeth century (Dyson and Murphy, 1985: 424).

Table 4.3 shows that the values of the average age at marriage of females in Jordan was 18 for Urban areas and 16.8 for Rural areas in 1976. These values rose to 19.4 (Urban) and 18.6 (Rural) by 1983. The increase in the average age at marriage is also reflected by the decline in the proportion of females ever married in the 15-19, 20-24, and even in the 25-29 age groups (see Table 4.4). The negative relation between age at marriage and proportion of ever married, reflects the same trend in marriage patterns.

The modal age of females at marriage in 1976 was between ages 14 to 18. This shifted upward in 1983 to between ages 16-19.

Table 4.3

Average age at marriage (female).

	1976	1983
Jordan		
Urban	18.0	19.4
Rural	16.8	18.6
Irbid	17.7	19.5
Amman	18.2	19.4
Balqa	-	19.6
Other Urban	17.8	19.1

Source: Jordan fertility survey 1976, fertility and family health survey, 1983.

It should be noted that the age at marriage in rural areas increased more than in the urban areas. Table 4.4 reveals the same result.

Table 4.3 shows that differences in age at marriage between the different regions are relatively small. The average age at marriage varies regionally from 17.7 to 18.2 in 1976 and from 19.1 to 19.6 in 1983. Other urban areas came at the lower end of the range in 1983 and also had the highest proportion of married females in the 15-19 and 20-24 age groups in 1983 (Table 4.4).

As can be seen in Table 4.5 widowhood is the major cause of the disolution of marriage in Jordan. The number

of currently widowed and divorced women in all the regions was small according to the 1983 survey.

Several reasons lie behind the changes in pattern of marriage. It is not the concern of this study to provide a comprehensive socioeconomic, demographic, and cultural explanation of marriage changes, but it remains useful to summarise the main reasons. One major factor has been that the proportion of marriages occuring between relatives has diminished (Faour, 1983: 31). This diminution may reflect the reduced influence of the tribe and extended family in arranging marriages, especially in the urban areas where the alternatives to early marriage such as higher education and opportunities for employment of women in the labour force are greater, and at the same time religious forces are weaker (Faour, 1983: 123). It seems unlikely that changes in the pattern of marriage had a strong relation to any conscious decision to limit the size of family. It seems more probable that they happened as a reflection of changes in the conditions of marriage within society, and as result of some economic constraints.

Table 4.4

Percentage of women ever married by age in Jordan.

Year	Age							
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	19-49
Jordan								
Urban 1976	16.1	58.5	84.5	94.4	96.4	97.7	98.1	66.3
Urban 1983	8.6	40.6	74.1	88.8	94.7	97.6	96.8	54.8
Rural 1976	28.7	77.8	94.1	97.4	99.6	98.6	99.1	76.6
Rural 1983	11.4	45.7	81.5	93.8	95.9	95.9	100.0	59.1
Irbid								
1976	16.7	58.2	86.9	95.2	96.9	99.2	98.1	66.6
1983	9.6	38.0	70.4	84.1	95.2	100.0	95.3	53.3
Amman								
1976	15.6	58.1	82.6	93.2	96.0	96.7	97.8	65.5
1983	8.4	42.1	73.1	90.3	94.5	97.1	97.6	55.3
Balqa								
1983	5.2	30.0	82.5	96.4	90.9	93.9	92.6	52.6
Other Urban 1976	16.7	60.1	86.3	96.3	96.8	97.7	98.9	67.9
1983	12.5	47.6	92.0	90.5	100.0	100.0	100.0	61.9

Source: Jordan fertility survey 1976, Fertility and family health survey 1983.

Table 4.5

Percentage of widowed and divorced among ever married women 1983.

	Divorced	Widowed
Jordan		
Urban	.007	.034
Rural	.006	.035
Irbid	.005	.039
Amman	.008	.034
Balqa	.000	.042
Karak+Maan	.008	.016

Source: Fertility and family health survey 1983.

4.2.2 Breastfeeding

Table 4.6 reveals that the duration of breastfeeding is decreasing. The decrease in rural areas is more rapid than in urban areas. Women in Amman recorded the shortest average duration of breastfeeding (1983 survey), while Balqa had the longest one. Regional differences both in 1976 and 1983 were not however very big.

Recently most studies of breastfeeding have been more concerned with type , and frequency of breastfeeding. The contraceptive role of breastfeeding is not a matter of duration so much as of the intensity of breastfeeding, and whether the breastfeeding is full or partial (Bracher and Santow, 1982: 426; Hill, 1985).

Table 4.6

Mean duration of breastfeeding* in Jordan (months).

	1976	1983
Jordan		
Urban	11.0	9.5
Rural	15.4	10.5
Irbid	10.6	9.6
Amman	10.8	8.7
Balqa	-	11.5
Other urban	12.2	11.0

* Calculated by the researcher for ever married women who breast fed their last child and are not currently breastfeeding on the basis of the 1976 and 1983 fertility survey tapes.

Tables 4.7 and 4.8 indicate that in Jordan weaning is occuring gradually and that only partial breastfeeding occurs throughout Jordan. A considerable percentage of women gave their children non-maternal milk and nourishment at very early ages. This pattern of partial breastfeeding was evident in all the regions of Jordan. Table 4.9 also shows that a considerable percentage of women in all of the regions had nursed their children less than six times a day.

Table 4.7

Percentage of currently married women who are simultaneously breastfeeding and giving non-maternal milk according to age of child in 1983.

	Age of child (month)					
	0-2	3-5	6-8	9-11	12+	Total
Jordan						
Urban	28.6	22.3	9.6	2.6	36.9	100
Rural	26.6	15.8	8.9	2.4	46.3	100
Irbid	34.1	19.2	6.1	1.0	39.7	100
Amman	29.0	23.2	10.0	3.4	34.4	100
Balqa	11.3	25.8	19.4	1.6	42.0	100
Karak+Maan	20.5	18.2	6.8	0.0	54.5	100

Source: Fertility and family health survey 1983.

It would appear that the marital fertility in Jordan is very high among those who are partially breastfeeding and do not use contraceptives. The presence of partial breastfeeding would make the index of breastfeeding - as one of the proximate determinants of fertility- higher than it should be.

It should be noticed that women who use contraceptives among those who are currently breastfeeding would also cause some overlap and make the index of contraception higher than it should be. This overlap occurs in Jordan especially in the urban areas and in Amman in particular (Table 4.9). This overlap would produce an underestimation of fertility levels if using Bongaarts model.

Table 4.8

Percentage of currently married women who are breastfeeding and giving nourishment according to age of child in 1983

	0-2	3-5	6-8	9-11	12+	Total
Jordan						
Urban	8.0	50.2	22.5	3.2	16.1	100
Rural	7.5	57.3	20.5	3.5	11.2	100
Irbid	6.1	59.2	15.5	2.8	16.4	100
Amman	8.5	47.1	23.8	3.5	17.1	100
Balqa	6.5	46.8	42.0	0.0	4.8	100
Karak+Maan	11.4	59.1	9.1	4.5	15.9	100

Source: Fertility and family health survey 1983.

Table 4.9

Percentage of currently married women who are breastfeeding and who nursed their children less than 6 times in the 24 hours before the 1983 fertility and family health survey, and who currently were using contraception.

	Nursed less than 6 times	Currently using contraceptives
Jordan		
Urban	41.4	16.2
Rural	36.0	9.1
Irbid	43.3	12.1
Amman	40.9	23.6
Balqa	26.7	8.9
Karak+Maan	32.4	11.8

Source: Fertility and family health survey 1983.

4.2.3 Contraceptive use

As can be seen in Table 4.10 the proportion of couples of childbearing age practicing contraception increased in all urban and rural areas between 1976 and 1983. There were remarkable regional differences.

According to the 1983 fertility and family health survey. Amman and Irbid witnessed a slight decrease, but this seems likely to be a result of sampling error rather than representative of a real trend.

Table 4.10

Percentage of currently married women currently using contraceptives.

Year	Pill	IUD	F.M. Sterilization	Others	Total
Jordan					
Urban 1976	13.6	2.7	2.0	11.3	29.6
Urban 1983	9.0	10.5	4.0	8.3	31.8
Rural 1976	3.4	0.1	0.9	2.7	7.1
Rural 1983	4.3	2.0	2.5	3.6	12.4
Irbid 1976	9.1	1.2	2.1	7.8	20.2
1983	7.9	5.3	1.4	5.0	19.6
Amman 1976	17.6	4.6	1.9	15.0	39.1
1983	9.9	12.6	5.2	9.6	37.3
Balqa 1983	6.7	11.0	2.5	8.6	28.8
Other Urban 1976	10.9	2.0	2.0	9.2	24.1
Other Urban 1983	6.8	11.1	5.1	11.1	34.1

Source: Jordan fertility survey 1976,Fertility and family health survey 1983.

Table 4.11 indicates that the majority of women used contraceptives for controlling rather than for spacing births. The tendency towards birth control is evident in all regions and in both urban and rural environments. This general trend is also supported by the figures of Table 4.10 where the proportion of women who used highly effective methods increased between 1976 and 1983 in all regions.

The proportion of women who used the Pill in urban areas is decreasing and the proportion of women who used IUD is increasing. This reveals that the users of contraceptives prefer IUD to the Pill despite the fact that both methods have approximately the same effectiveness.

Table 4.11

Reasons given by women currently using contraceptives.

	Birth spacing		Birth controlling	
	1976	1983	1976	1983
Jordan				
Urban	32.5	25.1	76.5	74.9
Rural	34.2	24.2	65.8	75.8
Irbid	30.1	35.0	69.9	65.0
Amman	31.5	23.4	68.5	76.6
Balqa	-	26.3	-	73.7
Other urban	34.2	22.9	65.8	77.1

Source: Jordan fertility survey 1976, fertility and family health survey 1983.

4.3 EFFECT OF PROXIMATE DETERMINANTS ON FERTILITY

A convenient approach to quantifying the effect of the proximate determinants is to consider them as inhibitors of fertility (Bongaarts, et al, 1984; Singh, et al, 1985; Hobcraft and Little, 1984). The term "proximate determinants" was introduced by Davis and Blake (1956). Bongaarts made an important advance in relation to this framework by using aggregate data for 41 different populations (Bongaarts,1978) and by developing a mathematical model that quantifies the relationship between fertility and its proximate determinants (Bongaarts and Potter, 1983).

Figure 4.2 explains the relationship between fertility inhibition effects of proximate variables and various measures of fertility . If the effect of the index of marriage is zero, and changes in fertility levels are absent, fertility will increase to level TM (total marital fertility rate). If the effect of contraceptive use and induced abortion are eliminated, fertility will rise further to level TN (total natural marital fertility), and if post-partum infecundability is absent then it will rise to TF (total fecundity).

A comparison between estimated and observed total fertility rates, reveals that there is good agreement between estimated and observed fertility levels (Bongaarts and Potter,1983: 91). Despite this agreement the model was not formulated to produce a new method of estimating

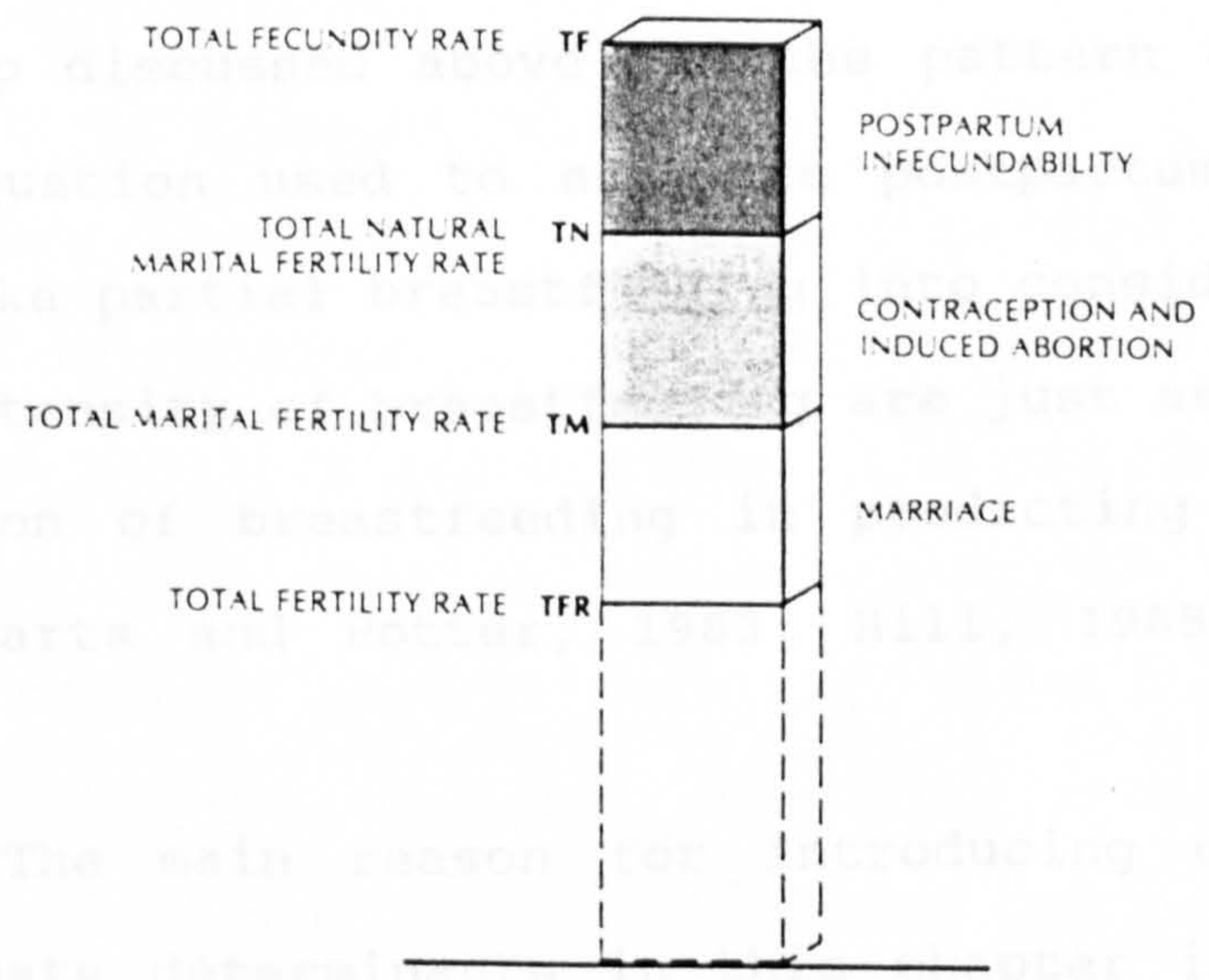


Fig. 4.2: Relationships between the fertility-inhibiting effects of the intermediate variables and various measures of fertility (Bongaarts, 1985: 154).

fertility levels. Indeed Bongaarts (1985) has listed a wide range of errors implicit in his methodology.

By comparing estimated total fertility rates with observed total fertility rates in Jordan, it was found that the levels of observed total fertility and observed total marital fertility rates are more than those estimated by applying Bongaarts' model (see Tables 4.1, 4.2, 4.12). The small differences between the observed and predicted values do not appear to arise from the total fecundity rate (TF), because TF is relatively invariant. The differences mostly come from the underestimation of natural marital fertility rates and marital fertility rates, probably because of the overlap discussed above and the pattern of breastfeeding. The equation used to estimate postpartum amenorrhea does not take partial breastfeeding into consideration. The type and intensity of breastfeeding are just as important as the duration of breastfeeding in predicting fertility levels (Bongaarts and Potter, 1983; Hill, 1985; Huffman et al, 1978).

The main reason for introducing discussion of the proximate determinants in this chapter is not however, to arrive at precise fertility estimates. Rather it is to use the proximate determinants approach to illumine aspects of the fertility transition in Jordan .

In examining the transition from natural to controlled fertility Bongaarts model was developed to examine changes in fertility measures over the course of the transition. This development comes by using a

comparative analysis of populations at different points in the transition. The result of this is an outline of a typical synthetic transition of the kind found in contemporary developing countries in contrast to the observed pattern of fertility .

Table 4.12 summarizes the estimated values of the proximate determinants and the associated fertility measures. The presented evidence gives a basis for evaluating the nature of fertility change in Jordan. As mentioned previously, Jordan and its different regions both urban and rural are experiencing decline in observed and estimated fertility.

It is obvious that the natural marital fertility rates are increasing in Jordan because of the rapidly decreasing influence of post-partum infecundability between 1976 and 1983. It appears that this increase has been more rapid in rural than in urban areas. One should note that the increase of marital fertility rates has not stopped the overall decline of total fertility rates because of the effects of the changing index of marriage and of contraceptive use are more than the effect of the index of post-partum infecundability.

Table 4.13, reveals that contraceptive use is the major component which affects fertility in urban Jordan both in 1976 and 1983. Contraception plays the same major role in Amman and other urban in 1976 and 1983. Increasing the quantity and quality of contraceptive use was the

reason behind its more effective role in urban areas. Rural areas have witnessed remarkable progress in the use of contraception. But its effect is still weak in rural areas by comparison with the cities. It appears that the pattern of marriage had the most important influence on fertility in rural areas in 1983.

In summary Table 4.14 suggests that the fertility regime in Jordan is typical of a country at the onset of fertility decline. Urban areas are approaching or are experiencing the second phase of the fertility transition. This phase is generally characterized by increasing marital fertility and at the same time increasingly effective use of contraceptives.

Amman is the only environment which could be said by 1983 to be approaching the third phase. Rural areas mostly have high stable fertility levels. There were no important changes in rural areas between 1976 and 1983 except with regard to changes in the pattern of marriage and post partum infecundability, which suggests that rural areas remained firmly in the first phase of the transition. Finally it should be noted that some regions other than Amman appear to have recently entered the second phase of the fertility transition.

In general fertility in Amman is witnessing a departure from natural to controlled fertility , and this departure is accompanied by a shortening of post-partum infecundability, an increase in effective contraceptive use, and a decline in the proportion ever married. The

other regions are witnessing a slow departure from natural to controlled fertility. In the rural areas the movement from natural to controlled fertility has not yet occurred. Post-partum infecundability and marriage factors are more effective than the impact of contraceptive use in determining fertility levels. In summarising, it would be fair to say that this pattern resembles the pattern of transition experienced in many developing countries.

Table 4.12

The indices of intermediate fertility variables and total, marital, and natural marital fertility rates in Jordan.

		Jordan		Irbid	Amman
	Year	Urban	Rural		
1-Prevalence of contraceptive use	1976	.296	.071	.202	.391
	1983	.318	.124	.196	.373
2-Index of marriage	1976	.663	.807	.682	.642
	1983	.612	.690	.604	.604
3-Index of contraceptive use	1976	.733	.936	.817	.649
	1983	.699	.883	.815	.646
4-Index of postpartum infecundability	1976	.800	.710	.808	.804
	1983	.831	.811	.829	.847
5-Total fertility rate	1976	5.9	8.2	6.9	5.1
	1983	5.4	7.6	6.2	5.1
6-Total marital fertility rate	1976	9.0	10.2	10.1	8.0
	1983	8.9	11.0	10.4	8.4
7-Total natural marital fertility rate	1976	12.2	10.9	12.4	12.3
	1983	12.7	12.4	12.7	13.0

Table 4.12 (Contd.)

	Year	Balqa	Other Urban
1-Prevalence of contraceptive use	1976	-	.241
	1983	.288	.341
2-Index of marriage	1976	-	.696
	1983	.819	.621
3-Index of contraceptive use	1976	-	.784
	1983	.730	.681
4-Index of postpartum infecundability	1976	-	.776
	1983	.784	.800
5-Total fertility rate	1976	-	6.5
	1983	7.2	5.2
6-Total marital fertility rate	1976	-	9.3
	1983	8.8	8.3
7-Total natural marital fertility rate	1976	-	11.9
	1983	12.0	12.2

Source: Jordan fertility survey, 1976, fertility and family health survey, 1983.

Table 4.13

Percentage of the reduction of total fecundity rate contributed by index of post partum infecundability Ci, index of contraception Cc, and index of marriage Cm.

	Index Ci		Index Cc		Index Cm		Total	Total
	1976	1983	1976	1983	1976	1983	1976	1983
Jordan								
Urban	33	26	34	38	33	36	100	100
Rural	62	38	9.9	18	28	44	100	100
Irbid	35	29	27	25	38	46	100	100
Amman	29	23	42	45	29	32	100	100
Balqa	-	40	-	40	-	20	-	100
Other urban	39	31	30	39	31	30	100	100

Source: Jordan fertility survey 1976, fertility and family health survey 1983.

Table 4.14

The phase of the fertility transition in Jordan as indicated by the intermediate fertility variables, and the total and natural marital fertility rates

		Jordan		Irbid	Amman
	Year	Urban	Rural		
1-Prevalence of contraceptive use	1976	II	I	I	III
	1983	II	I	I	III
2-Index of marriage	1976	II	I	II	II
	1983	II	II	II	II
3-Index of contraceptive use	1976	II	I	I	III
	1983	II	I	I	III
4-Index of post partum infecundability	1976	II	I	II	II
	1983	II	II	II	III
5-Total fertility rate	1976	II	I	I	II
	1983	II	I	I	II
6-Total marital fertility rate	1976	I	I	I	II
	1983	I	I	I	II
7-Total natural marital fertility rate	1976	II	I	II	II
	1983	II	II	II	III

Table 4.14 (Contd.)

	Year	Balqa	Other Urban
1-Prevalence of contraception use	1976	-	II
	1983	II	II
2-Index of marriage	1976	-	II
	1983	II	II
3-Index of contraceptive use	1976	-	I
	1983	II	II
4-Index of post partum infecundability	1976	-	II
	1983	II	II
5-Total fertility rate	1976	-	I
	1983	I	II
6-Total marital fertility rate	1976	-	I
	1983	I	II
7-Total natural marital fertility rate	1976	-	II
	1983	II	II

Source: Jordan fertility survey 1976, fertility and family health survey, 1983.

4.4. DIFFERENTIALS IN FERTILITY PREFERENCES

Fertility preferences are generally believed to be very important in influencing behaviour (Lightbourne, 1984; Lightbourne and MacDonald, 1982; Abdulah and Harewood, 1984; Berent, 1983). There is evidence from many countries which suggests that a significant fertility decline is preceded by a reduction in fertility preferences (Lightbourne and MacDonald, 1982). Fertility preferences have an influence on patterns of childbearing, with for example, those wishing to have a lower number of children being much more likely to use contraceptives. This in turn affects fertility levels (Abdulah and Harewood, 1984). There have been many studies which have shown that contraceptive behaviour by which fertility behaviour is affected, is highly influenced by fertility preferences (Kim and Choi, 1981; Abdulah and Harewood, 1984).

Several variables have been used by researchers as indicators of fertility preferences:-

1. Whether more children are wanted.
2. Whether the last live birth or current pregnancy was wanted.
3. Whether "total number of children desired" exceeds, equals or is less than the actual number of living children.
4. Total number of children desired.

These above listed variables could be argued to be alternatives to each other. For example, comparing the ratio of total number of children desired to the actual

number could be considered as an alternative measure to the proportion of couples not wanting the last live birth (if the actual number of children exceeds the total number desired). Similarly, this measure is closely related to the proportion of couples wanting no more children. The similarities of these measures may, however, be deceptive. For example, when respondents claimed that the last live birth or current pregnancy was not/has not been wanted, it could be argued either that respondents wanted no more children or that they desired a greater spacing between the birth of their children. Adding the question "How many additional children do you want?" to the question about total desired number of children is therefore not mere duplication, but helps in constructing a variable defining "wanted family size" (Lightbourne and MacDonald, 1982).

4.4.1 Studies of fertility preferences in Jordan

The world fertility survey (WFS) in Jordan, 1976, collected data which covers all four of these fertility preference variables. By contrast the Jordanian fertility and family health survey of 1983 contained only the first two variables mentioned above. Both of these two fertility surveys (1976, 1983) asked married women about their fertility preferences. It is interesting to note that in 1985 the Department of Statistics drew another sample using the 1983 fertility survey as the sampling frame. In the 1985 survey, husbands were asked about their fertility preferences.

Comparing women's answers in 1983 and their husband's answers in 1985, in terms of fertility preferences, it was found that wives were approximately three times more likely than their husbands to answer that their last pregnancy was unwanted (Department of Statistics, 1985). Furthermore, 30% of wives who had declared that they did not want more children in 1983 had had an additional birth in the interval between 1983 and 1985 (Department of Statistics, 1985). This result may suggest that husbands in Jordan still control the fertility decision.

Another interesting result revealed by the 1985 survey was that more than half of all husbands held a fatalistic attitude towards family size. For example, their attitudes toward contraception are negative, and their concern about regulated fertility is low. But at the same time it seems that the education of husbands is inversely related to the likelihood of them holding a fatalistic attitude towards family size. For example, it was found that husbands with higher education desired smaller family sizes than those with lower educational attainment. The 1985 survey also revealed that knowledge of methods of contraception was strongly correlated with husband's education. Therefore, fertility decline is impeded by male attitudes to family size and fertility behaviour.

For comparative purposes this thesis considers only two of the fertility preference indicators: whether more children are wanted, and whether the last live birth was

wanted.

4.4.2. Proportions wanting no more children, Jordan, 1976, 1983.

Analysis of the percentage of women who do not want more children provides one measure of how widespread is the desire to control fertility and to stop childbearing. Table 4.15 shows that there was a higher percentage of currently married Jordanian women who do not want more children in 1983 than in 1976. This was true in all regions of the country as well as in both urban and rural environments.

It can be noticed that the percentage change was higher among those women with only a small number of living children and that this held for all regions. For example, in urban areas the percentage change was 108.1 and 49.8 for those women who had one and two living children respectively. In rural areas these percentage changes were 86.6 and 51.8 for the same groups of women. These results may simply reflect the fact that in 1976 a relatively high proportion of women with a large number of living children already wanted no more children. This meant that any increase in the proportions of these women wishing no further children was constrained simply because of the nature of closed ratio statistics. By contrast, among those women with only a small number of living children, the proportion of women who wanted no more children in 1976 was relatively small which provided the opportunity for a high percentage change. In addition to the above

explanation it can also generally be noted that some changes had taken place in attitudes toward family size preferences among women with a small number of living children, particularly among young married women.

The overall conclusion suggested by Table 4.15 is that the proportion of women wanting no more children increased markedly through time with increasing family size. An interesting secondary effect is that percentage change was less in larger families although it was nearly always present. For example, in urban areas amongst women with only one child there was an increase in the proportion wanting no more from 9.9% to 20.6% of the total (i.e. more than a doubling of the proportion), while amongst women with more than seven children the shift was small from 78.5% to 81.1% wanting no more children (a shift of only just over 3%). The pace at which preferences for small families is growing is therefore most marked as reflected in these surveys. It is also noticeable that in Amman prefered family size is much smaller than elsewhere in Jordan.

4.4.3. Proportions not wanting the last live birth

Table 4.16 reveals that unwanted fertility rose remarkably with the age of mother (both in 1976 and 1983). For example, between ages 15-19 in urban areas, 10.4% of women did not want the last birth. This percentage jumped to 50.0% for women between ages 45-49 in 1983. In rural areas the same pattern can be seen, where the percentages

were 10.5 and 35.7 for women between ages 15-19 and 45-49 respectively. In general, Table 4.16 shows approximately the same situation for all regions.

Table 4.16 also reveals that unwanted fertility proportions fluctuate between ages 30-34 to 45-49 in 1976 and 1983. One can notice that some negative signs appear with regard to percentage change, especially for older women. Such cases could be interpreted as a reflection of a higher percentage of older women seeking to control their fertility. Positive percentage changes could reveal that a higher percentage of women are now aware of their fertility preferences, although at the time of the survey they may not have had effective control over their preferences because their husbands continued to control the fertility decision.

