UNWANTED FERTILITY AND THE UNDERINVESTMENT HYPOTHESIS: A PHILIPPINE STUDY

by

Clarita Estillore Tan

Dissertation submitted to the Graduate Faculty of the
Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

Sociology

APPROVED:

John A. Ballweg, Chairperson

George A. Hillery

John N. Edwards

Jesse C. Arnold

Theodore D. Fuller

November, 1981

Blacksburg, Virginia

ACKNOWLEDGMENTS

I am indebted to a number of persons and organizations for their assistance throughout this study.

I wish to express my sincere appreciation to the members of my dissertation committee:

Dr. John A. Ballweg, Chairman, for his continued support and encouragement during my graduate study at Virginia Tech, and for initiating the idea of testing the underinvestment hypothesis which led to this dissertation.

Dr. Theodore D. Fuller for his constant encouragement and assistance from the beginning of this project to the final writing.

Dr. Jesse C. Arnold, Dr. John N. Edwards, and Dr. George A. Hillery for their assistance and invaluable comments.

Special thanks go to for his council and support and for the training I obtained at RIMCU.

I am grateful to the staff of the Research Institute for Mindanao Culture, Xavier University, for their help in carrying out the field aspects of the project. Particular thanks go to for her expertise and advice which facilitated field work.

I wish to express my appreciation to the Rockefeller Foundation for a grant which made this study possible.

Special thanks to who patiently and diligently typed and retyped the dissertation through the various stages to its final form.

To my family and friends who patiently awaited the completion of this dissertation, I am profoundly grateful.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Chapter I

INTRODUCTION

STATEMENT OF THE PROBLEM

While the nonrecursive relationship between infant and child mortality and fertility has been commonly acknowledged by demographers (Preston, 1978; Brass, 1978; Omran and Standley, 1976; Madigan, 1975; Schultz, 1976; Harrington, 1971), most studies have dealt only with the response of fertility from a decline in infant and child mortality (Preston, 1978; Knodel, 1978; Kunstadter, 1978; Rutstein and Medica, 1978; Vallin and Lery, 1978; Chowdhury, et. al., 1978, Heer and Wu, 1975; Harrington, 1971). These studies generally focused on testing the biological (influences which operate through abbreviated breastfeeding and consequent cessation of postpartum amenorrhea), replacement (volitional replacement of a deceased child), insurance (volitional behavior attempting to anticipate child deaths), and societal (volitional behavior induced through societal mortality levels) effects of mortality on fertility (Friedlander, 1977; Ware, 1977; Taylor, et. al., 1976; Omran and Standley, 1976; Berg, 1973; Omran, 1971). Other studies were concerned with the close spacing of births, teenage pregnancy, high parity, and their effects on mortality (Watson, et. al, 1979; Omran, 1979; 1971; Puffer and

Serrano, 1975; Nortman, 1974; Wray, 1971). Still others dealt with the social and behavioral effects of unwantedness on the health of offsprings (Cytrych, et. al., 1974; Forssman and Thuwe, 1966).

The present research is based strongly on Scrimshaw's "underinvestment" concept. Underinvestment involves the idea that parents may not always provide maximum care for the child and that the investment of time, attention, and resources in some children may be greater than for others (Scrimshaw, 1978:396). The differential support for children constitutes underinvestment. It is suggested that parents might underinvest in unwanted children, and that the presence of underinvestment could result in differential mortality. While parents may grieve at the loss of a child, the possibility exists that some behavior (perhaps unintentional) on their part may contribute to the death of the child directly or indirectly (Piers, 1978; Scrimshaw, 1978). The Scrimshaw hypothesis attempts to reinterpret the relationship between unwanted fertility and infant and childhood mortality by positing parental underinvestment as an intervening mechanism. It is contended that underinvestment may, in some cases, be a device for regulating family size by negating unwanted births. Thus, underinvestment may lead to a reduced quality of life as manifested in shortness of life.

It is proposed that high fertility as perceived by parents will result in certain births being relatively unwanted compared to others. This study attempts to provide empirical verification for the existence or absence of underinvestment as a mechanism by which parents behaviorally respond to unwanted births. The response might lead to a lesser quality of life, as indicated by a higher incidence of death at the postneonatal and early childhood years. Specifically, this study tries to answer the following questions:

1. Is there a significant association between unwantedness and mortality?

2. Are unwanted births more likely to be underinvested by their mother than wanted ones?

3. Do underinvested births have greater mortality risks than births not subject to underinvestment?

4. Are births in lower class families more likely to be unwanted than births in upper and middle class families?

5. Is socioeconomic status (SES) an important determinant of underinvestment? If so, what is the nature of the relationship between mortality, underinvestment, and SES?

These questions formed part of the subject that appeared to lack empirical verification in the literature but which have often been alluded to in studies dealing with family size, birth spacing, number and sex preference, unwantedness, socioeconomic status (SES), and their effects on infant and child mortality (Adamchak, 1979; Gortmaker, 1979; Zimmer, 1979; Omran, 1979; 1971; Taylor, et. al., 1978; Antonovsky and Bernstein, 1977; Kyriakos and Barnes, 1977; Hunter, 1975; Terhune, 1975; Wray, 1971).

OVERVIEW

The chapter which follows reviews the studies dealing specifically with unwanted fertility and mortality as they relate to birth order, family size, spacing or birth interval, number and sex preferences, and underinvestment. Chapter III describes the history, political organization, demographic and socioeconomic characteristics of the Philippines and the Northern Mindanao region where the survey was conducted. Chapter IV elaborates on methodology of data collection. Chapter V presents the findings and Chapter VI provides a summary, discusses the limitations and implications of the study, and provides recommendations for further research on the relationships among unwantedness, underinvestment, and their effects.

Chapter II

REVIEW OF LITERATURE

UNWANTED FERTILITY

In view of the range of literature which bears upon the subject, sections of this chapter have been arranged to include the topics: 1) unwanted fertility, 2) unwanted fertility, family size, birth order, and mortality, 3) sex preference and mortality, 4) birthspacing and mortality, and 5) underinvestment. A statement of the hypotheses to be tested is presented at the end of the chapter.

A serious difficulty in trying to test Scrimshaw's hypothesis resulted from the fact that unwanted fertility, a crucial factor in the hypothesis, has been difficult to define and measure (Hass, 1974; Pohlman, 1967; 1965a; 1965b). Some of the problems encountered in trying to define unwantedness were: 1) that feelings of more than one family member was involved, 2) feelings of unwantedness or wantedness toward a particular child might change overtime, 3) feelings of hostility toward an unwanted child might generalize to the whole group, 4) repression and unconscious feelings might show that the child was wanted at the conscious level and unwanted at the unconscious level or vice versa, 5) self-deception might be present, 6) a child might be wanted for "unhealthy" reasons, and 7) in some societies

couples might never consciously decide whether a child was wanted or not, in which case decision making implied by such terms as "unwanted" or "wanted" might be absent (Hass, 1974; Pohlman, 1965b).

Cheetham (1977:3), depicting the complexities involved in defining unwanted pregnancy, stated:

> 'Unwanted pregnancy' can ... have many different and valid meanings. This is a complicated and muddled world where unplanned pregnancies may be wanted, where wanted children may emerge from unwanted pregnancies, where the offspring of wanted pregnancies may be rejected, where infatuation with infants grows cold and where children may be wanted solely to meet their parents' pathological needs...

Because of the difficulty in pinning down the meaning of unwantedness, several attempts had been made to distinguish an unwanted pregnancy from an unwanted child. David (1972) defined an "unwanted pregnancy" as one which was unintended and consciously unwanted at the time of conception, while an unwanted child was the product of an unwanted pregnancy (David, 1972:443). For Pohlman (1969:145-195), a conception was unwanted even when the child born of the pregnancy was wanted after its birth, provided one or both of the parents consciously did not want the child at the time of pregnancy. In contrast, the "unwanted child" referred "to the complex of conscious and unconscious feelings of parents at any given period in the child's life". Thus, in Pohlman's definitions, an unwanted pregnancy might or might not lead to an

unwanted child. Beck (1971:61) regarded the unwanted child "as the product of a compulsory (unwanted) pregnancy, whether or not the mother seeks a legal or illegal abortion, or whether or not she attempts to abort herself". David (1972) cited a more stringent definition of unwanted child used in a Prague study of children born to women denied abortions. "An 'unwanted child' was defined as one born to a woman whose applications for pregnancy termination had been denied on initial request and on subsequent appeal" (David, 1972:443). Soddy (1964:39) distinguished between "two kinds of 'not wantedness' of a child: first, the absence of a positive want for the child for its own sake, and as an individual in its own right; and, second, a negative attitude to, or rejection of the child". In a study of unwanted fertility of married couples in the United States, Westoff (1976) categorized unplanned births into: 1) wanted but unplanned and 2) unwanted. The former category has sometimes been referred to as "timing failures"; the latter as "number failures" (Jaffe, 1971). Both types of failure were considered unwanted in the present research.

Although not systematically investigated in the present study, the phenomena of the "abandoned child", the "battered-child syndrome", the "covered-up infanticide" or "infanticide" are ultimate manifestations of unwanted fertility (Rizo, 1976).

Despite the problems in the definition and operationalization of unwanted fertility, several measures were utilized as its indicators. One of these was the comparison of the birth order of the child to the desired family size of the mother. If the former exceeded the latter, the child in question was considered unwanted. Other measures involved the comparison of the sex preference of the mother with the sex of a child, and asking the mother to indicate which of her pregnancies she did not want at all or would have preferred to have come later. Literature describing these three indicators and their relationship to mortality will be discussed in the next sections.

UNWANTED FERTILITY, FAMILY SIZE, BIRTH ORDER, AND MORTALITY

Are higher parity order children unwanted? Terhune (1975) pointed out that the proportions of "unwanted" children tended to increase with family size. Since time and energy were limited resources, the per-child allocation decreased as family size increased. Parents devoted less care and attention to each child. This happened either because parents did not want to or were unable to do so. Also parents who chose to have large families might be less interested in their children, especially if they had children mainly for their own satisfaction, psychic or otherwise (Terhune, 1975).

A number of studies had focused on the relationship between birth order and infant and childhood mortality. A study of 14,605 live births in the Philippines in 1971 and 1975 showed that neonatal mortality rates had a J-shaped or U-shaped relationship with birth order. Postneonatal mortality and childhood mortality (one to four years) increased with birth order (Balderrama-Guzman, et. al., 1976). Chase (1961; 1962) and Yerushalmy and colleagues (1956) discovered similar findings regarding childhood mortality, although Yerushalmy and colleagues (1956) did not find a clear relationship between postneonatal mortality and parity.

Other studies indicated that postneonatal mortality tended to increase after the second birth (Loeb, 1965), the fifth (Newcombe, 1965), the seventh (Wyon and Gordon, 1971), or the eighth (Stoeckel and Chowdhury, 1972). The studies cited above tended to agree that mortality was lowest for the second order birth.

Comparing infant and childhood mortality by birth order, Puffer and Serrano (1973) reported that while only approximately 14 per cent of first and second born children died in infancy, 50 per cent of fifth and later born children died when they were in the same age category. Kessner and asso-

ciates' (1973) study of 142,017 live births registered in 1968 in New York Health Department showed that lowest mortality rates (18 per 1000 live births) were found among the first born infants and almost double (33 per 1000 live births) for infants of sixth or higher birth orders.

Shah and Abbey (1971) studied the birth and death records of infants born in Baltimore City. They wanted to determine the effects of birthweight, race, SES, prenatal care, maternal age, and live birth order on neonatal and postneonatal mortality. Birthweight was found to be the most important factor in both types of mortality. Race, SES, and maternal age were important in the neonatal period only because of their relation to birthweight. Next to birthweight, maternal age and live birth order were the most important factors in postneonatal mortality.

SEX PREFERENCE AND MORTALITY

Since methods of predetermining the sex of a child are still unavailable in the market, a preference for one sex can create negative feelings toward children with the "wrong" sex. While the Philippines as a whole exhibited a preference for balance, i.e., the same number of boys and girls (Ballweg and Ward, 1975; Stinner and Mader, 1975), Mindanao, where this study was conducted, showed a strong

preference for sons (Stinner and Mader, 1975). Stinner and Mader (1975) attributed this to the predominance of Muslims in the area. Preferential treatment for some children might be evident where a strong preference for one sex over the other existed (Williamson, 1978). For example, the Nelsilk Eskimos practiced female infanticide. Higher infant mortality among females in India and Egypt was linked to the relative neglect of female babies (Potts and Selman, 1979).

Scrimshaw (1978) noted that there was a high proportion of first born males (68 males to 32 females) were reported compared to first born females in Ecuador. She suggested that female neglect might have caused the higher female mortality. In Punjab, India, boys received more food and medical care than girls (Wyon and Gordon, 1971). Bangladesh had a higher mortality rate for females throughout childhood, adolescence, and the reproductive years. Postneonatal mortality rates among females exceeded those of males by as much as 50 per cent (D'Souza and Chen, 1980). A follow-up study concluded "that in cases of family investment and consumption, there is a consistent and systematic discrimination against females in all age groups, "although this was more pronounced among children and the elderly" (Chen, et. al., 1981: 66).

Meegama's (1980) Sri Lankan study showed that infant mortality was higher among males than among females, although child mortality (one to four) was significantly higher among females than among males in the upper socioeconomic group. In Korea, a country noted for strong son preference (Coombs, 1975), Guttmacher (1967) reported that in Seoul 70 per cent of its foundlings were girls. In Haiti, male children were less likely to be malnourished than female children (Ballweg, 1972).

BIRTHSPACING AND MORTALITY

Wray (1971) reviewed the health consequences of birth interval and reported that infant and childhood mortality tended to increase with short intervals. Yerushalmy and associates' (1956) Kauai study showed that for all child-age groups, interpregnancy intervals of four months were associated with high fetal and childhood mortality.

Omran (1979) reported that pregnancies with short intervals, especially those occurring less than a year after a previous one, carried greater risks of resulting in a fetal loss, stillbirth, premature babies, and infant and childhood mortality. This was also true for intervals less than two years. The cross-sectional study of all births in England and Wales (Morrison, et. al., 1959) revealed that in all

maternal age groups and in all social classes the postneonatal mortality rates were higher in the closely spaced group than in the other groups. These rates were also higher in younger mothers. The third closely-spaced child was found to be at greater risk than a second closely-spaced child. In addition, Morrison and associates (1959) found that firstborn children who arrived within the first year of marriage experienced higher mortality rates than first children born later; the finding was true for all maternal age groups and all social classes. One possible explanation for this finding was that women with premarital conception were less likely to receive optimal prenatal care; these women were also subject to more emotional stress than women who conceived their firstborns after marriage (Morrison, et. al., 1959).

Wyon and Gordon (1971) found both neonatal and infant mortality rates higher among infants born at short intervals. This greater effect of spacing was found for the first born of the two siblings. The first born might receive less maternal care resulting in earlier weaning (Mondot-Bernard, 1977). Wolfers and Scrimshaw's (1978) study reported that intervals shorter than one year carried an increased postneonatal mortality risk to the first child of a pair. This was in accord with the finding that

protein-deficiency malnutrition [Kwashiorkor] and other nutrition-related illnesses were often associated with earlier weaning as the result of the birth of a younger sibling. Children subjected to early weaning might not be able to compete successfully with either older or younger household members for food (Kunstadter,1978; Mondot-Bernard, 1977; Harrington, 1971).

UNDERINVESTMENT

Scrimshaw (1978) described underinvestment as conscious or unconscious set of behavior that parents practiced as a subtle response to population pressures or by familial desperation with existing conditions. In high infant mortality areas, underinvestment was generally characterized by an acceptance of the infant mortality rate, accompanied by a lack of a felt need to take desperate measures to save a child's life (Scrimshaw, 1978).

Scrimshaw (1978) further noted that while children were valued in many societies, sometimes some children were valued more than others. Thus, underinvestment involved differential treatment of a child relative to his or her siblings. This treatment could be manifested in the different amount of food given, timeliness and utilization of medical services, and amount of nurturing and other resources

spent on a child. In short, where underinvestment existed, parents would not always go to extreme to save the life of a child and might invest more time, attention, resources in some children than in others (Scrimshaw, 1978).

Recently, the study of child abuse and neglect has gained more grounds especially among scholars of the Western world. The concept of underinvestment as defined by Scrimshaw (1978) seemed to fall under the rubric of child neglect. This section deals with the literature of child neglect as it relates to unwanted pregnancy or fertility.

A review of the literature on child abuse and neglect indicated several attempts by scholars of the field to distinguish the two phenomena. Giovannoni and Becerra (1978) defined child neglect as acts of omission and child abuse as acts of commission. They pointed out that in defining neglect one was in essence defining the minimal expectations of those entrusted with the rearing of the young. Defining child abuse dealt with the limitation of the authority of the parents or those in charge (Giovannoni and Becerra, 1978).

Polansky and his colleagues (1975:5), describing the state of knowledge of child neglect, offered this working definition:

> Child neglect may be defined as a condition in which a caretaker responsible for the child either deliberately or by extraordinary inattentiveness permits the child to experience avoidable present suffering and/or fails to provide one or more of the ingredients generally deemed essential for developing a person's physical, intellectual, and emotional capacities.

While Polansky and colleagues (1975) admitted that the above definition was not free from semantic and conceptual arguments, they, nevertheless, offered an operational definition of neglect. This was the Childhood Level of Living Scale (CLL) made up of 136 items designed to tap the basic physical, cognitive, and emotional care bestowed on a child. Physical care covered areas like housing, medical care, and safety precautions. Emotional and cognitive care dealt with the opportunities for learning and stimulation provided the child, as well as concern shown for the child's need for warmth and security. The device was designed at the beginning to discriminate differences in level of care at the lowest economic class. A study of two groups of poor families living in Appalachia - one group comprising 65 self-supporting families, and the other 91 families receiving Aid to Families with Dependent Children (AFDC) - revealed that, in general, the self-supporting families provided higher levels of emotional support and stability than did the AFDC families. The researchers also reported that the family's socioeconomic level may be the most important factor in the

positive correlation between strong egos of the mothers and the higher level of care received by children of such mothers (Polansky, et. al., 1972; 1969).

One of the pioneering works on the field of child neglect was Leontine Young's (1964) Wednesday's Child. The purpose of this study was to obtain profiles of neglectful and abusive families. Studying 180 families from urban, surburban, and rural localities all over the United States, Young divided the families into four groups, using the following criteria:

1. Severe neglect - consistent inadequate feeding.

2. Moderate neglect - lack of cleanliness, lack of adequate clothing, or failure to provide medical care.

3. Severe abuse - either or both parents beat the children violently and consistently so that results of the beating were visible.

4. Moderate abuse - when parents beat their children only intermittently, when they were drunk or under some stress, and the beatings tended to be less violent.

When a family fell under two categories of abuse and neglect, it was classified as abusive. Young (1964) found tht 34.15 per cent of the 180 families analyzed belonged to the severe neglect group, 18.46 per cent to the moderate neglect group, 24.00 per cent to the severely abusive and 20.00 to the less abusive. She further discovered that among the severe neglect group, all of the families failed to keep their children clean, 95.00 per cent failed to secure medical care for the child, 98.00 per cent dressed their children inadequately, 65.00 left their children for hours, 29.00 per cent abandoned their children for days, and only 19.00 per cent were able to define their responsibilities and fulfill them. The moderately neglectful parents exhibited the same type of behavior but in less prevalent fashion. These parents were able to express their feelings and concern for their children. Nearly all of the neglectful families were of low socioeconomic status, lacked education, lived in poor housing condition, were unemployed, alcoholic, mentally ill, or had large family sizes. Although the criteria for classifying the families were made arbitrarily, the work was important in paving the way for distingushing neglect from abuse.

Are unwanted children more likely to become victims of neglect? Although systematic research on the subject had

been scarce, the review of literature showed unwanted fertility and pregnancy to be considered as one of the causes of child neglect. Most proponents of legal abortion argued that with abortion made legal, the number of unwanted children could be reduced, thereby, reducing the number of potential victms of child abuse and neglect (Morgan, 1975; Oliver, 1975; Lebensohn, 1973; Hardin, 1971; Reiterman, 1971; Beck, 1971; Lowry and Lowry, 1970; Ten Have, 1965).

Several studies had shown that some neglected or abused children were unwanted by their parents. For instance, Maginnis and associates (1967) studied 151 children who were admitted to the Children's Hospital Medical Center (Boston). They found that a significant number of the mothers of these children who 'failed to thrive' had either wanted a child of the opposite sex or had not wanted the child at all. In Indonesia, children of illegitimate unions or of forced marriages generally tended to be subject of neglect and cruel treatment (Haditono, 1981). Provence (1971) described four cases of unwanted children who were victims of child neglect.

SUMMARY

Based on the three indicators of unwantedness utilized in this study, literature on unwanted pregnancies and fertility, birth order, family size, sex preference, birth-spacing, and their effects on infant and childhood mortality have been reviewed. The literature on unwanted pregnancies and fertility underscored the problems related to the definition and measurement of unwanted pregnancies and fertility. Although the studies reviewed did not agree on which birth order mortality started to increase, most agreed that the higher the birth order of the child, the greater the mortality risks at postneonatal and childhood mortality. Studies on sex differentials pointed out that in some societies female postneonatal and childhood mortality exceeded those of males when the society displayed a strong son preference. Short intervals have been shown to contribute to greater mortality risk of infants born before and after such an interval. Review of literature of child neglect and abuse showed unwantedness to be one of the causes of child neglect or abuse.

HYPOTHESES

Based on the review of literature, the following hypotheses are formulated:

1. Unwanted children have greater mortality risks than wanted children.

2. Unwanted children are more likely to be underinvested than wanted children.

3. Births which are underinvested have greater mortality risks than births which were not underinvested.

4. Births in lower class families are more likely to be underinvested than births in middle and upper class families.

5. The mortality risks at the postneonatal and childhood years are greater for births in lower class families than births in the middle and upper class families.

6. Births in lower class families are more likely to be unwanted than births in middle and upper class families.

7. Unwanted births and mortality at the postneonatal and childhood years are significantly related with underinvestment as an intervening mechanism.

Chapter III

RESEARCH SETTING

The Philippines is an archipelago composed of approximately 7,100 islands and has a land area of 115,830 square miles. It is surrounded by the South China Sea to the west and north, the Pacific Ocean to the east, and the Celebes Sea to the south. The islands extend 1,000 miles from north to south, and 625 miles from east to west, with Taiwan at its north and Borneo at its south.

The Philippines has been affected by several migration streams. Although the Malays were ancestors of a majority of the Filipinos, the first inhabitants of the islands were the Negritoes who came across land bridges connecting Borneo, Sumatra, and Malaya. The Malays, the second group to come to the islands, migrated from the Malay Peninsula and the Indonesian islands around 2,000 B.C. Next came several streams of migrants: the Arabs who brought Islam to Mindanao and Sulu, the Indians and the Chinese merchants who have since dominated commerce in the country. In mid-16th century, the Spanish colonizers came and began more than 300 years of Spanish rule that left a legacy of Christianity and other western influences. After the defeat of the Spaniards in the Spanish-American War in 1898, the Philippines was ceded to the United States. Foremost of the American influ-

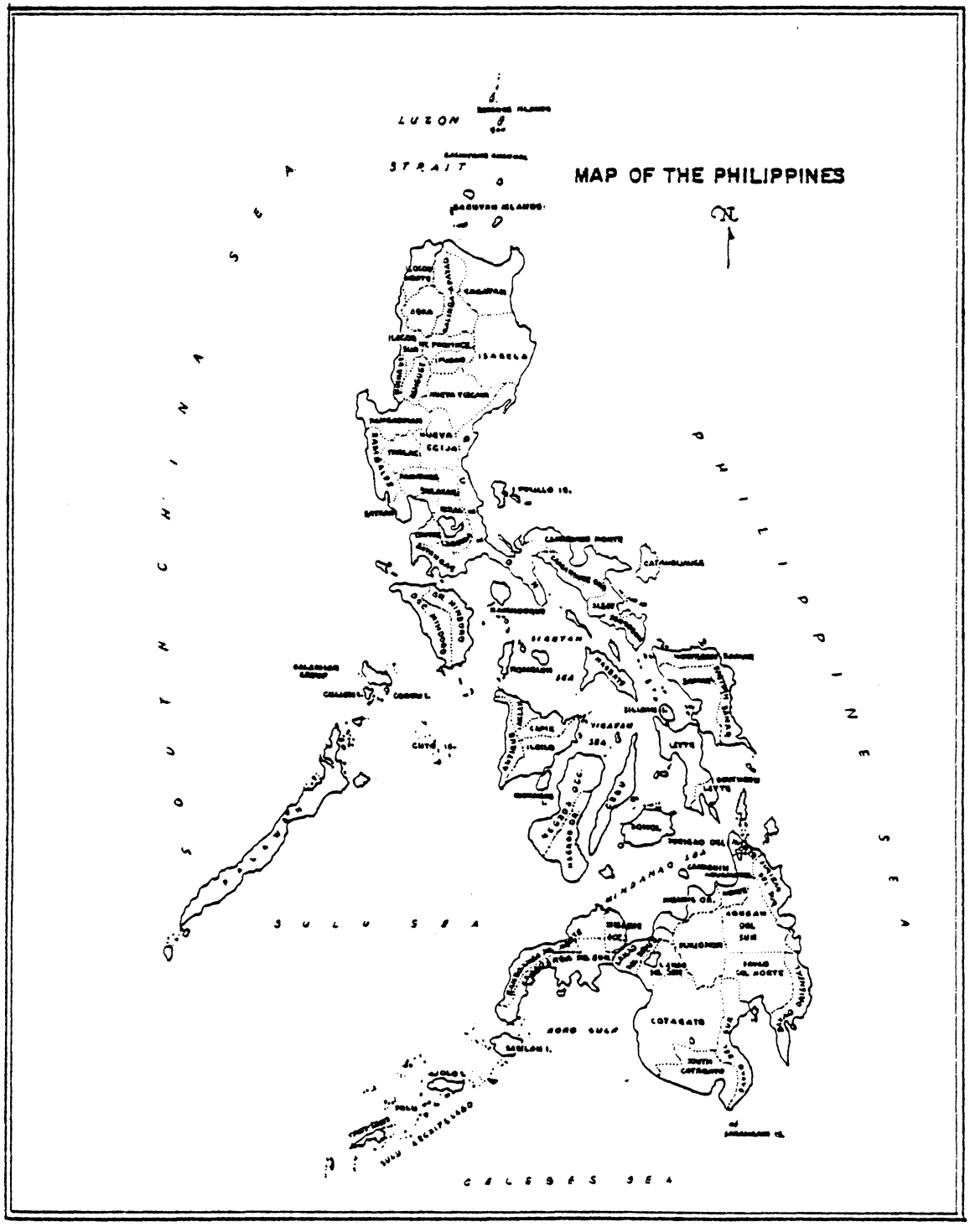


Figure 3.1. Map of the Philippines

ences in the Philippines were the establishment of a democratic political system and the westernization of the educational system (Cheetham and Hawkins, 1976).

POLITICAL ORGANIZATION

In 1946 the Philippines gained its independence from the United States and became a republic. It operated within a constitutional framework, with an executive branch headed by a president, a bicameral legislature, and a supreme court. In 1972 the Congress was replaced by the National Assembly.

As established by the constitution, the government is centrally organized. The country is divided into 72 provinces, 61 chartered cities, and approximately 1,440 municipalities and municipal districts which include some 34,000 barangays. Each province has jurisdiction over an average of 20 municipalities. Each municipality is composed of 20 or more barangays with one barangay designated as the poblacion or the town proper. Barangays are groups of dwellings which may constitute a hamlet, village, suburb, or even an urban district. Most local government offices and services are located in the town proper or poblacion (Cheetham and Hawkins, 1976).

Chartered cities are created from municipalities which are relatively heavily populated and had comparatively high incomes. A chartered city is administratively independent from the province in which it is located and is linked directly to the national government. Chartered cities are governed by their charters. Local city government offices cover the city mayor, the vice mayor, municipal board or city council, and different city departments including finance, engineering and public works, law, health, police, fire, and assessments. Mayors and vice mayors are elected at large by qualified voters of the city for a term of 4 years. Councilors are elected either at large or by the district. City department heads are appointed by either the city mayor or national officials.

DEMOGRAPHIC AND SOCIAL CHARACTERISTICS

In 1960 about 40 per cent of the Filipino population could speak English, 2 per cent Spanish, and about 44 per cent Tagalog, a form of Pilipino. None of the 75 languages spoken in the Philippines is the mother tongue of more than a quarter of the population. Eight are the mother tongues of about 86 per cent of the population: Cebuano (24%), Tagalog (21%), Ilocano (12%), Hiligaynon (10%), Bicol (8%), Samar-Leyte (6%), Pampangon (3%), and Pangasinan (2%) (Cheetham and Hawkins, 1976).

Over 85 per cent of the population is Roman Catholic, with a sizable minority of Moslems concentrated in Mindanao and its neighboring islands. Nearly a third of the nation's population live in urban areas. Although the majority of the population is still gainfully employed in agriculture and related sectors, there is an increasing employment in industrial and service sectors (World Fertility Survey, 1979).

In 1979 the Philippine population was estimated at 47.1 million. The crude birth rate in 1977 was 31.9 births per 1,000 population, compared with 39.3 per 1,000 in 1970. There is a continuing rise in age at marriage (Concepcion, 1980). Sixty per cent of women aged 20-24 considered themselves as unmarried in 1978. In contrast, only 41 per cent of this age group of women was unmarried in 1948. As age at marriage rose, fertility fell. Total fertility rate fell from 6.3 in 1965 to 5.89 in 1970 and to 4.96 in 1977. The Filipinos showed a distinct preference for smaller families. The average total family size desired by women of all ages is 4.4. But although Filipino women showed a preference for smaller families and were aware of contraception, the use of efficient contraception at the time of the 1978 Republic of the Philippines Fertility Survey (RPFS) was modest. Only a quarter of the women had ever tried the pill and one in

fourteen had used an IUD. The 1976 National Acceptor Survey (NAS) revealed that of the acceptors who terminated contraceptive use within one year after acceptance (any method), only eight per cent said they stopped in order to have another baby. Four per cent said they discontinued use because they no longer needed contraception (e.g. menopausal age) and eleven per cent stopped use because they became pregnant (Laing, 1977). Concepcion (1980) pointed out that while a considerable proportion of women did not want additional children, no move or plans were made to implement this desire now or in the future. Further findings of RPFS revealed that the duration of breastfeeding was the factor exerting the greatest effect on pregnancy interval because of its suppressing effect on ovulation.

FAMILY PLANNING

Family planning was introduced into the country by the private sector. Organizations such as the Family Planning Organization of the Philippines established in 1969, Institute of Maternal and Child Health in 1957, and the Philippine Family Planning Agency in 1964 were the prime movers in the family planning movement. Some of the main objectives of these organizations were concentrated on training personnel for family planning clinics, provision of

services including sex education, marriage counselling, and information on birthspacing. Dissemination of family planning information, education, motivation, and improvement of health and welfare of children were other objectives (Population Council, 1970).

Since 1970 the government has committed itself in promoting the movement. The 1971 Population Act (Republic Act No. 6365) established a national population policy to reduce population growth. Since then, population issues have formed an integral part of the government's development plans. Through provisions in the social and fiscal laws, family planning is stimulated and importation of contraceptives legalized (World Fertility Study, 1979).

In 1976 the National Family Planning Outreach program (NFPOP) was launched on a nationwide scale. In addition to the clinic-based delivery system, outreach workers are employed to contact ever-married women who generally live an average of six to twelve kilometers from a clinic (Concepcion, 1978). Family planning clinics continue to provide all types of contraceptives upon request. Field workers are authorized to dispense pills once they have undergone training. Persons requesting an IUD or sterilization are referred to the nearest family planning clinic or

hospital (Concepcion, 1978). All types of contraceptives are distributed through licensed drugstores, pharmacies, and commercial outlets. Courses on family planning have been introduced into the curricula of schools of medicine, nursing, and social work. Establishment of family planning clinics in industrial plants is required by law. An extensive program of supply services and commodities at the barangay level has been instituted (World Fertility Study, 1979).

