Time Allocation of Rural Women in the Philippines: The Case of Laguna

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A thesis submitted for the degree of
Doctor of Philosophy
at the Australian National University

Canberra: October, 1992

Declaration

Except where otherwise indicated, this thesis is my own work during the period covered by my Ph D Scholarship at the National Centre for Development Studies, Australian National University

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October, 1992

Dedicated to Oscar and Paolo

Acknowledgements

I gratefully acknowledge the assistance received from the Australian International Development Assistance Bureau (AIDAB) in providing the scholarship which enabled me to study at the Australian National University, and from my home institution, the Center for Policy and Development Studies of the University of the Philippines at Los Baños for permitting me to pursue this graduate course.

I express my gratitude to Dr Paul Meyer, my supervisor not only for his overall guidance and substantial contributions to this thesis but also for encouraging me to pursue this doctoral degree. I am deeply grateful to Dr Lorraine Corner, my other supervisor, for her keen interest in my research, careful reading of my drafts and for her valuable comments and suggestions which resulted in considerable improvements in the thesis. A special note of gratitude goes to Dr Philip Guest, my adviser, who was a tremendous source of assistance and encouragement even after he has moved to Thailand. He provided insight and assistance for the statistical aspect of this thesis.

At various times and places I have received helpful comments, suggestions and encouragement from other staff of the Centre and the Demography Program. Dr David Lucas, Program Director, for his constant reminders to finish this thesis; Dr Ian Diamond, for his guidance during the early part of my thesis preparation; Dr Alan Gray for his comments and suggestions to one of my chapters; Dr Robert Evenson of the Economic Growth Center, Yale University for access to data; and Ms Ann Judd for subsetting the data.

I am very grateful to Ms Marian May not only for proficient editing of my thesis but also for listening and offering advice when needed - in both academic and personal matters. I also express my gratitude to Ms Chris McMurrary and Ms Krys

Green for helping me with computing difficulties; and to Ms Jo Roper for giving assistance at various times.

I owe a debt of gratitude to a number of student colleagues: Dayday Abejo, Beth Go, Glorivic Salveron, Abdul Hakim and Kesaia Seniloli; and academic and administrative staff of the National Centre for Development Studies: Vicki Veness, Jennie Coleman, Karen Haines, Anne Cappello and Pam Ferrar who helped, cheered, and sympathized with me if the need arose.

Without the help of my family, I would never have been able to complete my Ph D. I have been fortunate to have parents who instilled in me the value of education early in life. I would like to thank my sisters and brothers for taking care of my son during the first two years of my stay in Australia. Other members of my family have also provided love and support, for which I am very grateful. I would like to thank my husband, Oscar and my son, Paolo, who provided love and encouragement through all the phases of this process.

Finally, I give my thanks and praise to God for giving me the courage to complete this work.

Abstract

This study was conducted to investigate the productive roles of women by analysing the number of hours devoted to their activities. The major objectives were to (1) examine women's time allocation by demographic, social and economic characteristics of women and the households to which they belonged; (2) determine the changes that occurred in women's time allocation between 1975 and 1985; (3) examine the sexual division of domestic work; and (4) investigate the undercounting of women's economic activities. The sources of data used in this study were the 1975, 1982 and 1985 Laguna Household Surveys.

This study divides women's activities into three categories: domestic work, market work and personal care. Regardless of employment status, domestic work was the dominant activity of Laguna mothers throughout this period. Activities centering on the kitchen formed the most time-consuming component of domestic work, followed by child rearing and other housework. Work for wages and 'other market activities' such as trading and retailing were the main components of employed mothers' market activities, whereas activities related to crop production contributed the least.

The burden of employed women's productive and reproductive roles affected their personal pursuits. As the number of hours devoted to market activities increased, a lower number of hours was spent on leisure, sleeping and personal activities because the time devoted to domestic activities remained stable. However, the time spent on total work (domestic and market work combined) by employed women was markedly less than the time spent on personal activities. This may reflect the fact that even if women had wanted to participate more in income-earning activities, they would be able to do so because jobs were not available.

The unavailability of suitable jobs could also explain the lack of significant increase in the time devoted to market work of women between 1975 and 1985. As

expected, the time spent on domestic work decreased between 1975 and 1985; however, the time saved was shifted mainly to personal activities. In effect, the number of hours devoted to market activities did not increase significantly despite the infrastructural development and technological innovations in agriculture during the period of study. Others probably benefited from such developmental efforts, but not the respondents of the study, probably because the women were considerably older (the mean age of women was 40 in 1985) and they lacked the necessary skills required by most manufacturing companies.

The domestic work of non-employed and employed women was significantly affected by the age of the youngest child but not by the number of children. The time devoted to domestic activities was reduced as the youngest child grew older.

Finally, through the use of time-allocation data the subsistence work of women which has normally been regarded as non-labour force work can be measured. The availability of this data will help to illustrate the importance of subsistence and small-scale activities in meeting the economic needs of the households in the developing countries and will thereby affect government perspectives and policies.

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Glossary

barangay	smallest political unit equivalent to a village
barrio	another term for barangay
bayanihan	exchange labour
cabeza	Spanish term meaning head or leader
carabao	water buffalo
cogon	*imperata cylindrica*, a kind of grass used as roofing material
gama system	a contractual arrangement in which workers weed certain plots for free in exchange for the right to harvest and receive a share of the harvest
Masagana 99	program launched by the government with the aim of increasing the yield in rice production
peso	the official currency of the Philippinese. The exchange rate was roughly ₱18.00 to AUS$1.00 in 1992

Abbreviations Used

FHDO	Farm and Home Development Office
ILO	International Labour Organization
IRRI	International Rice Research Institute
NEDA	National Economic and Development Authority
NCSO	National Census and Statistics Office
NSO	National Statistics Office (formerly NCSO)
NSCB	National Statistical Coordination Board
UN	United Nations
UPLB	University of the Philippines at Los Baños

Chapter 1

The Study of Women's Activities

1.1 The importance of women's activities

Women's economic activities have been of increasing interest to researchers from a variety of disciplines, among them sociologists, economists, and demographers, because of their role in economic development, social change, family formation, and status of women, and their effect on fertility behaviour (Koray, 1975: 1). This growing concern about women's economic activities is evidenced by the enormous volume of literature on the activities of women in both developed and less developed countries. However, considerable controversy continues to surround the concepts and measurement of women's economic activities.

Many researchers (see for example, Birdsall, 1980; Beneria, 1988; Durand, 1975) have recognised that estimating women's labour force participation, especially in the developing countries, is fraught with difficulties. As noted by Myrdal (1968: 1120-1121), the Western concept of labour force participation cannot be adequately transferred to an Asian context. Fong (1974: 7) and Jones (1984: 8) pointed out that

it is almost impossible to distinguish between the different roles of women as housewives, unpaid family helpers and agricultural workers when studying women's activities in traditional societies.

In addition to economic activities, household work comprises another important dimension of women's activities in all societies. Household work consumes immense human resources but is usually ignored, largely because historically it has been unpaid labour carried out by women (Berheide et al., 1976: 491; Coser and Coser, 1974: 93). In essence, women have dual productive roles. They not only actively participate in the market sector, working for cash income, or as unpaid family helpers in family farms or other enterprises, but they also provide child care, food and home management services in the home.

The dual burden carried by women in market and non-market activities tends to be overlooked (Corner, 1988: 198), largely due to the nature and sector of employment in which a majority of women in both less developed and developed countries are engaged. Their jobs fall outside the monetised sector and are not usually included in the definition of 'work' or labour force participation (Sulaiman, 1984: 3; Strasser, 1980: 44).

Several alternative approaches have been suggested to improve women's labour force statistics. One method uses time in describing the activities of women. Unlike conventional employment surveys, time-use studies make it feasible for the researcher to distinguish between activities carried out for market production and those for household production. In addition, time-allocation data can adequately classify activities that are on the borderline between household production for own consumption and income generating activities (Mueller, 1982: 55), thus providing a more complete picture of the true nature and extent of women's work.

Time-allocation data collected from households in Laguna, a province in the Philippines, will be used to detail the amount of time (and changes in these amounts)

that women devoted to different activities between 1975 and 1985. Since 1975, the Laguna Household Project has undertaken six rounds of data collection, but only the 1975, 1982 and 1985 data will be utilised here because time-allocation data were not included in all the surveys. Several authors (King, 1976; Navera, 1978; Popkin, 1976; Ho, 1979; Del Ninno, 1987) have previously used the Laguna Household data but have concentrated only on the 1975 and 1977 data. In addition, their concerns were different from those of this study. For example, Ho (1979) concentrated on the cost of child rearing in terms of time spent on child care, while Del Ninno (1987) dealt with the valuation of women's household activities. Recently, Spafford (1989) used the 1985 Laguna data to examine the time allocation of mothers and the nutritional status of children. The focus of this study is to explain how women from the province of Laguna allocated time between activities, and how such processes have changed over time. In addition, the study aims to identify which socio-demographic, economic and environmental factors affected the time devoted to domestic and market work and personal pursuits of mothers. Mothers are the main focus of this study; however, the patterns of time use of fathers and children are also included in order to examine their effects on mothers' allocation of time to different activities.

The other aim of this study is to measure the labour force participation of mothers and to examine how the differences in measuring the labour force participation affected women more than men. Thus, the next section begins with a discussion on the definitions and approaches used in measuring the economically active population, followed by possible explanations as to why women's economic participation is usually underreported.

1.2 Definition and measurement of the economically active population

1.2.1 Definition of the economically active population

The economically active population is generally defined as consisting of those individuals who furnish the supply of labour for the production of economic goods and services as defined by the United Nations (UN) systems of national accounts and balances during a specified time-reference period. According to the United Nations (1951: 5), the economically active population is defined as persons who are paid employees, employers, self-employed persons who work for profit, unpaid family workers (relatives who assist without pay in farms, stores, handicrafts, industry, and others) and those not currently employed but available for employment, as well as persons actually working at the time of the enumeration.

1.2.2 Approaches in measuring the economically active population

Two basic approaches have been followed in identifying the economically active population. The first is usually referred to as the 'gainful worker' approach, and the second has been called the 'labour force' approach.

According to the United Nations (1951: 5), the gainful worker approach is based on the idea that each person has a more or less stable functional role, as a bread-winner following a gainful occupation, or as a housewife, student or retired pensioner, and that this role is to some extent independent of his/her activity at any given time. This approach is primarily concerned with the enumeration of the usual occupation by which the person who pursues it receives compensation in money or in kind, or in which he or she assists in the production of marketable goods and services (Standing, 1978: 26). However, the gainful worker approach has several shortcomings. The most serious is that it is ambiguous. The reporting of the occupation of persons who do not have single and definite occupations, such as seasonal workers, depends on the enumerators' and respondents' interpretation of the

question (UN, 1951: 6). Another shortcoming is that the concept does not include a specific time reference. Respondents can report an occupation even if they are not at work or seeking work at the time of the survey. As a result, it is impossible to estimate the exact number workers who were employed, unemployed, ill, retired, or not able or willing to work for some other reason. Furthermore, persons entering the labour market for the first time are excluded and persons re-entering the labour market to seek jobs may or may not have been included among the 'gainfully occupied' (UN, 1951: 6).

The labour force approach was initially adopted in the United States in the 1930s when there was a great desire to generate data on the extent and incidence of unemployment created by the Great Depression (Hauser, 1949: 340). The gainful worker approach was inadequate for such a purpose. The principle of enumerating the economically active population on the basis of each individual's activities during a stated brief time interval is the basis of the labour force approach. Respondents are asked specifically whether they were employed or seeking work on a given day, or during a given time period. Those reported as employed or seeking work at that time are included in the economically active population, regardless of their usual activities (UN, 1951: 6).

Despite the fact that the labour force approach provides a comprehensive and consistent system of classifying the working age population, it also has several drawbacks (UN, 1951; Myrdal, 1968; Hauser, 1974; Tidalgo and Esguerra, 1984). One weakness is that it may reflect atypical conditions existing at the time of the interview (UN, 1951: 6). This is particularly likely in developing countries where subsistence agriculture dominates, and thus many rural (and some urban) activities are seasonal. The problem of timing can be partly eliminated by exercising care in the selection of the census or survey date; thus careful attention to timing is important to avoid overestimation or underestimation of the unemployed segment of the labour force (UN, 1951: 6). Related to this is the length of the reference period

used. For instance, the use of a week or a month before the survey has important effects on the enumeration of casual workers and of persons having recently joined or withdrawn from the labour force. On one hand, a longer time reference period will result in a larger measure of the labour force if all persons involved in any income-earning work during the specified period are included (Durand, 1975: 9-10). On the other hand, a longer reference period increases the likelihood that there will be some effect on the quality of data. In addition to the fact that respondents will have difficulty in recalling their activities, respondents may be confused as to how to report the varied activities in which they were engaged during the period since information on only one activity, or at most two activities, is sought in most surveys.

In sum, problems of definition and procedure plague the collection of labour statistics in industrialised and developing countries alike, for young and old, male and female. Yet women are disproportionately undercounted as workers in most population censuses and surveys for a number of reasons which are fully described in the next section.

The problem of multiple activities is not addressed in this study, but the study aims to present a more realistic picture of women's total labour activities through the use of time-allocation data. This may help to give a justifiable evaluation of their economic contributions and enhance their socio-economic status. Using the time spent on different activities provides a convenient standard of comparison for all activities and it is left to the researcher or the user to classify which activities are economic and non-economic.

1.2.3 Problems in measuring women's work

The inadequacy of official labour statistics can be partially attributed to the definitions and procedures used (Dixon, 1982; Beneria, 1982; Schultz, 1989; Anker, 1983; Anker et al., 1988). Concepts and methods of reckoning labour force participation in developed countries are less applicable to developing countries,

where workers are more likely to be self-employed, to work seasonally rather than year-round, to be underemployed rather than formally unemployed, and to engage in a fluid or sporadic pattern of diverse shifting economic activities (Durand, 1975: 9-12; Mueller, 1985: 8-9).

Many efforts have been made to improve labour statistics. This is reflected in the 1976 definition, where unpaid family members in agriculture, especially women, were given particular attention (ILO, 1976: 32 cited in Beneria, 1982: 123). This concern was reiterated at the World Conference for the Advancement of Women held in Nairobi in 1975, where it was recommended that special efforts should be made to measure and reflect the unremunerated contributions of women to agriculture, food production, reproduction and household activities in national accounts and economic statistics (UN, 1986: paragraph 20).

Underestimation of women's participation in economic activities may be due to several factors. The first concerns the identification of unpaid family workers and non-domestic activities. In 1954, the ILO recommended definition of unpaid family workers covered persons who worked in non-domestic activities for at least one-third of the normal hours (Beneria, 1982: 123). The problem of defining normal hours and obtaining accurate information on how long a family member has worked affects both male and female workers. The minimum number of hours or days that one must work during the reference period in order to be counted as working is not always specified in survey; and where it is, the time varies widely. Based on the Philippine Census definition, a person is considered an unpaid family worker if he or she works on a family farm or enterprise during the reference quarter. However, the number of hours a person has to work in a family farm or enterprise to be classified as an unpaid family worker is not specified. Some surveys have used elaborate instructions to interviewers in order to overcome ambiguities. For example, the requirement for activities around the house to be considered as work was defined in

the Integrated Survey of Households in the Philippines (National Statistics Office, 1988: xii) as follows:

> ... any activity that a person does during the reference quarter in relation to minor activities in home gardening, raising crops, fruits, etc. raising hogs, poultry, etc., fishing for home consumption and manufacturing for own use are also considered work. However, during the reference quarter, there must be some harvest in the case of home gardening, raising of crops, fruits and nuts and gardening of wild vegetables; animals disposed of (sold, consumed, bartered or given away) or some catch in fishing in order that these activities will be considered work. These activities were considered work in as much as earnings were derived from them.

Another problem arises when defining the number of hours devoted to economic activities because women's unpaid family work is highly integrated with domestic activities, and the task of distinguishing between domestic and unpaid family work is very difficult (Beneria, 1982: 123; Pittin, 1987: 41). Moreover, there is the difficulty of reporting simultaneous activities. Women are often performing more than one type of work at a time.

The second difficulty arises when workers are classified only according to their main occupation. This inevitably leads to the under-reporting of work of women in agriculture or in other non-domestic production. In censuses and surveys that do not ask about secondary occupations, it is likely that women will be classified only as housewives, when this often is not the case. For example, when women in India were categorized by their main occupation in 1971, the participation rate was just 13 per cent, but when secondary work was included the participation rate rose to 23 per cent (Gulati, 1975: 1699).

The third factor causing under-estimation of women's work is the deeply ingrained notion that the household is the place for women (Beneria, 1982: 124; Baster, 1981: 10). In some countries, it is considered prestigious for women not to work outside the household (Beneria, 1982: 124). A wife who does not perform any paid work is regarded by many as a status symbol. For instance, a cultivator's wife in India retires into seclusion to avoid all agricultural work outside the household, in

order to distinguish herself from the despised and hardworking female labourers - even if it means living in utter poverty (Boserup, 1970: 66).

The location of women's economic activities gives rise to a related issue in that activities such as selling food and drinks, or cloth-making for non-family members, as well as family members, are usually carried out at or near the home. The considerable overlap between women's market and domestic work makes women highly invisible (Longhurst, 1982: 113). In Laguna, the locale which is the focus of this study, one of the most common income-earning activities was tending *sari-sari* (small variety stores). These were always located adjacent to the house and mothers performed other housework such as washing clothes, cooking meals and looking after the children while running the business. This type of market activity is usually so interspersed with home activities that these productive tasks are not only invisible to outsiders, such as survey enumerators, but also to the men and women themselves. Mies' (1982: 54) study of Indian lacemakers reported a similar situation. The work of lacemakers and the labour time which it costs were not only invisible to the exporters, traders, and government officials but also to the husbands who considered lacemaking as non-work.

The nature of work carried out by women is another matter which causes women as well as other household members to not report women's market activities. Over the last decade, collecting bets for illegal lottery draws has been one of most popular income-earning activities, not only in Laguna but also in other parts of the country. When illegal lotteries started, collectors of bets were mostly men. Eventually, women also became collectors and combined whatever they collected with their husbands' or with other male members of the households' collection. Therefore, it was reported as men's work rather than women's work. Furthermore, women as well as other household members were ashamed to report collecting bets as market work.

The final factor concerns the perceptions of women and other household members as to what constitutes work. In developing countries, women's productive roles tend to be overlooked because the tasks are intermittent, casual, and marginal. The tasks appear to be small and not worthy of a separate identity, much less a value (Bhattacharya, 1985: 199; Ng, 1986: 101).

Even where there is a clear definition of work, incorrect enumeration may occur because productive activities are treated as part and parcel of housework. Men and women seldom recognise that productive tasks such as feeding livestock or food processing are separate from women's housework or domestic activity. As a result, such work is included as housework and unrecorded as economic activity in censuses or surveys. Thus, the quality of labour force statistics will only be improved if 'deep seated blocks' in the perceptions of men and women about 'housework' are themselves removed (Bhattacharya, 1985: 209). In the study villages in Laguna, mothers frequently instructed interviewers to exclude time spent on certain activities, feeding chickens in particular, from market activities. Mothers did not regard this as work as it often required only a small amount of time.

One approach to eliminating the problems associated with interviewer's and respondent's perceptions of what constitutes work is to use either a simplified activity/time-use schedule or a key-word and key-phrase questionnaire. Anker et al. (1988: 40-48), in an attempt to obtain more accurate data on Indian women's labour force activity, compared the results of two kinds of questionnaires. In the simplified activity/time-use schedule, respondents were asked to report the number of hours spent on 13 possible labour force activities during the reference period. This schedule was straightforward and unambiguous as regards participation in labour force activities, and did not require any interpretation on the part of respondents. For the key-word questionnaire, respondents were asked a series of key-word questions, with each successive question being more specific and detailed than the previous one. The key-word questionnaire thus differed from the conventional labour force

questionnaires, where only one or two broad questions on economic activities are usually asked.

Anker et al. found large differences in the results of the key-word question and activity schedule when compared. Significantly higher rates were reported on the activity schedule. Adding a question on secondary activity greatly reduced the differences, but it was only when the last key-word question was added that the differences between the results became insignificant. Thus, reasonable estimates of women's labour force participation can be obtained through either key-word questions or a simplified activity schedule, although the key word questionnaire requires greater care, especially at the stage of questionnaire construction (Anker et al., 1988: 84-90).

In view of the conceptual difficulties involved in accurately measuring the labour force participation of women, Anker et al. (1988: 27-32) suggested four possible labour force definitions:

1. The *paid labour force* refers to persons who are in wage or salary employment for which they are paid in cash or in kind. This category corresponds fairly closely to the currently-used employment-status category of 'employees'.

2. The *market-oriented labour force* includes persons who are in paid employment, and persons who are engaged in activities in a family farm or in a family enterprise/business that sells some or all of its products. In addition, employers, own-account workers, unpaid family workers and members of producer cooperatives can be included.

3. The *ILO labour force* refers to persons who are engaged in activities, the products or services of which should be included in the national income accounts statistics in accordance with the UN recommendations. In this definition activities associated with primary products such as food production and food processing (for

example, animal tending and milking; threshing in the home compound; processing and preparing food for preservation and storage; and unpaid gathering of food or fruit) are considered labour force activities whether or not market-related exchanges occur.

4. The *extended labour force* includes persons who are engaged in activities not included in the most recent UN recommendations on the Systems of National Accounts (SNA), but which nonetheless contribute to meeting the basic needs (goods and services) of families which would generally be purchased in the developed countries. Activities such as gathering and preparing fuel and making clothes are included in this category. Water fetching that requires long distance travelling can also be included.

Several labour force definitions will also be used in this study. Women who spent time on activities classified as market work will be considered as members of the labour force. However, the labour force definitions adopted in this study differ from those of Anker et al. (1988: 27-32) in the sense that market activities will not be differentiated by the disposal of the produce, whether sold or not, but rather by activity. For example, the first definition will include those who worked for wages only while the second definition will include those who worked in crop production.

In this section, the labour force definitions have been reviewed and the difficulties involved in the measurement have been identified. To eliminate these difficulties, four labour force definitions have been reviewed with increasing levels of inclusion, beginning with the paid labour force and ending with a fairly broad definition of the extended labour force. Each definition provides a different perspective which allows several different ways to estimate the labour force. To be able to carry out the different estimations, data have to be gathered by a simplified activity/time-use schedule. As noted earlier, this study will be using the time-

allocation data from the Laguna Household Study. Therefore, method and technique in time-allocation studies are discussed in the following section.

1.3 Time-allocation surveys

Given the difficulties involved in measuring women's work through the conventional labour force approach, several researchers (Birdsall, 1980; Tomoda, 1985; Mueller, 1982) have suggested that the use of the time-allocation approach would measure women's labour force participation more effectively. Time-allocation studies, also known as time budget studies, itemize and measure how people spend their time within the bounds of a working day, a seven-day week or some other relevant period. The use of time is defined as performing or conducting some kind of activity; even resting and relaxing may be understood as activities. Time-allocation studies are concerned with the exhaustive accounting of the activities of individuals, whatever the component activities happen to be (Szalai, 1972b: 1).

The time-allocation approach can give a more realistic measure of women's labour force participation (Tomoda, 1985: 662; Birdsall, 1980: 162; Caldwell et al., 1980: 1). Researchers are able to identify the inter-relationship between different kinds of work and between the work of different individuals. The focus is more on the household than only the individual. Other advantages are that no a priori assumptions are made about what is and what is not an economic activity; respondents are not required to reply to ambiguous questions; the labour force can be easily defined after the survey in different ways for different purposes; many of the numerous economic activities performed can be taken into account (Standing, 1982: 392).

Conversely, time-allocation studies cannot be recommended for national surveys and censuses because they are expensive and complex to administer, requiring well-trained and well-supervised interviewers. They are useful instruments for smaller in-depth studies concerned with micro-level relationships, as well as for

checking the validity of post-enumeration inquiries for large surveys and censuses (Jain and Chand, 1982 cited in Anker, 1983: 717).

1.3.1 The history of time budget research

The use of time for studying social behaviour grew out of family and income expenditure studies. Morton (Chapin, 1974: 3) made use of family budget information in reporting the living conditions of the English working class in the eighteenth century. Using this methodology, Engels undertook a similar study but paid greater attention to family budget statistics and incentives for work and buying, concluding that there was an inverse relationship between income and the proportion taken up in food expenditures (Szalai, 1966: 3).

The first exact recording of time spent on the job by industrial workers was carried out by Frederick Taylor in his 'time-and-motion' studies at the beginning of the twentieth century (Converse, 1968: 43). Other articles were published later by Rowntree, Halbwachs and others which dealt with the standard of living of the English and French proletariat (Szalai, 1966: 3). However, Szalai noted that these studies were not regular time budgets since they were concerned with the time expenditure or time requirement of an isolated activity and not with the exhaustive employment of the entire time at the disposal of individuals during a certain period.

The first large-scale exhaustive 24-hour time budget study was conducted by Strumilin in 1924 (Converse, 1968: 43). This dealt with Russian workers and peasants. It was also at the end of this decade that a study was conducted by the Bureau of Home Economics of the United States' Department of Agriculture investigating 'the use of time' among American farm women (Converse, 1968: 43). During the 1930s, more time budget studies appeared including important studies by Lundberg et al. (1934) and Sorokin and Berger (1939). However, the use of the time budget technique expanded only after 1945, as a result of a general upsurge of scholarly and public interest in the study of social phenomena by means of mass

observation through polls and sample surveys, producing easily digestible, though perhaps not always as easily interpretable, quantitative results (Szalai, 1972: 7b).