Data on the proportion of unwanted last live births can be used to estimate its effect on the fertility level (Lightbourne and MacDonald, 1982; Lightbourne, 1985; Lightbourne, 1984). Estimating the effect can be done by relating the number of recent births (number of births to respondents in the 12 months preceding the interview) to the total number of women in the productive age cohorts.

The estimation of the wanted total fertility rate requires the following steps:

1. Calculate percentage of births, which are unwanted by age of mother in the cohorts 15-49 years.
2. Calculate age specific fertility rates (ASFRS).

3. Multiply the outcome of step 1 by the outcome of step 2. The result will be the "estimated" reduction in ASFRs.

4. Finally, the wanted total fertility rate (WTFR) can be calculated. The wanted total fertility rate can be considered as an alternative measure of desired family size (Lightbourne, 1984).

Table 4.17 demonstrates that there is a gap between the actual total fertility rate and the wanted total fertility rate, in the different regions of Jordan. The gap is greater in 1983 than in 1976 in all regions except in the category "other urban". The small size of sample in "other urban" could cause this exceptional figure, where there were fewer than 15 married women in two of the five age groups.

It is worth mentioning here that Lightbourne (1985: 188) studied the differences between actual total fertility rate and wanted total fertility rate covering several countries. He considered that the differences between actual and wanted total fertility represented the potential for fertility decline, through fertility control. This potential reduction was considered "negligible" if the differentials ranged between 0.10 and 0.20 births, and "moderate" for differentials ranging between 0.3 and 0.5 births. Gaps of 0.6 births and over relative to the TFR were considered as a situation offering a high potential fertility decline. Accordingly, in Jordan (Table 4.17, Col. 3) it would suggest that there is a high potential for

reduction of the TFR in all regions of the country.

The estimated reduction which could be achieved is listed in Col.3 of table 4.17. This reveals that the level of potential reduction is about two births in all regions except Irbid where the gap between TFR and WTFR is even greater. There was relatively little variation in the estimated potential reduction between regions evident in 1976. While in 1983 estimated reduction was equal to or exceeded two births except in the category in "other urban", there was again relatively little variation in the estimated reduction between regions.

Table 4.17 shows that potential fertility decline remained stable in urban areas between 1976 and 1983; estimated reduction in TFR was 1.9 in both years. In contrast, the potential fertility reduction which could be achieved rose to 2.3 births in rural areas in 1983. On the assumption that fertility preferences do influence fertility trends, one can predict the most significant future decline in rural areas.

The assumption stated above is, however, a considerable one to make in a male dominated Islamic society (Weeks, 1988). Clearly, if the assumption had held a much greater decline in fertility would already have taken place in all regions of Jordan during the period of study. A full implementation of fertility preferences clearly did not occur however. Nor is such a full implementation of preferences likely to happen in the

immediate future as long as fertility decisions remain dominated by husbands within the Arab household.

4.5 CONCLUSIONS

It can be concluded from this chapter that overall national fertility levels were experiencing the onset of fertility decline between 1976-1983. The decline was more rapid in urban than in rural areas. In contrast, marital fertility levels were relatively stable or slightly increasing in some regions.

Data suggests that short duration of breastfeeding negatively affected natural marital fertility levels in all regions other than Amman, where contraceptive use seemed to have a significant role. It is possible to say that change in marriage patterns has had the most influential role on overall fertility. The above results are to be expected in a society like Jordan which is experiencing the onset of fertility decline.

It was found that the intermediate variables are changing; age at marriage for women is increasing, duration of breastfeeding is decreasing, and the practice of contraception is increasing.

There are no big differences between regions in terms of age at marriage and duration of breastfeeding, but spatial variations are remarkable with regard to contraceptive use.

There was a higher percentage of Jordanian women who did not want more children in 1983 than in 1976. This is true in all regions of the country as well as in both urban

and rural environments. The data suggested that the proportion of women wanting no more children increased markedly through time with increasing family size. It is noticeable that in Amman prefered family size is much smaller than elsewhere in Jordan.

The results demonstrate that there is a gap between the actual total fertility rate and the wanted total fertility rate in the different regions of Jordan. These results also suggest that there is a high potential for reduction of the TFR in all regions of the country. The potential for fertility decline remained stable in urban areas between 1976 and 1983. In contrast, it had risen in rural areas by 1983.

Table 4.15

Proportions of married women who wanted no more children, by region and year.

Regions and years	Number of living children 0	1	2	3	4	5	6	7+
Jordan								
Urban 1976	3.1	9.9	21.1	38.9	41.1	63.7	63.3	78.5
1983	0.0	20.6	31.6	40.0	58.6	62.9	74.0	81.1
% change		108.1	49.8	2.8	42.6	-1.3	16.9	3.3
Rural 1976	2.5	6.7	13.9	14.0	26.4	31.7	43.2	63.8
1983	0.0	12.5	21.1	33.8	32.0	44.1	58.2	72.1
% change		86.6	51.8	141.4	21.2	39.1	34.7	13.0
Amman 1976	4.3	9.4	27.6	43.0	44.1	63.6	73.2	78.2
1983	.0.0	22.4	33.3	44.4	63.5	67.6	77.8	84.9
% change		138.3	20.7	3.2	44.0	6.3	6.3	8.6
Irbid & Zarka 1976	2.8	7.5	11.8	35.1	37.2	73.2	48.0	78.1
1983	0.0	20.0	24.1	23.5	43.1	55.0	64.3	69.3
% change		166.7	104.2	-33.0	15.9	-24.9	34.0	-11.3
Other urban 1976	0.0	16.7	8.3	30.6	35.1	52.9	55.6	75.5
1983	0.0*	0.0*	30.8	31.3	52.9	50.0	73.1	82.5
% change			271.1	2.3	50.7	-5.5	31.5	9.3

* Cases less than 15.
Source: Jordan Fertility Survey 1976, Fertility and Family Health Survey, 1983.

Table 4.16

Percentage of births which were unwanted, by age of their mother, region and year (births in the year preceding survey).

Region and Year		Age of mother 15-19	20-24	25-29	30-34	35-39	40-44	45-49
Jordan								
Urban	1976	0.0	6.3	21.9	35.4	46.6	68.0	16.7
	1983	10.4	18.0	30.8	35.6	35.2	35.2	50.0
% change	-		185.7	40.6	0.6	-24.5	-48.2	199.4
Rural	1976	2.9	7.4	11.1	24.1	30.0	52.4	20.0
	1983	10.5	22.2	26.4	26.4	37.7	33.3	35.7
% change		262.1	200.0	137.8	9.5	25.7	36.5	78.5
Amman	1976	0.0	6.0	22.4	28.0	57.1	66.7	0.0
	1983	5.9	20.0	32.8	37.5	34.1	35.5	53.8
% change	-		233.3	46.4	33.9	-40.3	-46.8	-
Irbid & Zarka	1976	0.0	2.7	25.0	54.2	33.3	72.7	50.0
	1983	18.2	18.4	33.3	30.6	48.3	38.5	33.3
% change	-		581.5	33.2	-43.5	45.0	-47.0	-33.4
Other urban	1976	0.0	13.6	17.1	31.8	38.9	60.0	0.0
	1983	33.3*	9.1	10.1	20.0	0.0	66.7	50.0*
% change	-		-33.1	-40.9	-37.1	0.0	11.2	-
Balqa	1983	0.0*	0.0	18.2	41.7	12.5	14.3	0.0

* Cases less than 15
Source: Jordan Fertility Survey 1976, Fertility and Family Health Survey 1983.

Table 4.17

Estimating the reduction to the total fertility rate (TFR) if all unwanted births were prevented, by regions and year.

Regions and Year		1 Actual total fertility rate TFR	2 Wanted total fertility rate WTFR	3 = 1-2 Estimated potential reduction in TFR	4 Percentage of reduction
Jordan					
Urban	1976	6.7	4.8	1.9	28.4
	1983	6.0	4.1	1.9	31.7
Rural	1976	9.2	7.4	1.8	19.6
	1983	8.0	5.7	2.3	28.8
Amman	1976	6.1	4.5	1.6	26.2
	1983	5.8	3.9	1.9	32.8
Irbid & Zarka	1976	7.5	5.0	2.5	33.3
	1983	6.4	4.2	2.2	34.4
Other urban	1976	7.1	5.3	1.8	25.3
	1983	6.4	5.6	0.8	12.5
Balqa	1983	6.8	4.8	2.0	29.4

Source: Jordan fertility survey 1976, fertility and family health survey, 1983.

CHAPTER 5

FAMILY CHANGE

5.1. INTRODUCTION

The nature of family change has been much debated, especially in relation to changes in the bases for family structures. Important research on this subject has tended to reflect the experience of European family change (Caldwell, 1982; Stone, 1977; Goode, 1963). Attempts to model family change in developing countries have often assumed a transfer of the European situation to other contexts. Caldwell (1982: 149,150) for example, has suggested that the developing countries have to a greater or lesser degree adopted the Western ideology of the family. In his work and that of others (Stone, 1977), family change in developing countries is expected to follow a parallel course to those experienced in N.W. Europe from before the industrial revolution through until the twentieth century. Caldwell emphasizes that some cultural changes, involving modification of social norms, occured before industrialization in the west. These changes affected familial relationships and led him to the conclusion that structural economic changes were not necessarily the prime catalyst of social change. Indeed he goes as far as to state that in pre-industrial society there is no need for there to be a structural economic mechanism for there to be changes in family relations (Caldwell, 1982: 135).

Some commentators would find these arguments

unconvincing and would suggest conversely that change in important social values cannot happen independently from structural economic changes. Indeed historical evaluations indicate that there were significant structural economic changes in progress in pre-industrial England which provided the background for the changes in social values and in family structure (Thadani,1978; Moore, 1966; Goodsell,1915).

The interrelationship between structural changes and value changes can well be illustrated from the European case. In Europe from the fifth to ninth centuries tribal groups were the prime social unit influencing the family system. Family relationships were affected by the ideology and values of the tribe. "The great family or 'sippe' among Germanic races was the fundamental institution of private law ... In consequence the 'sippe' had large powers over each household as well as over the individuals composing it. The family as a whole could protect a child even from his father" (Goodsell, 1915:183).

When this institution gave way to the church, the church provided the values determinig new social structures and governing existing social units. This change inevitably influenced the family's values, and relationships. For example, during the last centuries of the 'Anglo-Saxon Regime' the church attempted to persuade oppressed women to live in religious houses and arranged a "spiritual marriage" for them (Goodsell, 1915; Murstein,

1974).

The above historical examples are evidence of changes in family structure, authority and relationships resulting from broader social and societal change in pre-industrial Europe. These types of change can have profound effects on childbearing within the family, as can be shown both historically, and in contemporary cases in the less developed countries. The point of relevance to this thesis is that change in family structure and in family relationships may be inspired by broader societal and cultural changes rather than directly being a response to economic forces. This is not to say that changes in family structure do not have economic implications and give rise to economic conflicts. These conflicts arise because they are inherent in the relations of production. As Caldwell has noted (1982:160): "Potential conflict, antagonism, and opposed interests are inherent in the relations of production".

5.1.1. Family change in Tribal Society

It is necessary now to consider the nature of the relations of production which existed in primitive societies. Primitive society would in the case of Jordan be defined here as a tribal society in which the influence of the state was absent. The chief of a tribe had absolute authority over all of his people. The economy of the society was on a subsistence level with all of the people of the tribe cooperating to achieve this subsistence level. While Caldwell recognised the economic significance of even

the most primitive societies, he ignored the importance of how production was organized. For example, he notes (1982:164) "The importance of family relationships in "primitive" economies has been taken to demonstrate the dominance of social goals rather than the essence of the organization of production". From this it can be inferred that social mechanisms inducing change are fundamental even in primitive societies, yet how these changes are achieved is not obvious. In Jordan, it could be claimed that even as recently as the 1950s society in large parts of the desert regions of the country came close to the definitions of primitive society stated above.

The economy depended overwhelmingly on self sufficient tribes, where camel herding was the main means of producing food and shelter as well as a limited range of commodities for exchange or barter with other groups. The tribe itself was a big extended family grouping consisting of up to five generations (Lancaster, 1981; Musil, 1928). Women worked from early morrning until late at night, while men stopped work in the afternoon. The woman in this society was a very hard worker. To quote Lancaster (1981:70): "A woman just does not have a lot of spare time: the children have to look after themselves and each other. The woman runs the tent; she makes it, repairs it and adjusts it to the weather as well as putting it up and taking it down. She collects firewood, makes the bread, plans the meals and cooks them, washes up, collects the

water, makes clothes, quilts, rugs and pillows and keeps them in repair. She looks after children, doctors them and her husband .... The preserving and storing of food is under her care, as is the butter- and cheese-making if the family has sheep; carding, spinning and weaving of wool are her concern, and she must be ready at any time to entertain her husband's guests and visitors or down tent and migrate. On top of this she may well be pregnant".

At the beginning of the fifties some important structural changes took place. The economy of these societies became progressively monetized, and the modern state became more influential. The modern state affected the position of the chief of the tribe by making him an agent of government. Once the chief of the tribe became an agent, the government started asking him to apply state law strictly to the tribe. This new function caused some tension between him and the other tribesmen. At the same time the Jordanian state began to recruit the best educated for jobs in the public sector. This gave some young men a new independence from tribal authority (Lancaster, 1981). As education spread in Jordan during the 1950s and 1960s, so also the occupational mobility of all elements in the population including tribal elements increased. The spread of education reduced the percentage of illiteracy in Bedouin societies from 70 per cent (1952) to 29.3 per cent (1979) (Jureidini and Mclaurin,1984).

With regard to economic changes, the economy of the tribe had been entirely dependent on camel-herding. The

most important economic changes came when less well educated young tribesmen found that they could enrol for "paid jobs" as soldiers in the army. Their remittances sent to their families and relatives helped to buy more camels, but undermined the economic basis of the nomadic lifestyle. The skill of becoming a camel herder needs long-term training from an early age, but gradually these skills were seen as having low status and were ignored. This process was accentuated by government attempts to encourage all children to attend school.

Money became more important to all tribal members, making paid jobs more attractive to young men and establishing a cycle of tribal decay. There was therefore an increased rate of migration, especially among the young tribesmen, from the depth of the desert. This migration seriously affected camel-herding, initiating a change from camel-herding to sheep-herding. While camel-herding allowed the tribesmen to stay in the desert, sheep-herding forced them to move from the heart of the desert to its margins, because sheep need water daily, whilst camels survive for days without water. Thus economic forces even within the pastoral economy advanced the movement towards the edges of the desert and towards settlement in small villages in the north west, south, and south west of Jordan.

Tribal law continued to be exercized over the tribesmen of the villages. But while there was an emphasis on kin-relationships there was a decline in the depth of

kin-relationships with families no longer involving five generations as in the past, but now involving only three generations. The woman's role was also changing. In spite of the fact that the government encouraged them to enter agriculture as part of the process of population sedenterization, it seems that many of them preferred public jobs over the work in agriculture (Jureidini and Mclaurin, 1984).

Table 5.1

Percentage of income from agriculture in rural areas, 1988.

	Percentage of income from agriculture				
	0-10	10-30	30-50	50+	Total no.
Rural, South (tribal village)	65.6	29.2	2.1	3.1	96
Rural, north	60.5	15.8	6.6	17.1	76

Source: Author's survey

Table 5.1 shows that only a small minority of households in the two rural survey areas were dependent on agriculture for the majority of their income. By contrast 66% of households in the south and 60.5% in the north received no income or very little income from agriculture. Most of this group in fact were employed in a public sector job. The table therefore shows conclusively that although these sample populations were rural in terms of their location and the characteristics of their place of

residence, they were not part of the agricultural labour force.

5.1.2 Change in Settled Agricultural Communities

While in the past nomadism prevailed over much of the territory of the present day Hashemite state of Jordan, in the highlands of north west Jordan, sometimes referred to as the "green corner", peasant agricultural society has existed for many centuries and followed a slightly different historical course from nomadic society. The peasants of the north west mainly depended on agricultural production.

Before the economy of the peasant villages became monetized, familial production was dominant. People of the village of Ketm used to produce a wide variety of different crops. They also used to rear animals such as cows and sheep, etc. These animals provided them with milk, meat, wool, etc. These agricultural products were produced by involving all the family. Some of the agricultural products used to be kept until the next season, or exchanged for other products. This familial production system lasted approximately until the 1950s, and then gradually started to diminish when many of the young men left to join the army.

As the villages became more monetized, it created a need for a more complex marketing system so that rural produce could be exchanged. Some rural producers started to go to nearby cities to buy and sell goods. As agriculture

in the north-west of Jordan became commercialized the result was inevitably that the market played an ever more important role in the organization of rural areas and of rural society.

It was noticeable that the government increasingly became more powerful in peasant villages and that the nature of state intervention was direct in tribal villages. One example seems to illustrate the rather diferent level of intervention. A shepherd in "Ketm" who was interviewed by the author mentioned that the government did not allow peasants to keep their own flocks of sheep, or of any other animals, near to village housing. In southern tribal villages no such statute existed or was enforced.

5.1.3 Change in Urban Settlements of Jordan

In 1921 when the Hashemite Kingdom of Jordan was established, the territory had no truly "urban" settlements and even Amman, which was to become the capital, had only 5000 inhabitants. During the 1930s and 1940s a small number of urban areas, and especially Amman, became the economic, commercial, and financial centres of the country. These settlements received all the administrative, political, and educational institutions. This concentration of governmental services on urban areas further encouraged rural-urban migration. This migration in turn significantly affected the social structure of the urban areas.

From the 1950s onwards the pace of rural-urban migration in Jordan accelerated. Most of the rural migrants settled in Amman and particularly on the eastern side of

the city. As in other Arab cities, rural migrants initially settled within small well defined communities within the city amongst other migrants from the same region. For example there is a small area in Amman named "Haret al-Tafaileh". This name means the place of Tafaileh, indicating that those who settled there were from the area of Tafilah which is located in the south of Jordan. Indeed, many of the emergent suburbs of eastern Amman look like small villages rather than metropolitan residential areas. In effect "urbanisation" has occurred prior to the integration of the migrants into an urban way of life ("urbanism").

In Amman, urbanisation has been severely affected not only by rural migration but also be the Palestinians refugee influx, after the wars of 1948 and 1967 (Samha, 1979; Rowley, 1984). This, more than any other factor, explains Amman's rapid expansion over the last two decades (Findlay, 1988; Tewfik, 1989), but detailed description of the morphological and social evolution of Amman lies beyond the scope of this thesis. For the purposes of the author's research, it is sufficient to note that by 1980 Amman could be divided in the very roughest terms into two main social areas: east (lower class) and west (middle class).

Because of the importance and very recent nature of the migration process in accounting for Amman's growth, tribalism is still a significant influence in urban as well

as desert areas. For example, the strength of kin-relationships of migrants remains quite marked in urban areas according to the research findings of Jureidini and McLaurin (1984). The survival of some traditional patriarchal families within otherwise "modern" urban environments is a feature found not only in Jordan (Faour, 1983), but also in other Arab countries (Patai,1969).

5.2. NUCLEAR FAMILY STRUCTURE

Despite the survival of some patriarchal extended families even in environments such as Amman, the nuclear family structure has now become dominant in Jordan. This is true both in urban and rural areas of the country. This important claim is substantiated by Table 5.2 which indicates that the extended family was not widespread among the families interviewed by the author in urban and rural areas.

Table 5.2

Family structure identified in the author's survey, 1988

Area	Nuclear family	Extended family (lineal)	Extended family (lateral)	Total no. in sample
	Percentage of households in each area.			
Urban,middle class	92.1	6.7	1.1	178
Urban,lower class	84.6	9.6	5.8	240
Rural,south	63.5	14.6	21.9	96
Rural,north	75.0	15.8	9.2	76

Source: Author's survey.

There are of course different definitions of family types (Liu, 1967, 1977 ; Burch and Gendell , 1970). In this study the nuclear family is defined as consisting of husband, wife and unmarried children, the lineal extended family as consisting of all the elements of the nuclear family plus one or more grandparents, and the lateral extended family as consisting of the nuclear family plus the husband's brothers, sisters, uncles, aunts,and other relatives.

The structural changes described in the first part of this chapter which have taken place in Jordanian society have been the key forces behind the changes in Jordanian family type, and indeed explain the dominance of the nuclear family structure in the country today.

The following examples from the author's fieldwork illustrate the different types of family structure defined above:-

-Example 1, represents a nuclear family structure of the type commonly found in urban middle class areas in Amman. The father was born in the city of "Jericho" in the West Bank. He migrated to Amman, and has a university education. At the time of the survey he was working as an employee at a tourist office. His salary was the only source of family income.

Husband (born 1945) Son (born 1983)

Wife (born 1954) Daughter (born 1985)

Although the main purpose of this example is to illustrate a typical nuclear family structure, it is interesting to

note in passing the small number of children and the relatively late age at which this couple had their first son.

-Example 2, represents a lateral extended family from the southern village of Basta, where the author undertook one of his surveys. The father and mother were both born in the village. The father was illiterate, and 60% of his family's budget depended on the earnings of his sons. The remainder of the family budget (40%) came from shepherding and some agricultural work.

Husband (born 1933)	Son (born 1963)
Wife (born 1945)	Daughter (born 1965)
	Son (born 1968)
	Son (born 1970)
	Son (born 1973)
	Daughter (born 1976)
	Son (born 1979)
	Daughter (born 1981)
	Son (born 1984)
	Son (dead)
First Brother's wife (born 1966)	Daughter (born 1986)
	Son (born 1988)
Second (dead) Brother's wife (born 1967)	
	Daughter (born 1983)
	Daughter (born 1984)
	Son (born 1985)

The contrast with the first example is striking in terms of

the number of children in the household and the age of the mother at the time of the first birth.

-Example 3, represents a lineal extended family from the same southern rural area (Basta).

The father was born in the village, and was working as a government employee in the village at the time of the survey. He had an elementary level of education. His family's income depended mainly on his government salary in addition to a small amount of shepherding and agricultural work.

Husband (born 1948)
Wife (born 1952)
Husband's mother (born 1923)
Daughter (born 1974)
Daughter (born 1975)
Daughter (born 1977)
Son (born 1978)
Son (born 1982)
Daughter (born 1984)
Son (born 1986)
Son (born 1987)

In general, it would be true to say that in the surveys studied by the author, the lineal extended family was more common than the lateral extended family (Table 5.2). Only in southern rural areas was the lateral extended family more common than the lineal extended family. As one might have expected in the south nomadic families who had recently been sedentarized had stronger kin-relationships than any other group. Where the nuclear family was found in rural areas it was characterized by a

more open family structure. One way in which a stronger tribal influence on kin-relationships can be measured is through the higher level of social and economic obligations which exist between members of the extended family (Liu,1977). In urban areas, especially in the middle class areas of Amman, the nuclear family was relatively more closed, because of a decline in the social and economic kin-relationships. These generalisations were substantiated by data collected by the author and reported later in the chapter.

Before discussing economic and social links between family members in more detail, it is appropriate to consider more readily observed linkages manifested in terms of physical space and the spatial organisation of residential areas. In particular, the author was interested in discovering the extent to which housing units within a neighbourhood reflected kinship links in terms of the frequency with which households would live physically next to other family members.

It was found that of three areas studied, the highest percentage of households who had no relatives living in adjacent housing was in the southern rural area. The difference between the northern rural and southern rural areas was significant in statistical terms ($X^2 = 8.3$, df = 1) at the 95% level of confidence (Table 5.3). The reason for this could simply be that there was no restriction on land for house building in the south, but also must to a certain extent reflect the higher proportion of extended

families found in the south and hence the lower requirement for housing units to be organised in such a way as to be contiguous with close relatives. The highest percentages of "joined housing units" were in the northern village surveyed by the author and in the urban lower class areas of Amman (Table 5.3). The obvious reason for the high percentage of joined housing units in the urban lower class areas was the low income level of families relative to high land prices. This favours subdivision of land and property between relatives. The relative expense of construction materials may also have encouraged the adoption of building strategies to cut costs, with close relatives agreeing to share a common wall. In the urban lower class areas, the data indicated that over 40% of people were related to their neighbours. An additional reason contributing to the explanation of this high percentage is the fact that in this area so many of the people were refugees from Palestine.

Surprisingly, there was no statistically significant difference in the frequency of joined housing units between the urban middle class and lower class areas of Amman which were studied (X^2 = 2.6, df = 1, not significant at 95% level of confidence). Nevertheless, the proportion of free-standing housing units in the middle class housing area in Amman was a little lower than in lower class areas (Table 5.3).

The presence of "joined houses" mainly represented

parents living next to sons, and or brothers living as neighbours as shown in Table 5.4 and may be taken to represent a geographical response permitting a "gradual" transaction from an extended to a nuclear family form. In the southern rural area there was a relatively high percentage of "joined houses" which consisted of people living next to their uncles or other more distant relatives. Table 5.4 also shows that the south was distinctive in having no cases in which families lived next to the wife's family. In spite of the residential proximity of many families to their relatives, most had their meals separately from their relatives living in adjoining units. They also mainly kept separate household budgets (Tables 5.5, 5.6). Thus, in terms of social science terminology most, but not all, these housing units were "independent" households according to the conventional definition and usage of this term.

The data indicated that one third of the newly formed families in middle class areas started their married life with the husband's parents. This accounted for approximately half of all the newly formed families in urban lower class areas. In the southern rural area again about half started with their parents, while in the northern rural area 73.3% of couples started married life by living with the husband's parents. The main reasons behind this general phenomenon are the economic difficulties which confront new families with the percentage variations quoted above reflecting in general

terms spatial variations in economic circumstances. It is worth mentioning, however, that in the southern rural area wives often demand to live separately from the husband's parents. Most of the new families which had lived with the husband's parents did so only temporarily until they were able to be financially self- supporting. In this respect the greatest differences in residential pattern appears to be between urban middle class couples and others, although as Table 5.7 shows significant differences of behaviour were also detected between the southern and northern villages.

Table 5.3

Percentage of the people who live in houses adjoining relatives, 1988.

Area	Percentage	Total no. in sample
Urban,middle class	34.3	178
Urban,lower class	42.1	240
Rural,south	26.0	96
Rural,north	47.4	76

Source: Author's survey.

Table 5.4

Nature of kinship links with occupants in adjoining houses, 1988 (Percentages by area).

	Urban, middle class	Urban, lower class	Rural, south	Rural, north
houses adjoining husband's parents	27.3	21.2	9.7	20.5
houses adjoining sons,daughters	13.6	11.0	3.2	17.9
houses adjoining brothers,sisters	34.1	36.8	48.4	38.4
houses adjoining wife's family	13.6	9.7	0.0	7.7
houses adjoining uncles,aunts	3.4	9.7	19.4	10.3
houses adjoining other relatives	8.0	11.6	19.4	5.1
Total number of responses*	88	155	31	39

Source: Author's survey.

*Some households had relatives living in more than one adjacent houses. For example uncle might be living next door while parents were to be found on another floor of the same building.

Table 5.5

Nature of social links with relatives living in adjoining houses, 1988 (percentages by area).

Area	sharing meals				Total no.
	daily	weekly	sometime	never	
Urban,middle class	20.3	7.8	39.1	32.8	64
Urban,lower class	17.8	1.0	22.8	58.4	101
Rural,south	13.8	0.0	20.7	65.5	29
Rural,north	19.4	8.3	27.8	44.4	36

Source: Author's survey.

Table 5.6

Nature of economic links with relatives living in adjoining houses, 1988 (percentages by area).

Area	Sharing budget			Total no.
	sharing	sometimes	never	
Urban,middle class	6.3	15.9	77.8	63
Urban,lower class	8.9	7.9	83.2	101
Rural,south	10.3	13.8	75.9	29
Rural,north	19.4	8.3	72.5	36

Source: Author's survey.

Table 5.7

Place of residence of married couples now and at time of getting married, 1988 (percentages by area).

Area	With parents and still living with them	With parents but now independent	Separate house	Total no.
Urban,middle class	4.6	22.5	72.8	173
Urban,lower class	11.0	38.4	50.6	237
Rural,south	17.0	31.9	51.1	94
Rural,north	16.0	57.3	26.7	75

Here, as elsewhere in the thesis, X^2 statistics are based on absolute figures and on appropriately prepared contingency tables. They have not been calculated directly from the closed ratio data in the table above.