NUTRITIONAL STATUS AND HEALTH CONDITIONS

Three major nutritional problems plagued the country: 1) inadequate caloric intake, 2) infant and child malnutrition, and 3) dietary imbalance leading to vitamin and mineral deficiencies. Inadequate caloric intake is caused by the uneven distribution of food among regions and income groups. Several factors contribute to infant and child malnutrition. Among these are: poverty, large family size, short birth intervals, high cost of available weaning foods, faulty weaning practices, false beliefs and ignorance of proper nutrition, and inadequate food distribution within the family. Food distribution within the family shows the father as having priority by virtue of his being the family's breadwinner and of his occupation which may require heavy

physical labor. The mother also gets priority because she may be pregnant, lactating, or working, too. Of the food available to children, the larger share goes to the older children, who can give voice to their need and are better equipped physically to reach for it. The third problem, dietary imbalance leading to vitamin and mineral deficiency, is caused by poverty, ignorance of good nutritional practice, and cultural preferences that interfere with an adequate diet (Cheetham and Hawkins, 1976).

An estimated 40 to 45 per cent of Filipino families display a degree of malnutrition. Of the 6.8 million Filipino children aged zero to four years, at least half are in need of nutritional intervention. Nutrition data suggest that growth progresses satisfactorily while the child is breastfed, i.e., when the supply of mother's milk is adequate. But after the sixth month, mother's milk is not enough to support the growing infant. Also the traditional weaning food - rice gruel - is not nutritionally sufficient (Cheetham and Hawkins, 1976).

The major health problems of the Philippines are communicable diseases and malnutrition. Communicable diseases are aggravated by the lack of sanitary water and sewerage, crowded and unsanitary housing, and lack of immunization (Cheetham and Hawkins, 1976).

Health statistics report the leading causes of death as: 1) pneumonia, 2) tuberculosis, and 3) gastrointestinal infections. The leading illnesses are: 1) influenza, 2) bronchitis, 3) gastrointestinal infections, 4) tuberculosis, and 5) pneumonia (Cheetham and Hawkins, 1976).

About 22 per cent of registered deaths, which are believed to represent only about three-fourths of all deaths, are not medically attended (Cheetham and Hawkins, 1976). Health services statistics underscore the inadequacy of the number of medical and paramedical personnel and services which serve the population (Nortman and Hofstatter, 1978).

Since a majority of the population cannot afford private medical care, the responsibility for health care services tends to fall upon the public sector. The Ministry of Health provides basic health services to the rural populace and to the urban poor. At the base of the public health system are the Rural Health Units and the City Health Department clinics. Patients who require hospitalization are referred to the city or provincial hospitals. Cases which needed more specialized care are referred to a regional hospital; each region would have one regional hospital (Cheetham and Hawkins, 1976).

MORTALITY SITUATION

One of the problems in mortality studies in developing countries is the lack of adequate and reliable data. Nevertheless, studies on Philippine mortality have shown that a gradual downward trend in mortality occurred during the post War II era (1947-1974) (United Nations, Department of International Economic and Social Affairs, 1979). Based on data available, Table 3.1 shows the changing mortality conditions in the Philippines from 1926 to 1973. Data indicate that the crude death rate has decreased from around 19 deaths per thousand in 1926 to seven per thousand in 1973. Infant mortality rate has substantially decreased from about 157 in 1926 to about 65 in 1973 (Department of Health, Republic of the Philippines, 1973).

Comparing mortality rates for male and female infants, Table 3.2 shows that more male infants died than female infants. Table 3.3 shows that a male infant born in 1902 expected to live for 11.54 years while a female infant expected to live 13.92 years. This life expectancy at birth has increased to 56.90 in 1970-1975 for male infants, and 60.00 in 1970-75 for female infants. (Department of Health, Republic of the Philippines, 1973; United Nations, Department of International Economic and Social Affairs, 1978a; 1978b; 1975; 1968; 1967; 1961; 1957).

Table 3.1. Total Deaths, Deaths Under One Year, Number and Rates, Philippines, 1926-1973

YEAR	DEATHS		DEATHS UNDER 1 YEAR	
	Number	Rate*	Number	Rate**
1926	229,988	19.3	62,753	156.7
1927	220,328	18.0	63,205	152.5
1928	218,096	17.5	63,441	150.1
1929	237,733	18.6	69,334	161.6
1930	252,988	19.3	70,826	165.0
1931	240,825	18.0	68,290	155.2
1932	211,809	15.4	61,511	137.6
1933	227,594	16.2	67,002	145.8
1934	239,705	16.7	72,008	160.8
1935	257,181	17.5	70,793	153.4
1936	239,107	15.9	64,999	134.0
1937	254,740	16.5	70,515	137.3
1938	261,848	16.6	71,239	139.0
1939	273,141	16.9	76,377	146.2
1940	273,480	16.6	72,647	135.8
1941-45	***	-	***	-
1946	278,546	15.1	66,902	125.5
1947	238,527	12.7	63,809	111.5
1948	234,467	12.7	68,897	114.4
1949	231,151	11.8	66.114	108.5
1950	226,505	11.1	65,273	101.6
1951	237,937	11.4	67,209	105.5
1952	241,020	11.1	65,883	101.6
1953	239,988	10.8	69,729	105.3
1954	217,650	9.5	66,175	94.2
1955	219,798	9.0	61,958	84.3
1956	219,719	9.0	63,583	83.9
1957	241,469	9.5	69,592	93.0
1958	218,186	8.4	61,335	80.0
1959	197,423	7.3	58,610	72.4
1960	212,688	6.6	59,301	73.1
1961	213,587	7.5	56,663	72.4
1962	213,439	7.3	56,365	67.7
1963	215,743	7.1	56,700	66.6
1964	214,904	6.9	54,174	61.5
1965	241,305	7.5	59,733	68.5
1966	240,865	7.2	59,810	65.8
1967	241,548	7.0	59,448	65.2
1968	253,841	7.1	62,994	65.5
1969	255,785	6.9	65,142	64.1
1970	248,251	6.7	59,774	59.3
1971	250,139	6.6	59,730	62.0
1972	285,761	7.3	65,719	67.9
1973	283,475	7.0	67,881	64.7

*per 1000 population **1000 live births

***No data available

Table 3.2. Infant Mortality Rates[a] by Sex, Philippines, 1949-1972

Year	Both Sexes	Male	Female
1949	96.9	-----	-----
1950	101.7	112.4	90.1
1951	99.1	108.5	88.8
1952	108.7	120.3	96.1
1953	-----	-----	-----
1954	-----	-----	-----
1955	-----	-----	-----
1956	110.9	120.7	100.0
1957	112.9	117.6	107.5
1958	109.2	118.0	99.0
1959	93.4	96.1	90.2
1960	84.6	97.6	72.2
1961	72.4	79.3	64.8
1962	67.7	74.1	60.7
1963	72.8	79.3	65.6
1964	70.5	77.8	62.5
1965	72.9	80.4	64.6
1966	72.0	80.0	63.2
1967	72.2	81.8	62.0
1968	71.0	78.6	62.5
1969	67.3	75.3	58.6
1970	60.0	-----	-----
1971	62.0	68.3	55.0
1972	67.9	75.3	59.7

[a] - per 1000 live births

SOURCE: Data obtained from United Nations, Department of International Economics and Social Affairs, Demographic Yearbook, 1957, 1961, 1966, 1974, 1977.

Table 3.3. Life Expectation at Birth, By Sex, Philippines, Selected Years

Year	Male (Years)	Female (Years)
1902	11.54	13.92
1918	25.17	26.07
1938	44.80	47.72
1946-49	48.81	53.56
1970-75	56.90	60.00

SOURCE: United Nations, Department of International Economics and Social Affairs, Demographic Yearbook, 1967, 1974. United Nations Statistical Yearbook, 1977.

THE FILIPINO FAMILY

The Filipino household is nuclear rather than extended. It is composed of husband, wife, and unmarried children. The large household size is due to many children and not to the presence of other relatives (Castillo, 1977). Following the kinship patterns of the preindustrial city described by Sjoberg (1960), urban areas in the Philippines tend to have more extended family households than rural areas. A higher percentage of extended family households is found among those with higher income, education, and occupational statuses. This suggests the idea of accommodation of relatives who migrated to the urban areas (Castillo, 1977; Stinner, 1979).

While the Filipino household is nuclear, it is not at all free from the extended family norms. Reciprocal assistance in the form of cash or kind takes place across both lineal and collateral relatives, includings cousins (Castillo, 1977; Stinner, 1979).

Filipino kinship is bilateral. The kinship is reckoned through the male and the female line simultaneously. Both male and female children have equal inheritance rights, thus, whatever assets the parents have are equally divided among all their children (Yu, 1980). Kinship is also gener-

ational. Members of the group are recognized according to the order of descent. Rules of inheritance, emotional ties, hierarchy of values, respect for elders, social etiquette, and administration of social control are established, clarified, and interpreted through the generational kinship system (Aquino, 1981).

Birth order determines the status, privileges, and duties of a child. Special rank with status is given to the oldest child and the next, and so on down the line. The elder children are expected to be good examples for the younger children; they help in the care of younger siblings, and in many instances, the older children are expected to help the younger ones finish college education. The first born has authority about inheritance. If he or she properly adheres to the "equal distribution" concept, no conflict ensues (Aquino, 1981).

Marriage is universal and fairly stable in the Philippines. Husbands take the role of family headship and economic provider. The main tasks performed by women are childbearing and housekeeping; a woman working outside the home is still expected to fulfill her domestic role. The Filipino woman is found to be generally contented with the homemaking role while men derive most satisfaction in life

in the performance of their economic role (Aleta et. al., 1977).

Aleta and colleagues (1977) reported that about three-fourths of the married women regarded themselves as housekeeper. The average Filipino wife spends at least 29 days a month and more than eight hours a day in her main activity of housekeeping, yet less than one half of the men help the women perform this domestic chore.

The authority pattern in the Filipino home attempts to be egalitarian with the husband or wife having more authority in certain aspects of family life. Decision making is shared regarding child care, discipline and schooling, social and leisure activities, and farm business. Economic matters, livelihood, and son's discipline are mostly handled by the husband while household chores, child rearing, and family budgetting are usually managed by the wife (Aleta, et. al., 1977). Bulatao's (1977) study reported that decision making was generally a male function. However, it should be noted that outwardly the husband constituted the symbol of authority (Aleta, et. al., 1977).

The Filipino family sees childbearing as one of its important functions. The primary purpose of marriage is procreation. Children are seen as the natural outcome of the union of husband and wife. The Filipino parents tend

not to follow any scientific method of child rearing. Chance, common sense, customs, traditional beliefs, legends, and prevailing practices dictate the style of child rearing (Aquino, 1981).

Guthrie's (1969) study of 200 nursing women in four Philippine communities revealed that dietary beliefs and practices of pregnant women were dictated by the likes and dislikes of the mother rather than by consideration of nutritional advantages.

Mixed feeding is resorted to if the mother decides to work. She breastfeeds the infant before she leaves for work and during the night; formula is used during the day. When the infant is about four months old, rice gruel, broth, soups, mashed sweet potato, and mashed banana are used to supplement the mother's milk in rural areas and among the urban poor. In more affluent urban areas, mothers use the commercially prepared baby food. Breastfeeding usually lasts until the child reaches one and a half to two years old, or until the mother becomes pregnant again (Aquino, 1981).

One common method of weaning is the application of bitter extracts from ampalaya leaves, garlic, onion, ginger, or pepper to the mother's breasts to discourage the baby from

sucking. Other methods are physical separation of mother and child, the reduction of frequency of breastfeeding, and training the child to drink from a cup early (Aquino, 1981).

The Filipino child is often cared for by a number of individuals. A working mother entrusts the care of her children to relatives who are willing to babysit or to the domestic help she hires. Thus, in a household where non-working relatives are present or which can afford hired help, child care is not a problem (Aquino, 1981).

Although parental discipline varies by social class, parents' education, and region, the children's behavior is controlled by fear of censure. Filipino parents are generally authoritarian. As a rule, answering back is not allowed. Depending on the circumstances, public scolding is not practiced. Parents seldom ask the opinion of their children. This conditions the children to doing what they are told to do. Most parents believe that sparing the rod will spoil the child. When spanking is necessary, bare hands, slippers, belt or a ruler-sized stick is used. Spanking is approved as long as it is not brutal (Aquino, 1981).

Methods of punishment vary with the ages of the children. One or two year olds are usually scolded and shouted at. Other methods are verbal appeal and silent treatment. For

three to six year olds, verbal appeal, shouting, silent treatment, scolding, and spanking are used. For seven to ten year olds, Filipino parents use corporal punishment when disruptive behavior, disobedience, or a disrespectful show of rebellion is evident. Reasonable restrictions are imposed; silent treatment, scolding, verbal appeal, ignoring, and disowning are used. When wild behavior emerges, fathers generally intervene. Serious matters that require firm intervention and heavy parental authority are referred to the father (Aquino, 1981).

Most Filipino parents forbid their children to fight back, but if the family honor is at stake, it is the children's duty to defend the family honor. Expression of anger is circumscribed. Throwing fits or tantrums may be allowed occasionally but talking back to parents or striking back is forbidden. Children learn early in life to obey humbly. Suppression of hostility is balanced by a set of other child rearing practices, such as gentleness, permissiveness, close parent-child relationships and other aspects of kindness (Aquino, 1981).

CHARACTERISTICS OF THE NORTH MINDANAO REGION

Second largest of the islands of the Philippine archipelago, Mindanao lies to the south of Luzon and the Visayan Islands. Figure 3.2 shows the coastal provinces of Northern Mindanao, from Misamis Occidental on the west to Surigao del Norte on the east. The north coast is generally hilly; the majority of the population lives on the coastal plains and in the river valleys. The people of this region are chiefly engaged in farming, logging, fishing, and livestock production. Most important among the regional crops are corn, rice, coconuts, bananas, and in Bukidnon, pineapples. Most of the larger towns and cities of the region function mainly as commercial outlets for the farm, livestock, and timber products of their areas, although industrial development had only started in the late seventies (Madigan, 1973).

According to the 1975 Census (Madigan,1979), the region had a population of 2,310,941. The Area Fertility Study reported that as of 1976 the median age at first marriage was 19.3 (Madigan, 1979). Slightly less than five children had been born to all ever-married women of the region as of 1976. The total fertility rate of 7.55 in 1972 had declined to 5.80 in 1976. Overall crude birth rate for 1976 was 34.5. As of 1977, only 23.5 per cent of the women were current users of contraception (Madigan, 1979).

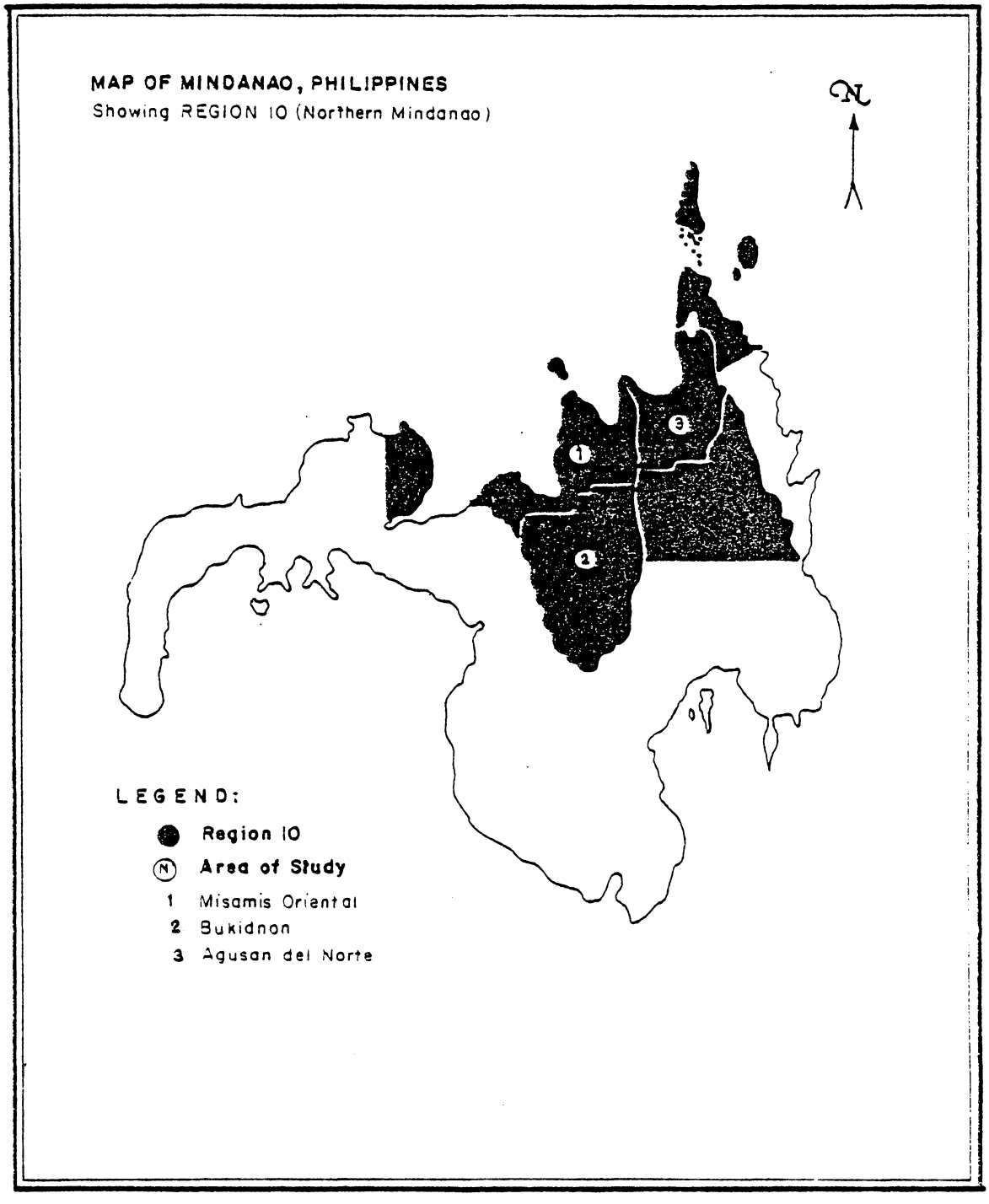


Figure 3.2. Map of Mindanao, Philippines

The Department of Health of the Philippines reported that as of 1973 the crude death rate for the Northern Mindanao region was 5.4 per thousand while the infant mortality rate was 62.5. These rates were slightly lower than the rates for the country which had a crude death rate of 7.0 per 1,000 and an infant mortality rate of 64.7 in 1973. A study of the morbidity conditions of the region revealed that the leading causes of death were bronchitis, emphysemia, and asthma. Table 3.4 indicates that North Mindanao had higher morbidity rates for ten leading causes of death , compared to the country (Department of Health, Republic of the Philippines, 1973).

Most of the women in the region were employed, with 63.8 per cent working away from home while 36.2 per cent worked at home. In terms of socioeconomic status measured by average weighted score (Madigan, n.d. See Appendix A), 94.3 per cent of the women came from lower social class, 5.5 per cent from the middle, and 0.2 per cent from the upper class (Madigan, 1979).

Table 3.4. Morbidity: Ten Leading Causes, North Mindanao and The Philippines, 1973

Leading Cause of Death	NORTH MINDANAO Number	NORTH MINDANAO Rate per 100,000	PHILIPPINES Number	PHILIPPINES Rate per 100,000
Bronchitis, emphysema, and asthma	35,290	1060.3	338,062	840.6
Influenza	31,801	955.3	319,955	795.5
Gastro-enteritis and colitis	22,871	687.2	277,108	689.0
Tuberculosis (all forms)	10,536	316.6	147,703	367.2
Pneumonia	7,591	228.1	93,569	232.6
Malaria	3,648	109.6	31,999	79.6
Measles	3,440	103.4	28,568	71.0
Dysentery (all forms)	3,107	93.4	23,935	59.5
Whooping Cough	2,473	74.3	20,210	50.2
Beriberi	2,389	71.8	14,391	35.8

SOURCE: Department of Health, Philippine Health Statistics, 1973.

Chapter IV

METHODOLOGY

This study endeavored to provide empirical verification of the hypothesis that unwanted fertility would result in mortality with underinvestment as an intervening mechanism. Unwanted births were thought to be more likely to be subject to underinvestment and hence, experienced greater mortality risks at the postneonatal and early childhood years.

OPERATIONAL DEFINITIONS

Unwanted Fertility

Unwanted fertility was defined as a live birth that deviated from parental expectations in some distinguishable characteristics or set of characteristics.

One indication of unwanted birth was the difference between the desired number of children a couple had and the actual number of living children they had at the time of birth of a particular child. Desired family size was measured by asking: "Now suppose that you could start your married life all over again and choose to have just the number of children that you would want, how many children would you want to have?" Desired family size, in turn, was compared with the actual number of children a woman had. The children whose birth order exceeded the preferred number of offsprings were considered unwanted.

Another indication of unwanted fertility was the discrepancy between the preferred sex composition a woman had and the actual number of boys and the number of girls she had. Respondents were asked to indicate the number of boys and girls they preferred out of the desired family size. Births which exceeded the birth order of the desired number of boys and desired number of girls were considered unwanted.

Respondents were also directly asked:

> Which ones of your pregnancies would you have preferred to have occurred later than they did? At the time of birth of _____(child), did you wish that this birth would occur a year or more later than it did or even not at all?

These questions measured timing failures which indicate unwantedness.

In sum, the approaches described above were designed to determine the number of children considered desirable by a woman. From the information gathered, inferences were made as to whether a particular child was wanted or unwanted relative to his or her siblings.

Underinvestment

The concept of underinvestment involved the idea that "parents will not always go to extremes to save the life of a child and may in fact invest more time, attention, and resources in some children than in others" (Scrimshaw,

1978:396). Usage of the term in this study was consistent with her definition.

Since precise indicators of the absolute amount of investment in each child were unobtainable, reliable indicators of the amount of investment in each child relative to the investment in other children in the family were obtained. Indicators of underinvestment included: frequency and source of prenatal care, the quality and quantity of nutrition, utilization of available medical services, and amount of nurturance bestowed on a particular child.

Frequency and source of prenatal care were ascertained by asking the respondent the following questions:

> While you were pregnant with _____(child), did you seek prenatal care from any of the following: none, doctor, nurse, licensed midwife, herbolario or tambalan, mananabang or hilot (unlicensed midwife), hospital, private clinic, government clinic, relatives and friends or others? IF YES: How many times did you go to _____ while you were pregnant with _____ (child)?

Since measurement of actual quality and quantity of nutrition received by the child was not feasible in the present study, adequacy of nutrition was defined as the subjective evaluation of the mother and the comparison of food intake by child in relation to the others. As points of reference, the following were considered: 1) whether or not the child was breastfed, 2) length of breastfeeding, and 3)

when supplemental feeding was begun. The respondent was asked this series of questions:

> Did you breastfeed _____ (child)? IF YES: While you were breastfeeding _____ (child), did you start feeding him (her) other food such as porridge, soup, or fruit juice? IF YES: When did you start feeding him (her) these other foods? At what age did you wean _____ (child)? Why did you wean _____ (child)?

If the respondent did not breastfeed her child, she was asked to indicate the reason why she did not breastfeed her child. She was also asked to indicate what food she gave to the child instead. In addition, questions regarding breastfeeding practices were posed. These included length of lactation and whether respondent considered breastfeeding, bottlefeeding or a combination of both the best type of nutrition for the infant. This was important in order to control for cultural bias toward bottlefeeding as the modern way of feeding infants and breastfeeding as a last recourse due to inability to provide milk formula for infants (Bader, 1976).

Utilization of available medical services was measured by asking these questions:

> Before ____ (child) was five years old, when you noticed that he or she was not feeling well, do you try to medicate him (her) yourself? IF YES: When you noticed that his (her) condition did not improve, what do you usually do? IF NO: What do you usually do? IN BOTH CASES, IF RESPONDENT SOUGHT TREATMENT, SHE WAS ASKED: How long would it be before you take _____ (child) to ____?

Nurturance was indicated by the amount of time each parent spent playing, cuddling, and rocking his or her child or children. Respondents were asked the reason why little or more time was spent with a particular child. The questions were:

> Before ____(child) was one year old, did you have time for cuddling or playing with him (her)? About how many minutes a day did you spend with him (her)?

Reduced Quality of Life

Like the first two mentioned concepts, quality of life also faced definitional problems. Among the available indicators of the concept were income, energy consumption, literacy, nutrition, mortality, health, and density of living conditions (Corsa and Oakley,1979). Absolute measures of quality of life was obtained by investigating the survivorship of a particular child.

Survivorship information for each live birth was obtained from the mother's pregnancy history which gave the pregnancy outcome, sex, month and year of birth, month and year of death, and age at death. The analysis focused on two mortality periods--the postneonatal and childhood mortality at ages one to four years. Hence, postneonatal mortality described the survivorship of all births born at least a

year before the time of interview. It was dichotomized into those who died at ages one to eleven months and those who survived to age one year. Childhood mortality involved all births born at least five years before the time of interview. It was dichotomized into those who died at ages one to four years and those who survived to age five years. Neonatal deaths were excluded since the focus of this research was the determination of the behavioral effects on mortality. Neonatal deaths have often been associated with congenital defects and anomalies during pregnancy and the birth process (Bouvier and van der Tak, 1976).

SAMPLING DESIGN

Two-stage cluster sampling was utilized in the selection of sample areas. The first stage consisted in the selection of barangays from a sampling frame used by the Area Fertility Study (Madigan, 1979). The frame included all of the Northern Mindanao with the exception of two fringe provinces on both east and west (see Figure 3.2). Thus the frame included barangays of the following provinces: Agusan del Norte, Bukidnon, Camiguin, and Misamis Oriental. Maps of the provinces selected are presented in Appendix B. Eventually twenty five barangays were sampled: eleven from Agusan del Norte, eight from Bukidnon, and six from Misamis

Oriental. Sampling of these barangays was with replacement and probabilities proportional to size. Of the twenty-five barangays selected, eight were designated as urban, eight as semi-urban, and nine rural. The urban component consisted of poblaciones of chartered cities, the semi-urban as municipal poblaciones, and the remainder rural.

The second stage involved the systematic sampling of households from each of the twenty-five barangays. In order to obtain the desired sample size of 1,000 households, the interview number designated within each barangay was forty households. Actual number of households interviewed varied over or under the ideal of forty in relation to the number of household units located for each sample barangay. Using a household listing and map for each area which were previously utilized by the Area Fertility Study and updated by the interviewer prior to interviewing, the required number of households were selected by systematic sampling. A sample of maps for the three types of survey areas (rural, semi-urban, and urban) is shown in Appendix B. Households in each area were identified by number and the starting point for the systematic sampling was selected by use of a table of random numbers. Replacement was allowed only for out-migrant households and for households in which all adult members were away for the entire interviewing period in each

sample barangay. A total of 1,077 households were selected consisting of 339 households in the urban sample, 386 in the semi-urban, and 352 in the rural.

THE INTERVIEW SCHEDULE AND THE PRETEST

It was anticipated that most respondents would be interviewed in the local language, Cebuano Binisaya. Thus, a Binisaya interview schedule was developed in addition to the English version. This Binisaya version was used in the pretest carried out by the present writer and three field supervisors of the project. The pretest revealed some minor difficulties such as the length of the interview, the wording of some questions, and the presence of sensitive questions in the schedule. These problems were resolved by eliminating questions which were not considered as central to the problem of the study. The shortened interview schedule reduced interviewing time from two hours and a half to two hours. Vague and sensitive questions were reworded or ultimately eliminated from the interview schedule. This was decided only after a discussion with several RIMCU senior field staff who were familiar with the culture of the area. The revised schedule was again pretested and the final version of the Binisaya schedule was adopted for actual interview.

FIELD WORK

Prior to doing field work, clearances were obtained from government and military officials of sample areas. Courtesy calls were made to barangay heads, mayors, governors, and military of sample areas. In this way, conflicts were avoided which could result in delay of fieldwork. Because a few sample areas were critical or dangerous areas, local barangay officials sometimes acted as guides for interviewers and supervisors.

Field work began on May 21, 1980 and ended June 18, 1980. An interview averaged approximately two hours to accomplish. Eighteen field interviewers with their three field supervisors (one for each province) carried out the field aspect of the study. The three supervisors were all college graduates and had some experience with fieldwork and data processing. Almost all of the interviewers had attended college; a few were housewives. All members of the interviewing team had worked as field interviewers of the Area Fertility Study or some other projects of RIMCU and government agencies. Thus, interviewers' training which lasted for two to three days was mostly geared to familiarizing the trainees with the underinvestment section of the interview schedule. Interviewing techniques were reviewed.

Because the main focus of the study was information on the behavior and attitudes of the women toward their children, the persons considered eligible for interview were ever-married women aged 15-54. The person preferably to be interviewed for household and socioeconomic data was the wife of the household head. All ever-married women aged 15-54 living in the household were personally interviewed in order to obtain information on their maternity history, data regarding underinvestment and number, sex, and spacing preferences. Only women who had at least one live birth were asked the underinvestment questions.

Because ever-married women aged 15-54 living in one household were interviewed after one another, interviewers were instructed on two things: 1) to make sure the respondents did not overhear each other and 2) no other household members should be around the respondent during the interview session. These injunctions were deemed important because of the sensitive nature of some of the underinvestment questions and to make sure that the respondents feel free to answer the questions without fear of hurting anyone's feelings. Contamination of answers would also be avoided. This was believed to be successful.

In order to minimize problems of recall, a systematic approach to the interview was adopted. Information was gathered using the standard questions and procedures for obtaining pregnancy histories (Population Council, 1972). The life history technique developed by Balan and associates (1973) was used for the underinvestment section with each live birth as one time unit. With the use of this technique all relevant information was obtained for each live birth. This procedure was considered helpful in aiding the respondent to "think through" and remember the needed information.

Because no substitution was permitted, callbacks were necessary when the would-be respondent was out or very busy at the time of visit. In a number of cases, several callbacks were required to obtain or complete the interview. Only one refusal was encountered. Since the survey was the fifth survey conducted in some sample areas, interviewers were instructed to explain the purpose of the survey to some respondents who had been interviewed in the other surveys and census enumeration.

CHARACTERISTICS OF THE SAMPLE

Of the 1,077 households selected, 1,026 ever-married women aged 15-54 were interviewed. Of these women, 15 were pregnant for the first time and 24 had never been pregnant. This resulted in a total of 987 women eligible for the

study. These were women aged 15-54 who had been married or were currently married at time of interview, had at least one pregnancy which resulted in a live birth, fetal loss, abortion, or stillbirth. Of these 987 women, one refused to be interviewed, resulting in a working sample of 986 women. Remaining households which were not included in the working sample were either households in which no woman met the criteria of eligibility, i.e., the woman was 55 years old or over, single, or the woman who was eligible for interview was temporarily absent from the area during the interviewing period.

The sample, consisting of 986 ever-married women aged 15-54 who had had a pregnancy, included 34.2 per cent (n=338) urban respondents, 34.1 per cent (n=336) semi-urban, and 31.6 per cent (n=312) rural. Table 4.1 shows that the majority of the women (94.5%) were married at the time of interview; only 3.8 per cent (n=37) were widowed, and 1.7 (n=17) were separated from their spouses.

As shown in Table 4.1 the women in the sample had a median age of 34.96 and had been married for about twelve years. As an indication of the stability of marriage, 95.5 per cent (n=942) of the women had been married only once.

