

AN ABSTRACT OF THE THESIS OF

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Title: A Comparative Study of the Relation Among Religion,
Development and Population Policy in Three Muslim Countries:
Egypt, Saudi Arabia, and Tunisia.

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This is an interdisciplinary study combining the areas of Sociology, Religious Studies, and Adult and Community Education. Drawing from these disciplines, an investigation was made into the religious and socio-economic variables of development and their relation to family planning policies in the Muslim world. The primary focus in this study was upon the Muslim countries of: United Arab Republic (Egypt), Saudi Arabia, and Tunisia.

Two main hypotheses were designed after reviewing the literature regarding theories and variables in demography and development in order to investigate how religious traditionalism and socio-economic developmental factors affect whether a government's formal population policy is antinatal or pronatal. The first hypothesis is that religious traditionalism has an inverse relation to a formal antinatal population policy. And the second

hypothesis is that the level of development has a direct relation to a formal antinatal population policy.

From secondary data, the findings of this thesis are two-fold. The first part of the conclusion reveals that the results of many of the indicators used to investigate the original hypotheses did not support the hypotheses. Thus, a revision of the operationalization of the concepts of religion and development were made in the second part of the conclusion which yielded a recasting and re-evaluation of the data collected.

The latter discussion raised questions concerning variables used in standard research to measure Islamic traditionalism and levels of socio-economic development. The variables used in research by the First and Second World researchers to measure Islamic traditionalism are being rejected by several Muslim Third World writers as being incorrect and often ethnocentric. The many standard socio-economic development measurements are also questioned, for they too are often ethnocentric and are measurements of the economic system and not always of the results of that system in terms of the welfare of the ordinary person.

From the recent writings of Muslim Third World writers concerning Islam and M.D. Morris' new book, Measuring the Conditions of the World's Poor: The Physical Quality of Life Index (PQLI), in which he introduces a new measurement of "development" - the PQLI, a final analysis of this study is made. The final findings suggest that religion should be considered as a dependent variable

to that society's secular forces. Development is believed to be an important factor affecting population policy, but is a concept which needs to be defined in terms of "societal development" and not as "economic development".

A Comparative Study of the Relation Among
Religion, Development, and Population Policy
in Three Muslim Countries: Egypt,
Saudi Arabia, and Tunisia

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PREFACE

The increasing awareness and acceptance of the "global community" perspective has assisted the world to focus on global issues and interests with concern and action. The past decade has seen many international conferences held by the various United Nations' organizations such as: the International Education Year (1970), the World Population Year (1974), the International Women's Year (1975), and the International Year of the Child (1979).

This particular study is intended to contribute to the "global community" an understanding of the Muslim world--one-fifth of humanity. The groundwork for this thesis, entitled "A Comparative Study of the Relation Among Religion, Development, and Population Policy in Three Muslim Countries: Egypt, Saudi Arabia, and Tunisia", is drawn from an interdisciplinary approach concentrating on the fields of sociology, religious studies, and adult and community education. The purpose of the study is to investigate the variables relating to population policies, birth control, and the multiple facets of development within the Muslim world. This interdisciplinary analysis will concern itself with several socio-economic, socio-religious, and educational dimensions. The primary issue dealt with is how population policy and family

planning practices are related to a country's level of development and religious traditionalism. Also discussed in this study are questions recently raised concerning past research and variables concerning development and the Islamic faith.

Since this work deals with another culture, many words found in the text may be of Arabic or French origin. To assist the reader, all foreign words will be underscored and defined within footnotes. Due to difficulties in transliteration from the Arabic language to the English language found in the literature, variations in spelling and pronunciation may frequently be confusing to the reader. Therefore, an attempt has been made by the author to reduce this confusion by generally adhering to the system known as BGN/PCGN, one agreed to by the United States Board of Geographical Names and the Permanent Committee on Geographical Names for British Official Use, as well as to spellings most commonly found in the academic literature. Also, all measurements in the text are presented both in the British system and the Metric system (most have been rounded off to the nearest whole number).

To assist future researchers with the collection of information relating to the various topics presented in this study Appendix IV has been included. Appendix IV gives addresses of useful contacts which provide written materials and references. The author feels that this

appendix will have the potential of assisting other researchers since there is a general lack of materials in this area of study.

Finally, if this study contributes to an understanding of developments in the Muslim world, or to encouraging further research, then it has accomplished an important goal. As our world becomes "smaller" and more interdependent, the importance of interdisciplinary approaches will grow and become more significant in facing the complexity of issues and to insure mutual understanding and harmony among the populations of our world.

A Comparative Study of the Relation Among
Religion, Development, and Population
Policy in Three Muslim Countries:
Egypt, Saudi Arabia, and Tunisia

I. INTRODUCTION

This thesis involved an investigation into the relation of traditional religious practices and development to the population policies of Egypt, Saudi Arabia, and Tunisia. To provide an understanding of why this investigation involved the topics used, an overview of literature dealing with the areas of population, theoretical issues in development, and women and Islam will be summarized. From the discussion of this chapter, only selected topics from within the areas just named will be chosen for closer study. The material presented in this chapter, but unused later in this thesis, will provide a context with which to understand traditional views toward the topics chosen for more detailed discussion beginning with Chapter II.

A. Review of Literature on Population

The relationship existing between demographic variables and various socio-economic variables has constituted a subject of thought for a long time, but has become of worldwide interest only in the past few decades. The study of population, or demography, is a field of study with a history of only three

centuries. There has been a rapid increase in the growth of the population of the world which has caused many nations of the world to give attention to the phenomenon. The world today is witnessing a trend of accelerating growth of world population which began about 200 years ago, at about the same time as the Industrial Revolution in Europe. Prior to that time, human populations increased very slowly and took an average of more than 1,000 years to double in number. By comparison to the early era of humanity, the growth during the past two centuries has been dramatic. For example: between 1750 and 1900, according to estimates shown in Table 1 below, the world population doubled in approximately 150 years, rising from about 800 million to 1,650 million. The annual rate of increase climbed from an estimated average of 0.8 percent for the first half of the twentieth century to 1.8 percent between 1950-1960, and advanced to 1.9 percent between 1960-1970. At this rate, world population will double in about 37 years (United Nations Papers of World Population Conference, 1975:3).

TABLE I. GROWTH OF WORLD POPULATION 1750-1970, AND PROJECTIONS TO 2000.

Date	Estimated population (millions)		
	World total	More developed regions ^a	Less developed regions ^b
1750	791	201	590
1800	978	248	730
1850	1,262	347	915
1900	1,650	573	1,077
1950	2,506	857	1,649
1960	2,995	976	2,019
1970	3,621	1,084	2,537
1980	4,401	1,183	3,218
1990	5,346	1,282	4,064
2000	6,407	1,368	5,039

Period	Annual increase (millions)			Annual rate of growth (percentage)		
	World total	More developed regions ^a	Less developed regions ^b	World total	More developed regions ^a	Less developed regions ^b
1750-1800	3.7	0.9	2.8	0.4	0.4	0.4
1800-1850	5.7	2.0	3.7	0.5	0.7	0.5
1850-1900	7.8	4.5	3.2	0.5	1.0	0.3
1900-1950	17.1	5.7	11.4	0.8	0.8	0.9
1950-2000	78.0	10.2	67.8	1.9	0.9	2.2
1950-1960	48.9	11.9	37.0	1.8	1.3	2.0
1960-1970	62.6	10.8	51.8	1.9	1.0	2.3
1970-1980	78.0	9.9	68.1	2.0	0.9	2.4
1980-1990	94.5	9.9	84.6	1.9	0.8	2.3
1990-2000	106.1	8.6	97.5	1.8	0.6	2.2

SOURCE: For 1750-1950: J. D. Durand, "The modern expansion of world population", *Proceedings of the American Philosophical Society*, vol. 111 (1967), p. 137 ("medium" estimates). For 1950-2000: population estimates and projections available to the United Nations as of March 1974.

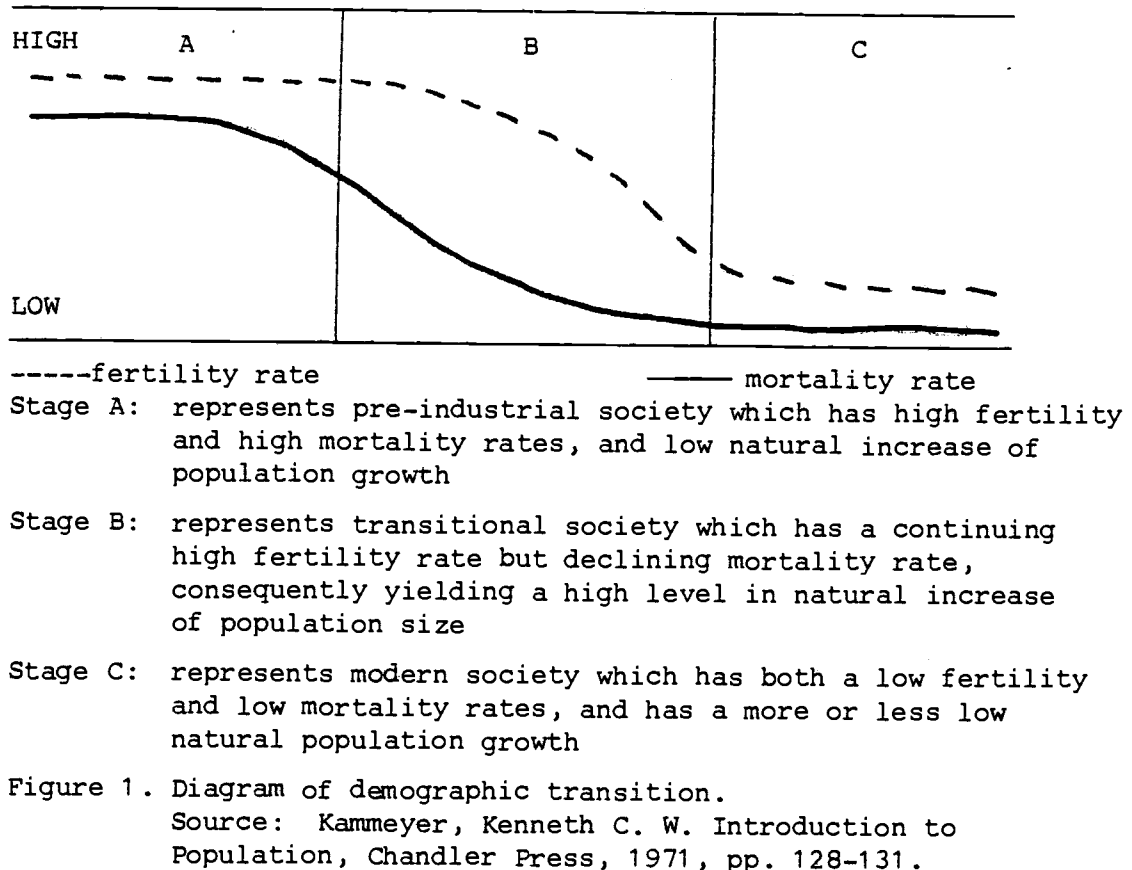
^a Europe, USSR, Japan, Northern America (Canada and United States of America), Temperate South America (Argentina, Chile and Uruguay), Australia and New Zealand.

^b All other regions.

A prominent feature of Table 1 is the uneven distribution of the population increases in the world. According to the projections for the 1990s, the less-developed regions will be gaining 98 million people a year, which is seven-eighths of the projected annual increase in the world as a whole. The author suggests that the reader bear in mind that the future trends of population growth cannot be foreseen with certainty, due to risks of error from lack of reliable measures and possible results of complex syntheses of unforeseeable trends of world conditions and events.

The increasing awareness of substantial growth of our world's population has led many nations to give attention to the issues and implications of population growth. This aspect was highlighted by the international participation at the World Population Conference held at Bucharest, Romania from August 19 to August 30, 1974. There were several conferences which dealt with population prior to the one in Bucharest, but the World Population Conference was the first global meeting of governments convened by the United Nations. One hundred and thirty governments were represented, and they considered population issues and adopted by consensus a World Plan of Action as well as several resolutions and recommendations. The nations of the world, as exemplified by those participating at Bucharest, have come to recognize the importance of demographic

factors in planning for social and economic development. The relations between population issues and socio-economic development claimed a prominent place in debate among the nations at the conference. The primary argument in the debate was between people from Third World countries who argued that a decline in fertility would occur as a result of reaching higher levels of development, and people from First and Second World countries who argued that development could not progress well without implementing controls on fertility growth. The primary basis for the contrast of viewpoints comes from varying interpretations of the demographic transition theory, which is diagrammed in Figure 1 below.



The demographic transition theory was modeled after the developments and demographic changes of Europe during the Industrial Revolution. When the three population transitional stages were first proposed, it was assumed that the demographic transition of the West would be essentially followed by the countries of the world currently undergoing development and industrialization (Peterson, 1975:12). Although challenges have been made to the theory of the demographic transition, in its simplest form at least, it is still one of the best-documented generalizations in the social sciences (Peterson, 1975:10).

The interrelationships between population and development will be further dealt with in the following section, "Review of Literature on Theoretical Issues and Development". The important variables perceived by the international committees at the World Population Conference and various demographic sources as being helpful to curb population growth will now be considered.

Robert Malthus postulated two centuries ago that population tends to grow faster than resources and food supplies on which it subsists (1914). There are two ways of achieving low population growth levels: the high mortality-high fertility pattern, and the low mortality-low fertility pattern. It is a generally agreed upon assumption that people prefer to have their offspring survive birth and early childhood without severe illness or death. It is also generally seen as desirable for people to live longer lives. Thus, it becomes a population's goal to achieve the pattern of low mortality-low fertility to improve its own quality of life.

The improvements in health standards and modern medicine which have been introduced relatively recently, along with increases in means of providing material needs for satisfying a more healthy living condition, have spurred the leaps of population growth throughout the world. Due to current levels of population growth, there is widespread concern about the consequences of continual increases in the context of other problems such as poverty, pollution, underemployment,

congestion, and shortages in food, housing, and energy. The relation between population size and resource supply may well be one of the first social equations understood by people since, from the earliest tribal life, the relation between the productivity of the land and the number and welfare of the people was recognized (Ehrlich and Ehrlich, 1972:12).

Posed with the dilemma of population growth outstripping the resource base, as presented by Malthus, the demographers of the world have joined forces with persons of other disciplines to attempt to resolve population issues. One may ask in what way and under what conditions the fertility rate may be reduced in the less-developed countries where the rate has remained quite high. The experiences of the more developed countries that have undergone the transition to low fertility provide a few clues, although no precise formulae for predictions in other countries can be established.

Within the wide range of proposals presented at the Bucharest World Population Conference in 1974, the two policies most commonly advocated for reducing population growth in the developing countries were more rapid economic growth and more effective family planning programs. There are many components, believed to be amenable to policy manipulation, presented in demographic literature which hypothesize socio-economic determinants of fertility control. The author has categorized these various components into the following six classifications: changes in 1) family patterns, 2) economic patterns, 3) health patterns, 4)

educational patterns, 5) psychological patterns, and 6) governmental legal patterns. The author wishes to make note that all of these categories overlap, are intrinsically interrelated, and do not operate in clearly predictable patterns. These categories were arbitrarily designed to classify the literature in a simplified manner for the reader.

1. Changes in Family Patterns

Changes in the patterns of family life have been extensively covered in demographic literature, and are regarded as an important area to promote family planning, since most fertility decisions are made within the family. One important variable is the delaying of marriage and the start of childbearing. The key argument is that by shortening the duration of marriage and years for childbearing, the size of families will be reduced. Policymakers believe population growth would decline if the legal age of marriage were raised, if women were involved in education and the labor market for extended lengths of time, and if family planning practices and spacing of births were taught (Clayton, 1975:326-331; Janowitz, 1976:189, 197; and Youssef, 1976/77:191-210). Complementing this variable is also a vast amount of literature which states that the general improvements in the status of women and the allowance of alternative roles for women outside of the family and home circle would assist in the decline of fertility rates. This position is commonly expressed in terms of increases in

female economic participation, status of women within the family and social culture, and access to education (Camilleri, 1967:590-595; Youssef, 1971:430-431 and 1972:135-152; Graziani, 1976/77:41-50; and Dixon, 1971:215-217). Dixon, a sociologist argues that high fertility rates in many developing countries are related to the social and economic roles assigned to women and that the best way to change this situation is through improvements in female employment. Dixon describes women in a large number of countries, especially in rural sectors, as powerless, economically and socially dependent upon males, and isolated from the mainstream of life outside of their families. Dixon feels that females can gain a greater voice in decision-making at home once they are employed outside of the home. A study done by Aziz Bindary, Colin B. Baxter, and T. H. Hollingsworth in 1973 (Ridker, 1976:326) points out that the simple relationship between female labor force participation rates and fertility differences among countries is due to cultural differences and abilities for women to work and rear children simultaneously.

Another variable relating to the family states that the decline of the extended family's role for education, welfare and generation of income has led to increasing numbers of transitional and nuclear families (Tauber, 1971:44-48). Increases in urbanization, mobility, and economic support systems have caused changes in the structure and function of the family unit. The economic value of children is greater in rural areas (Mueller, 1976:99) due to the agricultural economic base

of the family income. Also, in societies where the social security system is deficient or lacking, the desire for large numbers of children, especially males, is stronger. As more of the traditional functions of the extended family are replaced by other institutions in the society at large, the family becomes structured towards the nuclear family.

The decrease in the desire for large families, especially for sons, is the result of the combined efforts of the state's social security system as well as the improvement in the value and status of females. Fewer male children will need to be born if families feel financially supported and if the status of a woman is not based upon the number of male children she bears.

2. Changes in Economic Patterns

The economic and social changes cited in the demographic literature which are viewed as affecting fertility patterns are levels of urbanization, educational, and economic participation, distribution of income, and raised economic standard of living and aspirations for achievement. The arguments presented in this literature basically point to the idea that modernization of the society through economic developments and developments in a supportive infrastructure of social and educational levels will produce individuals who recognize the results of controlled family size from the economic and psychological point of view.

The pattern of urbanization allows rural people to come into contact with urban and more modern attitudes and behavior.

According to David Goldberg, a significant proportion of fertility related behavior is explained by the residential location over and above the effects of the respondent's income, education, or place of birth (Ridker, 1976:25).

Improvements in educational level and economic participation are shown to effectively assist in the decline of fertility rates. Fertility shows a negative gradient with rising levels of husbands' and wives' education (Bogue, 1969:676-677). The number of children that parents feel they can afford tends to diminish also as a result of rising material standards and aspirations for family levels of material living and children's education. According to Kuznets, the processes of modern economic growth, which heighten the demands for educational qualifications in the labor force, help to provide motivation for restricting the size of families (United Nations Papers of Population Conference, 1975:19). The cost of childrearing tends to be higher in urban areas, and the possibility for children to contribute to the family income at an early age tends to be lower than in rural areas (Mueller, 1972:384).

History has shown that a high degree of socio-economic development and modernization is not an indispensable condition for reduction in fertility. In Bulgaria, for example, when the level of fertility declined about 1910, more than 80 percent of the population was rural, 70 percent of the male labor force was in agriculture, 60 percent of the adult population was

illiterate, and the infant mortality rate was above 150 per 1,000 (United Nations Papers of Population Conference, 1975:19).¹ Also, the differences in the dates of fertility decline between countries can be explained by other cultural factors besides socio-economic ones. For example, longstanding cultural traits seem to underlie the persistence of high fertility and absence of family limitation in the rural populations of Soviet Central Asia, despite many decades of social change, universal primary education, low mortality, and massive indoctrination efforts. Although a direct causal factor remains to be established, the subordinate position of women, which appears to be an interwoven part of the dominant Muslim culture of the region, is probably a contributing factor (Population Reference Bureau, Inc., 1980:34).

As mentioned in the section dealing with family pattern changes (above, pp. 9-11), the employment outside of the home is significant in reducing fertility. Some studies point out, however, that it is doubtful how much can be accomplished in countries where one of the major problems is scarcity of employment for either sex, especially in the better-paid jobs which would be most attractive as an alternative to motherhood.

3. Changes in Health Patterns

The literature in many demographic journals and

¹ The reason for the fertility decline in Bulgaria in 1910 was not explained in the cited source.

publications of professionals in the field of family planning stresses the importance of improving health standards and the availability of contraceptives as a valuable component in development planning to reduce population growth. The decreases in infant and child mortality reveal improved chances that children will survive, and it takes fewer births to satisfy the parents' desires for living offspring (Tauber, 1971:44-48). Cross-country and historical evidence tends to support the proposition that a decline in infant mortality rates, better health and improved nutrition are preconditions for a fall in fertility. Paul Schultz points out, however, that this decline in births is unlikely to be sufficient to offset the increase in population growth resulting from the decline in mortality unless additional behavior factors are brought into play (Ridker, 1976:17). Yet, it seems reasonable to say that certain improvements in medical and health care will encourage some decline in fertility. There is also growing evidence from a variety of countries which suggests that easier access to the information services and supplies provided by modern family planning programs is effective in reducing the gap between desired and actual family size (Berelson, 1974:2-12; International Bank of Reconstruction and Development, 1974:Chapter 5; Mauldin, 1975:30-36).

4. Changes in Educational Patterns

Improvements in the educational standards of a population

are a positive component in the literature concerning family planning and development. One important statistical variable related to measuring educational standards is the literacy rate. Holsinger and Kasarda indicate in their writings that literacy per se, apart from the general effects of more schooling, has little significance to population education (Holsinger and Kasarda, 1975:180-181). Literacy may make contraceptive information more accessible to people; however, medical professionals have designed information specifically for illiterates. Informal education channels and the combining of population education with the already established formal curricula would proliferate family planning concepts in an effective manner (Holsinger and Kasarda, 1975:180-181). Literacy courses also have the potential of enhancing the overall status of the individual and may give the person the opportunities to seek information that could help him or her regulate the family size. De Tray expresses the theme that parents with more education have fewer children and discusses the perspective of "quality versus quantity" (De Tray, 1970:Report P-4449). This study reinforces the writing discussed earlier (above, pp. 12-13) concerning family size preference and the desire to improve the economic and educational opportunities for the children in the family. Improving educational levels within the society is still viewed as very important to social development, especially for women (Holsinger and Kasarda, 1975:180; Youssef, 1976/77:197-199).

The effects of education on population trends are difficult to measure, for it is not easy to separate the education factors from other variables. A number of studies indicate that there is a relatively high correlation between high literacy and low birth rates. The level of education among adults correlates with the desire for education for their children, which in many societies causes them to limit their family's size due to costs and rising aspirations (United Nations Educational, Scientific and Cultural Organization, 1975:562-572).

Population education is still at an experimental stage as an instrument of education policy in many countries, and its introduction does not always achieve desired results where the social structures and cultural norms fail to stimulate change. Some authors believe no great changes in fertility have been recorded yet in some less developed countries, such as India and Pakistan, where family planning programs have been in operation for a long time. Other writers feel that family planning programs, organized to provide information services and supplies and to indoctrinate the public in the advantages of regulating births, are a potentially influential factor in the lowering of fertility trends. The assessments of impact are debatable, and some experts are of the opinion that, where fertility declines have occurred, this might be due to the fact that the social and economic development may have reached the point that a decline was due to happen anyway (Goldscheider, 1971:97-98)

The importance of education as a fundamental component as well as a basic precondition for development is generally acknowledged in the literature (Holsinger and Kasarda, 1975:154-181; Janowitz, 1976:189-197; and Sack, 1973:245-272). A certain level and content of education are essential for the development of the individual as well as the society. Education enters the development process at two points: first, in shaping the attitudes and motivations conducive to development and second, in providing the fundamental part of the economic growth and social progress through the teaching of various skills.

5. Changes in Psychological Patterns

One important variable of introducing family planning and social change deals with the component of individual and social-psychological change. The modernization of the mental outlook is regarded as a major factor in increasing people's disposition to limit births (Inkeles, 1960:210). A modern attitude or outlook, compared to a traditional one, is an openness to new experiences, ideas, and alternative modes of behavior (Clifford, 1971:47). According to Ronald Freedman, a trend for change within the individual and small rural social systems is the development of a tendency to perceive themselves as participants and members of "mass" society. Included in this trend are a sense of allegiance to and uniformity with various social institutions, as well as having contacts outside of their sub-regional culture (Beaver, 1975:7).

As mentioned previously in the sections of family, economic, and educational patterns of change, aspirations and the seeking of attainment of higher goals or status assist in the lowering of fertility levels. The psychological pattern presented in the literature reflects the necessity to encourage and design various social-psychological motivations which may lead to the encouragement of fewer births. The changes in psychological patterns, also related to family planning, reveal that the decisive factor in the timing and pace of the fertility decline is probably due to the spread of a new mentality, rather than merely the transfer of information on birth control techniques or devices. This new mentality is an openness to the idea of manipulating reproduction, a new willingness to explore methods of fertility control, and an acceptance of available methods which may have been previously regarded as socially threatening or unacceptable.

The identification of social and cultural indicators that reflect a receptivity to family limitation has lagged behind the measurement of more readily identifiable socio-economic characteristics. Nevertheless, such hard-to-measure factors, as changes in the status of women, secularization of attitudes, and the rejection of societal traditions in favor of individual interests, may have played a more important role than the socio-economic factors in setting off the West's fertility transition (Population Reference Bureau, Inc., 1980:36).

6. Changes in Governmental Patterns

A primary step for a country to deal with population growth issues is to concern itself with developing a population control policy, and to organize and support the collection of

statistical data for its population. The literature stresses the importance of governmental support of programs, improving statistical information, and having an interest in demographic trends (Ridker and Muscat, 1973:150-152; United Nations, 1975:20).

Improvements may also be made within the governmental legal codes which would facilitate directly and indirectly the family planning activities within the country, such as those concerning contraceptive sales or importation, child labor, abortion statutes, status of women, school attendance, age of marriage, and various economic sanctions for the number of children in a family.

Old-age maintenance is another area where changes in governmental patterns may adjust to fertility growth indirectly by developing social security plans, and allowances for private pension plans and life insurance. These governmental programs decrease the number of children desired by the parents to provide old-age support (Ridker and Muscat, 1973:150-152).

Finally, many governments in the developing world have control or strong influence over the mass media systems within their countries. Thus, the literature often suggests the usage of popular mass media channels to promulgate concern about population issues and encourage family planning (Mueller, 1972:403). However, according to Deborah Freedman, there apparently is no evidence that mass media programs aimed directly at promoting family planning increase the rates of

acceptance or change basic family size norms. She feels that the best that can be said is that the programs increase information and a willingness to listen to other appeals (Ridker, 1976:357-358, 365-366).

B. Review of Literature on Theoretical
Issues in Development

The relationship between population and development variables is widely recognized in the literature of both areas of study (Adelman, 1963:890-903; Berberoglu, 1978:51-59; Birdsall, Fei, Kuznets, Ranis, and Schultz, 1979:211-295; Friedlander and Silver, 1967:30-70; Goldscheider, 1971:3-101; Oppong and Haavio-Mannila, 1979:440-485; Weller and Sly, 1969:313-326). Beyond this broad generalization, what is the true level of our scientific knowledge concerning the population-development relationship?