The enormous increase in the generation of time-allocation data can also be attributed to the many ways time budget studies can be used. In the United States, the most well-known were those of Chapin (1974: 4) on discretionary time and of Walker (1969) on homemaking. The Soviets have utilized time budgets in economic planning and the French in studying wives' time planning (Chapin, 1974: 4). Researchers from Hungary and other Eastern European countries have launched time budget surveys as tangential to the official census (Converse, 1968: 43), while for more than 20 years, the Japanese have been conducting time use surveys once every five years for radio and television programming (Nakanishi and Suzuki, 1986).

The most ambitious and comprehensive time-allocation survey, the Multinational Comparative Time Budget Research Project, was conducted in 1964-65 in 15 locations spread over 12 countries (Szalai and Scheuch, 1972). Its objective was to make aggregate comparisons of time use under different cultural and economic conditions. The data collected, either at specialized sites or in the national sample, from this undertaking were later used in several studies in the United States (Fox, 1978; Vanek, 1974; Leibowitz, 1972; Robinson, 1977).

The review in this chapter of time-allocation studies indicates that the collection of information on how people use their time is not a new phenomenon in the developed countries and has varied uses. Although time-allocation studies have also been carried out in developing countries, the study of time allocation is still in its infancy (Birdsall, 1980: 157). Surveys had been undertaken for purposes ranging from describing adults' time-allocation patterns (Farouk, 1980; Khuda, 1982; Acharya and Bennett, 1983) to determining the economic contribution of children (White, 1976; Cain, 1980; Vlassof, 1979; Nag et al., 1980).

In the Philippines, one of the earliest surveys on time allocation was carried out by home economists (Bustrillos and Torreta, 1960). This study focused mainly on home management among married women in Laguna. Other research in the mid-1970s was carried out by Hayami et al. (1978) in a village of the same province, but explored the labour use of all household members. Labour use referred only to time devoted to working for wages, on-own farm or as exchange labour; thus, household chores were excluded. This was also the period when the Laguna Household Project, the source of data for the current study, was first conducted. Several researchers (Cabañero, 1978; Ho, 1979; Navera, 1978; Popkin, 1976) published reports based on the Laguna Household Project (See Appendix A for details of their studies.)

Similar studies (Res, 1985; Guino, nd; Lanzona, 1986) in other provinces of the Philippines were pursued by the International Rice Research Institute (IRRI). Their focus was mainly on the effect of the new technology - high yielding varieties, farm mechanization, and use of irrigation water in rice production - on the time allocation of household members.

1.3.2 Time-allocation methodology

1.3.2.1 Data collection

Three broad techniques are employed for collecting time-allocation data: diary keeping, observation and recall. With the diary method, the respondent records a log of activities and the duration of each, on the basis of instructions and forms provided by the researchers. This method has been widely used in developed countries (Berk and Berk, 1979; Walker and Woods, 1976; Szalai, 1972a). It minimizes recall bias (Robinson, 1977: 9) but has proved impractical in developing countries (Birdsall, 1980: 165). Evenson et al. (1980: 297) tried this method in the pre-test of the Laguna Multipurpose Questionnaire, but rejected it because respondents found it too burdensome and simply did not follow instructions.

The observation method requires the interviewer to stay with members of the household throughout the period. For developing countries, where work is less structured, this method assures greater data accuracy. Joint activities and the intensity with which an activity is undertaken can be more accurately recorded. The observation method is also advantageous when respondents have a limited sense of time (Birdsall, 1980: 167). However, it introduces bias insofar as a person's activities, especially those of children, are influenced by the presence of an observer. Furthermore, it is very costly to implement and fewer households can be covered (Robinson, 1977: 9; Wigna et al., 1980: 4-5, Juster, 1985b: 27). Juster (1985b: 27) noted that the direct observation method involved a relatively high refusal rate, and that the refusals were not random.

A modification of the observation method is the use of random spot checks or the instant record technique. Erasmus (1955) introduced this method when he studied the activities of Mayo Indians. In this approach, hours were selected in advance and households were visited during the hours specified. The activity recorded was that which the subject was doing at the moment he/she was first seen (Erasmus, 1955: 323-324; Johnson, 1975: 303; Acharya and Bennett, 1983: 65; Reynolds, 1991: 84-86). Different methods have been used to record activities. Johnson described the activities of the Machiguenga Indians in longhand in notebooks at the time of the visit and later coded the different activities. Acharya and Bennett, by contrast, used a pre-coded form containing a detailed set of activities listed vertically with space to record the name and person number of each household member across the top. During the visit, the interviewer observed what each household member was doing and recorded the observation by marking the corresponding box on the activity list under that person's name.

An advantage of the random spot check is that it consumes very little time and does not allow the observed individual to alter his or her behaviour. However, it also has disadvantages. The most serious is that activities involving movement or

travelling are missed (Reynolds, 1991: 84-86). Similar to direct observation, individuals are usually observed in particular sites such as the village or homes; thus many important activities that occur in other place are missed. The other disadvantages are that the interpretation of activities depends on the enumerator, sequences of tasks are unlikely to be captured, and crises of health or family problems which may have affected an individual's activities are also unlikely to be noted.

With the recall method, an interviewer asks the subject to narrate what he or she did during a certain period. The interviewer either prompts the subject regarding specific activities, a list of which is available to the interviewer, or asks the respondent to relate the activities in his/her own words and in sequence. Alternatively, the respondent is asked how much time has been devoted to certain activities or how often he or she has been engaged in various activities. Andorka (1987: 151) refers to this as 'stylized questions'. Recall data are cheaper to collect, since interviewers spend less time per household. The limitation of this approach is that people forget (Converse, 1968: 45). However, White (1976: 434-435) found that the Javanese respondents in his study could correctly recall time to within a quarter of an hour. There were several features in everyday life, such as the invariable time of sunrise and sunset, school time and the five obligatory daily Moslem prayers that helped respondents in remembering the time devoted to different activities.

Secondary and concurrent activities are not usually reported in the recall method of data collection; yet these can be critical to analysis (Birdsall, 1980: 168). White (1976: 436), for example, divided the recorded time between simultaneous activities. However, the arbitrary splitting of hours was not realistic. White found that the households which reported the most time in child care appeared overall to spend the least time in cooking. The number of hours devoted to cooking while

baby-sitting probably were hardly more than time devoted to cooking so that the reduction in cooking time was not practical.

Reynolds (1991) used the observation, random spot check and 24 hour recall in collecting time-allocation data from women, girls and boys in the Zambesi Valley (Zimbabwe). A comparison of these methods showed that each technique lends a particular perspective to people's activities. The most striking feature was that the order of magnitude within groups remained consistent across all three techniques. That is, the observation method recorded the highest number of activities related to work for women, boys and girls, the random spot check recorded the highest number of activities related to self-care and the 24 hour recall recorded the highest number of activities related to leisure. It was also found that respondents not only reported the lowest number of activities related to work but also underestimated the time spent on these activities when asked to recall their time use (Reynolds, 1991: 86-87).

These findings have important implications in the current study because time-allocation data were collected through recall from Laguna households. There are certainly inaccuracies in recall data when compared with the other methods of data collection, but the flaw in the Laguna data may not be as serious as indicated from the results of the data collected through recall in the Zambesi study because of the differences in the conditions prevailing in the location of the two studies. In the Zambesi study, few people had watches, clocks, radios or other means of telling time (Reynolds, 1991: 69), whereas in the Laguna study, nearly all of the households had radios which helped the respondents in recalling the number of hours spent on different activities. In addition, a list of activities was used in the Laguna surveys and respondents were asked the amount of time spent on the activities. In this manner, respondents were prompted to recall the activities which they might have inadvertently forgotten.

1.3.2.2 Duration of coverage

The time reference period used in different studies varies. A majority of researchers covered a single day (24 hours) exhaustively (Szalai, 1972a; Meissner et al., 1975). Others considered only certain periods of the day, such as the time spent only in the work place, waking time or the time spent only on leisure. For instance, the Multinational Study (Szalai, 1972a: 37) covered the activities of the whole day - from midnight to midnight. Caldwell et al. (1980: 4), by contrast, observed the sampled households for 17 hours a day while Messer and Bloch (1977: 332-333) used 12 hours and 13 hours.

In addition to differences in the number of hours, the sampling of the days for which time data are collected is also an issue. Data gathering usually takes place at several times throughout the year including several different days of the week (Cain, 1980; Caldwell et al., 1980; Lanzona, 1986; Guino, nd; Nag et al., 1980; Szalai, 1972a). Anker (1982: 33) posed the question as to how many times respondents should be visited - once, each month or each season? Again, in the Multinational Study (Szalai, 1972a: 39), interviews were carried out within two months but excluded the summer months, Christmas time, and the period of very cold weather. Some time budgets (Lanzona, 1986; Guino, nd; Khuda, 1982; Cain, 1980) attempted to embrace the whole year by distributing the observed days throughout the year. Multiple interviews are considered to be advantageous because the quality of response tends to improve over time (Andorka, 1987: 151). Nevertheless, Kalton (1985: 112) recommended that any person should not be interviewed more than four times, distributed usually at equal intervals during the year. More than four interviews are unlikely to increase the reliability of time data because of the difficulty of obtaining cooperation from the respondent. White's (1976: 432-433) experience in Indonesia was different. Each of the 92 households in the sample was

visited every sixth day a total of 60 times for one year and none of the 92 households declined to participate.

The fact that the Laguna survey has been conducted for the past ten years using the same respondents helped in improving the quality of the data. Also, the trust between the respondents and the enumerators had been established. As far as the author knows, none of the respondents refused to be interviewed. Others who were not included in the survey even asked the enumerators why they were not interviewed. The interest in being interviewed was probably due to the small gifts that were given to the respondents.

The continuous collection of time-allocation data in Laguna from 1975 to 1985 from the same respondents also makes this study unique. Most previous time-allocation studies have been carried out using data that refer only to one point in time. Very few studies (Robinson, 1980; Staikov, 1989; Nakanishi and Suzuki, 1986) have analysed changes in women's time allocation over time but on different respondents. Popkin and Doan (1989: 19) stressed that the relationships between women's activities and technological changes, spatial movement and other social forces affecting women's lives inevitably affect women's economic activities. An understanding of the consequences of these changes for women's time-allocation patterns necessitates a careful study of longitudinal data.

1.3.2.3 Classification of activities

An appropriate classification of activities is necessary to analyse activity patterns (Rodgers and Standing, 1981: 1). This might be based on the nature of the social system and prevailing mode of production (Rodgers and Standing, 1981: 1), or the purpose of the study (Hull, 1981: 66). There are conflicts between having a large number of categories so as to be complete and accurate, and the desire to have as few codes as possible so that analysis can be efficient and relatively uniform. If a large number of categories is preferred, many of the activities may not apply to most

people, and the results of analysis may be extremely uneven and difficult to comprehend. However, if only a small number of categories is used, there is the problem of being too general to differentiate sensitively enough among the groups being compared (Michelson and Reed, 1975: 190).

Some time-allocation studies (Cain, 1980; Hart, 1980) classified activities into directly-productive and home-maintenance activities. Cain (1980: 221) defined directly-productive activities as those necessary for generating income and capital formation, and home-production activities as those required for the maintenance and upkeep of the household. Home production activities are not directly-productive in the sense of generating an income, but enable other household members to engage in directly productive activities. The problem with this classification is that activities that are considered productive in some studies may be classified as home-productive activities in others, or even excluded altogether. Ali and Farouk (1977: 31-35), for example, used the term productive activities to cover directly-productive and home-maintenance activities. Chakravarty (1985: 23-24) basically categorized activities into production-oriented and consumption-oriented activities. Caldwell et al. (1980: 9) noted that classifying the work into directly productive and unproductive activity is usually more misleading than helpful because, in the familial mode of production, the majority of activities are aimed at subsistence food production. Activities starting in the fields and ending in the kitchen are on a single continuum. Thus, even in the time-allocation approach, the problem of defining economic activity remains. However, the advantage of time-allocation studies lies in the fact that the time devoted to different activities is recorded so that researchers can change their definitions of economic activities depending on the purpose of the studies.

In summary, there is no agreed-upon method of data collection; nor is there an ideal duration of coverage or number of categories into which activities are placed. Given the advantages and disadvantages of the different methods, the research design and field techniques must be modified to fit each individual research

situation. The principal determinants of field technique are the objectives of the study and the restrictions imposed by time, resources and the situation itself.

Deciding on the appropriate number and classification of categories is difficult. The choice depends on the objectives being pursued. In analysing women's time allocation in this study, fetching water and collecting firewood were combined with cleaning and other activities, whereas in comparing the contributions of all household members to different household tasks, these activities were analysed separately. Water and firewood collection were examined separately in looking at the entire household's time allocation since it is believed that children as well as fathers contributed more in this activity.

The problem of identifying secondary activities in the recall method of data collection can be partly resolved by adding another question as to whether the activities were done solely or simultaneously with other activities, and if two activities were done at the same time, respondents can be asked which was primary and which was secondary. However, if the objective of the study is focused mainly on multiple activities performed by individuals, then the direct observation method may be an appropriate methodology.

All the techniques used in collecting time-allocation data appear to be more invasive than other techniques so that developing and maintaining good relations between respondents and researchers should be kept in mind (Wigna et al. 1980: 38):

> ...while differences in method (such as the length of recall-period) may determine whether respondents are <u>able</u> to provide reliable information, it is the relationship between researcher and respondent which largely determines whether they are <u>willing</u> to provide it.

1.4 Objectives of the Study

In this study, all facets of women's activities will be examined together with the factors affecting them over time. The gender-based division of labour and the

changes in it will also be examined through a study of substitution among household members and among domestic activities. The time allocation of the household members will be analysed to determine who assisted mothers in performing household activities.

The main objectives of the study are:

1. To identify demographic, economic and community factors affecting women's time allocation;

2. To analyse changes in the time devoted by women to domestic, market, and other activities in Laguna between 1975 and 1985;

3. To examine the time allocation of other household members in order to identify what activities and how much time were contributed by household members to the maintenance of the household; and

4. To analyse the labour force participation of women using the usual reported occupation, and to compare the results with the pattern of women's economic activities revealed by the time-allocation approach. The effect on women's labour force participation of using different definitions of economic and non-economic activities will also be examined.

This thesis has seven chapters. Chapter 2 describes the data sources and their limitations, methods of analysis and the setting of the study. Differentials among the major categories of women's time allocation are presented in Chapter 3. The changes in the time devoted to domestic, market and personal activities and their components are examined in Chapter 4. Chapter 5 analyses the contribution of all household members to different household tasks. A comparison of women's economic activities with the other household members is made in Chapter 6. The concluding chapter, Chapter 7, presents a review of the main findings, their importance for empirical knowledge and the direction of further research.

Chapter 2

Setting, Sources of Data and Methodology

This chapter provides a brief discussion of the Philippine economy, the general characteristics of the study area, sources of data and methodology, and a profile of the villages included in the study. As national, social, and economic conditions affect the employment of women, a brief discussion of the Philippine economic situation during the period of study is presented in section 2.1. Section 2.2 provides background information on Laguna province and a description of the developments taking place during the period of study. The location and profile of the villages included in the study are provided in section 2.3, while the sources of data and methodology are presented in sections and 2.4 and 2.5, respectively. The chapter ends with the limitations of data in section 2.6.

2.1 Some social and economic indicators for the Philippines

Despite the increased share of the manufacturing sector in providing employment, the majority of the population in Laguna derived their livelihood from agriculture and related industries. This section discusses the aspects of the national, social and

economic situation that have consequences for the domestic and market work of the respondents in the study area. In line with this objective, the plight of the workers engaged in agricultural production, rice and coconut in particular, is reviewed in this section. The manufacturing sector is also briefly described.

Mass poverty has long been a fact of life in the Philippines especially in rural areas. Recently, poverty has become more widespread. The deficit between what households can earn and what they must spend to meet their basic needs has increased dramatically. The legal minimum wage for agricultural workers was ₱34.42 per day (₱869.10 per month) for plantation and ₱25.90 (₱653.98 per month) per day for non-plantation workers. These earnings were far below the poverty threshold estimated at ₱2,613.12 per family per month by the World Bank in 1975 (de Dios, 1984: 25). The burden on women who must collect, produce and prepare food, has been increased by economic recession because many do not have sufficient income to buy what they need, and must utilise more labour-intensive substitutes. Their difficulties have been aggravated by the use of chemicals in agricultural production, which has reduced the supply of free protein sources like snails and fresh-water fish in rice paddies and irrigation canals.

Not only poverty, but also unemployment and underemployement have increased dramatically. From 1978 to 1983, the percentage of those who were working but wanting additional work nearly tripled, from 10 to 29 per cent in 1978 and 1983, respectively (de Dios, 1984: 23). This was caused by the marginalisation of many small farmers brought about by the high-cost of inputs, growing landlessness among the rural masses coupled with rising land concentration in the hands of corporate interests and the rural elite, the rapid displacement of many rural workers by mechanisation, and the low level of demand for major export crops such as sugar and bananas (Pineda-Ofreneo, nd: 7). The proportion of rural women engaged in agricultural production declined from 54 per cent in 1975 to 40 per cent

in 1984, probably due to increasing loss of jobs, especially in the agricultural sector (NCSO, 1984b cited in Pineda-Ofreneo, nd: 7).

Agriculture has remained of prime importance in employment and net contribution to export earnings. However, its share of employment declined from 1976 to 1986 (NSCB, 1988: 522-525). More than 75 per cent of women engaged in farming could be found in rice production activities, such as transplanting, weeding, harvesting and threshing (Pineda-Ofreneo, nd: 7). These activities were most affected by the Green Revolution. In rice production, the *Masagana 99* program was specifically launched to attain self-sufficiency; however, not only did the program displace labour, but it also had detrimental effects on the environment. Government programs to increase productivity relied heavily on the use of fertiliser, pesticides, tractors and other machinery. Agricultural activities such as making seed-beds, uprooting seedlings, transplanting, and weeding had been largely reduced on well-drained and irrigated land because of the interaction of mechanical cultivation, direct-seeding and chemical herbicides. Winnowing and then threshing were replaced by machines, while hand tractors replaced much of the work in land preparation (Fegan, 1982: 14-23). The most adversely affected were women from landless households because they mainly depended on income from agricultural wage labour.

The series of peso devaluations (Ofreneo, 1984 cited in Pineda-Ofreneo, nd: 7) coupled with the removal of all government subsidies for agricultural production (Business Day, 1985 cited in Pineda-Ofreneo, nd: 7) have contributed to the high levels of indebtedness among rice farmers. The use of high-yielding varieties has not only meant an increase in the use of fertiliser, pesticides and irrigation water, but has also made timing very important. With the ever-increasing cost of farming, rice farmers have been forced to borrow money from banks as well as private money lenders at high interest, to buy the necessary farm inputs whenever the planting season commenced. Rice farming has become a vicious circle where the produce of

the farm has increasingly already been promised as payment for the credit accrued from the previous season. Rice farmers have had to give up farming because it was becoming unprofitable, thus increasing the number of landless workers who have had to depend on other farms for employment as well as other off-farm activities. In the period 1980-82, 195,000 hectares of rice land were converted either for subdivision, piggeries, or to fields planted to commercial crops less in need of female labour, which was detrimental to the rural women previously engaged in rice production (Ofreneo, 1984 cited in Pineda-Ofreneo, nd: 9).

The purpose of a lengthy discussion about rice production is that Laguna is primarily a rice-producing province. The entire province, except for one municipality, is involved in rice farming. Coconut production is also discussed because coconut is the most planted crop in the province. Coconut plantations cover twice as much land as that planted to rice production but fewer people, women in particular, rely on this industry because the labour requirements are less intensive than for rice production.

With respect to coconut production, as well as other plantation crops, the available studies deal only with the general trends affecting agro-industries and their workers, from which some implications could be inferred for women (Pineda-Ofreneo, nd: 12). The coconut industry is export-oriented and depends on the world market. When the price drops in the world market, the earnings of farm workers also decline. In 1977, fourteen million farm workers were engaged in coconut production (David, 1977 cited in Pineda-Ofreneo, nd: 12). Many of these farm workers were women involved in gathering and piling nuts and removing coconut meat from the shells, on a piece rate basis. Adverse weather conditions also affect coconut production. The severe drought in 1983 and the typhoons in 1984 resulted in a low volume of production when the price of coconut in the world market was so high that one of the opportunities to earn more could not be maximized (Pineda-Ofreneo, nd: 13).

The geographic location of Laguna has played an important role in the increased share of the manufacturing sector in providing employment. The manufacturing sector in the Philippines has expanded markedly since Independence but the economic crisis in 1976-85 slowed its growth. Most women in manufacturing were involved in textiles, weaving, apparel and related categories of employment which were badly hit because of the unavailability of imported raw materials. Piecework contracting in garment and handicraft production was one of the most common off-farm sources of income for women in the rural areas. Pieceworkers were concentrated in Rizal, Batangas, Laguna, Negros and Cebu. Exporters recruited workers through subcontractors, the exporter providing the raw material while the sewing machines were either rented or bought from the subcontractor to enable women pieceworkers to work in their homes. At peak season in 1983, women could earn ₱9.00 for sewing and ₱50.00 a day for embroidering but the off-peak workload (and therefore income) was often only one-third of the peak workload, or less (Sinay-Aguilar, 1983 cited in Pineda-Ofreneo, nd: 14). Pieceworkers did not enjoy vacations, sick leave or medical treatment benefits. They did not receive the minimum wage yet worked for very long hours, and had no job security. When there was heavy demand, they were most essential to the industry but they were the first to suffer when demand declined (Cabalu and Javier, 1982: 23).

Since the early 1980s, women have faced a gloomy outlook in both the agricultural and manufacturing sectors. The modernisation of agricultural production coupled with the dependence of cash crops on international markets has reduced employment opportunities for women. High inflation has increased the cost of maintaining a family so that many women have had to exert extra effort to meet their families' financial requirements. In addition, women have had to plan carefully their day-to-day activities to attain efficiency in the use of energy and other household resources.

These national conditions for agricultural production as well as industries have some bearing on local processes, particularly on the economic activities of women. The following section takes one step closer to the study area by discussing the demographic and socio-economic characteristics and the developments taking place in Laguna province when this study was conducted. Developmental changes specific to the province that have some links to the potential changes in the activities of women are also included.

2.2 The province of Laguna

Laguna is an inland province situated to the southeast of Manila (Figure 2.1). It is bounded on the east and south by Quezon, and on the west by Batangas and Cavite. To the north lies a part of Rizal province and Laguna de Bay. Its terrain consists mainly of narrow rolling plains that extend along the eastern, southern and western shores of the bay. A few elevated portions are found along the northwestern part of the province, and to the southwest lies Mt. Makiling. Intensive irrigated rice production is carried out in most lowlands areas, while upland farming consists of a mixture of rice and other crops, principally sugar-cane, coconut, pineapple and corn. Administratively, Laguna province is composed of one city, Santa Cruz, the capital, 30 municipalities (towns) and 673 *barangay* (the smallest political unit in the Philippines).