- Difference between urban areas (middle and lower class) is significant (X^2 = 21.0, df = 2) at 95% level of confidence.
- Difference between rural areas is significant (X^2 = 12.4, df = 2) at 95% level of confidence.
- Difference between urban and rural areas is significant (X^2 = 21.5, df = 2) at 95% level of confidence.

Source: Author's survey.

5.3. ECONOMIC AND SOCIAL NUCLEATION

Before discussing aspects of economic and social nucleation within the family, it is worth considering some of the mechanisms which could lie behind changing family structures. Opposing interests of both individuals and groups can lead to conflict in society in general. On an a priori basis one would expect that within Jordan the level of individualism would be at its lowest level in so-called "primitive" Jordanian tribal society, because of the overwhelming authority of tribal structure. Before the economy became monetized all members of the tribe worked hand in hand struggling under hard environmental conditions to ensure a communal livelihood. This effort was under the authority of the tribal chief and the elderly members of the tribe. After the economy became monetized, individualism naturally increased (Patai,1969).

Tribal members with salaries naturally began thinking that their earnings were their own or their family's individual property rather than the property of the tribe. Thus emerged the view that they should derive maximum benefit for their family rather than for the tribe from this money. Caldwell (1982) studying African primitive societies found that in these circumstances men began to tell their relatives to be more careful in their expenditures patterns, more frugal in their demands, and in some instances refused to give assistance to relatives. Altorki and Cole (1989) in their study of wealth flows in a

developing society confirmed that in the case of the town of Unayzah, where their work was based, individuals rather than kin groups were the main beneficiaries of rising salary levels. Despite the fact that kin ties have remained strong and are generally highly valued, Altorki and Cole reported that there were cases in which even the wealthier elements of society had not helped to improve the status of their close kin. In short, research in other countries points to the strengthening of what may be termed "economic individualism" in parallel with the expansion of a monetized economy.

The advent of a monetized economy, in addition to other changes, remoulded "primitive" Jordanian society into what might be termed a " traditional" society. The monetized economy made people more dependent on market forces. This dependence in turn affected the role of women. For example, women used to make bread but with the changes many women gave up this duty and families began buying bread from shops. Women in the rural areas no longer provided all household domestic services. In brief, in "traditional" societies in rural areas women did not perform many of the duties which they had previously undertaken in what has been defined as primitive society. In this context it is not surprising that rural families gradually began to depend on the market even for products which were much more expensive than similar home produce. The resultant change in the role of women as Oppong and Abu (1986) have noted in another context extended to many

other household activities and contributed to changing family structures and to what may be thought of as a social transition.

If a newly married couple became economically independent because of the salary of the husband, the opportunity to settle away from the rest of the family also presented itself. The break would of course not be an absolute one with family units still recognizing some economic obligations towards some relatives and towards the parental home. Nevertheless, the very possibility of geographical mobility from rural to urban environments and between urban areas in itself affects kinship ties (Jacobson, 1970; Patai, 1969; Zelinsky, 1971).

People in rural areas in a monetized economy maintain some kinship ties and at the same time sustain a range of friendship bonds. These friendship ties are selective and differ from those of primitive society. The men in primitive nomadic society used to spend much of their free time out side their own tent, and used to go to a special large tribal tent in order to talk to other men in the tribe (Lancaster, 1981). By contrast in traditional rural societies men, especially young men, started selecting some friends with whom they spent their free time in one of their friend's houses. For example, those with some level of education tended to have close relations with each other. Occupation also tended to become a determinant in the selection of friends.

It is clear from the discussion above that economic factors play an important role as a mechanism of change from primitive to traditional societies. Economic changes are also significant in promoting the emergence of the nuclear family.

What came first - the economic or social nuclear family? In order to answer this question it is useful to tabulate some of the findings of the author's field survey. This was done by classifying all households, as outlined in the methodology chapter, on the basis of the strength of their declared kinship links. For both economic and social links with close relatives each household was classified as either traditional, early transitional, advanced transitional or modern in its relationships. The outcome is shown graphically in Figures 5.1 and 5.2 and is discussed below in relation to Tables 5.8 and 5.9.

Table 5.8 shows that the families which have strong social kin-relationships do not necessarly have the same level of economic kin-relationships. It can be seen,for example,that amongst those families defined as in the traditional stage of social kin-relationships, only 11.5% of them were in the traditional stage in economical terms (Table 5.8), while the remainder have mainly experienced a transition in their economic kin-relationships. The data from Table 5.8 reveals that the same pattern can be noticed in both urban and rural areas. This result suggests that changing kinship ties begins with economic relationships. No doubt the transition in the economic and social kin-

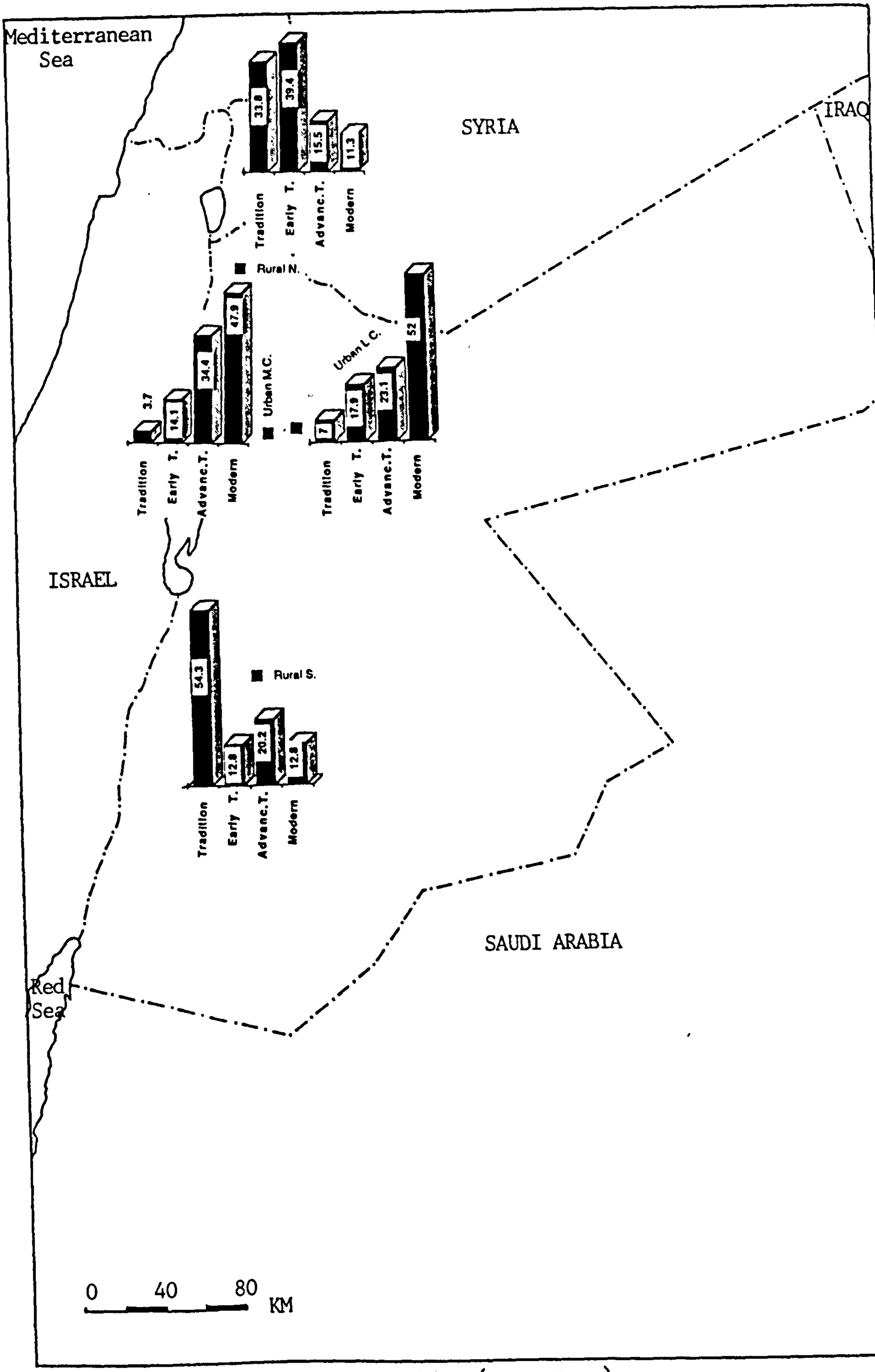


Fig. 5.1: Economic kin-relationships (percentage).

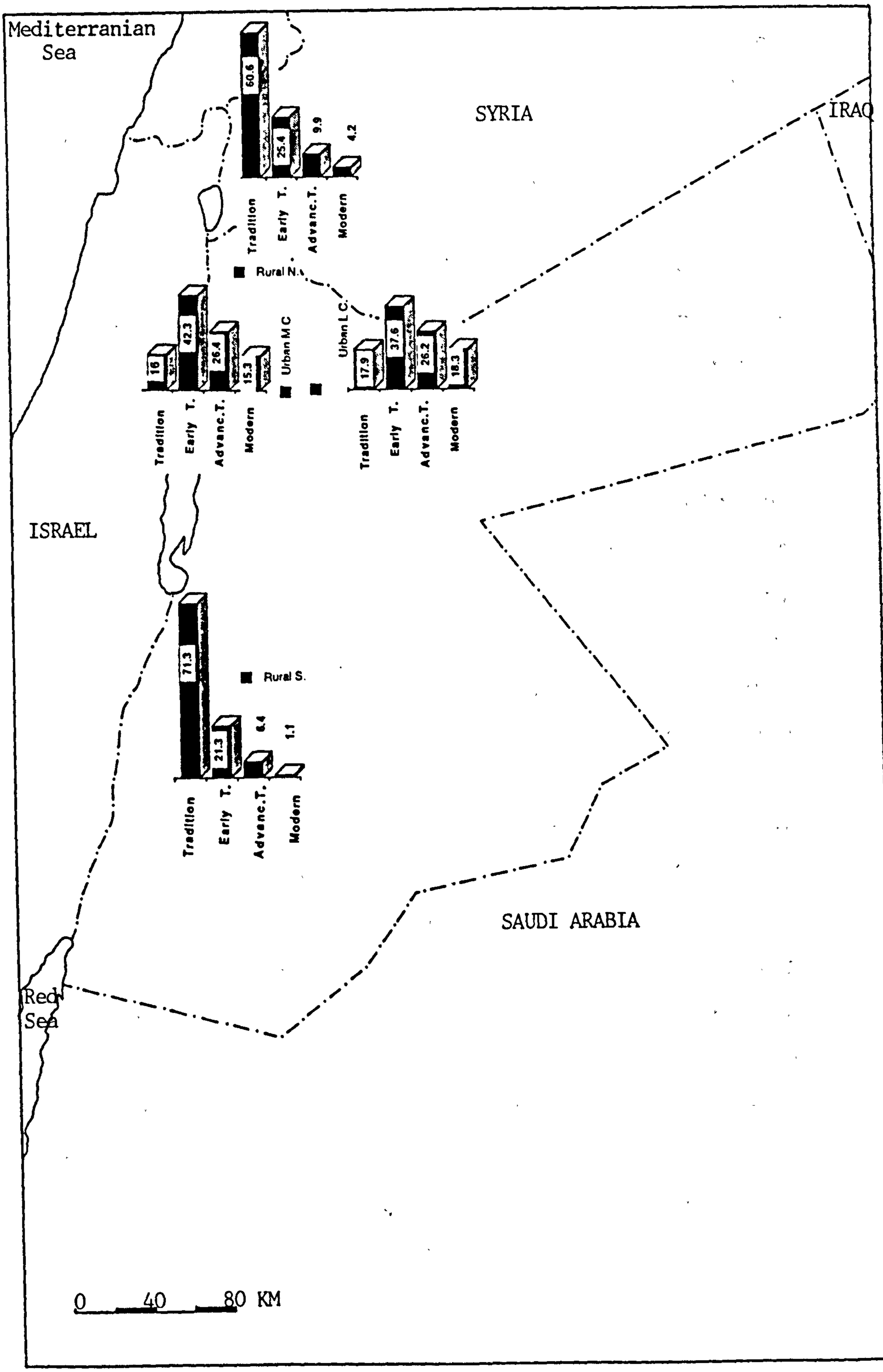


Fig. 5.2: Social kin-relationships (percentage)

relationships will affect family structures causing them initially to be more isolated (socially and economically). Later, a more closed nuclear family will result which will increase the emotional and social bonds between the spouses within the nuclear family.

Table 5.8 shows some regional differences in terms of the character of the transition in social and economic kin-relationships which have been discussed above. Only a small percentage of families in the urban areas, especially in the middle classes were at the traditional stage (for definition see the methodology chapter) of economic and social kin-relationships (11.5%,19.5%), while, on the contrary a high percentage of families in rural areas, especially in the south, were at the traditional stage economically and socially (70.1%,51.2%). Perhaps cultural factors lie behind the high percentage of families with strong kinship relations in rural areas. With regard to the differences between rural areas, it seems plausible that the reason why the southern rural area has the highest percentage (70.1 %) is its greater isolation from the Jordanian urban economy. Thus one might expect cultural change to take place more rapidly in the rural north with its closer associations with Amman and the stronger presence of market forces. It is important also to bear in mind that the rural north was an area of peasant cultivation while the rural south remained an area of pastorlism in which tribal law was still to a certain extent effective.

Table 5.8

Economic and social kin-relationships by area, 1988.
(Figures expressed in percentages)

	Economic kin-relationships				
Social kin-rel.	Traditional stage*	Early trans-itional stage	advanced trans-itional stage	moden stage	Total No.
Urban,middle class					
Traditional stage	11.5	34.6	30.8	23.1	26
Early transitional stage	4.3	11.6	43.5	40.6	69
Advanced transi-tional stage	0.0	9.3	30.2	60.5	43
Modern stage	0.0	8.0	20.0	72.0	25
Urban, lower class					
Traditional stage	19.5	34.1	9.8	36.6	42
Early transitional stage	7.0	23.3	31.4	38.4	60
Advanced transi-tional stage	1.7	8.3	28.3	61.7	86
Modern stage	2.4	4.8	11.9	81.0	41

Table 5.8 (Contd.)

Social kin-rel.	Economic kin-relationships				
	Traditional stage*	Early transitional stage	advanced transitional stage	modern stage	Total No.
Rural, south					
Traditional stage	70.1	7.5	14.9	7.5	67
Early transitional stage	10.0	35.0	30.0	25.0	20
Advanced transitional stage	33.3	0.0	50.0	16.7	6
Modern stage	0.0	0.0	0.0	100.0	1
Rural, north					
Traditional stage	51.2	27.9	11.6	9.3	43
Early transitional stage	11.1	72.2	11.1	5.6	18
Advanced transitional stage	0.0	42.9	57.1	0.0	7
Modern stage	0.0	0.0	0.0	100.0	3

*See methodology chapter for definitions of traditional, transitional and modern stages.

Source: Author's survey.

Table 5.9 shows that the urban areas (both middle and lower class) would appear to be experiencing a rapid transition in economic and social kin-relationships. It is of course impossible to prove from the data that a transition is occuring since the information is cross-sectional, rather than following a time sequence. Nevertheless, a "transition" hypothesis seems tenable.

Table 5.9

Economic and social kin-relationships, by area, 1988.

	Tradition. stage	Early transit. stage	Advanced transit. stage	Modern stage	Total no.
Economic kin-rel.*					
Urban,middle class	3.7	14.1	34.4	47.9	163
Urban,lower class	7.0	17.9	23.1	52.0	229
Rural, south	54.3	12.8	20.2	12.8	94
Rural, north	33.8	39.4	15.5	11.3	71
Social kin-rel.**					
Urban,middle class	16.0	42.3	26.4	15.3	163
Urban, lower class	17.9	37.6	26.2	18.3	229
Rural,south	71.3	21.3	6.4	1.1	94
Rural, north	60.6	25.4	9.9	4.2	71

* Difference between urban areas (middle and lower class is not significant (X^2 = 7.3, df = 3) at 95% level of confidence.

* Difference between rural areas is significant (X^2 = 16.2, df = 3) at 95% level of confidence.

* Difference between urban and rural areas is significant (X^2 = 157.4, df = 3) at 95% level of confidence.

** Difference between urban areas (middle and lower class) is not significant (X^2 = 1.3, df = 3) at 95% level of confidence.

** Difference between rural areas is not significant (X^2 = 3.3, df = 3) at 95% level of confidence.

** Difference between urban and rural areas is significant (X^2 = 137.41, df = 3) at 95% level of confidence.

Source: Author's survey.

The differences with regard to this transition between the middle and lower classes are not significant. Rural areas seem to be witnessing an onset of the transition in economic and social kin-relationships (Table 5.9), but as previously noted the transition in the north is relatively rapid compared to the south. The difference between these two rural societies is significant with regard to economic but not in terms of social kin-relationships.

These findings are of relevance with regard to Caldwell's central proposition on family change, that "emotional" or social changes in the nuclear family precede economic change.

Showing how economic and social kin-relationships change from being inclusive of many relatives to being exclusive of all but the basic actors in the nuclear family is very important in understanding the changes in family patterns. It would appear from the data presented above that increasing economic nucleation is followed by increasing "emotional" or social nucleation.

From the above discussion it could be tentatively hypothesized that the nucleation of the family follows the following sequence:

-First, a physical nuclear family structure will emerge.

-Second, kinship links in economic terms will weaken until they are conformable with the "economic closure" of the nuclear family.

-Third, social kinship relations will weaken as a result of

the emergence of the closed economic structure of the nuclear family.

-Fourth, the nuclear family will emerge in emotional terms.

Economic isolation makes the nuclear family structure depend more on their own sources of income, which may affect social and emotional relations in two ways; first of all social and emotional relations with other kin will weaken, and second the strength of social emotional bonds inside the family will grow. This will make the emotional relation with kin recessive and it will increase the dominance of father-son, and then husband-wife economic, social and emotional relations. The importance of the emergence of the physical nuclear family was clear in the work of Altorki and Cole (1989) in their study of the city of Unayzah. From their work it could be inferred that the emergence of the physical nuclear family was the first stage in a more fundamental transition to the economic and social closure of the family.

As a result of the appearance of the nuclear family structure, and of the onset of a transition in economic and social kin-relationships the strength of emotional bonds between spouses would be expected to increase, but it would not be expected to be dominant. Rather the father-child relationship would be expected to be dominant, especially in the traditional and transitional societies, because of the economic and social value of children. This point will be discussed in more detail in the next chapter.

The speed of the change in social kin-relationships is likely to be relatively slow compared to the rate of change in economic kin-relationships, although not quantitative data is available to verify this suggestion. It may be that a distinction can be made between social relations which affect the speed of transition from an open nuclear or extended family to a closed nuclear family, and economic relations which initiate and power the transition itself. In terms of analysing Jordanian family bonding it seems clear from Tables 5.8 and 5.9 that the nuclear family emerges more rapidly as an economic than as an emotional unit.

Caldwell (1982) considered that social conditions change as fast as economic ones, and that social change determines economic change. It may be that there is an inter-relationship between them, but in Jordan social forces do not appear to change nearly as rapidly as economic conditions (Jureidini and Mclaurin, 1984). The slow speed of cultural change reduces the speed of the social kin-relationship transition, while the economic kin-relationship transition advances more rapidly (see Tables 5.8 and 5.9). These Tables show that a time lag exists between economic and social change. While social change may not be a determinant of economic change, it is possible that economic change influences social change. Caldwell (1982:72) said: "I should remark that nothing I have experienced in the West Africa suggests that there is any cultural lag- any delay in recognizing how to achieve new

objectves arising from traditional ways of looking at things and an inability to do things in a new way - in adjusting to new economic ends that are determined by changed social ends. The rate of social change determines economic change". Clearly, the results of the author's Jordanian research contradict this view.

As the nuclear family structure becomes more widely established in Jordan in both urban and rural areas, it can be expected that there will be an increase in the intensity of conjugal relations, and inversely a reduction in the other kin contacts (Liu,1977). As well as the evidence reported in Table 5.8, Khairi (1985) has also reported an increase in the strength of bonding between spouses in Amman and a decrease in financial links outside the nuclear family. This pattern is stronger in urban than in rural areas.

In the author's survey 33% and 38% of the people in the urban areas (middle and lower class respectively) claimed that economic co-operation did not exist between brothers, while in rural areas (south and north) the percentages are 10.4, and 15.8 respectively. In terms of economic co-operation among relatives (such as with an uncle) in urban areas (middle and lower class) most people (71.3% and 75.4% respectively) said that it did not exist, while in rural areas (north and south) only a small percentage (26.0 and 23.7 respectively) said that it did not. The majority of people in both urban and rural areas

considered moral support amongst relatives as more important than financial assistance.

In urban areas most people considered that economic help among relatives was offered with some hesitation, while in rural areas approximately two thirds said it was offered with no hesitation. This means that potentially economic relations in rural areas have still considerable strength and that there remains much scope for future restructing of family ties.

5.4. CONJUGAL ROLES

In primitive society women do not have any jural identity and responsibility. The social norms of primitive society determine the low status and roles of women.

In traditional rural society in Jordan the modern state has increasingly intervened and the economy has become monetized. Nevertheless, the status of women remains relatively poor, although it is also true that the range of tasks for which they are responsible has been reduced by their changing position in the economy. For example, they have mainly stopped making bread, stopped repairing and putting up tents, ceased collecting firewood, and water ... etc.

In the middle and lower class areas of the cities other important changes have been taking place. Women have received more power in economic matters, especially salaried women. Women's level of education has been improving (Table 5.10), with over half of all wives in the author's survey area in middle class Amman having recieved

secondary or higher education. Women's involvement in the work force has also been increasing, and the social norms constraining women's public roles have generally become less acute (Ghazwi, 1985). These changes in women's status and roles may have created some conflicts, as for example in the conflict between their maternal role and their occupational role (Oppong and Abu, 1986; Oppong, 1987; Weeks, 1988). Such conflict may be behind the low percentage of male heads of the household in the author's survey who accepted the possibility of women entering waged work . Table 5.11 reveals that generally, the head of the household was against women working outside the home. This was true both in urban and rural areas.

In spite of the fact that women's status is now less tightly prescribed by society (especially in urban society), cultural influences are still the most important determinants of women's status and roles. For example, the absence of women in some sectors of the Jordanian labour market such as retailing is a continuing reflection of their status (Findlay, 1987a).

Most parents no longer live with their married children, and daughters-in-law no longer live with their mothers-in-law. Most respondents in the survey mentioned that wives preferred to live at a distance from the house of their mothers-in-law. This was true even in the south.

Table 5.10

Education level of wife, by area, 1988.

Area	Education level			Total number
	Less than secondary	Secondary and college	University level	
Urban, middle class*	26.4	47.8	25.8	178
Urban, lower class*	61.3	35.8	2.9	240
Rural, south**	93.8	6.3	0.0	96
Rural, north**	84.2	11.8	3.9	76

Source: Author's survey.

* Differences between urban areas are significant (X^2 = 72.4, df = 2) at 95% level of confidence.

** Differences between rural areas are not significant (X^2 = 4.2, df = 2) at 95% level of confidence.

*** Differences between urban and rural areas are significant (X^2 = 93.9, df = 2) at 95% level of confidence.

Table 5.11

Opinion of husband about female waged employment, by area, 1988.

Area	Opinion of husband (%)		Total no.
	Women's work outside the home is acceptable	Women should stay at home and not have waged employment	
Urban, middle class	30.3	69.6	178
Urban,lower class	17.1	82.9	240
Rural, south	4.2	95.8	96
Rural, north	23.7	76.3	76

Source: Author's survey.

Conjugal roles in Jordanian society remain markedly segregated. A characteristic of gender-determined activities is that the husband makes most of the economic decisions. This is borne out by the results of Table 5.12. This is the case in both urban and rural areas, with the feature being most marked in rural areas. This may reflect the fact that the personal relationship between husband and wife is less intense, and less inclusive, but in urban areas this situation is becoming less common. For example, in urban areas most husbands and wives solve their disagreements by themselves without any interference from outside (Khairi,1985). This is one hallmark of the emergence of a more mature nuclear family.

Taking all the evidence on the transition of social and economic relationships into consideration, it would seem fair to suggest that the weakening of kin-relationships is accompanied by a parallel reduction in role segregation between husband and wife and some improvement has taken place in husband-wife relationships (Caldwell and Caldwell, 1987). Husband-wife relationships start to dominate in family structures as other kin-relationships start diminishing. To quote Liu (1977:45-46): "The nuclear family is characterized by a high degree of affective bonding between the conjugal pair and a minimum degree of authority of power differentials. On the other hand, the traditional extended family would be characterized by a high degree of power differentials and a

low degree of affective involvment"

Caldwell emphasized the importance of the internal economy of the family and the relations of production of the peasant family in traditional society. But it is very important to consider the internal economy of the family in transitional and modern societies as well, when discussing family change. Women's work is an important factor in terms of family change in primitive, traditional, transitional, and modern societies.

Women's work in primitive and traditional societies does not imply that they have power in economic decisions. The reason behind this could be, according to Caldwell's theory that the head of the household (the husband) owns the means of production. As a result women's work at this stage is not expected to affect the women's position, but in urban areas women's work does affect their position because of their ability to determine to a great extent the use of their earnings in matters relating to their children and to day-to-day matters (Jacobson, 1970; Wery, 1987).

Generally, the data on Jordan reveals that women are increasingly involved in economic decision-making. Women workers in urban areas share more of the economic decisions of the household than do women who do not work (Findlay, 1987a). This was upheld by the author's survey (Table 5.12). This fact supports Caldwell's proposition. In spite of the fact that this proposition focussed on familial production, where the husband owns all of the means of production, and all of the

Table 5.12

Percentage of wives who share in economic-decision making, 1988.

Area	Only husband makes decisions	husband more than wife	both share equally	husband less	Total no.
Urban					
-working wives	1.2	40.4	36.0	22.5	89
-wives not working	15.5	58.4	17.7	8.4	322
Rural					
-working wives**	x	x	x	x	x
-wives not working	41.9	51.5	6.0	6.0	167

Source: Author's survey
** No working wives were encountered

Table 5.13

Attitude of father towards his sons and daughters regarding education, 1988 (percentages by areas).

Attitude	Urban, middle class	Urban, lower class	Rural, south	Rural, north
-Daughters should receive more education than sons	2.2	1.3	0.0	0.0
-Both should get the same level of education	79.2	77.9	46.4	61.3
-Daughters should receive less education than sons	18.5	20.8	53.6	38.7
-Total number	178	240	97	76

Source: Author's survey

members of the family are workers . In urban areas, when the wife enters the labour market and starts to be a source of income for the household, this gives her economic power and makes her share with the head of household in decision-making, but this power is not complete within the traditional male-centred culture.

The author's survey showed that 57.3% of working wives in urban areas have a partially independent budget and 7.9 % had a completely separate budget. The important difference between the work of women in rural and urban areas is that women in rural areas do not own anything as a result of their work, but women in urban areas (who work in paid jobs) had some control over their own earnings. So the work of women in urban areas played a significant role in changing their position in the household.

Looking at female education, compared to that of males, provides a further surrogate measurement of the level of equalization between the sexes. Table 5.13 indicates that there is still discrimination between males and females in Jordan, but this discrimination is greatest in rural areas.

Generally speaking, this chapter reveals that the nucleation process has been taking place in Jordananian urban and rural areas. After the physical nuclear family has emerged, the economic nuclear family appears, followed by the social nuclear family, and lastly the emotional nuclear family. Associated with this trend, women's status

and roles are changing in urban and rural areas. These family changes have implications on wealth flow direction and fertility attitudes, which are going to be examined in later chapters.