In the first case, the debate has centered on whether the high demographic growth rates of the developing countries constitute a negative, neutral, or positive factor vis-a-vis their development. If we turn our attention to the other side of the relationship, namely that of the influence of the economic and social factors upon population growth or upon its determining variables, it can be said that correlations sometimes of high order, have been found to exist between the levels of growth and some economic and social situations and changes which are dependent on the particular stage and pattern

of development. What remains still unclear is how the causal relationship can be explained. For example, studies have attempted to relate fertility behavior to some indicator of development and have found negative correlations in some cases (Weller and Sly, 1969:313-326; Stockwell, 1966:216-224), positive in others (Weintraub, 1962:812-817, Adelman, 1963:143-157). Still others find that the direction of the relation varies according to the level achieved by the country in question (Friedlander and Silver, 1967:30-70). Whether the correlation between population change and development are positive, negative, or relative to an individual country is most likely due to variances in the types of studies conducted and the types of measures used.

In all probability, these diverse developmental models and strategies will have differential effects on various factors, such as levels of organization of the social base and its capacity to influence the political process; income distribution; the spatial location of economic investments; the employment opportunities; the mode and degree of female participation in economic, social, and political activities; the development and coverage of education, health, housing and social security services; the types of land, property and other means of production; and the organization of the productive units, both agrarian and industrial.

The relationships between population change and socio-economic development were neglected in the past, mainly

for two reasons. First, development was measured in terms of growth in per capita income. Second, population growth was treated as coming from outside of the planning framework. Development strategies often emphasized industrialization as a major means of accelerating the rate of income growth and neglected the issues of income distribution and socio-economic development policies which would have considerably enhanced the general welfare of the bulk of the population. This past approach to development has resulted in enhancing disparities in levels of development among various sectors and groups of people within a country and between countries (Berberoglu, 1978:71).

At the same time, the rate of population growth has increased in these countries largely due to a decline in mortality brought about by an extension of public health measures and disease control programs. Many demographers have taken the tenable view that contraceptive technology is a facilitator, rather than the basic cause of natality decline in association with development (Robinson, 1964:385). Changes in values and social structure are also linked to falling natality. The cause of the modern decline of natality is believed to be found in "new patterns of living and new values". Changing values, occupational and residential composition, and increasing education were specifically mentioned by Notestein and Stix (1940:149-150).

In examining the literature on mainstream development theories for the past several decades, there are several

theoretical variants. Common to these variants is the assumption that "underdeveloped" is an original state which may be characterized by "traditionality", and further, to "modernize" the country must drop and abandon these characteristics and adopt those of the developed countries. Parsons, Hoselitz, and other functionalist followers believe that these countries must change from particularisms to universalities, away from diffuseness towards specificity, and away from ascription towards achievement (Berberoglu, 1978:52). Thus, the implied solution for underdevelopment is a greater penetration of modern economic principles and institutions, because the traditional societies have insufficient social mobility and lack achievement motivation. This transformation approach, also known as the "ideal type index" or "Gap approach", requires change within a cultural framework of values instilling hard work, thrift, and achievement (Berberoglu, 1978:51-53).

Another approach is closely related to the previous one, but is based on two major assertions: first, that development is largely the result of the spread of certain cultural patterns and material benefits from the developed world to the underdeveloped world, and second, that within each underdeveloped nation a similar process of diffusion takes place. Thus, this approach is known as the "diffusion approach". This particular theory underlies what is called "cultural and economic imperialism" (Berberoglu, 1978:61-62).

A third approach in theory is the "psychological approach". According to McClelland, the key to economic development is "the need for achievement", not the economic, political, or social structure of society, but rather its values, motives, and psychological forces which determine the rate of development (Berberoglu, 1978:63-65).

Robert Malthus wrote a famous essay entitled, "Essay on the Principles of Population" in 1798 (1914:5-19). In it he felt the potential for rapid population growth to deteriorate human welfare, but he also felt he saw how control over such multiplication could be established through the inculcation in each person of a higher aspiration, which would induce him or her to forego numerous progeny in exchange for other values. The tensions between population and subsistence were viewed as a major cause of misery and vice. However, Malthus denounced birth control both on account of its immorality and its tendency to remove a necessary stimulus to work hard for industry. Malthus also showed the negative correlation between status and the number of children as a clue to the population problem. He felt that the rise in economic status could be greatly facilitated by an appropriate political measure, such as free education. The importance of the inter-relations between population size and education, since both are a means to and a goal of development, has been frequently stressed by Malthus and many others. The importance of education as a fundamental component of, as well as a basic precondition for, development

is generally acknowledged.

The prominent theorist in the literature concerning the social structural approach to changes in development has been the socialist writer, Karl Marx. Marx's main principle of population can be stated as, "every historic mode of production has its own special laws of population historically valid within its limits alone" (Peterson, 1975:671). Marx believed that with an adequate social organization it would be possible to face any increases in population.

In the literature dealing with development, politics, economics, and many other areas, the world is basically divided into three blocks, or worlds. These three worlds are, generally speaking: the First World (Europe and North America and the Western capitalist block of nations), the Second World (U.S.S.R., China, and the communist block of nations), and the Third World (basically non-aligned, ex-colonial nations which are generally dedicated to becoming industrialized). The "Third World", has added new style and structure to the world order. Irving Horowitz wrote,

The emergence of the Third World...the transformation of world relations from a dyadic to a triadic balance, the emergence of a mass scale of new nations, new economic systems, new cultural products, new political forms -- all bound up with national traditions -- not infrequently synonymous with national myths -- have created a profusion of new issues for our times. The question is what direction such development is going to take (Horowitz, 1966:3).

The distinction between nations receiving aid and nations rendering aid is central to the definition of the three worlds.

The Third World receives economic aid, assistance, and imports manufactured goods from the other two worlds, while supplying them with primary commodities and sometimes informal allegiances. Today, many developing areas of the Third World are locations for international tensions between the First and Second World, especially in the oil-rich region of the Middle East.

The current thinking about development is characterized by a misunderstanding of the real issues at stake. How did we in the First World then come to this defective understanding about development? Most of the question can be answered from examining approaches used in dealing with the Third World nations: due to the Western World's historical patchwork approach to development aid, the Third World nations were not able or permitted to give their own definitions of development for their own futures, and due to Western ethnocentrism which assumed that underdevelopment exists in all phases of life, and overlooked the possibilities that the Third World may be more developed culturally and humanly than themselves.

Thus, several developmental wisdoms may arise out of diverse cultures. History reveals that the importance of diversity preserved the quality of human life...the man who despises others dehumanizes himself...and so with cultural aggressors (Castel, 1971:15).

There is no simple acceptable definition of developing countries which encompasses the diverse relationships between economic and population growth and the diverse prospects for development. In an attempt to label countries within a spectrum

of development, several measurements have been used. The three major indicators used to measure development found in the literature are: Gross National Product (GNP), infant mortality rate, and literacy rate. The GNP per capita has been the most prominently used guideline for evaluating development, due to the historically narrow view of development merely in terms of economic and industrial growth. The World Bank and many other international agencies for development have relied heavily upon data using GNP per capita of a country for decisions relating to financial and technical assistance. Health improvements are one of the major objectives of development, and the main measurement for a country's standard of health is the infant mortality rate. Infant mortality is defined as the number of deaths per 1,000 infants born per year. The infant mortality rate is an indicator of developments in the fields of health, nutrition, and sanitation used by publications of the World Health Organization, the United Nations, and many other agencies. Other important variables mentioned in the development literature related to health are life expectancy, maternal mortality rates, and caloric intake; however, infant mortality rate is considered the most significant measurement of world health standards. The final major indicator used to measure development is the literacy rate. In the literature, the literacy rate measurement is basically defined as the percentage of the population over the age of 15 years who have acquired basic reading and writing skills. This indicator is the most

common and popular index used for comparative measurements of educational levels between nations or areas (Morris, 1979: 37-38).

C. Review of Literature on Women and Islam

The study of the effects of population trends on economic and social development has been mainly concerned with the relatively narrow, although complex, issue of economic growth and development, especially the growth of income. Apart from studies dealing with the implications of population growth, composition and distribution for specific social sectors such as education, health, housing, and to a lesser extent social services, relatively little attention has been given to the links between population and the social dimensions of development.

These interacting forces include, in particular, the demographic factors in which the dual nature of reproduction of real life in human society--that is, the interrelation and interdependence of the biological and social--is expressed. One cannot correctly assess the current position and forecast the future dynamics of natality, mortality, and other demographic trends on the basis of the biological approach alone, without considering, apart from the economics, such social elements as dominant customs and traditions, the cultural level, level of public health, social welfare, and the political situation, all of which are involved in the process of human reproduction (Guzevaty, 1973:534).

In this final section of the review of the literature, an emphasis will be placed upon the materials dealing with the social dimension of development which has become prominent in

the literature dealing both with development and demography -- the status of women. The Decade for Women, 1976-1985, is a direct outcome of the International Women's Year in 1975. The decade is a period for action to make it possible for women to participate more fully in economic, social, and political life in their countries, and to reap the benefits of that participation. Social welfare, economic development, and population planning will meet limited success unless there is a corresponding effort to improve the status of women in that society. A decrease in the population growth rate through contraceptive use depends mainly on women's ability to make the decisions to plan and space the number of children desired. What determines their choices regarding contraception, family size and spacing are the interacting factors of health, information, education, employment, legal status, economic independence, and political participation, as well as the prevailing traditional, cultural and religious attitudes towards women (World Bank, 1979:18).

The extent to which women participate in, and are affected by, economic growth and its accompanying social, structural, attitudinal, and technological changes varies greatly among and within developing countries. In general, however, their participation differs from that of men, and they are for the most part at a disadvantage.

Also, the work that women are presently doing in many developing countries tends to be economically invisible.

Worldwide, women's domestic and childbearing activities are generally not valued for purposes of national income accounting. However, their contributions to subsistence or cash agriculture as unpaid family workers are not separately accounted for. Although in many countries women represent about 70 percent of the agricultural labor force, statistics on economic activities in these same countries classify a large portion of women as "economically not active" (World Bank, 1979:11).

The focus of this study is upon the Muslim world; thus, a careful look at the literature concerning Islam and the status of women is in order. One of the main issues confronting Islam in the modern world is the position of women in society, and their rights and roles inside and outside of the family sphere. The literature concerning the status of women and attitudes concerning family planning in the Muslim world is often found to be paradoxical and reveals the diversity of debate among scholars. One of the prominent features about this literature is that the bulk of it, written primarily by Western writers, continually assigns the low status of women and underdevelopment of the countries to the Islamic religion. Topics drawn from Islamic laws which are extensively covered in the critical literature are: polygamy, seclusion (purdah)², divorce procedures, arranged marriages, and inequalities in inheritance

² purdah: the practice of seclusion and segregation of women from men.

laws (Ingrams, 1971:526-531; Pastner, 1972:248-261; Cooper, 1975:280-287; Williams, 1973:49-54). In the past few years, more literature can be found which defends Islam and investigates the other factors affecting the low status of women and development of various countries. This literature is primarily written by Third World individuals, Western educated individuals, or representatives for international agencies stationed in the Muslim world. There is also more literature from the Muslim world being translated into English for various research and consulting agencies, as well as for various international conferences. Within the past decade or so, the Western writers in various sociological, anthropological, and development journals have become more objective about social changes in the Muslim world than in the recent past.

The Pro-Islamic literature takes a defensive posture which generally states that Islam is being unfairly blamed for the relatively low status of women in the Middle East. They criticize the majority of Western writers and state that they tend to handle their subject matter in broad general terms and rarely attempt any in-depth interpretations or analysis. They feel that many of these authors convey negative connotations about Islam and the status of women, as previously stated, for they tend to compare the Arab Muslim society with Western European values, seeing only the "backwardness" and overlooking the many changes and ideas presented by the Middle Easterners. Western writers have described the Arab Muslim society in

negative terms with regard to pardah, polygyny, and the wearing of the veil; however, those of the Pro-Islamic position do not view these practices in their culture as discriminatory. The literature of religious orientation which defends Muslim interpretations of the role and status of women uses one of the following four strategies: 1) comparison of the position of women before and after the establishment of Islam, 2) attribution of women's low status to extra-Islamic traditions, 3) comparison of Islam, Christianity, and Judaism in their relative treatment of women, and 4) Islam's belief in differences between men and women according to Allah³, justifying the different religious prescriptions for each sex with the scripture. Aminuddin argues that pre-Islamic women in Arabia were looked upon as the most degerate social group and that Muhammed realized the lack of equality for women and sought various reforms. He did that by removing the "original sin" stigma, restricting polygamy, forbidding infantcide, and stressing the importance of knowledge and education for both sexes as essential for a good Islamic life (Al-Qazzaz, 1978:373).

The second strategy agrees with the first position, that Islam does not contribute to the low status of women, but stresses that non-compliance with Islamic laws has resulted in the present state of inequality between the sexes, furthered by the assimilation of European cultures into the region which led

³ Allah: the word "God" in Arabic.

to a decline in women's status (Saleh, 1972:1-8; and 1976:1-20). Islam gave women the right to arrange their own marriage, while the pre-Islamic era and the deterioration of Islam during the Middle Ages had unrestricted polygamy, under-age marriages without consent, and unilateral repudiation of a wife by her husband.

The third strategy is a comparison with the other two major monotheistic religions, and focusing on how they treat their women. Dr. Gamal Badawi states that in the Old Testament many of the male figures had more than one woman, and Islam is thus viewed as a more realistic means of socially dealing with barrenness, widows, and divorcees. Also, several contemporary comparative studies have been done cross-culturally by Nadia Youssef to show many parallels in the treatment of women (Youssef, 1972:135-153). Egyptian feminist, Nawal El Saadawi, points out the role of religion in many social systems in the following statement:

While history has proved time and again that the underprivileged position of women, and the oppression to which they have been exposed throughout the ages, are an offshoot of the socio-economic system, many writers and historic analysts maintain that religion is the root cause. I have come to see more and more clearly that religion is most often used by those who rule to keep down those who are ruled...in any society it is not possible to separate religion from the political system, nor to keep sex separate from politics. If we study the relationship between religion and the state at different stages of history, and in different types of society we will discover that it is perfectly possible for a single religion to uphold diametrically opposing principles and positions, even on crucial issues...This is evident from the way in which the Christian Church changed its

position continuously and radically on many questions, to suit the transition from feudalism to capitalism (El Saadawi, 1979:12).

The final strategy in denying Islam's responsibility for the negative and low status of women and for underdevelopment comes from the fundamentalist's view of the scripture's legitimization of differences between men and women as God-given. This view, in turn, explains why men receive two portions of inheritance (compared to one portion for women), and the proper care, rights, and privileges given to women. While affirming the potential equality between men and women in God's eyes, Muslims have created a set of social institutions designed to restrain or limit this natural equality for the proper order of daily life. Polygamy, repudiation, sexual segregation and seclusion are thus interpreted in this light (Saleh, 1972:7).

Due to growing international concern for the status of women and the growth of international development projects in the Muslim world, many scholars from the East and West are assessing and interpreting Islamic thought, the status of Muslim women within their families, the economic and educational participation of women, and their role in national development. The role of Islam and the various traditional cultural elements associated with it will remain a dominant feature in the literature dealing with development in the Muslim world; however, there are presently many areas open to future research.

Al Azhar University in Egypt, Islamic Conferences, and many international agencies have shown concern with the transition and challenges confronting modern Muslim societies. As development continues to change the Muslim world in whatever direction it takes, and as the sophistication of data collection increases, many subjects such as the status of women, changes in family patterns and education, as related to the multiple facets of social change will be valuable for social scientists, educators, and political scientists alike to investigate.

II. DESIGN OF THE STUDY

A. An Overview of the Variables and Theoretical Issues Discussed in the Literature

Chapter I presented a review of the literature dealing with the areas of population, development, and women and Islam. These reviews are pertinent for this study, because they reveal numerous topics and theoretical issues which could be investigated and analyzed in different societies.

1. Topics Found in the Literature

The topics which were found in the literature are inter-related, and several appear important in all three areas of population, development, and women and Islam. The following topics were drawn from the discussion in Chapter I:

- demographic transition
- structure and function of the family in society
- status of women
- social security systems
- age at which marriage occurs
- desire for large numbers of children, especially sons
- health standards and services
- infant and maternal mortality rates
- nutrition levels
- life expectancy
- female educational and economic participation
- literacy rates
- urbanization
- yearly growth rate of a country's population
- population size of a country
- GNP per capita
- educational levels
- dissemination of information via mass media

- governmental legal codes
- modern mentality and an openness to new ideas versus traditional attitudes
- religious and cultural values
- rising aspirations for attainment of material goals or status
- collection of statistical data

These numerous and varied topics were organized into categories by the author after reflecting upon the environmental forces and conditions in the model by Thomas Dye, which may be found in Appendix I, on page 187. The scheme of this model and the topics derived from the review of the literature were of fundamental importance in the structuring of the hypotheses for this study. However, as will be described below in the last chapter, this study found the perceptions of religious influence and development as described above in the preceding chapter to be inadequate. The remainder of this chapter, and all the next chapter on results, will investigate religious influence and development as these relations have been traditionally formulated by most writers. Then in the last chapter (below, pp. 161-165) reformulations of religious influence and development will be made, which will argue that religious behavior is a dependent variable, and will explain a new measurement of development, the Physical Quality of Life Index. This format will be followed to show clearly the inadequacy of the traditional perceptions and formulations concerning religious behavior as well as development.

2. General Propositions and Expectations based on the Literature

As stated in the title of this thesis, this was a comparative study of development and population policy in three Muslim countries. The author investigated which socio-economic environmental forces and conditions affect a government's population policy.

Considering the topics and discussion presented in Chapter I, the author designed the following diagram to depict the relationships to be considered in studying the determinants of public population policies:

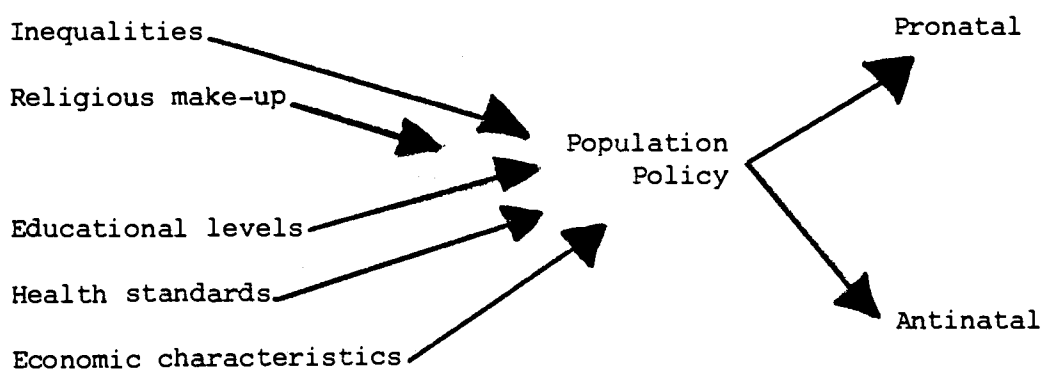


Figure 2. Diagram of environmental forces and conditions and population policy positions.

The five environmental categories listed above have substantial significance in determining the speed of societal changes according to the literature on population and development. It appeared that these five categories could be subsumed

within the topics of traditionalism and development.

From an evaluation of the diagram above, the author designed two propositions. The first proposition deals with traditionalism, which draws from the two environmental categories of Inequalities and Religious make-up, and its relationship to a pronatal or antinatal population policy position. The second proposition deals with modern society in terms of development, and draws from the remaining three environmental categories of Educational levels, Health standards, Economic characteristics, and their relationship to a pronatal or antinatal population policy. Thus, the two propositions summarize theories about traditionalism and development. Religious values will be used as an index of traditionalism since normally, religion, cross-culturally, is not change-oriented.

The first proposition stated that the formal practicing of Islam encourages pronatalism indirectly through the allowance of multiple wives, the desire to multiply (stated vaguely in the Koran⁴) and restricted roles for women, whereas atheism or secularism does not. From this proposition the following expectation could be derived: The more secular the society is, the more antinatal policies will be encouraged; whereas, the more traditionally religious in behavior the society is, the less antinatal policies will be encouraged.

⁴Koran: (also transliterated as Quran): the holy book of Islam believed to be God's (Allah's) revelation to the prophet Muhammad.

The second proposition stated that pre-modern society encourages pronatalism generally because of high mortality rates, the need for additional laborers, and the necessity of additional income through children for social security, whereas modern society does not. From this proposition the following expectation can be derived: The more modern the society is, the more antinatal policies will be encouraged; whereas, the more traditional the society is, the less antinatal policies will be encouraged.

These propositions and expectations were developed into two main hypotheses which will be presented in a later section of this chapter. The two hypotheses served to define the study and summarize the literature from Chapter I.

B. Purpose of the Study

This was a study concerned with the relationships between social and demographic phenomena, and hence was in the area of social demography. At present, there does not seem to exist within the field of sociology any single frame of reference with integrated sets of deductive and empirical propositions linking social and demographic variables that could properly be called a social demographic theory. This is not to say that theoretical propositions are lacking, for they exist in abundance in the literature in as much as a number of writers in the area of social demography have developed sets of formal

propositions relating to the various aspects of social demography, but they have not brought the propositions into any single scheme or theoretical system. Most of the theories related to social demography merely tie into the conventional types of theories presented in the discipline of sociology. Wilbert Moore has suggested that the "structural-functional" approach in sociology offers one of the most promising frameworks for the development of a social demographic theory, in that it explicitly brings the demographic variables into a scheme of a sociological theory (Ford and De Jong, 1970:19-20). Kingsley Davis, a leading contemporary social demographer and proponent of structural-functional analysis, has warned, however (1954:34), that:

Future advances in demographic theory will hardly be made by pretentious attempts to develop a general theory or to integrate the big 'ologies" with demography: it will more likely be made by individuals pursuing particular problems with all the conceptual and empirical tools they can find.

Therefore, the author investigated the two propositions just mentioned with knowledge obtained from studies done in her interdisciplinary studies in sociology, religious studies, and adult and community education, as well as from related literature in the field of development.

These specific propositions were chosen because the major concern of social demography is the analysis of how general social and cultural factors are related to population structure and processes. This concern is also reflected in the

reformulations of religious influence and development which will be given in the last chapter (below, pp. 161-166). This thesis was an effort to investigate certain social demographic characteristics in the Muslim world, and how they relate to a particular Muslim nation's level of development and formal stand on population policy issues.

The recent worldwide interest in population has forced almost every national government to consider whether or not it wishes to have an official policy, and, if it does, what that policy should be. This situation creates the opportunity to develop and investigate hypotheses related to pronatal or antinatal policies.

C. Limits of the Study

This study focused upon social demography and was an analysis of the connections between certain features of social system and the government's population policy. One of its limits is that it did not offer insights on the construction of demographic measures or improvements in policy construction.

The ties between theory and research in the social analysis of population processes and policy have been generally stunted by the general neglect of theory and the absence of overall guidelines and frameworks for collecting information in the literature. Once one moves out of the population data to locate connections between population processes and policy and the social system, it is not likely that a grand social-oriented

population theory can be developed at the present state of social demography. The field of population policy has generally lacked disciplined direction. The author did not attempt to pursue an overall theory nor focus exclusively on describing facts of populations that may have social relevance, but rather investigated hypotheses which caused the author to seek data on traditionalism and development and how they affect a government's population policy.

A natural context for social demography is the social action framework, the focus of which has usually been on demographic behavior and its social determinants. The macro-level approach is the social structural approach, and the micro-level is the social psychological approach. This study utilized both approaches; however, an emphasis was placed upon the social structural approach, under the presumption that large-scale changes and development have a greater impact upon the society and individual within the society. Based upon the assumption presented earlier, specific discrete rewards and penalties, based on symbolically perceived values at the micro social psychological level, are important; yet, they alone cannot offset the broad social practices of developing societies. Therefore, one must step further into the realm of understanding societal institutions at the macro social structural level to produce change in the broader environment. There is also the assumption found in the literature, that in any society, only

when the accepted model of behavior is emulated by the population at large, does it become a predominant personal style. Thus, the author will focus upon the social structures and institutions which are a sociological pivot for the activation of the psychic mobility, and which the public shares through their daily association, and binds the individual to the prevailing participant lifestyle. The author is aware of the fact that modernizing individuals and institutions, like "the chicken and the egg", reproduce traits in each other due to the complex web of interrelationships and interactions in social phenomena.

D. Definition of Concepts

This study used many concepts from sociology, demography, religious studies, and socio-economic development literature. Thus, clarification of the definitions of the concepts used by the author is important. The following definitions are of the concepts used in the literature and in this thesis:

Adult education: any kind of learning experience designed for adults irrespective of content, level, and methods used. It is related to the period of life, adulthood, and can be formal, non-formal, or incidental in nature. Defined this way, adult education would include: literacy and fundamental education; vocational or job training; education about health, consumer, and family problems as well as education about physical and personal development; literature, art, drama, and other cultural programs; community development, social education, and community organization; political and civil education; religious and economic education.

Antinatal: a position or attitude of decreasing population growth taken by an individual or a government through the limitation

of births. The following factors are conducive to an antinatal policy (Godwin, 1975:26): 1) declining mortality, 2) awareness of population levels and trends, 3) interest in population control projects, 4) commitment to modernization, at least in principle, to optimize the time path of modernization, 5) freedom from fear of encroachment by neighboring states, 6) absence of, or control over, internal ethnic and religious rivalries, 7) pragmatic, as opposed to dogmatic, religious affiliation among the major ethnic groups 8) a sense of pressure upon the land or increasing dependence upon imports for necessary consumption items, mainly food, and 9) cordial relations with foreign governments and international agencies willing to aid in the delineation of population problems and in fertility control programs.

Culture: the way of life of a social group, including all the material and non-material products of the group's life that are transmitted from one generation to the next; the technical skills, norms, knowledge, beliefs, habits, attitudes, language, arts, instruments, and overall civilization of a given people.

Development: the level or state of a country on a spectrum ranging from traditional, transitional, to modern. The development processes are those planned and unplanned activities which produce the social structures, technologies, and lifestyles found in the First and Second World. This idea also includes the social and economic changes which tend to make the nation more closely resemble the nations of the First or Second World, or a combination of the two. It is measured primarily in terms of a country's GNP per capita, literacy rate (%), and health standard (infant mortality rate).

Functional education: adult education which is founded on the relationship between the individual and work (taking the word "work" in its broadest sense). It is linking the working individual with the general development of the community and reconciling the interests of the individual with those of society. Functional education is a means with which an individual fulfills himself or herself within the framework of society which, in turn, facilitates development.