2.2.1 Demographic profile

As recorded in the 1980 census (NCSO, 1983a: xxvi), Laguna had 973,104 inhabitants, of whom 487,135 were males and 485,969 females. The province is ranked number 14 among the 73 provinces of the country in terms of population size. During the 1960 to 1970 intercensal period, the province experienced a rapid population increase. While the population of the country increased by 35.4 per cent during this period, that of Laguna increased by 48.2 per cent. The annual rate of

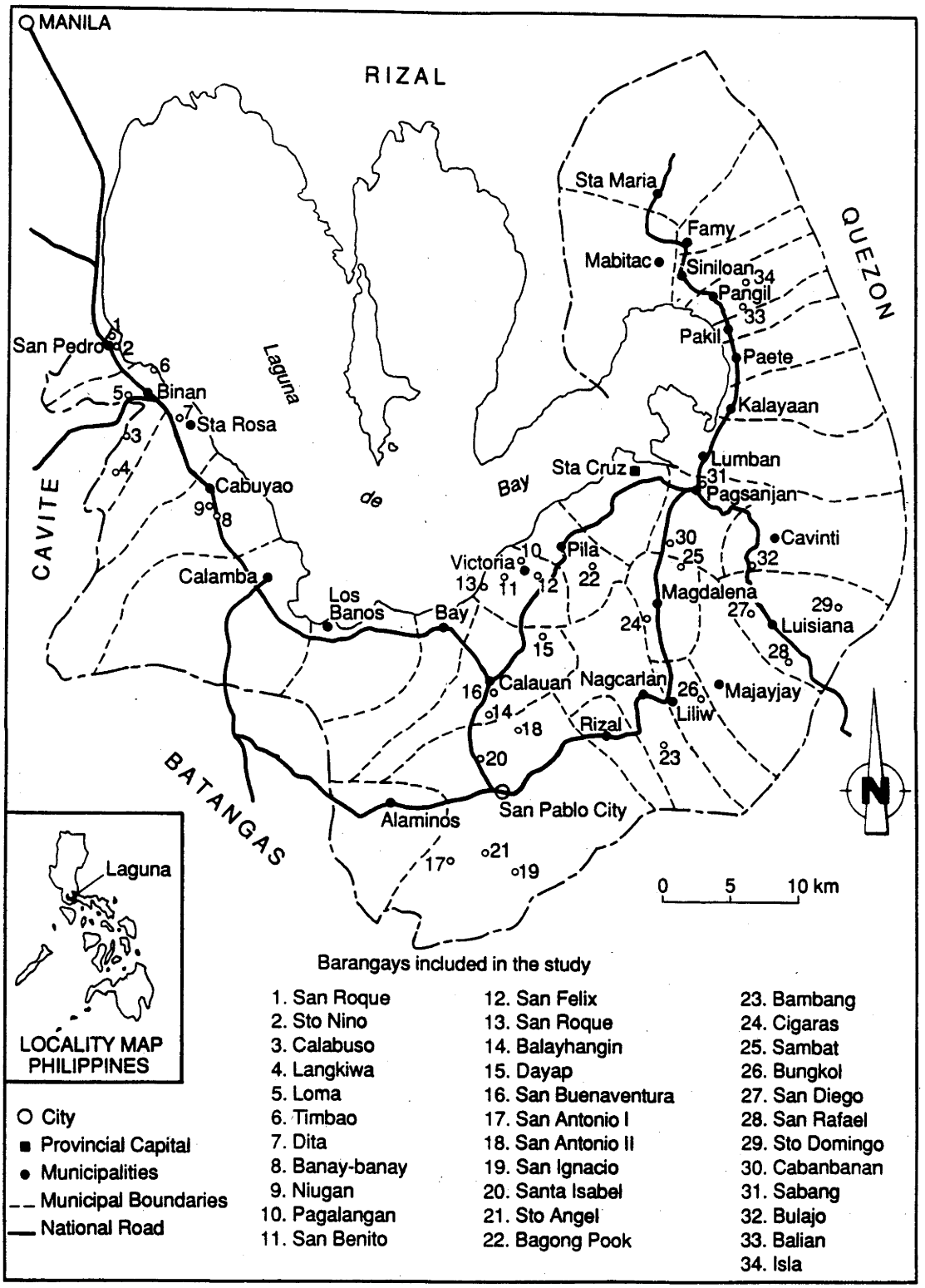


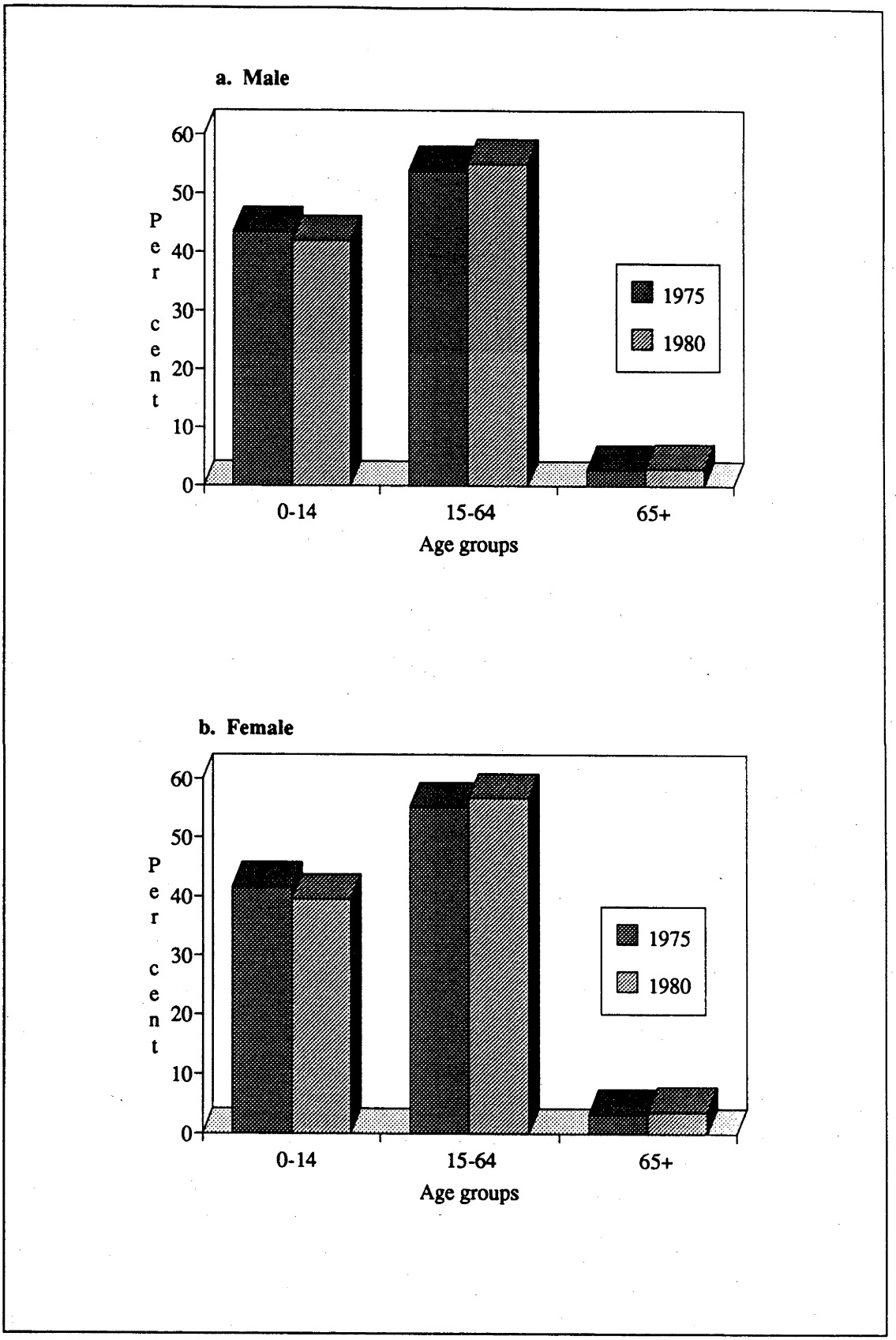
Figure 2.1 Map of Laguna, Philippines.

growth from 1960-70 was 3.9 per cent, falling to 2.8 per cent between 1970 and 1975, and rising again to 3.9 per cent between 1975 and 1980. The population density of the province was 553 per square kilometer in 1980, an increase from 457 inhabitants per square kilometre in 1975. With this increase, Laguna moved from the third most densely populated province in 1975 to the second in 1980. The high rate of population growth resulted from both natural increase and net migration into the province. The net population inflow was due to the increased employment opportunities in the province (Hayami et al., 1978: 10-11), as well as the conversion of farm lands close to Metro Manila into residential subdivisions.

The sex ratio (the number of males for every 100 females) for the province dropped from 101.7 in 1975 to 100.2 in 1980. The sex ratio for the whole country also dropped from 102.3 to 100.2 during the same period, probably due to an increase in the overseas contract work. The number of overseas workers rose from 12,501 in 1975 to 337,754 in 1985 (NEDA, 1986: 486-487). A large proportion of overseas contract work was in production process, transport equipment operation and labour (44 per cent in 1985), presumably men. The drop in sex ratio could also be due to more accurate reporting in 1980 than in 1975. The sex ratio was higher in the urban areas of Laguna (103) than in the rural areas, where there were only 98.5 males for every 100 females. The explanation could be that more men migrated to the urban areas to work in agricultural and related industries while women were left in the rural areas.

Although a downward trend in youth dependency has been observed since 1970, Laguna still had a relatively youthful population in 1980 (Figure 2.2). The young population (aged 0-14 years) constituted 42 per cent male and 40 per cent female in 1980. These were slightly lower than the 1975 proportions. By contrast, the proportion of the population in the productive age group (15-64 years)

Figure 2.2 **Age composition by sex, Laguna, Philippines, 1975 and 1980**



Source: Appendix Table 2.1

has been increasing. The older age group (65 years and over) constituted a small proportion of the provincial population.

While it is true that children help in meeting the domestic and economic needs of the family, the relatively youthful population of the province has an influence on the productive as well as reproductive responsibilities of women. In addition to the greater attention and needs of the younger population, compulsory education at the elementary level limits the extent to which children can help their parents, resulting in a heavier load for adults, and women in particular.

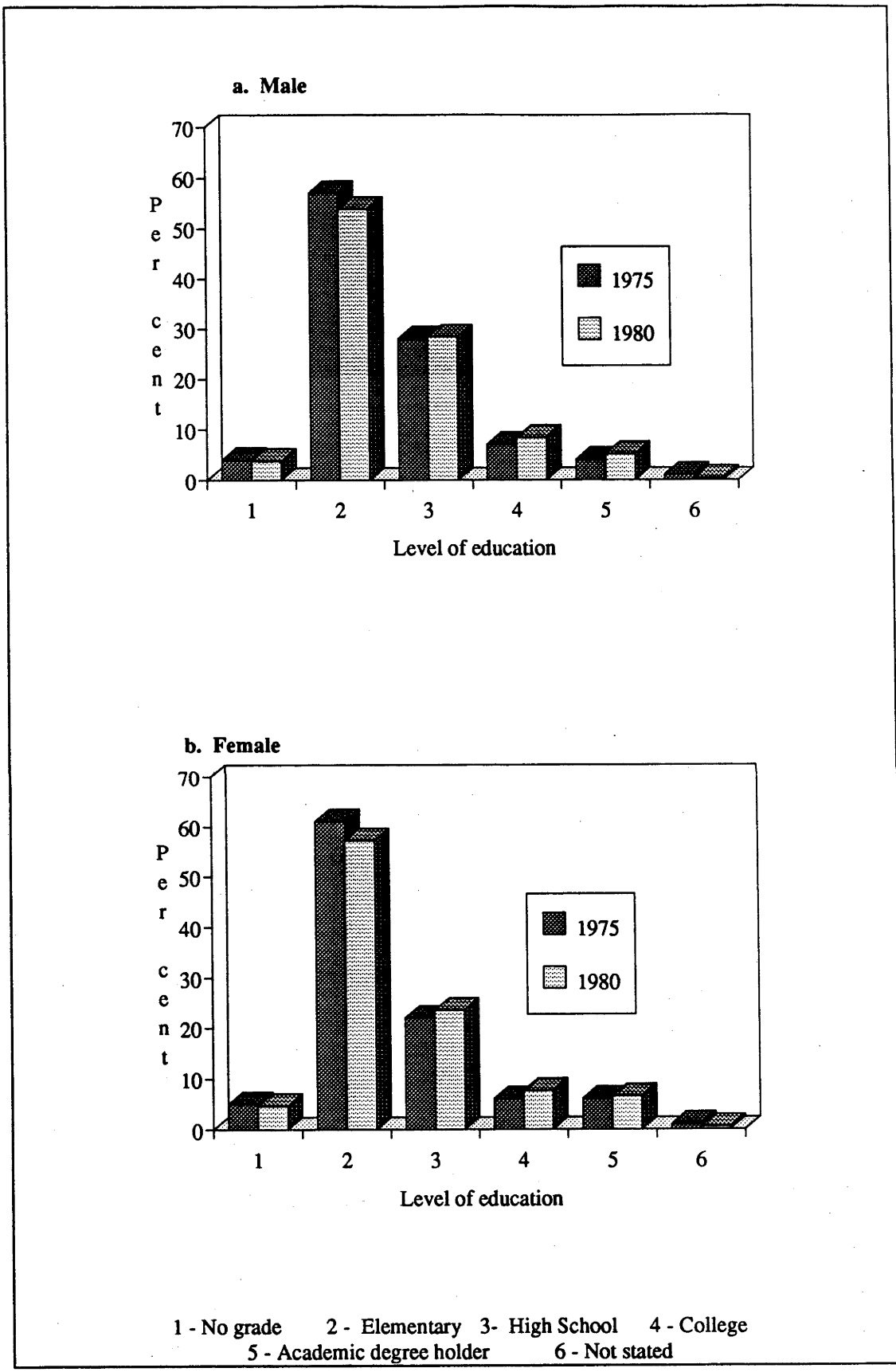
In summary, the rapid increase in the population in the province and the relatively youthful population have repercussions on the productive and reproductive responsibilities of women. A rapid increase in population means more competitors for limited employment opportunities and while most of the children are in school, women have to provide most of the domestic needs of the family. In addition, high inflation means that women have to be ingenious in making ends meet, involving extra time and stress.

This information reflects only the demographic characteristics of the population in the province, but does not describe the quality of the population, that is, their social and economic characteristics. Thus, the next section examines the literacy level, educational attainment and major occupation of the people from Laguna.

2.2.2 Social and economic profile

In 1980, the literacy rate for both sexes in Laguna was high. A slightly higher proportion of adult males (91 per cent) than females (89 per cent) were able to read and write (NCSO, 1983a: xxvii). Educational attainment data (Figure 2.3) indicate that the majority of the population 7 years old or over finished elementary education

Figure 2.3 **Private population seven years old or over by highest grade completed and sex, Laguna Philippines, 1975 and 1980**



1 - No grade 2 - Elementary 3- High School 4 - College
5 - Academic degree holder 6 - Not stated

Source: Appendix Table 2.2

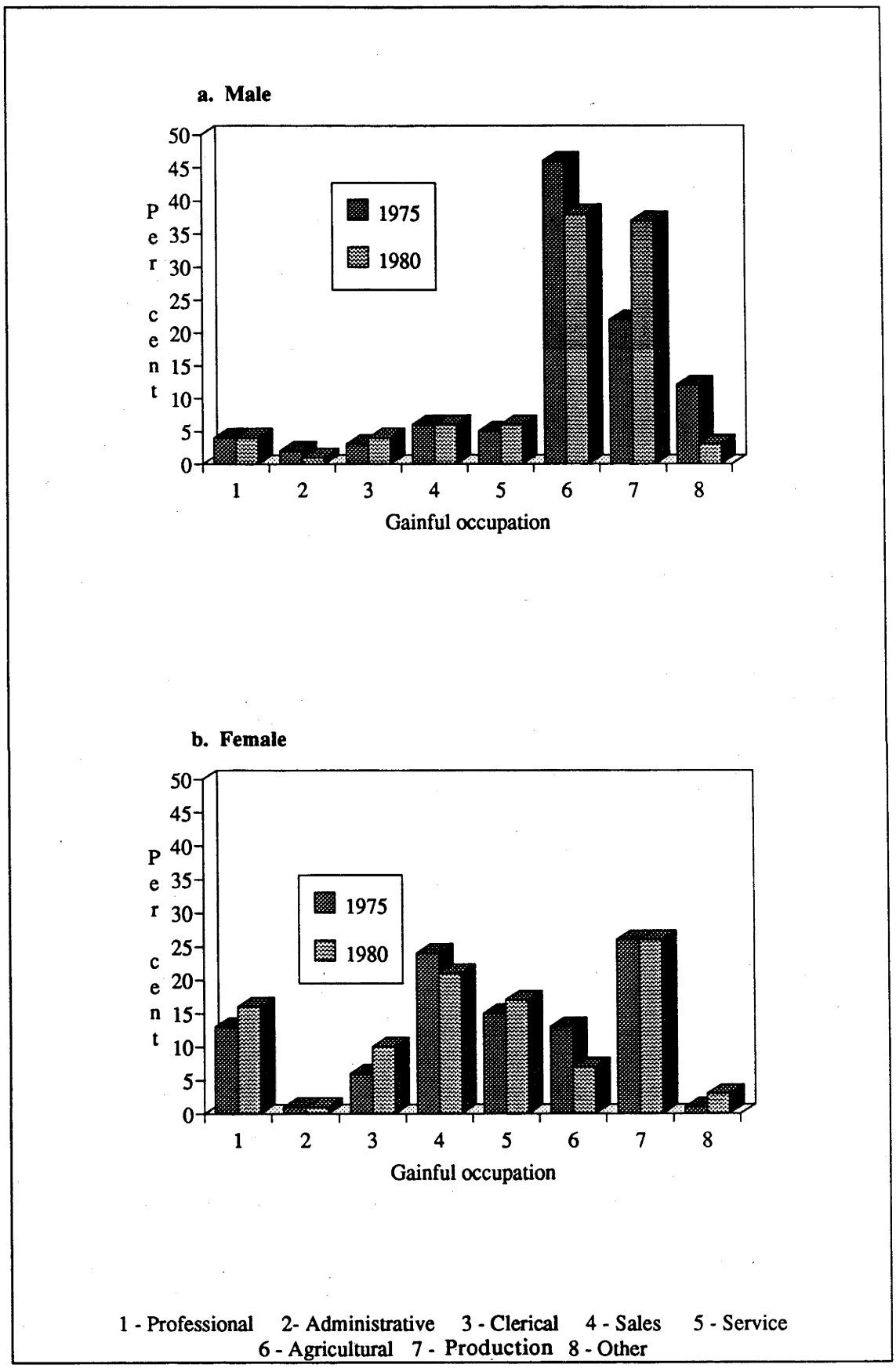
regardless of sex. However, the extent to which a person's education is functional, in terms of their gainful occupation is questionable. An examination of Figure 2.4 reveals a heavy concentration of men in agriculture and production-related industries whereas women were occupied in production, sales, service and agriculture. There were fewer male professionals than female and the proportion increased between 1975 and 1985. The share of manufacturing in providing employment increased more for males than females. There was a sharp increase in the proportion of males in the production sector whereas the proportion of women in this sector remained stable between 1975 and 1980. One common element between the gainful occupation of both sexes was that fewer men and women were engaged in agricultural work in 1980 than five years earlier.

The gainful occupation of the population was becoming less dependent on agriculture, although farming was still the main source of income for many. Probably the number of people depending on agriculture declined faster than expected because of the changes in land utilisation. In view of this, the changes in land use between 1971 and 1980 are outlined below.

Laguna, with an estimated total land area of 175,973 hectares (approximately 1,759.7 square kilometers), represents only 0.6 per cent of the total land area of the Philippines. At the 1980 Census of Agriculture (NCSO, 1985b: 2), 49 per cent of the province's total land area was farmland. Of this, 38 per cent was planted in annual crops (rice, corn, sugar-cane and others), and 55 per cent in perennial crops (coffee, coconut, fruit trees and others).

A comparison between 1971 and 1980 (NCSO, 1985b: 2) shows a decline in the amount of land devoted to farming and related activities (Table 2.1). This was in part attributable to the changes in the definition of what constituted a farm, and to the conversion of agricultural lands, especially land under annual crops, meadows

Figure 2.4 **Gainful workers 15 years old or over by major occupation group and sex, Laguna, Philippines, 1975 and 1980**



Source: Appendix Table 2.3

and pastures, to manufacturing plant sites and residential areas. In 1971, parcels of land were considered as a farm regardless of its size, while in 1980 only meadows and pasture lands of 10 hectares or more were counted as farms.

Among classes of land use, the decline in meadow and pasture land was the largest. This may have been due to a shift in land usage, that is from meadows to land planted with perennial crops such as fruit trees and to the expansion of residential areas. As shown in Table 2.1, the area of land planted with permanent crops increased from 45 per cent in 1971 to 55 per cent in 1980.

Table 2.1 **Land use and area of farms, Laguna, 1971 and 1980**

Land use	1971		1980	
	Size (hectare)	Per cent	Size (hectare)	Per cent
Under annual crops	35,804	39	32,177	38
Lying idle	1,851	2	1,203	1
Under permanent crops	40,489	45	47,231	55
Meadows and pastures	7,890	9	1,132	1
Land covered with forest	2,563	3	1,265	2
All other agricultural lands	2,049	2	2,800	3
All agricultural classes	**90,646**	**100**	**85,809**	**100**

Source: NCSO,1985b: 2

The increased pressure of population on the land poses a problem for employment and this is further aggravated by the shift in land usage, that is from annual to perennial crops. Annual crops are more labour intensive than perennial crops, so a shift to the latter means fewer employment opportunities. The negative effect is greater for women than men because women lose opportunities when land under annual crops declines.

What effect does advances in technology have on women's time allocation? While other technological innovations are designed to ease the burden of women in the house, provided women can afford them, some innovations in agricultural production are not conducive to women's economic participation. These technical improvements in agriculture and other developments in the province during the period of study are discussed in the next section as a background to later analysis of the changes in the number of hours devoted to domestic and market work and personal activities of women.

2.2.3 Developmental changes

Development efforts in the province of Laguna have been greater than in most other provinces of the Philippines (Evenson et al., 1986: 3-4), largely because Laguna province borders Metropolitan Manila on the south. In addition, the presence of international research institutions (such as the International Rice Research Institute, the Southeast Asian Regional Center for Agriculture and the Research Network for Agricultural Mechanization) and the University of the Philippines at Los Baños has contributed to the province's rapid growth and development. This is particularly true for technological innovations in agricultural production, especially in rice production.

The continued adoption of improved technology in rice production is evidenced by the successive replacement of earlier modern rice varieties by new ones, more efficient application of fertilizers and chemicals and adoption of better cultivation practices. As a result, a sustained increase in productivity has been achieved. For example, despite the fact that some farmers in Laguna suffered from rodent infestation in 1979, the average yields per hectare for the wet and dry seasons were 84 and 103 cavans (approximately 50 kilograms per cavan) as compared with 70 and 80 cavans per hectare during the previous year (Kikuchi, 1983: 64).

At the same time, farmers and their family members have tended to withdraw from working on their own farms and have relied mostly on hired workers. In particular, women in farm households have shifted to more lucrative marketing or sideline activities and have provided supervision rather than labour in farm production (Roumasset and Smith, 1981: 413; Illo, 1985: 86; Res, 1985: 114). Women from families whose farms could supply household rice needs rarely joined paid harvesting teams; instead, they engaged in what they viewed as more profitable, self-employed work (Illo, 1985: 88; Kikuchi, 1983: 64).

Another important development has been the extension of electricity to almost the whole of Laguna province in the mid-1980s. This meant not only the introduction of appliances and labour-saving devices, but also enabled women, as well as other household members, to increase the time spent in economic activities, such as lengthening the hours spent tending *sari-sari* stores. With electricity for lighting, the bundling and sorting of agricultural produce, in particular vegetables (eggplant, string beans, okra, and bitter gourd), could be done the night before the produce was to be marketed.

The availability of electric power has also resulted in the proliferation of industrial enterprises in the province, increasing opportunities for women to participate in off-farm economic activities. This was evident along the northwest coast of Laguna de Bay, where a number of factories were built (Hayami et al., 1978: 10-11). As a result, there was a shift from agricultural to production-oriented occupations (factory and transportation work) between 1975 and 1980 in the province (NCSO, 1983a: xxviii).

Improvements in highway systems have made urban centres, Manila in particular, more accessible. Travel to and from the province has become cheaper and less time-consuming, thus exposing more people to more diverse off-farm sources of livelihood. Transaction costs for access to employment, such as

transportation expenses and the amount of time spent travelling to and from urban centres, have decreased. More vehicles plyed from the area to nearby towns, reducing the waiting time for passenger jeepney (a longer version of a Willy's jeep to accommodate more people) and tricycle (a motorycle with side cars attached to ferry passengers). Services (family planning and health centres) which previously could be obtained only in urban centres have become more accessible. As a result of such changes, Kikuchi (1983: 64) observed an increase in urban employment among villagers in Pila, Laguna, between 1974 and 1980.

In sum, even with the fast pace of modernisation, Laguna has remained primarily a rural area. Agriculture has dominated the industrial composition closely followed by production work. Literacy is high, but a majority of the population has only an elementary level of education. While those with some elementary education are counted among the literate, they usually are not employed in the manufacturing sector because of limited skills. Most factories only employ those who had finished secondary education.

This discussion of conditions at the national and provincial levels has provided background information that will contribute to a better understanding of the later analysis. What about the characteristics of the villages included in the study? What about the process involved in selecting villages as well as the households to be included in the study and how were the data collected? The next section describes the villages included in the study followed by the sources of data and how the data were collected.

2.3 Location and profiles of the villages studied

The discussion of social, economic and development processes at the national and provincial level have provide a general idea of similar process in the villages in this study. However, the villages included in the study differ in some respects, so a brief

introduction regarding their location, access to services and urban centres is discussed in this section.

The National Statistics Office of the Philippines (NSO) has developed a system of classifying *barangay* into rural and urban. According to the NSO (1988: xi-xii), a *barangay* is urban if it has more than 1000 inhabitants, has a street pattern, has at least six establishments (commercial, manufacturing, recreational and/or personal services) and has at least three of these characteristics: town hall; church or chapel; public plaza; park or cemetery; market place, public building; and the occupations of the inhabitants are predominantly non-farming or fishing (see Appendix B for details). However, this classification is not used in the current study because some of the *barangay* included in the study were considered urban, probably because these *barangay* met the required number of residents and facilities even if most of the people were engaged in farming activities. More people mean more businesses in the villages; thus the required number of business establishments is not difficult to meet. In a similar manner, more primary schools have been established in the villages because of the increasing number of students while the presence of a chapel in every village is not surprising because 88 per cent of the Filipinos are Catholics (NCSO, 1974: xxii). This classification was adopted as early as the 1970s and has not been upgraded, although a committee was set up in the late 1980s by the NEDA to revise this classification.

Instead of using the above classification, *barangay* in this study were classified based on the distance from town and social services (such as secondary school and hospital), road condition and when electricity was established. In terms of economic activities, distance and road condition meant easy access to urban centers where off-farm employment opportunities were more available, while the availability of electricity by 1975 could have facilitated business operations (for example, longer hours of operating *sari-sari* stores). With respect to domestic activities, the availability of electricity has enabled villagers to use electrically-

operated appliances, such as stoves and irons, which could lighten the burden of housework, while the better road condition and closeness of urban centers has meant shorter travelling time for shopping for food and other necessities. Therefore, a more modern *barangay* has an asphalted road or better, has electricity by 1975, and is located within five kilometers of the nearest urban center, otherwise a *barangay* is classified as less modern. A five kilometer distance from the nearest municipality or town was adopted because the minimum fare paid for public transport was for the first five kilometers in the rural areas and four kilometers in Metro Manila.

Based on this classification, 47 per cent of the *barangay* were considered more modern and the remaining *barangay* less modern (Table 2.2). Some more modern *barangay* were located near rice and sugarcane fields, but because of the asphalted road and closeness to urban centres, many villagers were able to carry out trading and related businesses and be employed in other non-farming activities. In the mid-1980s, several factories, such as handicraft and biscuit factories, had been established, and at the beginning of this decade some agricultural land had been converted into housing subdivisions so that many villagers had to rely on off-farm activities.