Table 4.1. Distribution of Sample by Socioeconomic and Demographic Characteristics

Characteristic	Number of Cases	Percent
Community Type		
Urban	338	34.3
Semi-urban	336	34.1
Rural	312	31.6
Total	986	100.0
Marital Status		
Married	932	94.5
Widowed	37	3.8
Separated	17	1.7
Total	986	100.0
Age at First Marriage		
10-14	43	4.4
15-19	459	46.6
20-24	359	36.4
25-29	96	9.7
30-34	22	2.2
35 & over	6	0.6
N.R.	1	0.1
Total	986	100.0
Age Last Birthday		
16-19	16	1.6
20-24	139	14.1
25-29	195	19.8
30-34	133	13.5
35-39	147	14.9
40-44	152	15.4
45-49	107	10.9
50-54	97	9.8
Total	986	100.0

Table 4.1. Continued

Characteristic	Number of Cases	Percent
Number of Times Married		
Once	942	95.5
More than once	44	4.5
Total	986	100.0
Duration of Marriage (yrs.)		
<1 yr. - 4	186	18.9
5-9	185	18.8
10-14	153	15.5
15-19	112	11.4
20-24	146	14.8
25-29	81	8.2
30-34	63	6.4
35-42	19	1.9
N.R.	1	0.1
N.A.	40	4.1
Total	986	100.1
Number of Living Children (Family Size)		
0	7	0.7
1-4	574	58.2
5-8	316	32.0
9-12	84	8.5
13-14	5	0.5
Total	986	99.9
Number of Live Births Total Parity		
0	6	0.6
1-4	533	54.1
5-8	289	29.3
9-12	132	13.4
13-19	26	2.6
Total	986	100.0

Table 4.1. Continued

Characteristic	Number of Cases	Percent
Number of Pregnancies		
1-4	492	49.9
5-8	320	32.5
9-12	133	13.5
13-18	41	4.2
Total	986	100.1
Socio-economic Status		
Low class	686	69.6
Middle class	288	29.2
High class	12	1.2
Total	986	100.0
Household Monthly Income		
001-499	470	47.7
500-999	344	34.9
1000-1499	117	11.9
1500 & over	55	5.6
Total	986	100.1
Highest Grade Completed		
No formal education	20	2.0
Attended elementary	225	22.8
Elementary graduate	242	24.5
Attended high school	194	19.7
High school graduate	115	11.7
Attended college	76	7.7
College graduate	103	10.4
Graduate school	4	0.4
Voc.	3	0.3
No response	4	0.4
Total	986	99.9

Table 4.1. Continued

Characteristic	Number of Cases	Percent
Employment		
Yes, work at home	77	7.8
Yes, away from home	177	18.0
Yes, both at home & away	18	1.8
No	713	72.3
No response	1	0.1
Total	986	100.0

Half of the women (49.9% n=492) had one to four pregnancies, 32.5 per cent (n=320) reported five to eight pregnancies, 13.3 per cent (n=133) had nine to twelve, and 4.3 per cent (n=41) were pregnant 13 to 18 times.

Less than half (47.7%) resided in households where the average monthly income was from one peso to 499 pesos (one dollar=7.5 pesos). About 35 per cent (n=344) lived in households where income was from 500 pesos to 999 pesos and 17.5 per cent in households where income was 1,000 pesos or over. Using the average weighted socioeconomic status (SES) score for households devised by Madigan (n.d. See Appendix A), about 70 per cent (n=686) of the women came from the lower social class, 29.2 per cent (n=288) from the middle and 1.2 per cent (n=12) from the upper social class.

Formal education in the Philippines is divided into a six-year elementary cycle, a four-year secondary cycle, and college. Public elementary education from grades one to four is supported by the national government. About 95 per cent of the elementary students are enrolled in the public school system. Table 4.1 shows that 2 per cent (n=20) of the women in the sample reported no formal education. About a quarter of the sample finished elementary school (n=242), and 12 per cent (n=115) graduated from high school, and 8

per cent (n=104) from college. Majority of the women (72.3%) were not earning money at time of interview. Eighteen per cent (n=177) worked away from home, around 8 per cent (n=77) worked at home, and 1.8 per cent (n=18) earned money both at home and away.

The next chapter describes the variables, the statistical methods used, and the findings of the study.

Chapter V

RESULTS OF THE STUDY

The primary purpose of this study was to provide empirical verification to the hypothesis that unwanted births are more subject to underinvestment and hence, more likely to have greater mortality risk than wanted births.

The present chapter is divided into three sections. Part One will discuss the variables and method used in the analysis. Part Two presents the bivariate findings of the study and Part Three presents the multivariate findings of the study.

VARIABLES AND METHOD

Unwantedness

Three measures of unwantedness were employed. The first approach involved asking the mothers to describe their pregnancy histories; each pregnancy were asked whether the pregnancy was "wanted" or "unwanted". Included in the category of "unwanted" pregnancies were those pregnancies where the mother did not want the pregnancy at the time it occurred and pregnancies that were not wanted at all. Of the 4,464 live births included in the analysis, 5.9 per cent were described as unwanted.

The second approach for describing unwantedness involved a comparison of mother's desired number of children with the birth order of the child. When the ordinal position of the child was found to exceed the desired number of children, the birth was described as unwanted. About 30.4 per cent of the births (1356/4457) were unwanted by this measure.

The third approach was the comparison of mother's sex preference and the sex of the child. Males born after the desired number of sons was attained, or females born after the desired number of daughters was attained, were considered unwanted. This approach showed more unwanted births than the other two approaches. More than half (54.8 per cent) of the 4,464 live births were unwanted because they exceeded the sex preference of the mother. While this figure indicated a substantial number of unwanted births, it is important to remember that this measure of unwantedness also incorporates birth order of the child.

Underinvestment

The indicators of the amount of investment in each child included: 1) the source of prenatal care, 2) frequency of prenatal care, 3) age in which supplementary feeding was started, 4) length of breastfeeding, 5) the source of medical care, 6) number of days before treatment was sought, and

7) time spent cuddling and playing with child. The seven items describing physical as well as emotional care, were believed to best indicate the amount of investment that a mother would bestow on each of her children. An average score of one, two, or three in the scale indicated a low level of investment while a score of four, five, or six indicated a high level investment. This was decided based on cultural definition of the maximum amount of parental care expected. Item scores are presented in Appendix C.

Mortality

Mortality is classified into postneonatal mortality and childhood mortality. Postneonatal mortality measures the survivorship of live births to age one year. It involves deaths at ages one to eleven months. It is dichotomized into 'died at ages one to eleven months' and 'survived to age one year'. Childhood mortality refers to deaths at ages one to four years and measures the survivorship of live births to age five years. It is dichotomized into 'died at ages one to four years' and 'survived to age five years'. Analysis of postneonatal mortality was based on 4,464 live births born at least a year prior to the time of interview. In the case of childhood mortality, analysis was based on 3,514 live births born at least five years before the time

of interview. These cut-off points were established in order to allow the live births complete exposure to mortality risks. The analysis proceeded in two ways: 1) involving all live births born at least a year prior to the time of interview and 2) involving only live births born at least five years before the time of interview.

Because behavioral rather than biological mechanisms of mortality were the main interest of this study, neonatal mortality which has been mainly attributed to biological factors and anomalies of the birth process, was excluded from the analysis (Bouvier and van der Tak, 1976; United Nations, Department of International Economic and Social Affairs, 1973).

Statistical Procedures

Since the variables are categorical, statistical techniques appropriate to nominal level data have been used. The first part of the analysis involved testing for significant association of variables in 2 x 2 contingency tables. The second part involved elaboration (Rosenberg, 1968) of the bivariate relationships through analysis of multiway contingency tables.

Bivariate analysis uses the traditional chi-square tests for significance. For statistically significant relationships at .05, phi is reported as a measure of the strength of relationship. Its value ranges from zero to one, where zero means no relationship and one means a perfect relationship. The odds ratio and its logarithm or Goodman's Y are also reported. Odds ratio indicates the independence of two variables. If the variables are statistically independent, odds ratio equals one. Odds ratios greater than one show direct covariation and odds ratios less than one indicate an inverse relationship. The direction of covariation is arbitrary and depends on the categories given 'higher values' (Knoke and Burke, 1977). In this study the categories 'died at ages one to eleven months', 'died at ages one to four years', 'underinvested', 'unwanted', and 'lower class' were given higher values for the variables postneonatal mortality, childhood mortality, underinvestment, unwantedness, and SES, respectively. Goodman's Y was used to test the null hypothesis of no significant association between variables of interest (Marascuillo and McSweeney, 1977). A one-tailed probability test was used at level of significance .025. The computational procedure for the test is presented in the Appendix D.

For multiway tables, the likelihood ratio estimate chi square was used to test for significant partial associations (Dixon and Brown, 1977). The level of significance was set at .05.

BIVARIATE FINDINGS

Mortality and Unwantedness

To test the general hypothesis that unwanted births are more likely to be subjected to underinvestment and hence, have greater mortality risks than wanted children, the first task was to investigate the nature of the relationship between mortality and unwantedness.

Table 5.1A presents the number and per cent distribution of postneonatal deaths by unwantedness based on the direct question which asked the woman to indicate which of her pregnancies she did not want at the time it occurred and the pregnancies she did not want at all. About 2.3 per cent of the unwanted births, compared to 3.5 per cent of the wanted births, died at ages one to eleven months. Test of the null hypothesis revealed that postneonatal mortality and unwantedness were not significantly related.

Table 5.1B presents the number and per cent distribution of postneonatal mortality by unwantedness based on the first

Table 5.1. Postneonatal Mortality by Unwantedness

A. Unwantedness (direct question)

Postneonatal Mortality	Unwantedness: Unwanted N	Unwanted %	Wanted N	Wanted %	Total
Died at ages 1-11 months	6	2.3	149	3.5	155
Survived to age 1	258	97.3	4,051	96.5	4,309
Total	264	100.0	4,200	100.0	4,464

chi square = 1.205 p > .05
odds ratio = 0.632
log odds ratio = -0.485 T = -1.323

B. Unwantedness (based on desired family size)

Postneonatal Mortality	Unwantedness: Unwanted N	Unwanted %	Wanted N	Wanted %	Total
Died at ages 1-11 months	50	3.7	104	3.4	154
Survived to age 1	1,306	96.3	2,997	96.6	4,303
Total	1,356	100.0	3,101	100.0	4,457

chi square = 0.315 p > .05
odds ratio = 1.103
log odds ratio = 0.098 T = 0.551

C. Unwantedness (based on mother's sex preference)

Postneonatal Mortality	Unwantedness: Unwanted N	Unwanted %	Wanted N	Wanted %	Total
Died at ages 1-11 months	87	3.6	68	3.4	155
Survived to age 1	2,361	96.4	1,948	96.6	4,309
Total	2,448	100.0	2,016	100.0	4,464

chi square = 0.108 p > .05
odds ratio = 1.056
log odds ratio = 0.054 T = 0.329

indirect measure--mother's desired family size. About the same proportions of unwanted (0.037) and wanted (0.034) births died at ages one to eleven months. Again, no significant positive relationship between mortality and unwantedness (based on mother's desired family size) was found.

With mother's sex preference as the basis for unwantedness, Table 5.1C shows that about the same proportions of unwanted (0.036) and wanted (0.034) births died at ages one to eleven months. Clearly, no significant positive association existed between the number of infants who died at ages one to eleven months and whether they were wanted or unwanted because of "wrong" sex.

Unwantedness based on the three measures was not significantly related to postneonatal mortality. The null hypothesis of no significant association could not be rejected.

Since no significant positive relationship between unwantedness and mortality at ages one to eleven months was detected, the next task was to investigate if unwantedness of births was manifested in higher mortality risks during ages one to four years. It should be remembered that the analysis involving childhood mortality included only live births born at least five years prior to the time of interview.

Table 5.2 shows the number and per cent distribution of childhood mortality by unwantedness measured in the three ways described previously. Table 5.2A shows that 5.0 per cent of unwanted births, compared to 3.6 per cent of wanted births, died at ages one to four years. No significant positive association existed between unwantedness (direct question) and childhood mortality.

Similarly, Table 5.2B indicated no significant positive association between unwantedness (based on mother's desired family size) and childhood mortality. About the same proportions of unwanted (0.035) and wanted (0.037) births died at ages one to four years.

When unwantedness was based on mother's sex preference for the child, about the same proportions of unwanted (0.038) and wanted (0.035) births died between the ages one year and 4 years. Again, no significant positive relationship between childhood mortality and unwantedness was found.

Underinvestment and Unwantedness

Unwantedness was not directly related to either postneonatal or childhood mortality. But is there differential treatment by mothers towards their unwanted offspring from

Table 5.2. Childhood Mortality (1-4) by Unwantedness

A. Unwantedness (direct question)

Childhood Mortality	Unwantedness: Unwanted N	Unwanted %	Wanted N	Wanted %	Total
Died at ages 1-4 years	9	5.0	120	3.6	129
Survived to age 5 years	172	95.0	3,213	96.4	3,385
Total	181	100.0	3,333	100.0	3,514

chi square = 0.914 p > .05
odds ratio = 1.401
log odds ratio = 0.337 T = 0.831

B. Unwantedness (based on mother's desired family size)

Childhood Mortality	Unwantedness: Unwanted N	Unwanted %	Wanted N	Wanted %	Total
Died at ages 1-4 years	37	3.5	91	3.7	128
Survived to age 5 years	1,033	96.5	2,347	96.3	3,380
Total	1,070	100.0	2,438	100.0	3,508

chi square = 0.160 p > .05
odds ratio = 0.924
log odds ratio =-0.079 T = -0.405

C. Unwantedness (based on mother's sex preference)

Childhood Mortality	Unwantedness: Unwanted N	Unwanted %	Wanted N	Wanted %	Total
Died at ages 1-4 years	73	3.8	56	3.5	129
Survived to age 5 years	1,852	96.2	1,533	96.5	3,385
Total	1,925	100.0	1,589	100.0	3,514

chi square = 0.177 p > .05
odds ratio = 1.079
log odds ratio = 0.076 T = 0.422

ages one month to four years? Are unwanted births more likely to be underinvested than wanted births?

Table 5.3 presents the number and per cent distribution of births by unwantedness for all live births which were alive at least a year prior to the time of interview. More wanted births (12.8 %) were underinvested by their mothers than unwanted ones (9.1%) when unwantedness was measured by directly asking the mother. No significant positive association between underinvestment and unwantedness (direct question) could be established.

With unwantedness based on mother's desired family size cross-tabulated with underinvestment, 13.1 per cent of unwanted births, compared to 12.4 per cent of wanted births, were underinvested, as shown in Table 5.3B. Unwantedness based on mother's sex preference showed an equal proportion (0.126) of unwanted and wanted offsprings who were underinvested by their mothers as shown in Table 5.3C. No significant positive association was found between underinvestment and either indirect measure of unwantedness.

Based on the above analysis, unwanted births were not more likely to be underinvested than wanted births.

Table 5.3. Underinvestment by Unwantedness (for live births born at least 1 year prior to the time of interview)

A. Unwantedness (direct question)

Underinvestment	Unwantedness: Unwanted N	Unwanted %	Wanted N	Wanted %	Total
Underinvested	24	9.1	539	12.8	563
Not underinvested	240	90.9	3,661	87.2	3,901
Total	264	100.0	4,200	100.0	4,463

chi square = 3.156 p > .05
odds ratio = 0.679
log odds ratio = -0.387 T = -2.024

B. Unwantedness (based on mother's desired family size)

Underinvestment	Unwantedness: Unwanted N	Unwanted %	Wanted N	Wanted %	Total
Underinvested	178	13.1	385	12.4	563
Not underinvested	1,178	86.9	2,716	87.6	3,894
Total	1,356	100.0	3,101	100.0	4,457

chi square = 0.433 p > .05
odds ratio = 1.066
log odds ratio = 0.064 T = 0.652

C. Unwantedness (based on mother's sex preference)

Underinvestment	Unwantedness: Unwanted N	Unwanted %	Wanted N	Wanted %	Total
Underinvested	309	12.6	254	12.6	563
Not underinvested	2,139	87.4	1,762	87.4	3,901
Total	2,448	100.0	2,016	100.0	4,464

chi square = 0.001 p > .05
odds ratio = 1.002
log odds ratio = 0.002 T = 0.023

Analysis of all live births born at least five years prior to the time of interview showed a similar pattern as births born one to four years before the time of interview. Table 5.4A shows that 8.8 per cent of unwanted births were underinvested while 12.1 per cent of wanted births were subject to the same treatment. No significant positive association existed between unwantedness (direct question) and underinvestment for all live births born at least five years prior to the time of interview.

The first indirect measure of unwantedness, i.e., the comparison of birth order and mother's desired family size when cross-classified with underinvestment shows that 12.6 per cent of unwanted births were underinvested, compared to 11.6 per cent of wanted births as shown in Table 5.4B. Table 5.4C shows about the same proportions of unwanted (0.121) and wanted (0.118) births were underinvested when unwantedness was based on mother's sex preference. Again, no significant positive relationship between underinvestment and unwantedness (indirect measures) could be established.

In sum, for all live births which occurred at least five years before the time of interview, unwanted births were not more likely to be underinvested than wanted births.

Table 5.4. Underinvestment by Unwantedness (for all live births born at least 5 years prior to the time of interview)

A. Unwantedness (direct question)

Underinvestment	Unwantedness: Unwanted N	Unwanted %	Wanted N	Wanted %	Total
Underinvested	16	8.8	403	12.1	419
Not underinvested	165	91.2	2,930	87.1	3,095
Total	181	100.0	3,333	100.0	3,514

chi square = 1.728 p > .05
odds ratio = 0.705
log odds ratio = -0.350 T = -1.484

B. Unwantedness (based on mother's desired family size)

Underinvestment	Unwantedness: Unwanted N	Unwanted %	Wanted N	Wanted %	Total
Underinvested	135	12.6	284	11.6	419
Not underinvested	935	87.4	2,154	88.4	3,089
Total	1,070	100.0	2,438	100.0	3,508

chi square = 0.662 p > .05
odds ratio = 1.095
log odds ratio = 0.091 T = 0.803

C. Unwantedness (based on mother's sex preference)

Underinvestment	Unwantedness: Unwanted N	Unwanted %	Wanted N	Wanted %	Total
Underinvested	232	12.1	187	11.8	419
Not underinvested	1,693	87.9	1,402	88.2	3,095
Total	1,925	100.0	1,589	100.0	3,514

chi square = 0.067 p > .05
odds ratio = 1.027
log odds ratio = 0.027 T = 0.258

Mortality and Underinvestment

In the previous sections, the hypothesis that unwanted births have greater mortality risks at ages one month to four years was not borne out. Similarly, the second hypothesis that unwanted births were more likely to be underinvested was also not supported. The present section deals with the task of testing the hypothesis that births which were underinvested had greater mortality risks than wanted births at either the postneonatal period or early childhood years.

Table 5.5 presents the number and per cent distribution of deaths at ages one to eleven months by underinvestment for all live births born at least a year prior to the time of interview. Of those who were underinvested by their mother, 9.1 per cent died at ages one to eleven months while only 2.7 per cent of those not subjected to underinvestment died at this age. A statistically significant positive association between postneonatal mortality and underinvestment existed. The odds ratio indicated that the odds of an underinvested birth dying at ages one to eleven months were about 3.6 times greater than those for births where underinvestment was not evident.

Table 5.5. Postneonatal Mortality by Underinvestment

Postneonatal Mortality	Underinvestment: Underinvested N	Underinvested %	Not Underinvested N	Not Underinvested %	Total
Died at ages 1-11 months	51	9.1	104	2.7	155
Survived to age 1 year	512	90.9	3,797	97.3	4,309
Total	563	100.0	3,901	100.0	4,464

chi square = 59.987 $p < .001$
odds ratio = 3.637
log odds ratio = 1.291 $T = 5.243$
ϕ 0.116

Do underinvestment and mortality at ages one to four years have a significant positive relationship? Table 5.6 suggests that for all live births born at least five years before the time of interview and which were underinvested, 8.4 per cent died at ages one to four years, compared to 3.0 per cent of those not subject to underinvestment. As with postneonatal mortality, a significant positive relationship between mortality at ages one to four years and underinvestment was found. Thus, more births which were underinvested died in the early childhood (one to four years) than births not underinvested. The odds of an underinvested births dying at ages one to four years is 2.9 times greater than those of births not underinvested by their mothers.

In sum, the hypothesis that a birth which is underinvested has greater mortality risks during the postneonatal or childhood years than a birth which is not underinvested was supported.

Underinvestment and Socioeconomic Status

In a study of the behavioral aspects of infant mortality, Figa-Talamanca and Modolo (1977) pointed out the strong relationship between social and behavioral factors. They cited social class and education as important determinants of an individual's conceptual frame of reference, attitude

Table 5.6. Childhood Mortality (1-4 years) by Underinvestment

Childhood Mortality	Underinvestment: Underinvested N	Underinvested %	Not Underinvested N	Not Underinvested %	Total
Died at ages 1-4 years	35	8.4	94	3.0	129
Survived to age 5 years	384	91.6	3,001	97.0	3,385
Total	419	100.0	3,095	100.0	3,514

chi square = 29.492 $p < .001$
odds ratio = 2.910
log odds ratio = 1.068 T = 3.859
ϕ 0.092

towards health and illness, and access to and use of health facilities. To investigate effectively the underinvestment hypothesis, it is important that socioeconomic (SES) be introduced as a determinant of underinvestment and postneonatal mortality and childhood mortality. The first task is to investigate the nature of the relationship between underinvestment and SES. It was hypothesized that lower class births were more likely to be underinvested than middle class and upper class births.

The variable SES was measured by the average weighted household SES score developed by Madigan (n.d. See Appendix A). It was dichotomized into: 1) lower class and 2) middle and upper class.

Focusing on live births born at least a year before the time of interview indicated that about 70.5 per cent of births in the sample were born to lower class households, compared to 29.5 per cent born to middle and upper class households. Of those born to lower class households, 15.7 per cent were underinvested, compared to only 5.2 per cent of births from the middle and upper class. Results in Table 5.7 suggest that there was a significant negative association between underinvestment and SES for live births born at least one year before the interview. The odds of a lower

Table 5.7. Underinvestment by SES (for live births born at least one year prior to the time of interview)

Underinvestment	SES				
	Lower		Middle & Upper		
	N	%	N	%	Total
Underinvested in	494	15.7	69	5.2	563
Not underinvested in	2,652	84.3	1,249	94.8	3,901
Total	3,146	100.0	1,318	100.0	4,464

chi square = 92.338 $p < .001$
odds ratio = 3.372
log odds ratio = 1.215 $T = 12.298$
ϕ 0.144

class birth being underinvested were 3.4 times greater than the odds of a middle and upper class birth who was underinvested.

Restricting the analysis to births born at least five years before the time of interview showed that more lower class births were underinvested than middle and upper class births--15.0 per cent to 5.0 per cent. Clearly, there was a significant negative association between underinvestment and SES when the analysis excluded births born four years or less prior to the time of interview as shown in Table 5.8.

Mortality and Socioeconomic Status

Socioeconomic status has often been regarded as a determinant of mortality, particularly for postneonatal and childhood mortality (Meegama,1980; Kyriakos and Barnes, 1977; Bouvier and van der Tak, 1976; Balderrama-Guzman, et. al., 1976; Singh, 1974).

Figures in Table 5.9 do not appear to support the hypothesis of significant relationship between postneonatal mortality and SES. About 3.7 per cent of lower class births, compared to 2.8 per cent of middle and upper class births, died at ages one to eleven months. The null hypothesis of no significant association between postneonatal mortality and SES must be accepted.

Table 5.8. Underinvestment by SES (for live births born at least 5 years before the time of interview)

Underinvestment	SES				
	Lower		Middle & Upper		
	N	%	N	%	Total
Underinvested in	365	15.0	54	5.0	419
Not underinvested in	2,068	85.0	1,027	95.0	3,095
Total	2,433	100.0	1,081	100.0	3,514

chi square = 71.363 $p < .001$
odds ratio = 3.357
log odds ratio = 1.211 T = 10.736
ϕ 0.143

Table 5.9. Postneonatal Mortality by SES

Postneonatal Mortality	SES				
	Lower		Middle & Upper		
	N	%	N	%	Total
Died at ages 1-11 months	118	3.7	37	2.8	157
Survived to age 1 year	3,028	96.3	1,281	97.2	4,309
Total	3,146	100.0	1,318	100.0	4,466

chi square = 2.467 p > .05
odds ratio = 1.349
log odds ratio = 0.300 T = 1.671

Restricting the analysis to all live births born five years prior to the interview showed that 4.1 per cent of lower class births died at ages one to four years as shown in Table 5.10. Of those middle and upper class births, 2.7 per cent died at these ages. Contrary to the finding involving postneonatal mortality, test of significant association indicated that mortality at ages one to four years was inversely related to SES. The odds of a lower class child dying at ages one to four years were 1.56 times greater that those of a child born to the middle and upper class households.

Unwantedness and Socioeconomic Status

While SES did not have a significant relationship with postneonatal mortality, it showed a significant negative association with childhood mortality and underinvestment. To investigate the nature of the relationship between unwantedness and SES, it was hypothesized that more births from lower class households would be unwanted than births from the middle and upper class households.

Table 5.11A shows that for all live births born at least a year before interview, 5.3 per cent of lower class births, compared to 7.3 per cent of middle class births were desig-

Table 5.10. Childhood Mortality (1-4 years) by SES

Childhood Mortality	SES: Lower N	Lower %	Middle & Upper N	Middle & Upper %	Total
Died at ages 1-4 years	100	4.1	29	2.7	129
Survived to age 5 years	2,333	95.9	1,052	97.3	3,385
Total	2,433	100.0	1,081	100.0	3,514

chi square = 4.313 $p < .05$
odds ratio = 1.5555
log odds ratio = 0.441 T = 2.271
ϕ 0.035

nated as unwanted by their mothers. Evidently, unwantedness (direct question) and SES were directly related; more middle and upper class births were unwanted than lower class births.

Unwantedness, based on mother's desired family size, did not show a significant relationship with SES. Table 5.11B shows that about the same proportions of lower class (0.300) and middle and upper class (0.305) births were unwanted by their mother because they exceeded the mother's desired family size. For births which did not meet the sex preferences of the mother, about the same proportions of lower class (0.546) and middle and upper class (0.555) births were unwanted as presented in Table 5.11C. No significant association between unwantedness (based on mother's sex preference) and SES was found.

Analysis involving only live births born at least five years prior to the time of interview displays a similar pattern as the results shown for all live births born at least a year prior to the time of interview. Unwantedness (direct question) and SES were positively related. About 4.6 per cent of births from the lower SES class, compared to 6.3 per cent of births from the middle and upper classes were unwanted as shown on Table 5.12A.

Table 5.11. Unwantedness by SES (for live births born at least one year prior to the time of interview)

A. Unwantedness (direct question)

Unwantedness	SES: Lower N	Lower %	Middle & Upper N	Middle & Upper %	Total
Unwanted	168	5.3	96	7.3	264
Wanted	2,978	94.7	1,222	92.7	4,200
Total	3,146	100.0	1,318	100.0	4,464

chi square = 6.306 $p < .05$
odds ratio = 0.718
log odds ratio = -0.331 T = -2.381
ϕ -0.038

B. Unwantedness (based on mother's desired family size)

Wantedness	SES: Lower N	Lower %	Middle & Upper N	Middle & Upper %	Total
Unwanted	956	30.4	400	30.5	1,356
Wanted	2,190	69.6	911	69.5	3,101
Total	3,146	100.0	1,311	100.0	4,457

chi square = 0.007 $p > .05$
odds ratio = 0.994
log odds ratio = -0.006 T = -0.081

C. Unwantedness (based on mother's sex preference)

Wantedness	SES: Lower N	Lower %	Middle & Upper N	Middle & Upper %	Total
Unwanted	1,717	54.6	731	55.5	2,448
Wanted	1,429	45.4	587	44.5	2,016
Total	3,146	100.0	1,318	100.0	4,464

chi square = 0.294 $p > .05$
odds ratio = 0.965
log odds ratio = -0.036 T = -0.543

Table 5.12. Unwantedness by SES (for live births born at least 5 years before the time of interview)

A. Unwantedness (direct question)

Unwantedness	SES: Lower N	Lower %	Middle & Upper N	Middle & Upper %	Total
Unwanted	113	4.6	68	6.3	181
Wanted	2,320	95.4	1,013	93.7	3,333
Total	2,433	100.0	1,081	100.0	3,514

chi square = 4.151 $p < .05$
odds ratio = 0.726
log odds ratio = -0.321 T = -1.940
ϕ -0.034

B. Unwantedness (based on mother's desired family size)

Wantedness	SES: Lower N	Lower %	Middle & Upper N	Middle & Upper %	Total
Unwanted	737	30.3	333	31.0	1,070
Wanted	1,696	69.7	742	69.0	2,438
Total	2,433	100.0	1,075	100.0	3,508

chi square = 0.165 $p > .05$
odds ratio = 0.968
log odds ratio = -0.032 T = -0.405

C. Unwantedness (based on mother's sex preference)

Wantedness	SES: Lower N	Lower %	Middle & Upper N	Middle & Upper %	Total
Unwanted	1,333	54.8	592	54.8	1,925
Wanted	1,100	45.2	489	45.2	1,589
Total	2,433	100.0	1,081	100.0	3,514

chi square = 0.0001 $p > .05$
odds ratio = 1.001
log odds ratio = 0.001 T = 0.013

Tests of significance indicated that unwantedness (based on mother's desired family size) was not significantly associated with SES. About the same proportions of lower class births (0.303) and middle and upper class (0.310) births were unwanted because they exceeded their mother's desired family size. Unwantedness based on the mother's sex preference was also not significantly associated to SES. The same proportions (0.548) of lower class and middle and upper class births were unwanted.

Thus, for all live births born at least five years prior to the interview, lower class births were not more likely to be unwanted than middle and upper births.

Summary

The foregoing analysis of bivariate relationships indicated the following:

1. The hypothesis that unwanted births have greater mortality risks than wanted births at the postneonatal and early childhood years was not supported.

2. The hypothesis that unwanted births are more likely to be underinvested than wanted births was also not supported.

3. The hypothesis that births which are underinvested have greater mortality risks at the postneonatal and early childhood years was supported. The odds of an underinvested birth dying at ages one to eleven months were about 3.6 times greater than those of births not subject to underinvestment. The odds of an underinvested birth dying at ages one to four years were 2.9 times greater than those of births not subject to underinvestment.

4. The hypothesis that lower class births are more likely to be underinvested than middle and upper class births was supported. The odds of a lower class birth being underinvested were 3.4 times more than the odds of a middle and upper class birth being underinvested.

5. Postneonatal mortality and SES did not show a significant association. Childhood mortality and SES showed a significant negative association. The odds of a lower class birth dying at ages one to four years were 1.6 times more than those of middle and upper class births.

6. Finally, the hypothesis that lower class births are more likely to be unwanted than middle and upper class births was not supported.

MULTIVARIATE FINDINGS

Mortality, Underinvestment, and Unwantedness

Although no significant association between unwantedness and postneonatal mortality or childhood mortality was found, underinvestment was found to have a significant association with mortality in both age ranges. To elaborate on the nature of the relationship between underinvestment and unwantedness, on the one hand, and postneonatal and childhood mortality, on the other, cross-classification of these variables are presented in Tables 5.13 and 5.14.

Tables 5.13A shows that for all births who were underinvested, 8.3 per cent of unwanted (direct question) died between the ages one month and eleven months, compared to 9.1 per cent of the wanted who died at these ages. Among births which were not underinvested, 1.7 per cent of the unwanted (direct question) and 2.7 per cent of the wanted died at ages one to eleven months. As with the bivariate analysis of unwantedness and postneonatal mortality, no significant association was found between unwantedness (direct question) and postneonatal mortality, when controlling for underinvestment.