GNP (Gross National Product) per capita: the basic accounting measure of the total output of goods and services defined as the total market value of all final goods and services produced (regardless of whether or not they are sold) in the economy in one year, per person in a given country.

Government: the organized and active political network within a nation; the formal central agency or complex totality of interrelated organizations exercising overall control over society; the system and people who administer and control the affairs of the state. The political social institution that serves to maintain social order, exercises power to compel conformity to the existing system of authority, and provides the means for change in the legal or administrative system. The modern state is a type of social structure in which government finds much of its formal expression and codification.

Hypothesis: a supposition of certain relationships to provide a basis for further investigation.

Industrialization: changes in the methods of production, and economic and social organization resulting from the introduction of power-driven machinery and technological innovations.

Infant mortality rate: the number of infant deaths per 1,000 live births in one year.

Islam: the religion of those who follow the prophet Muhammad⁵, which arose in Arabia in the seventh century A.D. The religion holds to the teachings through Muhammad, the final prophet, to the writings in the Koran, and to the Hadith⁶.

Literacy rate: the percentage of the population, age 15 years and over, who have acquired the set basic writing skills as defined by a country or international agency.

Modernization: used to designate the process of development of contemporary or modern ideas, beliefs, or standards. Modernization is a secularization trend, unilateral in direction from traditional to modern participant lifestyles. It is a broad social change process that transforms and reshapes society. It is often a concept used interchangeably with the concept of development.

Muslim: those or that which follow or belong to the Islamic

⁵ Muhammad (also transliterated as Mohammed, Mohammad, or Muhammed): the prophet of Islam.

⁶ Hadith: literally, "the right path". Islamic writings containing the sayings and teachings of the prophet Muhammad, as recalled by those who knew him. It serves as one of the sources of Islamic laws.

faith. A concept used interchangeably with the word Islamic or "Moslem".

Non-formal education: any organized, systematic, educational activity done outside the formal educational system to provide selected types of learning to adults as well as children. It may include, for example, agricultural extension and farmer training given outside the formal system, youth clubs with substantial educational purposes, and various community programs of instruction in health, nutrition, family planning, co-operative, and the like.

Policy: something a government chooses to do or not to do. The policy toward population may be pronatal, antinatal, or neutral. When a government is neutral (or does not take action), it is the policy of that government to be laissez-faire⁷, by allowing the prevailing societal forces to continue to influence the people's behavior without interference by the government. It is the active implementation and laws or decrees based on a government's position on the population issue.

Polygyny: a form of polygamy, in which a husband has more than one wife at the same time.

Pronatal: a position or attitude taken by an individual or a government of increasing the population growth and not limiting births. The position is held due to either a protest toward the idea of birth control measures, or a perception that the country is underpopulated.

Religiosity: the interest and participation in activities that are defined as religious by a certain religion. It is also the degree of participation of an individual in religious rituals, or a sum of various behaviors and attitudes judged to be religious within a group or society.

Social change: any modification in the social organization of a society in any of its social institutions or patterns of social roles. It refers to changes in established patterns of social relationships -- for example in family, religious, or economic life.

Status of women: the normatively defined position of women in the social structure, that is distinguished from and at the same time related to other positions through designated

⁷ laissez-faire: a policy of non-interference.

rights and obligations. The status position is generally expressed in terms of a role, that is, a pattern of behavior expected of the occupant of the status -- in this case, the female gender and her role in society as well as her rights and obligations.

Urbanization: this term means the proportion of urban residents (as defined and counted by the government or international organization) in the total population. It is also a rise in the proportion or percentage of the urban population in the total population.

E. Discussion of Development and Related Concepts

Traditional society is characterized by little change from generation to generation, and has the following traits: behavior patterns governed by customs, ascribed status, low levels of economic productivity, and a social lifestyle and organization founded upon principles of hierarchical command. The developing society has a tendency to have more characteristics in common with the developed society. Developing societies exhibit rapid changes in behavior governed both by laws and customs, achieved as well as ascribed status, low economic productivity in some sectors of the economy and high productivity in others, lifestyles with the trends of rapid social mobility despite intensive stratification.

Development differs from industrialization in that the latter implies technological innovations in the forms of economic production and transportation support systems. Development implies, in addition, transformations in human relations in social, economic, and political status, irrespective of the level of

industrialization. Industrialization may produce stresses in human relations, which in turn, create a large-scale effect on the overall process of social development (Horowitz, 1966:418). To identify industrialization with development is to run the risk of offering policy prescriptions for economic industrial growth independent of social inequities or other matters of concern.

Development also differs from social change, in that the latter may imply a continual adaptation through small steps and stages to an existent social condition. However, development implies a larger scale break from tradition which contains perceptible disruptions from the past's static equilibrium. Often social development requires a new set of conceptual tools in the culture to "explain reality", whereas social change may keep old conceptual tools intact and merely adapt to modified situations. Thus, that concept which is modifiable may be subject to change, whereas, that concept which is no longer flexible is subject to development. For example, the fact that women are permitted to seek professional careers in the areas of education and medicine is a social change from their previous traditionally expected role (concept) as a mother and wife. Yet, women pursuing these careers in traditional areas of the Muslim world are limited to practicing in segregated environments. Thus, old conceptual tools of religious and cultural patterns have not been replaced, but only modified to accommodate to a new situation for women. For development to have occurred, new conceptual tools

for perceiving the status and roles of women would have to be accepted, and the women would be allowed to pursue various careers and be co-workers alongside males.

Modernization involves a process of social change on a broad- and large-scale level. Social change is the wide spectrum of changes ranging from the individual level to the social structural level. Thus, modernization is one segment in the area of social change. The key to understanding modernization begins with the process of structural differentiation, which involves the evolution of specialized role structures from multifunctional structures. During modernization, differentiation of major social roles, structures, and organization occurs, including specialization and separation of economic, familial, political, and religious systems. Modernization involves increased division of labor, specialization, differentiation of institutional structures, among other social changes. Modernization is a dimension of development, and is a concept often interchangeable with the concept of development (Horowitz, 1966:416).

Development also differs from alterations in population growth or national wealth, for like the process of social change, these latter do not produce a new process, but are simply processes of adaptation. It should be noted that alterations or growth may inhibit or promote modernization with respect to that developing society.

Despite the differences among the concepts of development,

modernization, social change, and industrialization, they are intricately interrelated. The precondition of social development is social change for progress, however defined, can only arise in a changing world. Often these social changes are brought about by industrialization, a change which is the property of a society's subsistence arrangements.

There is no purely acceptable definition of "developing countries" which exhibits the diverse relationships between economics, population growth, and the diverse prospects for development. Basic characteristics of the developing countries derived from the literature are: 1) rapid population growth, 2) one-sided exploitation of resources, 3) lack of capital, trained labor, or an effective social and political administration, 4) ancient and conservative traditions and attitudes, 5) limited industrial development, 6) expensive and cumbersome systems of distribution, and 7) low per capita income and material standard of living. Obviously, no single criterion is satisfactory or necessarily applicable in the case of every developing country.

A further difficulty arises from the fact that there is no inherent clear-cut definition which exists to distinguish between "developed" and "developing" countries. Between the highly developed and poorly developed countries there is a wide spectrum, which cannot be easily categorized, because countries may experience development in one sector and not in another, and because the position of countries on the spectrum is not static.

For the purposes of this study, it was appropriate to retain the term "developing countries" despite its imperfections. However, the author realizes that the term is arbitrary and a rather relative perception of reality. The term was preferable to other terms found in the literature, for other terms were too pessimistic or pejorative and implied a permanent status, such as: "underdeveloped", "backward", or "less-developed".

F. Presentation of Assumptions

The following assumptions convey the basis upon which the hypotheses presented below rested.

- 1) The existence of a development process is a social fact, but the recognition of a need for development is a social value.

This assumption was based on the perception that there is a difference between the countries which have no consciousness of need to change or develop in a particular area; e.g., those that characterize themselves as being "developed" socially and culturally and as "developing" economically and technologically, and those that wish to develop and emulate the western cultures of the First and Second Worlds.

- 2) Population growth is influenced by the broader environment within which couples make fertility decisions, and that environment shapes their decisions.

Population processes do not operate in a social vacuum, because births, deaths, and migration are integral to the functioning of human society. These three variables are responsive to the

patterns of social structure and affect the character of social life.

- 3) Traditionalism encourages large families, and this pattern is strongest in rural areas where traditionalism prevails.

Reproductive behavior, like most human behavior, is the result of the interaction between inherited tendencies and patterns learned through the process of socialization, which, in turn, reflect social structure.

- 4) Motives for behavior and decision-making are based upon personal or governmental values of perceived economic and social costs and benefits.

Costs and benefits motivate a person's or nation's behavior or policy in terms of the weight placed upon specific economic, political, and religious values perceived by that person or government. Religious symbolisms as well as a variety of other personal social symbolisms interact with perceived exchange costs and rewards build into the social system.

- 5) Participatory approaches to education and development help to broaden the decision-making base within a community, and expanding that base aids development and is adaptable to most kinds of training situations.

Participants are often best suited to identify their own needs. Participatory approaches may lead to changes in the aspirations and expectations learners hold about their lives. Helping others to develop skills such as the ability to clarify value positions, recognize cause-and-effect relationships, make judgments, and take responsibility for actions, is as important as helping learners develop more concrete abilities in specific development

sectors.

G. Expression of Biases

Most studies and writings implicitly contain the biases of the author despite an attempt to remain objective. Thus, the author wishes to express her personal values which may appear in this thesis despite an attempt to remain neutral throughout the study.

- 1) The recognition of a need for development and the designated approach or process to achieve that development should be free from external ethnocentric influences and appraisals as much as possible to insure a strong development foundation. That is, development would more likely reflect the local people's desire and tend to be more permanent.
- 2) A population policy is desirable so that inhabitants can have a higher material standard of living and, in turn, an overall improvement in their quality of life.
- 3) Modernization and the development of efficient and effective population policies which are antinatal can be achieved regardless of what classical political form of government that country has.
- 4) If fertility decisions are influenced by the socio-economic environment in which they are made, then it is not enough to make birth control services available and to inform, educate, and exhort couples regarding their use. By the same token, the absence of such services and the presence of a communications campaign to increase fertility may have little impact if environmental conditions are conducive to small families. To create an antinatal environment, changes in the societal institutions and norms are needed to change the broader environment, and agencies must break away from the family-planning-as-policy syndrome.
- 5) The movement for the full inclusion of women in society and their acceptance as equal partners within the family

is an important feature in the developing countries for social change and the pursuit of human rights and freedom of expression.

H. Hypotheses for Investigation

After reviewing the topics and theoretical issues in Chapter I, and considering the propositions and expectations developed earlier in this chapter, the following two hypotheses were formulated:

Hypothesis 1: Religion (Islam) has an inverse relation to an antinatal formal population policy.

Hypothesis 2: Development has a direct relation to an antinatal formal population policy.

These two hypotheses involve the topics, propositions, and expectations presented earlier. With these hypotheses, development and traditionalism in religion and their impact upon a government's formal population policy was investigated.

The investigation of these hypotheses will now be done by examining several topics intended to focus on traditionalism and secularism levels in Islamic culture in the case of Hypothesis 1, and on traditionalism and modernism within the development process in Hypothesis 2.

1. Hypothesis 1: Religion (Islam) has an inverse relation to an antinatal formal population policy.

This first hypothesis suggests that as Islamic religious traditionalism increases within a country, the chance of that country having an antinatal formal population policy decreases. The opposite condition would also be true: as the Islamic religious

traditionalism decreases and the country becomes more secular, the chance of that country having an antinatal formal population policy increases.

The following factors may be used as indicators to measure Islamic religious traditionalism:

- a) Polygyny: Polygyny is related to adherence to and is allowed by traditional interpretations in Islam by many of the Sunni⁸ Islamic sect. Polygyny can be stated as an indicator of religious traditionalism.

- b) Status of women: As the status of women improves in a country, it is more likely that that country will move towards an antinatal formal population policy. The status of women was extensively discussed in the literature in both the areas of population and development in Chapter I. The status of women may be an indicator of both the level of development in a society as well as the degree of religious traditionalism. Since the review of the literature (pp. 31-34) debates, yet often infers, the lower status of women in these developing Islamic countries is due to Islamic traditionalism, this study will place the "status of women" as an indicator of investigation under the hypothesis pertaining to religious traditionalism rather than development although the indicator overlaps both areas. Islamic

⁸ Sunni: The larger of the two great divisions, or sects of Islam. The Sunni consider themselves the orthodox adherents of the sunna (the body of customs and practices based on the prophet Muhammad's words and deeds as found in the Koran and Hadith, which serves as a guide to proper behavior).

religious traditionalism, as expressed in the Koran and Hadith and explained by secular writers, often prescribes social roles which affect the status of women. The following variables examined religious traditionalism with traditional measures of religiosity brought forth in the review of the literature, which by definition (p. 47, "religiosity") included normative activities judged to be religious by a society:

- (1) The percentage of women in the labor force (Adelman, 1963:869-911; Bindary, Baxter, and Hollingsworth, 1973:159-167; Youssef, 1972:135-153; and Friedlander and Silver, 1967:30-70). The traditional practices of religion prescribe the role of women to child care and duties of the home, while the men are prescribed the role of provider. This variable is expressed in the Koran, Sura II:233:

Mothers shall suckle their children two years completely, for such as desire to fulfill the suckling. It is for the father to provide them and clothe them honourably (Arberry, 1979:33).

and Sura IV:38:

Men are the managers of the affairs of women for that God has preferred in bounty one of them over another, and for that they have expended of their property (Arberry, 1979:77).

Religious traditionalism has defined roles for males and females, thus the percentage of women in the labor force would be lower in the societies adhering to the traditional socio-religious norms.

- (2) The age of marriage. If the age of women marrying is low, then the status of women will be lower. The Koran and Hadith have verses which discuss marriage, women who are forbidden as marriage partners (examples: sisters, aunts, stepdaughters, and nieces), chastity, and the allowance for polygyny (up to four wives). Other practices viewed as normative religious adherences are: bride-prices which males pay to the father of the bride, arranged marriages, and marriage between first cousins. A means of protecting female chastity and family honor with regard to the various practices of religious traditionalism mentioned above, is to have females marry at a young age.
- (3) The leniency of divorce for women. The Koran expresses allowances for divorce for both men and women, and the rights for both of them to restore their marriages or remarry after prescribed terms are followed with regard to waiting periods, payments of the bride-price, and children. In the traditionally religious societies, there are often laws based on the Islamic interpretation which make divorces more difficult for women. It is in the power of the men to state, "I divorce thee" three times before a witness to initiate a divorce, whereas women must pursue various legal channels oftentimes with the assistance of their fathers (Saleh, 1972:6).

In some Islamic societies practicing religious traditionalism, other deterrents for a woman to resort to a divorce are that the man retains custody of her children (after age 7 for boys, and after age 9 for girls), and the fact that it is often socially more difficult for a woman to remarry after being divorced than for a man. The leniency of divorce for women is more difficult in a religiously traditional society than in a more secular society.

- (4) The percentage of women in school enrollment. Although this variable is also adaptable as an indicator for development, it is also important in terms of religious traditionalism due to the practice of purdah, or segregation, and the limited roles for women outside of the home. The significance of education for females is limited when strict adherences to religious traditionalism prescribe traditional roles for women, and when opportunities in the labor force and school system may be restricted due to the prescriptions of purdah and segregation. The percentage of women in school enrollment will reflect, in part, advancements of the status of women and trends toward secularization.

(5) The percentage of women in Western Dress.

Sura XXIV:30:

Say to the believers, that they cast down their eyes and guard their private parts; that is purer for them. God is aware of the things they work. And say to the believing women, that they cast down their eyes and guard their private parts, and reveal not their adornment save such as is outward; and let them cast their veils over their bosoms, and not reveal their adornment save to their husbands or their fathers, or their husband's fathers, or their sons, or their husbands' sons, or their brothers, or their brothers' sons, or their sisters' sons, or their women, or what their right hands own, or such men as attend them, not having sexual desire, or children who have not yet attained knowledge of women's private parts; nor let them stamp their feet, so that their hidden ornament may be known. And turn all together to God, O you believers; haply so you will prosper (Arberry, 1979:355-356).

The definition of the kinship group within which women need not be secluded from males is provided by the Koran, but the actual observance and attire vary among Muslim societies due to the variance in manifestation and the change of normative values with regard to this religious traditionalism. In traditional Islamic societies, the typical attire for a female who has reached puberty includes a concealing cloak. Since the Western dress for women generally exposes more than the hands and face, accents the female figure, and combines colors and decor for attractive adornment, it would be contrary to the public display of adornments prescribed by traditional Islamic norms.

- (6) The equality of inheritance laws for women. Islamic inheritance laws are based upon the assumption that the men are the family providers, responsible for its female and needy members. Although the laws of inheritance do not treat men and women equally, they provide support for the prescribed traditional social roles for men and women.

Sura IV:11:

God charges you, concerning your children: to the male the like of the portion of two females, and if they be women above two, then for them two-thirds of what he leaves, but if she be one then to her a half; and to his parents to each one of the two the sixth of what he leaves, if he has children; but if he has no children, and his heirs are his parents, a third to his mother, or, if he has brothers, to his mother a sixth, after any bequest he may bequeath, or any debt (Arberry, 1979:73).

Islamic inheritance laws appear to be unjust due to the fact that males are granted two portions while females are granted only one; however, according to the context of the traditional male and female roles prescribed by the Koran the inheritance laws support the males in their role as providers. Thus, secularization of inheritance laws will indicate a change in the relationship between status of women and religious traditionalism.

- c) The legal codes (in terms of percentage of legal cases appearing in religious courts): designed to indicate the amount of secularization in a country.
- d) The insistence on Friday being observed as the sole "day of rest". Friday is the Islamic holy day of the week.

- e) The percentage of students who attend religious schools versus the percentage that attends secular government schools.
- f) The percentage of civil marriages versus the percentage of religiously performed marriages.
- g) The consumption of alcohol. In strict traditional Islamic interpretation, the consumption of alcoholic beverages is prohibited. Sura V:92-93:

O believers, wine and arrow-shuffling, idols and divining-arrows are an abomination, some of Satan's work; so avoid it; haply so you will prosper.

Satan only desires to precipitate enmity and hatred between you in regard to wine and arrow-shuffling, and to bar you from the remembrance of God, and from prayer (Arberry, 1979:114).

- h) The percentage of people giving their almsgiving, or zakat⁹. Almsgiving is one of the "Five Pillars of Islam"¹⁰ to be practiced by followers of Islam.

2. Hypothesis 2: Development has a direct relation to an antinatal formal population policy.

This second hypothesis states that as the developmental level increases within a country, the chance of that country having an antinatal formal population policy increases.

The following indicators were selected by the author from the literature on development to measure levels of development:

⁹ zakat: almsgiving given to the poor and usually in the form of camels, oxen, sheep, goats, horses, mules, gold, silver, or money.

¹⁰ "Five Pillars of Islam": five obligatory duties of a Muslim -- 1) recitation of the creed (shahada), "There is no God but Allah, and Muhammad is His Prophet"; 2) daily prayer (salat); 3) almsgiving (zakat); 4) fasting (sawm); and 5) the pilgrimage to Mecca (haj).

- a) The percentage of urbanization: Urbanization is an important variable in the development and demographic literature, for it is a measure of modernization and assists in the dispersion of attitudes and behavior (Ridker, 1976:25; and Inkeles, 1960:210).
- b) The percentage of non-farm occupational workers: As with urbanization, this variable may indicate the amount of contacts people have with modern society's attitudes and behaviors. It also could indicate levels of industrialization and modernization as more persons find work outside of the traditional agriculturally-related occupations.
- c) The energy consumption level: Energy consumption reveals the amount of inanimate energy sources which are being utilized within a country. This may indicate the level of industrialization and modernization (Lenski and Lenski, 1974:290-296).
- d) The literacy rate: As the literacy rate increases within a country, the individual may become more educated and develop more modern ideas which may assist in the introduction of family planning practices. The education and skills that an individual possesses may also assist in the modernization and development of a nation's economic level (Mueller, 1976:99; and Bogue, 1969:676-677).
- e) The life expectancy levels: Two indicators of life chances, aside from the average life expectancy for males and females, are the infant mortality rates and maternal mortality rates. Improvements in life expectancy reveal that the health conditions, sanitation, and nutritional levels are improving, which is a reflection of modernization and development. Population growth will indirectly be affected by such improvements in that the survival of children will take fewer births to satisfy the parents' desire for living offspring (Tauber, 1971:44-48).
- f) The GNP per capita: GNP per capita has clearly been one of the major measurements of development cited in the literature. It has been theorized that increases in economic wealth for a country would provide for various social, educational, and economic development.
- g) The availability of statistics: The quality, completeness, and procedures for the gathering of census data may reveal the importance nations place upon the collection of their own vital statistics, and thus an interest in understanding the dynamics of their population growth and structure. Modernization, in addition, includes the spread of written records in a society (Owens, 1972:12).

- h) The availability of health services: The purpose of this indicator is to reveal the extensiveness of the health services provided within a country.
- i) The extensiveness of sanitation systems: Improvements in sanitation will indicate development in the modernization of cities and rural towns, and in the prevention of disease.
- j) The advancements in communications: The more a country improves its communications networks and facilities, the more it is considered to be modern and developed.
- k) The advancements in transportation: This indicator has the same implications about modernization and development as the last indicator (Lenski and Lenski, 1974:290-296).
- l) The presence of social security systems: The demographic literature pointed out that improvements in the development of social security systems may lower the necessity of additional children, especially sons, for economic security (Ridker and Muscat, 1973:150-152). As mentioned above (pp. 9-11), modernization involves a differential of roles -- including social security -- from the family to the government.

In Table II below, is a summary of the two hypotheses and their indicators. Chapter III will contain a report of results from secondary data sources concerning measurements of these indicators and how they support or reject the original hypotheses.

TABLE II. SUMMARY OF THE HYPOTHESES
AND THEIR INDICATORS.

Hypothesis 1: Religion (Islam) has an inverse relation to an anti-natal formal population policy.

Therefore, it is expected that a country with a pronatalistic formal population policy will:

1. legally permit polygyny
2. give lower status to women as indicated by:
 - a) a lower percentage of women in the labor force
 - b) a lower legal age of marriage
 - c) a greater difficulty for women to divorce than for men
 - d) a lower percentage of women in school enrollment
 - e) a lower percentage of women in Western dress
 - f) an inequality of inheritance laws between men and women
3. have a higher percentage of legal cases judged in religious courts rather than secular courts
4. have more insistence on Friday being observed as the sole "day of rest"
5. have a higher percentage of students who attend religious schools
6. have a lower percentage of civil marriages
7. have a lower consumption of alcoholic beverages
8. have a higher percentage of people giving their almsgiving, or zakat

Hypothesis 2: Development has a direct relation to an antinatal formal population policy.

Therefore, it is expected that a country with a pronatalistic formal population policy will:

1. have a lower percentage of urbanization
2. have a lower percentage of non-farm occupational workers
3. have a lower energy consumption level
4. have a lower literacy rate
5. have a lower life expectancy level
6. have a lower GNP per capita
7. have less available statistics
8. have less availability of health services
9. have less extensive sanitation systems
10. have less advancements in communications
11. have less advancements in transportation
12. lack the presence of social security systems

I. Methodology

This final section of Chapter II will discuss how the design of the study was applied and pursued. The methodology includes a description of the population under study, the scope of the study, and the procedures used for the collection of data and information.

1. Population Under Study

As expressed in the title of this thesis, the focus of study was upon the Muslim world. It is significant to study the Muslim world since one-fifth of all humanity adheres to the Muslim faith, and since the Muslim world is rising to economic and political power within the Third World due to its many oil-rich regions.

In Table III below there is a listing of all the Muslim countries and territories found in the world today, with percentages indicating the proportion of that country's or territory's population that is categorized as Muslim. This table shows the vast territorial, regional, and cultural variety found within the Muslim world. This thesis was not able to cover the Muslim world in its entirety, but offered an insight into only a segment of that world.

Table IV lists those countries with 75 percent or more of their population Muslim classified under four categories: Government supported population planning programs, Private population planning operations, No policy-no activities, and Pronatalistic governments.

TABLE III. COUNTRIES AND TERRITORIAL REGIONS WITH MUSLIM POPULATIONS:

OVER 75%

Afghanistan - 99%
 Algeria - 99%
 Bahrain - 95%
 Bangladesh
 Egypt - 91%
 French Territories of Afars & Issas
 Indonesia - 90%
 Iran - 98%
 Iraq - 95%
 Jordan - 88%
 Kuwait - 94%
 Libya - 96%
 Mauritania - 99%
 Morocco - 95%
 Muscat - 99%
 Oman - 99%
 Pakistan - 88%
 People's Republic of Yemen (Aden) - 80%
 Qatar - 99%
 Saudi Arabia - 99%
 Senegal - 76%
 Spanish Sahara
 Syria - 82%
 Tunisia - 97%
 Turkey - 99%
 United Arab Emirates, or Trucial States (Abu Dhabi,
 Ajman, Dubai, Fujeira, Ras al-Khaima, Sharjah
 & dependencies, and Umm al-Quiwain)
 U.S.S.R.:
 Kirghiz SSR - 85%
 Turkmen SSR - 90%
 Uzbek SSR - 85%
 Yemen Arab Republic (Sa'na) - 99%
 Zanzibar - 99%

46% to 75%

Albania - 69%
 Chad - 58%
 China:
 Sinkiang
 Cyprus
 Gambia - 75%

(continuation of Table III)

Guinea - 65%
 Lebanon - 50%
 Malaysia - 51%
 Mali - 63%
 Niger - 75%
 Nigeria - 48%
 Sudan - 69%
 U.S.S.R.:
 Azerbaijan SSR - 75%
 Kazakh SSR - 60%

3% to 45%

Brunei	
Bulgaria	
Burma	
Cameroon - 19%	
Central African Republic - 4%	
China - 15%	
Dahomey (Benin) - 16%	
Ethiopia - 30%	
Ghana	
India - 11%, (Kashmir - 77%)	
Israel	
Ivory Coast	
Kenya - 10%	
Liberia	
Malagasy Republic	Tanzania
Malawi	Thailand
Mozambique	Togo
Philippines	Uganda - 6%
Portugese Guinea	U.S.S.R.:
Portugese Timor	Armenian SSR
Sierra Leone - 23%	Georgian SSR
Singapore - 20%	Upper Volta - 26%
Sri Lanka (Ceylon)	Yugoslavia
Surinam - 26%	

SOURCES: (New York: MacMillan Publishing Company, 1974):276.
 (A map classified the countries/territories into the three percentage categories shown.) Omran, Abdel Rahim. "The Dichotomy of Islam's Natality Design in an Epidemiological Context", paper of the Federation of Family Planning Association of Malaysia Information Service, August, 1976:2-3 (Exact percentages indicated may now be higher or lower, for they are from approximately 1967).