Other *barangay* were located within five kilometers of the nearest town but were classified as less modern. For example, San Felix is four kilometers away from Victoria (the nearest town) but considered less modern because it is situated within coconut and rice farms so that most of the villagers were involved in rice and coconut production. Most villagers built their houses under coconut trees and some in the middle of rice farms. In addition, the village is connected to the town only by a feeder road which makes the trip to the town not only difficult but also expensive. Private vehicles and tricycles are the only means of transportation. The proximity of the village to the Laguna lake has also enabled some of these villagers to fish (see Figure 2.1).

Table 2.2 **Characteritics of *barangay* included in the study, Laguna, Philippines, 1985**

Barangay	Distance (kilometers) to Town	Secondary School	Hospital	Road Condition[b]	Year electricity was established
Less modern					
Langkiwa	7	7	7	2.5	1981
Loma	8	8	8	3	1979
Timbao	8	8	8	2	1979
San Buenaventura[a]	5	1	3	3	[c]
San Felix	4	2	4	3	1984
San Benito	8	10	8	2.5	[c]
Pagalangan[a]	2	2	20	3	[c]
Sta. Isabel	3	3	3	2	1920
San Antonio I	6	8	8	1	1978
Sto. Angel	6	6	6	2	1920
San Antonio II	3	4	9	1	1979
San Diego	5	5	5	5	[d]
San Rafael[a]	3	3	3	3	[c]
Sto. Domingo[a]	5	1	5	3	[c]
Bulajo[a]	5	5	6	2	[c]
Sambat	2	2	2	2.5	1981
Cigaras[a]	3	1	7	2	[c]
Bagong Pook[a]	2	2	7	3	[c]
More modern					
Calabuso	4	5	4	2	1978
Balayhangin	1	1	5	1.5	1939
Dayap	5	0	5	2	1933
San Roque[a]	1	1	1	1	[d]
San Ignacio	3	3	3	1	1978
Sto. Nino	1	4	1.5	2	1947
San Roque	1	5	2	1	1930
Dita[a]	0	0.2	4	1	1930
Cabanbanan	5	0	3	1	1957
Sabang	4	1	2.5	1	1968
Bambang[a]	1	1	1	2	[d]
Niugan[a]	3	3	3	1	[d]
Banay-banay[a]	4	2	4	1	[d]
Balian	1.5	0	1.1	1	1942
Bongcol	1	3	4	2	[d]
Isla	0	0	3	1	1942

Sources: Laguna data tapes, 1975 and 1985

Notes: [a]Barangay excluded in the 1982 and 1985 surveys.

[b]Road condition

1.0 = concrete

1.5 = concrete and asphalt

2.0 = asphalt

2.5 = asphalt and dirt

3.0 = dirt

[c]Electricity was only available after 1975.

[d]Electricity was avalaible in 1975 but the year when established was not available.

In the 1975 survey, 47 per cent of the *barangay* had electricity and in the 1985 survey, all of the villages included in this study had electricity. As early as 1920, some *barangay* had electric power, especially those located in the town proper and in nearby urban areas.

2.4 Sources of data

The Laguna Household Study was designed to meet the specific interests of a planning group based at the University of the Philippines (UP) at Diliman and the University of the Philippines at Los Baños (UPLB). Key areas of interest included fertility, health, poverty, time allocation, and home and market production. The original survey was undertaken in 1975, while re-surveys took place in 1975-76, 1977, 1979, 1982 and 1985. Of these, data from 1975, 1982 and 1985 have been used in this study. The data from the 1975-76 survey were not used because time-allocation data for that year were obtained by direct observation (time-allocation data from the original survey and four other surveys were obtained by recall), while in 1979 time-allocation data were not collected at all. The 1977 survey was excluded because time-allocation data on different activities were grouped and cannot be compared with the data from other survey years. Only the details of the re-surveys included in the study are discussed in the following sections to illustrate the emphasis for each year in terms of data collected, and changes in sample size.

2.4.1 1975 survey

A wide variety of information related to demography, economics and the health practices of the households was collected from 576 households in the initial survey in 1975. The data included demographic data, pregnancy and delivery histories, family planning practice, work histories of mothers over the past five years, and participation in organisation, agricultural production, and other related activities (tenancy arrangements, and family and hired labour tasks). In addition, information about the community, such as the existence of educational institutions, agricultural

extension services, social services, sanitation, irrigation facilities, transport availability, community organisations, commercial establishments, and the prices of important commodities at the time of survey, was obtained.

Of particular interest to this study was information collected on the time use of women, their husbands and any children staying with them. A recall instrument was included to obtain information on the number of hours spent on a set of home-production, market-production and other activities during the week preceding the survey.

***Barangay* Sampling.** The *barangay* covered in the study were drawn from the samples used in two other studies: the Laguna Household Study (1975) and the FHDO Project. The Laguna Household Study stratified the 576 *barangay* of the province into four key occupational groupings: upland cropping *barangay*; fishing *barangay*; intensive lowlands rice farming *barangay* located near wage employment opportunities (semi-urban *barangay*); and intensive lowlands rice farming *barangay*. From this list, six upland *barangay*, three fishing *barangay*, and twelve semi-urban *barangay* were randomly selected.

Thirteen *barangay* (representing intensive lowlands rice *barangay*), were also taken from the FHDO Project of the UPLB (Evenson, 1978: 26). The FHDO project grouped *barangay* according to their land use, such as lowlands rice, sugar-cane, diversified upland crops, and coconut farming (UPLB, 1971 cited in Evenson, 1978: 26). Sixteen rice-producing *barangay* were randomly selected by the FHDO but only 13 *barangay* were adopted in the 1975 Laguna Study. The samples from both studies have been utilised in this study.

Household selection. Financial considerations led to a decision to select 600 households for the 1975 survey. A *barangay* household list was made by conducting a census of each selected *barangay*. Sixteen households were then randomly selected from each *barangay*, except for the fishing *barangay*. Twenty-

seven households were picked from each fishing *barangay* because the planners felt that these households were under-represented. It should be pointed out that, since *barangay* populations ranged from 223 to 5,000 persons, such a procedure provides only *barangay* representativeness rather than a representative sample population (Recto, 1986: 2). In the end, a total of 576 households were studied (Table 2.3).

2.4.2 1982 survey

The fourth survey was undertaken from 29 November to 31 January 1983. Only 241 households were covered because households where the youngest child was born before 1963 were excluded. The 1979 questionnaire was modified to incorporate questions on labour recruiting and labour supervision costs for rice-producing households and time allocation. Ability tests were also given to parents and children.

Again, *barangay* heads were interviewed for the *barangay* questionnaire. Aside from the information asked in previous surveys, questions on daily wage rates for basic farm work in rice production were added.

2.4.3 1985 survey

In this survey, the original plan was to consider only those 1982 households with married women who were capable of bearing a child. However, only 42 out of the 132 eligible households proved to be rice-producing households. In order to include analysis of rice production, an additional 32 rice-producing households from the non-eligible households were also interviewed. The wives in these households were no longer capable of bearing a child, already dead, or separated from their households (Recto, 1986: 6)*.

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*In the 1977 survey, a subsample of 20 *barangay* out of the 34 *barangay* covered in 1975 was selected. Most of these chosen *barangay* came from the Laguna Household Project. As a result, a large number of households from the FHDO Project were excluded. In addition, many of the respondents in the FHDO Project were already so old that of many of them failed to meet the criteria of having their youngest children born after 1963.

In summary, the sample size diminished as the re-surveys were undertaken, partly owing to non-replacement of households that moved out of the survey area, and partly to the criteria imposed on the households that were to be included in each re-survey. The present study is restricted to households where both parents are living in the same household with their children, hence the sample became even smaller. For example, in 1975, 59 cases were excluded because one of the parents was either dead or separated from the household. In analysing the factors affecting the average number of hours devoted to domestic and market work and personal activities, women numbered 517, whereas when the changes were examined, the number of respondents who were present from the first to the last survey numbered only 101.

Table 2.3 **Sample households of the Laguna Household Study, 1975 - 1985.**

Year	Laguna Study	FHDO	Total
1975	368	208	576
1982	179	65	241
1985	122	42	164

Source: Recto,1986: 1-8

With respect to data collection, each survey was carried out in different months and as such, rice cultivation was at various stages of production (Table 2.4). There were differences in the type of activities undertaken by the respondents, but all of these surveys covered both busy and slack months which might have averaged out seasonal variations in labour input.

Table 2.4 **Period of data collection, Laguna, 1975-1985**

Survey year*	Month*	Activity**
1975	April	Peak season for harvesting
	May	Slack month
	June	Peak season for land preparation, planting and weeding
1982	November	Slack month
	December	Peak months for land preparation, planting and weeding
1985	July	Peak season for land preparation, planting and weeding
	August	Slack month

Sources: *Laguna data set, 1975
**Hayami et al., 1978: 24-28

2.4.4 Time-allocation data

A variety of information regarding the demographic and economic aspects of the households for all survey years was collected from the 1975 to the 1985 survey. In addition, anthropometric measures (height and weight) were taken from children living with the parents. As time utilisation is the focus of this study, the methodology used in collecting the data and from whom the data were collected is described in the next paragraph.

In 1975, husbands and wives were asked to recall how many hours/minutes they spent on each of the activities listed in the questionnaire during the week before the survey. In addition, time-use information was collected from the three most important children (those who contributed the greatest number of hours to domestic and market work) participating in each of the listed activities, and hired help. Mothers had to answer for their children's home production time, probably because they were assumed to recall more easily the time children spent on housework, because this usually involved children helping mothers. Fathers had to recall children's time spent on market activities because children were assumed to help

fathers on the farm and other income-earning activities. However, these assumptions may not be valid. Evenson et al. (1980: 298-302) compared the time allocation data of the Laguna study collected in 1975 (time-allocation data were collected by recall) and in 1975-76 (data were obtained by direct observation) and found a large understatement of both market and domestic time of children by the recall method. Parents viewed many activities of children as leisure while the observers viewed these as production.

As a result, attempts were made in 1982 and 1985 to ask the children directly about their time allocation. However, some were unable to answer because they were not yet attending school and therefore could not tell the time, much less remember the time devoted to different activities during the past week. In such cases, mothers had to remember for them. All children five years old or over who lived with their parents at the time of survey were covered in the 1982 and 1985 surveys.

2.5 Methods of analysis

The general strategy for analysis is to disaggregate the data in as many ways as possible in order to illuminate the aims of the study. The t-test and F-test for one-way analysis of variance (ANOVA) are employed when examining the differentials in mothers' time allocation by different socio-demographic, economic and environmental factors. Results are presented in graphs so as to clearly portray the differences in the activities performed by women, as well as other household members. The t-test is used to determine whether or not the difference between means is significant, while one-way ANOVA is used for more than two means. The one-way ANOVA provides various additional tests that allow further examination of differences, including the multiple range test. By this test, the difference in the mean value of dependent variables (number of hours devoted to each activity) among

categories within each factor is examined to determine whether the difference is statistically significant.

Because the study is focused on individuals, the statistical test which would test the interaction within activities (for example, between meal preparation and child care) and between factors (for example, between the number of hours devoted to activities by age of the youngest child and employment status of mothers) is not performed in this study. To carry out such analysis would require a very significant change in the focus of the study, that is from the individual towards the event. Therefore, the implicit and explicit interaction terms contained in this study have not been explicitly tested for their statistical significance. In cases where comparisons were made between employment status of mothers were made, t-test was used in determining the significant differences.

In order to explore the separate and joint effects of the independent variables, and to identify the significant variables influencing mothers' time allocation, multivariate analysis was employed. Histograms showed the distributions of mothers' activities were highly skewed. Therefore, transformations were carried out before multiple regression with dummy variables was applied. The specifications and definitions of the dependent and independent variables used, and the application of the technique were discussed in the relevant sections. The multivariate analysis of mothers' time allocation was undertaken separately for non-employed and employed mothers.

In examining the changes in time allocation, time allocation of women who remained married to the same spouses and who also remained in the sample between 1975 and 1985 are analysed. The assumption of randomness required when using t-test and one-way analysis of variance is not met in using these types of data, therefore paired t-test and analysis of variance with repeated measures are used.

2.6 Limitations of the data

The current study has several shortcomings. First, it relies on the recall method of data collection. During the data gathering, some respondents had difficulty in recalling the number of hours devoted to different activities. However, benchmarks such as meal times, radio shows and the school time of children helped in reconstructing a typical day by recall. An important element of this study is to portray the many varied activities of women, whether reproduction or production, so that recall data are adequate. In an earlier analysis of the data, Boulier (1977: 195) found that the data collected in 1975 through recall (the data used in this study) and the data collected through direct observation (data collected in 1976 but not used in this study) were consistent; thus it was possible to be confident about the quality of the data used in this study. Undoubtedly, there were inaccuracies in the data collection, especially for activities which were of short-duration and those which started and stopped intermittently throughout the day, but these might be assumed to occur consistently throughout the sample and would not thus affect internal comparisons.

The second shortcoming is concerned with the period when the data were collected. Despite the improvement in irrigation which has drastically changed the patterns of rice production, seasonality still persists so the comparison between years may not be suitable. As indicated earlier, the respondents are distributed in the 20 villages located throughout the whole province where irrigation systems are relatively well-developed. However, it is possible that rice production at any given time in these villages is at different stages of production covering both the slack and lean periods of labour utilisation. Furthermore, King (1977: 74-75), who used the data from the 1975-76 intensive phase of the Laguna data (time-allocation data were collected by direct observation), found no significant differences in the number of hours devoted to market activities by mothers and fathers throughout the period of

observation. Generally, the amount of time spent on market work was not influenced by seasonal variations.

This chapter has outlined the demographic, social and economic situation in the country as well as in the study area, the sources of data and the methodology used. The next chapter deals with the characteristics of the households, the mothers and other household members. Such characteristics are examined to investigate the factors influencing women's time allocation which is the main focus of the next chapter.

Chapter 3

Women's Pattern of Time Allocation

The purpose of this chapter is to examine the patterns of time allocation of women in Laguna in 1975. The focus is on the pressure of time forced upon women by their dual participation in domestic activities and in the labour market. The analysis is primarily based on the average number of hours spent on various activities and on variation in time use across three different dimensions - the socio-demographic and economic characteristics of the women and the households where they belonged and the type of area where the respondents lived.

Earlier research (Mueller, 1982; Leibowitz, 1972; Robinson, 1977) showed an association between socio-demographic, economic, and environmental factors and time use. However, the nature of the relevant relationships is not entirely clear. For example, the relationship between time use and education varied not only from country to country (Mueller, 1982: 66) but also among studies within a particular country (Robinson, 1977; Leibowitz, 1972). Thus, the other purpose of this chapter is to identify these characteristics which influenced women's time allocation and to answer such questions as: how do employed and non-employed women with the same socio-demographic and economic characteristics differ in allocating their time

and what factors motivate women to devote increasing time to domestic and market work? The identified patterns of women's time allocation and the factors affecting it also serve as a starting point for identifying the changes in women's time allocation that occurred between 1975 and 1985, which are explored in Chapter 4.

This chapter is organised as follows. Section 3.1 examines the characteristics of women, their husbands and the households to which these women belonged. Section 3.2 deals with the classification of activities and how they were defined in this study, followed by a discussion of women's overall time allocation in the study and its differentials in section 3.3. The bivariate analyses between women's time use and selected factors are examined in section 3.4 Multivariate analysis of the factors affecting women's time allocation is presented in section 3.5 to ascertain which were the most important determinants of women's domestic and market work. Multivariate analysis of the relationship between the factors affecting time allocation was performed through the application of multiple linear regression. Section 3.6 is focused on the patterns of employed women's time use and the number of hours spent on market activities. The comparison of women's time allocation in intact households and households headed by women is explored in section 3.7.

The data for this chapter were drawn from the 1975 Laguna Household Study. The chapter focuses on the 1975 survey because it has the largest number of cases, making more intensive analysis possible. Out of the 573 respondents interviewed, 517 met the criterion of constituting a complete family where both father and mother were present at the time of the survey.

Before analysing the patterns of women's time allocation in the next section, selected characteristics of the women and their households are reviewed because they are essential in interpreting time-allocation patterns. These include socio-demographic characteristics, such as women's age and educational attainment,

number of children, age of youngest child, household structure, and husbands' education as well as economic characteristics, such as resource base.

3.1 Characteristics of the sample

The rows of Table 3.1 depict variations in socio-demographic and economic characteristics according to the employment status of married women who were the respondents in the 1975 survey. On average, respondents had been married for 18 years. Husbands were older than wives by four years, reflecting the fact that Filipino males married females younger than themselves. The 1973 Philippine National Demographic Survey reported that the age at first marriage for the whole of the Philippines was 23.7 and 25.7 for males and females and males, respectively. In the same survey, the mean age at marriage for the Southern Luzon Region, of which Laguna was one of the provinces, was 24.0 years for females and 25.2 for males (Perez, 1976 cited in Castillo, 1979: 134). The majority of the adult respondents had formal schooling; however, few had completed some secondary education or beyond (18 per cent of men and 14 per cent of women). These proportions were lower than the 39 per cent of men and 34 per cent of women for the province during the same period.

The predominance of nuclear households is clear: more than 70 per cent of the households were of a nuclear type consisting of mother, father and their unmarried children. Other studies (Liu and Yu, 1968; Hayami et al., 1978) in the Philippines have also confirmed the predominance of nuclear households, especially in rural areas. In Liu and Yu's (1968: 119) study among low-income Cebuano families in the Philippines, married children started to break away from their parents' home only about 13 months after marriage. One of the explanations offered by Castillo (1979: 117) for the predominance of the nuclear rather than the extended structure is the relative ease with which a house can be built with light materials because there is no cold weather to contend with. In rural areas where houses can be

built near the family farm or under the coconut trees, newly married couples can readily obtain permission from parents or the parents' landlords to build their houses. Through *bayanihan* (exchange labour), a house can be constructed with light materials such as bamboo, coconut trunks and leaves and *cogon* grass.

Couples included in the study had many children, the average being more than three per couple. Sixty-one per cent and 64 per cent of non-employed women and employed women had more than two children, respectively. Since the children included here were only those who were living with their parents at the time of the survey, the actual number of children in these families was higher. Children studying and working away from home at the time of the interview were not counted as household members.

The large number of children was not unique to the place of study. Findings from a rural community study (Jocano et al., 1976) in the Philippines revealed similarly large families and found that reason for having many children was that children were perceived as sources of joy and happiness, of help in lightening the burden of women's household chores, and of support for old age, not only financially but also physically and emotionally. The contribution of children's earnings to the household purse was one of the most common reasons given by parents for having many children, although parents were motivated to have many children by their emotional, as well as material contribution to the family.

The sample households were grouped into landed and landless households to reflect their resource base. A landed household was defined as one which cultivated 200 square metres or more of land as an owner, lessee or tenant. It is assumed that the household head as well as other members of families with less than 200 square metres of land would have had to rely on wage employment, the main type being agricultural work on other people's land. Other possible measures of the resource

Table 3.1 **Selected couples' and households' characteristics, Laguna, Philippines, 1975**

Characteristics	All	Non-employed	Employed
Number of years married (mean)	18	17	19
Age (mean)			
Husband	42	41	42
Wife	38	38	39
Educational attainment (percentage)			
Husband			
None(0)	6	6	6
Primary(1-4)	44	39	48
Intermediate(5-6)	32	31	32
High School or over(7 +)	18	24	14
Total	100	100	100
χ^2= 8.7 statistically significant at 0.05 level, df = 3			
Wife			
None(0)	6	6	7
Primary(1-4)	42	40	44
Intermediate (5-6)	38	37	38
High School or over(7 +)	14	18	12
Total	100	100	100
Household Structure (percentage)			
Nuclear	73	74	72
Extended	27	26	28
Total	100	100	100
Number of children (percentage)			
0 - 2	37	39	36
3 - 5	42	39	43
6 +	21	22	21
Total	100	100	100
Mean	3.5	3.6	3.5
Resource base (percentage)[a]			
Landless	51	53	50
Landed	49	47	50
Total	100	100	100
Mean (hectare)	2.0	2.0	2.0
Number of cases	517	182	335

Source: Laguna data tape, 1975

Notes: Non-employed women included women who worked in market activities for less than an hour during the week preceding the survey
None of the differences between means was statistically significant
[a]Households with no land and less than 200 square metres of land were classified as landless.

base, such as the ownership of land, the type of crop planted or the type of irrigation used by rice farming households, were not useful as most of farming families owned more than one parcel of land, each with different tenurial arrangements, and practised multiple cropping; nearly all of the rice farmers had irrigated land.

The average farm size for all households was 2.0 hectares. The opportunity for landed women to participate in market activities was presumed to be greater than for landless women because of opportunities on the farm and the income from it, which helped them to operate their own businesses. However, as the figures in Table 3.1 reveal, there was only a small difference in the proportion of women from landless and landed households who were employed. Although landless women could have been forced to participate more in the market due to poverty, employment levels for women in landed households were also quite high.

In summary, the characteristics of the non-employed and employed households suggest a high degree of homogeneity with the exception of husbands' educational attainment. Employed women tended to be married to husbands who had lower educational attainment than the husbands of non-employed women, which could affect their time allocation. It is possible that lower educated husbands were involved in market activities which had lower returns compared to husbands with higher education. Therefore, wives of men with lower education had to supplement their husbands' income by working in the market. Women in the study were similar in some of the demographic and economic characteristics to women in the whole province in relation to such characteristics as children ever born, age at marriage, and size of land owned by the household. Still, any inference drawn about a typical woman from Laguna has to be constrained by the older age and lower education of the sample, compared to the population of Laguna (see section 2 of Chapter 2).

3.2 Classification of women's activities

Depending on their aims, researchers have adopted different classifications of activities in different studies of women's time allocation. In this study household work is equally as important a focus as market work. Therefore, the activities are classified such that market work does not rank higher than domestic work. This contrasts with many studies where only economic activities have been recognised and domestic work which is necessary for the maintenance of the households, has been excluded. In this study, the domestic contributions of women are analysed simultaneously with market activities in order to examine their inter-relationships.

Women's activities in this study are classified into three broad categories: domestic work, market work and personal care (Figure 3.1). Market work is used broadly to include income-earning activities and those activities related to the operation of a family farm or business, as well as those activities associated with products or services that are included in the national income accounts statistics in accordance with the UN recommendations (Husmanns et al., 1990b: 14-24). Work for wages includes activities for which members of the household received income, such as working as farm labourers, seamstresses, irrigation water tenders, caretakers, factory workers, teachers or other employees (private and public). Crop production is defined as working on own farm or garden, land preparation, weeding, fertilising, planting, and harvesting, as well as activities related to own coconut, sugar-cane, and other crop production. Supervising and contracting hired labourers are also included under this category. Animal husbandry involves collecting grass for fodder, grazing *carabao* (water buffalo), feeding livestock, and cleaning stables and pens. Activities under crop production and animal husbandry are considered market activity regardless of whether the produce are sold or consumed because the products of these activities have to be bought in the market if not produced in the household. In addition, there is no information in the time-allocation data about the disposal of the crops produced and the livestocks raised. Other market work refers to business

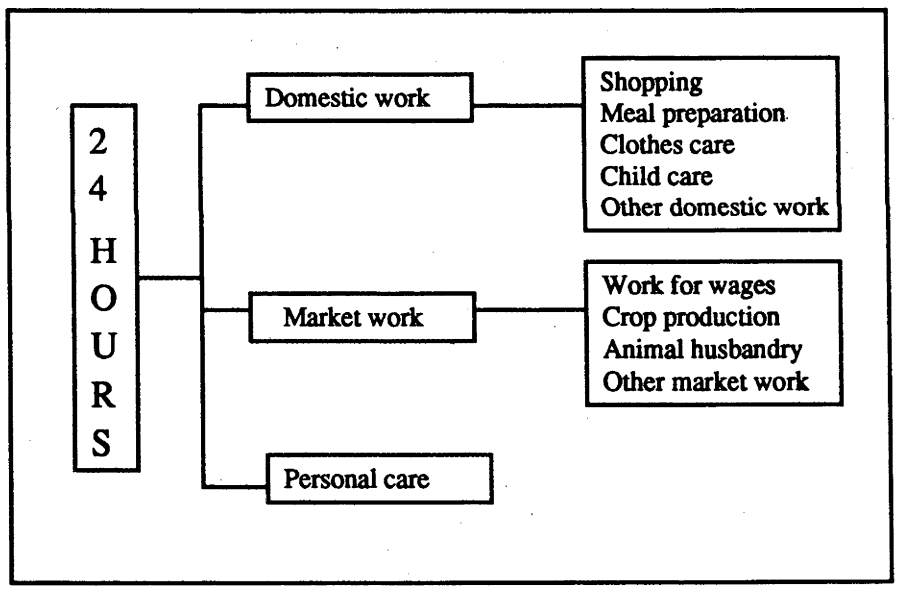
related vocations, such as tending *sari-sari* stores, selling sweepstake tickets, jeepney and tricycle driving, and operating one's own tractor for hire to other farmers.

Domestic work refers to the various household tasks necessary for the maintenance of family members, both social and biological. It is the time used for work related to meeting the needs of the family for food, clothing, shelter, nurture, and buying food items and other necessities of the households from nearby stores, travelling peddlers and shops in urban centres. Meal preparation includes cutting and cleaning ingredients prior to cooking. Clothes care comprises washing, ironing and mending clothes. Child care is composed of feeding and bathing children, putting them to sleep, and playing with them. Although the inclusion of child care within the domestic category is the subject of some debate (Rodgers and Standing, 1981: 2), here it is included as domestic activity because child care in the Philippines is still largely done within the home by family members, and is not monetised. Family members are not paid for looking after the children. For similar reasons, included under the category of other domestic work are such tasks as cleaning the house and backyard and firewood collection. These components of other domestic activities are those in which women received the most assistance from their children.