Table 5.13. Postneonatal Mortality (M) and Unwantedness (W) by Underinvestment (I)

A. Unwantedness (direct question)

Postneonatal Mortality	Underinvested				Not underinvested				
	Unwanted		Wanted		Unwanted		Wanted		
	N	%	N	%	N	%	N	%	Total
Died at ages 1-11 mths.	2	8.3	49	9.1	4	1.7	100	2.7	155
Survived to age 1 yr.	22	91.7	490	90.9	236	98.3	3561	97.3	4309
Total	24	100.0	539	100.0	240	100.0	3661	100.0	4464

Underinvested: $L^2_{MW} = 0.02$ $p > .05$ Not underinvested: $L^2_{MW} = 1.12$ $p > .05$

Unwanted: $L^2_{MI} = 2.82$ $p > .05$ Wanted: $L^2_{MI} = 41.93$ $p < .001$

B. Unwantedness (based on mother's desired family size)

Postneonatal Mortality	Underinvested				Not underinvested				
	Unwanted		Wanted		Unwanted		Wanted		
	N	%	N	%	N	%	N	%	Total
Died at ages 1-11 mths.	13	7.3	38	9.9	37	3.1	66	2.4	154
Survived to age 1 yr.	165	92.7	347	90.1	1141	96.9	2650	97.6	4303
Total	178	100.0	385	100.0	1178	100.0	2716	100.0	4457

Underinvested: $L^2_{MW} = 1.01$ $p > .05$ Not underinvested: $L^2_{MW} = 1.56$ $p > .05$

Unwanted: $L^2_{MI} = 6.18$ $p < .05$ Wanted: $L^2_{MI} = 41.48$ $p < .001$

*L^2 = Likelihood ratio chi square

Table 5.13. Continued

C. Unwantedness (based on mother's sex preference)

Postneonatal Mortality	Underinvested				Not underinvested				
	Unwanted		Wanted		Unwanted		Wanted		
	N	%	N	%	N	%	N	%	Total
Died at ages 1-11 mths.	29	9.4	22	8.7	59	2.8	45	2.6	155
Survived to age 1 yr.	280	90.6	232	91.3	2081	97.2	1716	97.4	4309
Total	309	100.0	254	100.0	2140	100.0	1761	100.0	4464

Underinvested: $L^2_{MW} = 0.09$ $p > .05$ Not underinvested: $L^2_{MW} = 0.15$ $p > .05$

Unwanted: $L^2_{MI} = 25.67$ $p < .001$ Wanted: $L^2_{MI} = 19.30$ $p < .001$

L^2 = Likelihood ratio chi square

Table 5.14. Childhood Mortality (1-4 years) (M) and Unwantedness (W) by Underinvestment (I)

A. Unwantedness (direct question)

Childhood Mortality	Underinvested				Not underinvested				
	Unwanted		Wanted		Unwanted		Wanted		
	N	%	N	%	N	%	N	%	Total
Died at ages 1-4 years	4	25.0	31	7.7	5	3.0	89	3.0	129
Survived to age 5 yrs.	12	75.0	372	92.3	160	97.0	2841	97.0	3385
Total	16	100.0	403	100.0	165	100.0	2930	100.0	3514

Underinvested: $L^2_{MW} = 4.19$ $p < .05$

Not underinvested: $L^2_{MW} = 0.001$ $p > .05$

Unwanted: $L^2_{MI} = 8.76$ $p < .05$

Wanted: $L^2_{MI} = 17.619$ $p < .001$

B. Unwantedness (based on mother's desired family size)

Childhood Mortality	Underinvested				Not underinvested				
	Unwanted		Wanted		Unwanted		Wanted		
	N	%	N	%	N	%	N	%	Total
Died at ages 1-4 years	14	10.4	21	7.4	23	2.5	70	3.2	128
Survived to age 5 yrs.	121	89.6	263	92.6	912	97.5	2084	96.8	3380
Total	135	100.0	284	100.0	935	100.0	2154	100.0	3508

Underinvested: $L^2_{MW} = 1.02$ $p > .05$

Not underinvested: $L^2_{MW} = 1.44$ $p > .05$

Unwanted: $L^2_{MI} = 15.87$ $p < .001$

Wanted: $L^2_{MI} = 9.77$ $p < .01$

*L^2 = Likelihood ratio chi square

Table 5.14. Continued

C. Unwantedness (based on mother's sex preference)

Childhood Mortality	Underinvested				Not underinvested				
	Unwanted		Wanted		Unwanted		Wanted		
	N	%	N	%	N	%	N	%	Total
Died at ages 1-4 years	15	6.5	20	10.7	58	3.4	36	2.6	129
Survived to age 5 yrs.	217	93.5	167	89.3	1635	96.6	1366	97.4	3385
Total	232	100.0	187	100.0	1693	100.0	1402	100.0	3514

Underinvested

$L^2_{MW} = 2.40$ $p > .05$

Not underinvested

$L^2_{MW} = 1.94$ $p > .05$

Unwanted

$L^2_{MI} = 4.42$ $p < .05$

Wanted

$L^2_{MI} = 22.76$ $p < .001$

L^2 = Likelihood ratio chi square

The second indirect measure of unwantedness (based on mother's desired family size) cross-tabulated with mortality and underinvestment is presented in Table 5.13B. Of all births which were underinvested, 7.3 per cent of the unwanted births died at ages one to eleven months, compared to 9.9 per cent of the wanted. Among those births which were not underinvested, 3.1 per cent of the unwanted and 2.4 per cent of the wanted died at ages one to eleven months. Again, no significant association was found between postneonatal mortality and unwantedness, even after introducing underinvestment as a test factor.

Table 5.13C shows the cross-classification and per cent distribution of postneonatal mortality by unwantedness (based on mother's sex preference) and underinvestment. Of those births which were underinvested, 9.4 per cent of the unwanted, compared to 8.7 per cent of the wanted, died at ages one to eleven months. Among those not underinvested, about the same proportions of unwanted (0.028) and wanted (0.026) died at these ages. As with unwantedness based on the direct question and based on mother's desired family size, unwantedness based on mother's sex preference was not significantly associated with postneonatal mortality, after controlling for underinvestment.

When the analysis excluded births which occurred less than five years before the interview, the results show that for all births which were underinvested, 25.0 per cent of unwanted births died at ages one to four years, compared to 7.7 per cent of wanted births who died at these ages, as shown on Table 5.14A. Childhood mortality and unwantedness (direct question) showed a significant association. Among births that were not underinvested, an equal proportion (0.030) of unwanted and wanted births died at ages one to four years. Examination of Table 5.14B reveals that of those underinvested, 10.4 per cent of the unwanted and 7.4 per cent of the wanted died at ages one to four years. Among the births not underinvested, 2.5 per cent of the unwanted and 3.2 per cent of the wanted died at ages one to four years. No significant relationship between unwantedness and childhood mortality was found, even after controlling for underinvestment.

Table 5.14C presents the cross-tabulation and per cent distribution of childhood mortality and unwantedness (based on mother's sex preference) by underinvestment. Of all births which were underinvested, 6.5 per cent of unwanted births, compared to 10.7 per cent of wanted births died at ages one to four years. Of those births which were not underinvested, 3.4 per cent of unwanted and 2.6 per cent of wanted births died between the ages one and four years.

Again, no significant association was found between childhood mortality and unwantedness (based on mother's sex preference), after the introduction of underinvestment as a test factor.

With unwantedness (direct question) as control, inspection of Table 5.13A reveals that for all unwanted births, 8.3 per cent of underinvested births, compared to only 1.7 per cent of births not subjected to underinvestment, died at ages one to eleven months. For all wanted births, 9.1 per cent of the underinvested births, died at ages one to eleven months while only 2.7 per cent of those not underinvested did. Evidence seems to suggest that postneonatal mortality and underinvestment had a significant association.

Table 5.13B also indicated that for all unwanted births, 7.3 per cent of births not underinvested, compared to 3.1 per cent not underinvested, died at ages one to eleven months. Underinvestment and mortality had a significant association for both unwanted and wanted births. Differences of proportions show that underinvestment had a greater impact on postneonatal mortality among the wanted births than among unwanted births. Among all wanted births, the odds of an underinvested births dying at ages one to eleven months are 4.4 greater than those of births not underin-

vested. Among all unwanted births, the odds of underinvested births dying at ages one to eleven months are 2.4 more than those of births not underinvested.

Table 5.13C shows that for all births unwanted because of "wrong" sex, 9.4 per cent of these births which were underinvested, compared to 2.8 per cent of those not underinvested, died at ages one to eleven months. Among wanted births, 8.7 per cent of underinvested births died at these ages, compared to 2.6 per cent of those not underinvested. Clearly, a significant association existed between underinvestment and postneonatal mortality, for both unwanted and wanted births.

Analysis of all live births born at least five years prior to the time of interview shows that for all wanted (direct question) births, 25.0 per cent of the underinvested births died at ages one to four years, compared to only 3.0 per cent of births not underinvested, as shown on Table 5.14A. Among the wanted births, 7.7 per cent of those underinvested died at ages one to four years, compared to 3.0 per cent of births not underinvested. A significant association existed between underinvestment and childhood mortality, for both wanted and unwanted births.

Table 5.14B also suggests the same pattern of relationships as the results on Table 5.14A. For all unwanted births, 10.4 per cent of the underinvested, compared to 2.5 per cent of those not underinvested, died at ages one to four years. Of all wanted births, 7.4 per cent of underinvested births, compared to 3.2 per cent of births which were not underinvested, died at these ages. Childhood mortality and underinvestment were significantly related, even when controlling for unwantedness.

Figures in Table 5.14C suggest that for all births which were unwanted because of the "wrong" sex, 6.5 per cent of the underinvested, compared to 3.4 per cent, died at ages one to four years. Of all wanted births, 10.7 per cent of births which were not underinvested, compared to 2.6 per cent of births which were not underinvested, died at this age group. Underinvestment and childhood mortality were significantly related, for both unwanted and wanted births.

In sum, underinvestment and childhood mortality were significantly associated for both categories of unwantedness.

Mortality, Underinvestment, and Socioeconomic Status

To further elaborate on the relationship between mortality and underinvestment, the cross-classification of

1) postneonatal mortality and underinvestment by SES and 2) childhood mortality and underinvestment by SES are presented in Tables 5.15 and 5.16, respectively.

Analysis of mortality and underinvestment by SES for all live births born at least a year prior to the time of interview reveals that for all births associated with lower class households, 9.7 per cent of the underinvested births, compared to only 2.6 per cent of those births which were not underinvested, died at ages one to eleven months. Among middle and upper class births, 4.3 per cent of the underinvested births and 2.7 per cent of births not subject to underinvestment died at ages one to eleven months. Tests of significance suggested that for lower class births, a significant association existed between postneonatal mortality and underinvestment. No significant association was found between postneonatal mortality and underinvestment among middle and upper class births.

When births occurred one to four years before the interview were eliminated, childhood mortality was significantly associated with underinvestment, for both categories of SES. The figures on Table 5.16 show that of all lower class births, 8.2 per cent of births underinvested, compared to 3.4 per cent of births not underinvested, died between the

Table 5.15. Postneonatal Mortality (M) and Underinvestment (I) by SES (S)

Postneonatal Mortality	Lower				Middle and Upper				
	Underinvested		Not Underinvested		Underinvested		Not Underinvested		
	N	%	N	%	N	%	N	%	Total
Died at ages 1-11 mths	48	9.7	70	2.6	3	4.3	34	2.7	155
Survived to age 1 yr.	446	90.3	2582	97.4	66	95.7	1215	97.3	4309
Total	494	100.0	2652	100.0	69	100.0	1249	100.0	4464

Lower

$L^2_{MI} = 44.39$ $p < .001$

Middle and Upper

$L^2_{MI} = 0.55$ $p > .05$

Underinvested

$L^2_{MS} = 2.52$ $p > .05$

Not Underinvested

$L^2_{MS} = 0.02$ $p > .05$

L^2 = Likelihood ratio chi square

Table 5.16. Childhood Mortality (1-4 years) (M) and Underinvestment (I) by SES (S)

Childhood Mortality	Lower				Middle and Upper				
	Underinvested		Not Underinvested		Underinvested		Not Underinvested		
	N	%	N	%	N	%	N	%	Total
Died at ages 1-4 yrs.	30	8.2	70	3.4	5	9.3	24	2.3	129
Survived to age 5 yrs.	335	91.8	1998	96.6	49	90.7	1003	97.7	3385
Total	365	100.0	2068	100.0	54	100.0	1027	100.0	3514

Lower

$L^2_{MI} = 15.17$ $p < .001$

Middle and Upper

$L^2_{MI} = 6.02$ $p < .05$

Underinvested

$L^2_{MS} = 0.06$ $p > .05$

Not Underinvested

$L^2_{MS} = 2.67$ $p > .05$

L^2 = Likelihood ratio chi square

ages one and four years. Among middle and upper class births, 9.3 per cent of the underinvested, and 2.3 per cent of those not underinvested, died at ages one to four years. Childhood mortality and underinvestment were significantly related, for both births in lower class families and births in middle and upper class families.

What is the nature of the relationship between mortality and SES? Bivariate findings indicated no significant association between postneonatal mortality and SES.

Table 5.15 also shows that for all births subjected to underinvestment, 9.7 per cent of lower class births, compared to 4.3 per cent of middle and upper class births, died at ages one to eleven months. For births not subject to underinvestment, about the same proportions of lower (0.026) and middle and upper (0.027) class births died at ages one to eleven months. There was no significant association between postneonatal mortality and SES, even after controlling for underinvestment. The finding that postneonatal mortality and SES were not significantly associated was replicated.

Table 5.16 indicated that among all births underinvested, 8.2 per cent of births from the lower class, and 9.3 per cent of middle and upper class births, died at ages one to four years. Among births not underinvested, 3.4 per cent of

lower class births, compared to 2.3 per cent of middle and upper class births, died at these ages. When controlled for underinvestment, the significant relationship between childhood mortality and SES disappeared which denotes underinvestment as an intervening variable between childhood mortality and SES. The original relationship between childhood mortality and SES was due to the relationship between underinvestment and SES, on the one hand, and underinvestment and childhood mortality, on the other.

Summary

1. Postneonatal mortality was not statistically associated with unwantedness, even when controlling for underinvestment.

2. Childhood mortality was significantly related to unwantedness (direct question), but only among births which were underinvested.

3. For both unwanted and wanted births, postneonatal mortality and underinvestment showed a significant association. However, this was not true for unwanted births (direct question).

4. Childhood mortality and underinvestment displayed a significant association for both unwanted and wanted births.

5. Postneonatal mortality and underinvestment showed a significant association, but only among the lower class.

6. Childhood mortality and underinvestment had a significant association, for both lower class births and middle and upper class births.

7. Controlling for underinvestment, postneonatal mortality and SES did not show a significant association.

8. Controlling for underinvestment, childhood mortality and SES did not remain significantly related.

The next chapter provides the summary, conclusions, and recommendations derived from this study.

Chapter VI

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY

This study endeavored to provide empirical verification to the hypothesis that unwantedness could lead to mortality, with underinvestment as an intervening mechanism.

Unwanted fertility was defined as a live birth that deviated from parental expectations in some distinguishable characteristics or set of characteristics. Unwantedness was operationalized in three ways:

1. The respondent was asked to indicate which pregnancies she preferred to have occurred later and which pregnancies did she not want at all.

2. Birth order of the child was compared to the mother's desired family size. The child whose birth order exceeded the preferred number of offsprings was considered unwanted.

3. Respondents were asked to indicate the number of boys and the number of girls they preferred out of their desired family size. Males born after the desired number of sons was attained, or females born after the desired number of daughters was attained, were considered unwanted.

Underinvestment involved the idea that parents may not always provide maximum care for an unwanted child and that investment of time, attention, and resources in some children may be greater than for other children. To measure underinvestment, an underinvestment scale was constructed out of the following:

1. Source of prenatal care.

2. Frequency of prenatal care.

3. Age started supplementary feeding.

4. Length of breastfeeding.

5. Source of medical treatment.

6. Length of time before treatment was sought.

7. Time spent cuddling and playing with child.

Mortality was classified into two types: postneonatal and childhood mortality. Postneonatal mortality, as defined in this study, referred to deaths between the ages one to eleven months. Childhood mortality referred to deaths between the ages one to four years. The measurement of mortality was confined to these two periods since it was believed that underinvestment would have its greatest effect on mortality at these ages.

Elaboration of the nature of the relationship among the variables of interest suggested the following:

1. In general, unwantedness was not significantly related to either postneonatal or childhood mortality.

2. In general, underinvestment was significantly associated with postneonatal mortality for both wanted and unwanted births.

3. The association between childhood mortality and underinvestment was significant for both wanted and unwanted births.

4. The positive association between postneonatal mortality and underinvestment was significant, among lower class births only.

5. The positive association between childhood mortality and underinvestment was significant for both lower class births and middle and upper class births.

6. Postneonatal mortality and SES did not show a significant association.

7. Childhood mortality and SES showed a significant association, with underinvestment as an intervening mechanism.

LIMITATIONS OF THE STUDY

Before drawing any conclusive statement from the findings of the study, it is important to point out some of its limitations.

First, the study was retrospective. Like most retrospective studies, memory lapse was a factor to be considered in the measurement of the variables. The sample included women aged 15-54 who were asked to describe their pregnancy histories. Memory lapse could lead to underenumeration of live births and deaths, especially births which died at the early years of life.

Underinvestment measures asked the woman to recall behavioral practices which could have happened 20 to 40 years ago for women in the older age groups. It was also possible for respondents to report behavior which they thought was appropriate rather than behavior they actually practiced (Figa-Talamanca and Modolo, 1977). In connection with this, live births included in the analysis were born in the period from 1938 to 1980, a span of over 40 years. Mortality risk dur-

ing this period have changed, particularly for infant mortality, as shown on Table 4.1. Thus, births born prior to the improvement of the health situation were more subject to mortality risks than those born later. This was not controlled for in this study. In addition, high birth order births will be more recent births. Based on the second measure of unwantedness, most of these births will be unwanted. But because of the improved condition in mortality, these births would have better chances of survival than wanted births born at the time of low life expectancy.

Aside from the problems related to unwantedness discussed in the review of literature, there are difficulties connected with its measurement. The direct measure utilized in this study asked the woman to indicate which of her pregnancies did she prefer to occur later and which of her pregnancies she did not want at all. It was possible for guilt feelings to prevent a mother from thinking of a child, especially a dead one, as unwanted (Figa-Talamanca and Modolo, 1977). As studies on unwanted pregnancy and fertility have reiterated (Pohlman, 1969; Hass, 1974; Piers, 1978), parents' feelings of wantedness or unwantedness for a child might change over time. An unwanted child at the time of birth could become wanted later and vice versa.

The indirect measures of unwantedness involved the concepts 'desired family size', 'desired number of boys', and 'desired number of girls'. Desires change. The question of desired family size asked the woman the number of children she would want if she had to start her marriage all over again. This, too, could be problematic. The desired number of children at the start of the marriage could change after many years of marriage or after having a certain number of children.

In addition, Kiesler's (1977) idea of a post hoc justification of family size should be taken into consideration. This involves the idea that women tend to justify their own fertility and develop positive attitudes toward it, especially after having completed their family size. Moreover, because the consequences of having an additional child are important, couples tend to adjust their fertility preference and develop a rationale to accommodate what has already happened (Neal and Groat, 1980).

In the Philippines, topics like sex, contraception, and abortion are sensitive and emotion-laden topics. It is doubtful whether the average Filipino couple ever rationally decide the family size and number of boys and number of girls they want. Although further studies have to be con-

ducted on how Filipinos perceive their social world, it seems fair to assume that most Filipino couples tend to respond to events as they happen rather than deliberately causing them to happen through their own efforts (Neal and Groat, 1980). This fatalistic attitude is often expressed in the phrase "Bahala Na" which means "up to God".

Other variables related to infant and childhood mortality were not controlled for. Some of these are: birthweight, mother's education, parity order, age of mother, and availability of medical service and food. Socioeconomic status was thought to be the best measure which could control for some of the extraneous factors that would have a bearing on underinvestment and mortality. However, while the time period of interest extended from 1938 to 1980, SES was measured as SES of the households in which the mother belonged to at the time of the interview. Thus, for some births, especially first or second order births of older women, SES might have changed over time.

Finally, statistical significance does not mean practical or real-world significance. All of the significant associations found in the results are weak.

Thus with all the above mentioned limitations in mind, the interpretations of and implications derived from the findings should be viewed with caution.

CONCLUSIONS

To recapitulate, the primary purpose of this study was to provide empirical verification to the hypothesis that unwantedness could lead to mortality with underinvestment as an intervening mechanism. In other words, it is postulated that unwantedness and mortality are related because unwantedness is associated with underinvestment which is in turn related to either postneonatal mortality or childhood mortality.

The findings did not seem to support the above hypothesis. Evidence did not suggest a significant association between unwantedness and postneonatal or childhood mortality, hence, underinvestment can not serve as an intervening mechanism between them. What seems to be supported is the hypothesis that births which were underinvested have greater mortality risks in early childhood ages than births which were not underinvested. However, postneonatal mortality and underinvestment were significantly related, among lower class births only. Childhood mortality and underinvestment were significantly related for both levels of socioeconomic status. Births which were underinvested have greater mortality risks at the postneonatal and early childhood years than births which were not underinvested, regardless of whether the birth was wanted or unwanted.

Interestingly, postneonatal mortality and SES did not show a significant association. However, childhood mortality was significantly associated with SES. This tends to support the findings of Balderrama-Guzman and associates (1976) in their study of infant and childhood mortality in Manila which showed childhood mortality to be significantly associated with SES. No significant association was found between infant mortality and SES.

What are the implications of the findings? First, unwantedness as measured in this study did not seem to be an important factor in the mortality of infants and children at ages one month to four years. The hypothesis proposed by Scrimshaw (1978) was not borne out, at least for Northern Mindanao. While it is possible for the hypothesis to be true in other Philippine regions or other countries, no research to the writer's knowledge has been conducted which would substantiate Scrimshaw's (1978) hypothesis.

Bearing in mind the problems related to the definition and measurement of unwanted fertility or pregnancy, results of this study call into question the viability of the concept of "unwantedness" and hence, the testability of the hypothesis proposed by Scrimshaw (1978). However, if unwantedness were accepted as a viable concept, other fac-

tors aside from those mentioned above would confound the problem of testing the relationship among unwantedness, underinvestment, and either postneonatal mortality or childhood mortality. Factors such as the Filipino woman's perceived maternal role and religious or cultural values related to child rearing might have greater impact on the quality of life of an unwanted child than unwantedness *per se*.

Second, underinvestment has its effect on postneonatal mortality among the lower class only. The lower class has less access to education, sanitary facilities and housing, medical facilites, and food. For instance, lower class mothers would have less money to spend and seek prenatal care. And, if they indeed seek prenatal care, they probably would seek the care of the herbolario or unlicensed midwife whose services are cheaper.

In a society where the bulk of income is spent on food, supplementary feeding may be started late because less food is available for all members of the family. Special food for infants may not be available. Food distribution Filipino families seems to favor grown-ups rather than children. Income providers are given preference.

When illness strikes, lack of money for medical treatment may delay bringing the sick infant or child to the hospital or doctor. Nurturance, in terms of time spent cuddling and playing with the infant or child may be nil, because the mother is too busy working to provide more income for the family.

RECOMMENDATIONS

This research made use of survey techniques to study the nature of the relationship between unwantedness, underinvestment, and mortality in the early years of a child's life. Since underinvestment is behavioral, it is recommended that other research techniques be employed. Participant observation, coupled with in-depth interviews, is one option. Longitudinal studies are another appropriate way to study underinvestment since the life history of a child would be followed through. Moreover, longitudinal studies can capture the dynamic process related to feelings of unwantedness or wantedness (Haas, 1974).

Underinvestment or unwanted fertility may not always lead to mortality. Sometimes the effects are manifested in greater morbidity risks. Moreover, the effects of underinvestment or unwantedness are not always physical. Psychological and social effects are possible. Thus, further

studies on the physical and psychological development of underinvested or unwanted children should be investigated.

Although having the children themselves as respondents in this study was not feasible, it is recommended that other studies investigate the children's subjective interpretation of unwantedness and underinvestment, and what effects these have on their physical and emotional well-being. Fathers should also be included in the study. Underinvestment or unwantedness of a child by one parent is not necessarily true of the other. Husbands and wives do not always agree on matters regarding fertility attitudes and behavior (Coombs and Chang, 1981). In addition, siblings do sometimes compensate for what they perceived as underinvestment of parents for certain siblings. The process by which siblings compensate for parents' underinvestment is another area worthy of investigation.

Lastly, more research on the measurement of unwantedness should be carried out. As Pohlman (1969), Hass (1974), Kiesler (1977), and Neal and Groat (1980), among others, have systematically and repeatedly shown, the concept of unwanted pregnancy and fertility has started to be incorporated into fertility and mortality research. Thus, a development of an accurate measure of unwantedness would be an

important contribution to the understanding of the reciprocal relationship between fertility and mortality.

REFERENCES

Adamchak, D. J.
1979 "Emerging trends in the relationship between infant mortality and socioeconomic status." Social Biology 26: 16-29.

Adelson, L.
1963 "Homicide by starvation; the nutritional variant of the 'battered child.'" Journal of the American Medical Association 186: 458-460.

Aleta, I. R., T. L. Silva, and C. P. Eleazar
1977 A Profile of Filipino Women: Their Status and Role. Quezon City: Capitol Publishing House, Inc.

Antonovsky, A. and J. Bernstein
1977 "Social class and infant mortality." Social Science and Medicine 2: 453-470.

Aquino, C. J.
1981 The Filipino in America. Pp. 166-190 in A. L. Clark (ed.), Culture and Childrearing. Philadelphia: F. A. Davis Co.

Bader, M. B.
1976 "Breastfeeding: the role of multinational corporation in Latin America." International Journal of Health Services 6: 609-626.

Balan, J., H. L. Browning, and E. Jellin
1973 Men in Developing Society. Austin: University of Texas Press.

Balderrama-Guzman, V., G. B. Roman, and A. R. Omran
1976 "Family formation and childhood mortality-Manila." Pp. 236-245 in A. R. Omran and C. C. Standley (eds.), Family Formation Patterns and Health. Geneva: World Health Organization.

Ballweg, J. A.
1972 "Family characteristics and nutrition problems of pre-school children in Fond Parisien, Haiti." Journal of Tropical Pediatrics (Sept.): 229-243.

Ballweg, J. A. and S. S. Ward
1975 "Integer variation in family composition for the Philippines." International Journal of Sociology of the Family 5: 150-157.

Beck, M. B.
1971 "The destiny of the unwanted child: the issue of compulsory pregnancy." Pp. 59-71 in C. Reiterman (ed.), Abortion and the Unwanted Child. New York: Springer Publishing Company, Inc.

Berg, A.
1973 The Nutrition Factor. Washington, D.C.: The Brookings Institution.

Bouvier, L. F. and J. van der Tak
1976 "Infant mortality-progress and problems." Population Bulletin 31: 1-33.

Brass, W. and J. C. Barrett
1978 "Measurement problems in the analysis of linkages between fertility and child mortality." Pp. 209-233 in S. H. Preston (ed.), The Effects of Infant and Child Mortality on Fertility. New York: Academic Press.

Bulatao, R.
1977 National Survey on the Status and Roles of Women in the Philippines. Preliminary Report. University of the Philippines.

Castillo, G. T.
1977 Beyond Manila: Philippine Rural Problems in Perspective, Vol. 2. Laguna: University of the Philippines at Los Banos.

Chase, H. C.
1962 The Relationship of Certain Biologic and Socioeconomic Factors to Fetal, Infant and Early Childhood Mortality - II. Father's Occupation Infant's Birth Weight and Mother's Age. Albany: New York State Department of Health (mimeographed document).

1961 The Relationship of Certain Biologic and Socio-Economic Factors to Fetal, Infant and Early Childhood Mortality - I. Father's Occupation, Parental Age, and Infant's Birth Rank. Albany:

New York State Department of Health (mimeographed).

Cheetham, J.
1977 Unwanted Pregnancy and Counselling. London, Henley, and Boston: Routledge and Kegan Paul.

Cheetham, R. J. and E. K. Hawkins
1976 The Philippines: Priorities and Prospects for Development. Washington, D.C.: The World Bank.

Chen, L. C., E. Huq, and S. D'Souza
1981 "Sex bias in the family allocation of food and health care in rural Bangladesh." Population and Development Review 7: 55-70.

Chowdhury, A.K.M., A. R. Khan, and L. C. Chen
1978 "Experience in Pakistan and Bangladesh." Pp. 113-132 in S. H. Preston (ed.), The Effects of Infant and Child Mortality on Fertility. New York: Academic Press, Inc.

Concepcion, M. B.
1980 "The Philippines." In J. J. Clinton and J. Baker (ed.), East Asia Review 1978-79. Studies in Family Planning 11: 335-340.

1978 "Philippines." In S. M. Keeny (ed.), East Asia Review, 1976-1977. Studies in Family Planning 9: 243-245.

Coombs, L. C.
1975 Are Cross-Cultural Preference Comparisons Possible? A Measurement Theoretic Approach. International Union for the Scientific Study of Population. Paper No. 5, Liege.

Coombs, C. H. and M. C. Chang
1981 "Do husbands and wives agree? fertility attitudes and later behavior." Population and Environment 4: 109-127.

Corsa, L. and D. Oakley
1979 Population Planning. Ann Arbor: The University of Michigan Press.

Cytrych, Z., Z. Matejcek, H. P. David, and H. L. Friedman
1974 "Children born to women denied abortion: initial findings of a matched control study in

Prague, Czechoslovakia." Paper presented at the annual meeting of the Population Association of America, New York City.

David, H. P.
1972 "Unwanted pregnancies: costs and alternatives." Pp. 439-466 in C. F. Westoff and R. Parke, Jr. (eds.), Demographic and Social Aspects of Population Growth I. Washington, D.C.: Government Printing Office.

de Hamilton, G. M.
1976 "Social implications of unwanted pregnancy." Pp. 133-137 in H. E. Holtrop, R. S. Waife, W. Bustamante, and A. Rizo (eds.), New Developments in Fertility Regulation. Boston: The Pathfinder Fund.

Department of Health, Republic of the Philippines
1973 Philippine Health Statistics 1973. Manila: Disease Intelligence Center, Department of Health.

Dixon, W. J. and M. B. Brown
1979 BMDP-79: Biomedical Computer Programs P-Series. Berkeley: University of California Press.

D'Souza and L. C. Chen
1980 "Sex differentials in mortality in rural Bangladesh." Population and Development Review 6: 257-270.

Figa-Talamanca, I. and M. A. Modolo
1977 "A study of behavioral aspects of infant mortality in an Italian community." International Journal of Health Education 20: 248-258.

Forssman, H. and I. Thuwe
1966 "One hundred and twenty children born after application for therapeutic abortion refused." Acta Psychiatrica Scandinavia 42: 71-88.

Friedlander, D.
1977 "The effect of child mortality on fertility: theoretical framework of the relationship." Proceedings of the International Population Conference I. Liege, Belgium: IUSSP.

Giovannoni, J. M.
1971 "Parental mistreatment: perpetrators and victims." Journal of Marriage and the Family 33: 649-657.

Giovannoni, J. M. and R. M. Becerra
1979 Defining Child Abuse. New York: The Free Press.

Gortmaker, S. L.
1979 "Poverty and infant mortality in the United States." American Sociological Review 44: 280-297.

Guttmacher, A. F.
1967 "Unwanted pregnancy: a challenge to mental health." Mental Hygiene 51: 512-516.