The four categories are defined as follows;

Government Supported Programs: Countries with a genuine interest in population control and management. They are countries which have: a) formulated a national population policy or governmental body (such as within the Ministry of Health, or the regional and local government level) that is organized and active in fulfilling set goals; b) given financial or material resources to international organizations for the purposes of curbing population growth rates; c) followed-up and supplemented the work of private family planning groups in an official manner; and d) government financed or operated clinics and health centers, distribution of information (use of the public mass media systems), and educational programs for population control and family planning.

Private Population Operations: Countries which have population planning activities that are managed and supported solely by private and/or international organizations. The government's position is generally favorable toward population control, but it has the private organizations operating in the country due to some of the following reasons: a) they feel that population control and family planning is mainly needed only as a health measure (such as for the prevention of venereal diseases, etc.), or for what is defined as family welfare (prevention of illegal types of abortion and maternal health); b) divisions in the society due to attitudinal or societal factors; c) the country is still a bit unsure about its own position on the population control issue; d) financial reasons -- the country may have other priorities or demands to meet, or the country may lack sufficient funds to adequately begin a program; and e) the country may be on the verge of beginning a new program of its own, but it is still heavily dependent upon the private organizations' activities.

No Policy -- No Activities: This category finds most of its listed countries in Africa. These countries are basically neutral, disinterested in population control measures, or financially deprived, which may be due to some of the following reasons: a) internal conflicts or wars; b) poor health conditions and poverty, as well as perhaps a number of refugees due to droughts; c) the country sees its population as growing at an acceptable rate.

Pronatalistic Governments have Limited or No Activities: These countries either protest the idea of family planning from a philosophical and ethical point of view, or feel that their country is underpopulated. Importation of contra-

ceptives is usually illegal, and activities would lie with the private physicians. These countries have adopted the position of being pronatalistic because of one of the following reasons: a) conditions of poverty which yields a high death rate, so birth rates are not regulated because the overall growth rate is low already; b) religious prohibitions; c) political reasons (such as threats from neighboring countries; d) set pronatalistic laws that are difficult to change; and e) an abundance of natural resources and a small labor force.

TABLE IV. COUNTRIES WITH POPULATIONS OVER 75 PERCENT MUSLIM.

Government Supported Population Planning Programs:

Afghanistan*
 Bangladesh
 Egypt
 Indonesia
 Iran*
 Morocco
 Pakistan
 Tunisia
 Turkey

Private Population Planning Operations:

Algeria
 Bahrain
 Jordan
 Senegal
 Syria

No Policy - No Activities:

French Territories of Afars and Issas
 Somalia

Pronatalistic Governments having Limited or No Activities:

Iraq
 Kuwait
 Libya
 Mauritania
 People's Republic of Yemen (Aden)
 Qatar
 Saudi Arabia
 United Arab Emirates
 Yemen Arab Republic (Sa'na)

SOURCE: Category designation was designed by the author of the thesis with reference to the following: Population Reference Bureau, Inc. World Population Growth and Response, 1965-1975; a Decade of Global Action. (Washington, D.C., 1976) 1-60, 65-72, 91-93, 167-177.

* NOTE: The status of these countries is questionable due to political unrest in the past few years.

2. Scope of the Study

After dividing the countries with population over 75 percent Muslim into the four above categories, the scope of the study was further narrowed to the two extreme polar categories of Government Supported Population Planning Programs and Pronatalistic Governments having Limited or No Activities. These two categories were chosen for comparative purposes of their distinctive positions on population policy.

Below on Table V is a summary of data collected from the nine countries in the Government Supported Population Planning Programs and from the nine countries in the Pronatalistic category. The data gathered are concerned with the following four variables: density, growth rate, GNP per capita, and literacy. The first two variables were selected to show the present trends in the demographic state of the countries, and the latter two were selected to show the important factors in development for those same countries. Only these four variables were presented. Although there were other variables, the data for the latter were very incomplete due to its unavailability for the countries the author used.

TABLE V. COMPARATIVE RANKING OF DATA FOR 18 COUNTRIES.
 (THOSE WHICH ARE UNDERLINED ARE FROM THE GOVERN-
 MENT SUPPORTED POPULATION POLICY CATEGORY.)

	Density	Yearly Growth Rate ^b	GNP per capita ^c	Literacy ^d	
HIGH	<u>Bangladesh</u>	Emirates	<u>Bangladesh</u>	Mauritania	LOW
▲	<u>Pakistan*</u>	Kuwait	Aden	<u>Afghanistan*</u>	↓
	<u>Indonesia</u> 3.7%	<u>Iraq</u>	<u>Pakistan*</u>	Aden	
	Kuwait	<u>Libya</u>	<u>Afghanistan*</u>	<u>Pakistan*</u>	
	<u>Turkey</u>	<u>Iran*</u>	Sa'na	<u>Bangladesh</u>	▲
	<u>Morocco</u>	Qatar	Mauritania	Sa'na	
	<u>Egypt</u>	<u>Saudi Arabia</u>	<u>Indonesia</u>	<u>Morocco</u>	
	<u>Tunisia</u>	<u>Bangladesh</u>	<u>Egypt</u>	Emirates	
	Sa'na 3.0%	Sa'na	<u>Morocco</u>	Qatar	
	<u>Iran*</u>	<u>Morocco</u>	<u>Tunisia</u>	Saudi Arabia	
	<u>Iraq</u>	<u>Pakistan*</u>	<u>Turkey</u>	Libya	
	<u>Afghanistan*</u>	Aden	<u>Iraq</u>	<u>Egypt</u>	
	Qatar	<u>Egypt</u>	<u>Iran*</u>	<u>Iran*</u>	
	Emirates	<u>Mauritania</u>	Libya	Iraq	
▲	Aden 2.5%	<u>Turkey</u>	Saudi Arabia	<u>Turkey</u>	↓
	Saudi Arabia	<u>Afghanistan*</u>	Qatar	Tunisia	
	Libya	<u>Indonesia</u>	Kuwait	<u>Indonesia</u>	
LOW	Mauritania	<u>Tunisia</u>	Emirates	Kuwait	HIGH

*NOTE: The status of these countries is questionable due to political unrest in the past few years.

SOURCES: ^aUnited Nations Demographic Yearbook (New York: United Nations, 1978), pp. 140-145.

^bIbid.

^cWorld Bank Atlas, 1978 (Washington, D.C.: Johns Hopkins University Press, 1978), p. 6.

^dUnited States Department of State, Background Notes (Washington, D.C.: United States Government Printing Office), first page of the latest issue for each country.

To thoroughly investigate the hypotheses on religion, development and population policies, it became necessary to narrow the study to only a few countries. Because of the variety of linguistic, cultural, and geographical backgrounds, the author decided to deal with those nations that are from the Arab culture and of the Sunni sect of Islam to avoid influences outside of the socio-economic variables investigated which affect the data collected.

Accordingly, the author narrowed the scope of the thesis to cover three countries due to time limitations and the depth of investigation necessary. The three countries are: Egypt and Tunisia from the Government Supported Policy category, and Saudi Arabia from the Pronatalistic Policy category. These three countries were chosen for the following reasons:

- 1) Egypt: the land of one-third Arabs
- 2) Tunisia: the Maghreb¹¹ African region, and a representative of an Arabic and French speaking country

¹¹Maghreb: the Western Islamic world of northwestern Africa which traditionally includes Morocco, Algeria, Tunisia, and northwestern Libya.

- 3) Saudi Arabia: the hub of Islam, representative of the culture and lifestyles of most of the Arabian Peninsula or traditionally conservative religious sectors in other nations

These three countries were chosen as representative of groups of nations and their unique features which make them stand out from the other nations listed in the two main categories. The author would like to point out, however, that information gathered about these three countries may be exemplary of larger areas or ideologies present in other countries, but the three cannot be solely used as a basis for generalizations to other nations. The role of this comparative analysis was merely that of extending the search for ideas and possibilities relating to population planning policies across national boundaries.

The author collected information for the investigation of the hypotheses from many sources. Library research played a significant part in the collection of information; however, the type of materials found in many of the libraries in this country are relatively scarce or outdated on the subject of the Muslim Middle East. Therefore, the author relied heavily on correspondence with many international organizations, agencies involved in international development projects, and offices or contacts within the three countries under study. Approximately 95 contacts were initiated by the author to receive additional information relating to Islam, development, the status of women, education, and health conditions. From these numerous contacts, the author

has collected the names and addresses of the most helpful sources of information on the topics, and they may be found in Appendix IV for those readers who are interested in pursuing other related studies.

A final technique used to obtain information about the hypotheses in Chapter III was to design a questionnaire. This questionnaire, which is found in Appendix II, was not given significant importance in this thesis. Its role was to be used as a tool to interview individuals who were from the countries under study, those who had spent a great deal of time in those countries, or those who are presently living in those countries. (The final group of individuals was only a few in number, and the questionnaire was sent to them for the purpose of familiarizing them with what sort of information was being sought.) A more detailed explanation of the questionnaire's use for each country will be reported in Chapter III: Results (p. 83). The main purpose of the questionnaire, other than to inform individuals as to what sort of material was being sought, was to get some response from individuals familiar with the countries and compare it with the information gathered from library and correspondence materials, in order to check for discrepancies.

III. RESULTS

On the following five pages, Table VI reveals a summary of some of the important data collected on the countries of Egypt, Saudi Arabia, and Tunisia, in reference to the hypotheses developed earlier.

The data in the tables were collected primarily from library research. The data were collected in connection with the information needed to respond to the hypotheses presented in Chapter II. A majority of the entries in Table VI were gathered from the United Nations Statistical Yearbooks. This is one of the main publications available which presents statistical data in such detail.

TABLE VI. SELECTED DEMOGRAPHIC AND DEVELOPMENTAL INDICATORS BY COUNTRIES.

COUNTRY	Area in square miles and square kilometers ^a	Population Size ^b		Growth Rate ^c		Energy Consumption in kilograms of ^d coal equivalent (per capita, 1976)
		(Millions)				
Egypt	386,000 sq. mi.	(1)	(2)	(3)	(4)	473
	999,730 sq. km.	40.0 (1978)	42.1	2.7%	2.7%	
Saudi Arabia	873,000 sq. mi.	5.6	8.2	3.0%	3.0%	1,901
	2,261,000 sq. mi.	(1974)				
Tunisia	63,378 sq. mi.	5.98	6.5	2.2%	2.5%	456
	164,149 sq. km.	(1977)				

SOURCES: ^aU.S. Department of State, Background Notes (Washington, D.C.: Government Printing Office); (Egypt, December, 1978) p. 1; (Saudi Arabia, January, 1978) p. 1; (Tunisia, November, 1978) p. 1.

^bColumn 1, Ibid. Column 2, Population Reference Bureau, Inc., Population Data Sheet (Washington, D.C.: Population Reference Bureau, Inc., 1980).

^cColumn 3, Background Notes (same as Column 1). Column 4, Population Data Sheet (same as column 2).

^dUnited Nations, United Nations Statistical Yearbook 1977, pp. 384, 386.

TABLE VI. SELECTED DEMOGRAPHIC AND DEVELOPMENTAL INDICATORS BY COUNTRIES (Continued).

COUNTRY	Percentage of Female Employment In Agriculture ^e		Percent Literate ^e		Percent Enrolled In School, 1975 ^f			
	1968	1975	1968	1975	Males 6-11	Females 6-11	Males 12-17	Females 12-17
Egypt	32.7	20.3	35.0	40.0	80	52	49	27
Saudi Arabia	81.8	80.8	. . . . .	15.0	46	24	32	20
Tunisia	9.9	8.1	32.2	32.0	91	63	44	24

SOURCES: ^e Amy Ong Tsui and Donald J. Bogue, "Declining World Fertility: Trends, Causes, Implications" Population Bulletin, 33, No. 4 (Washington, D.C.: Population Reference Bureau, Inc., 1978), pp. 50-51, 53, 54.

^f Population Reference Bureau, Inc., World's Children Data Sheet, International Year of the Child, 1979, (Washington, D.C.: Population Reference Bureau, Inc., 1979).

TABLE VI. SELECTED DEMOGRAPHIC AND DEVELOPMENTAL INDICATORS BY COUNTRIES (Continued).

Country	GNP per capita (U.S. \$) ^g			Percentage Urban ^g			Infant Mortality Rate ^g			Life Expectancy at Birth (Years) ^g		
	1968	1975	1978	1968	1975	1978	1968	1975	1978	1968	1975	1970- 1977
Egypt	170	310	400	43.0	47.7	44.0	120	103	90	49.9	52.4	55.0
Saudi Arabia	360	3,010	8,040	16.6	20.8	24.0	157	152	150	42.3	45.3	48.0
Tunisia	220	760	950	40.5	46.9	50.0	135	128	125	51.6	54.1	57.0

SOURCE: ^gPopulation Bulletin, Ibid., pp. 50-51, 53, 55.

TABLE VI. SELECTED DEMOGRAPHIC AND DEVELOPMENT INDICATORS BY COUNTRIES (Continued).

COUNTRY	Number of Hospitals (1975) ^h	Number of Hospital Beds (1975) ^h	Number of Doctors (1975) ^h	Number of Vehicles ⁱ	
				Automobiles	Commercial Vehicles
Egypt	1,454 (1 per 27,500 persons)	85,300 (1 per 469 persons)	. . . . .	1976 estimates	
				245,600 (1 per 163 persons)	57,400 (1 per 697 persons)
Saudi Arabia	63 (1 per 89,000 persons)	5,780 (1 per 968 persons)	2,250 (1 per 2,485 persons)	1974 estimates	
				59,400 (1 per 95 persons)	52,600 (1 per 107 persons)
Tunisia	. . . . .	14,000 (1 per 427 persons)	1,290 (1 per 4,636 persons)	1975 estimates	
				102,600 (1 per 59 persons)	67,000 (1 per 90 persons)

SOURCES: ^hUnited Nations, United Nations Statistical Yearbook 1977, pp. 887, 889.

ⁱIbid., 537-38, 541.

TABLE VI. SELECTED DEMOGRAPHIC AND DEVELOPMENTAL INDICATORS BY COUNTRIES (Continued).

COUNTRY	Number of Telephones (1974) ^j	Number of Televisions ^k	Number of Radios (1975) ^k	Number of Newspapers ^l		Number of Cinemas ^m
				Dailies	Total Daily Circulation	
Egypt	560,000 (1 per 72 persons)	680,000 (1 per 59 persons) (1975)	5,520,000 (1 per 8 persons)	14	773,000 (1 per 52 persons)	152 (1 per 263,000 persons) (1971)
Saudi Arabia	117,600 (1 per 48 persons)	78,400 (1 per 72 persons) (1975)	156,800 (1 per 36 persons)	11	96,000 (1 per 59 persons)	. . . (closed)
Tunisia	143,400 (1 per 42 persons)	59,750 (1 per 100 persons) (1970)	292,775 (1 per 21 persons)	4	190,000 (1 per 32 persons)	105 (1 per 56,900 persons) (1973)

SOURCES: ^jIbid., pp. 620-22.

^kIbid., pp. 942, 944.

^lIbid., pp. 933, 935-36.

^mIbid., pp. 938, 940.

A. The Data Collection Sources for each Country

The results focus on 1975, because the most complete data published in 1980 were for that year.

1. Egypt

The author did not receive any direct responses to the questionnaire from Egypt, but she did receive an abundance of literature from inside the country, particularly from Al Azhar University in Cairo, the United States Agency for International Development (USAID) in Cairo, and researcher Sanya Saleh.

2. Saudi Arabia

Responses to the questionnaire and estimates for the varieties of the hypotheses were received by the author from a few individuals very familiar with or from Saudi Arabia. Literature and information were also received from two inside sources living in Saudi Arabia, whose names and location will remain anonymous.

Most data were gathered from the United Nations' statistics and material presented in the Area Handbook on Saudi Arabia done for the Foreign Area Studies Department of the American University in Washington, D.C.

3. Tunisia

Although no direct responses to the questionnaire were received,

an abundance of literature was collected from inside the country, particularly from the National Union of Tunisian Women, as well as various international development agencies.

B. Population Policies of Egypt,
Saudi Arabia, and Tunisia

1. Egypt

The Egyptian government's involvement in the family planning policy began in 1965, with the creation of the then Supreme Council for Family Planning (changed to the Supreme Council for Population and Family Planning in January, 1974). Program activities are carried out through the Health Ministry's existing network of clinics and hospitals as well as centers established by the Social Affairs Ministry. Government financial support for the national program has been generally well-provided. In 1973, the number of acceptors of family planning almost tripled in the participation of five years earlier (Population Reference Bureau, Inc., 1976: 35-36). In addition, aid funds have provided general budgetary support to the Population and Family Planning Board and the Egyptian Family Planning Association by the United Nations Fund for Population Activities and the International Planned Parenthood Federation.

One year before Bucharest, Egypt had already embarked on the second phase of its population policy, which was based on the "development approach" rather than the traditional type of activities associated with population control alone. Given the

extremely comprehensive nature of Egypt's national population policy in its present phase, it follows that the strategies employed are equally wide-ranging. Basically, they fall into the two categories of: 1) those strategies intended to improve family planning facilities and to motivate more people to make use of them, and 2) the strategies designed to raise the standard of material living for the people in general so as to create the conditions that will eventually lead to a reduction in desired family size.

2. Saudi Arabia

Saudi Arabia is a pronatalistic country. In April of 1975 the Saudi Arabian government prohibited contraceptives' sale and importation, which is consistent with the government's view that Saudi Arabia can support a larger population, and must increase its labor force if it is to carry out its development plans.¹² Recently the government of Saudi Arabia decreed that a man would be paid for each woman and child in his home. The objectives are numerous: to increase the population of the country, and to emphasize the woman's role in child-rearing. The implication of the decree constitutes an attempt to hold back the trend throughout the Middle East of women moving outside the domestic sphere into the public sector (Boss, 1976:36). The author learned from an inside source that Saudi males are receiving financial incentives

¹²In 1980, sales and importation of some forms of contraception were available through pharmacies in Saudi Arabia.

to marry Saudi women and procreate pure-Saudi offspring.

3. Tunisia

Tunisia during the last decade has mounted one of Africa's most comprehensive population/family planning programs, moving from a limited pilot project to a nationwide government program. In 1974, the National Office for Family Planning and Population (ONPFP) was established as a semi-autonomous government agency under the Ministry of Health. Also active in the country is the Tunisian Association for Family Planning (ATPF), an affiliate of the International Planned Parenthood Federation (IPPF). This organization was formed in 1969 and currently works closely with the national program (Population Reference Bureau, Inc., 1976:59).

As stated in Tunisia's Four-Year Plan (1973-1976), the goals of the country's policy are full employment, equality of income distribution, and improvements in the physical quality of life. The Plan's trinity of variables indispensable to the creation of "a better and more equitable society" is the control of population growth together with job creation and an education system adapted to modernization.

Before Bucharest, the government's preoccupation with the population problem was governed by implications for employment. Since Bucharest, the government has maintained its policy of population limitation, although it has shifted the approach from planning and population control to "family welfare". The family

planning "message" is now expressed in terms of the health of the mother, the financial burdens of large families, and the higher standards of education and nutrition enjoyed by small families. Within the concept of "family welfare", the government's strategies for tackling the problem of population growth are two-fold: population education, and improved public health services including family planning facilities. These have been accompanied by a number of legislative measures designed to facilitate contraceptive practices and abortion. Population education receives valuable support through the powerful National Union of Tunisian Women. The Tunisian government is enthusiastic about the possibilities opened up by population education at all levels, and is gradually introducing it throughout the school system. Parallel with the efforts to improve and expand the official family planning program, the government is also seeking to facilitate individual access to fertility control methods. Thus, abortion previously authorized on "social grounds" has only recently been made available to anyone who wishes it, and, according to statistics, is becoming increasingly popular (Wolfson, 1978:107). Another approach now makes it possible to buy contraceptives at the local pharmacy at only a minimal cost (for it is heavily government subsidized) and upon presentation of a once-only doctor's prescription. Tunisia is also developing financial incentives to encourage a small family norm: for example, family allowances now cease after the fourth child. Voluntary sterilization has also been permitted since 1973 (Swedish International

Development Authority, 1974:42). In a law passed in 1965, which allows for the free sale of contraceptives, mothers with more than four living children are insured a free abortion without the consent of their husbands (National Union of Tunisian Women, 1976:12; Swedish International Development Authority, 1974:41).

C. Hypothesis 1

This hypothesis was judged to be supported if the data for Egypt and Tunisia are both in one predicted direction and the data for Saudi Arabia are in the opposite direction. Results were judged to support Hypothesis 1 only if each indicator of the hypothesis produced data showing Saudi Arabia to be the most traditional of the three countries. The indicator of Hypothesis 1 was judged not to support the hypothesis if the data of either Egypt or Tunisia was similar or more traditional than the data for Saudi Arabia. For example, if only Tunisia had a secular legal code, this indicator would not support Hypothesis 1 since it would be expected that Egypt would also have a secular legal code. This standard was applied to all the indicators and variables of Hypothesis 1 as well to those of Hypothesis 2.

Hypothesis 1: Religion (Islam) has an inverse relation to an antinatal formal population policy.

This hypothesis predicts that as traditional Islamic behavior increases in a country, the country will be more likely

to have a pronatal population policy. Indicators of religious traditionalism discussed earlier, pp. 55-62, covered the following topics: polygyny, status of women, religious legal codes, Friday as the sole "day of rest", percentage of students who attend religious schools, percentage of civil marriages, alcohol consumption, and almsgiving. The data of the indicators for Hypothesis 1 will now be investigated and reported by country.

1. Polygyny

a) Egypt

Polygyny, although legal and approved by the religion, has never been widely practiced among Egyptians. According to official statistics in Egypt, it occurs only in three percent of all marriages contracted (Hussein, 1968:12).

b) Saudi Arabia

The society in Saudi Arabia is more traditional in its views of polygyny than other Arab countries. Polygyny is legal, and up to four wives are allowed from interpretations of the Koranic laws and Sharia¹³. Due to lack of data collection and publication of statistics, the author does not know what percentage of marriages are polygynous. From discussions with persons familiar with the

¹³Sharia: the traditional code of Islamic law, both civil and criminal, based on the Koran and Hadith. Courts applying this law are known as sharia courts.

the country and with persons from Saudi Arabia, the author inferred that polygyny is practiced but the practice is generally decreasing among the younger generation.

c) Tunisia

The government's Code of Personal Status changed the status of women by eliminating polygyny in 1956. Polygyny is now illegal (National Union of Tunisian Women, 1976:11).

d) Summary of polygyny

It was expected that only Saudi Arabia would have polygyny. Strictly speaking, the hypothesis is not supported in that Egypt still permits polygyny. However, Saudi Arabia and Tunisia have laws regarding polygyny in the predicted direction. Frequency of polygyny does seem to support the prediction even though the information for Saudi Arabia is impressionistic. Unfortunately, Egypt's legal code contradicts the expectation, but the official data seem to support the dominance of monogamy. Consequently, it is concluded that this measure supports the hypothesis.

2. Status of Women

The status of women with regard to religious traditionalism was investigated with data concerning the following variables: the percentage of women in the labor force, the age of marriage, the leniency of divorce for women, the percentage of women in

school enrollment, the percentage of women in Western dress, and the equality of inheritance laws for women. Results for each of these variables of the indicator, the status of women, will now be reported by country.

a) The percentage of women in the labor force

(1) Egypt

In 1972, the female labor force reached 36.7 percent of the total labor force in Egypt. Female non-agrarian work participation in 1960 was 4.8 percent and in 1976, 9.2 percent (United States Agency for International Development/Cairo, 1978:44). Thirty percent of the universities' staff members are women, and 30 women are in the Diplomatic Corps representing Egypt abroad. On the whole, a low percentage of women is engaged in wage earning. Aside from tradition, two interrelated factors contributing to restrictions on women's role outside of the home, are: limits in educational and training experience, and difficulties entailed in performing both home and job responsibilities without adequate community services.

(2) Saudi Arabia

The percentage of women working in the labor force is less than two percent. Due to strong traditional attitudes about women being at home and the strict laws of purdah, or segregation, women

are found primarily in the areas of medicine and education. The women are basically needed to practice and teach among the other women of the society (Nyrop, et al, 1976:154).

(3) Tunisia

Out of the total population of women aged 15 and over, according to the 1975 census, 30 percent were working or were seeking employment, compared to 25.6 percent in 1965 (National Union of Tunisian Women: 1976:25). Article 46 of the government's labor code states that women shall be entitled maternity leave from work for 30 days, and in all cases where women breast-feed their baby, to have two half-hour periods of leave of absence for this purpose during working hours, for a maximum period of one year after the date of birth. This law also requires employers to provide a special room for feeding the babies for those employing at least 50 women. The criteria to be met by this room are laid down in a Ministry of Social Welfare order (National Union of Tunisian Women, 1976:9).

(4) Summary for the percentage of women in the labor force

It was expected that Saudi Arabia would have the smallest proportion of women in the labor force among the three countries. The data were consistent with this expectation. Saudi Arabia has less than two percent of its women in the labor force, whereas, the other two countries have at least 30 percent. Therefore, this variable supports the hypothesis.

(b) The age of marriage

(1) Egypt

According to civil law, Egyptian women may not legally marry before the age of 16, and may marry earlier only after having written consent. For men, the minimum legal age for marriage is 18. New legislation is underway in Egypt proposing 18 as the minimum age for girls also (United States Agency for International Development/Cairo, 1978:39).

(2) Saudi Arabia

It is unknown whether there is a set legal age of marriage in Saudi Arabia. However, observers contacted estimated that in urban areas the average ages for marriage are 25 for males and 17 for females. It is also estimated that about 95 percent of the marriages are arranged marriages.

(3) Tunisia

The legal age for marriage in Tunisia is 17 for girls and 20 for boys. However, special permission may be granted for young people, especially girls, to marry earlier than the legal age (Mernissi, 1978:29; Swedish International Development Authority, 1974:41). A girl must expressly consent to her marriage (National Union of Tunisian Women, 1976:10-11). The consent of the girl before marriage is not always sought, especially in the rural areas

where the patriarchial organization of the family is still vigorous (Ferchiou, 1975:5).

(4) Summary for the age of marriage

It was expected that the age of marriage would be lower in Saudi Arabia than in the other two countries. Unfortunately, information from Saudi Arabia is only impressionistic, and even those inferences countered the expectation. It must be concluded that insufficient data were secured to support or reject the expectation.

c) The leniency of divorce for women

(1) Egypt

Divorce is still relatively easy for the male in Egypt compared to the female. A woman cannot obtain divorce except through court rulings, and on the basis of certain specified grounds. Women commonly avoid the threat of divorce by providing children frequently, in order to make it difficult for the husband to consider divorce or marrying another woman. A husband is justified in the eyes of society if he decides to marry another woman because his wife does not bear sons (United States Agency for International Development/Cairo, 1978:40).