Personal care includes time devoted to leisure and other personal activities. The time devoted to leisure was computed as a residual in the 1975 and 1982 surveys. In the 1985 survey, the respondents were asked to recall the number of hours devoted to participating in active recreation (playing basketball, volleyball and others) and passive recreation (watching sports/movies/ television, gambling, cockfighting, reading, and gossiping), and other personal care activities including sleeping, washing, bathing, resting, eating and other related activities. The total number of hours for each person should be 168 hours per week (24 hours times seven days), but for some (3 per cent of the sample), the number of hours was below

168 while others had more. Therefore, the number of hours was adjusted to 168 hours per week either by editing obvious errors or by proportional adjustment where the nature of error was not obvious. The adjustment may in some cases have underestimated the time allocation of women, especially those who had small children, since most joint activities, according to Jayme-Ho (1976a: 31), took place when women were cooking and at the same time taking care of small children. Travelling time is included in the time recorded for each of the activities mentioned. For instance, the time in going to and from place of work, school, market and cinema was added to each particular activity.

Figure 3.1 **Schematic presentation of classification of time use**



One limitation of this classification is the exclusion of secondary activities. Even when women carried out simultaneous activities, only one was recorded, such as when a woman was cooking, and at the same time, taking care of her children. In such cases there was no attempt to identify which was the primary and which was the secondary activity, and only one was listed. As the recall method of gathering data was used in all of these surveys, the actual activity reported was determined by the respondents, which may lead to low levels of activities recorded for some activities, child care time in particular. Reynolds (1991: 66), in her African study in the Zambesi Valley (Zimbabwe), reported that child care was invisible. No adult, whether male or female, included infant and child care in his or her definition of work. The explanation could be that child rearing was the most common activity being done simultaneously with other household activities which were often reported as cooking, washing clothes, and leisure rather than as time spent on child care.

Overall time allocation is discussed in the following section to show the general pattern of activities performed by women, how much time was spent in providing for the needs of the family, and how these activities competed with their market time, if they worked in the market, and their personal time. This is followed by a detailed examination of the factors influencing women in allocating their time.

3.3 Methods of analysis

The t-test, one-way analysis of variance, and multiple regression have been used in examining women's time allocation. In studying the relationship between a single dependent variable (time devoted to activities) and a single independent variable (for example, employment status of women), the t-test and F-test (one-way analysis of variance) have been utilized. On the other hand, in assessing the relationships between a single dependent variable (number of hours devoted to domestic work) and several independent variables (for example, number of children, age of women and age of the youngest child), multiple regression has been used.

A detailed discussion of the t-test and one-way analysis of variance is carried out in this section while a detailed discussion of multiple regression is done in the latter part of this chapter. The t-test is used in determining the significant difference between two means. The observed significance level is the probability of the observed difference being be due to chance. If the observed significance level is small, usually less than 0.05, there is a significant difference between two means (Norusis, 1988: 213). In the case of this study, less than 0.10 is considered as statistically significant because of the small sample size. As suggested by Norusis (1988: 212), the observed level of significance is reported in the tables to serve as a guide to whether or not the difference could be due to chance alone.

The one-way analysis of variance is used to compare more than two means. For example, the one-way analysis of variance is used to determine whether there are significant differences in the number of hours devoted to different activities for women who had primary, intermediate or higher level of education. The ratio, called the F-statistic, is used together with the degrees of freedom in determining the significance level. The F-ratio indicates significant differences between means, but it does not tell which pairs or groups have different means. In order to identify where the differences are, multiple comparison procedures are used. The Scheffe test, one of the seven multiple range tests available for use of one-way analysis of variance, is chosen for this study. By comparisons with other available tests, the Scheffe test is stricter, and is exact even for unequal group sizes (Kim and Kohout, 1975: 428). The results of the Scheffe test are not indicated in the table but are mentioned whenever applicable in the discussion.

3.4 Overall pattern of women's time allocation

All the analyses in this chapter and in the succeeding chapters, except Chapter 6, were carried out separating the employed from the non-employed women because of the large variations in the number of hours each group devoted to their

various activities. The distribution of the number of hours, particularly for market work, was highly skewed for the sample as a whole because many women spent less than 30 minutes per week on this activity, while others, such as women who were engaged in their own businesses, worked long hours in market work. In most cases, the standard deviations were larger than the mean number of hours devoted to market activities (Table 3.2). Non-employed women included those who did not participate in any market activity during the week preceding the survey. Women who spent less than one hour per week on market activities were also considered as non-employed, based on the definition adopted by the Philippine National Census and Statistics Office in their quarterly labour force surveys (Marquez, 1987: 5). In this way, the extent of variation in the number of hours devoted to different activities was somewhat reduced.

The overall pattern of women's time allocation shows that domestic work was the dominant activity of women in the Laguna survey (Table 3.2 and Figure 3.2). On average, and regardless of employment status, women spent more than 50 hours per week doing housework, which occupied three times as much time as market activities (17 hours per week).

Activities centring on the kitchen formed the most time-consuming component of domestic activities. On average, and regardless of employment status, women devoted more than 20 hours per week or nearly three hours per day to preparing meals, washing dishes and cleaning tables after meals. Other time-consuming tasks were child rearing and 'other domestic work' which included cleaning the house and backyard, fetching water and gathering firewood. This may be compared with Skjonsberg's (1984: 211) findings in an African village where an even higher average number of hours was spent on cooking: preparing meals dominated women's domestic activities, accounting for an average of four and a half hours per day.

Table 3.2 **Mean number of hours (per week) that women devoted to different activities by employment status, Laguna, Philippines, 1975**

Activity	All	Non-Employed	Employed	t-value
Domestic work	**54.1**	**53.0**	**54.7**	**-0.6**
	(32.8)	**(30.1)**	**(31.2)**	
Shopping	3.7	3.6	3.7	-0.2
	(5.7)	(5.2)	(5.9)	
Meal preparation	22.6	21.0	23.5	-1.7*
	(16.4)	(13.5)	(17.8)	
Clothes care	9.1	9.6	8.9	0.8
	(9.9)	(8.5)	(10.5)	
Child care	10.2	10.2	10.2	0.0
	(16.9)	(16.6)	(17.2)	
Other domestic work	8.5	8.7	8.4	0.3
	(9.7)	(10.1)	(9.5)	
Market work	**16.9**	**a**	**26.0**	
	(22.9)	**(0.2)**	**(23.9)**	
Work for wages	6.4	a	9.9	
	(15.7)	(0.1)	(18.6)	
Crop production	2.1	a	3.2	
	(7.9)	(0.1)	(9.6)	
Animal husbandry	2.5	a	3.8	
	(5.2)	(0.9)	(6.1)	
Other market work	5.8	0	9.0	
	(15.6)		(18.6)	
Personal activities	**96.8**	**114.2**	**87.3**	**7.5*** **
	(40.7)	**(29.7)**	**(42.2)**	
Total	**168.0**	**168.0**	**168.0**	
Number of cases	517	182	335	

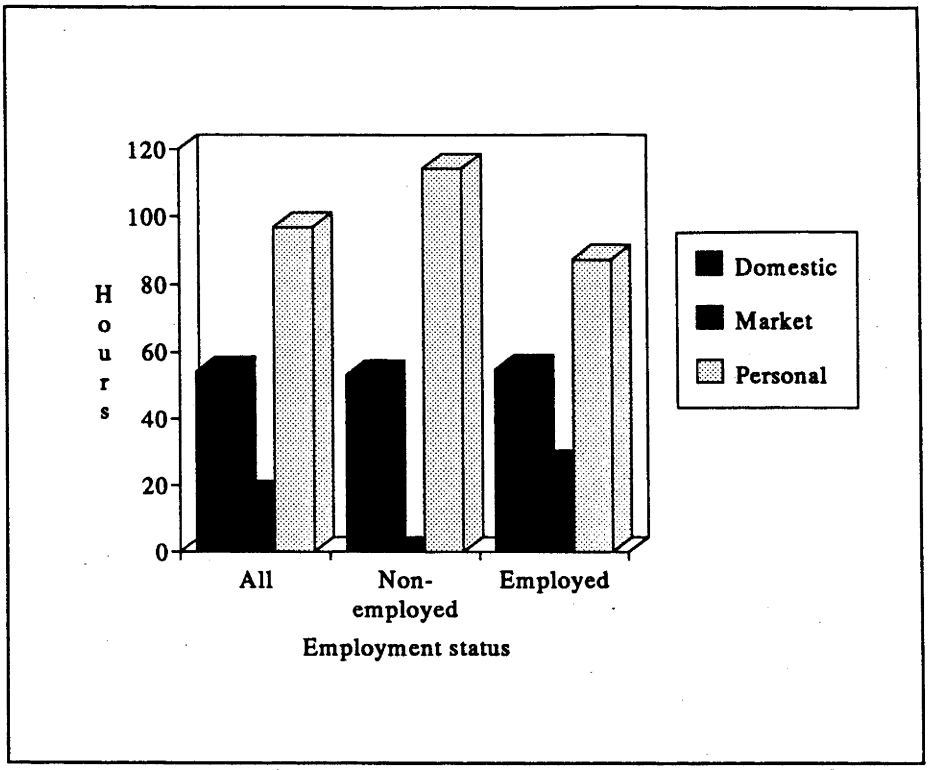
Source: Laguna data tape, 1975

Notes: The number of hours for personal activities was computed as a residual (deducting home and market activities from 168 hours).
Total number of hours may not add to 168 due to rounding.
Non-employed women included women who spent less than an hour a week on market activities.
Figures in parentheses are standard deviations.
a = less than 0.05
The one-way analysis of variance was used to determine the significance of differences between the number of hours to activities by non-employed and employed women. The significant differences on time devoted to market work and its component activities of non-employed and employed women were not included. Obviously, employed women devoted significant amount of time to market work when compared with non-employed women.
***Statistically significant at $\alpha = 0.01$
*Statistically significant at $\alpha = 0.10$

Work for wages and 'other market activities' such as trading and retailing contributed most to women's market activities, whereas activities related to crop production contributed the least. The long hours devoted to 'other market activities' were expected because these activities tend to be time-consuming, although not very arduous compared with other market related activities. Selling agricultural produce was a good example of these 'other market activities' where women sorted and bundled vegetables the day or night before bringing them to market or, if they were sold in the villages, spent long hours carrying the produce from village to village. The least number of hours was spent on crop production, probably because of the nature of activities performed by women from farming households in the Philippines, where women tend to be less active in agriculture than men. One farming activity that was typically performed by women was the recruiting of hired workers, but this took only a short period of time because women had to talk only to the *cabeza* (the leader of a transplanting or harvesting group), who in turn, contacted his members. The most time-consuming farming tasks, such as weeding and harvesting were normally carried out by contract workers, although some women also participated in these activities from time to time.

Table 3.2 and Figure 3.2 suggest that employment status did not markedly affect women's domestic activities. Consequently, the time spent on market activities by employed women was taken from their personal time. In addition to 55 hours of domestic work, employed women spent an average of 26 hours of market work per week resulting in a significant reduction of time spent on leisure and other personal activities. Employed women spent nearly 27 hours per week (nearly four hours per day less than non-employed women in resting, sleeping and other personal activities.

Figure 3.2 **Mean number of hours (per week) that women devoted to different activities by employment status, Laguna, Philippines, 1975**



Source: Table 3.1

The lack of influence of employment status on women's time devoted to domestic work contradicts the findings of another Philippine study where Miralao (1984) found substantial reductions in the time spent dishwashing, cleaning house and washing and ironing clothes by employed women. The difference may be explained by the location of the two studies. Miralao's study covered three urban areas in the Philippines where the main sources of livelihood were non-agricultural and probably incompatible with housework, and where services were more readily available. Moreover, in that study only employed women who brought in cash income to the household were considered as employed. (Miralao, 1984: 372-380).

Various other studies (Boulier, 1977; Gronau, 1980; Vanek, 1984; Leibowitz, 1972; Matsushima, 1982; Walker and Woods, 1976) have also found that employed women spent less time on domestic work. Vanek (1984: 98) reported that women

were forced to reduce most of the time spent on household activities under the pressure of employment responsibilities, but no single activity was eliminated. Gronau's (1980: 45) study showed that not only home time but also personal time was reduced when an Israeli woman worked in the market for 4.3 hours per day: she saved 2.8 hours by reducing her housework but 1.5 hours was at the expense of leisure and time spent on physiological needs. However, in this study, none of the time spent in home activities was shifted to market activities, resulting in the significant decline in time devoted to personal activities. In another study among Nicaraguan housewives, potters and factory workers, housewives spent more time in food preparation and food processing than the other two groups of women, although the latter continued to do necessary household work and care for the children (Gillespie, 1979: 383).

Although these studies are not strictly comparable because of differences in methods of data collection, definition of activities, sample size and period of data collection, all suggest that employed women still performed most home production activities, consequently leading to a decrease in the number of hours devoted to personal activities, compared to non-employed women.

Evenson et al. (1980: 310) suggested that working in the market per se does not mean a decrease in the time spent on essential home production. Rather, such time is determined by the degree of market participation or the quantity of the labour supplied to the market. When labour market structure allows flexibility in the number of working hours, such as in the case of informal business or agriculture, market participation does not necessarily imply a decline in the role of women at home. Berheide et al. (1976: 504), in a study of women in Evanston, United States, supported this view: only women with very high status jobs (especially in managerial positions) significantly reduced their work at home.

The amount of time that Laguna women spent on total work (domestic and market work combined) was markedly less than the time spent on personal activities. If a normal sleeping pattern of eight hours per day plus a minimum of two hours per day for leisure, eating and personal grooming is assumed, one can expect most women's working hours to be 14 hours per day or 98 hours per week. However, the time devoted to productive activities of women in this study was lower than this, so that a larger amount of time was left for recreation, sleeping, eating and personal grooming. For example, employed women spent an average of 81 hours (55 hours on domestic activities and 26 hours on market production) per week on productive activities which was 17 hours short of the expected time on total production. The large gap between productive time (home and market time combined) and personal time was also observed in all patterns of women's time allocation, controlling for different socio-demographic factors, economic and environmental factor, as presented in the following section.

3.5 Women's time allocation-differentials

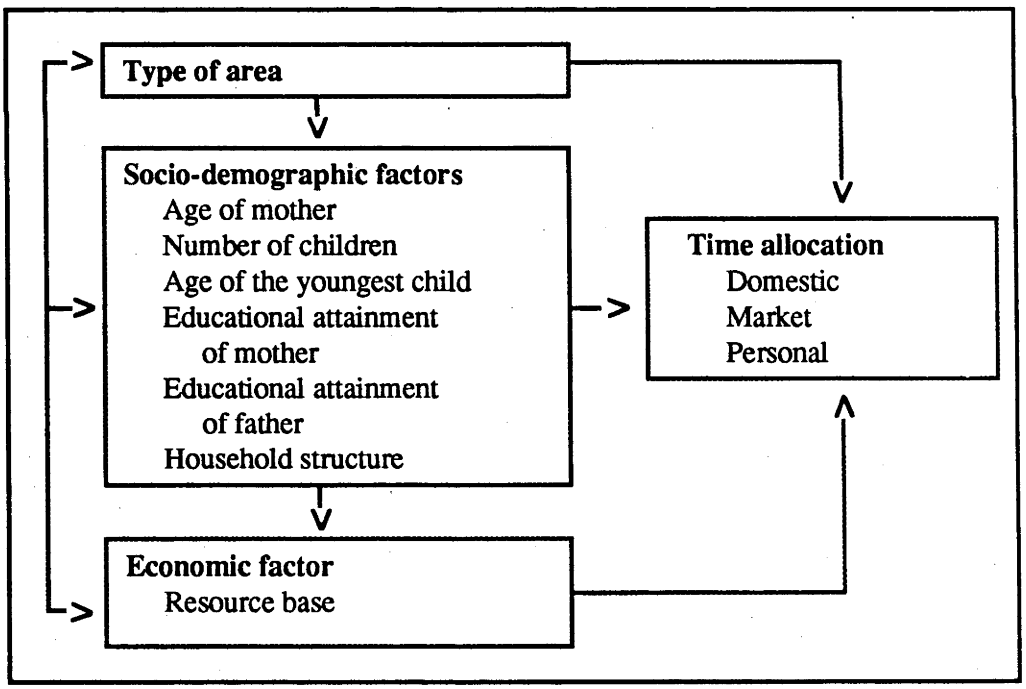
Each woman is unique and exhibits her own pattern of time use. Comparisons of time allocation between women with different characteristics can, however, reveal common underlying factors affecting their behaviour. To illustrate the different factors that influence women's time allocation, a schematic model is shown in Figure 3.3. In this model, time use is assumed to be influenced by three sets of factors: type of area (environmental), socio-demographic factors, and economic factors. The hypothesized relationship between the type of area and time use is that the time devoted to domestic work would be lower in more modern *barangay* than in less modern *barangay* due to the presence of services in the former which may facilitate the domestic work of women. In turn, the type of area is linked closely with economic activities: the time devoted to agricultural work would be less in more modern areas, while the time devoted to total economic activities would be more because the availability of other off-farm employment opportunities.

The next group of factors reflect the socio-demographic characteristics of husbands and wives, as well as the characteristics of the household to which the women belonged. The hypothesized relationship between time devoted to housework and age is that younger women would devote more time to this activity than older women because they would be more likely to have younger children who need constant care and attention, whereas older women would be more likely to have older children who not only do not require as much care, but can substitute for them in other domestic activities. Women's age may affect market work in a similar manner because younger women would have to earn more to support the increasing needs of their growing families, whereas older women would be more likely to receive financial support from children of working age. Conversely, younger women's economic activities may also be hampered by the presence of young children. However, the financial needs of the family might motivate poorer women to engage in any available income-earning activities, despite the presence of young children.

It is hypothesized that there would be a positive relationship between number of children and number of hours devoted to domestic work. As the number of children increases, the greater the number of hours required to prepare meals, cook and wash and iron clothes. Conversely, the domestic work of women could also be reduced if there were more children to help around the house. The age of the youngest child is presumed to vary inversely with the number of hours devoted to domestic work, and positively with the number of hours devoted to market work. On one hand, a young child, an infant in particular, would require constant attention and care, thus increasing the number of hours devoted to domestic work markedly. On the other hand, as the youngest child grows older, it would have less need from the mother and at the same time would be able to free the mother from other domestic work, enabling her to work more in the market.

Education may also affect time use. The educational levels of mother and father may indicate earning potential of the individual and hence can measure the price of his or her time augmented by human capital endowment. DaVanzo and Lee (1983: 64) stated that more highly educated women may have higher productivity in all types of activities; this increased efficiency may be neutral across activities, or it may be greater in other activities. For example, a woman with higher education may be able to type more letters and wash more clothes per hour than a less educated woman, but the relative difference may be greater for letters than clothes, in which case, one would expect to see the woman with higher education spend more time on market work than her less well educated counterpart. Thus, the time devoted to domestic and market activities would tend to move in opposite directions.

Figure 3.3 **Schematic model of factors affecting time allocation**



Economic factors, such as income and assets, may be seen as largely providing more options for the use of time. As income increases people can afford more of the amenities of life. Besides consumer goods and services, these may include leisure and household services (Mueller, 1982: 79). Due to data limitations, the economic determinant of time use included in this study was the household's resource base. To estimate household income, the expenditures incurred from each enterprise owned or operated by the family should be computed and subtracted from the estimated value of the produce. This proved to be too complicated and time-consuming, so household's ownership of land was used instead of income as a proxy for wealth status of the household.

3.5.1 Socio-demographic characteristics and time allocation

Age of women. The variations in the time-allocation pattern of women grouped according to age categories are examined in Table 3.3. As expected, the average time spent in domestic work declined significantly with age, regardless of employment status. The Scheffe test indicated that the difference was only significant when comparing younger women (29 years old or younger) and older women (45 years old or over). For example, younger employed women (29 years old or below) spent more than 65 hours per week on housework, compared to more than 41 hours for older women. There were no significant differences between younger women and women aged 30-44, nor between older women and women aged 30-44, regardless of employment status.

The substantial decline in time spent in domestic activities by older women was mainly due to the decrease in the number of hours devoted to child care. For non-employed women, child rearing was the only activity for which reported time decreased significantly with age. This is evident in the lack of significant differences in time devoted to child care between younger women and women aged 30-44, while it was significant between younger and older women. At the same

time, most older women did not have young children who need much attention from their mothers. Where young children were still present in the household, it was likely that older children assisted their women to care for younger siblings.

The relationship between age and time spent on domestic and market work might be expected to move in opposite directions. However, this was not observed in this study. There was no relationship between age and time spent on market production activities. This contradicts the findings among Malaysian women by Sulaiman (1984: 93) where women above 40 years of age worked more hours than younger women, largely because older women were mostly engaged in traditional market production whereas younger women mostly worked in permanent and salaried employment. Skjonsberg (1984: 214) also found that older African women worked longer hours (on agricultural work) than younger women. By contrast, Acharya and Bennett (1983: 32) found that older women in their Nepalese study were confined to domestic rather than market activities.

As a result of the markedly smaller amount of time spent on domestic activities and the similar amount spent on market time, older women in Laguna had more personal time than younger women. Employed and non-employed women aged 45 years old or over enjoyed more time for leisure, sleep and personal hygiene than women below 30 years of age. For instance, non-employed older women spent 23 hours per week more on personal time than non-employed younger women. In another study in Botswana, it was found that, after the age of 42, women devoted increased time to leisure (Mueller, 1984: 354).

Number of children. It was hypothesized that with more children, the number of hours devoted to domestic work would also increase. However, this was not found in the study (Table 3.4). The significantly smaller amount of time spent on other housework by employed women compared with non-employed women suggests that children of the employed women substituted for their mothers in

Table 3.3 **Mean number of hours (per week) that women devoted to activities by employment status and their age, Laguna, Philippines, 1975**

Employment status/ Activity	Age of women <30	30-44	45+	F-ratio
A. All women				
Domestic work	**63.9**	**57.2**	**41.2**	**21.4*****
Shopping	2.9	3.7	4.5	3.0**
Meal preparation	25.0	23.3	19.5	4.6*
Clothes care	9.5	9.8	7.9	1.9
Child care	16.9	12.5	1.1	42.3***
Other domestic work	9.6	7.9	8.2	1.4
Market work	**16.6**	**16.2**	**17.9**	**0.3**
Work for wages	8.0	5.6	6.1	1.1
Crop production	1.5	2.3	2.3	0.5
Animal husbandry	1.5	2.9	2.8	3.7**
Other market work	5.5	5.4	6.8	0.4
Personal care	**87.5**	**94.6**	**108.9**	**11.7*****
Total	**168.0**	**168.0**	**168.0**	
Number of cases	143	214	160	
B. Non-employed women				
Domestic work	**61.4**	**55.9**	**40.3**	**7.6*****
Shopping	3.0	3.8	3.9	0.5
Meal preparation	22.7	20.9	19.3	0.8
Clothes care	9.5	10.0	9.1	0.2
Child care	17.9	11.7	0.2	18.4***
Other domestic work	8.3	9.5	7.7	0.5
Market work	**a**	**a**	**0.0**	
Work for wages	a	a	0.0	
Crop production	0.0	a	a	
Animal husbandry	a	a	a	
Other market work	0.0	0.0	0.0	
Personal care	**106.5**	**112.0**	**127.6**	**7.6*****
Total	**168.0**	**168.0**	**168.0**	
Number of cases	52	78	52	

continued...

Table 3.3 (cont'd.) **Mean number of hours (per week) that women devoted to activities by employment status and their age, Laguna, Philippines, 1975**

Employment status/ Activity	Age of women <30	30-44	45+	F-ratio
C. Employed women				
Domestic work	**65.3**	**57.9**	**41.6**	**13.9*** **
Shopping	2.8	3.6	4.7	2.8*
Meal preparation	26.3	24.8	19.6	4.1**
Clothes care	9.5	9.7	7.3	1.8
Child care	16.4	12.9	1.5	24.5***
Other domestic work	10.3	6.9	8.5	3.5**
Market work	**26.0**	**25.5**	**26.5**	**0.1**
Work for wages	12.6	8.8	9.0	1.4
Crop production	2.4	3.7	3.3	0.5
Animal husbandry	2.3	4.6	4.1	4.2**
Other market work	8.7	8.4	10.0	0.2
Personal care	**76.6**	**84.6**	**99.9**	**8.4*** **
Total	**168.0**	**168.0**	**168.0**	
Number of cases	91	136	108	

Source: Laguna data set, 1975

Notes: Mean number of hours for personal care was computed by deducting home and market activities from 168 (24 hours x 7 days)
Non-employed included women who worked in the market for less than an hour during the week preceding the survey
Total number of hours may not add to 168 due to rounding.
a = less than 0.05
The one-way analysis of variance was used to determine the significance of differences in the number of hours devoted to activities by women and their age. The significant differences in the time non-employed women devoted to market work and its component activities were not included because of the very small number of hours devoted to market activities.
***Statistically significant at $\alpha = 0.01$
**Statistically significant at $\alpha = 0.05$
*Statistically significant at $\alpha = 0.10$

performing household tasks. Perhaps employed women contributed more to the family finances and had more power at home to ask children to share in cleaning the house and backyard, and fetching water. However, Sulaiman (1984: 98) found that, even if other household members in large families helped, the number of hours women devoted to non-market work was generally positively related to family size, implying that a large family increased women's obligations at home.

The average time devoted to market work of employed women exhibited a U-shaped distribution as the number of children increased, largely because of the trend in work for wages and other market work. Crop production time was highest for women with more than five children. Farming activities could be easily integrated with housework because most farms were located near the villages if not near their houses so that even while watering or weeding crops, women could still supervise older children doing household tasks. Because of this, the question of how simultaneous activities were recorded must be considered. It is possible that time for other housework was not significantly less but, since these activities could be carried out simultaneously with crop production activities, such time was recorded as crop production rather than 'other domestic activities'.