CHAPTER 6

PERCEPTIONS OF COSTS AND BENEFITS OF HAVING CHILDREN

It has been suggested that wealth flow directions between parents and children are critical in influencing attitudes towards desired family size (Caldwell, 1982). Prior to evaluating wealth flows (see next chapter) it is necessary to evaluate the costs and benefits of having children as perceived by the respondents of the author's Jordanian sample survey. This chapter tackles this topic by first of all considering the difficulties of measuring the direct and indirect costs of children.

6.1. COST OF CHILDREN

At the outset it should be noted that dealing with variables such as family income, cost of children and benefit from children is not an easy matter. It is not to be expected that people will give very accurate information about their income, or about their financial affairs. Estimating the costs and benefits of having children is therefore very difficult, and is a subject still open to much debate. Previous literature on the subject indicates a lack of precise methods for estimating the costs and benefits of children (Caldwell, 1983; Lee and Bulatao, 1983; Fawcett, 1983). Thus calculating the net value and relative cost of children is very difficult, especially in the developing countries, because to do this requires the researcher to make some heroic assumptions. These assumptions need to cover all aspects of children's

consumption and production activities in order to make it possible to calculate the balance of their economic contribution (Lee and Bulatao, 1983).

In the context of fertility analysis, researchers have examined the cost of children to the household in order to explain the transformation in attitudes from quantity to quality in childbearing. Demographers initially tended to consider the relative time cost per unit of utility on the basis of quantity rather than quality. There has been a requirement to take into account the opportunity cost of children relative to the changing roles of women in general and to women's work in particular (Robinson, 1987; Mincer, 1963; Oppong, 1983; Lee and Bulatao, 1983; Fawcett, 1983). It would appear that the true cost of children is most apparent in terms of opportunity costs rather than direct costs. Thus more importance has been placed on women's work, where the opportunity cost of children has been measured by a wife's wage rate (Ho, 1979; Arnold et al, 1975). This may be true in the more advanced countries, and it offers a partial explanation in urban areas of developing countries, especially where the wealth flow is downward.

In rural areas the reason behind the transformation in attitudes towards seeking a high quality of children would also appear to be an economic one even although wealth flow direction is expected to be upward. The data in the previous chapter on "Family change" reveal that

women in rural areas are seldom involved in wage employment. This demonstrates that families are possibly experiencing a direct economic cost, and that opportunity costs may be nearly zero in this environment.

The author's survey permitted the investigation of how respondents perceived both the benefits and the costs of having children, in urban and rural areas. Generally, it could be said that in urban areas families mostly did not expect any financial gain from their children. Several respondents said that "... we will be very satisfied if they (or children) succeed in looking after themselves financially". While in rural areas the picture was different. Respondents expected financial help from their children, especially from educated children. They emphasized that they wanted their children to be highly educated. Respondents in rural areas expressed that in terms of the benefits of having children, the quality of the children (often interpreted as educated children) was much more important than the quantity. Many of the respondents said "One educated and professional child is much better than ten children who are not educated or skilled".

This transformation in attitudes towards seeking a high quality of children in rural areas will probably increase the direct costs of children, in the short term, because this quality leads to supporting the children for a long time as students, and consequently incurring more expenditure on them. While previously children would be

sent at moderately young ages, especially in the northern rural areas, to work on the land or to participate in herding, or in southern rural areas to join the army.

The direct cost of children, in middle class urban areas is relatively low, while in the lower class urban areas, in the rural south and the rural north, it is relatively high (see Table 6.1). Thus, most of the families in lower class urban areas and in both southern and northern rural areas reported that they faced economic difficulties (Table 6.2).

This finding may partially explain why the respondents in these areas emphasized economic reasons for stopping having children. These reasons encouraged them to perceive the quality of children from an economic point of view. In the middle class urban areas it would appear that people are looking for high quality children from a social point of view (Tables 6.3 and 6.4). Their main concern is the social life of the family which increases the importance of the opportunity cost of children relative to the direct costs. Thus in the case of middle class urban areas child rearing may be determined by the fact that families are more economically secure, even though financial returns from their children are not generally guaranteed. The families in the middle class urban areas were also less affected by traditional cultural pressures, and traditional social norms, and consequently they were mostly isolated, socially and economically, and had become

relatively closed nuclear families.

Taking sources of income into consideration, with regard to economic difficulties brought about by having children, Table 6.5 shows that economic difficulties do not appear to vary significantly (X^2 = 2.7, df = 2, insignificant at 95% level of confidence) according to the source of household income. Table 6.6 shows that there are also no significant differences (X^2 = 2.4, df = 2, 95% level of confidence) between sources of income in terms of the direct costs of having children. The reason for this could be that income has a positive relation with the level of direct costs of having children. In other words, high incomes may be accompanied by more expensive consumption patterns. For example, in middle class urban areas the author noted that many families were accompanied by their children on a weekly visit to a restaurant. Many children were members of swimming pool clubs, and children often spent their summer holidays abroad. By contrast, in lower class urban areas, and rural areas, children did not take part in these expensive forms of consumer behaviour. In rural areas, especially in southern rural areas, children did not have any mass-produced toys.

Table 6.3 shows that respondents in the middle class urban areas emphasized the importance of the emotional and social life of their families in their decision making. This was the most important reason for stopping having children. By contrast respondents in the lower class urban areas gave the same weight to the social life of the family

as they did to economic factors as their reason for stopping having children. The differences between middle and lower class urban areas were significant (X^2 = 8.7 df = 1, significant at 95% level of confidence, Table 6.3). Families in which the wife worked put more emphasis on the emotional and social life of the family and proved to be significantly different from those families in which the wife did not work (Table 6.4). Noteworthy is the fact that most working wives lived in middle class urban areas. Rural respondents, by contrast, gave the greatest weight to economic factors. Differences between rural areas were not significant (X^2 = 2.9 df = 1, insignificant at the 95% level of confidence), but the differences between urban and rural areas was highly significant (X^2 = 55.3, df = 1, significant at the 95% level of confidence).

Generally speaking, urban parents in developing countries are more concerned about the opportunity costs of children and the restrictions which children place on their freedom, while by contrast parents in rural areas are more concerned about the direct costs of children (Fawcett, 1983). It is noticeable that respondents in Jordan in the northern rural area were more interested in the social life of the family than the respondents in southern rural areas (Table 6.3). The interpretation of this could be that society in northern rural areas has witnessed more cultural changes than in the southern rural areas. Table 6.3 also shows that a certain percentage of heads of household in

southern rural areas were worried about the future of their children.

Table 6.1

The percentage cost to families of children in terms of direct cost tabulated by area of interview, 1988.

	Cost of children			
	Less than 30% of income	30-50% of income	More than 50% of income	Total No.
	Percentage of Households			
Urban, middle class	41.5	29.2	29.2	171
Urban, lower class	26.0	23.3	50.7	223
Rural south	16.3	29.1	54.7	86
Rural north	12.7	12.7	74.6	71

Source: Author's survey.

Table 6.2

The percentage of families who face economic difficulties in raising children, by area of interview, 1988.

	Level of economic difficulties			
	Percentages			
	Always diff.	Some diff.	No diff.	Total
Urban, middle class	10.5	39.5	50.0	172
Urban, lower class	16.4	46.2	37.3	225
Rural south	24.4	61.6	14.0	86
Rural north	21.1	42.3	36.6	76

Source: Author's survey.

Table 6.3

Reasons stated for stopping having children by area of interview, 1988.

	Reasons stated for stopping having children					
	Percentages					
	Econ.	Social	Woman's work	Worry over future of children	Other reasons	Total* No.
Urban, middle class	27.8	48.4	6.8	16.4	0.6	281
Urban, lower class	38.1	38.1	3.8	18.6	1.4	291
Rural, south	69.9	8.2	-	21.9	-	73
Rural, north	71.2	21.2	-	7.7	-	52

* numbers represent total number of answers to the question.
Respondents were able to select more than one answer.
Source: Author's survey

Table 6.4

Reasons stated for stopping having children in terms of the work status of wives, 1988.

	Work of the wife	
	Work outside the home %	Not working outside %
Economic	22.2	44.7
Social	44.4	36.1
Women's work	17.3	00.0
Worry over future of children	15.4	17.7
Other	0.7	1.5
Total	162	532

Source: Author's survey

Table 6.5

The percentage of families who face economic difficulties in raising children by source of income, 1988.

	Level of economic difficulties			
	Percentage of Households			
Source of income	Always difficult	Some difficulties	No difficulties	Total No.
Employees	16.7	47.6	35.7	384
Self-employed	16.3	41.0	42.8	166

Source: Author's survey

Table 6.6

The percentage cost to families of children in terms of direct cost and tabulated by source of income, 1988.

	Cost of children			
	Percentage of Households			
Source of income	Less than 30% of income	30-49% of income	More than 50% of income	Total No.
Employees	20.2	35.6	44.2	405
Self-employed	15.1	39.7	45.3	179

Source: Author's survey

Within Jordanian culture children are expected to show obedience and respect for their fathers and elders. Traditional relationships between fathers and children are no longer so strong in urban areas while in rural areas they remain stronger, although here too there is an erosion of loyalty to fathers (Table 6.7).

It is worth noticing that this erosion of loyalty is clearer in the urban areas, especially amongst the lower classes. This may be due to the relatively bad economic situation of these families which has probably been responsible for creating some tension between fathers and children. In addition, the social and economic isolation of the nuclear family leaves parents responsible for the entire social and economic burden of child rearing. Differences between middle and lower class urban areas are not significant (X^2 = 3.4, df = 2, not significant at 95% level of confidence, Table 6.7).

The disobedience of children raises problems of control. In rural areas children, especially boys, have started more openly to disobey their fathers and to go against their wishes. One father complained that his children did not obey his wishes. He said, for example, "my father selected my bride but now my children do not want to take my opinion into consideration in this matter". Thus the new generation have no intention of being subjugated to traditional family constraints. Differences between rural areas were not significant (X^2 = 3.7, df = 2,

not significant at 95% level of confidence) in terms of perceived obedience of children to their parent's wishes while the differences were highly significant between urban and rural areas (X^2 = 191.0, df = 2, significant at 95% level of confidence, Table 6.7).

Traditional norms within the family and community have been eroded (Faour, 1983; Lancaster, 1981). Children have become less valuable in economic terms and their social significance has changed, for example, in terms of family name, prestige and social security. This is especially true in urban areas and among families who are socially and economically isolated.

Table 6.8 shows that the survey revealed interesting regional differences in terms of the motives given for having high fertility. Although respondents in both urban areas expressed approximately the same opinions towards the significance of sustaining the "family name", the differences were greater in terms of other motives.

In rural areas Table 6.8 shows that respondents in both rural areas emphasized "family name", "prestige" and "old age security" as motives. Differences between urban and rural areas were evident. These differences reflect the erosion of traditional cultural values, especially in middle class urban areas. Despite these differences one can notice certain similarities in all areas (urban and rural). Everywhere it was considered that the "family name" and "prestige" were more important than the other motives for having high fertility, while the "happiness"

associated with having high fertility was in every case the least important reason.

It would appear that socially isolated families were less likely to desire large numbers of children than economically isolated families. This is evident in Table 6.8 from the smaller proportion of families claiming to be influenced by a wide range of potential determining factors. For example, only 27.8% of the families defined as being in the modern stage of the social relation transition, compared with 39.9% of the families in the modern stage of the economic relation transition, supported the view that having a large number of children is important in maintaining the name of the family over time.

Table 6.7

Relationships* between parents and children, by area of interview, 1988.

	Strong relation	Average relation	Weak relation	Total No.
	Percentage of Households			
Urban, middle class	10.3	51.1	38.5	174
Urban, lower class	7.9	44.6	47.5	240
Rural, south	63.5	32.3	4.2	96
Rural, north	57.6	30.3	11.8	76

* relationships interpreted in terms of obedience to parental wishes and control.
Source: Author's survey.

Table 6.8

General motives for having high fertility by area of interview and by the stage of familial transition.

	Motivations					
	Family name	Prestige	Social security	Economic earning	Happiness	Total No.
	Percentage of Households					
Area:						
Urban, middle class	39.3	28.1	18.5	16.3	12.9	178
Urban, lower class	41.3	43.3	37.9	22.9	22.5	240
Rural, south	78.1	69.8	68.8	58.3	56.3	96
Rural, north	80.3	84.2	71.1	56.6	53.9	76
Social kin-relationships transition:						
Modern stage	27.8	23.6	20.8	15.3	13.9	72
Transitional advanced stage	41.4	35.3	29.3	18.1	21.6	116
Transitional early stage	46.1	46.6	33.2	25.4	20.2	193
Traditional stage	71.2	60.5	65.0	52.5	51.4	177
Economic kin-relationships transition:						
Modern stage	39.9	35.8	27.5	14.7	14.7	218
Transitional advanced stage	50.4	44.6	36.7	29.5	26.6	139
Transitional early stage	50.0	51.9	49.0	36.5	33.7	104
Traditional stage	76.3	79.4	68.0	64.9	62.9	97

Source: Author's survey

It is worth mentioning that in spite of the fact that families were defined as being modern, there remained some who seemed to be affected by traditional cultural values in terms of motivations for having children. Inversely a small proportion of families, defined as being traditional, disagreed in some respect with traditional values.

The motivations for having children clearly are not purely economic. Indeed it is evident that culture is very important (Mehryar et al, 1977). Sustained belief in the cultural values of having children (family name, prestige) is evident and even though some economists still consider "tastes" to be constant, it has recently become increasingly clear that "tastes" are affected by social norms, cultural pressures, personal fears and satisfactions (Fawcett, 1972; Demney, 1972; Leibenstein, 1974; Mehryar et al, 1977). Changes in the family under the influence of forces favouring a reduction in social and economic kin-relationships, has affected the desire to have children. The assumption remains that the so-called "modern" nuclear family will be less affected by traditional social norms and traditional cultural pressures, and will generally be much more influenced by personal wishes and motivations with regard to the desire to have children. Thus the perceived "cost" of children will be geographically varied according to the sub-culture in which a study is being undertaken.

It is now worth considering in greater detail the essential contribution of Caldwell's theory (Theory of

fertility decline) and its emphasis on the "family transition". This contribution sheds light on some of the difficulties faced by basic theories of consumer behaviour in general, and in particular the applicability of micro-economic theories to fertility analysis. This approach has been questioned by several western sociologists (Mehryar et al., 1977).

6.2 BENEFIT FROM CHILDREN

Table 6.9 reveals that the participation of girls and young women in the waged labour market is still low in urban areas, while in rural areas it is even lower. It is also noticeable from Table 6.9 that the participation of sons in the labour market in the cohorts (15-19, 20-24) is lower in middle class urban areas than in the other areas. This could be explained by the fact that in middle class urban areas sons spend a longer time in education.

Economic assistance of parents by children (both single and married sons and daughters) still occurs in both urban and rural areas, but it is less marked in urban areas (Table 6.10). In middle class urban areas more than half of the children in waged employment do not help their parents financially, while the lower class urban areas show an intermediate level of assistance between the levels reported in the rural areas and urban middle class districts of Amman. Despite the low percentage of daughters who are working (Table 6.9), it is noticeable that the daughters who are working in the urban areas play

approximately the same role as sons in providing financial support to the household (Table 6.10), while in rural areas the role of daughters in the waged labour market has still to develop. But in spite of the fact that daughters in rural areas are largely absent from labour market, their contribution in familial production is very real (Lancaster, 1981). For example, families who are engaged in agricultural activities have all members of the household, including daughters, participating at the time of harvest.

Table 6.10 shows significant differences (X^2 = 18.0, df = 2, significant at 95% level of confidence) between middle class and lower class urban areas in terms of sons' help to family. In rural areas, by contrast, the differences between southern and northern rural areas are insignificant (X^2 = 5.7, df = 2, insignificant at 95% level of confidence), while the differences between rural and urban areas are significant (X^2 = 72.5, df = 2, significant at 95% level of confidence). With regard to urban areas it is noticed that families in lower class urban areas received more help than families who lived in middle class areas. The reason could be that families in lower class areas have low income which makes them more dependent on their children's help.

It is also noticeable that their children leave school at a younger age for work (Table 6.11). Table 6.11 also reveals that there is a relatively high percentage of working children who have not attained even secondary

schooling.

When marital status is taken into consideration one finds that the financial contribution of single daughters who are working is higher than that of married daughters. Thus it is apparent that the marriage of a daughter, particularly early marriage, reduces their financial contribution to the parental household (Table 6.10).

Table 6.11 suggests that rural-urban migration may be one of the most important processes conducive to an increase in the perceived value of children. The author's survey reveals that in rural areas only a small minority of the families depend entirely on agricultural production for their income, while most of them depend partially on income from other sources including migrant remittances. Money flows from children to parents are not therefore confined in Jordan to the immediate location of the household, nor even to the local labour market, but involve migration to urban areas, especially to Amman.

Capitalist production (or production for the market) of agricultural produce has recently been introduced. New technology (i.e. chemical fertilizer, plastic greenhouses, machinery, etc.) has been used extensively in northern rural areas. This transformation was brought about by rich families who lived in urban areas, especially in Amman, but who were willing to invest in rural production. The poorer farming families living in rural areas were unlikely to possess the required investment funds to transform their

familial production into capitalist production. This situation encouraged poor farming families to look for other sources of income.

The rich families, who invested in agricultural projects, have dominated the agricultural market (domestic and international) by influencing national agricultural policy in their favour. The result has been that poorer farming families have faced great risks if they seriously considered making investment in new technology (Stark, 1981). Since the poorer farming families had difficulties in making investments and in marketing produce, this led them to seek to reduce their dependence on agriculture as their only source of income. This trend in turn made child labour, surplus to the needs of rural areas. Thus these families started looking at investment in education as an alternative means of diversifying their future income. In the context of Jordan, this in turn favoured rural-urban migration, although this has not been the case in all developing countries (Gould, 1981). The new attitudes of farming families towards their children, in northern rural areas, has developed not only because their children's labour competed unfavourably with the returns to investments in modern agricultural technology, but also because they wanted to diversify family income sources, and to control the level of risk associated with family investments. Stark (1981) has found similar outcomes in other developing countries.

Rural-urban migration facilitated the transformation

of the economy of rural areas towards a more monetized base. This occurred through a change in consumption patterns by the family (Stark, 1981). Instead of depending completely on familial production, consumption behaviour became linked to waged income sourced from market production. Thus rural migration was a most important mechanism in introducing change to the rural economy and society. This undoubtedly changed the emphasis of parents in favour of investment in quality rather than quantity of children. In turn this raised the relative cost of children.

Table 6.11 indicates that rural families get important financial help from their children working in urban areas and in particular in Amman. Few people in the survey reported children working abroad. The head of the household in rural areas insisted on sending his children to school since he no longer wanted them to be farm workers, believing instead that educational investment in children would give the best long term returns. Education might allow them to reach better paid urban white collar occupations. Thus great emphasis was given to having well qualified children. This reflected how important remittances were to the survey respondents. As well as sustaining an upward direction of money flow within the family, it brought other social rewards such as status, reputation and prestige for the families involved (Caldwell, 1982; Maslow, 1970).

It is noteworthy that in the survey middle class urban areas had the highest percentage of sons working abroad (17.3%). An examination of the recent characteristics of international emigration from Jordan shows that selectivity of this kind is a feature of most emigration to the Arab oil States. Jordanian skill groups (teachers, doctors and engineers, etc.) were particularly desired by the Oil-Arab States during the 1970s and early 1980s (Findlay, 1987b).

A high percentage of the sons of middle class urban areas who had entered the labour market had a university degree (Table 6.11). It was therefore not surprising to find that in the context of Jordan that this area also had the highest percentage of sons who were working abroad.

The majority of the respondents in urban and rural areas were satisfied with their children in terms of the economic returns which they received from them. This was even true in urban areas where the majority of working children were not helping their parents economically (Table 6.12). A small percentage of respondents who had working children in urban areas in both middle and lower class areas, expressed dissatisfaction with the economic help they had received from their children.

Taking the families which lived in urban areas and the families which were most isolated socially and economically, one can notice that they were the ones which considered consumption utility as the most important. This is especially the case among those families which live in

middle class areas. Several familes said that parents regularly enjoyed spending their leisure time with their children, by going weekly to restaurants, swimming pools or for picnics. Returning to Table 6.3, one can see that these families emphasized the social life of the family as an important reason for stopping having children. When wives entered the waged labour market, the concentration on the social life of the family became more apparent. Given this situation, it would seem fair to assume that children will increasingly be perceived in parents minds as competing with other sources of satisfaction. At the same time children will become more valued emotionally, despite the fact that the money flow direction within families is downward. This trend is important given the fact that in developing countries the most important motivations for having high fertility are generally believed to be social and economic, while the motivations of happiness and self-satisfaction have been less important.

The five motivations given for having high fertility (see Table 6.8 again) can be classified into three main categories: first is "consumption utility" which in some respects can be interpreted as self satisfaction; second is "economic utility" which involves social security and the contribution of children to the family income; third is "social utility" which related to maintenance of the family name, and prestige. In terms of this reclassification it would seem that for the Jordanians

interviewed the most important utility was the social one, and the least important was consumption utility.

In spite of the fact that there is a decline in the traditional values with regard to family relationships, it is not surprising that social values were the dominant set of reasons given for having high fertility. Such a finding is to be expected in Jordan, where the loyalty of the individual is first to the family and only next to the state (Faour, 1983).

By evaluating the perceptions held by respondents of the costs and benefits of having children, Table 6.13 shows that there were a high percentage of respondents (old and young) in urban areas who considered that the financial benefits arising from having children were less than the costs. However, a high percentage of parents in the rural areas considered the benefits to be more than the costs, especially in the south (Table 6.13).

A high percentage of younger parents in urban areas did not expect any financial benefits at all, while in rural areas the majority expected some benefits. Indeed a high percentage of the rural majority expected the financial benefits to be greater than the costs, especially in the south. The percentage of younger parents in northern rural areas who did not expect any financial benefits from having children was significantly greater than the percentage of younger parents in southern rural areas. The regional differences were significant (X^2 = 6.2, df = 2, significant at the 95% level of confidence).

Between middle and lower class urban areas the differences were insignificant (X^2 = 1.1, df = 2, insignificant at 95% level of confidence). Not surprisingly, the differences between urban and rural areas proved highly significant (X^2 = 54.8, df = 2, significant at 95% level of confidence). It could be that the stronger kinship-relations among the families of the southern rural areas (see previous chapter) lay behind the significant differences in other relationships between southern and northern rural areas.

Finally, it can be concluded that in urban areas fathers admitted that the costs of having children were greater than the financial benefits. There was also a problem of child control. Respondents were looking for high quality children and perceived children dominantly in relation to their social environment. These opinions were much more marked in middle class urban areas than in lower class districts.

In rural areas attitudes to child costs and benefits were different. Economic support of parents by children was evident. This meant that the perceived financial benefits of having children were greater than the costs. Despite this an onset of disobedience by children relative to their parents wishes was reported, but was very much less marked in rural areas.

The survey results emphasize the need to relate circumstances in urban and rural areas. For example the rural-urban migration process is one mechanism by which

these disparate social contexts were linked in the Jordanian case. Rural families received an important level of financial assistance from their children working in urban areas. Thus rural social, economic and demographic circumstances can never be treated in total isolation from urban ones. Overall, respondents in rural areas perceived and interpreted the quality of children from an economic point of view.

Table 6.9

Percentage of children who are working, by age and sex, and area of interview, 1988.

	15-19	20-24	25-29	30-34	35+	Total No.
Urban, middle class						
Sons: working chi%	0.0	26.0	79.2	100.0	95.2	51.6
all children: No	33	50	24	29	21	157
Daughters:						
working chi%	2.3	20.0	64.7	43.8	25.0	28.0
all children: No	43	40	34	16	8	141
Urban, lower class						
Sons: working chi%	11.0	47.1	75.4	97.4	85.2	50.6
all children: No	100	87	61	39	27	314
Daughters:						
working chi%	1.1	14.3	35.5	23.5	40.9	17.5
all children: No	94	91	62	34	22	303
Rural, south						
Sons: working chi%	16.2	65.6	88.9	100.0	100.0	59.1
all children: No	37	32	27	9	5	110
Daughters:						
working chi%	0.0	0.0	12.5	0.0	0.0	14
all children: No	33	23	8	5	1	70
Rural, north						
Sons: working chi%	19.1	75.0	96.3	80.0	95.5	64.3
all children: No	47	32	27	15	22	143
Daughters:						
working chi%	0.0	8.6	29.4	0.0	0.0	7.6
all children: No	35	35	17	8	10	105

Source: Author's survey.

Table 6.10

Percentage of working children who help their parents by area of interview, sex, and marital status, 1988.

	Help regularly*	Not regularly	No help	Total No.
	Percentage of Households			
Urban, middle class:				
Single sons	19.4	3.2	77.4	31
Married sons	27.3	20.4	52.3	44
All sons	24.0	13.3	62.7	75
Single daughters	28.6	10.7	60.7	28
Married daughters	9.1	9.1	81.8	11
All daughters	23.1	10.3	66.7	39
Urban, lower class:				
Single sons	49.3	23.9	26.8	71
Married sons	27.6	32.9	39.5	76
All sons	38.1	28.6	33.3	147
Single daughters	58.6	20.7	20.7	29
Married daughters	8.3	29.2	62.5	24
All daughters	35.8	24.5	39.6	53
Rural, south:				
Single sons	70.7	22.0	7.3	41
Married sons	79.2	16.7	4.2	24
All sons	73.8	20.1	6.2	65
Single daughters	100.0	0.0	0.0	1
Married daughters	0.0	0.0	0.0	0
All daughters	100.0	0.0	0.0	1
Rural, north:				
Single sons	75.5	8.9	15.6	45
Married sons	85.7	4.7	9.5	42
All sons	79.3	6.9	12.6	87
Single daughters	66.7	0.0	33.3	3
Married daughters	20.0	40.0	40.0	5
All daughters	37.5	25.0	37.5	8

* regularly = monthly
Source: Author's survey

Table 6.11
Percentage of working children, by place of work, level of Education and area of interview, 1988.

Place of Work	Level of education of children: Illit. + Elem. + Preparatory M	F	Secondary M	F	College M	F	Univ. degree M	F	Total No. M	F
Urban, middle class:										
Inside city/ village	4.9	2.6	26.2	17.9	11.5	17.9	57.3	61.5	61	39
Inside Jordan	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	0
Abroad	7.7	0.0	0.0	0.0	15.4	0.0	76.9	0.0	13	0
Total	6.6	2.6	21.3	17.9	12.0	17.9	60.0	61.5	75	39
Urban, lower class:										
Inside city/ village	29.8	6.0	37.4	34.0	13.7	40.0	19.1	20.0	131	50
Inside Jordan	0.0	0.0	75.0	0.0	25.0	100.0	0.0	0.0	4	1
Abroad	16.7	0.0	16.7	0.0	8.3	0.0	58.3	100.0	12	2
Total	27.9	5.7	36.7	32.1	13.6	39.6	21.8	22.6	147	53
Rural, south:										
Inside city/ village	50.0	0.0	35.7	100.0	7.1	0.0	7.1	0.0	14	1
Inside Jordan	53.2	0.0	34.0	00.0	6.4	0.0	6.4	0.0	47	0
Abroad	25.0	0.0	50.0	00.0	25.0	0.0	0.0	0.0	4	0
Total	50.8	0.0	35.4	100.0	7.7	0.0	6.2	0.0	65	1
Rural, north:										
Inside city/ village	40.9	0.0	22.7	0.0	13.6	80.0	22.7	20.0	22	5
Inside Jordan	36.1	0.0	23.0	0.0	18.0	100.0	23.0	0.0	61	3
Abroad	0.0	0.0	50.0	0.0	0.0	0.0	50.0	0.0	4	0
Total	35.6	0.0	24.1	0.0	16.1	87.5	24.1	12.5	87	8

Source: Author's survey.

Table 6.12

Level of satisfaction of father in terms of children's financial help, by sex and marital status of help (percentages), 1988.