(2) Saudi Arabia

Divorce by a woman is relatively uncommon and rather difficult

in Saudi Arabia. The woman must go through various legal channels for her case, and must often seek refuge with her parents' assistance. Also, women do not like to receive the negative status associated with divorcees, for it tends to lower their chances for remarriage. The custody of children in a divorce is settled by traditional Islamic law, which states that girls until the age of nine and boys until the age of seven remain with the mother, and then custody is given to the father. Many women find divorce difficult for they are often denied access to their children once the latter are old enough to be under paternal care.

(3) Tunisia

The Code of Personal Status proclaims men and women as equal in divorce matters. A husband or wife may petition for divorce on the same grounds through a secular court system (National Union of Tunisian Women, 1976:11; Swedish International Development Authority, 1974:41). Tunisia is one of the few Arab countries to have abrogated the husband's traditional unilateral right to talaq¹⁴ (Mernissi, 1978:29). In 1971, seven percent of the men and 6.5 percent of the women were divorcees (Mernissi, 1978:30). Various new legal reforms have been in effect since 1956/57, but women, especially in rural Tunisia, have not availed themselves fully of their new right to divorce, because they know that it is

¹⁴ talaq: a repudiation of a wife by her husband stating three times, "I divorce thee".

hard for a divorced woman to find a husband in their culture.

(4) Summary for leniency of divorce for women

It was expected that divorce would be easier for women in Egypt and Tunisia. Legally, divorce is easiest for women in Tunisia. In practice, divorce is still hard in rural areas even in Tunisia. Saudi Arabia does make divorce a bit difficult, both legally and in practice. Egypt presents a situation both legally and in practice closer to that of Saudi Arabia than Tunisia, contrary to expectation. Therefore, it is concluded this variable does not support the hypothesis.

d) The percentage of women in school enrollment

(1) Egypt

In 1923 the Egyptian Constitution made primary education a minimum educational requirement for Egyptian children of both sexes from six to twelve years of age. Presently, education to age 12 is still compulsory (although not seriously enforced), and is free of charge in all government schools (United States Agency for International Development/Cairo, 1978:41). In the lower urban class and rural areas, few parents oppose schooling of girls up to the age of 12, for traditional segregation is not necessary up to that age. After the age of 12, segregated schools are not necessarily available for girls in many rural areas. According to data presented in Table VI (p. 79), in 1975, 52 percent of the females

ages six through eleven and 27 percent of the females ages twelve through seventeen were enrolled in school.

(2) Saudi Arabia

Modern education of any sort, for males as well as females, is a relatively recent phenomenon in Saudi Arabia. In 1960, the government first assumed responsibility for introducing a system of public schools for girls throughout the Kingdom (Parssinen, 1979:20). Since the 1960's, the progress in education for females has extended to service virtually every community in the Kingdom with one or more schools for girls at the elementary level. In 1976, only sixteen years after the introduction of government-sponsored education for girls, close to half of the total population of all Saudi girls between the ages of six and twelve were attending school (Parssinen, 1979:22).

Female education was originally permitted with the understanding that traditional standards of segregation would remain in force. The education of women through the graduate level now takes place in totally segregated institutions. Saudi educators have made imaginative use of such technological innovations as closed-circuit television to facilitate segregation. Women enroll exclusively in colleges or university departments for women or as external students at the University of Riyadh. At that university and at King Abd al Aziz University, they view closed-circuit telecasts of university lectures by male professors and

ask questions by a remote hookup. The University of Riyadh is intended eventually to have a separate women's faculty and campus. Women students entered the medical faculty of the university for the first time in 1975, again as an exclusively female group. A general problem in women's higher education is the provision of female university instructors in all required fields (Nyrop, et al, 1977:111).

Because of the total lack of reliable population statistics available to foreigners, the number of young people in various age groups in the mid-1970's is not known, and it is therefore impossible to state with any certainty the percentage of Saudi youth then enrolled in school. The problem was further complicated by the probability of high absenteeism, especially in the rural areas. It was therefore impossible to determine with any accuracy the percentage of Saudi youth who actually attended school.

In 1970 it was estimated that about 23 percent of the boys and 20 percent of the girls of the appropriate age were enrolled in elementary school, nine percent of the boys and three percent of the girls of the appropriate age were enrolled in secondary school, and 1.3 percent of the boys and 0.2 percent of the girls of the appropriate age were enrolled in higher education. Although enrollment ratios doubtlessly increased between 1970 and 1975, some authorities believe that some of the true figures may be even lower than those cited. They estimate that only about one-sixth of elementary-age girls may have been in school in 1975 (Nyrop, et al, 1977:104).

Figures from Table VI (p. 79) reveal that in 1975, 24 percent of the females ages six through eleven and 20 percent of the females

ages twelve through seventeen were enrolled in school.

Data for this measure with regard to Saudi Arabia varies a great deal. On the last page, a citation by Parssinen estimated that close to 50 percent of the girls between the ages of six and twelve were attending school. The discrepancies between data sources reveal the variances and difficulties within statistical materials available for Saudi Arabia.

(3) Tunisia

Women's role in formal education, particularly at the higher levels, has been increasing since independence.

Ranking high among the goals of the school programs has been an improvement of educational opportunities for females. In 1956 only 70,000 were enrolled in schools. By 1972, female enrollment rose from 30 percent in 1957 to 39 percent of the total; at the secondary level, it rose from 21 percent to 28 percent. Most of the secondary as well as the primary classes were coeducational (Nelson, 1979:108).

By the late 1970's, females made up nearly one-half of the students in primary schools. Although the male students continued to predominate at higher levels, a 1975 study of the Maghribi countries pointed out that in Tunisia one-fourth of the university students were female, whereas they hardly represented one-tenth elsewhere in the Maghrib. In the late 1970's, planners estimated that at least 30 percent of the women leaving school were candidates for the job market (Nelson, 1979:88).

According to the data presented for 1975 in Table VI (p. 79), 63 percent of the females ages six through eleven and 24 percent of the females ages twelve through seventeen were enrolled in school.

Modern values and their reflection of higher expectations make parents highly ambitious for their children. Education is regarded as the key to the achievement of aspirations, and the government's phenomenal success in expanding and improving the education system during the 1950's and 1960's made it possible for young people of the 1970's to entertain high education and occupational goals. . . . A 1970 survey of the children of several thousand families in Tunis, mostly members of the working class, found that 65 percent of the boys and 40 percent of the girls looked forward to a university education and finding career employment before reaching the age of 25. A majority of these expected their careers to fall in one of the professions, and most of the others anticipated white-collar employment (Nelson, 1979:83).

(4) Summary for the percentage of women in school enrollment

It was expected that Saudi Arabia would have a lower percentage of females enrolled in school than Egypt or Tunisia. In 1975, 24 percent of the females ages six through eleven and 20 percent of the females ages twelve through seventeen were enrolled in school. In both Egypt and Tunisia the figures for the percentage of females enrolled in school for both age groups were higher than in Saudi Arabia. Therefore, the data clearly supports the expected direction of this variable.

e) The percentage of women in Western dress

1) Egypt

An exact percentage of this variable was not obtainable, for it is difficult to measure and is not discussed in the literature. Western style apparel is generally more acceptable in urban

centers than rural areas. There is also a tendency for Western apparel to be worn by younger or more educated women.

Clothing is closely related to social milieu. Two entirely distinct styles, the traditional and modern, exist side-by-side in Egypt. Western-style makeup, often heavily applied, is a sign of elegance, as is a carefully maintained hairstyle. Adult women (women, ¹⁵ over 12 years old) wear a black, full-length jalabiya with a shawl for the head. They may wear bright modern-style dresses at home. The traditional costume is considered by villagers to be "a symbol of maturity and stability". Some of the men and women today are "urban by day and rural by night". Most village women retain their traditional clothes within the confines of the home community. On trips to cities, however, they frequently remove their outer garment, conceal them in a handbag, and go about in the modern dress they had worn underneath (Nyrop, et al, 1976:107).

(2) Saudi Arabia

Traditional attire is the general rule among the women in Saudi Arabia. However, some observers estimate that perhaps two percent of the women wear Western attire under their traditional abaya ¹⁶ or veil, which is still worn by most women in public places. The abaya is the most visible artifact of an entire system of traditional habits and values relating to women. Thus, initial impressions of a static or retrogressive state of affairs vis-a-vis the women in Saudi Arabia is basically deceptive to the

¹⁵ jalabiya: a long-sleeved, loose fitting robe.

¹⁶ abaya: the outer garment worn by Arab women, consisting of a long robe and veil.

foreigners. It is also relevant to note that contemporary Saudi women do not observe the customs of veiling, seclusion, or segregation when they journey abroad despite their adherence to other tenets of their faith such as prayer and fasting. Also, foreign Muslim female airline stewardesses wear the abaya over their attire upon landing and entering the public in Saudi Arabia. Western women are permitted to remain in their Western clothes, but they are advised to practice modesty to avoid public harrassment. Recently, sources inside of Saudi Arabia report that a new regulation is in the making to prohibit the wearing of Western swimming apparel in the swimming pools of major hotels.

(3) Tunisia

As women achieve greater social emancipation, they increasingly wear Western clothing, but the sifsari -- a white cloak or wraparound shawl -- is still seen everywhere. Functional as well as decorative, it is an outdoor garment worn over Western-style clothing. In rural areas women dress in traditional fashions. The most frequently seen costume is the mellia, a loose drape-like a sari. It is worn in combination with another drape called the futa, which is fixed to the mellia by large silver pins and a thickly wound belt at the waist. Despite the advances in modern ways of living, the traditional Muslim veil has not been entirely abandoned. Its use was never common in the countryside where women worked in the fields and a veil could have been a nuisance. In the cities it still is sometimes used for its original purpose, which is to provide a portable means of privacy. Older women, not yet accustomed to modern-open ways, sometimes continue to wear it for the feeling it affords, and younger women may wear it to avoid offending elders or as an excuse for not buying expensive Western clothing (Nelson, 1979:98-99).

(4) Summary for the percentage of women in Western dress

It was expected that a higher proportion of women in Egypt and Tunisia would wear Western dress as outer garments. Information gathered was impressionistic. In Saudi Arabia, public wearing of Western dress by Saudi women is not approved. In Tunisia and Egypt, Western dress can be seen in urban areas, though traditional dress is also seen there. Impressions, therefore, support this expectation. However, because of a lack of substantive data, it cannot be concluded this variable either supports or rejects this hypothesis.

f) The equality of inheritance laws for women

(1) Egypt

An Egyptian woman, whether single or married, has the right of control over her property. The laws of inheritance, however, do not treat men and women equally. As examples: a girl inherits half as much as her brother; an only girl inherits half of her parents' property, while an only boy inherits all his parents' property. The childless wife inherits one-fourth of her husband's property; and a wife inherits one-eighth if there are children. The husband, on the other hand, has the right to half his deceased wife's property if there are no children, and to one-fourth otherwise. Throughout the inheritance laws, there runs the principle that one man equals two women (United States Agency for International

Development/Cairo, 1978:39-40).

(2) Saudi Arabia

The inheritance laws in Saudi Arabia follow the strict religious prescriptions for inheritance as put forth in the Koran and Sharia. Thus, men receive two parts whereas women receive one.

(3) Tunisia

Women are legally equal to men except in matters of inheritance (Swedish International Development Authority, 1974:41). One exception, however, is that a daughter has the full legal right to dispossess her paternal uncle and grand uncle and their descendants and claim her father's inheritance for herself. President Bourguiba has spoken in favor of changes in the inheritance law, but as yet no change has taken place. However, this realm is fairly minor compared to the major changes in women's situation that have resulted from other feminist changes in family law (National Union of Tunisian Women, 1976:11).

(4) Summary for the equality of inheritance laws for women

It was expected that Tunisia and Egypt would provide women and men more equal inheritance rights than Saudi Arabia. In fact, in all three countries the men can inherit twice as much as the women, with the minor exception noted for Tunisia. It must be

concluded, therefore, that this expectation was not supported.

g) Summary of the status of women

The results for the indicator entitled "the status of women" revealed that out of six variables, two supported the hypothesis (the percentage of women in the labor force and the percentage of women in school enrollment), two rejected the hypothesis (the leniency of divorce for women and the equality of inheritance laws for women), and two variables (the age of marriage and the percentage of women in Western dress) had insufficient information. It is interesting to note that the two variables which rejected the hypothesis had strong prescribed practices from the Koran. This issue will be elaborated later in Chapter IV, Conclusion and Discussion, pp. 148-154.

3. The Legal Codes

a) Egypt

The court systems of Egypt were secularized under a national court system on January 1, 1956.

b) Saudi Arabia

Nearly all court cases in Saudi Arabia are handled through the religious courts. The Ministry of Justice administers the sharia legal system throughout the country. Another convention determined by scripture is that a woman's testimony bears half the weight of

a man's in a court of law; thus, it takes two women to testify in the place of one man.

c) Tunisia

Tunisia inherited from the Protectorate system an intricate legal organization with several systems of courts and laws, drawing from the French law, Tunisian law, and the Sharia. When the new government was formulated in the late 1950's, it formulated a single Tunisian code which is purely a secular one. The sharia now has no status, and some of the new codes are contrary to its spirit. Women have the right to vote and are eligible for election, which is stipulated in the 1959 Constitution.

d) Summary for the legal codes

It was expected that religious legal codes would be used by the government of Saudi Arabia, secular codes by the governments of Egypt and Tunisia. The information confirms this expectation. It is concluded this indicator of the hypothesis is supported.

4. The Insistence on Friday being observed
as the sole "day of rest"

a) Egypt

Friday is the religious "day of rest" for the Islamic faith, and is observed as such in Egypt. However, some businesses may reopen in the afternoon, and other Western businesses may close to

observe Sunday as the "day of rest", for there are some Christian minority groups in Egypt. There are no data or estimates regarding this indicator which the author could find.

b) Saudi Arabia

Friday is the holy religious day of worship in Saudi Arabia. The "Muslim weekend" is, therefore, Thursday and Friday. Most businesses are closed on Friday. Western businesses are allowed to close on Sundays and on other Christian holidays, unofficially. The only secular holiday is National Day, which commemorates the unification of the country by King Abd al Aziz, under the name of the Kingdom of Saudi Arabia in September, 1932.

c) Tunisia

The author was not able to obtain specific information as to what extent Fridays and Sundays are observed as the "day of rest".

d) Summary for the insistence of Friday as the sole "day of rest"

It was expected Saudi Arabia would observe Friday as their "day of rest" more than Tunisia or Egypt. Unfortunately, no information was obtained for Tunisia, and only impressionistic information was available for the other two countries. There also seems to be little difference between Egypt and Saudi Arabia as a matter of practice. Despite this impression, no conclusion can be drawn because of inadequate information.

5. The Percentage of Students who attend Religious Schools

a) Egypt

The author could not find data separating the types of schools and number of students in attendance. However, according to information from the Area Handbook on Egypt, both the public and private schools are under the purview of the Ministry of Education, which sets curricula and authorizes textbooks. In 1961 the traditional religious educational systems came under government supervision (Nyrop, et al, 1976:91).

b) Saudi Arabia

There is no really clear separation of schools in the sense of secular and religious, unless a particular school is only a purely religious training center. It is also estimated that about 30 percent of the courses in the government schools are religious courses, often stressing history and memorization of the Koran.

c) Tunisia

The data separating the types of educational school systems between religious and secular were not obtainable in a quantitative form. In the past, both the French and Italian influences in Tunisia developed their own national bilingual school systems.

Today, Tunisia is undergoing a "Tunisification" of its school system by returning bilingual instruction back to Arabic, as the instructors and textbooks become available (Nelson, 1979:112).

d) Summary for the percentage of students who attend religious schools

It was expected that Saudi Arabia would have only religiously oriented schools, and Egypt and Tunisia would have secularly controlled education by the government. Because of inadequate data concerning attendance at religious and secular schools, one cannot come to a conclusion about this indicator.

6. The Percentage of Civil Marriages

Adequate data were not available to investigate this indicator.

7. The Consumption of Alcohol

a) Egypt

The author was only able to obtain information on this indicator from individuals who have visited the country. No statistical information could be found concerning the amount of alcohol consumed or purchased, or if there are any problems with alcoholism in the country. Alcohol consumption is not legally prohibited, but is primarily found at restaurants and entertainment establishments.

b) Saudi Arabia

Prohibition is the law in Saudi Arabia. Persons caught dealing with alcohol are given a six months' prison sentence and 60 lashes with a whip. There is a special religious police force, known as the matawa, which upholds morality in public and checks for alcohol consumption or production. From sources inside of the country, the author has discovered that there is a "black market" for alcohol, but the prices are extremely high.

c) Tunisia

The author could not find any statistics concerning the amount or openness of alcohol consumption for Tunisia; however, it is known to be sold legally and exported.

d) Summary for the consumption of alcohol

It was expected that the proportion of people drinking alcohol would be lower in Saudi Arabia. No information was found regarding this indicator. However, the legal situations are consistent with the expectation; i.e., Saudi Arabia is the only country of the three which legally prohibits the consumption of alcohol. Assuming illegality will normally reduce the activity in society, then it is reasonable to conclude that this information supports the hypothesis.

8. The Percentage of People giving their Almsgiving, or Zakat

The data for this indicator were not available to the author for any of the three countries. It may be an indicator for which data are not easily obtainable or even recorded. Most of the payments of zakat are on a personal and informal basis, such as giving directly to a poor person. Some of the zakat may be given to a local mosque¹⁷ for distribution to the needy, but this is done on a voluntary basis. Thus, records of the amounts given or percentage collected are not easily obtainable. Insufficient information for data did not allow for an investigation into this indicator and its relation to the hypothesis.

9. Summary for Hypothesis 1

Hypothesis 1: Religion (Islam) has an inverse relation to an anti-natal formal population policy.

It was expected that traditional Islamic behavior would be practiced the most in Saudi Arabia, a pronatal country. Results of the indicators of religious traditionalism revealed that out of 13 variables, five supported the hypothesis, two rejected the hypothesis, and six had insufficient information from which to draw a conclusion. For a condensed summary of the results of Hypothesis 1, see p. 138, below.

¹⁷ mosque: a temple for Muslims' prayer.

D. Hypothesis 2

Hypothesis 2. Development has a direct relation to an antinatal formal population policy.

It is expected that the more developed countries will be more likely to have an anti-natal formal population policy. Development was defined above (p. 45) as a rather inclusive term. This definition reflects the traditional view which embraces both changes in the economic system and changes in individual lifestyles. The economic system is studied in this thesis by investigating energy consumption levels, GNP per capita, availability of statistics, availability of medical facilities, communication facilities, and transportation. All of these indicators can be increased and improved by wealth, but do not indicate the distribution of that wealth among the people. By comparison, change in a typical person's life is indicated by urbanization, literacy rates, life expectancy at birth, infant mortality rate, health services received, sanitation, and social security. The conclusions will be reported in this chapter using the traditional understanding of development then, in the latter part of Chapter IV below (pp. 159-161), the conclusions of all the indicators just discussed will be re-analyzed. The data of the indicators for Hypothesis 2 will now be reported by country.

1. The Percentage of Urbanization

According to the data in Table VI on page 80, 47.7 percent of Egypt's population, 20.8 percent of Saudi Arabia's population, and 46.9 percent of Tunisia's population were classified as urban in 1975. (The 1978 data show a downward trend of urbanization in Egypt; however, this pattern seems rather unlikely, and is probably due to the difference in data sources.) Since it was expected that Saudi Arabia would be least urbanized, this expectation was supported.

2. The Percentage of Non-farm Occupational Workers

a) Egypt

In 1975, agriculture remained the country's most important economic sector. In 1973, 47 percent of all livelihood was agricultural (Nyrop, et al, 1976:270). Table VI, on page 79, shows that the percentage of females in agriculture in 1975 was 20.3. However, according to a development project for the United Nations, rural women play an important economic role, for 46.9 percent of the working women are in agriculture, as compared to 33 percent of the rural males (United States Agency of International Development/Cairo, 1978:44). Often women are not counted in the labor force in rural work, for they are not paid workers. This fact alters the possible percentages of what would be classified as non-farm occupation.

b) Saudi Arabia

Agriculture does not play a very prominent role in the Saudi economy, and the majority of the rural labor is done by the semi-nomadic people. Table VI, on page 79, states that 80.8 percent of the women worked in agriculture in 1975; however, less than two percent of the Saudi women work outside of their homes (Nyrop, et al, 1976:236). Also, no reliable data can give an accounting for this variable, for there are many foreigners working in the Saudi economy.

c) Tunisia

In the late 1970's, agriculture remained the main employer and supported about half of the Tunisian population (Nelson, 1979: 133); thus, it may be assumed that approximately half of the population is involved in non-agricultural employment. The reader must bear in mind that the statistics relating to labor force composition often do not include the work of women in agriculture, so the actual figures of the percentages of non-agricultural workers may, in fact, be much lower.

d) Summary for the percent of non-farm occupational workers

It was expected both Tunisia and Egypt would exceed Saudi Arabia in percentage of non-farm occupational workers in the labor force. For various reasons, information is so unreliable no conclusion can be made regarding this expectation. In both Tunisia

and Egypt, women's contribution to agriculture is seriously underrated. In Saudi Arabia, foreign laborers distort the labor market figures.

3. The Energy Consumption Level

The following figures were collected for each country from the United Nations' statistical data in Table VI, on page 78: Egypt's 1976 per capita energy consumption was 473 kilograms of coal equivalent, Saudi Arabia's 1976 per capita energy consumption was 1,901 kilograms of coal equivalent, and Tunisia's 1976 per capita energy consumption was 456 kilograms of coal equivalent. The expectation that Saudi Arabia would have the lowest consumption of the three countries was clearly not supported.

4. The Literacy Rate

The literacy rate in 1975 was 40 percent for Egypt, 15 percent for Saudi Arabia, and 32 percent for Tunisia, as shown in Table VI on page 79. (Table VI shows that for Tunisia in 1975 the literacy rate was 32 percent compared to 32.2 percent in 1968. It is not known why the literacy rate reveals a decline, for the government of Tunisia has large investments in the improvement of its educational standard.) The expectation that Saudi Arabia would have the lowest literacy rate was clearly confirmed.

5. The Life Expectancy Levels

It was expected Saudi Arabia would have the lowest life

expectancy level of the three countries.

The average life expectancy at birth in 1975 for Egypt was 52.4 years, for Saudi Arabia 45.3 years, and for Tunisia 54.1 years as recorded in Table VI, on page 80. The infant mortality rates were cited in Table VI, page 80, as follows: Egypt's 1975 infant mortality rate was 103 per 1,000 live births, compared to 120 per 1,000 live births in 1968; Saudi Arabia's 1975 infant mortality rate was 152 per 1,000 live births, compared to 157 per 1,000 live births in 1968; and Tunisia's 1975 infant mortality rate was 128 per 1,000 live births, compared to 135 per 1,000 live births in 1968.

Though the data were not available for maternal mortality, the other two variables clearly support the hypothesis. Saudi Arabia has the lowest life expectancy at birth and the highest infant mortality rate.

6. The GNP per capita

In 1975 the GNP per capita for Egypt was U.S. \$310, for Saudi Arabia U.S. \$3,010, and for Tunisia was U.S. \$760, as recorded in Table VI, on page 80.

Since the expectation most consistent with the hypothesis predicts the lowest GNP per capita for Saudi Arabia, predictably, Saudi Arabia's oil revenues failed to support this measurement of the hypothesis. By contrast, Egypt and Tunisia have no large petroleum reserves.

7. The Availability and Accuracy of Statistics

It was expected that statistics published by Saudi Arabia would be less complete and less accurate than statistics of the other two countries. In general, when compared to other Middle Eastern countries listed in international data publications, Egypt and Tunisia usually have complete entries. The data for Saudi Arabia are often showing discrepancies (see pp. 98-99 , above), or lacking information on many variables.

Egypt has been taking a census of its population since 1897. Saudi Arabia has not collected much data until just recently, and most of the data have not been open to official publication. In 1976, the United Nations Fund for Population Activities provided Saudi Arabia \$128,000 for two demographic projects: one was for a national census, and the other was for the improvement of civil registration and the collection of vital statistics (Population Reference Bureau, Inc., 1976:173). The 1975 census in Tunisia included many variables; however, the data may not be as accurate as desired due to problems in data collection. For example, many women are not counted in agricultural work, for they are not considered paid laborers, and also due to the fact that many women work seasonally and may not have been working at the time of the census.

Only part of the expectation is supported -- that regarding completeness of entries. Accuracy of statistics could not be determined for Egypt and Saudi Arabia due to lack of information.

Tunisia's statistics lack desirable accuracy. Since the purpose of statistics is to be able to make predictions and to assess perceived needs of a population, the lack of certain accuracy of statistics in all three countries makes it seem wise to attempt no conclusion regarding this expectation even though completeness of information supports the expectation.

8. The Availability of Health Services

a) Egypt

The health network of Egypt is considered to be quite adequate in terms of the number of clinics and health centers under the Ministry of Health (Nyrop, et al, 1976:105). The United Nations' data available concerning the health services in Egypt are cited in Table VI, on page 81. In 1975, Egypt had 1,454 hospitals (1 per 27,500 persons) and 85,300 hospital beds (1 per 469 persons).

b) Saudi Arabia

Oil revenues have enabled the government to provide free medicine and medical care for all of its citizens and foreign residents. The data concerning the health services in Saudi Arabia are cited in Table VI, on page 81. In 1975 Saudi Arabia had 63 hospitals (1 per 89,000 persons), 5,780 hospital beds (1 per 968 persons), and 2,250 doctors (one per 2,485 persons).

c) Tunisia

All citizens have a free health service, in theory. Improvements are underway to add to the number of medical professionals and paramedical personnel. In Table VI, on page 81, statistics reveal that in 1975 Tunisia had 14,000 hospital beds (one per 427 persons) and 1,290 doctors (one per 4,636 persons).

d) Summary for the availability of health services

It was expected Saudi Arabia would be least likely to have health services available to the typical person among the three countries. Complete information for all three countries was available only for the number of hospital beds and here the pattern supported the expectation; therefore, this variable supported the hypothesis. With the number of hospitals, information is missing for Tunisia. The remaining information on Egypt and Saudi Arabia is in the direction of the expectation; however, a conclusion cannot be made due to missing data. Finally, even though information for the number of doctors in Egypt is not available, the expectation is clearly not supported, since Saudi Arabia has twice the doctors proportionate to the population compared to Tunisia.

9. The Extensiveness of Sanitation Systems

The sanitation systems are considered rather inadequate in Egypt due to the poor systems of waste disposal and the spread of diseases from contaminated waters (Nyrop, et al, 1976:102, 104-105). In Saudi Arabia the sanitation systems are unsatisfactory, especially in the overcrowded areas of the urban shantytowns and during

the time of the Ramadan pilgrimage, which occurs once a year (Nyrop, et al, 1977:77, 84-86). The sanitation systems in Tunisia are good in urban centers, but generally poor or lacking in the rural areas (Nelson, 1979:105). It was expected Saudi Arabia would have the least developed sanitation system of the three countries.