The dual burden of an employed woman is clearly evident for those with six or more children. These women devoted significantly fewer hours to personal activities compared with employed women who had less than six children. As observed earlier, employed women shifted their personal time to market time to earn more money to support their families. Skjonsberg (1984: 214) found that older African women, who presumably had many children, worked to earn money because of necessity and because the help from their older children provided them with an opportunity (and a need) to cultivate cash crops to pay for school expenses.

Table 3.4 **Mean number of hours (per week) that women devoted to activities by employment status and number of children, Laguna, Philippines, 1975**

Employment status/ Activity	Number of children			F-ratio
	< 3	3-5	6+	
A. All women				
Domestic work	**52.5**	**54.7**	**55.8**	**0.4**
Shopping	3.4	3.7	4.3	0.8
Meal preparation	21.5	23.5	22.9	0.8
Clothes care	8.5	8.7	11.0	2.5*
Child care	9.5	10.0	11.7	0.6
Other domestic work	9.6	8.7	5.9	5.6***
Market work	**17.1**	**15.2**	**19.7**	**1.4**
Work for wages	7.0	5.7	6.9	0.4
Crop production	1.5	1.9	3.5	2.4*
Animal husbandry	2.0	3.2	2.0	3.1**
Other market work	6.6	4.4	7.3	1.6
Personal care	**98.4**	**98.1**	**92.5**	**0.9**
Total	**168.0**	**168.0**	**168.0**	
Number of cases	193	215	109	
B. Non-employed women				
Domestic work	**52.2**	**55.8**	**49.5**	**0.6**
Shopping	3.2	3.6	4.3	0.5
Meal preparation	20.2	22.7	19.0	1.1
Clothes care	8.5	9.4	11.9	2.1
Child care	10.6	10.7	8.5	0.3
Other domestic work	9.7	9.3	5.8	2.1
Market work	**a**	**a**	**a**	
Work for wages	a	a	a	
Crop production	0.0	a	0.0	
Animal husbandry	a	a	a	
Other market work	0.0	0.0	0.0	
Personal care	**115.8**	**112.1**	**118.4**	**0.6**
Total	**168.0**	**168.0**	**168.0**	
Number of cases	71	71	40	

continued...

Table 3.4 (cont'd.) **Mean number of hours (per week) that women devoted to activities by status and number of children, Laguna, Philippines, 1975**

Employment status/ Activity	Number of children			F-ratio
	< 3	3-5	6+	
C. Employed women				
Domestic work	**52.7**	**54.1**	**59.4**	**0.9**
Shopping	3.5	3.7	4.2	0.4
Meal preparation	22.3	23.8	25.2	0.6
Clothes care	8.5	8.4	10.5	1.1
Child care	8.8	9.7	13.6	1.8
Other domestic work	9.6	8.5	5.9	3.5**
Market work	**27.0**	**22.6**	**31.1**	**3.1****
Work for wages	11.0	8.6	10.8	0.7
Crop production	2.4	2.8	5.6	2.7*
Animal husbandry	3.1	4.7	3.2	2.6*
Other market work	10.5	6.6	11.5	2.2
Personal care	**88.4**	**91.2**	**77.5**	**2.5***
Total	**168.0**	**168.0**	**168.0**	
Number of cases	122	144	69	

Source: Laguna data set, 1975

Notes: Mean number of hours for personal care was computed by deducting home and market activities from 168 (24 hours x 7 days)
Non-employed included women who worked in the market for less than an hour during the week preceding the survey
Total number of hours may not add to 168 due to rounding.
a = less than 0.05
The one-way analysis of variance was used to determine the significance of differences in the number of hours devoted to activities by women and number of children. The significant differences in the time non-employed women devoted to market work and its component activities were not included because of the very small number of hours devoted to market activities.
***Statistically significant at $\alpha = 0.01$
**Statistically significant at $\alpha = 0.05$
*Statistically significant at $\alpha = 0.10$

Age of the youngest child. The age of the youngest child was divided into three categories: 0-2 years (infant), 3-6 years (toddler), and 7 years old or over (school-age). Children aged two or younger were considered to form a separate group because children of this age group require more attention from women and other household members, not only because of caring time but also for other related chores like washing diapers. For the second category, six years old was chosen as the cut-off age because at age seven children started school and spent most of their time out of the house.

The presence of young children, an infant in particular, was hypothesized to have a considerable influence on women's time use. Younger children are likely to call for higher levels of inputs for child rearing and nurturing, and are not expected to contribute much productive time. However, as children mature, their participation in both home and market activities increases.

The age of the youngest child clearly influenced women's time allocation in Laguna in 1975, as can be seen in Table 3.5. An inverse relationship was found between the age of the youngest child and women's home activities time. A non-employed woman with an infant (under two years old) spent more than nine hours per day at household tasks. Similarly, an employed woman with an infant spent the highest number of hours on domestic activities. Surprisingly, this was higher (10.2 hours per day) than for non-employed women.

The strong effect of age of youngest child is evident in Table 3.5 where the differences were significant for all three groups of women, regardless of employment status. Unlike the analysis of age of women, where the difference was only significant between younger and older women, the time devoted to domestic work was significantly different (according to the Scheffe test) between women with

infant and toddler, between women with infant and school-age child and between women with toddler and school-age child as their youngest children.

The differences in the time use of women by age of youngest child were mainly due to the long hours spent on child care by women with infants. Among non-employed women, child care time was reduced to almost none for those whose youngest child was of school age. This was the only component of home activities which significantly decreased as the age of the youngest child increased. An analogous pattern was exhibited by employed women. However, not only child care time but also other aspects of housework declined when the youngest child was more than six years old. For employed women, child care was the largest contributor to the reduction in domestic time, followed by cooking and related activities, and clothes care.

An intensive in-depth study by Jayme-Ho (1976b: 39) on a sample of only ten households gathering time-use data by direct observation also found that the greater amount of time devoted to home activities by women with young children was mainly due to the large number of hours spent on child care. However, these women also spent more hours on food preparation and other domestic activities, implying that a young child's effect on woman's time was not only directly through child care, but also indirectly through increased time spent on other domestic activities such as preparing food and washing clothes.

DaVanzo and Lee (1983: 74) concluded that the age of children was the most important determinant of the total time required for household services. In their study, an infant increased total household production hours by almost five hours per day. Two- to five-year-olds added less than half that time, and six- to ten-year-olds about one-quarter.

Table 3.5 **Mean number of hours (per week) that women devoted to activities by employment status and age of the youngest child, Laguna, Philippines, 1975**

Employment status/ Activity	Age of the youngest child			F-ratio
	0 - 2	3 - 6	7+	
A. All women				
Domestic work	**68.4**	**53.7**	**40.8**	**35.6*** **
Shopping	2.9	4.0	4.7	4.6**
Meal preparation	25.8	22.4	19.7	6.1***
Clothes care	10.1	11.1	7.6	4.8***
Child care	20.6	7.8	1.3	76.0***
Other domestic work	9.0	8.4	7.5	1.1
Market work	**17.4**	**15.6**	**16.3**	**0.2**
Work for wages	6.7	6.8	5.5	0.3
Crop production	2.3	0.9	2.9	2.1
Animal husbandry	2.5	2.2	2.9	0.6
Other market work	5.8	5.7	4.9	0.2
Personal care	**82.3**	**98.7**	**111.0**	**24.1*** **
Total	**168.0**	**168.0**	**168.0**	
Number of cases	202	111	162	
B. Non-employed women				
Domestic work	**63.9**	**53.0**	**40.4**	**10.5*** **
Shopping	2.6	5.4	4.2	4.0**
Meal preparation	22.4	20.4	18.9	1.1
Clothes care	10.2	11.3	8.0	1.8
Child care	20.4	6.7	0.3	33.2***
Other domestic work	8.3	9.3	9.1	0.1
Market work	**a**	**a**	**a**	
Work for wages	a	a	a	
Crop production	a	0.0	0.0	
Animal husbandry	a	a	a	
Other market work	0.0	0.0	0.0	
Personal care	**104.0**	**114.9**	**127.5**	**10.5*** **
Total	**168.0**	**168.0**	**168.0**	
Number of cases	78	38	54	

continued...

Table 3.5 (cont'd.) **Mean number of hours (per week) that women devoted to activities by employment status and age of the youngest child, Laguna, Philippines, 1975**

Employment status/ Activity	Age of the youngest child			F-ratio
	0 - 2	3 - 6	7+	
C. Employed women				
Domestic work	**71.2**	**54.1**	**41.0**	**25.6*** **
Shopping	3.0	3.3	5.0	3.1**
Meal preparation	27.9	23.5	20.1	5.5***
Clothes care	10.1	11.0	7.3	3.0**
Child care	20.8	8.4	1.9	43.8***
Other domestic work	9.4	7.9	6.7	2.4*
Market work	**28.3**	**23.6**	**24.4**	**1.2**
Work for wages	10.9	10.3	8.3	0.6
Crop production	3.8	1.4	4.4	2.1
Animal husbandry	4.0	3.3	4.3	0.6
Other market work	9.5	8.7	7.4	0.4
Personal care	**68.6**	**90.3**	**102.7**	**21.9*** **
Total	**168.0**	**168.0**	**168.0**	
Number of cases	124	73	108	

Source: Laguna data set, 1975

Notes: Mean number of hours for personal care was computed by deducting home and market activities from 168 (24 hours x 7 days)
Non-employed included women who worked in the market for less than an hour during the week preceding the survey
Total number of hours may not add to 168 due to rounding.
a = less than 0.05
Forty-two childless women were excluded from this table.
The one-way analysis of variance was used to determine the significance of differences in the number of hours devoted to activities by women and age of the youngest child. The significant differences in the time non-employed women devoted to market work and its component activities were not included because of the very small number of hours devoted to market activities.
***Statistically significant at $\alpha = 0.01$
**Statistically significant at $\alpha = 0.05$
*Statistically significant at $\alpha = 0.10$

No relationship was found between the age of the youngest child and market production time. The number of hours devoted to income-earning and related activities remained stable as the age of the youngest child increased. As a result, the time released from household chores appeared to be transferred solely to personal activities, and women with school-aged children had the highest number of hours spent on personal activities, regardless of employment status, although employed women had fewer than non-employed women.

Educational attainment. Women were grouped into three categories according to educational attainment: primary (1-4 years of attending school), intermediate (5-6 years) and high school or over (7 or more years) (Table 3.6). The first category included women who never went to school. It would have been interesting to examine how the time use of women with no education differed from that of women who had attended school, but the small number of cases of those with no schooling included in the sample made it impossible to pursue such a comparison.

It was hypothesized that work time should increase with education, and non-market time should decrease because the higher productivity and wages of the more educated would lead them to increase their work time at the expense of non-market activities. However, this was not observed in the study (Table 3.6). This could be due to the non-availability of employment opportunities compatible with educational qualifications of the respondents. The established factories in the province probably preferred applicants with higher levels of education. As shown in Table 3.1, more than 40 per cent of women in the study had only reached primary education (four years of formal education).

The overall domestic time of employed women remained stable with increased education, whereas non-employed women's domestic time exhibited an inverted U-shaped pattern. A different finding was observed among Polish women, where women who had more than secondary vocational education spent less time on

domestic work than women with lower educational qualifications because educated women were relieved of household duties by other members of the family and by the use of various services (Strzeminska, 1972: 380).

The ambiguous effect of education on child care time has emerged from various American time-use studies (Robinson, 1977; Ofek, 1977; Leibowitz, 1974). Robinson's (1977: 185) study noted that the proposition that better-educated parents invest more time in their children received only modest support from his study, whereas Leibowitz and Ofek found that education significantly increased the time spent on children. According to Leibowitz (1974: 249), women with higher education were able to reduce the time they devoted to other household tasks so as to increase the time devoted to child care.

Only crop production time was significantly reduced with increased education (Table 3.6). It appears that with higher education, women were more likely to engage in income-earning activities other than farming. This is not surprising because farming activities are so arduous that women opted for other market activities that had similar pay, if not higher, but were not as difficult as farm work. The opposite effect of education among Malaysian women from different ethnic groups was observed by Sulaiman (1984: 86): among Malay women, education had a negative effect on market activities, but this effect was not observed for Chinese and Indian women. The explanation offered was that Malay women were engaged in permanent salaried activities, while the others were occupied with the traditional market activities of selling and trading.

The lack of influence of education on Laguna women's time allocation may be due to the homogeneity of the women in terms of educational attainment. As noted earlier (section 3.2), most women had completed some intermediate education, very few had completed some secondary education and none had reached the tertiary level. In previous time-allocation studies (Robinson, 1977; Walker and Woods,

Table 3.6 **Mean number of hours (per week) that women devoted to activities by employment status and their educational attainment, Laguna, Philippines, 1975**

Employment status/ Activity	Educational attainment of women			
	Primary[1]	Intermediate	Secondary or higher	F-ratio
A. All women				
Domestic work	**52.9**	**56.6**	**51.3**	**1.0**
Shopping	4.1	3.5	2.9	1.4
Meal preparation	22.5	23.4	20.9	0.6
Clothes care	9.9	8.5	8.0	1.6
Child care	7.4	13.1	12.2	6.9***
Other domestic work	9.0	8.2	7.3	1.0
Market work	**18.6**	**16.3**	**11.9**	**2.5***
Work for wages	7.2	6.1	4.8	0.7
Crop production	2.9	1.4	0.9	2.8*
Animal husbandry	2.7	2.2	2.6	0.4
Other market work	5.9	6.6	3.5	1.0
Personal care	**96.4**	**95.0**	**104.8**	**1.6**
Total	**168.0**	**168.0**	**168.0**	
Number of cases	252	194	71	
B. Non-employed women				
Domestic work	**51.9**	**58.4**	**44.7**	**2.4***
Shopping	3.6	4.2	2.3	1.6
Meal preparation	21.7	22.2	16.3	2.3
Clothes care	11.3	8.4	7.7	3.2**
Child care	5.6	15.3	11.5	6.9***
Other domestic work	9.7	8.2	7.0	0.9
Market work	**a**	**a**	**a**	
Work for wages	a	a	a	
Crop production	a	0.0	0.0	
Animal husbandry	a	a	0.0	
Other market work	0.0	0.0	0.0	
Personal care	**116.0**	**109.5**	**123.3**	**2.4***
Total	**168.0**	**168.0**	**168.0**	
Number of cases	83	67	32	

continued...

Table 3.6 (cont'd.) **Mean number of hours (per week) that women devoted to activities by employment status and their educational attainment, Laguna, Philippines, 1975**

Employment status/ Activity	Educational attainment of women			
	Primary[1]	Intermediate	Secondary or higher	F-ratio
C. Employed women				
Domestic work	**53.4**	**55.8**	**56.7**	**0.2**
Shopping	4.3	3.1	3.4	1.6
Meal preparation	22.9	24.0	24.7	0.2
Clothes care	9.2	8.6	8.3	0.7
Child care	8.3	11.9	12.9	2.2
Other domestic work	8.7	8.2	7.5	0.3
Market work	**27.8**	**24.9**	**21.7**	**1.2**
Work for wages	10.7	9.3	8.7	0.3
Crop production	4.3	2.2	1.7	2.3
Animal husbandry	4.0	3.4	4.8	0.9
Other market work	8.8	10.0	6.5	0.6
Personal care	**86.8**	**87.3**	**89.6**	**0.1**
Total	**168.0**	**168.0**	**168.0**	
Number of cases	169	127	39	

Source: Laguna data set, 1975

Notes: Mean number of hours for personal care was computed by deducting home and market activities from 168 (24 hours x 7 days)
Non-employed included women who worked in the market for less than an hour during the week preceding the survey
Total number of hours may not add to 168 due to rounding.
a = less than 0.05
[1]Includes women who had no education.
The one-way analysis of variance was used to determine the significance of differences in the number of hours devoted to activities by women and educational attainment. The significant differences in the time non-employed women devoted to market work and its component activities were not included because of the very small number of hours devoted to market activities.
***Statistically significant at $\alpha = 0.01$
**Statistically significant at $\alpha = 0.05$
*Statistically significant at $\alpha = 0.10$

1976) which found a positive relationship between hours of market work and educational attainment, women from all levels of educational attainment were well-represented.

It was hypothesized that women whose husbands had attained higher level of education would be engaged in occupations with higher pay. On one hand, the higher income brought in by husbands would enable their wives to buy more amenities in life, thus lowering the number of hours devoted to domestic work, and at the same time would enable them to devote more time to market work. On the other hand, the higher income of husbands could further enhance the gender division of labour where women were confined to domestic work while husbands would devote longer hours to market activities. However, as shown in Table 3.7, husbands education had no effect on women's time allocation. There are indications that employed women whose husbands had completed some secondary education or beyond devoted more time on market activities than women whose husbands had primary education, although the differences were not statistically significant because of the considerable variation in time devoted to market work, as mentioned in section 3.4.

Household structure. A number of studies (Robinson et al., 1972; Ardales, 1981) found that the presence of other household members (in-laws and household helpers) reduced the time women spent on housework and increased time spent on market work. However, this is only partly true in this study. Other household members did reduce the domestic work of employed women, but market time did not increase. As shown in Table 3.8, the average time spent by employed women on domestic work in extended households was less than in nuclear households by about 13 hours per week, but the time spent on market activities was similar.

Table 3.7 **Mean number of hours (per week) that women devoted to activities by employment status and husbands'educational attainment, Laguna, Philippines, 1975**

Employment status/ Activity	Educational attainment of husbands			
	Primary[1]	Intermediate	Secondary or higher	F-ratio
A. All women				
Domestic work	**53.6**	**56.7**	**50.9**	**1.0**
Shopping	4.0	3.9	2.6	2.0
Meal preparation	23.3	22.5	21.0	0.7
Clothes care	9.7	9.1	7.5	1.7
Child care	8.4	12.4	11.1	3.0*
Other domestic work	8.2	8.7	8.7	0.2
Market work	**18.3**	**15.5**	**15.2**	**1.0**
Work for wages	6.1	6.1	7.8	0.4
Crop production	2.8	1.7	0.9	2.2
Animal husbandry	2.6	2.7	1.9	0.8
Other market work	6.8	5.1	4.6	1.0
Personal care	**96.2**	**96.8**	**101.8**	**0.8**
Total	**168.0**	**168.0**	**168.0**	
Number of cases	259	166	92	
B. Non-employed women				
Domestic work	**56.5**	**52.7**	**46.9**	**1.5**
Shopping	4.4	3.3	2.6	1.9
Meal preparation	22.5	20.3	19.0	1.1
Clothes care	11.3	8.9	7.3	3.5**
Child care	8.2	12.6	10.8	1.2
Other domestic work	10.2	7.6	7.2	1.6
Market work	**0.1**	**0.1**	**a**	
Work for wages	a	a	a	
Crop production	0.0	a	0.0	
Animal husbandry	a	a	a	
Other market work	0.0	0.0	0.0	
Personal care	**111.4**	**115.2**	**121.0**	**1.5**
Total	168.0	168.0	168.0	
Number of cases	81	57	44	

continued...

Table 3.7 (cont'd.) **Mean number of hours (per week) that women devoted to activities by employment status and husbands' educational attainment, Laguna, Philippines, 1975**

Employment status/ Activity	Educational attainment of husbands			
	Primary[1]	Intermediate	Secondary or higher	F-ratio
C. Employed women				
Domestic work	**52.2**	**58.8**	**54.6**	**1.2**
Shopping	3.7	4.2	2.6	1.2
Meal preparation	23.6	23.7	22.8	0.1
Clothes care	9.0	9.3	7.6	0.4
Child care	8.6	12.3	11.4	1.7
Other domestic work	7.3	9.3	10.1	2.4*
Market work	**26.5**	**23.6**	**29.2**	**1.0**
Work for wages	8.9	9.3	15.0	2.1
Crop production	4.0	2.5	1.8	1.4
Animal husbandry	3.8	4.0	3.6	0.1
Other market work	9.9	7.7	8.8	0.5
Personal care	**89.2**	**85.6**	**84.3**	**0.4**
Total	168.0	168.0	168.0	
Number of cases	178	109	48	

Source: Laguna data set, 1975

Notes: Mean number of hours for personal care was computed by deducting home and market activities from 168 (24 hours x 7 days)
Non-employed included women who worked in the market for less than an hour during the week preceding the survey
Total number of hours may not add to 168 due to rounding.
a = less than 0.05
[1]Includes husbands with no education
The one-way analysis of variance was used to determine the significance of differences in the number of hours devoted to activities by women and educational attainment of fathers. The significant differences in the time non-employed women devoted to market work and its component activities were not included because of the very small number of hours devoted to market activities.
**Statistically significant at $\alpha = 0.05$
*Statistically significant at $\alpha = 0.10$

Table 3.8 **Mean number of hours (per week) that women devoted to activities by employment status and household structure, Laguna, Philippines, 1975**

Employment status / Activity	Household structure: Nuclear	Household structure: Extended	t-value
A. All women			
Domestic work	**55.9**	**49.3**	**2.1****
Shopping	3.5	4.3	-1.4
Meal preparation	23.6	20.0	2.2**
Clothes care	9.2	9.0	0.2
Child care	11.1	7.7	2.0**
Other domestic work	8.5	8.3	0.3
Market work	**17.0**	**16.4**	**0.3**
Work for wages	6.5	6.3	0.1
Crop production	2.0	2.4	-0.5
Animal husbandry	2.6	2.1	1.0
Other market work	5.9	5.6	0.3
Personal care	**95.1**	**102.4**	**-1.8***
Total	**168.0**	**168.0**	
Number of cases	377	140	
B. Non-employed women			
Domestic work	**51.5**	**57.3**	**-1.1**
Shopping	3.2	4.9	-2.0**
Meal preparation	21.1	20.4	-0.1
Clothes care	9.4	10.2	-0.5
Child care	10.1	10.5	-0.2
Other domestic work	7.7	11.3	-2.1**
Market work	**a**	**a**	
Work for wages	a	a	
Crop production	a	0.0	
Animal husbandry	a	a	
Other market work	0.0	0.0	
Personal care	**116.4**	**110.7**	**1.1**
Total	**168.0**	**168.0**	
Number of cases	135	47	

continued...

Table 3.8 (cont'd.) **Mean number of hours (per week) that women devoted to activities by employment status and household structure, Laguna, Philippines, 1975**

Employment status/ Activity	Household structure		t-value
	Nuclear	Extended	
C. Employed women			
Domestic work	**58.3**	**45.2**	**3.2*** **
Shopping	3.6	4.0	-0.4
Meal preparation	25.0	19.9	2.4**
Clothes care	9.0	8.4	0.5
Child care	11.7	6.3	2.6**
Other domestic work	9.0	6.7	2.0*
Market work	**26.5**	**24.7**	**0.6**
Work for wages	10.1	9.5	0.2
Crop production	3.1	3.6	-0.4
Animal husbandry	4.1	3.2	1.2
Other market work	9.3	8.4	0.4
Personal care	**83.2**	**98.1**	2.9***
Total	**168.0**	**168.0**	
Number of cases	242	93	

Source: Laguna data set, 1975

Notes: Mean number of hours for personal care was computed by deducting home and market activities from 168 (24 hours x 7 days)
Non-employed included women who worked in the market for less than an hour during the week preceding the survey
Total number of hours may not add to 168 due to rounding.
a = less than 0.05
The t-test was used to determine the significance of differences in the number of hours devoted to activities by women and household structure. The significant differences in the time non-employed women devoted to market work and its component activities were not included because of the very small number of hours devoted to market activities.
***Statistically significant at $\alpha = 0.01$
**Statistically significant at $\alpha = 0.05$
*Statistically significant at $\alpha = 0.10$

This result is presumably due to the presence of other household members. The difference between this and the findings of Robinson and Ardales may be explained by the nature of the extended households in the study area. In the current study, other household members included in-laws, married children, grandchildren, nephews, and nieces, while in Robinson's (1972) and Ardales' (1981) studies, other household members were mostly paid domestic helpers. Only two households included in the Laguna study had paid domestic helpers. Other household members in the current study worked either as unpaid labourers on the family farm or in the family-operated business, or for pay at the same time as they helped in housework (Table 3.9).

Again, the time saved by the employed in doing household tasks in extended households was solely transferred to increased hours of leisure, sleep and personal hygiene. On average, employed women from extended households spent 15 hours per week more than women belonging to nuclear households on personal activities.

Table 3.9 **Composition of extended households, Laguna, Philippines, 1975 (percentage)**

Other Household Members	All	Non-employed women	Employed women
Relatives[a]	78	79	77
Fathers- and women-in law	20	18	22
Others[b]	2	4	1
Total	100	100	100
Number of cases	220	84	136

Source: Laguna data tape, 1975.
Notes: a daughters- and sons-in-law, grandchildren, nieces and nephews
b non-relatives and servants
Total may not add to 100 due to rounding.

3.5.2 Resource base and time allocation

Ownership of land was hypothesized to increase productivity, thus make it more advantageous for women to work longer hours in the market and devote less time to domestic activities. However, the ownership of land did not affect the amount of time allocated to domestic work of non-employed women and had a conflicting effect on employed women (Table 3.10).

The number of hours devoted to market work of employed women was significantly less for women from landed households compared with those from landless households. On average, employed women from landed households devoted five hours less to market work than women from landless households. Women from landowning families may not have had to work such long hours to earn a living since they had their farms to rely on. Moreover, landed households had other productive assets, such as tractors and *carabao* which could be rented out. By contrast, women from landless households had to work longer because the earnings of their husbands, in addition to perhaps not being sufficient, could not be relied upon because their husbands were engaged in farm and construction work and other jobs which were not secure. As a result, the time for market work of landless women had to come from leisure and other personal activities. This pattern reflects landless women's disadvantaged position compared to landed women who had their farms to rely on for their subsistence. It is also possible that much of the time that women spent on farming activities may not have been treated as farm work by women from landed households.