Haas, P. H.
1974 "Wanted and unwanted pregnancies: a fertility decision-making model." Journal of Social Issues 30: 125-165.

Haditono, S. R.
1981 "Prevention and treatment of child abuse and neglect among children under five years of age in Indonesia." Child Abuse and Neglect 5: 97-101.

Hardin, G.
1971 "We need abortion for the children's sake." Pp. 1-6 in C. Reiterman (ed.), Abortion and the Unwanted Child. New York: Springer Publishing Company.

Harrington, J.
1971 "The effect of high infant and childhood mortality on fertility: the West African Case." Concerned Demography 3: 22-35.

Heer, D. M. and H. Y. Wu
1975 "The effect of infant and child mortality and preference for sons upon fertility and family planning behavior and attitudes in Taiwan." Pp. 253-279 in J. F. Kantner and L. McCaffrey (eds.), Population and Development in South East Asia. Massachusetts: Lexington Books.

Hunter, H. J.
1975 Health Benefits of Family Planning. Social Work Education and Population Planning Project. The University of Michigan.

Jaffe, F. S.
1971 "Toward the reduction of unwanted pregnancy." Science 174: 119-127.

Jinadu, M. K.
1980 "The role of neglect in the aeteology of protein-energy malnutrition in urban communities of Nigeria." Child Abuse and Neglect 4: 233-236.

Kessner, D. M., J. Singer, C. E. Kalk, and E. R. Schlesinger
1973 Infant Death: An Analysis by Maternal Risk and Health Care. Washington, D.C.: Institute of Medicine, National Academy of Sciences.

Kiesler, S. B.
1977 "Post hoc justification of family size." Sociometry 40: 59-67.

Knodel, J.
1978 "European populations in the past: family-level relations." Pp. 21-44 in S. H. Preston (ed.), The Effects of Infant and Child Mortality on Fertility. New York: Academic Press.

Knoke, D. and P. J. Burke
1980 Log-Linear Models. Beverly Hill: Sage Publications.

Kunstadter, P.
1978 "Child mortality and maternal parity: some policy implications." International Family Planning Perspectives and Digest 4: 75-85.

Lebensohn, Z. M.
1973 "Legal abortion as a positive mental health measure in family planning." Comprehensive Psychiatry 14: 95-98.

Loeb, J.
1965 "Weight at birth and survival of newborn, by age of mother and total birth order: United States, early 1950." Vital and Health Statistics, Series 21, Number 5.

Lowry, T. P. and A. Lowry
1970 "Abortion as a prevention for abused children." Psychiatric Opinion 8: 15-25.

Madigan F. C. (ed.)
1979 Declining Fertility: A 1977 Survey Study of Fertility Levels and of Prevalence in 20,000 Philippine Households. Cagayan de Oro: The Research Institute for Mindanao Culture, Xavier University.

1975 "Final Report." Seminar on Infant Mortality in Relation to the Level of Fertility, 6-12 May 1975. Bangkok (Thailand), Paris, Committee for International Coordination of National Research in Demography (CICRED).

1973 Birth and Death in Cagayan de Oro: Population Dynamics in a Medium-sized Philippine City. Manila: Ateneo University Press.

n.d. Average Weighted Socio-Economic Status Score for Households. (mimeographed).

Maginnis, R., E. Pivchik, and N. Smith
1967 "A social worker looks at failure to thrive." Child Welfare 46: 335-358.

Marascuillo, L. A. and M. McSweeney
1977 Nonparametric and Distribution-Free Methods for the Social Sciences. Monterey: Brooks/Cole Publishing Company.

Markides, K. S. and D. Barnes
1977 "A methodological note on the relationship between infant mortality and socioeconomic status with evidence from San Antonio, Texas." Social Biology 24: 38-44.

Meegama, S. A.
1980 Socio-Economic Determinants of Infant and Child Mortality in Sri Lanka: An Analysis of Post-War Experience. Scientific Reports No. 8. Voorburg, Netherlands: International Statistical Institute.

Mondot-Bernard, J. M.
1977 Relationships Between Fertility, Child Mortality and Nutrition in Africa. Paris: Development Centre of the Organization for Economic Co-Operation and Development.

Moors, H. G.
1974 Child Spacing and Family Size in the Netherlands. Voorburg: Netherlands Interuniversity Demographic Institute.

Morgan, D.
1975 "The place of family planning." Pp. 71-72 in F. A. White (ed.), Concerning Child Abuse. New York: Churchchill Livingstone.

Morrison, S. L., J. A. Heady, and J. N. Morris
1959 "Mortality in the postneonatal period." Archives of Diseases of Children 34: 101-114.

Neal, A. G. and H. T. Groat
1980 "Fertility decision making, unintentional births, and the social drift hypothesis: a longitudinal study." Population and Environment 3: 221-236.

Newcombe, H. B.
1965 "Environmental versus genetic interpretations of birth-order effects." Eugenics Quarterly 12: 90-101.

Nortman, D.
1974 "Parental age as a factor in pregnancy outcome and child development." Reports on Population/Family Planning, No. 16. New York: The Population Council.

Nortman, D. L. and E. Hofstatter
1980 Population and Family Planning Programs: A Compendium of Data Through 1978. New York: The Population Council.

Oliver, J. E.
1975 "Social aspects of the baby battering syndrome in relation to family planning: letter to the editor." British Journal of Psychiatry 126: 395-396.

Omran, A. R.
1979 "Family planning and health." Pp. 17-35 in M. Potts and P. Bhiwandiwala (eds.), Birth Control: An International Assessment. Lancaster, England: MTP Press Limited.

1971 The Health Theme in Family Planning. Chapel Hill: University of North Carolina Press.

Omran, A. R. and C. C. Standley (eds.)
1976 Family Formation Patterns and Health. Geneva: World Health Organization.

Piers, M. W.
1978 Infanticide. New York: W. W. Norton and Company, Inc.

Polansky, N. A. and L. Pollane
1975 "Measuring adequacy of child caring: further developments." Child Welfare 54: 354-59.

Polansky, N. A., C. Hally, and N. F. Polansky
1975 Profile of Neglect: A Survey of the State of Knowledge of Child Neglect. Washington, D.C.: Social and Rehabilitation Services, Community Services Administration.

Polansky, N. A., R. D. Borgman, and C. DeSaix
1972 Roots of Futility. London: Jossey-Bass.

1969 Mental Organization and Maternal Adequacy in Rural Appalachia. Athens, Georgia: Georgia University, School of Social Work.

Pohlman, E.
1969 The Psychology of Birth Planning. Cambridge, Mass.: Schenkman Publishing Co., Inc.

1967 "Unwanted conceptions: research on undesirable consequences." Eugenics Quarterly 14: 143-154.

1965a "Results of unwanted conceptions: some hypotheses up for adoption." Eugenics Quarterly 12: 11-18.

1965b "'Wanted' and 'unwanted': toward less ambiguous definition." Eugenics Quarterly 12: 19-27.

Population Council
1972 A Manual for Surveys of Fertility and Family Planning: Knowledge, Attitudes and Practice. New York: Population Council.

1970 "The Philippines." Country Profiles. New York: The Population Council.

Potts, M. and P. Selman
1979 Society and Fertility. Plymouth: MacDonald and Evans.

Preston, S. H. (ed.)
1978 The Effects of Infant and Child Mortality on Fertility. New York: Academic Press, Inc.

Provence, S.
1971 "Unwanted children: four case studies." Pp. 73-76 in C. Reiterman (ed.), Abortion and the Unwanted Child. New york: Springer Publishing Company.

Puffer, R. R. and C. V. Serrano
1975 Birthweight, Maternal Age, and Birth Order: Three Important Determinants in Infant Mortality. Washington, D.C.: Pan American Health Organization.

1973 Patterns of Mortality in Childhood. Washington, D.C.: Pan American Health Organization.

Reiterman, C.
1971 "Unwanted children". Pp. 115-122 in C. Reiterman (ed.), Abortion and the Unwanted Child. New York: Springer Publishing Company.

Rizo, A.
1976 "Unwanted pregnancy: a challenge to physicians." Pp. 138-142 in H. B. Holtrop, R. S. Waife, W. Bustamante, and A. Rizo (eds.), New Developments in Fertility Regulation. Boston: The Pathfinder Fund.

Rosenberg, M.
1968 The Logic of Survey Analysis. New York: Basic Books.

Rutstein, S. and V. Medica
1978 "The Latin American experience." Pp. 93-112 in S. H. Preston (ed.), The Effects of Infant and Child Mortality on Fertility. New York: Academic Press.

Schultz, T. P.
1976 "Interrelationships between mortality and fertility." In R. G. Ridker (ed.), Population and Development: The Search for Selective Interventions. Baltimore: The Johns Hopkins University Press.

Scrimshaw, S.C.M.
1978 "Infant Mortality and Behavior in the Regulation of Family Size." Population and Development Review 4: 383-403.

Shah, F. K. and H. Abbey
1971 "Effects of some factors on neonatal and post-neonatal mortality." Milbank Memorial Fund Quarterly 49: 33-57.

Singh, K. P.
1974 "Child mortality, social status, and fertility in India." Social Biology 21: 385-388.

Sjoberg, G.
1960 The Preindustrial City, Past and Present. New York: Free Press.

Soddy, K.
1964 "The unwanted child." Journal of Family Welfare 11: 39-52.

Stinner, W. F.
1979 "Modernization and family extension in the Philippines: a social demographic analysis." Journal of Marriage and the Family 41:161-168.

Stinner, W. F. and P. D. Mader
1975 "Sons, daughters or both? an analysis of family sex composition preferences in the Philippines." Demography 12: 67-79.

Stoeckel, J. and A.K.M. Chowdhury
1972 "Neonatal and postneonatal mortality in a rural area of Bangladesh." Population Studies 26:113-120.

Taylor, C. A., I. Emanuel, L. N. Morris, and R. L. Prosterman
1978 "Child nutrition and mortality in the rural Philippines: is socioeconomic status important?" Journal of Tropical Pediatrics and Environmental Health 24: 80-86.

Taylor, C., J. Newman, and N. Kelley
1976 "The child survival hypothesis." Population Studies 30: 263-278.

Ten Have, R.
1965 "A preventive approach to the problems of child abuse and neglect." Michigan Medicine 64: 645-649.

Terhune, K. W.
1975 A Review of the Actual and Expected Consequences of Family Size. Washington, D.C.: U.S. Dept. of Health, Education, and Welfare.

United Nations, Department of International Economic and Social Affairs
1979 "Philippines." Population Policy Compendium. New York: United Nations.

1978a Demographic Yearbook 1977. New York: United Nations.

1978b Statistical Yearbook 1977. New York: United Nations.

1975 Demographic Yearbook 1974. New York: United Nations.

1973 The Determinants and Consequences of Population Trends: New Summary of Findings of Interaction of Demographic, Economic and Social Affairs. New York: United Nations.

1968 Demographic Yearbook 1967. New York: United Nations.

1967 Demographic Yearbook 1966. New York: United Nations.

1961 Demographic Yearbook 1961. New York: United Nations

1957 Demographic Yearbook 1957. New York: United Nations.

Vallin, J. and A. Lery
1978 "Estimating the Increase in Fertility Consecutive to the Death of a Young Child." Pp. 69-90 in S. H. Preston (ed.), The Effects of Infant and Child Mortality on Fertility. New York: Academic Press.

Ware, H.
1977 "The relationship between infant mortality and fertility: replacement and insurance effects." Proceedings of the International Population Conference I. Liege, Belgium: IUSSP.

Watson, W., A. Rosenfield, M. Viravaidya, and K. Chanawongse
1979 "Health, population, and nutrition: interrelations, problems, and possible solutions." Pp. 145-173 in P. M. Hauser (ed.), World Population and and Development: Challenges and Prospects. Syracuse, New York: Syracuse University Press.

Westoff, C. F.
1976 "The decline of unplanned births in the United States." Science 191:38-41.

Williamson, N. E., T. H. Lean, and D. Vengadasalam
1978 Evaluation of an unsuccessful preselection clinic in Singapore. Journal of Biosocial Science (Colchester, England) 10: 375-388.

Wolfers, D. and S. Scrimshaw
1975 "Child survival and intervals between pregnancies in Guayaquil, Ecuador." Population Studies 29: 479-496.

World Fertility Survey
1979 Republic of the Philippines Fertility Survey, 1978 A Summary of Findings. Voorburg: International Statistical Institute.

Wray, J. D.
1971 Population Pressure on Families: Family Size and Child Spacing. Reports on Population/Family Planning, No. 9. New York: The Population Council.

Wyon, J. B. and J. E. Gordon
1971 The Khanna Study: Population Problems in Rural Punjab. Cambridge: Harvard University Press.

Yerushalmy, J. et. al.
1956 "Longitudinal studies of pregnancy on the island of Kauai, Territory of Hawaii - I. Analysis of previous reproductive history." American Journal of Obstetrics and Gynecology 71: 80-96.

Young, L. R.
1971 Wednesday's Children: A Study of Child Neglect and Abuse. New York: McGraw-Hill.

Yu, E. S. H.
1980 "Filipino migration and community organizations in the United States." California Sociologist 3: 76-102.

Zimmer, B. G.
1979 "Consequences of the number and spacing of pregnancies on outcome, and on spacing." Social Biology 26: 161-178.

APPENDIX A

ITEMS IN SOCIOECONOMIC STATUS SCORE FOR HOUSEHOLDS

ITEMS IN SOCIOECONOMIC STATUS SCORE FOR HOUSEHOLDS

Socioeconomic status is considered an attribute of a household. Individual households members share the status of their households. Three distinguishable socioeconomic statuses are assumed: 1) lower, 2) middle, and 3) upper. To determine the socioeconomic status category to which a household belongs, nine socioeconomic indicators (items) are used and combined into one socioeconomic status score. These indicators and the weights assigned to them are:

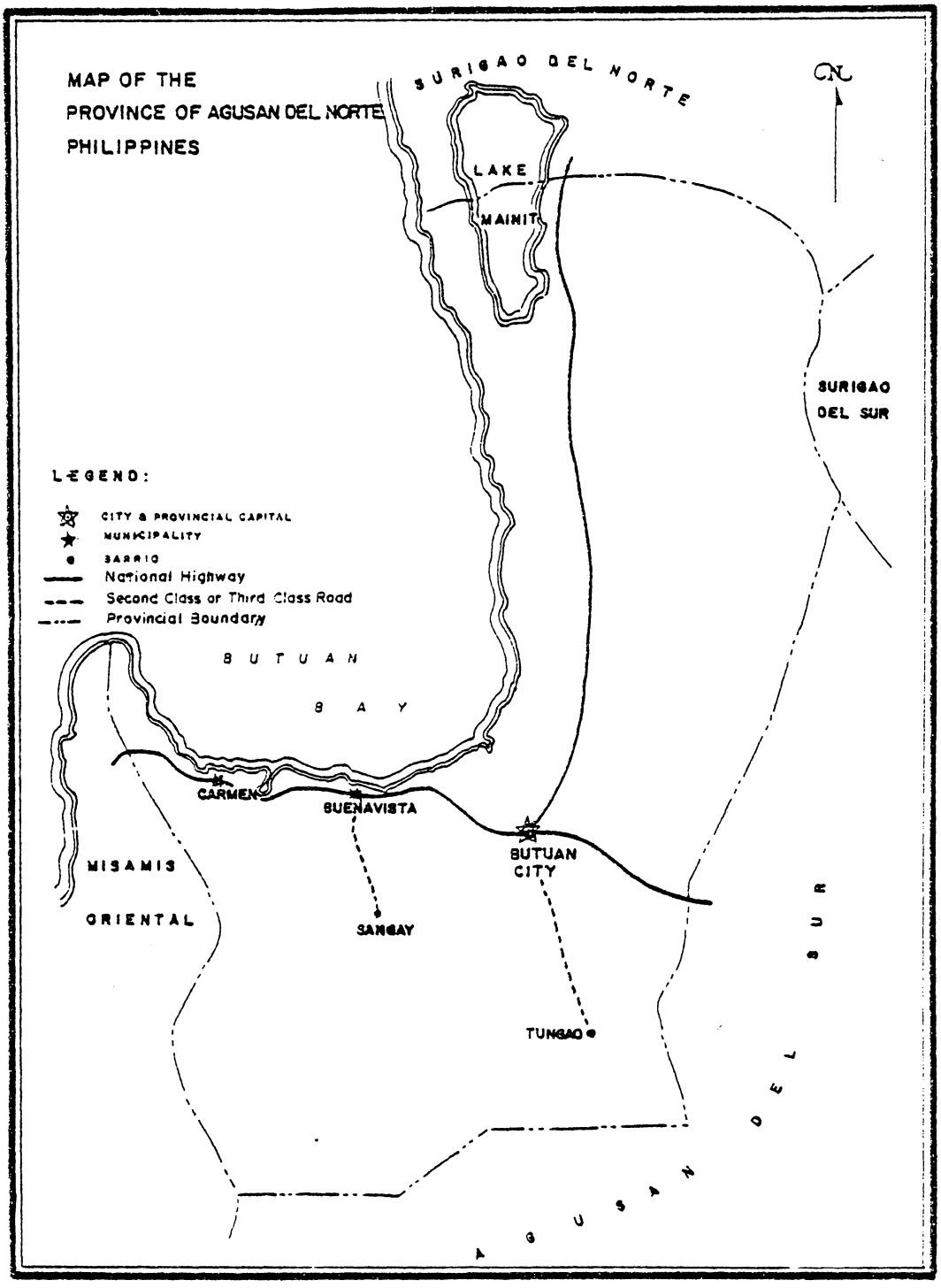
1. Occupation of household head - 7
2. Household income - 6
3. Highest grade completed by household head - 5
4. Total number of rooms in household segment of dwelling unit - 1
5. Type of toilet facility available to household - 1
6. Type of lighting used in household - 1
7. Appliances owned by household - 3

8. Predominant materials of which walls of dwelling units are constructed - 3

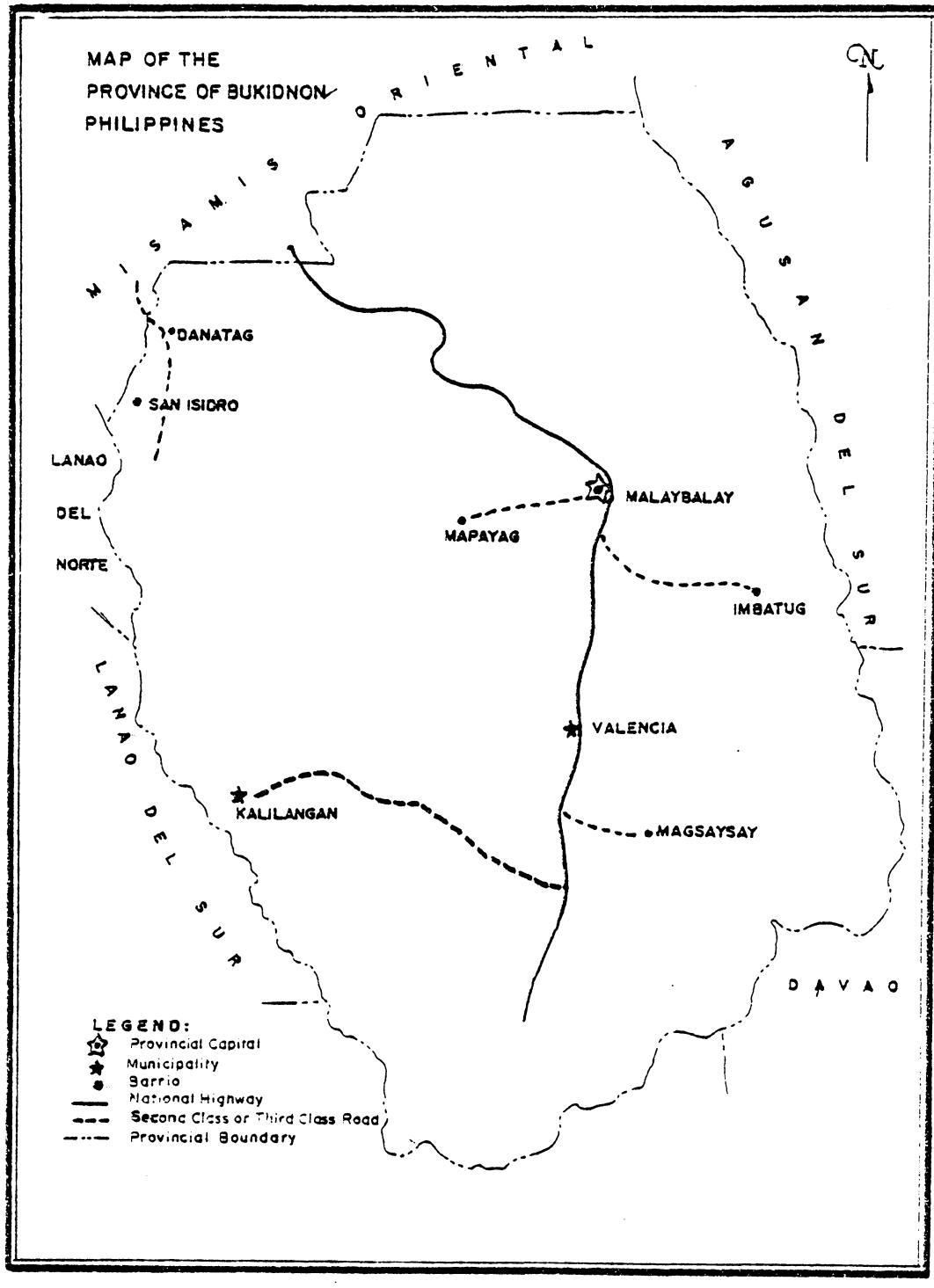
9. Predominant materials of which floors in dwelling unit are constructed - 3

APPENDIX B

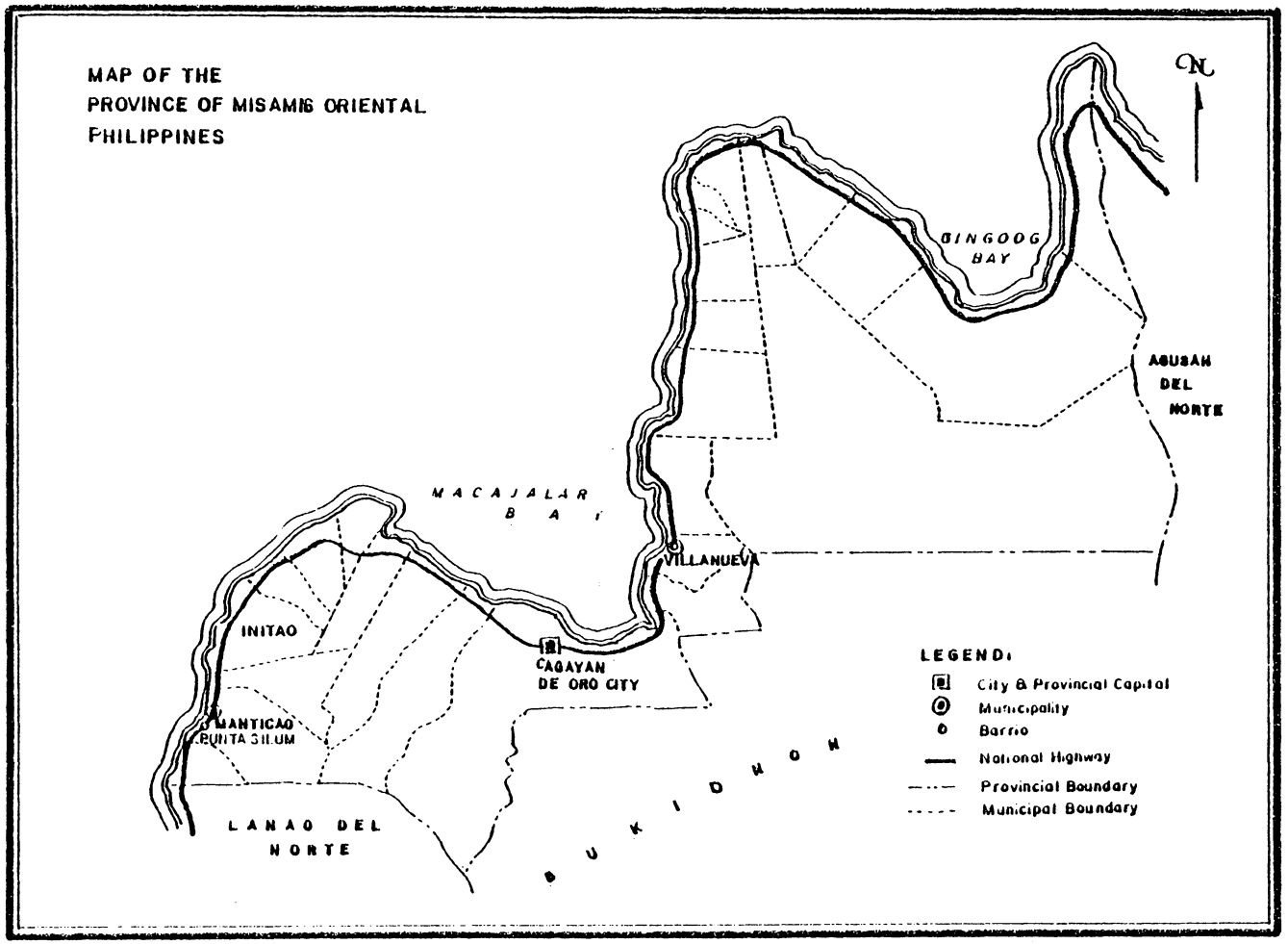
MAPS OF SAMPLE PROVINCES AND TYPES OF SURVEY AREAS



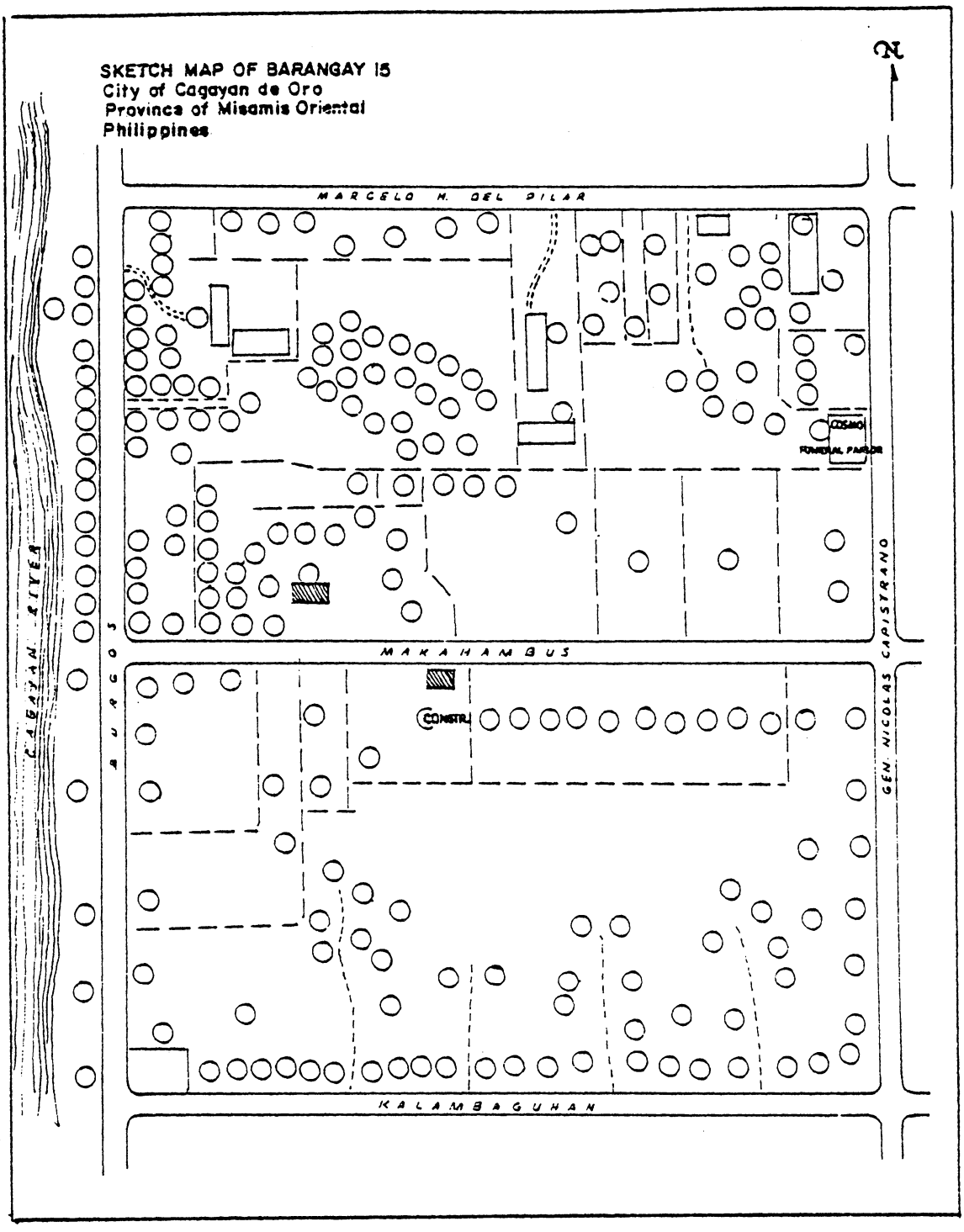
Map of the Province of Agusan Del Norte, Philippines



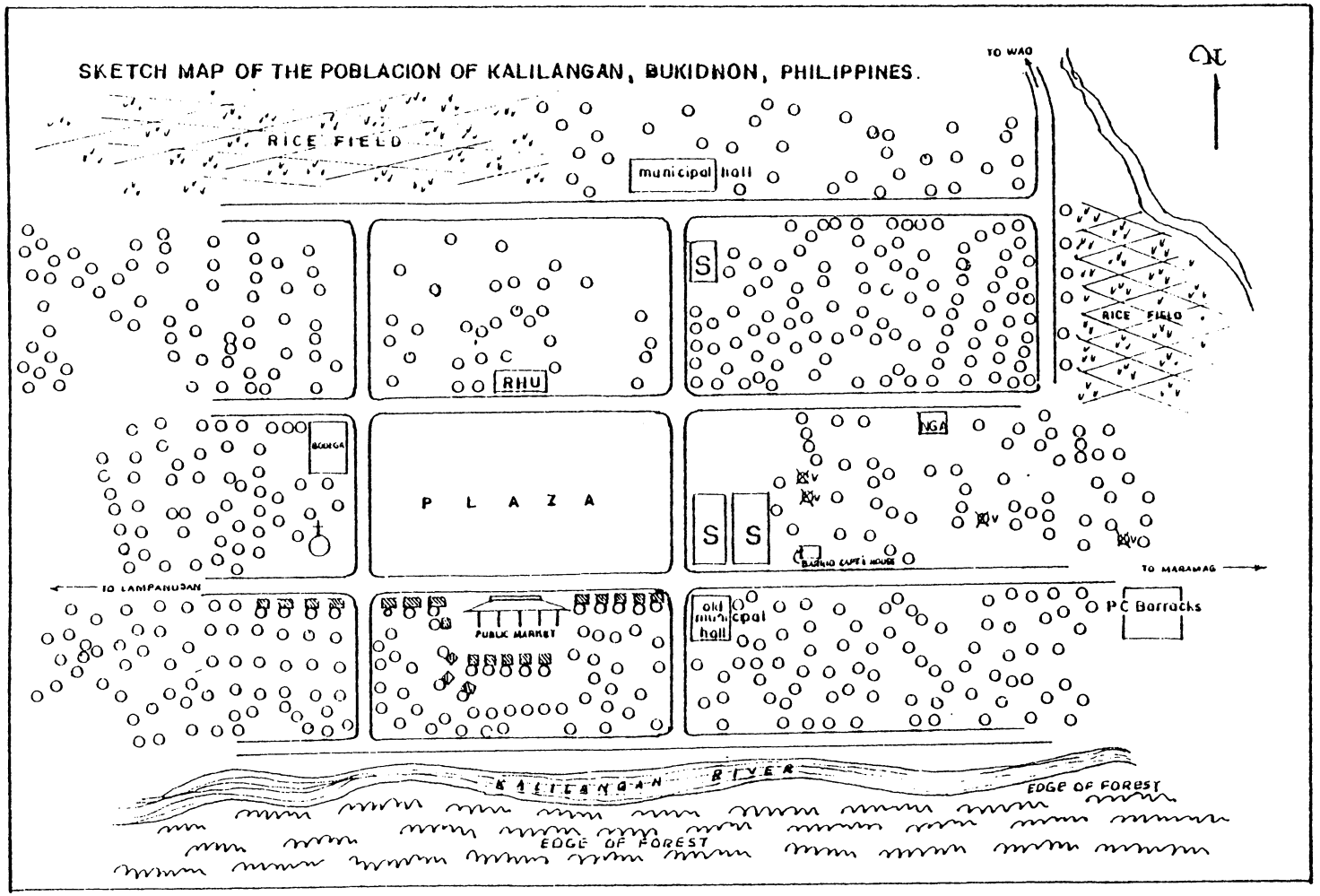
Map of the Province of Bukidnon, Philippines