As it appears, all the information is impressionistic, so no conclusions can be made regarding the hypothesis. Impressions, however, would fail to confirm the hypothesis. Relative to the size of its population, Saudi Arabia's sanitation system was judged middle-rank of the three countries; Tunisia's sanitation system ranked the most extensive and Egypt's was ranked the least extensive.

10. The Advancements in Communications

It was expected Saudi Arabia would have the least developed communication system among the three countries. This expectation's variables would translate into proportionately fewer telephones, radios, televisions, newspapers, and cinemas in the population.

a) Egypt

In late 1975, the mass communications were either directly controlled or closely supervised by the government. The Ministry of Information is the primary source of information policy. The A.S.U. (Arab Socialist Union), the nation's only political party, complements this ministry's activities. Freedom of the press and

opinion are guaranteed, but within a formally structured government apparatus that oversees the operations of all media organizations--from issuing permit licenses to the appointment of editors and station managers.

Radio continues to be the most widely used communications medium and reaches the largest percentage of the population--a larger percentage than all of the other media combined. Among the illiterate population, radio and television broadcasts are of primary importance as a source of information. In the mid-1970's, television was rapidly becoming a major mass communications channel. The government distributes radio and television receivers free of charge to cultural centers, as part of its effort to increase the effectiveness of broadcasts. The impact and effectiveness of radio and television programs vary widely, depending on the person's occupation group, degree of literacy, and place of residence (Nyrop, et al, 1976:229-230).

Radio broadcasts reach the entire population, and according to 1975 estimates, the ambitious television system has a capacity to reach almost 90 percent of the population. In 1972 there were about five million radio receivers, or about one set for every eight persons. According to communication experts, the number of radio owners is increasing rapidly. Most sets are assembled domestically from imported components. Transistor radios are especially popular, and may be purchased at relatively low prices. Television, financed by direct government grants, arrived early in Egypt and has grown rapidly. In 1975, television sets were produced and assembled locally and one-fifth were imported. Egypt is likely to become the first African country to provide color television (Nyrop, et al, 1976:241).

In the mid-1970's, more than 400 newspapers and periodicals were published in Cairo and Alexandria. The 1975 circulation figure for Arabic dailies was about one million. By tradition and custom, dailies and periodicals are read aloud in coffeehouses and government information centers and at gatherings of family and friends to accommodate informing the illiterates as well as sharing news. Media specialists estimate that there are five to ten readers and listeners per each Arabic publication. The efficiency of the press as a mass communications medium is limited by the high level of illiteracy among the population. But, because the papers are customarily read aloud, as mentioned above, they reach many more people than the circulation figure would indicate (Nyrop, et al, 1976:237).

Egypt is also the film-producing center of the Middle East, and exports many films each year. Most of the urban cinemas present numerous shows daily to capacity crowds. All films, domestic and foreign, are reviewed by a government agency, the Egyptian General Organization for Cinema. Films are a popular source of entertainment, but are usually available on a regular basis only to the urban residents. The government sponsors mobile units that present information and political films to the people in the rural areas (Nyrop, et al, 1976:242-243).

Although there are various internal sources of information and entertainment, and various foreign broadcasts beamed to Egypt, the informal channels of communication have still remained very important. Informal communications in both the rural and urban

area coffeehouses, shops, market places, and mosques are continual transmission centers for news of all kinds (Nyrop, et al, 1976: 243-244).

Data concerning communication facilities are cited in the United Nations' statistics in Table VI, on page 82. In 1974, there was one telephone per 72 persons, and in 1975, one television per 59 persons, and one radio per eight persons in Egypt. There were also 14 daily newspapers with a total daily circulation of 773,000 (one paper per 52 persons).

b) Saudi Arabia

Data concerning communication facilities are cited in the United Nations' statistics in Table VI, page 82. In 1974, there were 117,600 telephones (one per 48 persons). In 1975 data list 78,400 televisions (one per 72 persons), and 156,800 radios (one per 36 persons). Saudi Arabia has 11 daily newspapers with a total daily circulation of 96,000 (one per 59 persons). The public cinemas exist in Saudi Arabia, but presently they are legally closed (they have been opened and closed several times in the past, according to the author's inside sources). Home videotapes are said to be rather popular among the contemporary Saudis in their own private homes, according to inside sources.

In 1976, the mass communications in Saudi Arabia were closely scrutinized by the government and religious leaders. The government had increased the capacities of the mass media system dramatically during the 1960's,

but by the mid-1970's the system still lagged far behind other Middle Eastern countries.

The Ministry of Information is the primary source of information policies, and is in charge of promoting the image of Saudi Arabia at home and abroad. Radio and television networks are government-owned, and the country has a small, but growing privately-owned press (Nyrop, et al, 1977:193).

Several factors have influenced and shaped the structure of the mass media such as the size of the country, the diversity of domestic groups, the costs of broadcasting, and the low level of literacy. But, of far greater impact on the development of the media have been the religious and political traditions. The government and royal family have guided the press and broadcasting establishments from their creation, and have promoted their growth only when necessary to promote the government's interests. Thus, the underlying stimulus for change is not through innovation or creativity, but through pragmatic planning (Nyrop, et al, 1977:193-194).

Under the press law, the government has practically full control over the press, although the establishments themselves are in private hands. Table VI indicates the domestic audience is highly illiterate (p. 79); therefore, broadcasting has the potential for reaching the largest number of people. Radio has the capacity to reach the entire population, but television still had not become very widespread in 1976.

Although radio and television continue to be opposed by a few conservative factions in the mid-1970's, their establishment has become a reference point when planning the introduction of other media. Many of the more affluent young Saudis derive great enjoyment from both radio and television, and supported the few privately organized cinemas which, in 1976, were still not approved

by the government (Nyrop, et al, 1977:196).

It is difficult to speculate about the eventual effects of television on a society that has never really known theaters, nightclubs, or cinemas; this innovation is in total incongruence with the Saudi way of life. The religious content of both radio and television has been decreasing, and many of the imported programs have been challenging the people's traditional values. Despite the strong opposition of religious leaders, television promises to be a very popular channel of communication.

Informal channels of communication assume an important role because of the low level of literacy, the importance of small-group meeting places, and the pervading influence of religious institutions. The importance of these informal channels of communication for mobilizing the people and directing and controlling public opinion increases the influence of the ulama as opinion leaders in the social system. The government seeks out these individuals asking them to disseminate information among their groups in order to carry out information policies effectively.

The government hopes that through the increased distribution of radios and by decreasing illiteracy, formal communication channels will reduce the amount of distortion and exaggeration produced by the informal channels (Nyrop, et al, 1977:197-198).

c) Tunisia

The communications systems of Tunisia are best described in the American University's Area Handbook for Tunisia in the following two paragraphs.

All telecommunications in Tunisia are under the control of the Ministry of Transportation and Communication. By 1978, almost 90 percent of the telephones in the country were

automatic, after a long-range program of gradually introducing automatic switchboards to cut telephone rates and to improve service. Automatic telephone links also exist with Western Europe via underwater cables to France. Telex service connects Tunisia with several European and neighboring Arab countries (Nelson, 1979:207).

The broadcast media have been a state monopoly since the country's independence. They are administrated by a public corporation, Tunisian Radio and Television, under the Ministry of Cultural Affairs and Information (Nelson, 1979:209).

The circulation of daily newspapers is nearly equally divided between French and Arabic publications. In the mid-1970's, official overview of the press became more vigorous. A press code adopted in April of 1975 required all persons managing or financing publications in Tunisia to be Tunisian citizens. The Higher Council of Information, created in 1973 and presided over by the Secretary of State for Information, establishes guidelines regarding the acceptable content of all media (Nelson, 1979:208).

Data concerning communication facilities are cited in the United Nations' statistics in Table VI, on page 82. In 1974, there were 143,400 telephones (one per 42 persons), 1970 data lists 59,750 televisions (one per 100 persons), and 1975 data lists 292,775 radios (one per 21 persons). Tunisia has four daily newspapers with a total daily circulation of 190,000 (one per 32 persons).

d) Summary for the advancements in communications

Findings were expected to reveal the number of telephones, radios, televisions, newspapers, and cinemas to be lower in proportion to the population in Saudi Arabia than in Egypt or Tunisia.

The expectation was only partially supported. The pattern was supported for radios; Saudi Arabia had one radio per 36 persons, Egypt had one radio per eight persons, and Tunisia had one radio per 21 persons. Likewise, in newspapers, Saudi Arabia had one newspaper per 59 persons, Egypt had one newspaper per 52 persons, and Tunisia had one newspaper per 32 persons.

The expected pattern, however, was not reproduced for telephones or televisions. Concerning telephones, Saudi Arabia had one per 48 persons, Egypt had one per 72 persons, and Tunisia had one per 42 persons. Regarding televisions, Saudi Arabia had one per 72 persons, Egypt had one per 59 persons, and Tunisia had one per 100 persons.

No conclusion can be made regarding cinemas due to the position of the Saudi government to them -- an opposition not shared by the governments of Tunisia or Egypt. Unlike alcohol consumption discussed earlier (pp. 109-110), cinemas are not, of course, banned by the sacred writings of Islam. Therefore, whether cinemas are cast in religious terms depends on the country. In Saudi Arabia religious objection exists, but in Tunisia and Egypt apparently cinemas are not, in themselves, seen as a religious issue.

11. The Advancements in Transportation

It was expected that Saudi Arabia would have the least developed transportation of the three countries to be consistent with the hypothesis being investigated. This indicator's variables

would translate into the fewest number of automobiles and commercial vehicles proportionate to the population of Saudi Arabia compared to Tunisia and Egypt.

a) Egypt

The geographical features and locale of Egypt have facilitated the development of a good transportation system. The Nile River provides a natural link between all the important centers of habitation and economic activity, as it always has for thousands of years. Roads and railroads, with a few exceptions, follow the coastlines and the Nile River. In 1975, over 16,000 miles (25,744 kilometers) of roads existed in Egypt, one-third of which were hard surfaced. There were 2,500 miles (4,022 kilometers) of railroads, which were operated by the government. Alexandria is the most important port for foreign commerce; Port Said and Suez are important primarily for the Suez Canal traffic, which was resumed on June 5, 1975. All major cities have airports. Cairo International Airport is the major international terminal. And the government-owned EGYPTAIR is the principal domestic airline.

Railroads are the most important transportation carrier, supplemented by trucks for short hauls and waterways for long hauls. In 1964, the systems were built to their current level during the movement of construction materials for the Aswan Dam (Nyrop, et al, 1976:70-72).

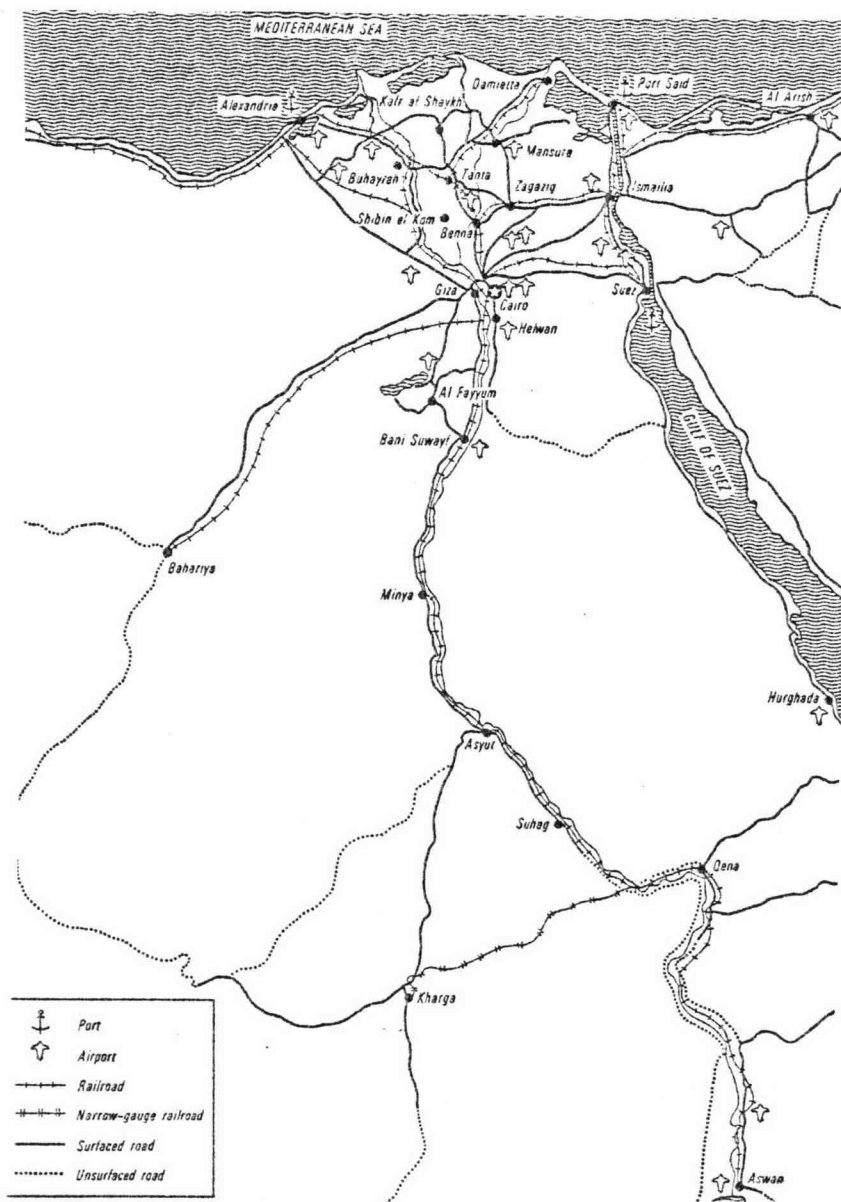


Figure 3. Egypt, transportation system, 1975.

In 1975, the government owned and operated most of the inland transportation systems. Many domestic transportation components were rundown and in need of extensive rehabilitation due to an absence of an overall plan to establish priorities for development and to provide adequate funds to maintain the system (Nyrop, et al, 1976:331).

Cairo and Alexandria operate urban transit for their cities. Cairo's system is cheap and heavily used. The equipment has suffered from excessive use and loading, inadequate maintenance, and lack of spare parts. More equipment is badly needed. A subway system for Cairo was discussed, with a feasibility study underway in 1975, but very high costs and impact on the balance of payments made it a questionable investment for the near future (Nyrop, et al, 1976:332).

The number of vehicles is cited in the United Nations' statistics in Table VI, on page 81. Egypt had one car per 163 persons and one commercial vehicle per 697 persons in 1976.

b) Saudi Arabia

The transportation of Saudi Arabia is described below from the American University's Area Handbook for Saudi Arabia.

A major constraint on economic growth in early 1976 was the transportation system. The ever-increasing flood of imports since 1973 became too much for the system to handle. Ports constituted the primary bottleneck. Long lines of ships waited at every port, some for as long as four to five months before unloading. Many experiments were tried to keep pace, the latest was to use helicopters to carry nets of cargo to shore. Despite these efforts, some observers suggest that even if the ships could be unloaded, the rest of the transportation system would not be able to distribute the goods (Nyrop, et al, 1976:243).

In 1975, there were approximately 6,200 miles (9,976 kilometers) of roads. There is one operative rail line, which is the Dammam-

Riyadh run that is 357 miles (574 kilometers) in length. There are four main ports, all badly congested: Jiddah and Yanbu on the Red Sea, Ras Tanura and Dammam on the Persian Gulf (see map below). There are three international airfields: Jiddah, Riyadh, and Dhahran; plus seventeen smaller airports. Transportation systems have been steadily improving since 1976, but still remain inadequate to meet the country's needs. Yet, the problem cannot be quickly resolved despite crash construction programs (Nyrop, et al, 1976:57, 59, 61).

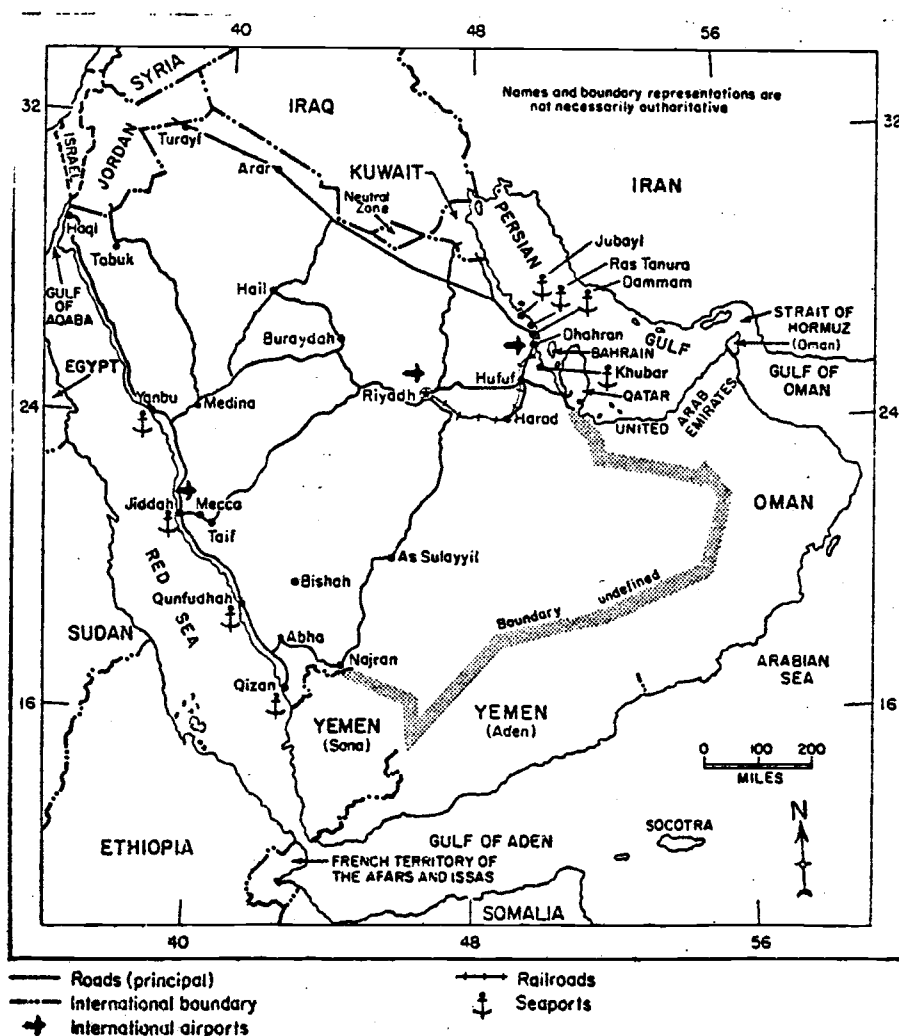


Figure 4. Saudi Arabia, transportation system, 1975.

The Five-Year Plan has committed itself to the study of the function and performance of the railroad in relation to the national transportation system. Road transport development is considered to be second in importance after air transport in minimizing the vast distances between population centers. Because the terrain is so inhospitable to ground travel and so expensive to build on, airport development has obvious advantages (Nyrop, et al, 1976: 60-61).

The number of vehicles is cited in the United Nations' statistics for Saudi Arabia in Table VI on page 81. Saudi Arabia had 59,400 cars (one per 95 persons) and 52,600 commercial vehicles (one per 107 persons) in 1976.

c) Tunisia

Tunisia's transportation system is best described in the American University's Area Handbook for Tunisia, which is found below.

The general control and management of all forms of transportation lie with the government, which coordinates road, rail, sea, and air services and establishes their rates. The transportation system is relatively well developed as shown in Figure 5 below, but improvements and modernization were required in the late 1970's.

The railroads are the most important element of the transportation system. The geographical distribution of the railroad system reflects its commercial function of linking mining and main agricultural regions to the seacoast.

Tunisia inherited a fairly extensive highway network and has improved upon it; but the design characteristics have

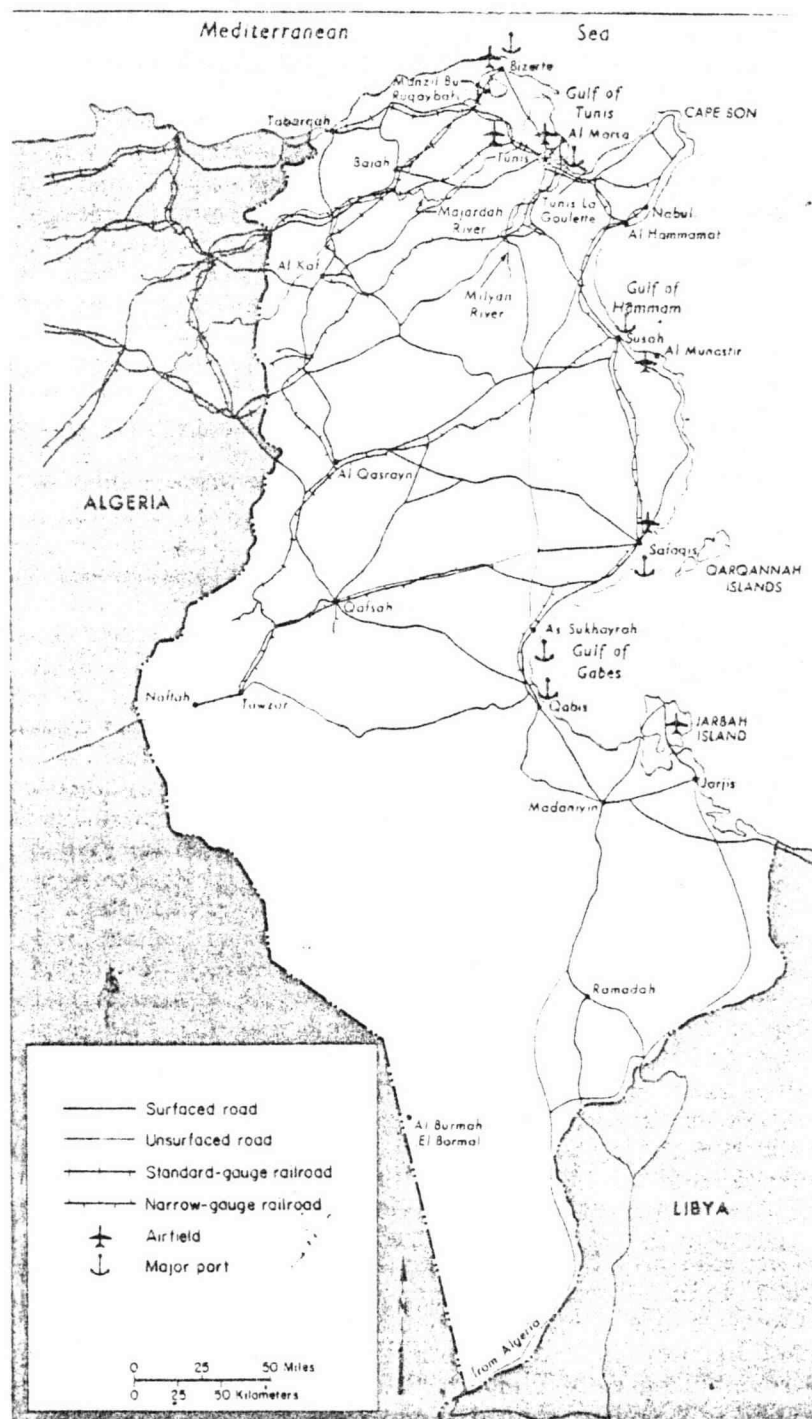


Figure 5: Tunisia, transportation system, 1978.

become insufficient for the growing volume of traffic, and more rehabilitation is required to bring the system up to modern standards. Rural roads are seldom maintained, mostly unpaved, and almost impassable in wet weather. A rural roads improvement project began in late 1978 in selected areas to improve marketing conditions for farmers and to enable extension services to be brought to the outlying areas (Nelson, 1979:162-163).

The country has six major seaports: Tunis-La Goulette, Bizerte, Safaqis, Susah, As Sukhayrah, and Qabis. As Sukhayrah is a specialized port for handling Algerian and Tunisian petroleum exports. Safaqis has a monopoly on the export of olive oil and phosphates. Bizerte and Tunis-La Goulette handle most of the country's imported goods. In terms of volume of cargo handled, Safaqis and Bizerte are the busiest. Both of these busy ports had reached their handling capacity by the late 1970's, and expansion of their port facilities is required to avoid congestion in the near future.

Major airfields are at Bizerte, Tunis, Al-Munastir, Safaqis, and Jarbah. There are also about 12 minor fields located throughout the country. A new international airport was under construction in the late 1970's at Naftah-Tawzar, 110 kilometers southwest of Qafsah, in an endeavor to accommodate tourism in the southern part of Tunisia (Nelson, 1979:163-166).

The numbers of vehicles is cited in the United Nations' statistics in Table VI, on page 81. Tunisia had 102,600 cars (one per 59 persons) and 67,000 commercial vehicles (one per 90 persons) in 1975.

d) Summary for the advancements in transportation

Information regarding transportation in the three countries failed to support the hypothesis. Contrary to expectation, Saudi Arabia did not have the lowest proportion of automobiles and commercial vehicles of the three countries. However, neither did

it have the highest proportion in 1975 -- Tunisia did. The lack of support for this variable of the hypothesis is reinforced by impressionistic information regarding other aspects of transportation. Ports, roads, railroads, as well as mass transportation are often crowded in all three countries. Tunisia and Egypt had maintenance problems, and Tunisia and Saudi Arabia needed to expand their systems. For various reasons, no country had transportation systems regarded as adequate for the demand.

12. The Presence of Social Security Systems

The author was not able to obtain specific information about the social security systems of the three countries, except that they do exist. Despite the changes in the status of women in Egypt and Tunisia, and the financial support of families in Saudi Arabia from the oil revenues, the cultural value for male children persists. Due to this strong cultural value, the desired number of sons in a family is four, and females are generally less desirable than males. Within some urban centers, this cultural trend may be declining in Egypt and Tunisia due to legal privileges bestowed upon women and due to the growth of smaller nuclear families.

a) Summary of the social security system

Because of impressionistic information for all three countries, no conclusions can be made regarding the original expectation that Saudi Arabia would be least likely to have a government supported

social security system. The same can be said regarding the traditional desire for sons.

13. Summary for Hypothesis 2

Hypothesis 2: Development has a direct relation to an anti-natal formal population policy.

It was expected that the more developed countries will be more likely to have an anti-natal formal population policy. Thus, an investigation was made to discover if Egypt and Tunisia, two countries with anti-natal formal population policies, were more developed than Saudi Arabia, a pronatal country. The results for the indicators of development revealed that out of 21 variables for this hypothesis, seven supported the hypothesis, seven rejected the hypothesis, and seven had insufficient data. For a condensed summary of the results of Hypothesis 2, see pp. 139-140, below.

Table VII, below, summarizes the results from investigating the two main hypotheses in this chapter. The first hypothesis expected traditional religious practices would be found in Saudi Arabia, a pronatal country. Out of 13 measures for this hypothesis, five measures provided support, two rejected the hypothesis, and six had insufficient information from which to draw conclusions.