Another possibility is that there was a greater opportunity for landless women to engage in market work. However, this is unlikely because landed women more than landless women had an opportunity to increase their market activities. Landed women could use their land as collateral in obtaining loans to start a business, planting vegetables along rice paddies to sell and even increasing their crop production time by devoting more time to weeding, harvesting and threshing to

increase their share in the produce. But there were no differences in the number of hours devoted to crop production and other market work of employed landless and landed women.

As expected, work for wages contributed most to the market work of landless women. Without access to land, women had to work as wage earners to help their husbands in meeting the economic needs of the family.

The conflicting effect of their resource base on women's domestic and market work is also found in other studies (Wallace et al., 1987; Caldwell et al., 1980; Res, 1985; Hart, 1980). The study in Bangladesh showed that women from landless households had more time for home activities than any other class of women, as well as more time for market production activities (Wallace et al., 1987: 118-119). Wallace et al. suggested that the poorest women were married to the poorest of the rural men and the efforts of both were needed to earn a subsistence living. However, in another Bangladeshi study, rural families with access to land and urban families with their own businesses spent the longest number of hours on both domestic and market work (Caldwell et al., 1980: 45).

Res' (1980: 23-24) findings in her study of Ilongo women in the Philippines supported Caldwell et al.'s observations. The number of hours spent on domestic and market activities was highest among women belonging to households with more than two hectares of land; this was due to the fact that women from these households did not have children aged five years or younger and thus had more time for other economic activities. Hart's (1980: 203) Indonesian study also revealed a strong direct relationship between class status and the absolute amount of time spent by women in housework. Women belonging to landless and near landless households spent the least time on housework and the most on market activities compared to those from landed households.

Table 3.10 **Mean number of hours (per week) that women devoted to activities by employment status and resource base, Laguna, Philippines, 1975**

Employment status/ Activity	Resource base		t-value
	Landless	Landed	
A. All women			
Domestic work	**55.6**	**52.6**	**1.0**
Shopping	3.5	3.9	-0.9
Meal preparation	22.4	22.9	-0.4
Clothes care	9.4	8.8	0.7
Child care	11.4	8.9	1.7*
Other domestic work	8.8	8.1	0.8
Market work	**18.0**	**15.7**	**1.1**
Work for wages	7.6	5.3	1.7*
Crop production	2.2	2.0	0.2
Animal husbandry	2.2	2.8	-1.4
Other market work	6.1	5.6	0.3
Personal care	**94.5**	**99.7**	**-1.5**
Total	**168.0**	**168.0**	
Number of cases	262	255	
B. Non-employed women			
Domestic work	**52.8**	**53.3**	**-0.1**
Shopping	3.2	4.1	-1.1
Meal preparation	19.6	22.4	-1.3
Clothes care	9.7	9.4	0.2
Child care	11.1	9.2	0.8
Other domestic work	9.2	9.0	0.5
Market work	**0.0**	**a**	
Work for wages	a	a	
Crop production	a	0.0	
Animal husbandry	a	a	
Other market work	0.0	0.0	
Personal care	**115.2**	**114.6**	**0.1**
Total	**168.0**	**168.0**	
Number of cases	96	86	

continued...

Table 3.10 (cont'd.) **Mean number of hours (per week) that women devoted to activities by employment status and resource base, Laguna, Philippines, 1975**

Employment status / Activity	Resource base: Landless	Resource base: Landed	t-value
C. Employed women			
Domestic work	**57.2**	**52.3**	**1.3**
Shopping	3.7	3.8	-0.3
Meal preparation	23.9	23.2	0.4
Clothes care	9.3	8.4	0.7
Child care	11.6	8.7	0.6
Other domestic work	8.7	8.1	0.6
Market work	**28.3**	**23.6**	**1.8***
Work for wages	11.9	7.9	2.0**
Crop production	3.4	3.0	0.4
Animal husbandry	3.4	4.2	-1.3
Other market work	9.6	8.4	0.6
Personal care	**82.5**	**92.1**	-2.1**
Total	**168.0**	**168.0**	
Number of cases	166	169	

Source: Laguna data set, 1975

Notes: Mean number of hours for personal care was computed by deducting home and market activities from 168 (24 hours x 7 days)
Non-employed included women who worked in the market for less than an hour during the week preceding the survey
Total number of hours may not add to 168 due to rounding.
a = less than 0.05
The t-test was used to determine the significance of differences in the number of hours devoted to activities by women and resource base. The significant differences in the time non-employed women devoted to market work and its component activities were not included because of the very small number of hours devoted to market activities.
**Statistically significant at $\alpha = 0.05$
*Statistically significant at $\alpha = 0.10$

3.5.3 Type of area and time allocation

Women living in more modern areas are expected to devote less time to domestic activities than women from less modern areas because of the availability of labour-saving devices and the presence of services in these *barangay*. On the other hand, an increased time spent on market work is expected in more modern areas because of more non-agricultural sources of employment. However, the expectation was only true for the time devoted to market work. The time devoted to domestic activities was not significantly affected, regardless of type of area and employment status of women.

The similarity in the number of hours devoted to domestic work of women from both *barangay* regardless of employment status reflects the fact that women had to devote long hours to household chores even if modern day appliances designed to lessen the burden of domestic activities are available (Table 3.11). Even with the help from labour-saving devices, the time devoted to domestic work was not significantly lower in more modern areas because some domestic activities, ironing clothes in particular, had to be done more often. In more modern *barangay*, women and their household members from more modern areas were more likely to be working in factories and service-oriented entities, whereas women and their household members from less modern *barangay* were probably engaged in agricultural activities so that clothes need not be ironed as often as those from modern *barangay*.

With respect to market work, employed women from more modern *barangay* spent five hours per week more than employed women from less modern areas. The increase largely came from the time devoted to wage working activities. As expected, the time devoted to crop production was significantly less in more modern *barangay* than in less modern *barangay*.

Table 3.11 **Mean number of hours (per week) that women devoted to activities by employment status and type of area, Laguna, Philippines, 1975**

Employment status/ Activity	Type of area: Less Modern	Type of area: More Modern	t-value
A. All women			
Domestic work	**54.9**	**53.1**	**0.6**
Shopping	3.6	3.9	-0.6
Meal preparation	23.3	21.8	1.1
Clothes care	9.0	9.3	-0.3
Child care	10.7	9.5	0.8
Other domestic work	8.3	8.7	-0.4
Market work	**16.0**	**17.9**	**-0.9**
Work for wages	5.4	7.7	-1.7*
Crop production	2.7	1.3	2.1**
Animal husbandry	2.4	2.6	-0.6
Other market work	5.5	6.2	-0.5
Personal care	**97.1**	**97.0**	**-0.2**
Total	**168.0**	**168.0**	
Number of cases	284	233	
B. Non-employed women			
Domestic work	**54.4**	**51.6**	**0.6**
Shopping	3.6	3.6	0.1
Meal preparation	21.5	20.4	0.5
Clothes care	9.8	9.4	0.3
Child care	12.0	8.4	1.5
Other domestic work	7.5	9.8	-1.5
Market work	**0.1**	**0.1**	
Work for wages	a	a	
Crop production	a	0.0	
Animal husbandry	a	a	
Other market work	0.0	0.0	
Personal care	**113.6**	**116.3**	**-0.6**
Total	**168.0**	**168.0**	
Number of cases	93	89	

continued...

Table 3.11 (cont'd.) **Mean number of hours (per week) that women devoted to activities by employment status and type of area, Laguna, Philippines, 1975**

Employment status/ Activity	Type of area: Less Modern	Type of area: More Modern	t-value
C. Employed women			
Domestic work	**55.2**	**54.0**	**0.3**
Shopping	3.5	4.0	-0.8
Meal preparation	24.2	22.6	0.8
Clothes care	8.6	9.2	-0.5
Child care	10.1	10.2	-0.1
Other domestic work	8.7	7.9	0.7
Market work	**23.8**	**28.9**	**-2.0***
Work for wages	8.0	12.5	-2.2**
Crop production	4.1	2.1	1.9*
Animal husbandry	3.5	4.3	-1.1
Other market work	8.2	10.1	-0.9
Personal care	**89.0**	**85.1**	0.9
Total	**168.0**	**168.0**	
Number of cases	191	144	

Source: Laguna data set, 1975

Notes: Mean number of hours for personal care was computed by deducting home and market activities from 168 (24 hours x 7 days)
Non-employed included women who worked in the market for less than an hour during the week preceding the survey
Total number of hours may not add to 168 due to rounding.
a = less than 0.05
The t-test was used to determine the significance of differences in the number of hours devoted to activities by women and type of area. The significant differences in the time non-employed women devoted to market work and its component activities were not included because of the very small number of hours devoted to market activities.
**Statistically significant at $\alpha = 0.05$
*Statistically significant at $\alpha = 0.10$

3.6 Multivariate analysis of women's time allocation

The separate effect of different socio-demographic, economic and environmental factors on women's time allocation has been examined in the preceding sections of this chapter. While there were observed differences, correlations among the independent variables made it impossible to determine from the simple crosstabulations whether these variables had significant effects on time allocation net of the effects of the other independent variables.

Multiple regression was used to identify the significant variables influencing time allocation. The assumptions of linearity, normality and homoscedasticity needed for regression analysis were examined to establish the validity of regression analysis for the Laguna data. Residual analysis was carried out to test whether the assumptions were violated.

Residuals are the primary tools for checking whether the assumptions necessary for linear regression appear to be violated. A residual is the difference between the observed value of the dependent variable and the value predicted by the regression model. An examination of the residuals in the Laguna study showed that the distribution of residuals was negatively skewed. Norusis (1988: 361) suggested that it is useful to take the square root of the data when the distribution of the residual has a tail in the negative direction and all data values are positive in order to make the data appear normal. Thus, a regression model using a square root transformation of the dependent variable was fitted.

A description of the dependent and independent variables used in the regression are shown in Table 3.12. The dependent variables are the number of hours devoted to domestic and market activities of women. The independent variables included are women's age, number of children, age of the youngest child, educational attainment of women and their husbands, household structure, husbands' occupation, resource base and type of area. As all the independent variables were

Table 3.12 **Specification and description of the regression model variables**

Variable + Measurement	Description of variable
Dependent variables (interval scale)	
Domestic and market work	Number of hours devoted to domestic and market work during the week preceding the survey
Independent variables	
Age of women(Interval scale data)	Age of women at survey date in completed years
Number of children (categorical data) (two or less=0) 3-5 = 1 otherwise=0 6+ = 1 otherwise=0	Number of children at survey date
Age of youngest child (categorical data) (Infant (0-2 years old=0) Toddler(3-6 years old)=1 otherwise=0 School-age(7+ years old)=1 otherwise=0	Age of the youngest child at survey date
Women's educational attainment (categorical data) (Primary=0) Intermediate=1 otherwise=0 Secondary=1 otherwise=0	The highest level of education attained by women
Husbands' educational attainment (categorical data) (Primary=0) Intermediate=1 otherwise=0 Secondary=1 otherwise=0	The highest level of education attained by husband
Household structure (categorical data) (Nuclear=0) Extended =1 otherwise=0	Composition of the household
Resource base (categorical) (Landless=0) Landed=1 otherwise=0	Source of livelihood
Type of area (categorical) (Less modern=0) More modern= 1 otherwise = 0	The place where the respondent lived

categorical except for age of women, dummy variables (variables that take two values, either one or zero) were created for the analysis.

3.6.1 Determinants of domestic work

In attempting to determine which of the independent variables had the greatest influence on the dependent variables, the unstandardized regression coefficients (B) cannot be used as they have different units of measurements. For this reason, the beta coefficients, β_i, which are standardized coefficients, are used to compare the importance of each independent variable in relation to the dependent variables. The beta coefficients displayed in Table 3.13 show the relative importance of the variables: variables with large betas indicate strong associations with women's time use.

As shown in Table 3.13, the presence of school-age children, compared to the presence of infants, was strongly associated with the amount of time devoted to non-employed women's domestic work as it has the largest beta. This was followed by respondent's age, being in an extended household compared to being in a nuclear household, and having a husband who had completed some secondary education or higher compared to a husband with lower a level of education. The presence of school-age children had a negative effect on women's domestic work because these children were not as demanding as infants; so the amount of attention required from these women was also less.

As the magnitude of the beta values shows, women's age had the greatest impact on employed women's domestic work. The earlier explanations of why older non-employed women spent less time in domestic activities may also apply to employed women; that is, older women were likely to have their youngest children of school age who could at least help in domestic activities. The pressure of work on employed women can be seen in Table 3.13 where toddlers compared to infants had a negative impact on employed, but not on non-employed, women's domestic work.

Domestic time was less only for a non-employed woman whose youngest child was of school-age compared to a non-employed woman with an infant. Another factor which did not affect non-employed women but had a negative impact on employed women's domestic work was the intermediate level of education. This suggests that because of their dual productive role, employed women may have organised their domestic tasks more efficiently in order to allocate more time to their income-earning activities or had labour-saving devices.

Substitution among different household members for different activities is suggested by the opposite signs of the coefficients for extended households; the coefficient was positive for non-employed women and negative for employed women. Non-employed women may have tried to compensate for not contributing financially to the household by devoting more time to domestic activities, relieving other household members, who were probably working in the market, of their domestic responsibilities. Or non-employed women were more likely to spend more hours on domestic work simply because they had more work to do because of the extra household members. The opposite may have been the case for employed women, with other household members substituting for employed women in meeting the domestic needs of their households. Alternatively, the additional income from women's market activities may have been used to pay (or purchase labour-saving devices) to do the domestic tasks.

The proportion of the total variability (or variance) in the dependent variable that is 'explained' by the independent variables is a measure of how well the regression model fits the observed data. The independent variables jointly explained 19 per cent, as measured by R^2, of the variation in the domestic work of non-employed women and employed women, respectively. The F-ratio test showed that these levels of explanation were significant.

Table 3.13 **Determinants of domestic work, non-employed and employed women, Laguna, Philippines, 1975 (standard regression coefficients (beta))**

Independent variables	Non-employed women	Employed women
Women's age	-.21**	-.27***
Type of area		
More modern	.05	.04
Number of children		
3-5	.12	-.02
6+	.01	.06
Fathers' education		
Intermediate	-.12	-.07
Secondary	-.15*	.06
Age of youngest child		
Toddler (3-6)	-.12	-.11***
School-age (7+)	-.28***	-.15**
Household Structure		
Extended	.15**	-.15***
Resource Base		
Landed	.02	-.03
Women's education		
Intermediate	.02	-.15**
Secondary	-.10	-.07
Constant	8.17	9.10
Mean =	53.0	54.7
Standard deviation =	30.1	34.2
Number of women =	182	335
Multiple R =	0.43	0.42
R-square =	0.19	0.15
Adjusted R-square =	0.13	0.14
F = 3.21, statistically significant at 0.0004 level		F = 5.86, statistically significant at 0.0000 level

Source: Laguna data set, 1975

Notes: ***Statistically significant at $\alpha = 0.01$

**Statistically significant at $\alpha = 0.05$

*Statistically significant at $\alpha = 0.10$

3.6.2 Determinants of market work

The dependent variable in this model (Table 3.14) is the number of hours devoted to market activities. As noted earlier, women who worked in the market for an hour or more during the week preceding the survey were considered as employed. As with the transformation done for the number of hours devoted to domestic work, a square root transformation of the number of the number of hours spent on market work was used. When the model was fitted, only women's education, number of children and type of area were found to have significant effects on the number of hours devoted to market time. Having three to five children compared to less than three children had negative effect on employed women's market work but women's market work with more than five children was not affected; this is difficult to explain. The domestic demands on the employed women with three to five children could be higher compared with employed women who had less than three children, so that women's time devoted to market activities had to be reduced. However, this explanation is not supported by the lack of influence of more than five children on market work of women and the negative sign on the domestic work of women with three to five children in Table 3.13.

The negative effect of intermediate and secondary education, compared to primary education, on employed women's market activities could be due to the nature of activities engaged in by these women. Women with higher education were probably more likely to be employed in permanently salaried activities that seemed to have shorter working hours while traditional market activities, such as trading and operating *sari-sari* stores, meant longer hours of work in which women with primary education were engaged.

Similar to the results of the bivariate analysis, living in more modern *barangay* had a positive impact on employed women's market work, as compared to

Table 3.14 **Determinants of market work, employed women, Laguna, Philippines, 1975 (standardized regression coefficients) (beta))**

Independent variables	Beta
Age of women	.00
Type of area	
More modern	.11*
Number of children	
3-5	-.12*
6+	.05
Fathers' education	
Intermediate	-.03
Secondary	.10
Age of youngest child	
Toddler (3-6 years old)	-.05
School-age (7+ years old)	-.01
Household Structure	
Extended	-.08
Resource Base	
Landed	-.09
Women's education	
Intermediate	-.11*
Secondary	-.12*
Constant	5.18
Mean	26.0
Standard deviation	23.9
Number of women	335
Multiple R	0.25
R-square	0.06
Adjusted R-square	0.03
F = 1.79, statistically significant at 0.10 level	

Source: Laguna data set, 1975
Note: *Statistically significant at $\alpha = 0.10$

living in less modern *barangay*. As mentioned earlier, women from more modern areas had better access to non-agricultural employment opportunities.

The R^2 in Table 3.14 is very small; only about 6 per cent of the variation in market work could be explained by the independent variables, suggesting that other important variables were missing. For example, the structure of the labour market in Laguna area could have been an important factor affecting women's market activities, but was not included because information was not available in the data set.

The determinants of women's time spent on domestic and market work were examined for non-employed and employed women. Women who spent an hour or more on market activities during the week before the survey were considered as employed. This analysis, classifying women by employment status, was pursued despite the fact that not all working women were full-time workers in order to provide a sufficient number of cases in each category. Nevertheless, there is the question of how the number of hours spent on market work affected the other activities of women. Moreover, in the overall time-use pattern of women in Laguna there was no significant difference between non-employed and employed women's domestic work. It was hypothesized that there was an inverse relationship between the number of hours devoted to market work and the number of hours spent on domestic work. The next section briefly examines the time spent on various activities in terms of the number of hours women worked in the market.

3.7 Length of a workweek

As suggested by Evenson et al. (1980: 310), the time spent on domestic work is determined not only by working in the market per se but by the degree of market participation or the quantity (hours) of labour supplied to the market. This is consistent with the lack of difference in the number of hours devoted to domestic work for non-employed and employed women in Laguna (section 3.4 of this chapter). Examination of the number of hours devoted to market work and women's

activities provided information on how domestic time differed as the amount of market time increased, as well as what constituted most of women's market time.

At first, employed women were grouped only as part-time (working for less than 40 hours per week) and full-time workers but, because of the many women working part-time, it was decided to further classify employed women by the number of hours worked. As shown in Table 3.15, 162 (42 per cent) employed women were working for 15 hours or less per week while 108 (28 per cent) were working more than 40 hours.

The hypothesized inverse relationship between hours of market work and domestic time was not supported by the Laguna data (Table 3.15). There were no differences in the time spent on domestic work when women were grouped by the number of hours worked in the market. This reflects a certain commonality of tasks that must be performed in the households no matter how many hours were spent on market activities. Alternatively, the lack of significant differences between women when analysed by the number of hours devoted to market activities was probably due to the large variability in the distribution of the number of hours spent on market activities.

The burden on women working full-time gave them less time for personal care. Women working for more than 40 hours per week had nearly 52 hours per week (or more than seven hours per day) less time for leisure and personal activities than those working for 15 hours or less. It appears that women working for more than 40 hours per week were overburdened. However, it should be mentioned that it is most likely that these women (working for more than 40 hours per week) were involved in less arduous tasks such as tending the *sari-sari* stores or tying vegetables in bundles for sale the following day so that their burden might not be as heavy as the figures in the table imply.

Table 3.15 **Mean number of hours (per week) that employed women devoted to activities by number of hours worked in the market, Laguna, Philippines, 1975**

Activity	Number of hours worked in the market			F-ratio
	1.00 - 15.00	15.01 - 40.00	40.01 +	
Domestic work	**46.5**	**40.7**	**47.5**	**1.1**
Shopping	4.1	3.2	3.5	0.6
Meal preparation	14.5	14.8	14.4	0.0
Clothes care	9.2	7.6	9.2	0.6
Child care	11.3	6.0	11.0	2.4*
Other domestic work	7.4	9.1	9.4	1.6
Market work	**5.9**	**24.9**	**56.7**	
Work for wages	0.6	6.2	26.2	
Crop production	1.2	5.9	4.6	
Animal production	3.1	6.4	3.4	
Other market work	1.1	6.3	22.5	
Personal care	**115.7**	**102.5**	**63.8**	**84.6*** **
Total	168.0	168.0	168.0	
Number of cases	162	65	108	

Source: Laguna data, 1975

Notes: The number of hours for personal activities was computed as residual (deducting home and market activities from 168 hours, 24 hours per day * 7 days).
Total number of hours may not add to 168 due to rounding.
Non-employed women included women who spent less than an hour a week on market activities.
Figures in parentheses are standard deviations.
a = less than 0.05
The one-way analysis of variance was used to determine the significance of differences in the number of hours devoted to activities by number of hours worked in the market. The significant differences in the time devoted to market work and its component activities were not included because as the number of hours devoted to market activities increased so are the component activities.
***Statistically significant at $\alpha = 0.01$
*Statistically significant at $\alpha = 0.10$

Studies in developed countries (Robinson et al., 1972; Michelson, 1985), where the time spent on personal activities was further explored, have found that women working in the market had less leisure and less sleep. Robinson et al. (1972: 130), for example, observed that non-employed women had on average, 6 to 60 minutes more sleep per day than employed women. Michelson (1985: 51) calculated that fully-employed women in Toronto slept 24 minutes a night less than non-employed women. A slightly greater difference was observed between employed and non-employed women in Jackson, USA, where non-employed women slept 36 minutes a night more than employed women (Robinson et al., 1972: 130).

Table 3.15 shows the decreasing importance (in proportional terms) of agricultural work with increasing hours worked per week. When women worked for 15 hours or less per week, crop production and animal husbandry constituted nearly 75 per cent of employed women's market time compared to 14 per cent when women worked for more than 40 hours per week. This may be due to the fact that these activities had lower returns when compared to work for wages and operating their own businesses. Raising animals, such as pigs, was capital intensive; this limited the number of animals that could be kept, thus demanding little time from women. The returns to pig raising could only be realised after three to four months, whereas money from work for wages and 'other market work' could be at hand after a day or a week. Perhaps another motivating factor for women to engage more in working for wages activities and operating their own businesses could be that money coming from these activities could be called their own even if such income was be spent on household needs.

The analysis in this chapter started with an overview of women's time allocation followed by a decomposition of the sample into sub-groups to permit investigation of variation of time patterns according to differences by age, number of children, age of the youngest child and educational attainment of husbands and wives. Similarly, differences in resource base were examined by comparing women

belonging to the landless and landed households. In this section, employed women were further grouped by the number of hours devoted to market activities. All of these women belonged to intact households; that is, both parents were living with their children. Women had their husbands who could be relied upon to earn a living, and could assist in women's domestic activities. There is no assumption that households headed by women are not intact, but for the purpose of discussion the word intact is used. The question now concerns widowed or separated women who could rely only on their children for help around the house and for market activities. Are widowed or separated women spent more time on domestic and market activities than women from intact households? This topic is examined in the next section.

3.8 Time allocation of women in households headed by women

The overall patterns of time allocation examined in this chapter show that employed women from intact households had to fulfil both domestic as well as economic roles; thus they had less free time for themselves. When examined in relation to various characteristics, the pattern shows that time for domestic work was reduced when women were employed; however, the saved time from domestic work was not enough to compensate for their market time so that the time for leisure and other personal activities could be reduced. The concern, however, in this section is women who were widowed or separated.

A total of 37 households were headed by women. These women were excluded from previous bivariate and multivariate analyses because they were hypothesized to have a different time-use pattern than women from intact households. Because of the small number of women from female-headed households, the analysis in this section was limited to their overall time use and then compared with the overall time use of women from intact households.

Widowed or separated women were hypothesized not to have as much free time as their counterparts from intact households because they needed to participate

more in economic activities to support their families and, at the same time, assumed the traditional primary caretaker role. However, a contrary picture emerges from the data presented in Table 3.16. Women from women-headed households devoted significantly less time to domestic and market work (although not statistically significant), than women from households where husbands were present. As a result, widowed or separated women had more time to spend on leisure and other personal activities. This unanticipated pattern could be associated with the age of separated or widowed women. The mean age for separated or widowed women was 54 years, compared to 38 for women from intact households. The results of the bivariate analysis. which were later confirmed by the multivariate analysis for women from intact households, showed that older women devoted less time to domestic and market work, and as a consequence spent more time in personal activities. The pattern of women's time allocation from households headed by women closely resembled that of older women from intact households. This explanation is evident from the very low number of hours allocated to child care activities by women from women-headed households, regardless of employment status. Perhaps, a different pattern would have emerged if women from women-headed households had been younger and when their reproductive as well as productive responsibilities were competing for their time.

3.9 Summary and discussion

The overall pattern of women's time allocation revealed that domestic work was the dominant activity of women in Laguna. On average, and regardless of employment status, domestic activities occupied three times as much time as market activities. Activities centring on the kitchen formed the most time-consuming component of domestic work, followed by child rearing and other housework (Figure 3.4). Work for wages and 'other market activities' such as trading and retailing contributed most to employed women's market activities, whereas activities related to crop production contributed the least (Figure 3.5).