	Level of satisfaction							
	Completely satisfied		Sometimes satisfied		No satisfaction		Total	
	M	F	M	F	M	F	M	F
1. Urban, middle class:								
Single	67.7	67.9	16.1	17.9	16.1	14.3	31	28
Married	65.9	45.5	15.9	36.4	18.2	18.2	44	11
Total	66.7	61.5	16.0	23.1	17.3	15.4	75	39
2. Urban, lower class:								
Single	74.6	82.8	15.5	6.9	9.9	10.3	71	29
Married	57.9	45.8	28.9	50.0	13.2	4.2	76	24
Total	66.0	66.0	22.4	26.4	11.6	7.5	147	53
3. Rural, south:								
Single	85.4	100.0	14.6	0.0	0.0	0.0	41	1
Married	91.7	0.0	4.2	0.0	4.1	0.0	24	0
Total	87.7	0.0	10.8	0.0	1.5	0.0	65	1
4. Rural, north:								
Single	84.4	100.0	11.1	0.0	4.4	0.0	45	3
Married	92.9	40.0	4.8	60.0	2.3	0.0	42	5
Total	88.5	62.5	8.0	37.5	3.4	0.0	87	8

Source: Author's survey

Table 6.13

Perceived financial costs and benefits of children, by area of interview, 1988.

	Money flow more than cost	Money flow less than cost	The same	Families do not expect financial help (% of total)	Total No.
	Percentage of all households expected some financial help				
Urban, middle class	16.2	76.2	7.6	49.7	178
Urban, lower class	21.4	71.7	6.9	44.3	240
Rural, south	56.0	34.1	9.9	8.1	96
Rural, north	50.8	47.7	1.5	22.0	76

Source: Author's survey.

CHAPTER 7

ANALYSIS OF WEALTH FLOW DIRECTION

This chapter will analyse the direction of wealth flow rather than of money flow. The assessment, therefore, takes into consideration factors other than purely monetary ones. It is desirable to mention here that wealth flow is a composite variable created from the amalgamation of several other variables which the author felt represented the power structure in the family (see Methodology chapter). These other variables (or dimensions of wealth flow) were discussed in detail in the last two chapters.

Table 7.1 shows the differences in wealth flow direction in terms of area of interview.

Table 7.1

Wealth flow direction by area of interview, 1988.

Area of Interview	Wealth flow direction (percentage) Upward	Downward	Total No.
Urban, middle class	9.8	90.2	178
Urban, lower class	9.9	90.1	240
Rural, south	70.2	29.8	96
Rural, north	70.4	29.6	76

Table 7.1 shows that differences are not significant (X^2 = .006 df = 1, not significant at 95% level of confidence) between the middle class and lower class urban areas, and even not significant (X^2 = .001 df = 1, not significant at 95% level of confidence) between southern

and northern rural areas. But the differences are highly significant (X^2 = 220, df = 1, significant at 95% level of confidence) between rural and urban areas.

The analysis which follows will assess the importance of the explanatory variables in terms of three separate models. The Statistical analysis as described in the methodology chapter involved use of categorical data analysis and in particular stepwise logistic regression. It focussed on explaining the relationships between the response variable "wealth flow" (WEALTH) and a range of potential explanatory variables as shown in Table 7.2. The table also shows the relevant approximated values of F-to-enter, and approximated F-to-remove statistics encountered in the statistical anlysis.

Identifying the first-order relationships involved the selection of a "reasonable" subset of potential explanatory variables. It was found that on the basis of the largest F-to-enter values relative to the number of degrees of freedom, the first variable to enter the logistic regression equation was area of interview (AREAINT). On the same basis, and always adjusting for higher order relationships, second to fifth order relationships were found between wealth flow and social kin-relationships (RELSOC), education level of wives (R2EDUC), and age of husbands (R1DOBYR). The remaining variables do not have a significant value of F-to-enter. A list of all variables and their labels is included in Appendix2 for reference purposes.

Table 7.2: (Model 1), Test statistics for stage one explanatory variable selection process, wealth flow direction (WEALTH), 1988.

	Approx F-to-enter	df	df	Approx F-to-remove	df	df
-First-order relationships:						
WEALTH x RELSOC	76.21	2	551			
WEALTH x RELECO	57.67	2	551			
WEALTH x AREAINT	165.52	2	551			
WEALTH x R1EDUC	25.87	2	551			
WEALTH x R2EDUC	29.05	2	551			
WEALTH x INCSOU	5.25	1	552			
WEALTH x R1DOBYR	2.24	2	551			
WEALTH x CHILD	2.64	2	551			
-Second-order relationships:						
WEALTH x AREAINT x RELSOC	16.97	2	549	80.34	2	549
WEALTH x AREAINT x RELECO	5.45	2	549			
WEALTH x AREAINT x R1EDUC	2.54	2	549			
WEALTH x AREAINT x R2EDUC	3.90	2	549			
WEALTH x AREAINT x INCSOU	0.40	1	550			
WEALTH x AREAINT x R1DOBYR	0.85	2	549			
WEALTH x AREAINT x CHILD	1.54	2	549			
-Third-order relationships:						
WEALTH x AREAINT x RELSOC x RELECO	0.66	2	547			
WEALTH x AREAINT x RELSOC x R1EDUC	2.39	2	547			
WEALTH x AREAINT x RELSOC x R2EDUC	3.71	2	547	12.88	2	547
WEALTH x AREAINT x RELSOC x INCSOU	0.60	1	548			
WEALTH x AREAINT x RELSOC x R1DOBYR	0.52	2	547			

(CONTD)
Table 7.2: (Model 1), Test statistics for stage one explanatory variable selection process, wealth flow direction (WEALTH), 1988.

	Approx F-to-enter	df	df	Approx F-to-remove	df	df
WEALTH x AREAINT x RELSOC x CHILD	1.05	2	547			
-Fourth-order relationships:						
WEALTH x AREAINT x RELSOC x R2EDUC x RELECO	0.35	2	545			
WEALTH x AREAINT x RELSOC x R2EDUC x R1EDUC	0.30	2	545			
WEALTH x AREAINT x RELSOC x R2EDUC x INCSOU	0.27	1	546			
WEALTH x AREAINT x RELSOC x R2EDUC x R1DOBYR	2.87	2	545	3.81	2	545
WEALTH x AREAINT x RELSOC X R2EDUC x CHILD	1.58	2	545			
-Fifth-order relationships:						
WEALTH x AREAINT x RELSOC x R2EDUC x R1DOBYR x RELECO	0.31	2	543			
WEALTH x AREAINT x RELSOC x R2EDUC x R1DOBYR x R1EDUC	0.50	2	543			
WEALTH x AREAINT x RELSOC x R2EDUC x R1DOBYR x INCSOU	0.44	1	544			
WEALTH x AREAINT x RELSOC x R2EDUC x R1DOBYR x CHILD	1.35	2	543	2.71	2	543

Table 7.3: (Model 1) Stepwise logistic regression results, 1988.

Variables	Category*	Coefficient	S. Error
RELSOC	(1)	0.131	0.280
	(2)	1.298	0.285
AREAINT	(1)	-0.926	0.192
	(2)	1.399	0.193
R2EDUC	(1)	-0.185 Ex-01	0.279
	(2)	0.954	0.290
R1DOBYR	(1)	-0.804 Ex-01	0.206
	(2)	0.416	0.186
CONSTANT		-2.1163	0.328

* As defined in the methodology chapter.

Table 7.4: (Model 1) Summary of stepwise logistic regression, 1988.

Step No.	Variable entered	df	Log Likelihood	Improvement in X^2	P-VAL	Goodness of fit of X^2	P-VAL
0			-327.426			505.154	0.000
1	AREAINT	2	-226.791	201.270	0.000	303.877	0.224
2	RELSOC	2	-210.931	31.721	0.000	272.158	0.683
3	R2EDUC	2	-206.875	8.112	0.017	264.046	0.772
4	R1DOBYR	2	-204.063	5.623	0.060	258.424	0.818

Table 7.3 shows the coefficients used for estimating the probability of households having a downward wealth flow direction. The statistical results of the overall model (Model 1) reveal that households living in urban areas, having weak social kin-relationships, having high levels of education amongst wives and involving young married couples have a higher probability than all other households of having a downward wealth flow direction. Table 7.4 provides an overall statistical summary of the stepwise logistic model fitted to the author's survey data. The goodness of fit of the model is measured using the X^2 statistic, with the state of probability of the hierarchical model being expressed in the conventional statistical form as shown by the columns of Table 7.4 head "P-value". With the entry of each additional explanatory variable the improvement in the model fit is indicated by the reduction of the chi square statistic. This is also shown in terms of the column measuring the "improvement in chi square". Table 7.4 shows (and all similar tables throughout the remainder of the thesis) variables in decreasing order of statistical significance. Thus, for example, the greatest reduction in variance in explaining wealth flow direction is area of interview followed by social kin-relationships. Even a cursory examination of Table 7.4 immediately shows that the proportion of variance explained by area of interview is so high that it threatens to obscure other important associations. As a result, it

was decided to disaggregate the model, and to examine wealth flow directions in urban and rural areas separately.

By controlling for location of interview allowed the researcher to investigate in more detail the determinants of wealth flow direction in urban and rural environments. It was decided, therefore, to re-run the model on this basis (Figure 7.1). When this change is introduced quite remarkable modifications emerge in the relationships influencing wealth flow. These more refined models (Model 1A and Model 1B) study urban and rural areas separately and are shown in Tables 7.5 to 7.10.

Table 7.5 shows the relevant approximated values of F-to-enter, and approximated F-to-remove statistics for the urban model. On the basis of the largest F-to-enter value relative to number of degrees of freedom, and always adjusting for higher order relationships, it was found that in urban areas relationships exist between wealth flow and social kin-relationships (RELSOC), and the education level of wives respectively.

Table 7.6 gives the coefficients for estimating probabilities of households having a downward direction of wealth flow. Weak social kin-relationships, and high levels of education amongst wives' serve to increase the probability that an urban household will have a downward direction of wealth flow from parents to children.

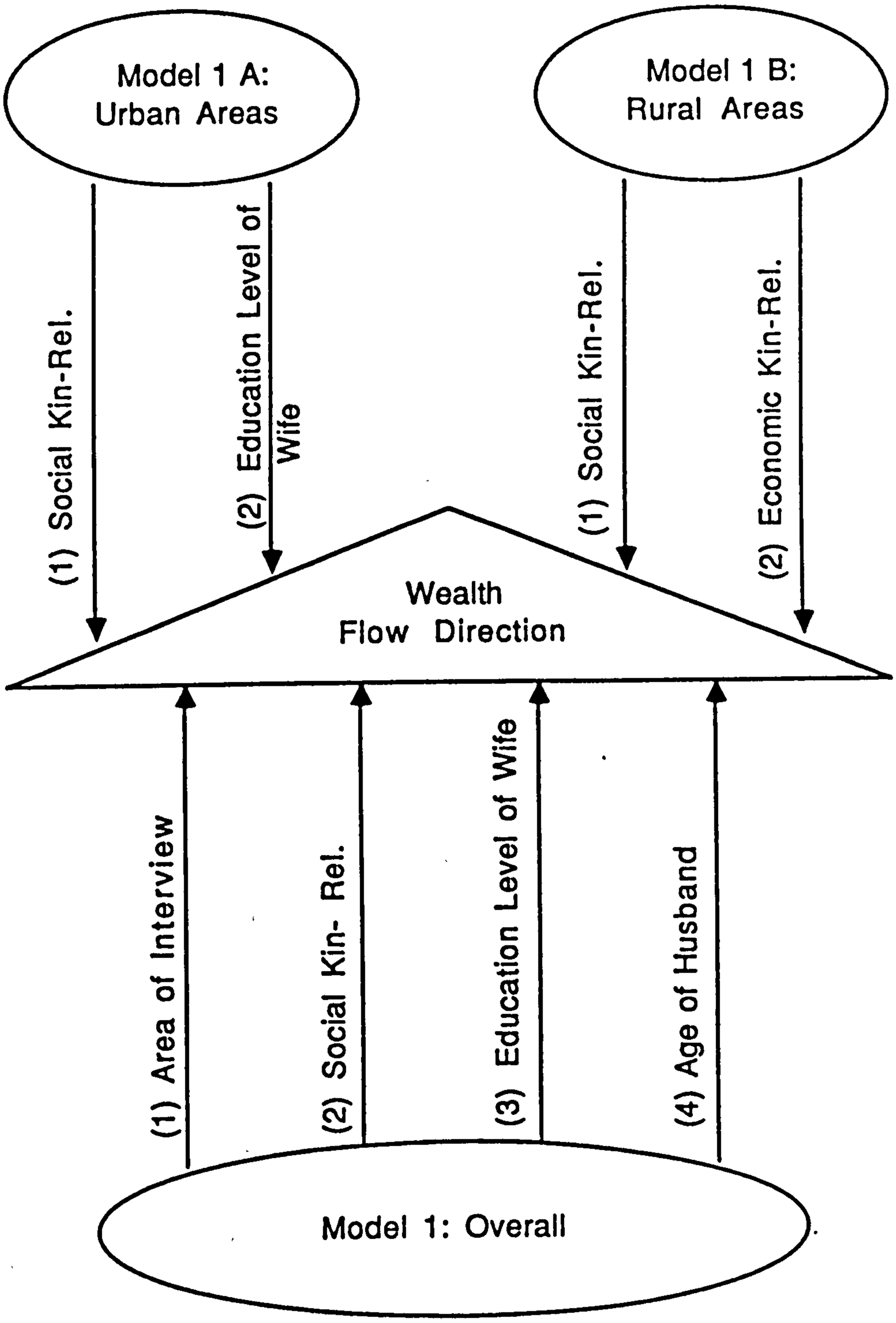


Fig. 7.1: Determinants of wealth flows direction.

Table 7.5: (Model 1A), Test statistics for stage one explanatory variable selection process, wealth flow direction (WEALTH), in urban areas, 1988.

	Approx F-to-enter	df	df	Approx F-to-remove	df	df
-First-order relationships:						
WEALTH x RELSOC	8.66	2	387			
WEALTH x RELECO	4.51	2	387			
WEALTH x R1EDUC	2.01	2	387			
WEALTH x R2EDUC	3.52	2	387			
WEALTH x INCSOU	2.40	1	388			
WEALTH x R1DOBYR	0.03	2	387			
WEALTH x CHILD	0.06	2	387			
-Second-order relationships:						
WEALTH x RELSOC x RELECO	2.11	2	385			
WEALTH x RELSOC x R1EDUC	2.62	2	385			
WEALTH x RELSOC x R2EDUC	5.25	2	385	7.16	2	385
WEALTH x RELSOC x INCSOU	2.66	1	386			
WEALTH x RELSOC x R1DOBYR	0.04	2	385			
WEALTH x RELSOC x CHILD	0.46	2	385			
-Third-order relationships:						
WEALTH x RELSOC x R2EDUC x RELECO	1.53	2	383			
WEALTH x RELSOC x R2EDUC x R1EDUC	0.27	2	383			
WEALTH x RELSOC x R2EDUC x INCSOU	1.92	1	384			
WEALTH x RELSOC x R2EDUC x R1DOBYR	0.70	2	383			
WEALTH x RELSOC x R2EDUC x CHILD	1.86	2	383	4.98	2	383

Table 7.6: (Model 1A) Stepwise logistic regression results, 1988.

Variables		Coefficient	S. Error
RELSOC	(1)	-0.388 -02	0.302
	(2)	1.265	0.320
R2EDUC	(1)	-0.151	0.332
	(2)	0.873	0.307
CONSTANT		-2.803	0.350

In rural areas (Model 1b) it was found that social and economic kin-relationships had the largest F-to-enter values, after adjusting for higher order relationships (Tables 7.8, 7.9). In other words, weak social and economic kin-relationships increase the probability that a household will have a downward direction of wealth flow. Table 7.10 offers a summary of the stepwise logistic regression for the two rural survey areas.

The above statistical results indicate that in the disaggregated models social and economic kin-relationships are the most important variables determining direction of wealth flow (Fig. 7.1). Caldwell (1982) emphasised wealth flow as a fundamental variable which could be used to explain both stable high fertility and the onset of fertility decline. It is not surprising, therefore, that social and economic kin-relationships are the most important variables in terms of wealth flow, because wealth flow itself reflects the family's internal power structure.

Indeed, wealth flow directions mirror internal relationships within the family.

The erosion of social and economic kin-relationships in traditional society in favour of more "modern" familial relationships forms part of the process responsible for the creation of the closed nuclear family, both socially and economically. This new social creation is accompanied by a change in the social and moral norms held by the family. The closed nuclear family is not characterised by the same level of differentiation and segregation in terms of age and sex found as is the traditional Islamic household. Therefore, a new form of familial production and morality appear along with the new power structure.

In both urban and rural areas social kin-relationships have most influence on wealth flow directions, although as has been shown through Tables 7.4, 7.7 and 7.10 the statistical definition of these linkages varies from one geographical context to another. These results might seem at first examination to contradict those of the previous chapter (Family Change chapter) which suggested that the strength of economic kin-relationships diminish first, followed by social kin-relations. In practice, however, changes in family structure and in wealth flow direction within the families may form a complex interdependent system of linkages rather than a simple unidirectional causal model.

Model 1A (Figure 7.1) indicates that the education

level of wives in urban areas also has a significant impact on wealth flow directions. This would suggest that the status and roles of women have been improving significantly and that the internal power structure of the family has been affected by its changing external context. But in rural areas it seems that women's status and roles do not play as important a role in determining wealth flow directions, in spite of the fact that some changes have been taking place.

Generally speaking, there is no doubt about the influence of these important explanatory variables: Area of interview, level of education, and social and economic kin-relationships. The data suggests that a significant cultural change has been taking place in Jordan and that this is manifested geographically by the different directions of wealth flow found by the author in rural and urban environments.

The highly significant differences between urban and rural areas probably reflects how much the economy and culture of these areas has been affected by external forces such as the penetration of international economic processes. Abu Lugod (1984) has attempted to explain variations in the forms of urbanisation in different Arab countries in terms of an analysis of these kinds of forces (i.e. the operation of different modes of production). It seems equally possible that differentiation between regions within a country, such as Jordan, relate in a similar way to geographical variations in the penetration of

international capital and production. Detailed investigation of this particular hypothesis lies beyond the scope of this thesis. What seems certain, however, is that traditional cultural values continue to be held by only a small percentage of families in urban areas, while in rural areas these traditional cultural values are still widespread amongst most families and play a strong role in influencing directions of wealth flow. The consequences of this are that major regional disparities have emerged in the attitude of parents towards the role of children within the family and consequently in the attitudes of parents towards desired fertility levels. It is this latter issue which is the focus of attention in the next chapter.

Table 7.7: (Model 1A) Summary of stepwise logistic regression, 1988.

Step No.	Variable entered removed	df	Log Likelihood	Improvement in X^2	P-VAL	Goodness of fit of X^2	P-VAL
0			-126.780			161.428	0.836
1	RELSOC	2	-119.103	15.355	0.000	146.072	0.962
2	R2EDUC	2	-113.777	10.651	0.005	135.421	0.990

Table 7.8: (Model 1B), Test statistics for stage one explanatory variable selection process, wealth flow direction (WEALTH), in rural areas, 1988.

	Approx F-to-enter	df	df	Approx F-to-remove	df	df
-First-order relationships:						
WEALTH x RELSOC	10.12	2	161			
WEALTH x RELECO	6.05	2	161			
WEALTH x R1EDUC	0.34	2	161			
WEALTH x R2EDUC	1.01	2	161			
WEALTH x INCSOU	1.09	1	162			
WEALTH x R1DOBYR	1.68	2	161			
WEALTH x CHILD	2.47	2	161			
-Second-order relationships:						
WEALTH x RELSOC x RELECO	2.69	2	159	56.64	2	159
WEALTH x RELSOC x R1EDUC	0.10	2	159			
WEALTH x RELSOC x R2EDUC	0.53	2	159			
WEALTH x RELSOC x INCSOU	0.93	1	160			
WEALTH x RELSOC x R1DOBYR	1.58	2	159			
WEALTH x RELSOC x CHILD	1.79	2	159			
-Third-order relationships:						
WEALTH x RELSOC x RELECO x R1EDUC	0.12	2	157			
WEALTH x RELSOC x RELECO x R2EDUC	0.68	2	157			
WEALTH x RELSOC x RELECO x INCSOU	0.62	1	158			
WEALTH x RELSOC x RELECO x R1DOBYR	1.10	2	157			
WEALTH x RELSOC x RELECO x CHILD	1.52	2	157	2.42	2	157

Table 7.9: (Model 1B) Stepwise logistic regression results, 1988.

Variables	Category*	Coefficient	S. Error
RELSOC	(1)	2.745	0.000
	(2)	4.085	0.463
RELECO	(1)	0.638	0.308
	(2)	0.112	0.301

*As defined in the methodology chapter.

Table 7.10: (Model 1B) Summary of stepwise logistic regression, 1988.

Step No.	Variable entered removed	df	Log Likelihood	Improvement in X^2	P-VAL	Goodness of fit of X^2	P-VAL
0			-100.011			104.518	0.001
1	RELSOC	2	-90.772	18.477	0.000	86.041	0.035
2	RELECO	2	-88.214	5.117	0.077	80.924	0.054

CHAPTER 8

ANALYSIS OF FERTILITY ATTITUDES

The purpose of this chapter is to investigate the fertility attitudes of the survey sample population through analyzing the following areas of interest:

1. Attitudes to family size to what might be the best number of children to have (BESTNC).

In the demographic literature there is a detailed discussion about how best to elicit information about desired number of children (Lee & Bulatao, 1983). In the context of this thesis it was felt most appropriate to follow Caldwell's approach (1982) as closely as possible and to ask respondents what they considered to be the best number of children to have.

2. The social and economic motivations for having high fertility (MOTIV).
3. Contraceptive use (CONUSE)

The literature review (Chapter 1) showed that a large number of explanatory variables might be investigated to explain variations in attitudes towards these aspects of fertility. In this study analysis was limited to three main groups of explanatory variables. The labels given to variables in subsequent tables are shown in brackets. The three main areas were:-

1. Kin-relationships expressed both in social (RELSOC) and economic terms (RELECO).

2. Wealth flow directions reflecting the structure of power in the family (WEALTH).
3. Socio-economic and demographic variables:
    a) area of interview (AREAINT)
    b) level of education of husband (R1EDUC)
    c) level of education of wife (R2EDUC)
    d) source of income (INCSOU)
    e) age of husband (R1DOBYR)
    f) actual number of children (CHILD)

In order to investigate the relationships between dependent and independent variables categorical data analysis (stepwise logistic regression) was used. An explanation of the statistical structure of the variables was undertaken in order to determine which of the explanatory variables were most significant.

The analysis which follows will assess the importance of the behaviour of the explanatory variables in terms of three main separate models. The results are helpful in investigating the theory of fertility decline, by shedding some light on some of Caldwell's propositions. These propositions and the implications of the statistical analysis presented below are discussed in greater detail in the next chapter.

8.1. MODEL 1: ATTITUDE TO THE BEST NUMBER OF CHILDREN TO HAVE

Table 8.1

Best number of children to have, by area of interview, 1988.

Best No. of Children (BESTNC)	Urban Middle class	Urban Lower class	Rural South	Rural North
	Percentages			
3 or less	48.3	21.3	10.4	9.2
4-5	34.8	35.0	18.8	27.6
6 or more	16.9	43.8	70.8	63.2
Total No.	178	240	96	76

Source: Author's Survey

Chi square test carried out on the data on which Table 8.1 is based indicated that in urban areas there were significant differences between urban middle class and lower class areas, while the differences between rural north and rural south were not significant.

Statistical analysis involved explaining the relationships between respondents attitude to what might be the best number of children and a range of potential explanatory variables is shown in Table 8.2. Table 8.2 also shows the relevant approximated values of F-to-enter, and approximated F-to-remove statistics.

Identifying the first-order-relationships involved the selection of a "reasonable" subset of potential

explanatory variables. It was found that on the basis of the largest F-to-enter value relative to number of degrees of freedom, the first variable entered is again "area of interview". On the same basis, and always adjusting for higher order relationships, second and third order relationships were found between attitude to what might be the best number of children and the area of interview, education level of wife, and economic kin-relationships. The remaining variables do not have a significant value of F to merit entering them in the regression equation.

Table 8.3 gives coefficients for estimating probabilities of households declaring that in their view the best number of children to have was 3. These coefficients show that husbands living in urban areas, with highly educated wives, and with weak economic kin-relationships are the most likely group to want to have fewer than 4 children. Inversely in the sample survey husbands in rural areas, who are married to poorly educated wives, and with strong economic kin-relationships were more likely to want to have more than 4 children.

In order to investigate the determinants of fertility attitudes in urban and rural environments in more detail, and because of the complex influences which the location of interview might have had on the analysis, it was decided to re-run the model in a spatially disaggregated form. When this change was introduced interesting modifications emerged in the relationships influencing attitude to desired family size. The more refined urban and rural

models are shown in Tables 8.5 to 8.10.

Table 8.5 shows the relevant approximated values of F-to-enter and approximated F-to-remove statistics in urban areas (Model 1A). On the basis of adjusting for higher order relationships first, second and third order relationships were found between attitude to what might be the best number of children and the education level of wives and economic kin-relationships respectively. It is most interesting that when location of interview was controlled in Model 1A, the results were similar to the results of Model 1, suggesting that the overall model has some similarities to the urban context of Model 1A although the strength of the relationships is different.

Table 8.6 shows coefficients which suggest that husbands in urban areas who marry highly educated wives, and have weak economic kin-relationships generally want to have fewer than 4 children. Comparison of Tables 8.4 and 8.7 indicates that the main effect of specifying the model more precisely has been to increase the statistical explanatory power of the education variable, but by contrast the economic relations with kin (RELECO) were of no greater importance than in the general model. This could be taken to imply a high degree of covariance between urban environments and levels of female education, a hypothesis which seems highly logical.

Table 8.8 shows the relevant approximated values of F-to-enter and approximated F-to-remove statistics for

rural areas (Model 1B).

Relationships were found between attitude to what might be the best number of children, the education level of the husband, and social kin-relationships. Regression coefficients suggested that husbands with a high level of education, and weak social kin-relationships were most likely to want fewer than 4 children (Table 8.9). Contrasting Table 8.10 with Tables 8.4 and 8.7 is useful. Not only are relationships in rural areas less well defined by the model, but the variables involved are different, with attitudes to the best number of children being determined as has been shown by very different factors.

Table 8.2: (Model 1) Test statistics for stage one explanatory variable selection process - Best number of children (BESTNC), 1988.

F-to-enter	F-to	Approx. df	df	F-to-remove	Approx. df	df
-First-order relationships:						
BESTNC x RELSOC	3.05	2	551			
BESTNC x RELECO	13.07	2	551			
BESTNC x AREAINT	35.21	2	551			
BESTNC x WEALTH	21.40	1	552			
BESTNC x R1EDUC	20.43					
BESTNC x R2EDUC	29.92	2	551			
BESTNC x INCSOU	0.19	1	552			
BESTNC x R1DOBYR	3.70	2	551			
BESTNC x CHILD	7.57	2	551			
-Second-order relationships:						
BESTNC x AREAINT x RELSOC	0.85	2	549			
BESTNC x AREAINT x RELECO	4.50	2	549			
BESTNC x AREAINT x WEALTH	3.03	1	550			
BESTNC x AREAINT x R1EDUC	3.59	2	549			
BESTNC x AREAINT x R2EDUC	7.63	2	549	27.91	2	549
BESTNC x AREAINT x INCSOU	1.27	1	550			
BESTNC x AREAINT x R1DOBYR	2.30	2	549			
BESTNC x AREAINT x CHILD	3.05	2	549			
-Third-order relationships:						
BESTNC x AREAINT x R2EDUC x RELSOC	1.32	2	547			
BESTNC x AREAINT x R2EDUC x RELECO	3.85	2	547	7.22	2	547
BESTNC x AREAINT x R2EDUC x WEALTH	1.48	1	548			

(CONTD)
Table 8.2: (Model 1) Test statistics for stage one explanatory variable selection process - Best number of children (BESTNC), 1988.