The second hypothesis expected that development (broadly defined) would be more likely in countries with antinatal population policies, such as Egypt and Tunisia. Out of 21 measures for this hypothesis, seven measures supported the hypothesis, seven rejected the hypothesis, and seven had insufficient information from which

to draw conclusions.

The following topics investigated, which had insufficient data reported in the results of this chapter, were not included in Table VII: age at which marriage occurs, the percentage of women in Western dress, the insistence on Friday as the sole "day of rest", the percentage of students who attend religious schools, the percentage of civil marriage, the amount of alms-giving, the percentage of non-farm labor, the availability of statistics, the adequacy of health services, the number of hospitals per capita, the number of doctors per capita, sanitation systems, the number of cinemas per capita, and the social security systems. The interpretation and recasting of these results are the subjects of the next chapter.

TABLE VII. SUMMARY OF HYPOTHESES' RESULTS.

Hypotheses and their Measurements	SAUDI ARABIA	EGYPT	TUNISIA	Supports or Rejects Hypothesis
<u>Hypothesis 1:</u> Religion has an inverse relation to an antinatal formal population policy.				
The practice of polygyny as traditional behavior.	Is legal and not uncommon	Legal, found in about 3% of marriages	Officially illegal, rather uncommon	Supports
Status of Women:				
-Percentage of women in the labor force	Less than 2%	36.7%	30.0%	Supports
-Ease of divorce for women	Difficult, allowed on limited grounds	Women may divorce on limited grounds	Legally, women are equal to men	Rejects
-Percentage of females in school enrollment	Ages: 6-11....24% 12-17....20%	Ages: 6-11....52% 12-17....27%	Ages: 6-11....63% 12-17....24%	Supports
-Equality for women in inheritance laws	Females receive one-half	Females receive one-half	Females receive one-half, with some exceptions	Rejects
The status of the practice of religious legal codes	Religious court system is used	Secularized court system	Secularized court system	Supports
Alcohol consumption	Illegal	Limited	Limited, some alcohol is exported	Supports

TABLE VII. SUMMARY OF HYPOTHESES' RESULTS (Continued).

Hypotheses and their Measurements	SAUDI ARABIA	EGYPT	TUNISIA	Supports or Rejects Hypothesis
<u>Hypothesis 2:</u> Development has a direct relation to a formal antinatal population policy.				
Percentage urban	20.8%	47.7%	46.9%	Supports
Energy consumption (of coal equivalent)	1,901 kilograms per capita	473 kilograms per capita	456 kilograms per capita	Rejects
Literacy rate	15.0%	40.0%	32.0%	Supports
Life expectancy	45.3 years	52.4 years	54.1 years	Supports
Infant mortality rate	152 per 1,000 live births	103 per 1,000 live births	128 per 1,000 live births	Supports
GNP per capita	U.S. \$3,010	U.S. \$310	U.S. \$760	Rejects
Hospital beds	5,780 (1 per 968 persons)	85,300 (1 per 469 persons)	14,000 (1 per 427 persons)	Supports
Doctors	2,250 (1 per 2,485 persons)	. . . .	1,290 (1 per 4,636 persons)	Rejects

TABLE VII. SUMMARY OF HYPOTHESES' RESULTS (Continued).

Hypotheses and their Measurements	SAUDI ARABIA	EGYPT	TUNISIA	Supports or Rejects Hypothesis
Telephones	1 per 48 persons	1 per 72 persons	1 per 42 persons	Rejects
Televisions	1 per 72 persons	1 per 59 persons	1 per 100 persons	Rejects
Radios	1 per 36 persons	1 per 8 persons	1 per 21 persons	Supports
Newspapers	Circulation: 96,000 (1 per 59 persons)	Circulation: 773,000 (1 per 52 persons)	Circulation: 190,000 (1 per 32 persons)	Supports
Automobiles	1 per 95 persons	1 per 163 persons	1 per 59 persons	Rejects
Commercial Vehicles	1 per 107 persons	1 per 697 persons	1 per 90 persons	Rejects

IV. CONCLUSION AND DISCUSSION

This last chapter is divided into three main parts. The first part ("A") will state conclusions regarding the two hypotheses and will challenge the adequacy of the original expectations. The second part ("B") suggests new ways of viewing the two concepts "religion" and "development", which were central to the two hypotheses. The third part ("C") will relate the new views of religion and development to the original two hypotheses and reflect back upon the ideas and assumptions presented in the first two chapters of this thesis. However, before an evaluation of the hypotheses can be made, a review of data limitations is needed.

Demographic and developmental statistics are generally lacking in many Middle Eastern countries. Several countries are relatively young modern states in the region, and have either lacked interest, resources and personnel, or sophistication in their data collection. All these factors combine to yield incomplete data. There is also the possibility that some governments are deliberately withholding their country's vital statistics from publication. An additional complication is the variance in the statistics recorded in primary data sources. For example, information from the United Nations and U.S. State Department has conflicting entries for the square area of the

countries by a significant amount; e.g., for Saudi Arabia's area--the U.N. states 830,350 square miles (2,149,690 square kilometers), versus the U.S. State Department figure of 873,000 square miles (2,261,000 square kilometers).

The present author chose information from sources outside of the countries, such as that from the American University's Foreign Area Studies' Area Handbooks, U.S. State Department's Background Notes, and the United Nations Statistical Yearbooks, with the thought that they may be more neutral or accurate. Thus, a value judgment had to be made in order to be consistent and as comprehensive as possible despite the general inadequacy of the data.

The information on several selected topics, such as that dealing with the status of women in Muslim countries, ventures into areas of research that have been relatively neglected, misrepresented, and unexplored. Two basic constraints appeared in conjunction with the gathering of information. The first constraint was that the majority of the works reviewed for this study were in English, although some French and Arabic materials were utilized. Secondly, due to time limitations and the vastness of the area under study, the selection and compilation of materials had to be arbitrarily set at a cut-off point beyond which the study did not extend. Thus, there are bound to be relevant works which may have not been included.

All these data limitations qualify both the validity and the scope of the study, regardless of whether the traditional

orientation--the first part of this chapter--or the revised orientation--the second part of this chapter--is being considered.

A. Evaluation of the Hypotheses in a Traditional Orientation

1. Conclusions Regarding the Hypotheses

The hypotheses were primarily designed to measure religious traditionalism and the level of development in relation to an anti-natal formal population policy. Based upon the available data collection with regard to these hypotheses, several conclusions may be drawn.

Hypothesis 1: Religion (Islam) has an inverse
relation to a formal anti-natal population
policy

The first hypothesis predicted traditional Islamic behavior will be practiced less in countries with a formal anti-natal population policy. As indicated above (pp.111,138), among those topics for which adequate data could be found, five variables supported the hypothesis, but two variables rejected it.

The results for Hypothesis 1, reported in Chapter III, showed that there is quite a range of traditionalism-secularism within the countries studied. Religious traditionalism is still a strong force in Saudi society. This socio-religious traditionalism has kept many women out of the labor force, although some

changes have been made in the last two decades by allowing females to attend a growing number of segregated schools. Secularization has not penetrated Saudi society, for the Koranic laws and principles are still widespread in the courts and educational system. Saudi Arabia is also the only country of the three which legally prohibits alcohol. By contrast, in Tunisia and Egypt, polygyny is not stressed; a higher proportion of women is in the labor force and in the schools; and secularized legal codes guide the court systems.

The two indicators which rejected the hypothesis were the leniency of divorce for women and the equality for women in the inheritance laws. Regarding the leniency of divorce for women, Egypt--a country with an anti-natal formal population policy--is more like Saudi Arabia. Regarding the equality for women in the inheritance laws, there is virtually no major difference between the three countries. The more religiously traditional society of Saudi Arabia has a formal pronatalist population policy; whereas, the more secular societies of Egypt and Tunisia have formal anti-natal population policies. Since two important indicators intended to measure religious traditionalism failed to support the hypothesis and the fact that six variables had insufficient information from which to draw a conclusion, the results do not show a clear support for the hypothesis.

Hypothesis 2: Development has a direct relation to
a formal anti-natal population policy.

Reviewing the results of the data for Hypothesis 2 shows that seven variables supported the hypothesis, seven variables rejected the hypothesis, and seven variables had insufficient information from which to draw a conclusion. The results show Saudi Arabia to be quite developed in terms of a very important variable in the area of development which was discussed in the review of the literature in Chapter I (pp. 26-27)--the GNP per capita. Considering the development spectrum on the basis of GNP per capita, the countries could be aligned as follows: Egypt (the least developed), then Tunisia, and Saudi Arabia. Additionally, Saudi Arabia has the highest energy consumption level and number of doctors per capita. Yet, in terms of some other developmental variables (namely: percent urban, life expectancy at birth, literacy rate, number of radios, newspapers, and hospital beds per capita, and infant mortality rate) Saudi Arabia ranks the lowest of the three countries. Tunisia has the most automobiles and commercial vehicles per capita, as well as the highest proportion of telephones. Of the three countries, Egypt has proportionately more televisions.

2. Critical Analysis of the Findings

The lack of clear support of the relation between secularism and a formal anti-natal population policy requires some interpretation. So too does the very mixed set of findings regarding the development variables and a formal anti-natal population policy. Embracing both hypotheses and their findings is the possibility that different histories of each country may account for some of the findings which did support the expectations. It is this topic which will be discussed first, followed by two sections relating to Hypothesis 1 (the status of women and challenges for Islam), and a section relating to Hypothesis 2 (development: conceptual problems).

a) The Role of Colonial History

Although only three countries were investigated, the author presumes that the phenomena associated with secularization and modernization are following the pattern which has been observed in other parts of the world. It is also felt by the author that variances in each country's historical acculturation with other societies may also have played an important role in the amount of secularization and development which has taken place in each of these three countries. One of these variances is the kind of contact each country had with colonial powers. As Accad indicates, the French influence was more

profound than the British.

In general, French colonialism has left the more deep and lasting impression on those areas which it has touched. This is a result of French colonial policy, which dictated that the native residents of areas under French control be made into French citizens with all possible dispatch... The British on the other hand, generally made a practice of "leaving the natives in their ignorance," perhaps agreeing with Governor Berkeley that education merely multiplies the problems of colonial rule (Accad, 1978:15).

Tunisia was the most influenced by the French colonialism, Egypt had a little exposure to both the French and British, and Saudi Arabia had only a short encounter with the British. Other factors related to colonialism are the geographical proximity of these countries to Europe, and the individual country's natural environmental appeal to Europeans. Tunisia is only a few hundred miles from Europe, whereas Saudi Arabia's desert and nomadic environment were not as appealing to the Europeans at the time.

The amount of contact with the West may account for why Tunisia and Egypt were less socio-religiously traditional than Saudi Arabia in such areas as the percentage of females enrolled in schools, the percentage of women in the labor force, the practice of polygyny, the legal codes and the consumption of alcoholic beverages. The different histories of the countries studied may have contributed to the trends of secularization. History is a variable which was indirectly mentioned in Chapter I, Review of Literature on Theoretical Issues in Development (pp.23-24),

where it states that development is a result of the spread of certain cultural patterns as well as material benefits from the "more developed" countries. This "diffusion approach" includes social and cultural factors as well as the material and economic factors. This point, as well as the results from Hypothesis 1, may imply that religious traditionalism is associated with development in its broadest sense.

b) Status of Women

This section is the first of two to call into question some of the ideas about religion presumed by Hypothesis 1. The results collected concerning Egypt, Saudi Arabia, and Tunisia reveal an unevenness in the progress of the status of women. If the traditional status of women is embedded in religious justification, then religion itself must be interpreted as it relates to the variables used to measure it.

There were two variables under the status of women which failed to support the indicator as a measure of religious traditionalism with regard to the hypothesis. The first contradictory result related to the leniency of divorce for women, where the Egyptian pattern was more similar to that of Saudi Arabia than to that of Tunisia. The second contradictory result showed essentially no major difference among the three countries regarding the equality in inheritance laws for women. Prior to analyzing these results, a discussion concerning how the status

of women appears to interact with religion and development is in order.

The status of women is a social dimension of development that is intricately associated with another social dimension of development--religion. Both the status of women and the level of religious traditionalism are important factors to consider with regard to issues in development and demography. The review of the literature in Chapter I disclosed that social welfare, economic development, and population planning will meet limited success unless there is a corresponding effort to improve the status of women in that society. The literature also debated whether Islam contributes to the lower status of women. The author designed the study (see above, Chapter II, p. 56) with the status of women as an indicator of religious traditionalism rather than as an indicator of development, even though the indicator overlaps both areas, specifically because of the debate in the literature and the Western world's view that Islam is responsible for the low status of women in the Muslim world. The results for the data concerning the status of women (above, pp. 90-105) reported that out of six variables, two supported the hypothesis (the percentage of women in the labor force and the percentage of women in school enrollment), two rejected the hypothesis (the leniency of divorce for women and the equality of inheritance laws for women), and two variables (the age of marriage and the percentage of women in Western dress) had insufficient information.

From these results, the author concludes that the status of women is low due to religious traditionalism. Referring back to Table VII, p. 138, Saudi Arabia had very low percentages of women in the labor force and school enrollment compared to Egypt and Tunisia. These two variables, out of the four reporting variables measuring the status of women, are possible measures that could have overlapped as variables measuring development, yet they supported Hypothesis 1. The two other variables (the leniency of divorce for women and the equality of inheritance laws for women) failed to support the hypothesis because the countries with formal anti-natal population policies, Egypt and Tunisia, still retained their religious traditionalism. The author concludes from this that Egypt and Tunisia have secularized in areas and issues which pertain to the status of women that are least vulnerable to criticism from strict traditional socio-religious adherences. This finding also supports the sociological theory that religion is one of the last social institutions to change in a society.

Both variables which failed to support the hypothesis (the leniency of divorce for women and the equality of inheritance laws for women) also either directly or indirectly relate to women's control of wealth. In traditional societies and conservative cultures there is a predominance of patriarchal power systems. This is a feature in many contemporary Muslim societies.

The range of types of male dominance found in the Muslim world varies, as in most societies of the world today which still maintain a social structure that is characterized by male dominance. The industrialization process per se can hardly be considered a factor in the promotion of the principle of equality between the sexes. Neither national independence and the evolution of the modern state, nor the emergence and growing prosperity of a middle-class can successfully challenge the patriarchal status quo in the Muslim societies where the traditional status of women has been legitimized for centuries. It has long been assumed that development, in the economic sense, would influence people without reference to ascribed status. However, for these Muslim countries studied, the positive relation between economic development and the emancipation of women has to be called into question. Many of the variables under the indicator "status of women" reveal justification of economic dominance of men by men in religious terms.

Both variables which did not support the hypothesis deal with the control of wealth and women. This relationship is most clearly seen where all three countries allow men to inherit twice as much as women, thus assuring the men's economic control. Difficulty of divorce for women implies control by men, since in Egypt and Saudi Arabia men can secure divorce more easily than women. If divorce were only a religious issue unrelated to economics, then it would be equally hard for both sexes to

separate. Thus, the two variables which did not support the hypothesis would lend support to the idea that the religious norms applied to women are really sanctifying the economic power of men.

Technological innovations have not always produced a higher status for women. For example, some interpretations contend that women lost status with the invention of the plow, for it made women dependent on men for their livelihood (Nelson, 1978:35-37). There is good historical reason for questioning the assumption that economic inventions result in an expanded role for women. It can be argued that economic inventions, the roles of women, and religion are most commonly used by men to consolidate power unto themselves.

First, a long-standing interpretation of sex roles in sociology connects the importance of female virginity before marriage with the emergence of land ownership by individuals. Among tribes who practice hunting and gathering or slash-and-burn economics, female virginity is generally not a very important socio-religious cultural expectation. This interpretation goes on to claim that restrictive sexual expectations--especially for females--tries to guarantee knowledge of a child's parentage, and in this way secure land holdings within the same family over the generations. Inheritance of land, then, became a means to achieve societal power. The general increase in patriarchal roles in turn gave rise to the importance of female chastity and

fidelity (Sherman and Wood, 1979:131-141; Mace, 1960:43-45; and Leacock, 1972:29-42). The religious sanctions given to female chastity and fidelity can be interpreted as designed to allow men to accumulate societal power through the inheritance of lands and to restrict females as a source of competition.

Second, religious precepts such as the relations between the sexes are commonly connected with existing economic arrangements. Those religious movements that have lasting power have aligned themselves historically with the economically powerful factions in society (Smith, 1970:57-84).

It should be noted that this is only one interpretation of sexual equality and the status of women. Many Muslims adhere to their belief that religion does not lower the status of women, but that it does quite the contrary. The socio-religious importance of honor and the high respect demanded for women is important in Islamic cultures. The woman is the vessel of a man's pride and honor. Women are perceived as preserving and handing down the important values of society to their children. Therefore, a man's action is not as important as a woman's, for she is like a mirror reflecting a positive image, and if that image breaks, so does the society. As the traditional Muslim man senses his ties with traditions gradually crumbling away, he feels that he is losing a part of himself in the system which allowed him to assert his identity in numerous ways. Amid the shifts of secularization and modernization, there is one reassuring

point of stability in his mind which he values and preserves, for it gives him inner coherence: his image of woman.

The movement for the full inclusion of women in the society and their acceptance as more equal partners within the family is one of the most general features of social change in developing countries. Any significant changes in the economic activity and social status in the traditional Muslim society will involve re-defining job suitability based upon new views about the relationships between men and women, and may even require fundamental changes in the central value system. This movement and its potential energy is only recently relating itself to the traditional cultural thought in contemporary Muslim societies.

c) Challenges for Islam

In the section above, it was implied that religion was used to justify economic arrangements. If that adjustment has happened once in Islamic history, it may well happen again as development begins to change a country. In this second section dealing with Hypothesis 1, the assumption that religion is an independent variable is challenged further. This assumption was part of the expectation that traditionally Islamic countries would be pronatalistic. Though the three countries chosen were over 90 percent Muslim, in order to eliminate the confounding factor of a different religious background, questions about the strength of religious influence remain. It was possible to select

three overwhelmingly Muslim countries with differing formal population policies. Thus, another explanation must be sought and is the subject of this section.

Among the Muslim countries, the degree of limiting population growth varies directly with their government's position on the issue and its ability to motivate and mobilize supportive social change. The strength of a government's commitment to population growth or family planning policies often has more to do with economic and political conditions than with religion. In each of the countries investigated in this study, the author believes that it has been to the countries' own perceived advantage of either have a formal anti-natal population policy or not in terms of economic and political realities rather than because of religious convictions. Religion is flexible enough to support whatever position a government decides to take regarding population control policies, as exemplified below.

In Islam, as in other religions, there has been a trend to interpret the written word to keep pace with change and to be consistent with modern society. Thus, certain interpretations and passages from the Koran are used to support equality for women and positive attitudes for the welfare of the family without condemning family planning practices among followers. Modern Muslim scholars support family planning from scripture and support "safe and legitimate" contraceptives. The 1971 Muslim Conference of Rabat stated in its final report:

The Conference tended to consider that family planning is for the spouses by mutual agreement and without compulsion, to use a safe and lawful means to delay or precipitate pregnancy in such a way as to suit their health, social and economic circumstances, within the framework of responsibility towards their children and themselves (International Planned Parenthood, 1979:9).

In Islam, as in other religions, the believers are asked to increase in number, to populate the earth, and to propagate the word of God. A commonly quoted pronatal sura is:

Wealth and children are the adornment of this present life; marry the affectionate and prolific women; Marry among yourselves and multiply, for I shall make a display of you before other nations on the Day of Judgement (Sura 18:46).

The modernists then argue:

Neither by your riches nor by your children shall you bring yourselves into the nearness with Us (Sura 34:37).

Another pro-natal and anti-abortion passage is:

And do not kill your children for fear of poverty; We give them sustenance and yourselves too; surely to kill them is a great wrong (Sura 17:31).

Whereas the modernists quote the following sura to state that Islam traditionally anticipates problems arising from population pressure and its economic impact in the prophetic saying:

The Day of Judgement will not be until the child becomes a nuisance; the most gruelling trial is to have plenty of children with no adequate means (Omran, 1976:17).

The debates go on, but each Muslim country adheres to a Koranic interpretation which will most closely cohere with its own plans for development and economic progress.

Malthus gave economics a relatively simple model linking family behavior, individual welfare, and economic growth. In his model, reproductive behavior was related to economic conditions. New families formed more rapidly and had more children in "good times"; thus, more per capita income led to larger populations. Larger populations, however, put pressure on limited land, and the law of diminishing returns then dictated lower labor productivity, forcing per capita consumption and family sizes back down.

Due to the goals of education and modernization set in Tunisia and Egypt, an anti-natal formal population policy is viewed as expediting the process of development. However, in Saudi Arabia, the economic and environmental factors have not put such a strain on that society for its leaders to consider limiting the numbers of its population. The economic revenues from petroleum, the numerous foreigners working within Saudi Arabia, and the strict traditional interpretation of the Koran have made the government decide in favor of a continuation of its pronatalistic formal population policy. An interesting viewpoint for pronatalism has also recently evolved in the newly rich oil regions of the Muslim world--this new unprecedented wealth is perceived by many as truly a Gift from God, which in

turn reinforces their own perception of their religious beliefs and socio-religious behavior, especially during these days of perceived failing economics and decline in morality in the "developed world".

Considering the discussion presented in this section above, it becomes apparent that Islamic interpretations of the Koran may be either for or against the position of a formal anti-natal population policy. It is the argument of this section that Islam in these three countries serves economic and political interests. If this argument is accepted, then Islam is not an independent variable as Hypothesis 1 presumed. Instead, the variables which supported the hypothesis would indicate that both religious practices and formal population policy reflect political and economic arrangements. Religion, therefore, can be seen as a delayed index of secular forces rather than a cause of those forces; that is, religious changes occur and are indicators of past economic and political changes.

Therefore, the author questions the strength of Hypothesis 1, which states that religion has an inverse relation to a formal anti-natal population policy. The author concludes that religion should be considered as a dependent variable to development, rather than an independent variable with regard to its relation to an anti-natal formal population policy. This is not to say that religious traditionalism is not important for the masses of people within the countries just discussed, because traditional religious

values may be very significant in fertility behavior. Yet, in terms of a country's policy, the religious interpretations are subject to follow the practicality of the government's development goals. A revised view of religion as a dependent variable will be discussed later in this chapter (pp. 161-164, below).

d) Development: Conceptual Problems

In this section, the results reported for the variables of Hypothesis 2 which related development with an anti-natalistic population policy will be evaluated. Two-thirds of the variables used to test Hypothesis 2 failed to support the hypothesis, therefore a re-assessment of the hypothesis and its concepts must be made. At a minimum, it can be argued that some of the concepts were inadequately measured. It seems, however, that the problems with the hypothesis lies with the definition of the concept of development.

Traditionally, it has been assumed that development involved the creation of an economic system with certain properties, and that the results of this system would eventually reach everyone in the population. This formulation is implicit in the definition of development given above (p.45). Accordingly, it was assumed the measures of the economic system, like GNP per capita, would result in more income for the poorest family. Results reported in Chapter III do not support this assumption. Variables concerned with the effects of the economic system, e.g., infant mortality,

without exception supported the hypothesis. Variables concerned with the system itself were more likely to reject the hypothesis. Out of ten measures of the system, e.g., hospital beds, GNP per capita, etc., three supported the hypothesis and seven did not. Probably the measures of the system have internal differences, or all would have related to the hypothesis in the same way; however, it seems reasonable to conclude that the variables concerned with the results of an economic system and variables of the system itself are both not measuring the same social phenomena. It seems that development has two aspects operating with two sets of social rules. It cannot be assumed that because the GNP per capita increases (i.e., presumably the economic system changes) the literacy rate will increase. Yet, as the review of the literature above (pp. 38-39) shows it has been presumed that a change in the system will produce changes for the ordinary person.

Looking at Table VII (pp. 139-140 above), a pattern evolves among the variables supporting the hypothesis: in four of the seven variables one individual contributes one unit to the measure; for example, one person can contribute only one unit to the literacy rate. This pattern also is true of life expectancy at birth, urbanization, and infant mortality rate. The other three variables (number of radios, hospital beds, and newspapers) are not subject to this pattern. The improvements and goals in objects of the system are different types of development compared to developmental results

for an individual. It is important that both types of development be included in the concept of development, yet it is important that the distinction be made. In terms of the evaluation of the hypothesis, it seems desirable to re-define development so that it will not contain potentially contradictory internal components.

B. The Concepts of Religion and Development:
A Revised View

This part of the chapter has as its main focus the re-thinking of the concepts of religion and development and how they relate to the original hypotheses. The revised views of these two concepts will, it is hoped, fit the results obtained in this study more adequately than the traditional view. Revisions will be presented not as additions to, but as substitutions for, the traditional views. If correct, the revised views could provide a different focus for future research concerning the role of religion and/or development in these three countries.

1. Religion as a Dependent Variable

Earlier in this chapter, questions were raised concerning the perception of Islam as an independent variable in relation to a formal anti-natal population policy in these three countries. It was concluded that such an orientation was inappropriate, and that Islam might better be regarded as a delayed index of secular society. This formulation makes religion in these three countries a dependent variable. In these societies, Islam changes or fails

to change as a result of secular forces. Islam itself does not generally change secular aspects of these societies.

The reason for this stems partly from the nature of Islam as a revealed religion. The Islamic belief is that Muhammad was a final prophet and that the Koran is strictly God's word. This is a tenet of faith that ostensibly allows no change, for no further revelations are anticipated nor is there the possibility of human error in perceiving the meaning of Allah's word. God is the regulating principle of the faith, as is true in Judaism. There is no mechanism stemming from within the faith to create change. Changes in Islam, be they the creation of the other Muslim sects, or the "fundamentalist revival" of Islam, are a result of secular forces according to this revised view.

The view that Islam is a dependent variable does not mean that its religious leaders do not attempt change or develop norms independent of secular forces. Islam has some very specific things to say about secular life, as shown through the prescribed laws for inheritance. In the long run, in a situation where religious, political, and economic interests differ, political and economic interests will prevail. Under changed economic and political conditions, Islamic practices and values will adjust or become increasingly irrelevant for the purpose of complying with or accommodating to a policy. This point is clearly seen in the differences between Saudi Arabia, Egypt, and Tunisia regarding population policy positions and Islam, pointed out earlier (pp. 84-88, above).

The implications of viewing Islam differently are immense. Traditionally, the development specialists have seen traditional religious practices and values as an obstacle to change. Their reasoning was that a change in values changes behavior, so religious values must be changed to promote development. If contemporary religious values and practices justify the existing economic and political system, and are therefore dependent variables, then change in economic and political relationships will automatically produce a delayed change in religious values and practices. Development specialists do not need to attack religion, rather they can ignore it to some degree, and therefore prevent the creation of unnecessary hostility by offending peoples' sense of the sacred.