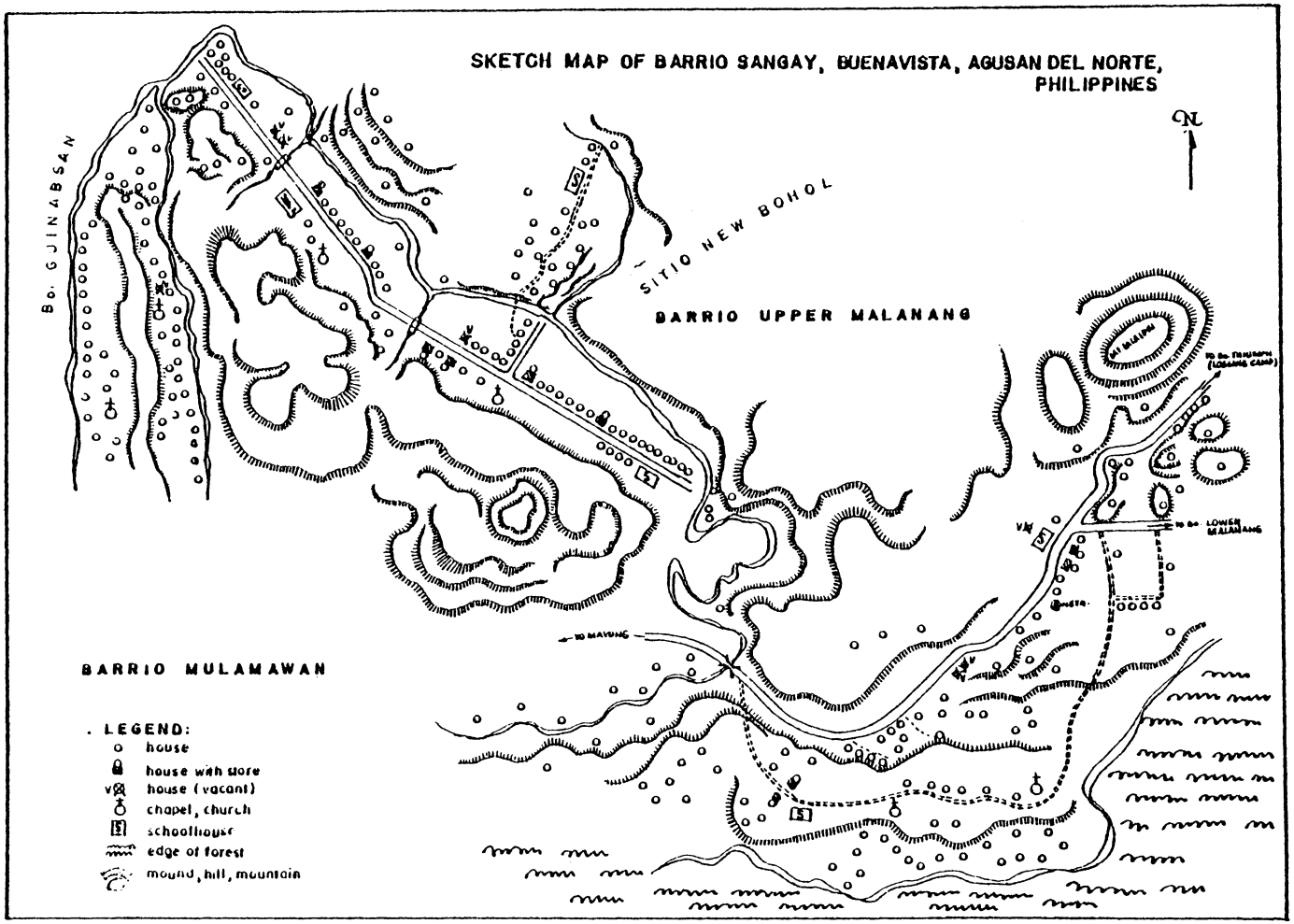
Map of the Province of Misamis Oriental, Philippines



Sketch Map of an Urban Sample Area



Sketch Map of a Semi-Urban Sample Area



Sketch Map of a Rural Sample Area

APPENDIX C

UNDERINVESTMENT SCALE ITEM SCORES

UNDERINVESTMENT SCALE ITEM SCORES

A. Source of prenatal care

1=no prenatal care
2=herbolario, relatives, friends
3=hilot, unlicensed midwife
4=midwife
5=nurse, government clinic
6=doctor, hospital, private clinic

B. Frequency of prenatal care

1=no prenatal care
2=once or twice
3= three to four times
4=five to six times
5=seven to nine times
6=ten times or more

C. Age started supplementary feeding

1=no supplementary feeding
2=twelve months or more
3=nine to eleven months
4=six to eight months
5=three to five months
6=under three months

D. Length of breastfeeding

1=not breastfed
2=three months or less
3=three to six months
4=six to twelve months
5=twelve to twenty four months
6=twenty four months or more

E. Source of medical care

1=did nothing, self medication
2=herbolario, relatives, friends
3=hilot, unlicensed midwife
4=midwife

5=nurse, government clinic
6=doctor, hospital, private clinic

F. No of days before treatment was sought

1=did not take for treatment
2=after one week
3=four to six days
4=three days
5=two days
6=one day, less than one day

G. Time spent cuddling and playing with child

1=no time
2=half an hour or less
3=up to one hour
4=up to two hours
5=up to three hours
6=three hours or more

APPENDIX D

GOODMAN'S V AS A MEASURE OF ASSOCIATION ON A 2 X 2 TABLE

Goodman's $\hat{\gamma}$ as a Measure of Association on a 2 x 2 Table

$$\text{Odds ratio } (g) = \frac{P_{11}P_{22}}{P_{12}P_{21}}$$

If the variables being studied are statistically independent, it follows that:

$$g = \frac{P_{1.}P_{.1}P_{2.}P_{.2}}{P_{1.}P_{.2}P_{2.}P_{.1}} = 1$$

Since most researchers prefer to have statistical independence associated with a measure equal to zero, consider:

$$\gamma = \log_e g$$

$$= \log_e P_{11} + \log_e P_{22} - \log_e P_{12} - \log_e P_{21}$$

where $\log_e g$ is the natural logarithm of g. This is used as an alternative measure of correlation since, when the variables are independent, $\gamma = \log_e 1 = 0$. When the correlation is positive, $\gamma > 0$, while, if the correlation is negative, $\gamma < 0$. Goodman has shown that γ can be estimated as:

$$\hat{\gamma} = (\log_e X_{11} + \log_e X_{22}) - (\log_e X_{12} + \log_e X_{21})$$

$$= \log_e \frac{X_{11}X_{22}}{X_{12}X_{21}}$$

and that its variance is given by:

$$\text{Var}(\hat{\gamma}) = \frac{1}{X_{11}} + \frac{1}{X_{22}} + \frac{1}{X_{12}} + \frac{1}{X_{21}}$$

In practice, one computes γ not in terms of logarithms to the base e, but in terms of logarithms to the base 10. With this transformation:

$$\hat{\gamma} = 2.3026 \log_{10}\hat{\gamma} = 2.3026 \log_{10} \frac{X_{11}X_{22}}{X_{12}X_{21}}$$

For large samples, $\hat{\gamma}$ tends to be $N(\gamma, \text{Var}[\hat{\gamma}])$. Thus, to test the hypothesis H_0: $\gamma = 0$ versus H_1:$\gamma > 0$ at $\alpha = .025$, one uses:

$$Z = \frac{\hat{\gamma} - 0}{\sigma_{\hat{\gamma}}}$$

as the test statistic and rejects H_0 if $Z > 1.96$. For this study the test statistic used was t since $\sigma_{\hat{\gamma}}$ was not known.

APPENDIX E

INTERVIEW SCHEDULE AND FORMS

UNDERINVESTMENT HYPOTHESIS SURVEY

BLOCK A: IDENTIFICATION

		CODE
A1	Sample Household Number in Barangay	
A2	Sample Barangay Number	
A3	Stratum	
A4	Province _____	
A5	City/Municipality _____	
A6	Barangay _____	
A7	No. of ever married women 15-54 years old	
A8	Respondent _____ (Last / First / Middle)	Line No.
A9	Complete Address _____	

A10 Call Record

Interview Calls	1	2	3
Date			
Time			
Interviewer's Name			
Result of Call			
Next Appt.: Date			
Time			
Place			

Field Edited	Reinterviewed Spot checked	Office Edited	Coded
Name: _____	Name: _____	Name: _____	Name: _____
Date: _____	Date: _____	Date: _____	Date: _____

BLOCK B: HOUSEHOLD QUESTIONNAIRE

B0. Good morning (afternoon, etc.). I am working for the Research Institute for Mindanao Culture, Xavier University. This is one of the households we have selected for this Family Life Survey. May I speak to the lady of the house?

B1. I would like to ask first a few questions about the people who live here with you in this household. How many persons live in this household with you?

(ENTER NUMBER AS GIVEN) _____

B2. Are there any of the people living here with you in this household who are temporarily absent?

(ENTER NUMBER AS GIVEN) _____

B3. Would you tell me the full names of all the people living here, including those temporarily absent, and how they are related to the head of the household? Let us start with the head of the household: what is his or her name?

(ENTER NAMES IN COLUMN 2 OF THE HOUSEHOLD RECORD FORM IN THE ORDER GIVEN BY RSP.)

B4. What is your/his or her relationship to the household head?

(ENTER RELATIONSHIP TO HOUSEHOLD HEAD IN COLUMN 3 OF HRF)

(WE WANT TO BE SURE THAT ALL MEMBERS OF THE HOUSEHOLD ARE INCLUDED IN THE HOUSEHOLD LIST. SOME HOUSEHOLD MEMBERS MAY BE TEMPORARILY ABSENT. TO OBTAIN INFORMATION ON THEM, ASK:)

B5. Have we missed anyone? I would now like to read the names of all persons living in this household (including those who are temporarily absent).

(READ LIST FROM HRF)

(OBTAIN INFORMATION ON B6-B10 FOR EACH USUAL RESIDENT LISTED AND ENTER IN THE APPROPRIATE COLUMN OF THE HRF)

(IF NOT OBVIOUS FROM THE FIRST NAME OR FAMILY RELATIONSHIP, ASK:)

B6. Is this person male or female?

(CHECK APPROPRIATE COLUMN IN HRF)

B7. What was the date of your/his or her birth?

(ENTER IN COLUMN 5, THEN ASK FOR EACH USUAL RESIDENT LISTED)
(IF RSP CANNOT GIVE DATE OF BIRTH, ASK B8)

B8. Can you tell me how old he (she) was on his (her) last birthday?

(ENTER NUMBER IN COMPLETED YEARS IN COLUMN 6 OF HRF)
(GO TO B10)

(IF RSP CANNOT GIVE EXACT AGE, ASK: B9;)

B9. Can you tell me about how old he (she) is?

B10. What is your present marital status?

(ENTER IN COLUMN 7 OF HRF)

(GO TO BLOCK C)

BLOCK C: OCCUPATION AND EDUCATION OF HOUSEHOLD HEAD AND HOUSING CHARACTERISTICS

C1. Is (houshold head) working at present?
1___Yes ...GO TO C3
2___No ...CONTINUE

C2. Has (household head) ever worked since January 1, 1975?
1___Yes ...CONTINUE
2___No ...GO TO C4

C3. Would you please describe what he does (did) in his main work (employment) activity? For example, if a farmer, how large (ha.) is (was) his farm and is (was) he an owner, part-owner, tenant, or agricultural laborer? If he is (was) working in a business, what kind of work or job does (did) he do?

WRITE BELOW THE IMPORTANT DETAILS AS YOU UNDERSTAND THEM AND THEN TRY TO SUMMARIZE INTO AN ACCURATE BRIEF DESCRIPTION OF HIS OCCUPATION (E.G., tenant farmer on 2 ha.; semi-skilled machine sawyer, logging company; salesman; covers four provinces in panel truck; young doctor; intern in provincial hospital, etc.

(DETAILS OF HIS MAIN OCCUPATION) _____

C4. Has (name) ever attended school?
1___Yes
2___No

(IF YES) What was the highest grade or year of school he has completed?
_____
Highest grade or year

C5. Excluding the bathroom and toilet, how many rooms do you have in this house?
_____exact number

C6. Do you have a private toilet?
0___None
1___Yes, outside house
2___Yes, inside house

C7. Do you own any of the following appliances?

(READ OUT LIST AND CHECK ITEMS NAMED BY RSP)

0___None
1___Radio
2___Electric iron
3___Electric fan
4___Stereo/tape recorder/cassette
5___Refrigerator
6___Television
7___Air conditioner

(FOR C8 AND C9 DO NOT ASK UNLESS NECESSARY BUT WRITE DOWN YOUR OWN OBSERVATIONS. IF MORE THAN ONE, CHECK THE MATERIAL WHICH PREDOMINATES. IN HOUSE WHERE DIFFERENT MATERIALS ARE USED IN EQUAL QUANTITIES, CHECK THE BETTER MATERIAL.)

C8. What is the material of which the walls of the house are made?

1___Scrap materials
2___Nipa, other thatch
3___Sawali, Bamboo
4___Rough-hewn timber and/or poorly-fitted planks
5___Painted and/or well-fitted boards
6___Hollow blocks, cement, other expensive materials
7___OTHER (SPECIFY)_____

C9. What is the material of which the floors are made?

1___Linoleum, tiles
2___Wood
3___Cement
4___Bamboo
5___Earth
6___OTHERS (SPECIFY)_____

C10. Approximately what is your total monthly family income in cash? Please include contributions and payments from members of the family and income from other sources like investment on land.

0___ 001 - 249
1___ 250 - 499
2___ 500 - 749
3___ 750 - 999
4___1000 - 1249
5___1250 - 1499
6___1500 - 1999
7___2000 and over

C11. Have you ever attended school?

1___Yes
2___No ...(GO TO C13)

C12. (IF YES) What was the highest grade or year of school you have completed? _____
(highest grade)

C13. Did you work at any time after you were first married?

___ YES (CONTINUE)

___ NO (GO TO BLOCK D)

C14. How many years did you work from the time of your first marriage to the present?

_____
Exact number

C15. Are you presently doing something to earn money?

1___Yes, at home
2___Yes, away from home
3___Yes, both at home and away from home (CONTINUE)
4___No ... (GO TO BLOCK D)

C16. Would you please describe what you do in your main work (employment activity)? For example, if a factory worker, what kind of work do you do and what kind of factory is it? (E.G., packer in a candy factory or cigarette roller in a cigarette factory). If an office employee, what is your specific work (e.g., filing clerk, receptionist, telephone operator, etc.)? If you are in business, what kind of work do you do (e.g., proprietor of a gasoline station, owner of a sari-sari store, etc.)?

(DETAILS OF MAIN OCCUPATION)_____

_____

_____

(GO THROUGH HRF AND CHECK OFF ALL EVER MARRIED WOMEN 15-54 YEARS. THESE ARE THE WOMEN ELIGIBLE FOR INCLUSION IN THE INTERVIEW. CHECK OFF COLUMN 8 OF HRF FOR THESE WOMEN. IF HOUSEHOLD DOES NOT HAVE WOMEN ELIGIBLE FOR INTERVIEW. TERMINATE INTERVIEW).

BLOCK D: PREGNANCY HISTORY

(ASK FOR ALL EVER MARRIED WOMEN AGED 15-54)

ASCERTAIN FROM HOUSEHOLD RECORD FORM WHETHER OR NOT RSP HAS ANY CHILDREN. IF THERE ARE ANY LISTED PROCEED TO D25. IF NONE, ASK D24.

D1. Have you ever been pregnant?

1___	Yes, with terminated pregnancy	(CONTINUE)
2___	No, but currently pregnant for the first time	(GO TO BLOCK F)
3___	No, never	(TERMINATE INTERVIEW)

(ASK D2 TO D13 ON CHILDREN STILL LIVING)

CHILDREN STILL LIVING

D2 First we want to ask some questions about your living children. How many of your children are now alive? Please count all of those born to you who are alive (including any born before the present marriage and between marriages) whether they are living with you or not.

_____LIVING CHILDREN

(IF NUMBER IS ZERO, GO TO D14)
(FOR EACH LIVING CHILD, ASK D3-D13 AND RECORD RESPONSE IN PREGNANCY RECORD)

D3. Please name for me each of your children who are now living at the present time. Please start with your eldest and go in consecutive order to the youngest.

(IF SEX IS NOT OBVIOUS TO INTERVIEWER, ASK:)

D4. Is this child a boy or a girl?

D5. When was he (she) born?

(OBTAIN DATE OF BIRTH)

D6. How old is he (she)?

D7. Do you happen to know how much he (she) weighed at birth?

YES___ (CONTINUE) NO___ (GO TO D9)

D8. How much? _____ lbs. (GO TO D12)

(IF CANNOT REMEMBER WEIGHT, ASK D9)

D9. Was the baby of average weight, less than average weight or more than average?

1___average weight (GO TO D12)
2___less than average weight (GO TO D10)
3___more than average weight (GO TO D11)

D10. Was it very small?

YES___ (GO TO D12) NO___ (GO TO D12)

D11. Was it very large?

YES___ (CONTINUE) NO___ (CONTINUE)

D12. Is he (she) living with you here now?

YES___ NO___

D13. Now, you have given me the information on all your children who are either living with you here or living somewhere else. I see there are _____ of them. Is that right? Have we left out any who are living here or elsewhere?

(IF NUMBER OF CHILDREN LISTED IN THE PREGNANCY RECORD IS NOT CORRECT, CHECK LIST WITH RSP AND ANY CHILDREN WHO WERE OMITTED)

(ASK D14 TO D27 ON DECEASED CHILDREN)

DECEASED CHILDREN

D14. Now we want to ask some questions about your children who were born alive, but who are deceased. Any child who gave even one sign of life during or after delivery like a cry was born alive even if it died right awa. Have you had any other children who were born alive but who are now dead? Please include any infant deaths.

YES____ (CONTINUE) NO____ (GO TO D28)

D15. How many children were born alive but are now dead?

_____Dead children

(ASK D16-D17 FOR EACH CHILD WHO HAS DIED. ENTER INFORMATION IN PREGNANCY RECORD, PUTTING IN PROPER ORDER WITH LIVING CHILDREN)

D16. Now I would like to ask about your children who have now died. In what month and year was he/she born?

(RECORD NAME IN PROPER ORDER WITH LIVING CHILDREN. IF ELDEST CHILD IS DECEASED, CHECK AGAINST DATE OF BIRTH OF RSP)

D16a. What was his/her name?

(ENTER INFORMATION IN THE APPROPRIATE COLUMN)

D17. Do you happen to know how much the baby weighed at birth?

YES____ (CONTINUE) NO____ (GO TO D19)

D18. How much did he/she weigh? _____ lbs

(IF CANNOT REMEMBER WEIGHT, ASK D19)

D19. Was the baby of average, less than average, or more than average weight?

1____average weight (GO TO D22)
2____less than average (GO TO D20)
3____more than average (GO TO D21)

D20. Was it very small?

YES____ NO____

(GO TO D22) (GO TO D22)

D21. Was it very large?

YES____ NO____

(CONTINUE) (CONTINUE)

D22. Was it a boy or a girl?

D23. When did he/she die? (OBTAIN DATE OF DEATH)

D24. How old was he/she when he/she died?

(ENTER AGE AT DEATH IN COMPLETED YEARS)

(IF AGE AT DEATH IS NOT SPECIFIED, ASK:)

D25. Was he/she less than a month, less than a year but more than a month, between one and 4 years old, or more than 5 years old?

____less than a month
____less than a year but more than a month
____between 1-4 years old
____5 years or more

(CHECK APPROPRIATE COLUMN OF PREGNANCY RECORD FORM)

D26. What was the cause of _____(child's) death?

_____

_____

D27. Now, have we forgotten to include any deceased children who were born alive but who did not live very long?

(ADD TO THE PREGNANCY RECORD ANY DECEASED CHILDREN THAT WERE FORGOTTEN)

(ASK D28 - D31 ON FETAL LOSS)

FETAL LOSS

D28. Now, we want to ask about any pregnancies you had, in which the child was not born alive because of miscarriage, stillbirth or abortion. Please tell me, have you had any pregnancies that did not result for any reason in a live birth?

YES____ NO____

(CONTINUE) (GO TO D32)

D29. How many such pregnancies have there been?

_____pregnancies not ending in live birth

(FOR EACH OF THESE PREGNANCIES ASK D30-D31 AND ENTER IN PROPER ORDER IN PREGNANCY RECORD)

D30. When did the first (second, etc.) occur? In what month and year?

(CHECK AGAINST DATE OF BIRTH OF RESPONDENT)

D31. Was it before your first, (second, etc.) live birth?

(ENTER INFORMATION IN PREGNANCY RECORD IN THE PROPER SEQUENCE OF OCCURRENCE)

D32. Between the time of your marriage and the present, did you and your husband practice family planning or do anything that would reduce the chance of your becoming pregnant?

YES____ NO____

(CONTINUE) (GO TO D54)

D33. When did you begin to practice family planning?

_____Month _____Year

D34. What did you or your husband do?

_____ (GO TO D38)
Contraceptive Method

(IF INTERVAL BETWEEN ANY TWO PREGNANCIES IS MORE THAN 2 YEARS, AND RSP DID NOT PRACTICE FAMILY PLANNING, PROBE AS FOLLOWS:)

D35. I noticed that the time between _____ and _____ (IDENTIFY PREGNANCY INTERVAL) is rather long. Could it be there was another pregnancy between those that I have not written down yet?

YES____ NO____

(IF YES, CORRECT PREGNANCY RECORD IF NECESSARY. ENTER OMISSIONS IN RECORD. GO TO D38)

(GO TO D36)

D36. Was there any periods between those 2 pregnancies (IDENTIFY PREGNANCY INTERVAL) during which you and your husban were separated for any reason?

YES____ NO____

(CONTINUE)

(GO TO D38)

D37. How many months did that last? _____

D38. Now let me be sure I have everything right. You have _____ children who are still living.

_____who have died, and
_____pregnancies that did not result in live birth. In all you have had
_____pregnancies (total)

Is that correct?

(EXCLUDE PRESENT PREGNANCY)

YES____ NO____

(CONTINUE)

(REVIEW PREGNANCY RECORD AND MAKE NECESSARY CORRECTIONS)

(IF RSP IS WIDOWED OR SEPARATED, GO TO BLOCK E)

D39. Are you expecting a baby now?

1____Yes (CONTINUE)
2____No (GO TO D41)
9____N.A. Menopause (GO TO NEXT BLOCK)

D40. In what month of pregnancy are you? _____

D41. What about now. Are you currently practicing family planning?

YES____ (CONTINUE) NO____ (GO TO NEXT BLOCK)

D42. What method? _____

(GO TO NEXT BLOCK)

BLOCK E: UNDERINVESTMENT

NUTRITION AND HEALTH CARE OF MOTHER

(FOR EACH LIVE BIRTH, ASK E1 - E2)

E1. While you were pregnant with _____(child) did you seek prenatal care from any of the following:

0____None
1____doctor
2____nurse
3____licensed midwife
4____herbolario o tambalan
5____mananabang o hilot (unlicensed midwife)
6____hospital
7____private clinic
8____government clinic
9____relatives and/or friends
10____others (SPECIFY) _____

E2. How many times did you go to _____(answer to E1) while you were pregnant with _____(child)?

_____No. of times

(PROBE: ASK FOR EACH TRIMESTER)

1-3 months _____
No. of times

4-6 months _____
No. of times

7-9 months _____
No. of times

E3. Do you think there are things which are harmful to do during pregnancy?

YES____ (CONTINUE) NO____ (GO TO E5)

E4. Please name these things.

1. _____
2. _____
3. _____

BREASTFEEDING

(FOR EACH LIVE BIRTH ASK E5-12)

E5. Did you breastfeed _____(child)?

YES____ NO____

(CONTINUE) (GO TO E10)

E6. While you were breastfeeding _____(child), did you start feeding him/her other food such as porridge, soup or fruit juice?

YES____ NO____

(CONTINUE) (GO TO E8)

E7. When did you start feeding him/her these other foods?

_____No. of months

E8. At what age did you wean _____(child)?

E9. Why did you wean _____(child)?

1____you were ill
2____you needed to work
3____child refused to suck
4____child was ill
5____child was too old
6____you were pregnant
7____other reasons (SPECIFY)

(GO TO E12)

E10. Why did you not breastfeed _____(child)?

VERBATIM: _____

_____

E11. What did you give him/her instead?_____(CONTINUE)

E12. At what age did _____(child) first eat from the family pot?

_____No. of months

NUTRITION

E13. When your children were small whom would you serve meat or fish first if you had any?

(IF 'NONE' OR 'EQUAL', PROBE AND WRITE RSP'S EXPLANATION)

VERBATIM: _____

_____

_____

E14. What about milk: Of your children whom would you serve first?

(IF 'NONE' OR 'EQUAL', PROBE AND WRITE RSP'S EXPLANATION)

VERBATIM: _____

_____

_____

E15. If you had any special food like lechon, cake, salad, ice cream, and others, whom of your children would you serve first?

(IF 'NONE' OR 'EQUAL', PROBE AND WRITE RSP'S EXPLANATION)

VERBATIM: _____

_____

_____

E16. In general, who would get these foods first - the youngest child or the oldest?

youngest _____
oldest _____

E17. Who would get these foods first your sons or your daughters?

sons _____
daughters _____

E18. Is it sometimes difficult for you to provide good food for your family?

YES____ NO____

(CONTINUE) (GO TO E20)

E19. How often is it difficult?

_____No. of times/month

E20. Do you think breastfeeding, bottle feeding or a combination of both is the best type of nutrition for an infant?

1____breastfeeding
2____bottle feeding
3____combination

E21. Why is that the best type of nutrition for an infant?

VERBATIM: _____

_____

_____

HEALTH

E22. Now I would like to talk with you about the health of your family. Would you please rank all your children, including those who are away or now dead, in terms of their health before they were 5 years old?

(OBTAIN RANKING OF LIVE BIRTHS IN TERMS OF HEALTH. NUMBER LIVE BIRTHS AS RANKED. INDICATE LIVE BIRTHS CONSIDERED LEAST HEALTHY)

E23. Besides minor colds and minor illnesses, was there any of your children who was seriously ill before he/she was 5 years old?

YES____ NO____

(CONTINUE) (GO TO E28)

E24. Who was this?

_____
NAME OF CHILD

E25. How many times did _____(child) become seriously ill before he/she was 5 years old?

_____Number of times

E26. Exactly what was the most serious illness that _____(child) had before he/she was 5 years old?

1. _____
2. _____

E27. Usually how long does he/she get seriously sick?

_____No. of days

(FOR EACH LIVE BIRTH, ASK E28-E32)

E28. Before _____(child) was five years old, when you noticed that he/she was not feeling well, do you try to medicate him/her yourself?

YES____	NO____
(CONTINUE)	(GO TO E30)

E29. When you noticed that his/her condition did not improve, what do you usually do?

0	continue self-medication	(GO TO E32)
1	doctor	
2	nurse	
3	midwife	
4	herbolario	
5	hilot	(GO TO E31)
6	hospital	
7	private clinic	
8	government clinic	
9	relatives and friends	
10	others (SPECIFY)	

E30. What do you usually do?

1___doctor
2___nurse
3___midwife
4___herbolario
5___hilot
6___hospital
7___private clinic
8___government clinic
9___relatives and friends
10___others (SPECIFY)

(GO TO E32)

E31. How long would it be before you would take _____(child) to _____(answer in E29)? _____(No. of days)

E32. Why did you choose _____(answer in E29 or E30)?

VERBATIM: _____

_____

_____

KNOWLEDGE OF AVAILABLE HEALTH SERVICES

E33. I'd like to ask you about the services available to people in this community. Please tell ne the types of services which are available to you. (CHECK AS MANY AS MENTIONED)

1___doctor
2___nurse
3___hilot
4___licensed midwife
5___herbolario
6___hospital
7___private clinic
8___government clinic
9___other (SPECIFY) _____

E34. Would you please rank order these services you just mentioned in terms of their accessibility and availability to you.

1____doctor
2____nurse
3____hilot
4____midwife
5____herbolario
6____hospital
7____private clinic
8____government clinic
9____other (SPECIFY) _____

NURTURANCE AND PUNISHMENT

E35. Before _____(child) was one year old, did you have time for cuddling and playing with him/her?

YES____ (CONTINUE) NO____ (GO TO E37)

E36. About how many minutes a day did you spend with him/her?

_____Minutes

(IF RSP CANNOT GIVE EXACT AMOUNT OF TIME, PROBE AND RECORD RSP'S ANSWER)

VERBATIM: _____

_____

(GO THROUGH ANSWERS TO E36. IF TIME SPENT FOR EACH CHILD IS EQUAL, ASK E38. OTHERWISE, ASK E39-42)

E37. Why didn't you have time for cuddling and playing with _____ (child)?

(GO TO E43)

E38. Do you think you spend too little time, too much or about the right amount of time with _____(child)?

1____too little
2____too much
3____right amount

(GO TO E43)

(ASK E39-E40 FOR CHILD/CHILDREN WHOM MOTHER SPENT MOST/ MORE TIME WITH)

E39. You spent more time playing with and cuddling _____(child) than you did with the rest of your children, why was that?

VERBATIM: _____

_____

(CONTINUE)

E40. Do you think you spend too little time, too much or about the right amount of time with _____(child)?

1____too little
2____too much
3____right amount

(CONTINUE)

E41. You spent less time playing with and cuddling _____(child) than you did with the rest of your children. Why was that?

VERBATIM: _____

_____

E42. Do you think you spend too little time, too much or about the right amount of time with _____(child)?

1____too little
2____too much
3____right amount

(CONTINUE)

E43. Does your husband have time for playing with and cuddling your children?

YES____ NO____

(CONTINUE) (GO TO E45)

E44. What about your husband. Do you think he spends too little time, too much, or about the right amount of time with your children?

1____too little
2____too much
3____right amount

E45. Does your husband ever help you take care of your child?

YES____ (CONTINUE) NO____ (GO TO E47)

E46. Please describe how he helps you.

VERBATIM: _____

_____

(FOR EACH LIVE BIRTH, ASK E47-E49)

E47. Has anyone ever helped you take care of _____(child), such as your parents, other relatives, neighbors, servants, other children?

YES____ (IF YES, ASK:) NO____ (GO TO E50)

E48. Who was helping you take care of _____(child)?

1____RSP's parents/parents-in-law
2____other relatives
3____neighbors
4____servants
5____other children
6____other (SPECIFY) _____

E49. For how long did you have help taking care of _____(child)?