F-to-enter	F-to	Approx. df	df	F-to-remove	Approx. df	df
BESTNC x AREAINT x R2EDUC x R1EDUC	0.06	2	547			
BESTNC x AREAINT x R2EDUC x INCSOU	0.66	1	548			
BESTNC x AREAINT x R2EDUC x R1DOBYR	0.19	2	547			
BESTNC x AREAINT x R2EDUC x CHILD	1.41	2	547			
-Fourth-order relationships:						
BESTNC x AREAINT x R2EDUC x RELECO x RELSOC	1.29	2	545			
BESTNC x AREAINT x R2EDUC x RELECO x WEALTH	0.82	1	546			
BESTNC x AREAINT x R2EDUC x RELECO x R1EDUC	0.04	2	545			
BESTNC x AREAINT x R2EDUC x RELECO x INCSOU	0.83	1	546			
BESTNC x AREAINT x R2EDUC x RELECO x R1DOBYR	0.32	2	545			
BESTNC x AREAINT x R2EDUC x RELECO x CHILD	1.47	2	545	3.71	2	545

Table 8.3: (Model 1) Stepwise logistic regression results, 1988.

Variables	Category*	Coefficient	S. Error
RELECO	(1)	0.674	0.167
	(2)	0.395	0.252
AREAINT	(1)	0.197	0.160
	(2)	0.532	0.216
R2EDUC	(1)	-0.119	0.157
	(2)	0.612	0.169
CONSTANT		1.011	0.157

* As defined in the methodology chapter.

Table 8.4: (Model 1) Summary of stepwise logistic regression, 1988.

Step No.	Variable entered removed	df	Log Likelihood	Improvement in X^2	P-VAL	Goodness of fit of X^2	P-VAL
0			-317.412			409.352	0.000
1	AREAINT	2	-286.235	62.354	0.000	346.985	0.111
2	R2EDUC	2	-278.865	14.741	0.001	332.256	0.229
3	RELECO	2	-275.010	7.708	0.021	324.539	0.301

Table 8.5: (Model 1A) Test statistics for stage one explanatory variable selection process - Best number of children (BESTNC) in urban areas, 1988.

	Approx. F-to-enter	df	df	Approx. F-to remove	df	df
-First-order relationships:						
BESTNC x RELSOC	0.33	2	387			
BESTNC x RELECO	3.67	2	387			
BESTNC x WEALTH	2.87	1	388			
BESTNC x R1EDUC	7.96	2	387			
BESTNC x R2EDUC	16.07	2	387			
BESTNC x INCSOU	0.10	1	388			
BESTNC x R1DOBYR	1.86	2	387			
BESTNC x CHILD	6.29	2	387			
-Second-order relationships:						
BESTNC x R2EDUC x RELSOC	0.62	2	385			
BESTNC x R2EDUC x RELECO	3.50	2	385	13.91	2	385
BESTNC x R2EDUC x WEALTH	1.13	1	386			
BESTNC x R2EDUC x R1EDUC	0.14	2	385			
BESTNC x R2EDUC x INCSOU	0.00	1	386			
BESTNC x R2EDUC x R1DOBYR	0.34	2	385			
BESTNC x R2EDUC x CHILD	2.27	2	385			
-Third-order relationships:						
BESTNC x R2EDUC x RELECO x RELSOC	0.55	2	383			
BESTNC x R2EDUC x RELECO x WEALTH	0.76	1	384			
BESTNC x R2EDUC x RELECO x R1EDUC	0.18	2	383			
BESTNC x R2EDUC x RELECO x INCSOU	0.01	1	384			
BESTNC x R2EDUC x RELECO x R1DOBYR	0.27	2	383			

(CONTD)
Table 8.5: (Model 1A) Test statistics for stage one explanatory variable selection process - Best number of children (BESTNC) in urban areas, 1988.

	Approx. F-to-enter	df	df	Approx. F-to remove	df	df
BESTNC x R2EDUC x RELECO x CHILD	2.25	2	383	3.40	2	383

Table 8.6: (Model 1A), Stepwise logistic regression results for urban households, 1988.

Variables	Category*	Coefficient	S. Error
RELECO	(1)	0.857	0.215
	(2)	0.382	0.349
R2EDUC	(1)	-0.107	0.160
	(2)	0.878	0.167
CONSTANT		0.703	0.199

*As defined in the methodology chapter.

Table 8.7: (Model 1A) Summary of stepwise logistic regression for urban households, 1988.

Step No.	Variable entered removed	df	Log Likelihood	Improvement in X^2	P-VAL	Goodness of fit of X^2	P-VAL
0			-246.107			252.300	0.009
1	R2EDUC	2	-231.141	29.932	0.000	222.368	0.133
2	RELECO	2	-227.622	7.038	0.030	215.328	0.189

Table 8.8: (Model 1B) Test statistics for stage one explanatory variable selection process - Best number of children (BESTNC) in rural areas, 1988.

	Approx. F-to-enter	df	df	Approx. F-to remove	df	df
-First-order relationships:						
BESTNC x RELSOC	3.78	2	161			
BESTNC x RELECO	0.63	2	161			
BESTNC x WEALTH	0.26	1	162			
BESTNC x R1EDUC	4.10	2	161			
BESTNC x R2EDUC	0.96	2	161			
BESTNC x INCSOU	1.04	1	162			
BESTNC x R1DOBYR	1.39	2	161			
BESTNC x CHILD	0.50	2	161			
-Second-order relationships:						
BESTNC x R1EDUC x RELSOC	4.48	2	159	3.49	2	159
BESTNC x R1EDUC x RELECO	0.28	2	159			
BESTNC x R1EDUC x WEALTH	0.14	1	160			
BESTNC x R1EDUC x R2EDUC	0.34	2	159			
BESTNC x R1EDUC x INCSOU	0.63	1	160			
BESTNC x R1EDUC x R1DOBYR	0.09	2	159			
BESTNC x R1EDUC x CHILD	0.40	2	159			
-Third-order relationships:						
BESTNC x R1EDUC x RELSOC x RELECO	1.92	2	157	3.0	2	157
BESTNC x R1EDUC x RELSOC x WEALTH	0.03	1	158			
BESTNC x R1EDUC x RELSOC x R2EDUC	0.27	2	157			
BESTNC x R1EDUC x RELSOC x INCSOU	0.37	1	158			
BESTNC x R1EDUC x RELSOC x R1DOBYR	0.22	2	157			

(Contd.)
Table 8.8: (Model 1B) Test statistics for stage one explanatory variable selection process - Best number of children (BESTNC) in rural areas, 1988.

	Approx. F-to-enter	df	df	Approx. F-to remove	df	df
BESTNC x R1EDUC x RELSOC x CHILD	0.33	2	157			

Table 8.9: (Model 1B), Stepwise logistic regression results for rural households, 1988.

Variables	Category*	Coefficient	S. Error
RELSOC	(1)	1.230	0.554
	(2)	0.595	0.458
R1EDUC	(1)	0.711	0.440
	(2)	0.935	0.415
CONSTANT		1.168	0.454

*As defined in the methodology chapter.

Table 8.10: (Model 1B) Summary of stepwise logistic regression for rural households, 1988.

Step No.	Variable entered removed	df	Log Likelihood	Improvement in X^2	P-VAL	Goodness of fit of X^2	P-VAL
0			-54.619			68.960	0.827
1	R1EDUC	2	-51.158	6.921	0.031	62.039	0.920
2	RELSOC	2	-48.318	5.681	0.058	56.358	0.963

8.2. MODEL 2 MOTIVATION FOR HIGH FERTILITY

Five different social and economic motivations for having high fertility were investigated: family's name, prestige, security in old age, economic benefit from children, and happiness.

On the basis of people's responses to the questionnaire, their attitudes to fertility were classified as being "modern", "transitional" or "traditional". The precise means by which this was done has already been outlined in the methodology chapter. To recap briefly, however, respondents who said having a large number of children was important in sustaining factors such as the family's name were interpreted by the author as being "traditional", while inversely those who disagreed with such a view were seen as being "modern". The methodology chapter shows that no less than five variables were taken into consideration in defining the overall classification of fertility attitudes.

Chi square tests carried out on the data on which Table 8.11 is based indicated that in urban areas there were no significant differences between urban middle class and urban lower class areas in attitudes to high fertility. Also, these differences were not significant between the rural north and rural south. Once again the chief contrast was between the urban and rural environments.

Table 8.11

Social and economic motivations affecting levels of fertility classified by type (modern, transitional and traditional), and by area of interview, 1988.

Motivations affecting fertility (MOTIV)	Urban Middle class	Urban Lower class	Rural South	Rural North
	Percentages			
Modern	57.3	47.1	13.5	10.5
Transitional	27.5	29.6	22.9	27.6
Traditional	15.2	23.3	63.5	61.8
Total number	178	240	96	76

Source: Author's survey

The analysis which follows investigates the relationships between the motivations affecting fertility and a range of potential explanatory variables. Table 8.12 shows the relevant approximated values of F-to-enter, and approximated F-to-remove statistics for the explanatory variables.

Identifying the first-order relationships involved the selection of a "reasonable" subset of potential explanatory variables. It was found that on the basis of the largest F-to-enter value relative to the degrees of freedom, the first variable to enter was wealth flow. On the same basis, and always adjusting for higher order relationships, second to sixth order relationships were found between motivations for high fertility and level of

education of husband, economic kin-relationships, social kin-relationships, and the age of husband. The remaining variables do not have a significant value of F.

It is most interesting that the explanatory variables were entered in this order, suggesting that wealth flow rather than location was the prime explanatory variable. By contrast with the previous logistic regression equations discussed in this thesis, location does not have a significant role in this model. In the last chapter (Chapter 7) location was the single most significant influence on wealth flow. It seems, however, that wealth flow has an intermediate role in determining attitudes to fertility as specified in Model 2 and outlined in Table 8.12.

Table 8.13 gives coefficients for estimating the probabilities of households being classified as "modern" in terms of their fertility attitudes. The regression coefficients show that a downward wealth flow direction, high education level amongst husbands, weak economic and social kin-relationships and young married couples all reduce the probability of people wanting to sustain high fertility levels. Inversely, in the sample survey an upward wealth flow direction, a low education level amongst husbands, strong economic and social kin-relationships and older married couples, serve to increase the probabilities that a household will be motivated to have a high fertility.

Model 2 was modified in order to investigate the

determinants of motivations for having high fertility in urban and rural environments in more detail, and because of the complex influences which the location of interview might have had on the analysis. These more refined models studying urban and rural areas separately are shown in Tables 8.15 to 8.20.

Table 8.15 shows the relevant approximated values of F-to-enter and approximated F-to-remove statistics in urban areas (Model 2A). On the basis of adjusting for higher order relationships, first to fifth order relationships were found between motivations for having high fertility and wealth flow directions, education level of husbands, social kin-relationships and education level amongst wives.

Table 8.16 shows coefficients which suggest that a downward wealth flow direction, a high education level amongst husbands, weak social kin-relationships and a high education level amongst wives reduces the probabilities of people desiring high fertility levels. Inversely, in the sample survey, households with an upward wealth flow direction, poorly educated husbands, strong social kin-relationships, and poorly educated wives, were more likely to desire high fertility levels.

Table 8.18 shows the relevant approximated values of F-to-enter and approximated F-to-remove statistics in rural areas (Model 2B). On the basis of adjusting for higher order relationships first, second and third order relationships were found between motivations for having

high fertility and the education level of husband, and economic kin-relationships respectively.

The coefficients of Table 8.19 suggest that high education levels amongst husbands, and weak economic kin-relationships reduce the likelihood of households seeking high fertility levels. Inversely, poorly educated husbands and strong economic kin-relationship will increase probability that households will be motivated to have high fertility. The implications of these patterns are discussed in the next chapter.

Table 8.12: (Model 2), Test statistics for stage one explanatory variable selection process, motivations for having a high fertility (MOTIV), 1988.

	Approx F-to-enter	df	df	Approx F-to-remove	df	df
-First-order relationships:						
MOTIV x RELSOC	37.67	2	551			
MOTIV x RELECO	54.49	2	551			
MOTIV x AREAINT	54.11	2	551			
MOTIV x WEALTH	86.05	1	552			
MOTIV x R1EDUC	40.43	2	551			
MOTIV x R2EDUC	20.70	2	551			
MOTIV x INCSOU	1.65	1	552			
MOTIV x R1DOBYR	7.91	2	551			
MOTIV x CHILD	1.95	2	551			
-Second-order relationships:						
MOTIV x WEALTH x RELSOC	13.00	2	550			
MOTIV x WEALTH x RELECO	23.81	2	550			
MOTIV x WEALTH x AREAINT	15.87	2	550			
MOTIV x WEALTH x R1EDUC	25.26	2	550	66.53	1	551
MOTIV x WEALTH x R2EDUC	9.32	2	550			
MOTIV x WEALTH x INCSOU	0.24	1	551			
MOTIV x WEALTH x R1DOBYR	9.98	2	550			
MOTIV x WEALTH x CHILD	0.85	2	550			
-Third-order relationships:						
MOTIV x WEALTH x R1EDUC x RELSOC	10.12	2	548			
MOTIV x WEALTH x R1EDUC x RELECO	15.81	2	548	19.71	2	548
MOTIV x WEALTH x R1EDUC x AREAINT	6.84	2	548			

(CONTD)
Table 8.12: (Model 2), Test statistics for stage one explanatory variable selection process, motivations for having a high fertility (MOTIV), 1988.

	Approx F-to-enter	df	df	Approx F-to-remove	df	df
MOTIV x WEALTH x R1EDUC x R2EDUC	0.67	2	548			
MOTIV x WEALTH x R1EDUC x INCSOU	0.56	1	549			
MOTIV x WEALTH x R1EDUC x R1DOBYR	1.88	2	548			
MOTIV x WEALTH x R1EDUC x CHILD	0.05	2	548			
-Fourth-order relationships:						
MOTIV x WEALTH x R1EDUC x RELECO x RELSOC	2.63	2	546	13.38	2	547
MOTIV x WEALTH x R1EDUC x RELECO x AREAINT	1.56	2	546			
MOTIV x WEALTH x R1EDUC x RELECO x R2EDUC	0.44	2	546			
MOTIV x WEALTH x R1EDUC x RELECO x INCSOU	0.15	1	547			
MOTIV x WEALTH x R1EDUC X RELECO x R1DOBYR	2.45	2	546			
MOTIV x WEALTH x R1EDUC x RELECO x CHILD	0.05	2	546			
-Fifth-order relationships:						
MOTIV x WEALTH x R1EDUC x RELECO x RELSOC x AREAINT	1.04	2	544			
MOTIV x WEALTH x R1EDUC x RELECO x RELSOC x R2EDUC	0.47	2	544			
MOTIV x WEALTH x R1EDUC x RELECO x RELSOC x INCSOU	0.05	1	545			
MOTIV x WEALTH x R1EDUC x RELECO x RELSOC x R1DOBYR	2.91	2	544	2.64	2	544
MOTIV x WEALTH x R1EDUC x RELECO x RELSOC x CHILD	0.02	2	544			

(CONTD)
Table 8.12: (Model 2), Test statistics for stage one explanatory variable selection process, motivations for having a high fertility (MOTIV), 1988.

	Approx F-to-enter	df	df	Approx F-to-remove	df	df
-Sixth-order relationships:						
MOTIV x WEALTH x R1EDUC x RELECO x RELSOC x R1DOBYR x AREAINT	0.99	2	542	2.62	2	542
MOTIV x WEALTH x R1EDUC x RELECO x RELSOC x R1DOBYR x R2EDUC	0.41	2	542			
MOTIV x WEALTH x R1EDUC x RELECO x RELSOC x R1DOBYR x INCSOU	0.13	1	543			
MOTIV x WEALTH x R1EDUC x RELECO x RELSOC x R1DOBYR x CHILD	0.23	2	542			

Table 8.13: (Model 2), Stepwise logistic regression results, 1988.

Variables	Category*	Coefficient	S. Error
RELSOC	(1)	-0.753 -01	0.214
	(2)	-0.574	0.237
RELECO	(1)	0.578 -01	0.168
	(2)	0.733	0.204
WEALTH		0.453	0.138
R1EDUC	(1)	-0.465	0.225
	(2)	0.831	0.186
R1DOBYR	(1)	0.113	0.202
	(2)	0.350	0.176
CONSTANT		-1.647	0.217

* As defined in the methodology chapter.

Table 8.14: (Model 2) Summary of stepwise logistic regression, 1988.

Step No.	Variable entered removed	df	Log Likelihood	Improvement in X^2	P-VAL	Goodness of fit of X^2	P-VAL
0			-299.449			429.239	0.000
1	WEALTH	1	-264.937	69.023	0.000	360.212	0.047
2	R1EDUC	2	-241.553	46.768	0.000	313.442	0.514
3	RELECO	2	-225.966	31.175	0.000	282.270	0.893
4	RELSOC	2	-223.137	5.657	0.059	276.614	0.920
5	R1DOBYR	2	-219.976	6.322	0.042	270.292	0.945

Table 8.15: (Model 2A), Test statistics for stage one explanatory variable selection process, motivations for having a high fertility (MOTIV), in urban areas, 1988.

	Approx F-to-enter	df	df	Approx F-to-remove	df	df
-First-order relationships:						
MOTIV x RELSOC	9.94	2	387			
MOTIV x RELECO	5.45	2	387			
MOTIV x WEALTH	18.77	1	388			
MOTIV x R1EDUC	8.17	2	387			
MOTIV x R2EDUC	7.33	2	387			
MOTIV x INCSOU	0.12	1	388			
MOTIV x R1DOBYR	3.06	2	387			
MOTIV x CHILD	0.41	2	387			
-Second-order relationships:						
MOTIV x WEALTH x RELSOC	6.66	2	386			
MOTIV x WEALTH x RELECO	3.71	2	386			
MOTIV x WEALTH x R1EDUC	7.26	2	386	15.94	1	387
MOTIV x WEALTH x R2EDUC	5.72	2	386			
MOTIV x WEALTH x INCSOU	0.00	1	387			
MOTIV x WEALTH x R1DOBYR	3.19	2	386			
MOTIV x WEALTH x CHILD	0.70	2	386			
-Third-order relationships:						
MOTIV x WEALTH x R1EDUC x RELSOC	7.87	2	384	6.78	2	384
MOTIV x WEALTH x R1EDUC x RELECO	3.32	2	384			
MOTIV x WEALTH x R1EDUC x R2EDUC	1.91	2	384			
MOTIV x WEALTH x R1EDUC x INCSOU	0.11	1	385			
MOTIV x WEALTH x R1EDUC x R1DOBYR	1.21	2	384			

(CONTD)
Table 8.15: (Model 2A), Test statistics for stage one explanatory variable selection process, motivations for having a high fertility (MOTIV) in urban areas, 1988.

	Approx F-to-enter	df	df	Approx F-to-remove	df	df
MOTIV x WEALTH x R1EDUC x CHILD	0.12	2	384			
-Fourth-order relationships:						
MOTIV x WEALTH x R1EDUC x RELSOC x RELECO	1.11	2	382			
MOTIV x WEALTH x R1EDUC x RELSOC x R2EDUC	2.92	2	382	7.12	2	382
MOTIV x WEALTH x R1EDUC x RELSOC x INCSOU	0.13	1	383			
MOTIV x WEALTH x R1EDUC x RELSOC x R1DOBYR	1.79	2	382			
MOTIV x WEALTH x R1EDUC X RELSOC x CHILD	0.23	2	382			
-Fifth-order relationships:						
MOTIV x WEALTH x R1EDUC x RELSOC x R2EDUC x RELECO	0.89	2	380			
MOTIV x WEALTH x R1EDUC x RELSOC x R2EDUC x INCSOU	0.03	2	381			
MOTIV x WEALTH x R1EDUC x RELSOC x R2EDUC x R1DOBYR	0.94	2	380			
MOTIV x WEALTH x R1EDUC x RELSOC x R2EDUC x CHILD	0.20	2	380			

Table 8.16: (Model 2A), Stepwise logistic regression results for urban households, 1988.

Variables	Category*	Coefficient	S. Error
RELSOC	(1)	-0.841 -01	0.198
	(2)	0.938	0.234
WEALTH		0.483	0.191
R1EDUC	(1)	-0.338	0.210
	(2)	0.421	0.222
R2EDUC	(1)	0.156	0.263
	(2)	0.725	0.310
CONSTANT		-1.513	0.294

*As defined in methodology chapter.

Table 8. 17: (Model 2A) Summary of stepwise logistic regression for urban households, 1988.

Step No.	Variable entered removed	df	Log Likelihood	Improvement of X^2	P-VAL	Goodness of fit of X^2	P-VAL
0			-196.534			250.353	0.012
1	WEALTH	1	-189.023	15.022	0.000	235.332	0.049
2	R1EDUC	2	-182.220	13.605	0.001	221.726	0.129
3	RELSOC	2	-174.877	14.686	0.001	207.040	0.298
4	R2EDUC	2	-171.790	6.175	0.046	200.865	0.372

Table 8.18: (Model 2B), Test statistics for stage one explanatory variable selection process, motivations for having a high fertility (MOTIV), in rural areas, 1988.

	Approx F-to-enter	df	df	Approx F-to-remove	df	df
-First-order relationships:						
MOTIV x RELSOC	2.07	2	161			
MOTIV x RELECO	8.67	2	161			
MOTIV x WEALTH	3.17	1	162			
MOTIV x R1EDUC	21.73	2	161			
MOTIV x R2EDUC	6.37	2	161			
MOTIV x INCSOU	2.69	1	162			
MOTIV x R1DOBYR	6.80	2	161			
MOTIV x CHILD	0.44	2	161			
-Second-order relationships:						
MOTIV x R1EDUC x RELSOC	1.43	2	159			
MOTIV x R1EDUC x RELECO	6.87	2	159	9.58	2	159
MOTIV x R1EDUC x WEALTH	2.82	1	160			
MOTIV x R1EDUC x R2EDUC	0.10	2	159			
MOTIV x R1EDUC x INCSOU	1.08	1	160			
MOTIV x R1EDUC x R1DOBYR	0.67	2	159			
MOTIV x R1EDUC x CHILD	0.09	2	159			
-Third-order relationships:						
MOTIV x R1EDUC x RELECO x RELSOC	0.70	2	157			
MOTIV x R1EDUC x RELECO x WEALTH	1.29	1	158	5.55	2	157
MOTIV x R1EDUC x RELECO x R2EDUC	0.14	2	157			
MOTIV x R1EDUC x RELECO x INCSOU	1.30	1	158			
MOTIV x R1EDUC x RELECO x R1DOBYR	0.28	2	157			

(CONTD.)
Table 8.18: (Model 2B), Test statistics for stage one explanatory variable selection process, motivations for having a high fertility (MOTIV), in rural areas, 1988.

	Approx F-to-enter	df	df	Approx F-to-remove	df	df
MOTIV x R1EDUC x RELECO x CHILD	0.21	2	157			

Table 8.19: (Model 2B) Stepwise logistic regression results for rural households, 1988.

Variables	Category*	Coefficient	S. Error
RELECO	(1)	-0.168	0.279
	(2)	0.926	0.277
R1EDUC	(1)	2.179	0.000
	(2)	4.592	0.583
CONSTANT		-4.370	0.572

*As defined in the methodology chapter.

Table 8.20: (Model 2B) Summary of stepwise logistic regression for rural households, 1988.

Step No.	Variable entered removed	df	Log Likelihood	Improvement in X^2	P-VAL	Goodness of fit of X^2	P-VAL
0			-113.663			135.697	0.000
1	R1EDUC	2	-93.229	40.869	0.000	94.828	0.108
2	RELECO	2	-87.057	12.343	0.002	82.485	0.343

8.3. MODEL 3: CONTRACEPTIVE USE

Chi Square tests carried out on the data on which Table 8.21 is based reveals that in urban areas there was a much higher use of contraceptives in urban middle class areas than in urban lower class ones. Differences in usage were insignificant between the rural north and rural south. The greater usage of contraceptives in urban relative to rural areas is self evident from Table 8.21.

Table 8.21: Current use of contraception, by area of interview, 1988.

	Urban middle class	Urban lower class	Rural South	Rural North
Contraception use (CONUSE)				
No use	10.7	59.6	85.8	88.2
Currently use	89.3	40.4	4.2	11.8
Total number	178	240	96	76

Source: Author's survey.

The analysis which follows is an investigation of the statistical relationships between contraceptive use and a range of potential explanatory variables using once against logistic regression equations. Table 8.22 shows the relevant approximated values of F-to-enter, and approximated values of F-to-remove.

Identifying the first-order relationships involved the selection of a "reasonable" subset of potential

explanatory variables. It was found that on the basis of the largest F-to-enter value relative to the degrees of freedom, the first variable to enter is area of interview. On the same basis, and always adjusting for higher order relationships, second to sixth order relationships were found between contraceptive use and the age of husbands, education level of husbands, actual number of children, and social kin-relationships. The remaining variables did not have a significant value of F.

Table 8.23 gives coefficients for estimating the probabilities of wives currently using contraceptives. The regression coefficients show that husbands living in urban areas, young married couples, highly educated men, and households with weak social kin-relationships, have a higher probability of practising contraception. Inversely, husbands living in rural areas, older married couples, poorly educated men, and households with strong social kin-relationships were less likely to use contraceptives. Table 8.24 indicates that although all these variables were statistically significant, the area of interview category mopped up an inordinant amount of variance, making it difficult to evaluate the relative significance of the other explanatory variables.

Table 8.25 shows the relevant approximated values of F-to-enter and approximated F-to-remove statistics for urban areas alone (Model 3A). On the basis of adjusting for higher order variables, relationships were found between contraceptive use and the education level of wives,

the actual number of children, in a household, the education level of husbands, the source of income and the strength of social kin-relationships.

The coefficients in Table 8.26 suggest that highly educated wives, large numbers of children, highly educated husbands, employment in the private business sector, and weak social kin-relationships increase the probabilities of practising contraception. By contrast with the general model, the urban model clearly allocates most of the explanation of contraceptive use to the education level of wives, a finding conformable with the concensus of most comparable survey research.

Table 8.28 presents the relevant approximated values of F-to-enter, and approximated values of F-to-remove, in rural areas (Model 3B). On the basis of adjusting for higher order variables, relationships were found between contraceptive use and education level of wives, and economic kin-relationships respectively.

Table 8.29 demonstrates that highly educated wives and weak economic kin-relationships in rural areas will increase the probability of using contraceptives.

Table 8.22: (Model 3), Test statistics for stage one explanatory variable selection process, contraceptive use (CONUSE), 1988.

	Approx F-to-enter	df	df	Approx F-to-remove	df	df
-First-order relationships:						
CONUSE x RELSOC	35.21	2	418			
CONUSE x RELECO	35.19	2	418			
CONUSE x AREAINT	151.48	2	418			
CONUSE x WEALTH	75.72	1	419			
CONUSE x BESTNC	39.83	1	419			
CONUSE x R1EDUC	62.90	2	418			
CONUSE x R2EDUC	65.23	2	418			
CONUSE x INCSOU	10.95	1	419			
CONUSE x R1DOBYR	13.08	2	418			
CONUSE x CHILD	7.71	2	418			
-Second-order relationships:						
CONUSE x AREAINT x RELSOC	2.92	2	416			
CONUSE x AREAINT x RELECO	3.16	2	416			
CONUSE x AREAINT x WEALTH	0.77	1	417			
CONUSE x AREAINT x BESTNC	3.75	1	417			
CONUSE x AREAINT x R1EDUC	7.25	2	416			
CONUSE x AREAINT x R2EDUC	6.05	2	416			
CONUSE x AREAINT x INCSOU	1.10	1	417			
CONUSE x AREAINT x R1DOBYR	9.32	2	416	53.44	2	416
CONUSE x AREAINT x CHILD	0.27	2	416			
-Third-order relationships:						
CONUSE x AREAINT x R1DOBYR x RELSOC	3.03	2	414			
CONUSE x AREAINT x R1DOBYR x RELECO	2.79	2	414			

(CONTD)
Table 8.22: (Model 3), Test statistics for stage one explanatory variable selection process, contraceptive use (CONUSE), 1988.