The suggestion that development specialists should be able to ignore religion is not meant to imply the change brought about by development will be accepted by religious leaders. Secular changes are normally resisted by leaders of revealed religions (e.g., Judaism, Christianity, and Islam). If religion has legitimated political and economic arrangements in the past (e.g., the European idea of the Divine Right of kings), then should those same arrangements change, the interests of the religious leaders will also be affected. If the secular changes occur in spite of the objections of established religious leaders, then some religious leaders will accommodate to the changes. Other leaders, however, will still object and for a time the religious leaders

will be divided, as the debate over family planning in Islam mentioned above shows (pp. 155-157).

In summary, the revised view of religion is that in the long run it is a dependent variable influenced by secular forces and commonly legitimating those forces. Sources of resistance to change come ultimately from traditional political and economic interests and are commonly reinforced by religious thinking.

2. Development as Societal Change

The inadequacies of development as traditionally defined have been discussed earlier in this chapter (pp. 158-159 above). There the distinction was made between development of the economic system's variables and support systems and the results measuring the effects of development on one individual. The former may be termed "economic development" and the latter, "societal development". The position taken in this revision of the concept of development is that to facilitate the design of Hypothesis 2, its meaning should be re-defined to include only societal development. The purpose of development is ostensibly to improve the lives of ordinary people, with the economic system serving as a means to that end. The availability of some capital is necessary for development but it is not a precondition for societal development to reach particular levels of performance. Therefore, given the different rules governing the variables of development mentioned earlier (pp. 159-161), it seems more accurate to use only those

variables which separate societal development from economic development.

As mentioned in the review of the literature on development in Chapter I (pp. 26-28, above), the concept of societal development has been frequently incorporated into the narrow and restrictive sense of economic development. This is a basic mistake which usually reflects itself in policies where social and economic development are treated as the same. Societal development needs to be viewed separately, yet as part of a wholistic approach.

The main important variable used for development projects throughout the world has been the economic indicator--the GNP per capita. M.D. Morris assesses and challenges the value of the GNP per capita index and introduces a new index for measuring the quality of life for an individual in a country, the PQLI (Physical Quality of Life Index). Morris has created the PQLI to measure development and distribution of the system's services to ordinary people (1979).¹⁸

GNP per capita has several limitations, for it is not a measure of total welfare, but only a measurement of goods and services that are valued in monetary terms. It is a measure of production and not consumption, and is very deceptive in terms of exchange rates and what kinds of goods and services are consumed

¹⁸ Morris' presentation of the PQLI is as a supplement to rather than a replacement of the GNP per capita, although he is quite critical of the value of the GNP per capita measure.

in different countries at various costs. The PQLI is a welfare indicator which is objective in nature, and attempts to measure improvements in developmental efforts over time.

The PQLI includes versions of three of the four variables which supported Hypothesis 2 (literacy rate, life expectancy, and infant mortality; all but urbanization are included). The PQLI is based on a simple indexing system. The three indicators which make up the PQLI are: literacy rate, infant mortality rate, and life expectancy at age one. Each of its three indicators is placed on a scale of 0 to 100, where 0 represents the "worst" performance and 100 represents the "best". A composite index, the PQLI, can then be calculated by averaging the three indicators, giving each one equal weight (Morris, 1979:41). The PQLI's major value is in the new information it provides and the challenge it stimulates in the analysis of development.

The PQLI is a welfare index and more objective than the GNP per capita, for one person contributes one unit to the measure of the literacy rate, the infant mortality rate, and the life expectancy at age one. The development exposed by a rise in the PQLI is one that shows the results of the system over time, measurements of changes in a typical person's life-style, and indicates a changed social structure which may or may not be the result of a thriving economy. By contrast, the GNP per capita can increase due to increases in incomes for a small percentage of the population, prosperous economic demand (e.g., petroleum

based economy), which does not require a change in social development per se, or alterations in the international exchange rates.

In Appendix III (pp. 191-198) the reader will find the compiled data of the GNP per capita ranking and the PQLI ranking for 150 countries in order to see how the Muslim countries fit into this spectrum. The GNP per capita for Saudi Arabia is listed as \$3,529 (#126), Egypt \$246 (#36), and Tunisia \$626 (#75). The PQLI table lists Saudi Arabia at 29, Egypt at 43, and Tunisia at 47. The PQLI reveals that "money isn't everything", for some of the countries have very high GNP's per capita, but perform poorly on other developmental indicators; whereas, others with quite low average per capita incomes have relatively high literacy rates, long life expectancy, and low infant mortality rates (as expressed in the higher PQLI ratings). For example, many of the oil-rich countries of the Muslim Middle East were very "developed" in terms of their GNP per capita, yet were very low among the developing countries of the world on other important development variables. Thus, the PQLI has much to offer in terms of putting "economic" and "societal" development in perspective.

C. Implications for the Revised Views of Religion and Development to the Hypotheses

1. Hypothesis 1

Hypothesis 1: Religion (Islam) has an inverse relation to a formal anti-natal population policy.

This original hypothesis was rejected because several of the variables failed to support the hypothesis, and an analysis of the results revealed that religious traditionalism can be viewed as a dependent rather than an independent variable. The author concludes that religious practices ultimately legitimate secular arrangements and that the relation between religious traditionalism and a formal anti-natal population policy will vary depending on the demands of the secular arrangements.

A replacement hypothesis cannot be formulated relating religious traditionalism to a formal anti-natal population policy because both variables are dependent, and there must be one independent variable to form a hypothesis. Also, neither variable has a specific content relationship to secular arrangements except to support them. Religious traditionalism does not necessarily have a high correlation to or a predictable pattern with regard to secular variables. Religion can take on certain characteristics independent of the society's secular forces, yet it plays a role in the society as a whole. Therefore, in the long run, religious traditionalism is not an independent factor in the formal population policy separate from the secular economic and political arrangements in these three countries.

2. Hypothesis 2

Hypothesis 2: Development has a direct relation to a formal anti-natal population policy.

This hypothesis was rejected because the data were mixed and showed no clear support for the hypothesis. This original hypothesis is rejected primarily due to the poor conceptualization of development. Development should be defined in terms of indices that measure changes in the lives of the ordinary people, like the literacy rate. Variables like the GNP per capita that allow one person to accumulate more than one unit of the measure, measure only the accumulation of power and material possessions via the economic system. Also, increases in such variables do not reveal that increased portions have reached more people. The availability of some capital is necessary for development projects, both economic and societal, to be supported. Referring to the ratings of 150 countries by GNP per capita and PQLI, it becomes apparent that money is a necessary prerequisite for development endeavors but that an abundance of money or lack of money does not always affect quality in the "societal development" variables such as literacy level or infant mortality rates. The precondition of an amount of capital does not guarantee or presuppose a certain level of development in terms of the variables in the PQLI. It appears that the efficiency of organization and distribution of resources and services is more important than large economic budgets. After recognizing the importance of the distinction made between "economic" and "societal" development, the author questions the relevance of some of the variables used to measure her hypothesis, such as number of schools, hospitals, vehicles, telephones, and doctors

per capita (many of which are also being widely studied and measured in international statistical organizations and handbooks). Although these variables have some information of significant value, it is doubtful that they can be extrapolated to indicate "development" if development is re-defined to include the quality of life.

Ethnocentricity exhibits itself in a variety of ways. Like GNP, other input measures simply are not adequate measures of distributive performance. For some purposes, information about inputs is essential. But if the aim is to learn about the effectiveness of an expenditure, it is important to know how much mortality or morbidity were reduced or literacy increased. If, for example, death rates are reduced very dramatically through the introduction of inexpensive "barefoot doctors", medical care should not be considered inadequate because there are no swollen budgets for health or costly hospitals and medical facilities (Morris, 1979:27-28).

The author concludes that the statement of Hypothesis 2 must be reformulated in order to distinguish between the "economic" and "societal developments in a society. Thus, the reformulated statement should read:

Hypothesis 2: Societal development has a direct relation to a formal anti-natal population policy, holding the economic development variables constant.

3. Concluding Remarks

The results of this study disclose that the relation of religious traditionalism and development to the formal population policies of Egypt, Saudi Arabia, and Tunisia was slightly contrary

to the presumptions and expectations drawn from the review of the literature concerning demography and development. Reflecting back upon the review of the literature (pp. 1-35), a few important observations can be noted.

Although religious traditionalism is not an independent variable with regard to a formal population policy, it is still important in reference to the status of women. Both the status of women and the level of religious traditionalism are important factors to consider with regard to issues in development and demography, but the role that religion plays with regard to the status of women or a population policy should not be over-emphasized. Religion is not the primary societal factor that initiates changes, and it is flexible enough to support various positions that are dictated fundamentally by economic and political arrangements.

The interrelationship between economic and societal development is wholistic and dynamically integrated; however, the results of this study have exemplified the fact that the "societal" development variables play an important key role to overall development and that economic systems are not the primary or sole facilitator of "progress" or "improvements" in development. This point demands that a qualification be made regarding the demographic transition theory (p. 6), which is so generally accepted and important in debates concerning demography and development. The demographic transition theory generalized that countries modernize

through industrialization and that the low mortality-low fertility pattern evolves from the high mortality-high fertility pattern via the transition of industrializing and modernizing. The demographic transition theory contains the implication that economic development and its support systems yield the low mortality-low fertility pattern. The point made earlier in this section of the chapter revealed that improvements in economic development are important only to a certain level and are not always even a prerequisite to attain some quality of societal development. Therefore, it is significant that the Third World societies have the potential to achieve a low-mortality-low fertility pattern different from that of Europe during the Industrial Revolution. The First and Second Worlds also could improve their aid to the Third World by emphasizing and supporting methods that add to the improvements of a country's PQLI.

The three countries of Egypt, Saudi Arabia, and Tunisia have formed population policy positions that coincide with their development goals, the relation between their population size and resources (natural and human resources), and other socio-economic arrangements. The status of women and the degree of religious traditionalism coincide with and reflect socio-economic patterns within each of the three countries studied. The formal population policy is also associated with socio-economic arrangements. Understanding the social and economic forces that affect a country's formal population policy necessitates becoming aware of how the

quality of life is perceived and how it is pursued. Thus, studying and exemplifying the ways and means that different countries deal with their own development and population growth may supply knowledge of processes and the need for cultural tolerance. This knowledge is necessary to address the issues of population growth and societal development for an improved quality of life and understanding in our global community.

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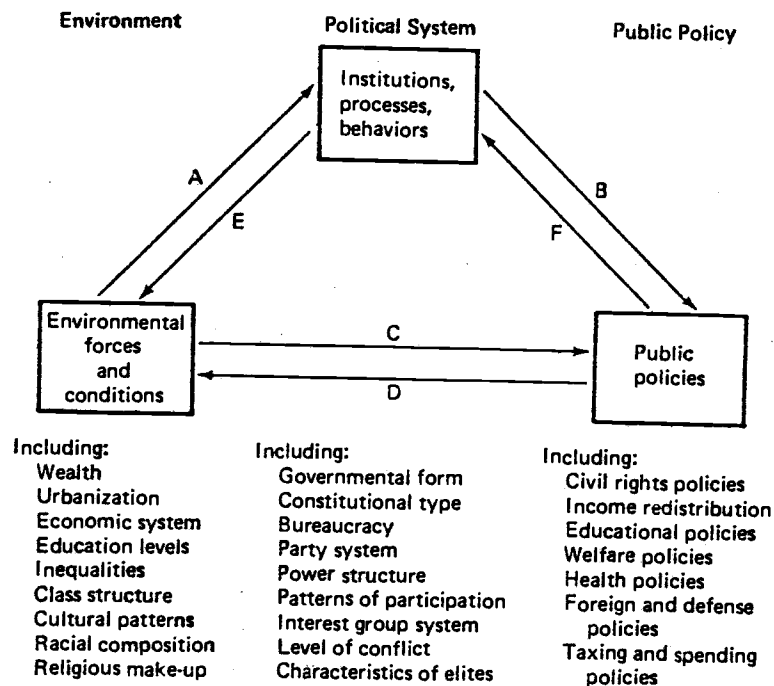
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APPENDICES

APPENDIX I

MODEL BY THOMAS DYE



- Linkage A: The effect of environmental forces and conditions on political and governmental institutions, processes, and behaviors.
- Linkage B: The effect of political and governmental institutions, processes, and behaviors on public policies.
- Linkage C: The effect of environmental forces and conditions on public policies.
- Linkage D: The effect (feedback) of public policies on environmental forces and conditions.
- Linkage E: The effect (feedback) of political and governmental institutions, processes, and behaviors on environmental forces and conditions.
- Linkage F: The effect (feedback) of public policies on political and governmental institutions, processes, and behaviors.

Figure 6. Model: Linkages in policy analysis. SOURCE: Godwin, R. Kenneth, Comparative Policy Analysis, Lexington Books, Lexington, Mass., D. C. Heath and Co., 1975, p. 4.

APPENDIX II

QUESTIONNAIRE

I. Status of Women (in the family, labor, society, education system, and courts)

1. What is the percentage of polygyny (the marriage to more than one wife) still practiced?
2. What is the legal number of wives allowed?
3. What is the average age of marriage, for males and females?
4. What percentage of the women are in the labor force, and in what field are they?
5. What percentage of the women are in Western dress?
6. Is infanticide and circumcision practices on females widely in various parts of the country?
7. Are women permitted to drive vehicles? Both the native and Western women?
8. Is divorce much easier for the men than for the women? Does it take more than one woman's testimony in court in the place of one man's testimony?

II. Religiosity

1. What percentage of legal cases are judged in the religious legal code courts versus civil courts?
2. What percentage of the school attendance is at a religious school? How many religious courses are in the required curriculums?
3. What is the percentage of civil marriage, if any?
4. Is Friday the sole day observed as the "day of rest"? To what extent is this followed? Are all businesses closed? Are Western businessmen and their families allowed Sundays or Western holidays off?

5. What is the estimated percentage of alcohol consumption? Is prohibition practiced and how is it enforced? Is there a "black market" and to what degree? What is the punishment decreed by law?
6. What percentage of the population gives the alms-giving--zakat--poor rate tax--each year to the mosque or government? What percentage of their incomes?
7. What is the amount of religious media programming and publications in relation to the amount of secular ones?

III. Development

1. What percentage of the population is considered urban? What percentage is still nomadic?
2. What is the country's energy consumption rate?
3. What is the country's GNP per capita?
4. What is the literacy rate for males and females?
5. What is the number of elementary schools? What is the number of schools of higher education? What is the percentage of the females in enrollment?

IV. Health

1. What is the life expectancy for males and females?
2. What is the infant mortality rate and maternal mortality rate?
3. What is the number of hospitals and/or health centers per capita?
4. What is the number of medical doctors per capita?
5. How are the sanitation systems and the drinking water?
6. Is there a housing shortage?

V. Communications and Transportation

1. What is the number of telephones per capita? How is the service?
2. What is the number of radios per capita? Are they easy to purchase? Are they relatively inexpensive?
3. What is the number of televisions per capita? Are they easy to obtain and relatively inexpensive?
4. What is the number of automobiles per capita? Are they relatively expensive?
5. Are the cinemas and entertainment places popular? Are they illegal?
6. How many different newspaper publications are there? Is there a magazine published for women?

VI. Other: Family Planning Issues

1. Does the country or various private firms offer planned retirement programs?
2. What is the desired number of sons in a family? Are male preferred over female children?
3. Are contraceptives illegal, or illegal to import? Or, easily obtainable?
4. What are some of the statements pro and con to family planning by the religious leaders? What are their comments and how do they support them from the Koran?
5. What contraceptive techniques are used or preferred? What percentage are used by the men and women?
6. What are the educational programs doing with regard to the illiteracy problem or family planning education?

APPENDIX III

TABLE VIII. 150 COUNTRIES RANKED BY GNP, EARLY 1970'S.

TABLE IX. 150 COUNTRIES RANKED BY PQLI, EARLY 1970'S.

TABLE VIII. 150 COUNTRIES RANKED BY PER CAPITA GNP,
EARLY 1970'S.

<u>Rank in Per Capita GNP among 150 Countries</u>	<u>Per Capita GNP</u> (<u>\$</u>)	<u>PQLI</u>
1. Kampuchea	70	40
2. Laos	70	31
3. Mali	90	15
4. Bangladesh	92	35
5. Ethiopia	97	20
6. Rwanda	97	27
7. Upper Volta	99	16
8. Nepal	102	25
9. Burma	105	51
10. Burundi	111	23
11. Somalia	111	19
12. Chad	113	18
13. Malawi	115	30
14. Guinea-Bissau	120	12
15. Benin	124	23
16. Guinea	126	20
17. Lesotho	131	48
18. Niger	132	13
19. India	133	43
20. Zaire	136	32
21. Afghanistan	137	18
22. Gambia	153	25
23. Tanzania	154	31
24. Pakistan	155	38
25. Haiti	176	36
26. Sri Lanka	179	82
27. Yemen Arab Rep.	180	27
28. Vietnam	189	54
29. Indonesia	203	48
30. Sierra Leone	203	27
31. Madagascar	204	41
32. Kenya	213	39
33. Central African Emp.	226	18
34. Comoro Islands	230	43
35. Sudan	241	36
36. Egypt	245	43
37. Togo	250	27
38. Yemen, People's Rep.	260	33
39. Uganda	265	40
40. Cameroon	273	27
41. Mauritania	287	17
42. Nigeria	297	25
43. China, People's Rep.	300	69
44. Western Samoa	300	84

TABLE VIII. 150 COUNTRIES RANKED BY PER CAPITA GNP,
EARLY 1970'S (continued).

<u>Rank in Per Capita GNP among 150 Countries</u>	<u>Per Capita GNP (\$)</u>	<u>PQLI</u>
45. Botswana	316	51
46. Thailand	318	68
47. Bolivia	332	43
48. Mozambique	333	25
49. Philippines	342	71
50. Swaziland	353	35
51. Equatorial Guinea	354	28
52. Senegal	355	25
53. Honduras	359	51
54. Zambia	415	28
55. Liberia	415	26
56. El Salvador	432	64
57. Morocco	436	41
58. Jordan	452	47
59. Papua New Guinea	460	37
60. Korea, Rep.	464	82
61. Grenada	465	77
62. Congo	465	27
63. Cape Verde	470	48
64. Ecuador	505	68
65. Ivory Coast	506	28
66. Colombia	526	71
67. Rhodesia	529	46
68. Albania	530	75
69. Paraguay	533	75
70. Guatemala	540	54
71. Mauritius	552	71
72. Guyana	559	85
73. Ghana	595	35
74. Angola	601	16
75. Tunisia	626	47
76. Dominican Rep.	630	64
77. Cuba	640	84
78. Nicaragua	650	54
79. Syria	662	54
80. Malaysia	692	66
81. Peru	701	62
82. Algeria	780	41
83. Turkey	789	55
84. Lebanon	822	79
85. Taiwan	847	86
86. Costa Rica	884	85
87. Brazil	912	68
88. Fiji	989	80
89. Mexico	996	73
90. Iraq	999	45

TABLE VIII. 150 COUNTRIES RANKED BY PER CAPITA GNP,
EARLY 1970'S (continued).

<u>Rank in Per Capita GNP among 150 Countries</u>	<u>Per Capita GNP (\$)</u>	<u>PQLI</u>
91. Jamaica	1,037	84
92. Malta	1,050	87
93. Romania	1,100	90
94. Chile	1,137	77
95. South Africa	1,205	53
96. Panama	1,240	80
97. Guadeloupe	1,240	76
98. Iran	1,260	43
99. Uruguay	1,268	87
100. Surinam	1,282	83
101. Argentina	1,285	85
102. Yugoslavia	1,341	84
103. Barbados	1,352	89
104. Bahrain	1,370	61
105. Cyprus	1,481	85
106. Portugal	1,535	80
107. Martinique	1,540	83
108. Réunion	1,550	73
109. Hong Kong	1,624	86
110. Netherlands Antilles	1,642	82
111. Bulgaria	1,780	91
112. Trinidad and Tobago	1,867	85
113. Singapore	2,111	83
114. Gabon	2,123	21
115. Greece	2,148	89
116. Venezuela	2,171	79
117. Hungary	2,180	91
118. Puerto Rico	2,230	90
119. Ireland	2,354	93
120. U.S.S.R.	2,380	91
121. Spain	2,485	91
122. Poland	2,510	91
123. Italy	2,756	92
124. Bahamas	3,284	84
125. Czechoslovakia	3,330	93
126. Saudi Arabia	3,529	29
127. Israel	3,579	89
128. United Kingdom	3,658	94
129. German Dem. Rep.	3,710	93
130. Japan	4,146	96
131. New Zealand	4,222	94
132. Libya	4,402	45
133. Austria	4,529	93
134. Finland	4,984	94
135. Australia	5,449	93
136. Netherlands	5,558	96

TABLE VIII. 150 COUNTRIES RANKED BY PER CAPITA GNP,
EARLY 1970'S (continued).

<u>Rank in Per Capita GNP among 150 Countries</u>	<u>Per Capita GNP</u> (\$)	<u>PQLI</u>
137. France	5,585	94
138. Iceland	5,708	96
139. Belgium	5,845	93
140. Luxembourg	6,054	92
141. Norway	6,221	96
142. Germany, Fed. Rep.	6,507	93
143. Canada	6,527	95
144. Denmark	6,606	96
145. United States	7,024	94
146. Sweden	7,668	97
147. Switzerland	8,569	95
148. Qatar	11,779	31
149. Kuwait	13,787	74
150. United Arab Emirates	14,368	34

TABLE IX. 150 COUNTRIES RANKED BY PQLI,
EARLY 1970'S

<u>Rank in PQLI among 150 Countries</u>	<u>PQLI</u>	<u>Per Capita GNP (\$)</u>
1. Guinea-Bissau	12	120
2. Niger	13	132
3. Mali	15	90
4. Angola	16	601
5. Upper Volta	16	99
6. Mauritania	17	287
7. Chad	18	113
8. Afghanistan	18	137
9. Central African Emp.	18	226
10. Somalia	19	111
11. Ethiopia	20	97
12. Guinea	20	126
13. Gabon	21	2,123
14. Benin	23	124
15. Burundi	23	111
16. Senegal	25	355
17. Gambia	25	153
18. Mozambique	25	333
19. Nigeria	25	297
20. Nepal	25	102
21. Liberia	26	415
22. Congo	27	465
23. Rwanda	27	97
24. Yemen Arab Rep.	27	180
25. Togo	27	250
26. Cameroon	27	273
27. Sierra Leone	27	203
28. Equatorial Guinea	28	354
29. Ivory Coast	28	506
30. Zambia	28	415
31. Saudi Arabia	29	3,529
32. Malawi	30	115
33. Tanzania	31	154
34. Laos	31	70
35. Qatar	31	11,779
36. Zaire	32	136
37. Yemen, People's Rep.	33	260
38. United Arab Emirates	34	14,368
39. Ghana	35	595
40. Bangladesh	35	92
41. Swaziland	35	353
42. Sudan	36	241
43. Haiti	36	176
44. Papua New Guinea	37	460

TABLE IX. 150 COUNTRIES RANKED BY PQLI,
EARLY 1970'S (continued).

<u>Rank in PQLI among 150 Countries</u>	<u>PQLI</u>	<u>Per Capita GNP (\$)</u>
45. Pakistan	38	155
46. Kenya	39	213
47. Uganda	40	265
48. Kampuchea	40	70
49. Madagascar	41	204
50. Morocco	41	436
51. Algeria	41	780
52. Egypt	43	245
53. India	43	133
54. Iran	43	1,260
55. Comoro Islands	43	230
56. Bolivia	43	332
57. Libya	45	4,402
58. Iraq	45	999
59. Rhodesia	46	529
60. Tunisia	47	626
61. Jordan	47	452
62. Cape Verde	48	470
63. Indonesia	48	203
64. Lesotho	48	131
65. Botswana	51	316
66. Honduras	51	359
67. Burma	51	105
68. South Africa	53	1,205
69. Nicaragua	54	650
70. Guatemala	54	540
71. Vietnam	54	189
72. Syrian Arab Rep.	54	662
73. Turkey	55	789
74. Bahrain	61	1,370
75. Peru	62	701
76. Dominican Rep.	64	630
77. El Salvador	64	432
78. Malaysia	66	692
79. Brazil	68	912
80. Ecuador	68	505
81. Thailand	68	318
82. China, People's Rep.	69	300
83. Mauritius	71	552
84. Philippines	71	342
85. Colombia	71	526
86. Réunion	73	1,550
87. Mexico	73	996
88. Kuwait	74	13,787
89. Paraguay	75	533
90. Albania	75	530

TABLE IX. 150 COUNTRIES RANKED BY PQLI,
EARLY 1970'S (continued).

<u>Rank in PQLI among 150 Countries</u>	<u>PQLI</u>	<u>Per Capita GNP (\$)</u>
91. Guadeloupe	76	1,240
92. Chile	77	1,137
93. Grenada	77	465
94. Lebanon	79	822
95. Venezuela	79	2,171
96. Panama	80	1,240
97. Portugal	80	1,535
98. Fiji	80	989
99. Korea, Rep.	82	464
100. Sri Lanka	82	179
101. Netherlands Antilles	82	1,642
102. Surinam	83	1,282
103. Singapore	83	2,111
104. Martinique	83	1,540
105. Yugoslavia	84	1,341
106. Western Samoa	84	300
107. Jamaica	84	1,037
108. Bahamas	84	3,284
109. Cuba	84	640
110. Cyprus	85	1,481
111. Guyana	85	559
112. Argentina	85	1,285
113. Trinidad and Tobago	85	1,867
114. Costa Rica	85	884
115. Hong Kong	86	1,624
116. Taiwan	86	847
117. Malta	87	1,050
118. Uruguay	87	1,268
119. Greece	89	2,148
120. Israel	89	3,579
121. Barbados	89	1,352
122. Romania	90	1,100
123. Puerto Rico	90	2,230
124. Hungary	91	2,180
125. U.S.S.R.	91	2,380
126. Poland	91	2,510
127. Spain	91	2,485
128. Bulgaria	91	1,780
129. Italy	92	2,756
130. Luxembourg	92	6,054
131. Austria	93	4,529
132. Belgium	93	5,845
133. Ireland	93	2,354
134. Australia	93	5,449
135. Germany, Federal Rep.	93	6,507
136. Czechoslovakia	93	3,330

TABLE IX. 150 COUNTRIES RANKED BY PQLI
EARLY 1970'S (continued)

<u>Rank in PQLI among 150 Countries</u>	<u>PQLI</u>	<u>Per Capita GNP (\$)</u>
137. German Dem. Rep.	93	3,710
138. Finland	94	4,984
139. New Zealand	94	4,222
140. France	94	5,585
141. United States	94	7,024
142. United Kingdom	94	3,658
143. Canada	95	6,527
144. Switzerland	95	8,569
145. Netherlands	96	5,558
146. Japan	96	4,146
147. Denmark	96	6,606
148. Iceland	96	5,708
149. Norway	96	6,221
150. Sweden	97	7,668

APPENDIX IV

CONTACTS FOR RESOURCE MATERIALS

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