_____
No. of months

E50. When your children were five to ten years old, whom do you usually but clothes, shoes, school things and playthings for?

_____
NAME OF CHILD

(GO TO E51)

(IF NONE OR 'EQUAL', PROBE AND RECORD RSP'S ANSWER)

VERBATIM: _____

_____

_____

E51. Why is that?

VERBATIM: _____

_____

_____

(FOR RSP WITH CHILDREN AGES LESS THAN 5 YEARS OLD, GO TO E54)

E52. Of your children, whom do you usually help with his/her school assignments or teach even before the child has gone to school?

_____
NAME OF CHILD

(IF 'NONE' OR 'EQUAL', PROBE AND RECORD RSP'S ANSWER)

VERBATIM: _____

_____

_____

E53. Why is that?

VERBATIM: _____

_____

_____

(FOR EACH LIVE BIRTH, ASK E54-E55:)

E54. Parents describe their children in different ways. I'd like you to give each of your children a score from 0-100 on the following traits. For instance, if you think _____ is very bad, give him/her a score of "0". If you think he/she is very good, give him/her a score of "100". Each of your children will have a score. You can give him/her a score between 0-100. Now how would you describe _____(child)?

(ENTER SCORE FOR THE FOLLOWING CHARACTERISTICS) Good_____

Intelligent_____

E55. If you had your way, what academic course would you like _____ (child) to take?

(IF RSP CANNOT ANSWER, PROBE AND RECORD RSP'S ANSWER)

VERBATIM: _____

_____

_____

(FOR CHILDREN AGED 7 YEARS OR OLDER, ASK E56-57)

E56. Has _____(child) ever attended school?

YES____ NO____

(GO TO E58)

E57. What is the highest grade completed by him/her?

_____
HIGHEST GRADE COMPLETED

E58. When your children were 5 to 10 years old, who among them answers you back when reprimanded?

(NUMBER OR RANK LIVE BIRTHS AS INDICATED. IF 'NONE', PROBE AND RECORD RSP'S ANSWER)

VERBATIM: _____

_____

_____

E59. How often does _____(child) answer back - almost always, sometimes, or rarely?

1____almost always
2____sometimes
3____rarely

E60. If _____(child) answers back, what do you usually do?

VERBATIM: _____

_____

_____

E61. After punishing _____(child), have you ever thought that you've punished him/her more harshly than you should have?

YES____ NO____

(IF YES, ASK:) (GO TO E63)

E62. How often does this occur?

1____many times
2____sometimes
3____rarely

E63. Do you think that parents explain a rule or should they punish their children if they disobey?

try to explain ____ (GO TO E67)
punish them if they disobey _____ (GO TO E67)
both ____ (GO TO E64)
don't know/not sure _____ (GO TO E65)
depends ____ (GO TO E66)

E64. Which one is more important to you? _____

E65. What do you usually do? _____

E66. Please explain. _____

E67. It is sometimes said that certain children are born to be bad, and parents cannot do much to change them. Do you think that there are children born to be bad?

YES____ DON'T KNOW____ NO____

(IF YES, ASK:) (IF DON'T KNOW, ASK:) (GO TO E70)

E68. Do you wonder whether any of your children have been born to be bad?

YES____ NO____

(IF YES, ASK:) (GO TO E70)

E69. Which ones? _____

_____

(CHECK LIVE BIRTH INDICATED)

E70. I'd like you to give yourself a score from 0-100 on the following traits. For instance, if you think you're totally not loving in relation to your children, give yourself a score of "0". If you think you're totally loving with your children, give yourself a score of 100. Of course, you can give yourself a score between 0-100 if you're somewhere in between. Now, how would you describe yourself in relation to your children?

	SCORE
loving	_____
generous	_____

E71. From a score of 0-100, how satisfied are you with the number of children you have? If you're totally satisfied with the number of children you have, give yourself a score of 100. If you're totally dissatisfied, give yourself a zero score.

Score _____

E72. How satisfied are you with the kind of parent you are?

Score _____

E73. In regard to the kind of parent you are, if you had to do it all over, what changes would you make?

VERBATIM: _____

_____

_____

E74. Will you please rank order all of your children in terms of your fondness to each of them?

(OBTAIN RANKING IN TERMS OF FONDNESS. INDICATE MOST FAVORITE AND LEAST FAVORITE CHILDREN. IF NONE, PROBE AND RECORD RSP'S ANSWER)

VERBATIM: _____

_____

_____

E75. Did you feel this way towards _____(most favorite child) right from the start, that is, since he/she was born?

YES____ NO____

(GO TO E77)

E76. Why did you feel this way about _____(most favorite child?

VERBATIM: _____

_____

_____

(GO TO E78 IF RSP HAS LEAST FAVORITE CHILD)

E77. What made you change your feelings toward _____(child)?

VERBATIM: _____

_____

_____

(IF RSP GIVES NAME OF LEAST FAVORITE CHILD, ASK E78)

E78. Why are you least fond of _____(least favorite child)?

VERBATIM: _____

_____

_____

(GO TO NEXT BLOCK)

BLOCK F: PREFERENCE QUESTIONNAIRE

F1. Now we want to ask about families and their welfare. For example, in your case, do you want any more children?

Wants more	Uncertain	Does not want anymore	Cannot have anymore
(GO TO F2)	(GO TO F4)	(GO TO F4)	(GO TO F4)

F2. How many more do you want to have?

_____more children
number

F3. Among these children, how many boys and how many girls do you want to have?

_____more boys
_____more girls
_____no preference

F4. Now suppose that you could start your married life all over again and choose to have just the number of children that you would want, how many children would you want to have?

_____
NUMBER

(GO TO F6)

(IF ANSWER IS: FATE, UP TO GOD, ETC., ASK:)

F5. Many people feel as you do but still they have some idea of what they would want chance (or God or fate) to send them. How about you? How many children would you have liked to have?

_____
NUMBER

F6. How many of the children would you want to be girls and how many boys?

_____boys
_____girls
_____no difference

F7. Now let me ask you to think about something a little different. If you were to have the same number of boys as girls (that is, an equal number of each), how many children in all would you most like to have--no children, two (1 boy & 1 girl), four (2 boys & 2 girls), or six (3 boys & 3 girls)?

____0 (GO TO F8) (PN1)
____2 (GO TO F7a)
____4 (GO TO F7c)
____6 (GO TO F8) (PN8)

F7a. If you didn't have two, would you rather have none or four?

____0 (GO TO F8) (PN2)
____4 (GO TO F7b)

F7b. If you didn't have four, would you most like to have none or six?

____0 (GO TO F8) (PN3)
____6 (GO TO F8) (PN4)

F7c. If you cannot have 4, would you rather have 2 or six?

____2 (GO TO F7d)
____6 (GO TO F8) (PN7)

F7d. If you cannot have 2, would you have none or 6 children?

____0 (GO TO F8) (PN5)
____6 (GO TO F8) (PN6)

F8. Sometimes the number of boys and girls makes a difference. If you were to have exactly three children altogether, how many would you want to be boys and how many girls? Would you prefer to have 3 girls, 1 boy and 2 girls, 2 boys and 1 girl, or 3 boys?

____3 girls (GO TO F9) (PS1)

____1 boy, 2 girls (GO TO F8a)

____2 boys, 1 girl (GO TO F8c)

____3 boys (GO TO F9) (PS8)

____indifferent (PROBE: If you had to make a choice which would you like best?)

F8a. If you didn't have that combination, would you rather have 3 girls, no boys or 2 boys 1 girl?

____3 girls, 0 boys (GO TO F9) (PS2)

____2 boys, 1 girl (GO TO F8b)

F8b. If you didn't have that combination, would you rather have no boys, 3 girls or 3 boys no girls?

____0 boys, 3 girls (GO TO F9) (PS3)

____3 boys, 0 girls (GO TO F9) (PS4)

F8c. If you didn't have that would you rather have 1 boy, 2 girls or 3 boys no girls?

____1 boy, 2 girls (GO TO F8d)

____3 boys, 0 girls (GO TO F9) (PS7)

F8d. And if you didn't have that, would you rather have no boys, 3 girls or 3 boys no girls?

____0 boys, 3 girls (GO TO F9) (PS5)

____3 boys, 0 girls (GO TO F9) (PS6)

F9. Have you ever talked with your husbane just how many children you two would like to have?

YES____ (CONTINUE) NO____ (GO TO F12)

F10. Just how many children does your husband want?

_____
Number of children

F11. How many of these does he want to be boys and how many girls?

number of boys _____
number of girls _____
no preference _____

F12. Many people tell us that they would have preferred a particular pregnancy to begin later than it did. Has this happened to you? Would you have preferred any of your pregnancies to have occurred later than they did?

YES____ (CONTINUE) NO____ (GO TO F15)

F13. Which ones of your pregnancies would you have preferred to have occurred later than they did?

F14. At the time of birth of _____(child), did you wish that this birth would occur a year or more later than it did or even not at all?

_____1 Yes later
_____2 Not at all

(REPEAT F14 FOR OTHER PREGNANCIES INDICATED IN F13)

F15. How many months do you think should there be between:

____Marriage and the birth of the first child _____

____First and second child _____

____Second and third child _____

____Third and fourth child _____

____Fourth and fifth child _____

____Births after the fifth child _____

F16. Now I would like to know when you and your husban got married. What was the date of marriage?

_____
Month Day Year

F17. How old were you on your last birthday at that time?

_____completed years

F18. Some women marry more than once. Is this your first marriage?

YES____ NO____

(TERMINATE INTERVIEW) (CONTINUE)

F19. How many times have you been married?

_____
Number of Times

(FOR EACH MARRIAGE EXCEPT THE LAST, ASK F20-23. ENTER INFORMATION FOR ALL MARRIAGES IN THE APPROPRIATE COLUMN OF THE MARRIAGE RECORD.)

F20. When did you get married for the first (second, etc.) time?

F21. How old were you at that time?

F22. How did this marriage end?

F23. When did your first (second, etc.) marriage end?

MARRIAGE RECORD

No. of Marriage	Date of Marriage: Month	Date of Marriage: Year	Age at marriage (Completed Years	Date of Marriage: Month	Date of Marriage: Year

(END OF INTERVIEW)

UNDERINVESTMENT HYPOTHESIS SURVEY

BLOCK A: IDENTIFICATION

		CODE
A1	Sample Household Number in Barangay	_____
A2	Sample Barangay Number	_____
A3	Stratum	_____
A4	Province _____	_____
A5	City/Municipality _____	_____
A6	Barangay _____	_____
A7	No. of ever married women 15-54 years old	_____
A8	Respondent _____ (Last First Middle)	_____ (Line No.)
A9	Complete Address _____	
	_____	

A10 Call Record

Interview Calls	1	2	3
Date			
Time			
Interviewer's Name			
Result of Call			
Next Appt.: Date			
Time			
Place			

Field Edited	Reinterviewed Spot checked	Office Edited	Coded
Name:_____	Name:_____	Name:_____	Name:_____
Date:_____	Date:_____	Date:_____	Date:_____

BLOCK B: HOUSEHOLD QUESTIONNAIRE

B0. Maayong buntag (hapon, gabii). Nagtrabaho ako sa Research Institute for Mindanao Culture sa Xavier University. Usa kini sa mga panimalay nga among napilian alang sa among pagtuon sa pamilya. Mahimo ba nga ikasulti ang ginang niining panimalay?

B1. Gusto kong mangutana mahitungod sa mga tawo nga ania magpuyo uban kanimo niining panimalay. Pipila ka mga tawo ang nagpuyo niining inyong kaugalingon, lakip kanimo?

(ENTER NUMBER AS GIVEN) _____

B2. Aduna bay mga tawo nga nagpuyo uban kanimo nga sa pagkakaron wala dinhi kay nagbakasyon sa laing lugar o namisita ba hinuon?

YES_____ Pila man sila? _____ NO_____(GO TO B3)

B3. Palihug nganli ang tanang tawo nga ania nagpuyo uban kanimo karon, ilakip na kadtong mga tawo nga wala dinhi karon kay namisita sa laing lugar o nagbakasyon ba hinuon. Kinsa ang pangulo sa panimalay?

(ENTER NAMES IN COLUMN 2 OF THE HOUSEHOLD RECORD FORM IN THE ODER GIVEN BY RSP.)

B4. Ig-unsa sa pangulo sa panimalay ikaw/si_____?

(ENTER RELATIONSHIP TO HOUSEHOLD HEAD IN COLUMN 3 OF HRF)

(WE WANT TO BE SURE THAT ALL MEMBERS OF THE HOUSEHOLD ARE INCLUDED IN THE HOUSEHOLD LIST. SOME HOUSEHOLD MEMBERS MAY BE TEMPORARILY ABSENT. TO OBTAIN INFORMATION ON THEM, ASK:)

B5. Aduna ba kitay nalimtan? Akong basahon ang tanang miembro sa panimalay nga imong guihinganlan, lakip na kadtong wala dinhi karon kay nagbakasyon sa laing lugar o namisita ba hinuon.

(READ LIST FROM HRF)

(OBTAIN INFORMATION ON B6-B10 FOR EACH USUAL RESIDENT LISTED AND ENTER IN THE APPROPRIATE COLUMN OF THE HRF)

(IF NOT OBVIOUS FROM THE FIRST NAME OR FAMILY RELATIONSHIP, ASK:)

B6. Babaye ba siya o lalaki?

(CHECK APPROPRIATE COLUMN IN HRF)

B7. Kanus-a ka/si _____natawo?

(ENTER IN COLUMN 5, THEN ASK FOR EACH USUAL RESIDENT LISTED)
(IF RSP CANNOT GIVE DATE OF BIRTH ASK B8)

B8. Pila ang edad nimo/ni _____niadtong ulahi nimong/niyang pag-adlaw?

(ENTER NUMBER IN COMPLETED YEARS IN COLUMN 6 OF HRF) (GO TO B10)

(IF RSP CANNOT GIVE EXACT AGE, ASK: B9;)

B9. Sa imong bana-bana, pila ang edad ni _____(person)?

B10. Dalaga, ulitawo, minyo, balo o bulag ba ikaw/si _____ (person)?

(ENTER IN COLUMN 7 OF HRF)

(GO TO BLOCK C)

BLOCK C: OCCUPATION AND EDUCATION OF HOUSEHOLD HEAD AND HOUSING CHARACTERISTICS

C1. Gatrabaho ba si _____(household head) karon?
1___Yes ...GO TO C3
2___No ...CONTINUE

C2. Nakatrabaho ba siya sukad sa Enero 1, 1975?
1___Yes ...CONTINUE
2___No ...GO TO C4

C3. Mahimo ba nga imong isulti kon unsa gayud and iyang trabaho? Panang1itan kon mag-uuma siya, pila man ka ektarya and iyang gui-uma? Siya ba ang tag-iya, nagkompaniya ba, saop o magbabasok ba siya? King siya nagtrabaho sa usa ka balay patigayon, unsang klase sa trabaho ang iyang gabuhaton?

WRITE BELOW THE IMPORTANT DETAILS AS YOU UNDERSTAND THEM AND THEN TRY TO SUMMARIZE INTO AN ACCURAGE BRIEF DESCRIPTION OF HIS OCCUPATION, (E.G., tenant farmer on 2 has.; semi-skilled machine sawyer, logging company, salesman, covers four provinces in panel truck; young doctor, intern in provincial hospital, etc.)

(DETAILS OF HIS MAIN OCCUPATION) _____

C4. Nakaeskuela ba si _____
(Name of Household Head)
1___Yes
2___No

(IF YES) Unsa man ang kinatas-ang grado o tuig sa pag-eskuela ang iyang nahuman? _____
Highest grade or year)

C5. Karon mangutana ako bahin sa inyong kahimanan sa balay. Pila ka mga kuwarto ang ania niining inyong balay, walay labot ang mga banyo ug kasilyas? _____exact number

C6. Aduna ba kamo'y kaugalingong kasilyas?
0___None
1___Yes, outside house
2___Yes, inside house

C7. Aduna ba kamo niining mosunod nga mga "appliances"?

(READ OUT THE LIST AND CHECK ITEMS NAMED BY R.)

0___None
1___Radio
2___Electric iron
3___Electric fan
4___Stereo/tape recorder/ cassette
5___Refrigerator
6___Television
7___Air conditioner

(FOR C8 AND C9 DO NOT UNLESS NECESSARY BUT WRITE DOWN YOUR OWN OBSERVATIONS. IF MORE THAN ONE, CHECK THE MATERIAL WHICH PREDOMINATES IN HOUSES WHERE DIFFERENT MATERIALS ARE USED IN EQUAL QUANTITIES, CHECK THE BETTER MATERIAL.)

C8. Unsang mga materyales ang gigamit nga dingding sa imong balay?

1___Scrap materials
2___Nipa, other thatch
3___Sawali, Bamboo
4___Rough-hewn timber and/or poorly-fitted planks
5___Painted an/or wall-fitted boards
6___Hollow blocks, cement, other expensive materials
7___OTHER (SPECIFY)_____

C9. Unsa nga materyales ang gigamit nga salog niining balay?

1___Earth
2___Bamboo
3___Cement
4___Wood
5___Linoleum/tiles
6___OTHER (SPECIFY)

C10. Pila ang tanang kita nga cash nga madawatan sa inyong pamilya matag bulan. Iapil ang mga hinatag ug binayad gikan sa mga kaubanan ug miembro sa pamilya, ug tanang kita gikan sa ubang kinitaan sama sa investments o abot sa yuta?

0___ 004 - 249
1___ 250 - 499
2___ 500 - 749
3___ 750 - 999
4___1000 - 1249
5___1250 - 1499
6___1500 - 1999
7___2000 - and over

C11. Nakaeskwela ka ba sukad?

1___YES (CONTINUE)
2___NO (GO TO C13)

C12. (IF YES) Unsa ang kinatas-ang grado o tuig ang imong nahuman?

_____
(highest grade or year)

C13. Nakatrabaho ka ba human sa una nimong kaminyoon?

___YES (CONTINUE) ___NO (GO TO BLOCK D)

C14. Pila ka tuig nga nagtrabaho ka sukad sa una nimong kaminyoon hangtud karon?

_____
exact number

C15. Sa pagkakaron, aduna ka bay gabuhaton aron makakita ka ug kwarta?

1___Yes, at home (CONTINUE)
2___Yes, away from home (CONTINUE)
3___Yes, both at home and away from home (CONTINUE)
4___No . . . (GO TO BLOCK D)

C16. Mahimo ba nga ihulagway nimo ang imong pagabuhaton niining maong trabaho (employment activity) pananglitan, kong trabahante sa pabrika, unsa ang matang sa trabaho nga imong pagahimoon, ug unsa nga matang kini nga pabrika? (Pananglitan kong tigputos sa dulce sa pabrika o tiglikit sa sigarilyo sa pabrika sa sigarilyo.)

Kon empleyado sa opisina, unsa man gayod ang imong gatrabahoon (Pananglitan, filing clerk, receptionist, telephone operator, etc.)?

Kon ikaw anaa sa negosyo, unsa nga matang sa trabaho ang imong pagahimoon (Pananglitan, stockholder sa rural bank, tag-iya ug gasoline station, tag-iya ug sari-sari store, etc.)?

(DETAILS OF MAIN OCCUPATION)_____

(GO THROUGH HRF AND CHECK OFF ALL EVER MARRIED WOMEN 15-54 YEARS. THESE ARE THE WOMEN ELIGIBLE FOR INCLUSION IN THE INTERVIEW. CHECK OFF COLUMN 8 OF HRF FOR THESE WOMEN. IF HOUSEHOLD DOES NOT HAVE WOMEN ELIGIBLE FOR INTERVIEW. TERMINATE INTERVIEW.)

BLOCK D: PREGNANCY HISTORY

(ASK OF ALL EVER MARRIED WOMEN AGED 15-54)

(ASCERTAIN FROM HOUSEHOLD RECORD FORM WHETHER OR NOT R HAS ANY CHILDREN, IF THERE ARE ANY LISTED, PROCEED TO D2, IF NONE, ASK D1)

D1. Namabdus ka ba sukad?

1___Yes, with terminated pregnancy ..... (CONTINUE)
2___No, but currently pregnant for the first time ..... (GO TO BLOCK F)
3___No, never ..... (TERMINATE INTERVIEW)

(ASK D2 TO D13 ON CHILDREN STILL LIVING)

CHILDREN STILL LIVING

D2. Karon, atong panagsultihan ang imong mga anak nga ania pa karon. Pila sa imong mga anak ang buhi karon? Palihug ihapa tanan ang natawo kanimo nga buhi karon (apil usab kadtong nangatawo sa una nimong kaminyoon) bisan kung ania kanimo nagpuyo karon o sa laing lugar ba hinoon.

_____Living Children

(IF NUMBER IS ZERO, GO TO D14)

(FOR EACH LIVING CHILD, ASK D3 - D13)
(RECORD RESPONSE IN PREGNANCY RECORD)

D3. Palihug nganli ang tanan nimong mga anak nga buhi sa pagkakaron. Palihug nganli sila sugod sa kinamagulangan hangtud sa kinamanghuran. Iapil usab ang mga anak nga nahilayo ug ang nangaminyo na.

(IF SEX IS NOT OBVIOUS TO INTERVIEWER, ASK)

D4. Babaye ba o lalaki ba kining bataa?

D5. Kanus-a siya natawo?

(OBTAIN DATE OF BIRTH)

D6. Pila ang iyang edad karon?

D7. Nahibaw-an mo ba ang timbang ni_____sa pagkatawo niya?

YES___ (CONTINUE) NO___ (GO TO D9)

D8. Pila man ang iyang timbang? _____(GO TO D12)
lbs.

(IF CANNOT REMEMBER WEIGHT, ASK D9)

D9. Unsa ang iyang kabug-aton, kasagaran ba, o ubos o labaw sa kasagaran?

1___average weight
2___less than average weight (GO TO D10)
3___more than average weight (GO TO D11)

D10. Gamay ba siya kaayo?

YES___ NO___
(GO TO D12) (GO TO D12)

D11. Daku ba siya kaayo?

YES___ NO___
(CONTINUE) (CONTINUE)

D12. Nagpuyo ba siya uban kanimo dinhi karon?

D13. Karon, imo nang nahatag ang mga impormasyon bahin sa imong mga anak nga buhi, nga nagpuyo ug wala nagpuyo uban kanimo dinhi. Sumala sa akong listahan, _____ silang tanan. Husto ba kini?

YES___ NO___

(IF NUMBER OF CHILDREN LISTED IN THE PREGNANCY RECORD IS NOT CORRECT, CHECK LIST WITH R AND ADD ANY CHILDREN WHO WERE OMITTED.)

(ASK D14-D27 ON DECEASED CHILDREN)

DECEASED CHILDREN

D14. Karon, atong panagsultihan kadtong imong mga anak nga natawong buhi apan namatay na. Aduna ka ba'y mga anak nga natawong buhi apan karon patay na? Ang usa ka bata natawong buhi kong sa bisag unya dayon namatay ra. Palihug i-apil ang mga namatay nga gagmayng bata.

1___YES . . . CONTINUE
2___NO. . . . GO TO D28

D15. Pila ang imong anak nga natawong buhi apan patay na karon?

_____Dead Children

(ASK D16-D17 FOR EACH CHILD WHO HAS DIED, AND ENTER INFORMATION IN PREGNANCY RECORD PUTTING IN PROPER ORDER WITH LIVING CHILDREN)

D16. Mangutana unta ako bahin sa imong mga anak nga namatay na.

(FOR EACH DECEASED CHILD) Sa unsang tuiga ug bulan siya natawo?

(RECORD NAME IN PROPER ORDER WITH LIVING CHILDREN. IF ELDEST CHILD IS DECEASED, CHECK AGAINST DATE OF BIRTH OF RESPONDENT.)

D16a. Unsa man kadto ang iyang ngalan?

(ENTER INFORMATION IN APPROPRIATE LINE.)

D17. Mahinumduman mo ba ang iyang timbang pagkatawo niya?

YES____ (CONTINUE) NO___ (GO TO D19)

D18. Pila ang iyang timbang? _____(GO TO D22)
lbs.

(IF CANNOT REMEMBER WEIGHT, ASK D19)

D19. Unsa ang iyang kabug-aton, kasagaran ba, ubos o labaw sa kasagaran?

1___Average weight
2___Less than average (GO TO D20)
3___More than average (GO TO D21)

D20. Gamay ba siya kaayo?

YES___ (GO TO D22) NO___ (GO TO D22)

D21. Daku ba siya kaayo?

YES___ (CONTINUE) NO___ (CONTINUE)

D22. Lalake ba kadto o babaye?

D23. Unsang bylana ug tuiga siya namatay?

(OBTAIN DATE OF DEATH)

D24. Pila na ang iyang edad sa iyang pagkamatay?

(ENTER AGE AT DEATH IN COMPLETED YEARS)

(IF AGE AT DEATH IS NOT SPECIFIED, ASK:)

D25. Ang iya bang edad sa pagkamatay, menos sa usa ka bulan, wala pa matuigi pero subra sa usa ka bulan, sulod sa usa hangtud sa upat ka tuig, o lima o labaw pa?

(CHECK APPROPRIATE COLUMN OF PREGNANCY RECORD FORM)

D26. Unsa'y hinungdan sa iyang kamatayon?

_____

_____

D27. Karon, wala na ba'y atong nalimtan nga mga anak nimo nga buhi sa pagkatawo apan wala mabuhi ug dugay?

(ADD TO PREGNANCY RECORD ANY DECEASED CHILDREN THAT WERE FORGOTTEN)

(ASK D28 - D31 ON FETAL LOSS)

FETAL LOSS

D28. Ug karon, atong hisgutan ang bisan unsa nimo nga pagmabdus diin ang bata wala matawong buhi kay kini nataktak, nakuha o namatay sa sa sulod sa tiyan. Palihug sulti-hi ako kung aduna ka ba'y mga pagmabdus nga sama niini, nga wala moresulta ug bata nga buhi.

YES___ (CONTINUE)

NO___ (GO TO D32)

D29. Kapila nga mga pagmabdus kini nahitabo kanimo?

_____Pregnancies not ending in Live Birth

(FOR EACH OF THESE PREGNANCIES, ASK D30-D31 AND ENTER IN PROPER ORDER IN PREGNANCY RECORD.)

D30. Unsang bulana ug tuiga ang una nahitabo, (ang sunod)?

(CHECK AGAINST DATE OF BIRTH OF RESPONDENT)

D31. Nahitabo ba kadto sa wala pa ang primero (ikaduha, etc.) nimo nga anak nga buhi?

(ENTER INFORMATIONS IN PREGNANCY RECORD IN THE PROPER SEQUENCE OF OCCURRENCE.)

D32. Sukad sa imong pagminyo hangtud karon, ikaw ba o ang imong bana naggamit sa bisan unsang paagi sa pagplano sa pamilya o paglangan sa pagmabdus?

YES___ (CONTINUE)

NO___ (CHECK IF INTERVAL BETWEEN ANY TWO PREGNANCIES IS MORE THAN 2 YEARS, ASK D35)

D33. Unsang bulana o uig kamo nagsugod sa paggamit sa bisan unsang paagi sa pagplane sa pamilya (family planning)?

_____MONTH _____YEAR

D34. Unsa nga paagi o mga paagi ang inyong gigamit?

_____(GO TO D38)
contraceptive method

(IF INTERVAL BETWEEN ANY TWO PREGNANCIES IS MORE THAN 2 YEARS, AND RSP DID NOT PRACTICE FAMILY PLANNING, PROBE AS FOLLOWS:)

D35. Layo ang gintang o agwat ni _____ug_____(IDENTIFY PREGNANCY INTERVAL) Tingali kini tungod kay nagmabdus ka sunod ni _____(FIRST PREGNANCY IDENTIFIED), nga wala nako malista.

YES____ (CORRECT PREGNANCY RECORD IF NECESSARY. ENTER OMISSIONS IN RECORD) (GO TO D38)

NO____ (GO TO D36)

D36. Aduna ba'y higayon sulod niining duha ka pagmabdus nga ikaw ug ang imong bana wala mag-ipon tungod sa iyang trabaho, kay nagbakasyon ka, nasakit siya, ug uban pa?

YES___ (CONTINUE)

NO___ (GO TO D38)

D37. Pila ka bulan nga kamo wala mag-ipon? _____

D38. Karon, gusto ko masiguro nga husto ang akong lista. Tanan-tanan, aduna kay

_____ka mga anak nga buhi karon
ug_____ka mga anak nga natawong buhi apan patay na
ug_____ka pagmabdus nga nakuha
ug ang tanan _____ka pagmabdus.

Husto ba kind?

YES____ NO____

(CONTINUE) (REVIEW PREGNANCY RECORD AND MAKE NECESSARY CORRECTIONS)

(EXCLUDE PRESENT PREGNANCY)

(IF RSP IS WIDOWED OR SEPARATED, GO TO BLOCK E)

D39. Mabdus ka ba karon?

1___YES ....CONTINUE
2___NO .....GO TO D41
9___N.A./Menopause (GO TO NEXT BLOCK)

D40. Pila na ka bulan ang tiyan mo karon?_____Month

(GO TO NEXT BLOCK)

D41. Naggamit ka ba sa bisan unsang paagi sa pagplano sa pamilya karon?

YES___ NO___

(CONTINUE) (GO TO NEXT BLOCK)

D42. Unsang klase sa paagi kini? _____

(GO TO NEXT BLOCK)

BLOCK E: UNDERINVESTMENT

NUTRITION AND HEALTH CARE OF MOTHER

(FOR EACH LIVE BIRTH, ASK E1-E2)

E1. Sa pagmabdus nimo ni _____(child), nagpasusi ka ba sa bisan asa niining mosunod:

0___None
1___Doctor
2___Nurse
3___Midwife (licensed)
4___Herbolario o tambalan
5___Mananabang o hilot
6___Hospital
7___Private clinic
8___Gov't clinic
9___Relatives and/or friends
10___Others (SPECIFY)

E2. Sa siyam bulan nga ikaw nagmabdus ni _____(child) pila ka higayon ka nagpasusi sa _____(answer in E1)?

_____
number of times

(PROBE: ASK FOR EACH TRIMESTER:)

1 - 3 months _____
Number of times

4 - 6 months _____
Number of times

7 - 9 months _____
Number of times

E3. Sa imong hunahuna, aduna ba'y mga buluhaton nga makadaut sa pagmabdus?

YES ___ (CONTINUE) NO ___ (GO TO E5)

E4. Palihug nganli kining mga buluhaton.

1._____
2._____
3._____

BREASTFEEDING

(FOR EACH LIVE BIRTH, ASK E5-E12)

E5. Nagpasusa ka ba ni _____ (child)?

YES___ (CONTINUE) NO___ (GO TO E10)

E6. Gawas sa imong pagpasuso ni _____(child) imo ba siyang gisugdan ug hatag sa laing pagkaon sama sa lugaw, sabaw, juice o duga sa prutas?

YES___ (CONTINUE) NO___ (GO TO E8)

E7. Pila ang edad ni _____(child) sa dihang imo siyang gisugdan ug hatag sa laing pagkaon gawas sa imong gatas?_____
No. of Months

VERBATIM:_____

_____

E8. Pila ang edad ni _____(child) sa imo siyang giundangan ug pasuso?

(CONTINUE)

E9. Nganong giundangan man nimo si _____(child) ug pasuso?

1___you were ill
2___you needed to work
3___child refused to suck
4___child was ill
5___child was too old
6___you were pregnant
7___other reasons (SPECIFY)

(GO TO E12)

E10. Nganong wala ka man nagpasuso ni _____(child)?

VERBATIM:_____

_____

E11. Unsa man diay ang imong gihatag kaniya?

_____

_____

E12. Pila ang edad ni _____(child) sa pagsugod niya ug kaon sa mga pagkaon para sa tibuok pamilya?