	Approx F-to-enter	df	df	Approx F-to-remove	df	df
CONUSE x AREAINT x R1DOBYR x WEALTH	0.99	1	415			
CONUSE x AREAINT x R1DOBYR x BESTNC	3.99	1	415			
CONUSE x AREAINT x R1DOBYR x R1EDUC	3.64	2	414	7.90	2	414
CONUSE x AREAINT x R1DOBYR x R2EDUC	2.24	2	414			
CONUSE x AREAINT x R1DOBYR x INCSOU	1.63	1	415			
CONUSE x AREAINT x R1DOBYR x CHILD	0.12	2	414			
-Fourth-order relationships:						
CONUSE x AREAINT x R1DOBYR x R1EDUC x RELSOC	2.69	2	412			
CONUSE x AREAINT x R1DOBYR x R1EDUC x RELECO	2.49	2	412			
CONUSE x AREAINT x R1DOBYR x R1EDUC x WEALTH	0.96	1	413			
CONUSE x AREAINT x R1DOBYR x R1EDUC x BESTNC	3.86	1	413	3.75	2	412
CONUSE x AREAINT x R1DOBYR X R1EDUC x R2EDUC	1.16	2	412			
CONUSE x AREAINT x R1DOBYR x R1EDUC x INCSOU	2.73	1	413			
CONUSE x AREAINT x R1DOBYR x R1EDUC x CHILD	0.24	2	412			

(CONTD)
Table 8.22: (Model 3), Test statistics for stage one explanatory variable selection process, contraceptive use (CONUSE), 1988.

	Approx F-to-enter	df	df	Approx F-to-remove	df	df
-Fifth-order relationships:						
CONUSE x AREAINT x R1DOBYR x R1EDUC x BESTNC x RELSOC	2.91	2	411	3.66	1	412
CONUSE x AREAINT x R1DOBYR x R1EDUC x BESTNC x RELECO	2.06	2	411			
CONUSE x AREAINT x R1DOBYR x R1EDUC x BESTNC x WEALTH	0.61	1	412			
CONUSE x AREAINT x R1DOBYR x R1EDUC x BESTNC x R2EDUC	0.79	2	411			
CONUSE x AREAINT x R1DOBYR x R1EDUC x BESTNC x INCSOU	2.95	1	412			
CONUSE x AREAINT x R1DOBYR x R1EDUC x BESTNC x CHILD	0.40	2	411			
-Sixth-order relationships:						
CONUSE x AREAINT x R1DOBYR x R1EDUC x BESTNC x RELSOC x RELECO	1.11	2	409			
CONUSE x AREAINT x R1DOBYR x R1EDUC x BESTNC x RELSOC x WEALTH	0.00	1	410			
CONUSE x AREAINT x R1DOBYR x R1EDUC x BESTNC x RELSOC x R2EDUC	0.91	2	409			
CONUSE x AREAINT x R1DOBYR x R1EDUC x BESTNC x RELSOC x INCSOU	2.65	1	410	2.57	2	409
CONUSE x AREAINT x R1DOBYR x R1EDUC x BESTNC x RELSOC x CHILD	0.20	2	409			

Table 8.23: (Model 3), Stepwise logistic regression results, 1988.

Variables	Category*	Coefficient	S. Error
RELSOC	(1)	-0.318	0.194
	(2)	0.492	0.235
AREAINT	(1)	0.219	0.207
	(2)	1.973	0.279
BESTNC		0.351	0.166
R1EDUC	(1)	-0.283	0.197
	(2)	0.480	0.195
R1DOBYR	(1)	-0.310	0.199
	(2)	0.712	0.196
CONSTANT		-0.567	0.212

*As defined in the methodology chapter.

Table 8.24: (Model 3) Summary of stepwise logistic regression, 1988.

Step No.	Variable entered removed	df	Log Likelihood	Improvement in X^2	P-VAL	Goodness of fit of X^2	P-VAL
0			-290.177			506.954	0.000
1	AREAINT	2	-186.160	208.035	0.000	298.922	0.474
2	R1DOBYR	2	-177.065	18.190	0.000	280.729	0.730
3	R1EDUC	2	-173.250	7.628	0.002	273.101	0.804
4	BESTNC	1	-171.287	3.926	0.048	269.175	0.838
5	RELSOC	2	-168.334	5.906	0.052	263.270	0.877

Table 8.25: (Model 3A), Test statistics for stage one explanatory variable selection process, contraceptive use (CONUSE), in urban areas, 1988.

	Approx F-to-enter	df	df	Approx F-to-remove	df	df
-First-order relationships:						
CONUSE x RELSOC	2.17	2	297			
CONUSE x RELECO	1.64	2	297			
CONUSE x WEALTH	2.39	1	298			
CONUSE x BESTNC	13.57	1	298			
CONUSE x R1EDUC	14.87	2	297			
CONUSE x R2EDUC	16.66	2	297			
CONUSE x INCSOU	3.53	1	298			
CONUSE x R1DOBYR	5.83	2	297			
CONUSE x CHILD	2.91	1	298			
-Second-order relationships:						
CONUSE x R2EDUC x RELSOC	3.79	2	295			
CONUSE x R2EDUC x RELECO	1.83	2	295			
CONUSE x R2EDUC x WEALTH	0.71	1	296			
CONUSE x R2EDUC x BESTNC	6.01	1	296	11.97	2	295
CONUSE x R2EDUC x R1EDUC	4.15	2	295			
CONUSE x R2EDUC x INCSOU	4.57	1	296			
CONUSE x R2EDUC x R1DOBYR	1.98	2	295			
CONUSE x R2EDUC x CHILD	0.03	1	296			
-Third-order relationships:						
CONUSE x R2EDUC x BESTNC x RELSOC	3.92	2	294			
CONUSE x R2EDUC x BESTNC x RELECO	1.35	2	294			
CONUSE x R2EDUC x BESTNC x WEALTH	0.33	1	295			

(CONTD)

Table 8.25: (Model 3A), Test statistics for stage one explanatory variable selection process, contraceptive use (CONUSE), in urban areas, 1988.

	Approx F-to-enter	df	df	Approx F-to-remove	df	df
CONUSE x R2EDUC x BESTNC x R1EDUC	4.14	2	294	5.65	1	295
CONUSE x R2EDUC x BESTNC x INCSOU	4.41	1	295			
CONUSE x R2EDUC x BESTNC x R1DOBYR	2.46	2	294			
CONUSE x R2EDUC x BESTNC x CHILD	0.00	1	295			
-Fourth-order relationships:						
CONUSE x R2EDUC x BESTNC x R1EDUC x RELSOC	3.18	2	292			
CONUSE x R2EDUC x BESTNC x R1EDUC x RELECO	1.33	2	292			
CONUSE x R2EDUC x BESTNC x R1EDUC x WEALTH	0.66	1	293			
CONUSE x R2EDUC x BESTNC x R1EDUC x INCSOU	4.72	1	293	5.83	1	293
CONUSE x R2EDUC x BESTNC X R1EDUC x R1DOBYR	2.05	2	292			
CONUSE x R2EDUC x BESTNC x R1EDUC x CHILD	0.08	1	293			
-Fifth-order relationships:						
CONUSE x R2EDUC x BESTNC x R1EDUC x INCSOU x RELSOC	3.12	2	291			
CONUSE x R2EDUC x BESTNC x R1EDUC x INCSOU x RELECO	1.01	2	291			
CONUSE x R2EDUC x BESTNC x R1EDUC x INCSOU x WEALTH	0.93	1	292			
CONUSE x R2EDUC x BESTNC x R1EDUC x INCSOU x R1DOBYR	2.07	2	291			
CONUSE x R2EDUC x BESTNC x R1EDUC x INCSOU x CHILD	0.00	1	292			

(CONTD)
Table 8.25: (Model 3A), Test statistics for stage one explanatory variable selection process, contraceptive use (CONUSE), in urban areas, 1988.

	Approx F-to-enter	df	df	Approx F-to-remove	df	df
-Sixth-order relationships: CONUSE x R2EDUC x BESTNC x R1EDUC x INCSOU x RELSOC x RELECO	0.58	2	289			
CONUSE x R2EDUC x BESTNC x R1EDUC x INCSOU x RELSOC x WEALTH	0.01	1	290			
CONUSE x R2EDUC x BESTNC x R1EDUC x INCSOU x RELSOC x R1DOBYR	2.13	2	289	2.91	2	289
CONUSE x R2EDUC x BESTNC x R1EDUC x INCSOU x RELSOC x CHILD	0.00	1	290			

Table 8.26: (Model 3A), Stepwise logistic regression results, 1988.

Variables	Category*	Coefficient	S. Error
RELSOC	(1)	-0.320	0.198
	(2)	0.553	0.250
BESTNC		0.421	0.167
R1EDUC	(1)	-0.368	0.207
	(2)	0.561	0.226
R2EDUC	(1)	0.321	0.292
	(2)	1.065	0.334
INCSOU		0.353	0.169
CONSTANT		-1.657	0.300

*As defined in the methodology chapter.

Table 8.27: (Model 3A) Summary of stepwise logistic regression, 1988.

Step No.	Variable entered removed	df	Log Likelihood	Improvement in X^2	P-VAL	Goodness of fit of X^2	P-VAL
0			-177.884			264.954	0.002
1	R2EDUC	2	-160.945	33.879	0.000	231.075	0.072
2	BESTNC	1	-157.870	6.150	0.013	224.925	0.109
3	R1EDUC	2	-153.705	8.330	0.016	216.595	0.174
4	INCSOU	1	-151.239	4.930	0.026	211.664	0.225
5	RELSOC	2	-148.328	5.824	0.054	205.840	0.283

Table 8.28: (Model 3B), Test statistics for stage one explanatory variable selection process, contraceptive use (CONUSE), in rural areas, 1988.

	Approx F-to-enter	df	df	Approx F-to-remove	df	df
-First-order relationships:						
CONUSE x RELSOC	1.35	2	118			
CONUSE x RELECO	6.43	2	118			
CONUSE x WEALTH	0.13	1	119			
CONUSE x BESTNC	1.88	1	119			
CONUSE x R1EDUC	4.58	2	118			
CONUSE x R2EDUC	9.52	2	118			
CONUSE x INCSOU	0.38	1	119			
CONUSE x R1DOBYR	4.79	2	118			
CONUSE x CHILD	0.36	2	118			
-Second-order relationships:						
CONUSE x R2EDUC x RELSOC	0.85	2	116			
CONUSE x R2EDUC x RELECO	4.43	2	116	14.91	2	116
CONUSE x R2EDUC x WEALTH	0.15	1	117			
CONUSE x R2EDUC x BESTNC	2.14	1	117			
CONUSE x R2EDUC x R1EDUC	1.20	2	116			
CONUSE x R2EDUC x INCSOU	0.08	1	117			
CONUSE x R2EDUC x R1DOBYR	3.79	2	116			
CONUSE x R2EDUC x CHILD	0.24	2	116			
-Third-order relationships:						
CONUSE x R2EDUC x RELECO x RELSOC	0.02	2	114			
CONUSE x R2EDUC x RELECO x WEALTH	0.03	1	115			
CONUSE x R2EDUC x RELECO x BESTNC	1.03	1	115			

(CONTD)
Table 8.28: (Model 3B), Test statistics for stage one explanatory variable selection process, contraceptive use (CONUSE), in rural areas, 1988.

	Approx F-to-enter	df	df	Approx F-to-remove	df	df
CONUSE x R2EDUC x RELECO x R1EDUC	0.47	2	114			
CONUSE x R2EDUC x RELECO x INCSOU	0.02	1	115			
CONUSE x R2EDUC x RELECO x R1DOBYR	2.19	2	114	2.39	2	114
CONUSE x R2EDUC x RELECO x CHILD	0.23	2	114			

Table 8.29: (Model 3B), Stepwise logistic regression results, 1988.

Variables	Category*	Coefficient	S. Error
RELECO	(1)	-4.008	27.80
	(2)	-2.267	27.80
R2EDUC	(1)	-4.608	0.960
	(2)	-2.305	0.000
CONSTANT		7.922	27.800

*As defined in the methodology chapter.

Table 8.30: (Model 3B) Summary of stepwise logistic regression, 1988.

Step No.	Variable entered removed	df	Log Likelihood	Improvement in X^2	P-VAL	Goodness of fit of X^2	P-VAL
0			-41.276			65.339	0.667
1	R2EDUC	2	-36.100	10.352	0.006	54.987	0.906
2	RELECO	2	-31.477	9.245	0.010	45.741	0.983

8.4. DISCUSSION

Based on the above results it is important to achieve an overall interpretation of the relationships which exist between family characteristics and attitudes towards fertility.

It is obvious that the education level of both the wife and husband plays an important role in terms of fertility attitudes. The education level of wives, in urban areas, seems to be the most important variable in determining both the best number of children to have, and also whether or not contraceptives are used (Figs. 8.1, 8.2, 8.3). The potential influence of wives' education on demographic decisions is particularly important as is change in the status and role of women in society.

The education level of husbands also has an important role in terms of fertility attitudes but the models shown graphically in Figure 8.1 suggest that in fact male education is more influential only in rural areas. In many respects Jordanian society can still be generally characterised as a male-centred culture. In rural areas in particular male education appears to strongly influence a households attitudes to traditional values. For example, higher levels of male education are positively correlated with more liberal attitudes to women's status, roles, and education.

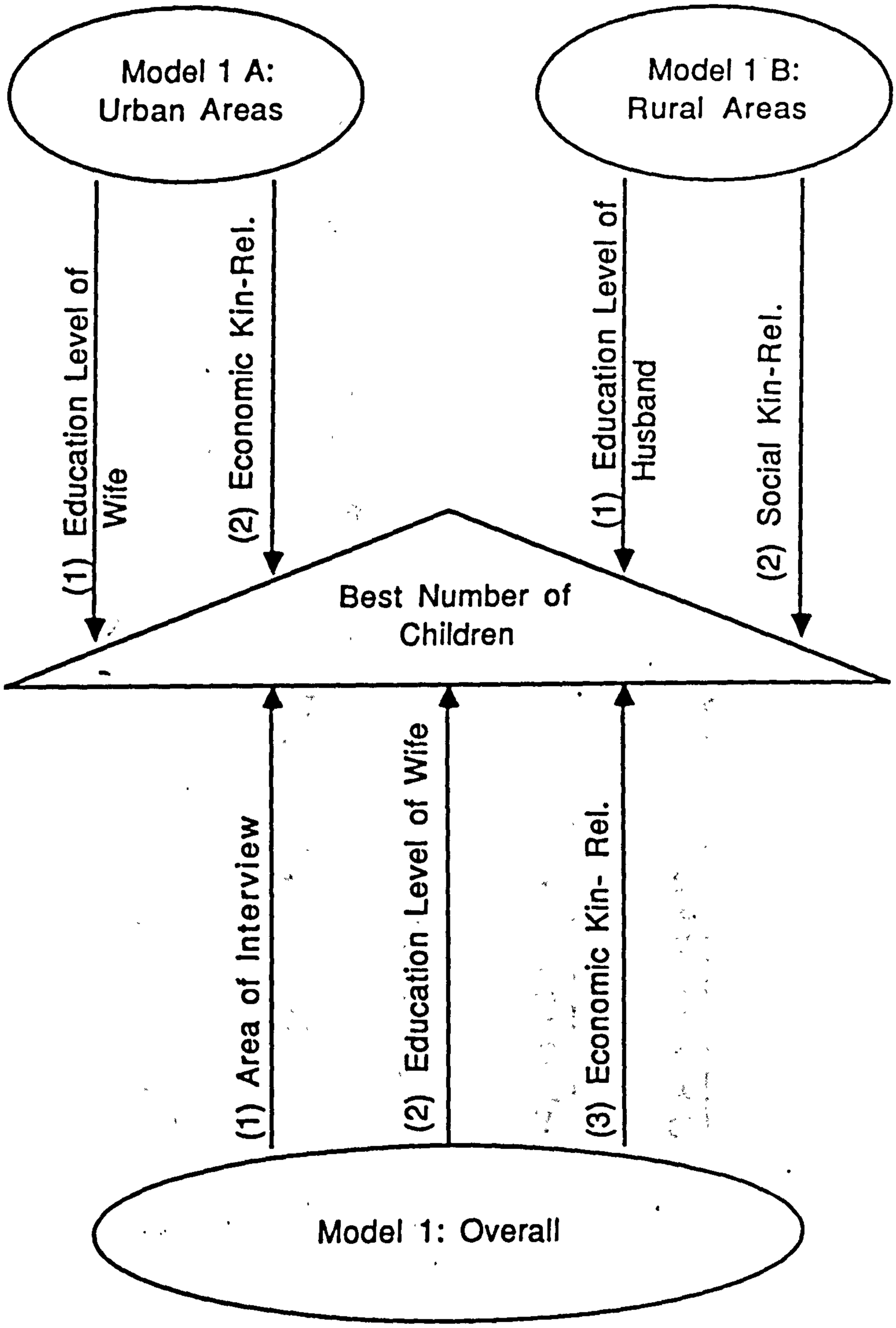


Fig. 8.1: Determinants of best number of children to have.

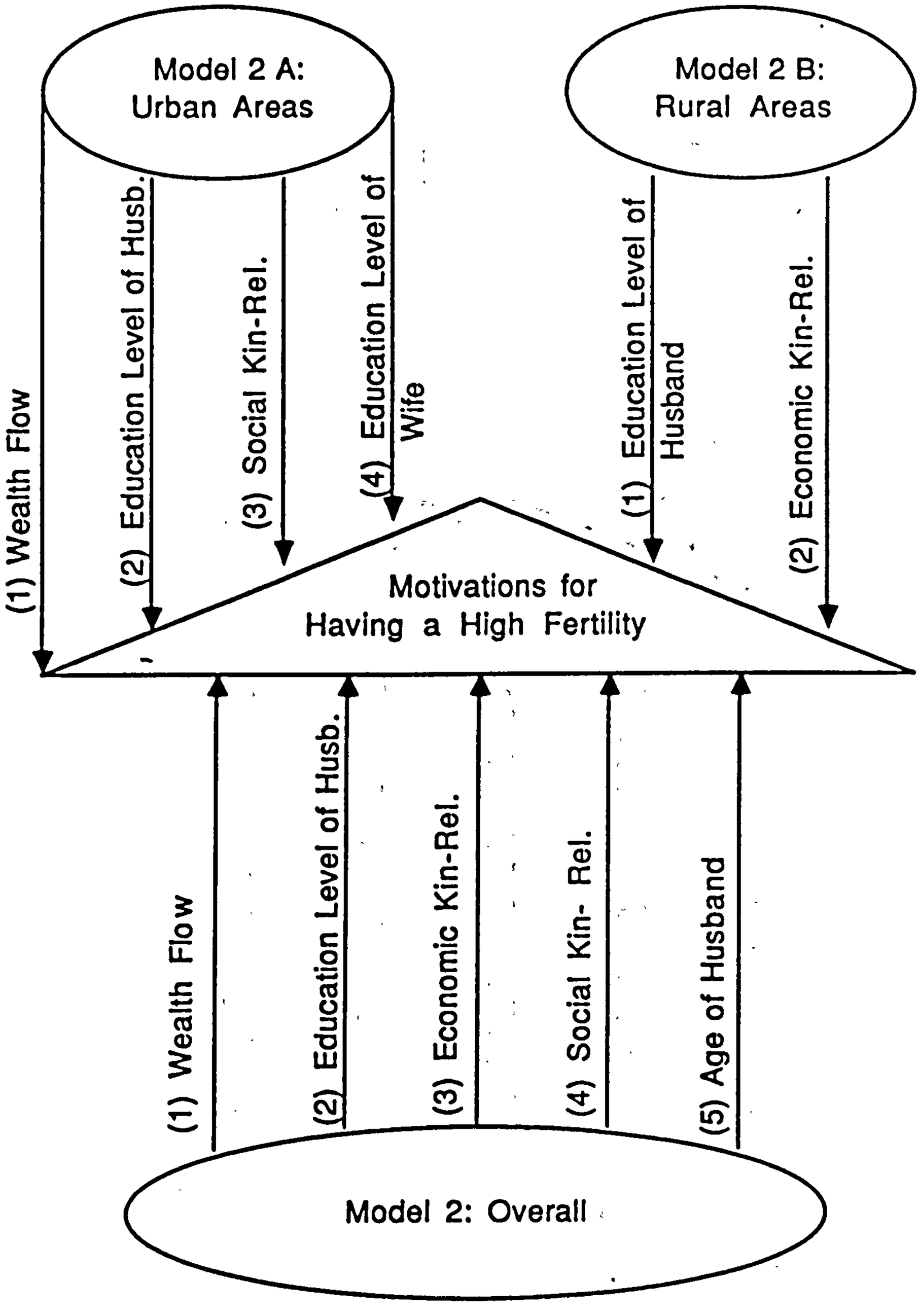


Fig. 8.2: Determinants of motivations for having a high fertility.

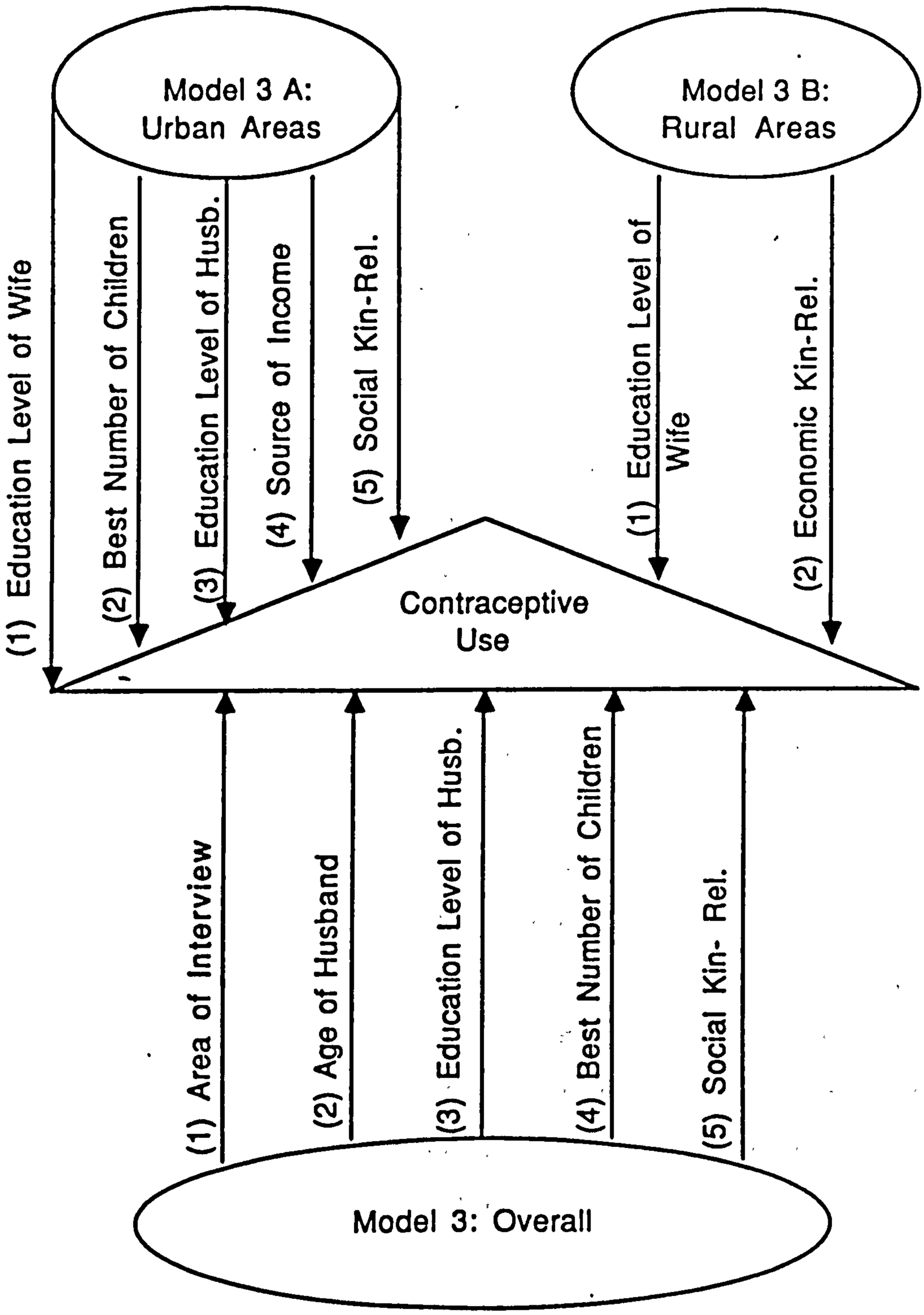


Fig. 8.3: Determinants of contraceptive use.

The statistical results which have been reported reveal that social and economic kin-relationships also have a significant influence on fertility attitudes. In urban areas social kin-relationships were more significant than economic kin-relationships in two of the three models. In rural areas economic kin-relationships appeared to be more significant than social kin-relationships in two of the three models (Figs. 8.1, 8.2, 8.3). One interpretation of this could be that there has been a remarkable crumbling of economic kin-relationships in rural areas. In rural areas the results reported in Chapter 5 indicated that changes in social kin-relationships are rapidly changing. Nevertheless, at present in rural areas economic kin-relationships still play a more important role with regard to fertility attitudes.

Fig. 8.2 shows that wealth flow directions emerged as the most significant influence in encouraging couples to favour high fertility. However, it should be remembered that social and economic kin-relationships themselves have an important influence on wealth flow directions and that in some cases wealth flow directions can be considered as an intermediate variable rather than as an ultimate explanation of fertility motivations.

It is very interesting that of the three models, wealth flow direction only appeared as the most important determinant in terms of motivations for high fertility. This is consistent with the central hypothesis of Caldwell's theory, in which he hypothesises that a change

in wealth flow direction, from net upward to downward wealth transfer, would be critical in reducing fertility levels. In other words, and also according to Caldwell's theory, social conditions (in Marxian terms, the superstructure) represent to a certain degree underlying economic conditions (or infrastructure). In this case motivations for high fertility represent the superstructure, but are mainly affected by wealth flows representing the infrastructure or power structure inside the family.

Area of interview was recorded as important in two of the three general models (Model 1 and Model 3), and therefore was clearly important, but as an explanatory variable it is difficult to use because of the "ecological" problems resulting from area of interview being correlated with other socio-economic and demographic characteristics. It is not really "place" which seems to be significant, but rather the characteristics of urban and rural populations. This is shown to be the case by the fact that removal of "area of interview" as a statistical variable, did not lead to an automatic increase in the explanatory power of all the other variables in the general model. Instead other variables emerged. With regard to desired number of children in rural areas, for example, the education level of the husband and social kin-relationships emerged as the most important determinants when "area of interview" was suppressed.

Similarly source of income was of some significance in relation to contraceptive use as shown in Fig. 8.3 (Model 3A), suggesting that in urban areas economic factors have a particularly strong influence on attempts to control fertility. It is also worth noticing that the desired number of children was a significant determinant of contraceptive use in urban areas, suggesting that many couples may now be actively seeking to control their family size.

Finally, it is worth commenting on the fact that husband's age was important in two of the models, suggesting that it mops up variance not explained by other variables. It would seem that one possible interpretation of this is that fertility attitudes are changing in a general fashion as one moves to younger generations, but that this passive "diffusionist" perspective is only a minor influence by comparison with the active agents of change which are associated with education and economic forces.

It is important to note that some circularity has entered the analysis of this chapter, despite the author's awareness of the problem (see page 88). This has been as a result of the method used in the construction of the composite variables. It is considered that the effect of this, while unfortunate, in no way nullifies the conclusions reached as a result of the logistic regression analysis.