_____
Number of Months

NUTRITION

E13. Sa gagmay pa ang imong mga anak, kinsa kanila ang una nimong hatagan kung adunay inyong karne o isda?

_____Name of Child

(IF 'NONE' OR 'EQUAL', PROBE AND WRITE RSP'S EXPLANATION)

VERBATIM:_____

_____

E14. Kon adunay inyong gatas, kinsa sa imong mga anak ang imong unang hatagan?

_____Name of Child

(IF 'NONE' OR 'EQUAL', PROBE AND WRITE RSP'S EXPLANATION)

VERBATIM:_____

_____

E15. Kon adunay inyong espesyal nga pagkaon sama sa lechon, cake, salad, ice cream ug uban pa, kinsa imong mga anak ang imong unang hatagan?

_____Name of Child

(IF 'NONE' OR 'EQUAL', PROBE AND WRITE RSP'S EXPLANATION)

VERBATIM: _____

_____

E16. Sa kasagaran, kinsa ang imong unang hatagan niining maong mga pagkaon - ang babaye o lalaki nimong anak?

1___sons
2___daughters

VERBATIM:_____

_____

E17. Ang kinamanghuran o ang kinamaguwangan?

1___oldest
2___youngest

VERBATIM:_____

_____

E18. Sa gagmay pa ang imong mga anak, naglisud ka ba usahay sa paghatag ug maayong pagkaon sama sa karne, utan, itlog, prutas, gatas, ug uban pa sa imong pamilya?

YES___ (CONTINUE) NO___ (GO TO E20)

E19. Kasagaran kapila kini mahitabo?

_____
Number of times/Month

E20. Sa imong hunahuna, ang pagpasuso sa gatas sa inahan ba o ang pagpasuso sa botelya o pagbanusbanus anang duha maoy pinakamaayong pagatiman sa bata?

1___breastfeeding
2___bottle feeding
3___combination

E21. Nganong kini man ang pinakamaayong pag-atiman sa bata?

VERBATIM:_____

_____

HEALTH

E22. Karon gusto kong masayod bahin sa kahimtang panglawas sa imong pamilya. Sa wala pa maglima ka tuig ang imong mga anak kinsa kanila, apil na kadtong temporaryo nga wala dinhi karon o kadtong namatay na, ang pinakahimsog ug panglawas, ang sunod nga pinakahimsog, and sunod...

(CONTINUE FOR ALL LIVE BIRTHS. OBTAIN RANKING OF LIVE BIRTHS IN TERMS OF HEALTH. NUMBER LIVE BIRTHS AS RANKED. INDICATE LIVE BIRTH CONSIDERED LEAST HEALTHY)

E23. Aduna ba sa imong mga anak nga naskit ug grabe, gawas sa hilanat ug ubo, sa wala pa siya maglima ka tuig?

YES___ NO___

(CONTINUE) (GO TO E28)

E24. Kinsa kini nga bata? _____Name of Child

(ASK E25-27 FOR EACH CHILD WITH SERIOUS ILLNESS)

E25. Kapila siya masakit ug grabe sa wala pa siya maglima ka tuig?

_____
Number of times

(ASK FOR EACH SICKNESS:)

E26. Unsa kini nga sakit?

1._____
2._____

D27. Kasagaran unsa ang kadugayon sa iyang pagkasakit ug grabe?

_____
Number of days

(FOR EACH LIVE BIRTH, ASK E28-E32)

E28. Niadtong wala pa maglima ka tuig si _____(child) kon namatikdan mo nga duna siya'y gibati, ikaw lang ba sa ang nag-tambal kaniya?

YES___ NO___

(CONTINUE) (GO TO E30)

E29. Kon wala siya maayo sa imong pagtambal, unsa ang kasagaran nimong gabuhaton?

0___continue self-medication - (GO TO E32)
1___doctor
2___nurse
3___midwife
4___herbolario
5___hilot (GO TO E31)
6___hospital
7___private clinic
8___gov't clinic
9___relative and friends
10___others (SPECIFY)

E30. Unsa ang kasagaran nimong gabuhaton?

1___doctor
2___nurse
3___midwife
4___herbolario
5___hilot
6___hospital
7___private clinic
8___gov't clinic
9___relatives and others
10___others (SPECIFY)

(GO TO E32)

E31. Pipila ka adlaw una mo siya gidala o gipatambalan sa _____? (answer in E29)

E32. Nganong mao man kini ang imong gabuhaton?

VERBATIM:_____

_____

_____

(GO BACK TO E28 FOR NEXT LIVE BIRTH)

KNOWLEDGE OF AVAILABLE HEALTH SERVICES

E33. Palihug nganli ang mga serbisyo bahin sa panglawas (medical services) nga ania niining inyong barangay/lungsod/siyudad. (CHECK AS INDICATED)

1___doctor
2___nurse
3___hilot
4___licensed midwife
5___herbolario
6___hospital
7___private clinic
8___gov't clinic
9___others (SPECIFY)

E34. Asa sa masunod ang mas duol ug mas makatabang sa imong pagpangina-hanglan? Ang sunod...

1___doctor
2___nurse
3___mananabang hilot
4___licensed midwife
5___herbolario or tambalan
6___hospital
7___klinika nga pribado
8___klinika sa gobyerno
9___uban pa (SPECIFY)

NURTURANCE AND PUNISHMENT

E35. Sa wala pa mag-usa ka tuig si _____(child) aduna ka ba'y panahon sa paapakigdula o paghagwa-hagwa kaniya?

YES___ (CONTINUE) NO___ (GO TO E37)

E36. Mga pila kaha ka minuto sa usa ka adlaw?

_____
Minutes

(IF RSP CANNOT GIVE EXACT AMOUNT OF TIME, PROBE AND RECORD RSP'S ANSWER)

VERBATIM:_____

_____

(GO THROUGH ANSWERS TO E36. IF TIME SPENT FOR EACH CHILD IS EQUAL, ASK E38. OTHERWISE, ASK E39-42)

E37. Nganong wala ka ma'y panahon sa pagpakigdula ug pagpakighagwa-hagwa kaniya?

VERBATIM:_____

_____

(GO TO E43)

E38. Sa imong hunahuna, ang gigahin mong panahon alang sa imong mga anak hamubo ra, taas ra o igo-igo lang?

1___too little
2___too much
3___right amount

(GO TO E43)

(ASK E39-40 FOR CHILD/CHILDREN WHOM MOTHER SPENT MOST/MORE TIME WITH)

E39. Gigahinan mo ug daghang panahon si _____(child) sa pagoa-kigdula ug pagpakighagwa kaysa uban nimong mga bata, ngano man?

VERBATIM: _____

_____

_____

(CONTINUE)

E40. Sa imong hunahuna, ang gigahin mong panahon kang _____(child/ children with whom mother spent more time) hamubo ra, taas ra o igo-igo lang?

1___too little
2___too much
3___right amount

(CONTINUE)

(ASK E41-42 FOR CHILD/CHILDREN WHOM MOTHER SPENT LESS/LEAST TIME WITH)

E41. Ngano nga hamubo ra man nga panahon ang gigahin mo sa pagpakigdula ug pagpakighagwa kang _____(child/children with whom mother spent the lease time)?

VERBATIM: _____

_____

_____

E42. Sa imong hunahuna, ang gigahin mong panahon kang _____(child/ children with whom mother spent less time with) hamubo ra, taas ra, o igo-igo lang?

1___too little
2___too much
3___right amount

(CONTINUE)

E43. Ang imong bana, aduna ba'y panahon sa pagpakigdula o paghagwa-hagwa sa inyong mga anak?

YES___ NO___

(CONTINUE) (GO TO E46)

E44. Sa imong hunahuna ang imong bana naggahin ug hamubo nga panahon, taas o igo-igo lang nga panahou alang sa inyong mga anak?

1___too little
2___too much
3___right amount

(CONTINUE)

E45. Ang imong bana, gatabang ba usahay sa pag-atiman sa inyong mga anak sa wala pa sila mag-usa ka tuig?

YES___ NO___

(CONTINUE) (GO TO E47)

E46. Palihug isulti kung giunsa niya pagtabang kanimo.

VERBATIM: _____

_____

_____

(FOR EACH LIVE BIRTH, ASK E47-E49)

E47. Aduna ba'y laing tawo gatabang kanimo pag-atiman ni _____ (child) sa wala pa sila mag-usa ka tuig, sama sa imong mga ginikana, kaubanan o paryente, silingan, sulogoon ug uban pang mga anak?

YES___ NO___

(CONTINUE) (GO TO E50)

E48. Kinsay gatabang kanimo pag-atiman kang _____(child) sa wala pa siya mag-usa ka tuig?

1___RSP's parents/parents in law
2___other relatives
3___neighbors
4___servants
5___other children
6___others (SPECIFY)

E49. Pila ka bulan o tuig nga aduna kay katabang o katimbang pag-atiman ni _____(child)?

_____Number of months

E50. Kinsa sa imong mga anak ang kanunay nimo gapalitan ug mga sinina, sapatos, mga maayong galamiton sa eskuelahan ug mga dulaan sa nag-edad pa sila ug lima hangtud sa napula ka tuig?

_____ Name of child

(GO TO E51)

(IF 'NONE' OR 'EQUAL', PROBE AND RECORD RSP'S ANSWER)

VERBATIM: _____

_____

_____

E51. Nganong siya man ang kanunay nimo-palitan?

VERBATIM: _____

_____

_____

(FOR RSP WITH CHILDREN AGED LESS THAN 5 YEARS OLD, GO TO E54)

E52. Kinsa sa imong mga anak ang kanunay nimong tun-an sa leksiyon o tabangan ug himo sa assignment sa eskuelahan o imong galugotan ug tudlo bisan kung wala pa ang bata magesjuela?

_____ Name of child

(IF 'NONE' OR 'EQUAL', PROBE AND RECORD RSP'S ANSWER)

VERBATIM: _____

_____

_____

E53. Ngano man?

VERBATIM: _____

_____

_____

(FOR EACH LIVE BIRTH, ASK E54-E55:)

E54. Ang mga ginikanan adunay nagkalain-laing paghulagway sa ilang mga anak. Gusto kong imong hatagan ug puntos gikan sa 0-100 ang kada usa sa imong mga anak sigun sa ilang mga kinaiya o batasan ug panlihok-lihok. Pananglitan, kung nagtuo ka nga si _____ buotan, tagai siya ug puntos nga 100. Kung nagtuo ka nga siya dili buotan, tagai siya ug 0. Sa ato pa ang kada nimo anak aduna gayo'y puntos. Mahimo nga hatagan mo siya ug puntos gikan sa zero ngadto sa usa ka gatos. Karon, unsaon mo man paghulagway si _____(child)?

(ENTER SCORE FOR THE FOLLOWING CHARACTERISTICS)

	Score
a. Buotan	_____
b. Malantip ug salabutan (bright)	_____

E55. Kon ikaw pagbut-on unsa nga kurso ang imong ipakuha ni _____ (child)?

(IF RSP CANNOT ANSWER, PROBE AND RECORD RSP'S ANSWER)

VERBATIM: _____

_____

_____

(FOR CHILDREN AGED 7 YEARS OR OLDER, ASK E56-E57)

E56. Nageskwela/nakaeskwela ba si _____(child)?

YES___ NO___

(GO TO E58)

E57. Unsa ang kinatas-ang grado nga natapos niya?_____

Highest grade completed

E58. Sa nagpanuigon ug lima hangtud sa napulo ka tuig ang imong mga anak, kinsa kanila ang motubag kon kasab-an?

(NUMBER OR RANK LIVE BIRTHS AS INDICATED. IF 'NONE', PROBE AND RECORD RSP'S ANSWER)

VERBATIM: _____

_____

E59. Kasagaran, kapila si _____(child) motubag-tubag kanimo, peri ba, usahay o talagsa ra gayud?

1___permi ba
2___usahay
3___talagsa

E60. Kon si _____(child) motubag-tubag, unsa may kasagaran nimong buhaton?

_____
_____
_____

E61. Pagkahuman mo ug silot kang _____(child), makahuna-huna ka ba nga nalabihan ra ang imong pagsilot kaniya?

YES___ (CONTINUE) NO___ (GO TO E63)

E62. Kapila man kini mahitabo nga ikaw makahuna-huna nga nalabihan ra nimo siya ug _____? (Answer in E60)

1___kadaghan
2___usahay
3___panalagsa

E63. Nagtuo ka ba nga linahanglan ipasabot o i-eksplikar mo pa ang imong mga pahimangno sa mga bata o silotan lang dayon sila kung masayop o masupak?

1___try to explain (GO TO E67)
2___punish them if they disobey (GO TO E67)
3___both (GO TO E64)
4___don't know/not sure (GO TO E65)
5___depends (GO TO E66)

E64. Asa niini ang mas important? _____

(GO TO E67)

E65. Unsay kasagaran mong pagabuhaton?_____

(GO TO E67)

E66. Palihug i-eksplikar. _____

_____

_____

E67. Usahay ginaingon nga adunay mga bata nga badlongon kaayo o dautan daan sa pagkatawo ug ang mga ginikanan medyo walay mahimo pag-usab kanila. Nagtoo ka ba niini?

YES___ (CONTINUE) DON'T KNOW___ (CONTINUE) NO___ (GO TO E70)

E68. Nakahuna-huna ka ba usahay nga aduna sa imong mga anak nga badlongon o dautan daan sa pagkatawo?

YES___ (CONTINUE) NO___ (GO TO E70)

E69. Kinsa sa imong mga anak? _____

(CHECK LIVE BIRTH INDICATED)

E70. Hatagi ang imong kaugalingon ug puntos nga zero hangtud sa usa ka gatos. Kung sa imong huna-huna mapinanggaon ka kaayo sa imong mga anak, hatagi ang imong kaugalingon ug puntos nga 100. Kung sa imong huna-huna naa ka sa tunga-tunga, hatagi ang imong kaugalingon ug puntos nga tunga-tunga usab sa zero ug usa ka gatos. Ug kon sa imong huna-huna dili ka mapinanggaon, hatagi ang imong kaugalingon sa puntos nga 0. Karon, unsaon man nimo paghulagway ang imong kaugalingon kabahin sa imong relasyon sa imong mga anak?

	Score
a. mapinanggaon	_____
b. manggihatagon	_____

E71. Unsa ka kakumtento sa gidaghamon sa imong mga anak? Kung kuntento ka kaayo, hatagi ang imong kaugalingon sa puntos nga 100 ug kung dili ka kuntento, hatagi ang imong kaugalingon sa puntos nga 0. _____ Score

---

E72. Unsa ka kamaayo nga pagkaginikanan?

_____Score

E73. Kung hatagan ka ug higayon sa pag-usab sa imong pagkaginikanan unsa nga kausaban ang imong himoon?

VERBATIM:_____

_____

_____

E74. Sa tanan nimong mga anak, kinsa ang pinalangga mo kaayo? Ang sunod, ug ang sunod pa gayud.

(OBTAIN RANKING IN TERMS OF FONDNESS. INDICATE MOST FAVORITE AND LEAST FAVORITE CHILDREN. IF NONE, PROBE AND RECORD RSP'S ANSWER)

VERBATIM:_____

_____

_____

E75. Mao ba kini ang imong gibati alang kang_____(child most fond of) sukad sa iyang pagkatawo?

YES___ NO___

(CONTINUE) (GO TO E77)

E76. Nganong mao man kini ang imong pagbati ngadto kang _____ (child most fond of)?

VERBATIM:_____

_____

_____

(GO TO E78 IF RSP HAS LEAST FAVORITE CHILD)

E77. Unsay nakapausab sa imong pagbati ngadto kang_____(child)?

VERBATIM:_____

_____

_____

(IF RSP GIVES NAME OF LEAST FAVORITE CHILD, ASK E78)

E78. Nganong menos man ang imong pagpangga kang_____(least favorite child)?

VERBATIM: _____

_____

_____

(GO TO NEXT BLOCK)

BLOCK F: PREFERENCE QUESTIONNAIRE

F1. Mahimo bang maghisgut kita karon bahin sa pamilya ug mga kaayohan sa pamilya. Panang1itan sa imong kabahin, gusto ka pa bag anak?

WANTS MORE ___ (GO TO F2)
UNCERTAIN ___ (GO TO F4)
DOES NOT WANT ANYMORE ___
CANNOT HAVE ANYMORE ___ (GO TO F4)

F2. Pila pa ka anak ang imong gusto?

_____more children

F3. Pila pa ka lalaki ug pila pa ka babaye ang imong gusto?

_____more boys
_____more girls
_____no preference

F4. Panang1itan mao ka pa gasugod sa imong kaminyoon ug ikaw makabuot sa gidaghanon sa imong mga anak, pila gyud ka anak ang imong gusto?

_____Number (GO TO F6)

(IF ANSWER IS: FATE, UP TO GOD, ETC., ASK:)

F5. Kadaghanan adunay susamaghunahuna kanimo, apan aduna gyod sila'y gihunahuna nga gidaghanon nga ilang gustong ihatag sa kapalaran, o Dios kanila. Sa imong kabahin, pila gyud ka mga anak ang imong gusto?

_____Number

F6. Pila sa imong gustong anak ang babaye ug pila usab ang lalaki?

_____boys
_____girls
_____no difference

F7. Karon mangutana ako kanimo niining mosunod. Kung mahimong parehas kanumay ang kadaghanon sa lakeki ug babaye, pila gyud kaha ka mga anak ang imong gusto:walay anak, duha (usa ka lalaki ug usa ka babaye), upat (duha ka lalaki ug duha ka babaye), o unom (tulo ka lalaki ug tulo ka babaye).

_____0 (GO TO F8) (PN1)
_____2 (GO TO F7a)
_____4 (GO TO F7c)
_____6 (GO TO F8) (PN 8)

F7a. Kung dili ka manganak ug duha, mas pilion mo bang wala kay anak o manganak ug upat?

_____0 (GO TO F8) (PN2)
_____4 (GO TO F7b)

F7b. Kung dili ka manganak ug upat, mas pilion mo bang wala kay anak o manganak ug unom?

_____0 (GO TO F8) (PN3)
_____6 (GO TO F8) (PN4)

F7c. Kung dili ka manganak ug upat, mas pilion mo bang manganak ug duha o manganak ug unom?

_____2 (GO TO F7d)
_____6 (GO TO F8) (PN7)

F7d. Kung dila ka manganak ug duha, mas pilion mo bang wala kay anak o manganak ug unom?

_____0 (GO TO F8) (PN5)
_____6 (GO TO F8) (PN6)

F8. Usahay ang kadaghanon sa lalaki ug babaye importante kaayo. Kung pananglitan tulo ra gayud ang imong anak, pila ang imong gusto nga lalaki ug pila ang babaye? Mas gusto mo bang tulo ka babaye, usa ka lalaki ug duha ka babaye, duha ka lalaki ug usa ka babaye o tulo ka lalaki?

_____3 girls (GO TO F9) (PS1)
_____1 boy, 2 girls (GO TO F8a)
_____2 boys, 1 girl (GO TO F8c)
_____3 boys (GO TO F9) (PS8)
_____indifferent (PROBE: Kung papilion ka, asa gayud ang imong gusto?)

F8a. Kung wala matuman ang imong gustong kadaghanon sa lalaki ug babaye, mas gusto mo bang manganak ug 3 ka babaye walay lalaki o duha ka lalaki, usa ka babaye?

_____3 girls, 0 boys (GO TO F9) (PS2)
_____2 boys, 1 girl (GO TO F8b)

F8b. Ug kung wala pa gayud kini matuman, mas gusto mo bang manganak ug tulo ka babaye, walay lalaki o tulo ka lalaki, walay babaye?

_____0 boys, 3 girls (GO TO F9) (PS3)

_____3 boys, 0 girls (GO TO F9) (PS4)

F8c. Kung wala matuman ang imong gustong kadaghanon sa lalaki ug babaye, mas gusto mo bang manganak ug usa ka lalaki, duha ka babaye o tulo ka lalaki, walay babaye?

_____1 boy, 2 girls (GO TO F8d)

_____3 boys, 0 girls (GO TO F9) (PS7)

F8d. Ug kung wala pa gayud kini matuman, mas gusto mo bang manganak ug tulo ka babaye walay lalaki o tulo ka lalaki walay babaye?

_____0 boys, 3 girls (GO TO F9) (PS5)

_____3 boys, 0 girls (GO TO F9) (PS6)

F9. Nagsultihanay ba kamo sa imong bana bahin sa kadaghanon sa anak nga imyong gusto?

YES___ NO___

(CONTINUE) (GO TO F12)

F10. Pila ka mga anak ang gusto sa imong bana?_____

Number of children

F11. Pila man niini ang iyang gusto nga lalaki ug pila man ang babaye?

_____Boys _____Girls _____No preference

F12. Adunay mga magtiayon nga gusto mataud-tauran pa ang pagmabdus. Nahitabo ba kini kanimo? Aduna ka bay gimabdus sa panahon nga dili mo pa unta gustong magmabdus?

YES___ NO___

(CONTINUE) (GO TO F15)

F13. Asa sa imong mga pagmabdus ang gusto mo untang sa umaabot pa nga mga adlaw mahitabo?

(CHECK PREGNANCIES INDICATED)

F14. Sa pagkatawo ni _____ (child) wala ka ba mangandoy nga wala mo na lang unta siya gipangangak o mataud-tauran ug usa ka tuigo labaw pa gikan sa imong pagpanganak kaniya?

1___Yes, later
2___Not at all

(REPEAT F14 FOR OTHER PREGNANCIES INDICATED IN F13)

F15. Sa imong huna-huna, pila ka bulan ang angayan nga gintang o gilay-on sa:

- imong pagminyo ngadto sa pagkatawo sa imong unang anak _____
- primero ug ikaduhang anak _____
- ikaduha ug ikatulong anak _____
- ikatulo ug ikaupat nga anak _____
- ikaupat ug ikalima nga anak _____
- mga anak human sa ikalima _____

F16. Kanus-a kamo naminyo sa imong bana?

_____ _____
MONTH YEAR

F17. Sa inyong pagminyo, pila man ang imong edad sa ulahi mong pag-adlaw?_____(completed years)

F18. Ang ubang babaye naminyo labaw sa makausa. Kini ba maoy imong unang kaminyoon?

YES____ NO___

(TERMINATE INTERVIEW) (CONTINUE)

F19. Kapila ka naminyo?_____(Number of times)

(FOR EACH MARRIAGE EXCEPT THE LAST, ASK F20-23. ENTER INFORMATION FOR ALL MARRIAGES IN THE APPROPRIATE COLUMN OF THE MARRIAGE RECORD.)

F20. Kanus-a ka naminyo sa imong unang/ikaduhang/ikatulong bana?

_____
MONTH YEAR

F21. Pila man ang imong edad niadtong panahuna?

F22. Nabalo ka ba ug nakigbulag sa imong unang/ikaduhang, (etc.) bana?

_____Separated

_____Widowed

F23. Kanus-a kini nahitabo?

MARRIAGE RECORD

No. of Marriage	Date of Marriage: Month	Year	Age at marriage (Completed Years)	Date of Marriage: Month	Year

---

(END OF INTERVIEW)

FORM No. 1

HOUSEHOLD RECORD FORM

SAMPLE HOUSEHOLD NUMBER _____
SAMPLE BARANGAY NUMBER _____
PROVINCE _____
STRATUM _____
CITY/MUNICIPALITY _____
BARANGAY _____
RESPONDENT _____

(1) No.	(2) Name	(3) Relationship to head of household	(4) Sex		(5) Date of Birth		(6) Age Completed Years	(7) Marital Status	(8) Ever Married women 15-54 Years old	(9) Residency Status		
			M	F	Month	Year				Temporarily absent	Visitor	Resident

FORM No 2

PREGNANCY RECORD FORM

SAMPLE HH IN BGY. ______
SAMPLE BGY. # ______
STRATUM ______
PROVINCE ______
CITY / MUNICIPALITY ______
BARANGAY ______

____
Name of Mother

(ENTER LIVING CHILDREN ON LINES MARKED XX)

		LIVING CHILDREN									DECEASED CHILDREN														FETAL LOSS	
Preg. Order	Name of Child	SEX		Date of Birth		AGE	Wt. at Birth	App. Size	Living		SEX		Date of Birth		Wt. at Birth	App. Size	Date of Death		Age at Death					Cause of Death	Date of Loss	
		M	F	Mo.	Yr.	Comp. Years	lbs		At Home	Elsewhere	M	F	Mo.	Yr.	lbs.		Mo.	Yr.	Comp. Years	Less than 1 mo.	Less than 1 yr.	1-4 years	5 or more		Mo.	Yr.
XX																										
XX																										
XX																										
XX																										

FORM NO. 3

UNDERINVESTMENT RECORD FORM
(FOR LIVE BIRTHS ONLY)

Sample HH No. _____
Sample Bgy. No _____
Stratum _____
Province _____
City/Municipality _____
Barangay _____

NAME OF CHILD (FROM PREGNANCY RECORD FORM)										
NUTRITION AND HEALTH CARE OF MOTHER										
E1. Prenatal Care 0- None 6- ospital 1- doctor 7- private clinic 2- nurse 8- gov't. clinic 3- midwife 9- relatives/friends 4- herbolario 10- others (SPECIFY) 5- hilot/manananbang										
E4. Number of times										
E5. Breastfeeding 1 - YES 2 - NO										
E6. Other formi 1 - YES 2 - NO										
E7. Age start other formi (Months) VERBATIM: _____										

NAME OF CHILD										
E8. Age weaned										
E9. Reason for weaning 1- you were ill 2- you needed to work 3- child refused to suck 4- child was ill 5- child was too old 6- you were pregnant 7- other (SPECIFY)										
E10. Reason for not breastfeeding VERBATIM: _____ _____										
E11. What was given instead of breastmilk?										
E12. Age first ate from family pot (Months)										

NAME OF CHILD										
NUTRITION										
E13. Gets meat or fish first (CHECK BIRTH INDICATED)										
VERBATIM: _____ _____										
E14. Gets milk first (CHECK BIRTH INDICATED)										
VERBATIM: _____ _____										
E15. Gets special food first (CHECK BIRTH INDICATED)										
VERBATIM: _____ _____										

NAME OF CHILD										
HEALTH										
522. Rank order (HEALTH) (NUMBER LIVE BIRTHS AS RANKED)										
523. Seriously ill 1 - YES 2 - NO										
524. Child/Children seriously ill (CHECK BIRTH/S INDICATED)										
525. Number of times										
526. Kind of sickness 1. _____ 2. _____										
527. Length of sickness (days)										
528. Self-medication 1 - YES 2 - NO										
529. Usual treatment after self-medication. 0- continue self-medication 1- doctor 2- nurse 3- midwife 4- herbolario 5- hilot 6- hospital 7- private clinic 8- gov't. clinic 9- relatives/friends 10- others(SPECIFY)										

NAME OF CHILD										
B30. Usual treatment 1- doctor 6- hospital 2- nurse 7- private clinic 3- mid wife 8- gov't clinic 4- herbolaria 9- relatives/friends 5- hilot 10- others(SPECIFY)										
B31. No. of days before treatment is sought.										
B32. Reason for seeking particular treatment VERBATIM: _____ _____										
NURTURANCE AND ENRICHMENT										
B33. Time for cuddling and playing 1 - YES 2 - NO										
B34. No. of minutes per day VERBATIM: _____ _____										

NAME OF CHILD										
E37. Reason for not cuddling and playing VERBATIM:										
E38. (EQUAL AMOUNT OF TIME SPENT) Perception of time spent 1- too little 2- too much 3- right amount										
E39. Reason for spending much time VERBATIM: _____ _____										
E40. (MOST TIME WITH) Perception of time 1- too little 2- too much 3- right amount										

NAME OF CHILD										
E41. (LEAST TIME WITH) Reason for spending less time MOTHER: _____ _____										
E42. Perception of time spent 1- too little 2- too much 3- right amount										
E43. Help available 1 - YES 2 - NO										
E44. Help in taking care 1- RCH's parents/parents in law 2- other relatives 3- neighbors 4- servants 5- other children 6- others (SPECIFY)										
E45. Length of time help is available (MONTHS)										

NAME OF CHILD										
E50. Child whom mother often bought things for (CHECK LIVE BIRTH INDICATED)										
(IF 'NONE' OR 'EQUAL', PROBE) VERBATIM: _____ _____										
E51. Why? VERBATIM: _____ _____										
E52. Help with schoolwork (CHECK LIVE BIRTH INDICATED)										
(IF 'NONE' OR 'EQUAL', PROBE) VERBATIM: _____ _____										

NAME OF CHILD										
853. Why? VERBATIM: _____ _____										
854. Characteristics (SCORE) 1. good (buotan) 2. intelligent (malantip ang salabutan)										
855. Course desired for children										
(PROBE:) VERBATIM: _____ _____										
856. Education 1 - YES 2 - NO										
857. Highest grade completed										

NAME OF CHILD										
E58. Answer back (NUMBER LIVE BIRTHS AS RANKED) VERBATIM: _____ _____										
E59. Frequency of answering back 1- almost always 2- sometimes 3- rarely										
E60. Usual form of punishment VERBATIM: _____ _____										
E61. Regret harshness of punishment 1 - YES 2 - NO										
E62. Frequency of occurrence 1- almost always 2- sometimes 3- rarely										
E63. Child born bad (CHECK LIVE BIRTH INDICATED)										

NAME OF CHILD										
E74. Most favorite child (RANK ORDER (PROBE:) VERBATIM: _____ _____										
E75. Feeling for MOST FAVORITE child since birth 1 - YES 2 - NO										
E76. Why? VERBATIM: _____ _____										

NAME OF CHILD										
E77. Reason for change VERBATIM: _____ _____										
E78. Least favorite child VERBATIM: _____ _____										

The vita has been removed from the scanned document

UNWANTED FERTILITY AND THE UNDERINVESTMENT HYPOTHESIS: A PHILIPPINE STUDY

by

CLARITA ESTILLORE TAN

(ABSTRACT)

This study aimed to provide empirical verification to the hypothesis that unwanted fertility could lead to mortality, with underinvestment as an intervening mechanism.

Unwanted fertility was defined as a live birth that deviated from parental expectations in some distinguishable characteristics or set of characteristics. Births defined as unwanted were: 1) births which respondent indicated she preferred to have occurred later or births which she did not want at all, 2) those whose birth order exceeded the mother's desired family size, and 3) those which exceeded the number of desired boys or the number of desired girls of the mother.

Underinvestment as defined by Scrimshaw (1978) involved the idea that mothers would not go to extremes to save the life of a child and might invest more time and resources in other children. To measure underinvestment, a scale was constructed made up of the following items: 1) source of

prenatal care, 2) frequency of prenatal care, 3) age started supplementary feeding, 4) length of breastfeeding, 5) source of medical treatment, 6) length of time before treatment was sought, and 7) time spent cuddling and playing with child.

Mortality was classified into two types: postneonatal mortality and childhood mortality. Postneonatal mortality involved deaths from ages one to eleven months. Childhood mortality involved deaths at ages one to four years. Thus, analysis proceeded in two ways: 1) that involving all live births born at least a year before the time of interview and 2) that involving only live births born at least five years before the time of interview.

Results of the study did not support the hypothesis that unwanted fertility could lead to mortality, with underinvestment as an intervening mechanism. In general, no significant association was found between unwantedness and mortality. However, underinvestment and mortality (postneonatal and childhood) were significantly associated for both wanted and unwanted births. Underinvestment and childhood mortality were significantly related for births in lower class families and for births in middle and upper class families. Postneonatal mortality was significantly related to underinvestment among lower class births only.

Postneonatal mortality was not significantly related to SES. Childhood mortality was significantly related to SES with underinvestment as an intervening variable.

The study underscored the difficulties involved in measuring the variables of interest--unwantedness and underinvestment. Several limitations of the study were pointed out and recommendations for further research were stated.