CHAPTER 9

THE CONDITIONS OF THE FERTILITY TRANSITION IN JORDAN

After examining in the last few chapters in detail the most important changes which have taken place in the Jordanian family in its structure and organisation and in its relation to fertility attitudes, it is suitable now to focus the discussion on what all this implies in terms of Jordan's fertility transition. Based on the results which have been reported, this chapter hopes to synthesize the thesis findings concerning the conditions of the fertility transition in Jordan.

9.1. FERTILITY LEVELS IN RURAL AREAS

As society moves from being characterised by "traditional" values to those of a so-called "modern" society, the importance of the individual in decision-making in the household increases. In rural Jordan the first indicators of increased individualism are readily observable, but as yet these changes in the social and economic structure of relations have not led to fertility decline. For example, a fundamental change took place in southern Jordan when young tribesmen first entered the wage labour market. This change profoundly affected the way of making a living, with the family no longer depending on tribal modes of production but rather with familial relations becoming monetised through the establishment of a common family budget which was at least partially independent of the tribe. This change undermined tribal

authority and tribal values. It introduced the concept of individualism with its many implications for social organisation and structure (Caldwell, 1982: 237). Individual action remains dominated by broader familial interests in most of southern Jordan. This is so because the family budget commonly remains under the control of the patriarchal head of household. Wealth flow directions between parents and children remain upwards, and as Caldwell's theory would predict, the result is high fertility levels. It can be said that in the 1980s this matrix of relationships remained intact in many rural areas in Jordan and this explains the high fertility regime of much of the country.

In spite of the fact that the influence of individualism in rural areas is still relatively weak the changed basis of production has brought about a decline in the strength of economic kin-relationships. However, within the family, other forms of bonding remain strong. Older generations continue to command respect from the younger and males dominate the most powerful familial roles. There is, therefore, some familial stability in terms of traditional familial values.

9.2. FERTILITY LEVELS IN URBAN AREAS

In urban areas, especially in middle class ones, individualism in general is greater than elsewhere in the country. There is both greater equality of the sexes and also between the elder and younger generations. In the

Amman conurbation a relatively high percentage of families have a divided family budget. This division is in a way a measure of the effective power of individualism as a force within the family. The sharp decline in the strength of economic kin-relationships is another example of the growth of individualism. At the same time, inequalities in the division of labour within the household have been diminishing. Given these changes it is not surprising to find that fertility has also been starting to decline in urban areas, especially in the middle class areas.

Changes in family morality and outlook are very important in bringing about changes in family structure. These changes have crystalised in most urban areas with the emergence in physical terms of a nuclear family structure. This has been argued in the thesis to be the first stage in moving towards true nucleation of families in social and economic terms.

9.3. FAMILY STRUCTURE, DEVELOPMENT AND FERTILITY

The transition from the extended physical family structure to the nuclear family is a significant step in terms of social reorganisation and demographic change. The nuclear family is more sensitive to economic changes than to social changes in the short term. This is because the family's economic situation is affected more rapidly by structural changes in the economy which subsequently impinge upon the economic functioning of the family, because of its strong dependence on the "modern" economic context in which it is set. By contrast the social kinship

bonds of the nuclear family are affected more slowly, being subject to the social norms operating in the broader cultural environment. An important point made by Goode (1963) in his study of family change was that the nuclear family is more flexible than the extended family in reacting to economic conditions. Davis (1955), and Davis and Blake (1956) expressed the same idea when they found that the independence of the family from kinship groups led to lower fertility levels.

It could be argued, therefore, that a transition in family structure could be the most important dimension in bringing about the fertility transition. Persisting high fertility levels in developing countries probably reflect the persistence of traditional social norms, especially in terms of the way that these norms relate to family relationships. Fertility decline may not occur in developing societies until social norms abandon the values of traditional culture. This in turn will allow the family system to begin its transition toward a closed economic and social nuclear family. Therefore, in spite of the fact that macro-scale socio-economic and demographic analysis reveals useful information with regard to the explanations of fertility, examination of the dynamics of the family gives richer information with regard to understanding fertility behaviour.

Researchers who have studied fertility in the developing countries have noticed that despite the fact

that some economic and social development has taken place, this has not been accompanied as might have been expected, by a concomitant reduction in fertility. The fact is that fertility has not been in rapid decline in all developing countries (Adepoju, 1977), nor even in many urban areas within these countries. This has certainly been the experience of the Arab world (Fargues, 1989). Adepoju (1977) notes that Nigeria has recently achieved some measure of real economic development, but despite this fertility levels have not started to decline. This finding led him to suggest that there are other fundamental factors such as the nature of urbanisation which account for the continuing high level of fertility. He notes that rural-urban links remain very strong in most developing countries, a point upheld by Potter and Unwin (1989). Associated with this is the fact that kin relationships also remain strong between rural and urban communities. This in turns can slow the pace of family nucleation in economic and social terms even in large urban areas.

In the case of Jordan, the strength of the migration process may help to explain, at least partially, why the level of fertility remained so high in the 1960s and early 1970s even in urban areas. Urban growth was very rapid. Urban areas rose from accounting for about 44% of the population in 1961 to 59% in 1979 (Ministry of Planning, 1986). Most migrant families actively maintained their links with their kin in their place of origin. This had two principal effects. First rural migrants who lived in

urban areas, while adopting a nuclear family structure in physical terms, kept up strong relations with the other members of their family and relatives in the place of origin. Thus, social and economic links with the extended family remained despite the emergence of physical nucleation. Second, some of the rural migrants who came to urban areas chose to live in the same areas as other migrants to whom they were related, thus maintaining traditional rural linkage patterns within the city.

In Amman, for example, there are many residential areas of the city well known for having clusters of migrants from specific parts of the country (Samha, 1979). This situation remains an important factor promoting strong kin-relationships within urban areas. These continuing kinship groups provide powerful support for traditional family values including the desire for high fertility.

It is to be expected in urban areas with this kind of social structure that the wealth flow direction will remain upwards. Fertility can not be expected to start to decline in areas such as this unless some transition occurs in terms of the strength of kin-relationships. The results of the last few chapters have shown, however, that some change is occurring in kin-relationships and that these trends are having a significant indirect effect on wealth flow directions. It could also be the case that fundamental changes in family relationships has lain behind the onset of fertility decline in Amman from the middle of the 1970s.

The survey research reported in this thesis has shown that upward wealth flows are found almost ubiquitously in rural areas. This direction of flow reflects the fact that rural areas still hold with what has been termed "traditional morality" involving the dominance of the older generation in setting key social norms. In this situation, it is neither surprising nor irrational that fertility levels have remained high.

It is to be expected that the older generation's role will gradually be eroded by forces favouring greater inter-generational equality and individualism. The last chapter indicated that such an erosion of traditional values has already begun.

9.4. FUTURE FERTILITY DECLINE

When the complete nucleation of the family is achieved in physical, economic, social and emotional terms, it should be expected that there will be a substantial shift in the values held by family members with regard to fertility. These should assure future fertility decline (Caldwell, 1982; Caldwell, 1987).

At present, however, in rural areas of Jordan fertility levels remain high and show little sign of changing in the near future. In urban areas, such as Amman, social, economic and "emotional" nuclear familes are beginning to appear. These changes have resulted in a downward direction of wealth flows, and in a reduction in fertility levels.

Table 9.1 gives a summary of some of the fundamental

changes with regard to family relationships which the author has found for Jordan, and which have been explored in this thesis.

It should be recalled that four terms defining kin-relationships as traditional, early transitional, advanced transitional and modern have been defined and discussed in detail in chapter 3. Families included in the survey were defined as belonging to one of the four categories, as a result of measurement of the strength of their economic and social ties with members of the extended family. The table therefore provides the opportunity for the reader to see in summary form the way in which a family's status in terms of its economical and social linkages is associated with other fertility related characteristics. Statistical analysis of some of these relationships has already been explored elsewhere in this thesis, but the average statistical values for families in each transitional category relative to other socio-demographic characteristics is included to illustrate the strength of the basic idea, i.e. that changing kinship relations are critical in affecting the circumstances of the fertility transition.

The figures of Table 9.1 demonstrate how important economic and social nucleation is in bringing about other changes within the household. It is concluded that changes in family structure and organisation are amongst the most important conditions in influencing the timing and character of the fertility transition. Until these changes

occur throughout all of Jordanian society both in a geographical and also in a sociological sense, fertility levels will remain high. Fertility decline can, however, be expected to occur more rapidly in the future in those urban environments of Jordan where change in the family structure is already well advanced.

Table 9.1
Some attributes of kin-relationships amongst Jordanian families at different stages in the transition from "traditional" to "modern" structures.

Characteristics	Transitional Stage			
	Trad-itional	Early Transition	Advanced Transition	Modern
% of heads of households who have weak control over their children	14.7	34.2	44.0	50.0
% of households with a physical family structure which is nuclear	73.4	83.4	88.8	91.7
Average desired family size	4.7	4.3	4.1	4.0
Average completed family size (for mothers over 45 years of age)	8.6	7.6	6.6	7.1
% of wives who are working (paid job)	6.2	19.2	16.4	15.3
% of husbands who accept the idea of their wives working	11.3	21.2	22.4	30.6
Nature of the family budget; % of those who have a common family budget	76.8	67.9	63.8	69.4
Percentage of head of household who believe that financial help from relatives is available	22.0	3.6	5.2	0.0
% of respondents who said that financial help is happily given to relatives	55.9	20.2	16.4	4.2
% of husbands who are responsible for most (75+%) economic decisions	65.5	46.1	36.2	34.7

Table 9.1 (Contd.)

Characteristics	Traditional	Transitional Stage Early Transition	Advanced Transition	Modern
% of wives who are responsible for most (75+%) economic decisions	1.1	3.1	3.4	12.5
% of heads of household who have traditional values favouring high fertility	43.5	14.5	15.5	6.9
% of heads of household who have weak economic kin-relationships	16.9	34.7	55.2	79.2

9.5 CONCLUSIONS

In conclusion, the above discussion has stressed the cultural context of fertility change in Jordan. Growing individualism, crumbling family relationships, and changing women's status and roles in Jordanian society (both urban and rural areas) reveals that there is a departure from a society being characterised by what might be termed a "theocentric" culture to one characterised by secularism.

Caldwell's theory (1982) stressed the importance of cultural changes in introducing fertility decline. Caldwell (1982, 1987) considered that traditional culture or theocentric culture (where religion and culture may not really be distinguished) provided support for the system of upward wealth flows in traditional society. Caldwell's theory focussed on production relations, within the family, as a determinant of culture.

This assumption, philosophically, has roots in Marxism. Where the production relations can be considered as a determinant of superstructure, this assumption could be true to a certain degree. The results of Chapter 8 demonstrate that wealth flow is the most important determinant with regard to motivations for fertility. However, at the same time, it was found that education was very important in terms of fertility attitudes.

In addition to the results of Chapter 8, which reveal how important education is in terms of fertility attitude, Table 9.2 shows the percentage of respondents who said that the best number of children to have was "as many as

possible" without placing any restriction on natural fertility. This attitude was found to be significantly different between respondents both when classified by wealth flow and the education level of husband and wife. Indeed, chi square tests showed that the most significant differences occurred between education groups (Table 9.2). Therefore, education could have the same or greater influence on fertility change as familial production relations. However, one can note that Caldwell himself stressed that it was only by education that secularism is brought about.

Table 9.2

Percentage of respondents who believe that the best number of children to have is as many as possible, classified by wealth flow direction and education level, 1988.

	Percentage
Wealth flow*	
Upward wealth flow	45.0
Downward wealth flow	21.3
Education level of husband**	
Less than secondary	48.4
Secondary and college	15.4
University level	4.5
Education level of wife***	
Less than secondary	42.5
Secondary and college	8.6
University level	0.0

Source: Author's survey.

* Difference are significant (X^2 = 31.4, df = 1) at 95% level of confidence.
** Differences are signficant (X^2 = 112.2, df = 2) at 95% level of confidence.
*** Differences are significant (X^2 = 93.8, df = 2) at 95% level of confidence.

CHAPTER 10

CONCLUSIONS AND RECOMMENDATIONS

10.1 FERTILITY AND FERTILITY PREFERENCES

In conclusion, it is worth restating the main findings of this thesis, not only as a means of synthesizing what has been discovered, but also to help to emphasize the linkages which exist between the factors influencing the different dimensions of fertility and family change which have been investigated.

10.1.1 - It has been found that between 1976 and 1983 Jordan was witnessing an onset of the decline in fertility. This decline was more rapid in urban areas than rural areas. In contrast, marital fertility levels were relatively stable or slightly higher in some regions. It was apparent that the short duration of breastfeeding negatively affected natural marital fertility levels in all regions, which in turn made marital fertility levels to be slightly higher in the absence of contraceptive use. This was especially true in rural areas. Except in Amman, where contraceptive use seemed to play a significant role, it is possible to say that change in marriage patterns has been the most influential force in changing overall fertility levels. The above results are to be expected in a society like Jordan which is experiencing the onset of fertility decline.

10.1.2 - Analysis indicates that there was a higher percentage of Jordanian women who did not want more children in 1983 than in 1976. This was true in all

regions of the country as well as in both urban and rural environments. The data suggested that the proportion of women wanting no more children increased markedly through time with increasing family size. It is noticeable that in Amman, preferred family size was much smaller than elsewhere in Jordan.

Results demonstrated that there is a gap between the actual total fertility rate and the wanted total fertility rate in the different regions of Jordan. These results also suggest that there is a high potential for reduction of the TFR in all regions of the country. The potential fertility decline remained stable in urban areas between 1976 and 1983. In contrast, it had risen in rural areas by 1983.

10.2 INTERMEDIATE VARIABLES: MARRIAGE, BREASTFEEDING AND CONTRACEPTIVE USE

There is an indication of changes in the pattern of marriage in Jordan. These changes have been in the age at marriage and in the proportion married.

Differences in age at marriage between different regions are relatively small. Widowhood is the major cause of the disolution of marriage in all regions of Jordan.

Duration of breastfeeding is decreasing. The decrease among the rural areas was more rapid than in urban areas. Regional differences were not, however, very big.

Partial breastfeeding is found throughout Jordan. A considerable percentage of women give their children non-

maternal milk and nourishment at a very early age. This partial breastfeeding emerged in all of the different regions of Jordan.

The proportion of couples of childbearing age practicing contraception increased in all urban and rural areas between 1976 and 1983. There were remarkable regional differences.

Results suggested that women used contraceptives for controlling rather than for spacing births. The proportion of women who use highly effective methods increased between 1976 and 1983 in all regions. Results reveal that the proportion of women who use IUD methods increased very rapidly in all regions.

10.3 FAMILY CHANGE

10.3.1 - It was clear that economic mechanisms were behind the changes in nomadic societies in Jordan. These economic changes favoured the emergence of the physical nuclear family. The strength of economic kin-relationships has been considerably reduced in Jordan, particularly in urban areas. Social kin-relationships have also been declining in importance in urban areas, but more slowly than the decline in economic kin-relationships. While in rural areas social kin-relationships are still strong there is evidence of an onset of decline. The data suggests that the nucleation of the family will probably take place in the following sequence:-

- first, a physical nuclear family structure will emerge.

- second, kinship links in economic terms will weaken until they are conformable with the "economic closure" of the nuclear family.
- third, social kinship relations will weaken as a result of the emergence of the closed economic structure of the nuclear family.
- fourth, in emotional terms the nuclear family will emerge.

These changes have crystalised to a certain degree in urban areas. In rural areas the data shows that there remains some familial stability in terms of traditional family relationships.

10.3.2 - Women in nomadic society used to work hard from early morning until late at night. But when the changes, especially economic ones, took place in this society the role of women also changed.

In rural areas women now perform only a few of the duties which they had previously undertaken. But the data suggests that in rural areas women's status and role do not play as important a role in demographic decision making as in urban areas. In cities, their status and role have been improving significantly in recent years.

For example, women have recieved more power in economic matters, especially salaried women. Women's levels of education have been improving. In spite of the fact that women's status is now less prescribed by society in urban areas, and especially Amman, cultural influences

are still the most important determinants of women's status and role.

10.4 COSTS AND BENEFITS OF CHILDREN

10.4.1 - In urban areas families mostly do not expect any financial gain from their children, while in rural areas it is vice versa. Respondents expect financial help from their children, especially from educated children. They emphasised that they wanted their children to be highly educated.

The direct cost of children, in middle class urban areas is relatively low, while in the lower class urban areas, in the rural south and the rural north, it is still relatively high. Therefore, most families in these areas reported that they had some economic difficulties associated with child rearing. Families in lower class urban areas, northern rural and southern rural areas, emphasised economic reasons for stopping having children, while in middle class urban areas families emphasised social reasons for stopping having children.

10.4.2 - Traditional relationships between fathers and children are no longer so strong in urban areas. Although there is an erosion of loyalty to fathers in rural areas, familial relations have remained strong.

10.4.3 - Economic assistance of parents by children (both single and married sons and daughters) still occurs in both urban and rural areas, but it is less marked in urban areas. In middle class urban areas more than half of all children in waged employment do not help their parents

financially, while the lower class urban areas show an intermediate level of assistance between the levels reported in the rural areas and that of the middle class districts of Amman.

10.4.4 - The data suggests that rural-urban migration may be one of the most important processes conducive to an increase in the perceived value of children, and in turn, rural migration is the most important mechanism in introducing change to the rural economy and society.

10.4.5 - In rural areas respondents emphasised "Family name", "prestige" and "old age security" as motives for having high fertility. But differences between urban and rural areas are evident.

10.5 DETERMINANTS OF ATTITUDES TOWARD FERTILITY

It is obvious that the education level of both the wife and husband plays an important role in terms of fertility attitudes. The education level of wives, in urban areas, seems to be the most important variable in determining the best number of children, and of contraceptive use.

The statistical results which have been reported reveal that social and economic kin-relationships also have a significant influence on fertility attitudes. In urban areas social kin-relationships were relatively more significant than economic ones. In rural areas economic kin-relationships appeared to be relatively more significant than social kin-relationships. The survey

results also show that wealth flow direction emerged as the most significant influence on motivations for having high fertility. That is to say as wealth flow direction changed, so also did people's perceptions of the importance of having many children in order to maintain the family's name, to have security in old age, prestige, economic benefits from children, and happiness.

Source of income was of some significance in relation to contraceptive use in urban areas, suggesting that in urban areas economic factors have a particularly strong influence on attempts to control fertility. It would seem that fertility attitudes are changing in a general fashion as one moves to younger generations. This might be taken to support a passive "diffusionist" perspective of demographic change, but in practice generational differences are minor by comparison with the active agents of change which are associated with education and economic forces.

10.6 DETERMINANTS OF WEALTH FLOW

Data analysis shows that social and economic kin-relationships are the most important variables in terms of wealth flow. In urban and rural areas kin-relationships have had most influence on wealth flow directions. It was also found that the education level of wives in urban area had a significant impact on wealth flow directions. But in rural areas it seems that women's status and roles do not play as important a role and male education and outlook remains more critical.

10.7 CULTURAL CHANGE

The highly significant differences between urban and rural areas - with regard to familial relationships, wealth flow direction, and fertility attitudes, etc., suggest that a significant cultural change has been taking place in Jordan. The precise nature of these cultural changes are inevitably very hard to define, but it does seem clear that traditional cultural values are now held by only a small percentage of families in urban areas. In rural areas these traditional cultural values are, however, still widespread. This in turn, has played a strong role in influencing kin-relationships, and the direction of wealth flow, and as a result has been critical in affecting fertility attitudes.

In urban areas, especially in middle class ones, individualism in general is greater than elsewhere in the country. In the Amman Conurbation a relatively high percentage of families have a divided family budget. Also, there has been a sharp decline in the strength of economic kin-relationships.

In rural Jordan the first indicators of increased individualism are readily observable. Economic changes have profoundly affected peoples' ways of making a living, with the family no longer depending on tribal modes of production but rather with familial relations becoming monetised through the establishment of a common family budget which is at least partially independent of the

tribe. But within the family, other forms of bonding remain strong. Elder generations continue to command respect from the younger and males dominate the most powerful familial roles. There is, therefore, some familial stability in terms of traditional familial values.

10.8 FERTILITY TRANSITION

It is concluded that changes in family structure and organisation are amongst the most important conditions in influencing the timing and character of the fertility transition. Until these changes occur throughout all of Jordanian society both in a geographical and also in a sociological sense, fertility levels will remain high. Fertility decline can, however, be expected to occur more rapidly in the future in those urban environments of Jordan where change in the family structure is already well advanced.

10.9 RECOMMENDATIONS FOR FUTURE RESEARCH

It has been found that recently there is an emphasis on cultural issues amongst researchers working in population studies, especially on fertility. This surge of interest reflects the importance of studying culture (or values system) in order to achieve a deeper understanding of fertility behaviour.

This author here would like to support this trend in development in population studies. There can be little doubt that studying the cultural dimension of fertility behaviour is a pre-requisite to achieving a better explanation of spatial and historical variations in

fertility levels. It is hard to conceive of convincing explanations being achieved of trends in fertility and of the speed of change in internal and external familial relationships without a more profound understanding being reached of the mechanisms bringing about change in value systems in society. Therefore, the author suggests that the basis of value systems be studied in Jordan and elsewhere as an important item on any future research agenda involving population studies. Such research should consider the following items:-

1. Social and economic mutual obligations between -
   a) parents and their children, as compared to sons/daughters
   b) husband and wife
   c) relatives, and the relative significance of men and women in these relations
2. Women's status and roles.
3. Conjugal roles.
4. Parental roles.
5. Decision making, and the relative significance of men and women in decision making tasks.
6. The participation of men as opposed to women in leisure, sports, cinema, and artistic activities.

The above mentioned items could be studied relative to people's commitment to a religious or secular stand point. This comparison would be very useful in revealing the process of cultural change, which, in turn, would help

towards achieving a better understanding of fertility behaviour.

It should be stressed here that understanding the source of culture is absolutely essential. The source of culture remains a strongly debated issue. Some researchers consider it a product of the means and relations of production, and claim that it has no other source. Religion could, however, be cited as one independent important source of culture. The importance of examining the source of culture is therefore evident. In the long term such advances would help towards explaining why some values resist change and dominate for a long time, while others disappear relatively quickly.

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Appendix 1

QUESTIONNAIRE

General characteristics of the household

No.	Relation to head of household	Date of Birth Year	Month	Place of Birth	Marital Status Single	Married	Divorced	Widowed	Level of Education	Economic Activ Active Student	Inact
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											

7. After marriage, head of the household lived:

   a) With parents but now independent

   b) With parents and still living with them

   c) In separate house

8. Do any of your relatives live in a house adjoined to yours?

   a) Parents

   b) Sons, daughters

   c) Brothers, sisters

   d) Wife's family

   e) Uncles, aunts

   f) Other relatives

9. If the answer of Q.8 is yes, do you share meals?

   a) Yes, daily

   b) Yes, weekly

   c) Yes, sometimes

   d) Never

10. If the answer of Q.8 is yes, do you have a shared budget?

   a) Yes, sharing

   b) Sometimes

   c) Never

11. Number of children ever born

   a) Male

   b) Female

   c) Total

12. According to your opinion, what is the best number of children to have?

13. What are the reasons for stopping having children?

    a) Economic reasons (family income)

    b) Social reasons, parents can enjoy their time freely

    c) Women's work

    d) Worry of future of children

    e) Other

14. Do you agree that a large number of children keeps family name carried for generations?

    a) Strongly agree

    b) Possibly true

    c) Do not agree

15. Do you agree that a large number of children guarantees security in old age?

    a) Strongly agree

    b) Possibly true

    c) Do not agree

16. Do you agree that a large number of children gives the family prestige?

    a) Strongly agree

    b) Possibly true

    c) Do not agree

17. Do you agree that a large number of children will economically benefit the family?

    a) Strongly agree

    b) Possibly true

    c) Do not agree

18. Do you agree that a large number of children brings happiness to the family?

a) Strongly agree

b) Possibly true

c) Do not agree

19. What is the minimum level of education you would like your sons to obtain?

a) Primary

b) Preparatory

c) Secondary

d) College

e) University (BA)

f) University (MA, PhD)

20. What is the minimum level of education you would like your daughters to obtain?

a) Primary

b) Preparatory

c) Secondary

d) College

e) University (BA)

f) University (MA, PhD)

21. How do you evaluate your social relationships with the the following relatives?

	Strong relationships	Ordinary relationships	Weak and no relationships
Brothers			
Sisters			
Uncles			
Aunts			
Other relatives			

22. How do you evaluate your economic relationships with the following relatives (in the sense of mutual financial help).

	Strong relationships	Ordinary relationships	Weak and no relationships
Brothers			
Sisters			
Uncles			
Aunts			
Other relatives			

23. Do you believe that financial help among relatives is available?

	Available	Available to a certain degree	Not available
From children to parents			
Among brothers			
Among relatives			

24. Do you believe that mutual helps among relatives is:

    a) more monetary than services

    b) more services than monetary

    c) both equal

25. Is the financial help among relatives happily given?

    a) Yes

    b) No (but because of social pressure)

26. Does your wife work?

    a) Yes (at home)

    b) Yes (outside the home)

    c) No

27. Source of family income?

	0 %	10 %	20 %	30 %	40 %	50 %	60 %	70 %	80 %	90 %	100 %
H of HH											
Wife											
Children											
Agricultural production											
Business (trade)											
Business (shepherd)											
Business (industry)											

28. What is your job? (For employees)

29. What type of business do you have?

30. Financial help from working children:

	Sex		Place of work			Pattern of help		
	M F	The same city/ village	Outside city/ village	Abroad	No help	Only when in need	Regularly
Single							
Married							

31. Are you satisfied with the financial help from your children?

	Sex	Satisfaction		
	M F	Completely Satisfied	Relatively Satisfied	Not Satisfied
Single				
Married				

32. What type of family budget do you have?

a) Common family budget

b) The wife has partially separated budget

c) The wife has completely separated budget

d) Children have partially separated budget

e) Children have completely separated budget

33. Responsibility for economic decisions:

	Less %	10 %	20 %	30 %	40 %	50 %	60 %	70 %	80 %	90 %	100 %
Head of household											
Wife											
Children											
Others (grandfather etc)											

34. What is the perceived direct cost of children?

a) Less than 30% of income

b) 30-50% of income

c) More than 50% of income

35. Do you have any financial difficulties with regard to cost of children?

a) Always difficulties

b) Some difficulties

c) No difficulties

36. How do you evaluate the financial help from your working children?

a) Money flow more than cost

b) Money flow less than cost

c) Money flow and cost are the same

37. How do you perceive the future financial help from your children? (For fathers who have unworking children)

a) Money flow more than cost

b) Money flow less than cost

c) Money flow and cost are the same

d) No expectation of help

38. According to your opinion which is better for women to go for work (outside home) or to stay at home?

a) Work outside home

b) Stay at home

39. How do you evaluate your relationships with your children with regard to obedience?

a) Strong relation

b) Average relation

c) Weak relation

40. Are you/is your wife, practicing any type of contraceptive use?

a) Yes

b) No

41. Which makes you more satisfied to see your children work:

a) in agriculture/shepherd

b) as employees

42. Which makes you more satisfied to see you children work:

a) in agriculture/shepherd

b) go to school and university

APPENDIX 2.

List of variables used in the thesis.

Variable name	Variable label
Wealth flow direction	WEALTH
Social kin-relationships	RELSOC
Economic kin-relationships	RELECO
Area of interview	AREAINT
Education level of husbands	R1EDUC
Education level of wives	R2EDUC
Source of income	INCSOU
Age of husbands	R1DOBYR
Actual number of children	CHILD
Best number of children	BESTNC
Motivations for having a high fertility	MOTIV
Contraceptive use	CONUSE
Wife's work	-
Economic decision-making	-
Financial help among relatives	-
Nature of the family budget	-
Husband's opinion towards wife's work	-
Family structure	-
Father-children relationships	-