Table 3.16 **Mean number of hours (per week) that women from intact and women-headed households devoted to activities, Laguna, Philippines, 1975**

Employment status/ Activity	Intact	Women-headed	t-value
A. All women			
Domestic work	**54.1**	**35.4**	**-3.4*** **
Shopping	3.7	2.8	-0.9
Meal preparation	22.6	14.7	-2.9***
Clothes care	9.1	9.1	-0.0
Child care	10.2	0.7	-3.4***
Other domestic work	8.5	8.1	-0.3
Market work	**16.9**	**14.6**	**-0.6**
Work for wages	6.4	5.3	0.4
Crop production	2.1	0.7	-1.1
Animal husbandry	2.5	1.1	-1.6
Other market work	5.8	7.5	0.6
Personal activities	**97.1**	**118.0**	**3.1*** **
Total	168.0	168.0	
Number of cases	517	37	
B. Non-employed women			
Domestic work	**53.0**	**35.9**	**-2.2** **
Shopping	3.6	4.1	0.4
Meal preparation	21.0	14.2	-1.9*
Clothes care	9.6	7.7	-0.8
Child care	10.2	0.8	-2.2**
Other domestic work	8.7	9.1	0.2
Market work	**a**	**a**	
Work for wages	a	a	
Crop production	a	0	
Animal husbandry	a	0	
Other market work	a	0	
Personal activities	**114.9**	**132.0**	**2.2** **
Total	**168.0**	**168.0**	
Number of cases	182	15	

continued...

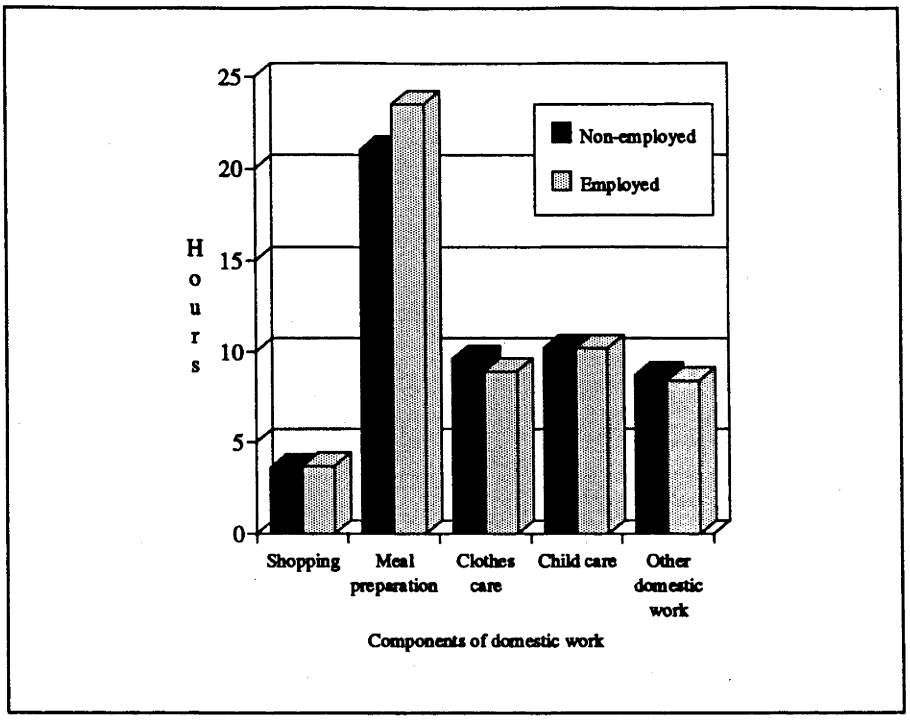
Table 3.16 (cont'd.) **Mean number of hours (per week) that women from intact and women-headed households devoted to activities, Laguna, Philippines, 1975**

Employment status/ Activity	Intact	Women-headed	t-value
C. Employed women			
Domestic work	**54.7**	**35.0**	**-2.7*** **
Shopping	3.7	2.0	-1.4
Meal preparation	23.5	15.0	-2.2**
Clothes care	8.9	10.1	0.5
Child care	10.2	0.7	-2.6**
Other domestic work	8.4	7.4	-0.5
Market work	**26.0**	**24.5**	**-0.3**
Work for wages	9.9	8.9	-0.3
Crop production	3.2	1.1	-1.0
Animal husbandry	3.8	1.8	-1.5
Other market work	9.0	12.6	0.9
Personal activities	**87.3**	**108.5**	**2.3****
Total	168.0	168.0	
Number of cases	335	22	

Source: Laguna data set, 1975

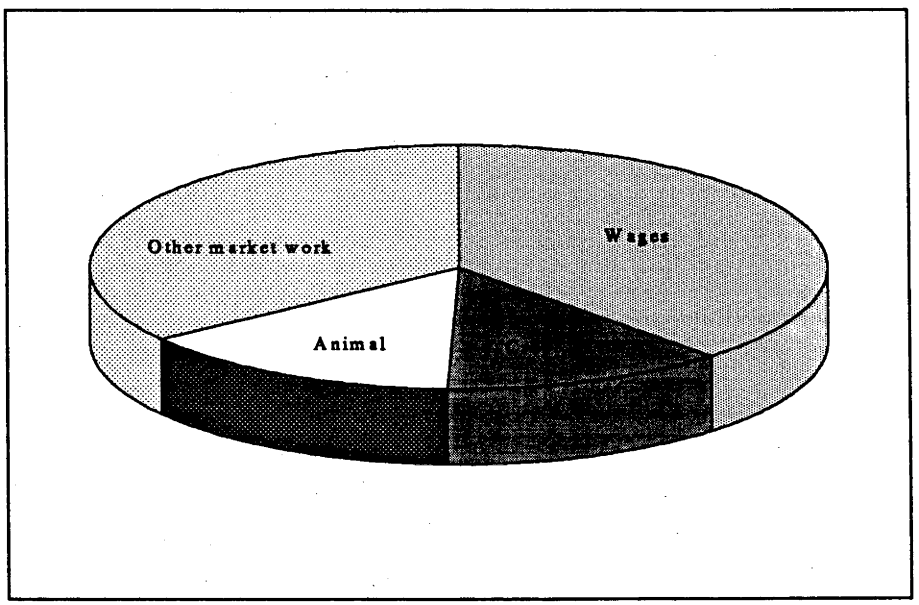
Note: Mean number of hours for personal activities was computed as residual
Total number of hours may not add to 168 due to rounding
Non-employed women include women spent less than an hour a week on market activities during the wek preceding the survey
a = less than 0.05
The t-test was used to determine the significance of differences in the number of hours devoted to market activities between women. The significant differences in the time non-employed women devoted to market work and its component activities were not included because of the very small number of hours devoted to market activities.
***Statistically significant at $\alpha = 0.01$
**Statistically significant at $\alpha = 0.05$
*Statistically significant at $\alpha = 0.10$

Figure 3.4 **Mean number of hours (per week) that mothers devoted to components of domestic work by employment status, Laguna, Philippines, 1975**



Source: Table 3.2

Figure 3.5 **Mean number of hours (per week) that employed mothers devoted to components of market work, Laguna, Philippines, 1975**



Source: Table 3.2

Employment status did not affect women's time spent on domestic activities. Consequently, the time employed women spent on market activities was taken from their personal time. However, even for employed women, the time spent on total work (domestic and market work combined) was markedly less than the time spent on personal activities. This may reflect the fact that even if women had wanted to participate more in income-earning activities, they could not because jobs were not available.

The results of the bivariate and multiple regression analyses showed that it was not the number of children per se that affected women's domestic time, but rather the age of the youngest child. There was no relationship between the number of children and women's domestic time, whereas an inverse relationship was found between age of the youngest child and women's domestic time, regardless of employment status. Another factor found to have a strong negative impact on women's domestic time was their own age. This is not surprising since older women were likely to have older children who could help around the house, and their youngest children probably needed less attention from their mothers. The time saved from domestic activities by older women and those whose youngest children were of school-age was shifted solely to personal activities, and not to market activities.

The pressure of employment on working women is reflected by the fact that the presence of toddlers had a negative impact on employed women's domestic activities, but none on non-employed women's. Intermediate level of education also had a negative effect on women's domestic work.

The extended type of household was strongly associated with both non-employed and employed women's domestic activities, although the effect was in opposite directions. For non-employed women, living in an extended household and in an urban area meant spending more time washing and ironing clothes, cleaning the house and backyard, and cooking, whereas employed women in similar

households spent less time on these activities. This may indicate that non-employed women tried to compensate for their lack of monetary contributions to the household by putting in more hours of work in domestic work. Other household members probably relieved employed women of their domestic responsibilities, or the women may have used the additional income from their market activities to pay someone else to do the domestic activities.

Employed women who had finished some intermediate level of education or higher and who had three to five children spent less time on market activities. With higher education, women may have been more likely to be engaged in permanent and salaried activities than in the traditional, activities such as retailing and trading, which were time-consuming. The lack of association between market time and having more than five children supports the fact that having many children did not hamper their income-earning activities. Perhaps with more children there were more people who could substitute for the women in performing the household chores.

The results in this chapter have provided insights into the patterns and determinants of women's domestic and market work in 1975. However, a number of developments have occurred in the province between 1975 and 1985 that could have affected the structure of women's everyday behaviour. Thus, the changes in women's time use between 1975 and 1985 are examined in the next chapter.

Chapter 4

Changes in Women's Time Allocation

A number of societal changes have been taking place in Laguna that could have affected the structure of the individual's everyday behaviour. These include improvement in infrastructure, such as construction of roads and provision of electricity to nearly all of the households, the intensification of rice production, and the increased influence of urban Metro Manila. These developmental changes, together with the economic burden of inflation, may have motivated women to devote more time to working in the market. By contrast, the time devoted to domestic work may have declined because of the increasing availability of labour-saving devices. In short, a variety of social, economic and cultural factors may have influenced women's time allocation.

This chapter examines the changes in time use between 1975 and 1985 for respondents who were married and living with their spouses in 1975, who remained married to the same spouses between 1975 and 1985, and who also remained in the sample throughout the period. The changes in time devoted to domestic and market work and personal activities, as well as their components, are analysed as are the

patterns of change in the number of hours devoted to the major activities by age, educational attainment and type of area.

Most time-allocation studies have been concerned with cross-sectional analysis, where the behaviour of different social groups is compared at one point in time. Researchers have typically analysed time-allocation patterns gathered at regular intervals over a year to take into account the problem of seasonality. However, cross-sectional analysis provides no firm basis for making predictions because it fails to accommodate changes in culture, values, economic circumstances, technology or demographic structure (Gershuny and Thomas, 1980: 9).

Time-allocation data have the major advantage, provided the data were collected for 24 hours, of providing a zero-sum measure of the effects of social change (Robinson, 1985: 290-291). This means that the available time remains unchanged (e.g., a 24-hour day or 168-hour week); if time spent in any one activity (say, leisure) increases, then time in some other activity (say, housework) must necessarily decrease. For example, an increase in the amount of time people devote to watching television may not only mean a decrease in other mass-media related activities (radio listening and movie-going), but a decrease in other free-time activities (visiting) as well. Furthermore, it is likely than non-free-time activities, such as sleeping and domestic work, may also be affected (Robinson, 1985: 291).

A few studies (Nakanishi and Suzuki, 1986; Gershuny and Thomas, 1980; Robinson, 1985) have examined individuals' time allocation based on longitudinal data. Such studies have compared different samples and emphasized the components of leisure and personal activities. Although this chapter also examines these changes, it is unique in the sense that changes are analysed for matched cases. Only 101 women interviewed in each of the 1975, 1982 and 1985 surveys were included in this analysis. They include respondents who transferred to other

barangay covered in the Laguna Household Study, but exclude those who moved out of the survey area.

In this chapter, the method of analysis used is presented in section 4.1. Section 4.2 compares the overall changes in women's time allocation while section 4.3 discusses the changes in the components of domestic and market work. Section 4.4 presents the changes in domestic, market and personal activities of women belonging to different subgroups. One limitation of panel data is the diminution of sample size because only fixed characteristics are used. If employment status of women together with their age, educational attainment and place of residence is taken into account, the number of cases available for analysis is reduced dramatically. Thus, the changes in women's time allocation and employment status are presented separately in section 4.5. The chapter ends with a summary of the major changes in women's time allocation between 1975 and 1985.

4.1 Methods of analysis

Much of the analysis in this thesis has been concerned with either the structure of time use among women or in comparisons with other household members, based on a single data set. In Chapter 3, the analysis is based on the survey conducted in 1975, while the analyses in Chapters 5 and 6 are based on the survey conducted in 1985. However, the analysis of changes in women's allocation in this chapter is based on the data collected from the 1975, 1982 and 1985 surveys.

Because other chapters have utilized either the 1975 or the 1985 survey, t-test and one-way analysis of variance, which assume random selection of respondents, are used to determine the statistical significance of differences between groups. However, in this chapter, the assumption of randomization cannot be assumed because of the use of panel data. This means that the same women have been followed over time, thus providing multiple observations on each individual in the sample. The eligibility of women for the 1982 and 1985 samples was determined by

their inclusion in the 1975 sample: they were not chosen at random. Therefore, the analysis of variance with repeated measures and paired t-test have been used to determine the statistical significance of differences in the number of hours devoted to domestic and market work and personal care over the period. Only the observed significance levels obtained in the analysis of variance are presented so that the tables are simple and easy to understand. The results of the paired t-test are discussed in the text whenever applicable.

4.2 General comparison between major activities

The most striking feature of Table 4.1 is the shift between domestic work and personal care between 1975 and 1985. The time devoted to domestic activities declined by 17 hours a week between 1975 and 1985 while the time spent on personal activities rose by 12 hours. This finding is consistent with the findings of some studies in the United States and Japan (Robinson, 1985; Nakanishi and Suzuki, 1986) but different from that of Staikov (1989).

Robinson (1985: 295-297) hypothesized that the domestic time of unemployed American women should increase because unused energies for market activities could plausibly be directed toward domestic work. However, women reported spending less time in domestic activities in 1975 than in 1965. Surprisingly, the decline in domestic time for American women came during a time when there were few major breakthroughs in labour-saving devices (Robinson, 1985: 299). Robinson speculated that the reduction in time spent on housework must have been due to other factors. Similarly, Nakanishi and Suzuki reported that women in Japan spent less time in domestic work in 1985 than in 1970. On average, the weekly number of hours devoted to housekeeping tasks fell by four per cent (Nakanishi and Suzuki 1986: 6-7). By contrast, Staikov's (1989: 16) study of the Kazanluk population in Bulgaria showed that the time spent in household chores per day increased by 58 per cent between 1965 and 1985. The inconsistencies among

these studies can perhaps be attributed to the definitions of domestic work used. Staikov (1989), for example, counted crop production time as part of domestic work, whereas this study includes farm activities as market work.

Women's market activities could have increased in Laguna between 1975 and 1985 because a number of manufacturing companies were established, infrastructural facilities were built and technical innovations in agricultural production occurred. The construction of roads and the electrification of the *barangay* would have enabled women to enter business or expand the sale of their existing operations. The figures in Table 4.1 suggest that the time spent on market activities rose between 1975 and 1985, but the increase was not statistically significant. The lack of necessary training and educational qualifications and increasing age may have prevented many of the women from participating more in market activities, particularly in the manufacturing sector. For instance, a manufacturing firm in the study area employed only those who had secondary level of education and were between the ages of 18-26. The majority of the women in the sample had not completed secondary education and were already comparatively mature. On average, women had attended seven years of education (equivalent to the first year of secondary education). By 1985, the mean age of the 101 women was 40. Age, according to Reynolds (1971: 21-22) and Mackay et al. (1971: 361), is one of the most important factors in hiring. Firms usually prefer younger workers if all conditions are equal for two reasons: their stronger physical ability in terms of adaptability, speed and persistence, and the longer period over which to collect the returns for training provided by firms after hiring new workers.

Table 4.1 **Mean number of hours (per week) that women devoted to activities, Laguna, Philippines, 1975-1985**

Activity	1975	1982	1985	F-ratio
Domestic work	**64.4**	**44.1**	**47.4**	**15.8*** **
Shopping	3.9	4.0	3.7	0.1
Meal preparation	25.9	14.5	16.1	28.4***
Clothes care	9.9	9.2	10.5	0.5
Child care	15.9	10.6	9.8	2.5*
Other domestic work	8.8	5.8	7.3	4.9***
Market work	**17.1**	**20.8**	**22.1**	1.1
Wage work	7.3	7.1	7.9	0.1
Crop production	3.7	3.8	1.7	1.6
Animal husbandry	1.4	1.2	1.8	1.3
Other market work	4.8	8.7	10.7	2.7*
Personal care	**86.5**	**103.1**	**98.5**	7.6***
Total	168.0	168.0	168.0	
Number of cases	101	101	101	

Sources: Laguna data sets, 1975, 1982 and 1985
Notes: Except in 1985, the mean number of hours for personal care was computed by deducting home and market work from 168 (24 hours x 7 days). The mean number of hours for personal care in 1985 was asked from the respondents.
Total number of hours may not add to 168 due to rounding
The one-way analysis of variance with repeated measures was used to determine the significance of differences in the number of hours devoted to each activity by surveys.
***Statistically significant at $\alpha = 0.01$
*Statistically significant at $\alpha = 0.10$

In a similar manner, the intensification of rice production was hypothesized to have increased women's market activities, but this assumption also appears to be unfounded. As noted, the number of hours devoted to market work remained stable between 1975 and 1985. In another study conducted in Laguna, it was found that farm mechanization and the introduction of high-yielding varieties actually reduced income-earning opportunities for both men and women in agriculture in Laguna (Roumasset and Smith 1981: 411-413). The high-yielding varieties were introduced

in the middle of 1960s resulting in an increased demand for labour during the first ten years. However, after this period the use of hand tractors reduced the amount of men's labour needed in land preparation, while the use of herbicides and threshers deprived women of their traditional occupations. Furthermore, men who had been displaced by farm machinery competed with women in transplanting, weeding, and harvesting, exacerbating the impact on women's employment opportunities.

The figures in Table 4.1 suggest that the number of hours devoted to market activities increased between 1975 and 1985; however, the changes were not significant. The lack of significant change could be due to the large variation in the number of hours devoted to market activities. The number of hours spent on market activities ranged from as low as one hour to nearly one hundred hours per week depending on the type of market activities these women were engaged in. As mentioned in Chapter 3 and earlier in this chapter, women who were involved in vegetable growing and livestock raising spent only a few hours on these activities. By contrast, women who had their own businesses spent long hours looking after their *sari-sari* stores or peddling their wares from one village to another.

The lack of significant increase in the number of hours devoted to market activities was not only confined to the 101 women who remained in the sample throughout the period but also to women who were interviewed once or twice but dropped out in the later years, referred to as the 'other group of women' in this analysis. In the 1975 survey, 517 women met the criterion of belonging to a complete family where both parents lived with their children at the time of the survey, while there were 193 and 142 such women in 1982 and 1985. Table 4.2 shows that the time spent on market activities by the 'other group of women' was similar to that of the 101 women in every survey year as shown in Table 4.1. The earlier explanations that the stability of women's market time was due to old age and lack of necessary skills were also found among the 'other group of women'. By

1985, the mean age of the 'other group of women' was 42 and the mean number of years of formal education (7 years) was the same.

Table 4.2 **Mean number of hours (per week) that the 'other group of women' devoted to activities, Laguna, Philippines, 1975-1985**

Activity	1975	1982	1985	F-ratio
Domestic work	54	39	48	17.3***
Market work	17	20	21	2.1
Personal care	97	109	99	8.2***
Total	168	168	168	
Number of cases	517	182	142	

Sources: Laguna data sets, 1975, 1982 and 1985
Notes: Except in 1985, the mean number of hours for personal care was computed by deducting home and market work from 168 (24 hours x 7 days). The mean number of hours for personal care in 1985 was asked from the respondents.
Total number of hours may not add to 168 due to rounding
[1]Includes women who were interviewed once or twice but dropped out in the later years, thus the number of respondents varied for each survey year.
The one-way analysis of variance with repeated measures was used to determine the significance of differences in the number of hours devoted to each activity by surveys.
***Statistically significant at $\alpha = 0.01$

4.3 Changes in the component activities

In this section, the activities of Laguna women are broadly defined. The emphasis is not only on the differences in the time spent on major activities but also on the effect of the changes in other activities. The interest lies in the consequences of the increased or decreased domestic time for the other two major categories of time use. Section 4.4 examines the various aspects of domestic and market activities because the component activities may have changed in different directions within the three major categories of activity.

4.3.1 Changes in the components of domestic work

Within the domestic work category, one can find evidence of mixed patterns of changes. On one hand, reductions in meal preparation, child care and other domestic work contributed to the significantly lower amount of overall domestic time between 1975 and 1982 (Table 4.1 and Figure 4.1). On the other hand, the amount of time devoted to shopping and clothes care remained stable during the same period. The time devoted to cooking and preparing food declined by almost ten hours per week between 1975 and 1985. Probably it is in this component of domestic work that substitution by other household members, children in particular, occurred between 1975 and 1985. The same women were interviewed over the ten-year period, so that women in 1985 had more older children than in 1975 to substitute for them in these activities. Included under meal preparation were washing the dishes and after-meal clean-up, the activities usually delegated to children.

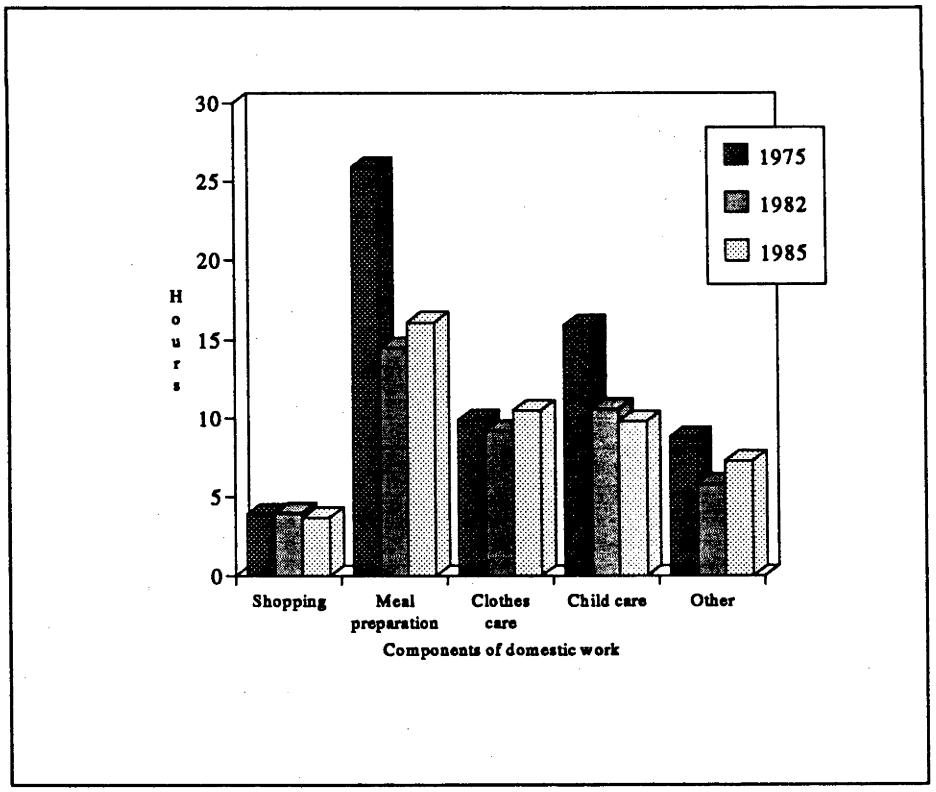
The other explanation of why the number of hours spent on meal preparation was reduced between 1975 and 1985 could be a change in food preparation practices. For example, it is likely that women pounded the rice to be cooked and ground the coffee to be brewed in 1975, but not in the later period, when rice mills were used and coffee beans were taken to the market for grinding. However, no studies are available to support this explanation. The other possibility was that more cooked foods were bought from nearby *sari-sari* stores.

The significant reduction in meal preparation time could also be a result of the methods used to collect the data. A question on feeding other household members was asked separately at the time of the interview in 1975 and the information was later added to the meal preparation activity, whereas in 1982 and 1985 the question on feeding was asked directly as part of the meal preparation activity. Thus, double counting might have occurred in 1975 because the time spent feeding other household members while cleaning the cooking utensils was reported separately, when in fact the two activities may have been carried out simultaneously.

As expected the time devoted to child care declined by more than five hours between 1975 and 1985, but there were no significant differences in this variable between 1982 and 1985. The probable explanation is that by 1985, there were fewer babies to care for, and at the same time there would have been older children who could assist women in feeding, bathing and playing with their younger siblings.

A decline in the amount of time devoted to other domestic work can also be seen in Figure 4.1. However, the difference was only significant between 1975 and 1982 and not between 1975 and 1985. The significant decline in other domestic work between 1975 and 1985 was also expected because cleaning the house and backyard, and fetching water and firewood, activities usually carried out by children, were included under other domestic work.

Figure 4.1 **Mean number of hours (per week) that women devoted to components of domestic work, Laguna, Philippines, 1975-1985**



Source: Table 4.1

The stability in the amount of time devoted to washing, ironing and mending clothes between 1975 and 1985 also appears in Figure 4.1, although it was expected that time associated with washing and ironing clothes would decline over time due to the availability of labour-saving devices and wash-and-wear types of clothing. This was not the case for Laguna women, probably because the appliances that could ease the burden of washing were beyond their reach. In the 1975 data, the most common appliance owned was a radio. Although data were not available about ownership of consumer durables in the 1985 survey, none of the households included in the study owned washing machines. Kikuchi (1983: 70) found that in one Laguna village radios, bicycles and sewing machines were the most commonly owned durable goods between 1974 and 1980. There was an increase in the ownership of television sets and bicycles, but not of appliances that could lighten the burden of women's housework, particularly washing clothes.

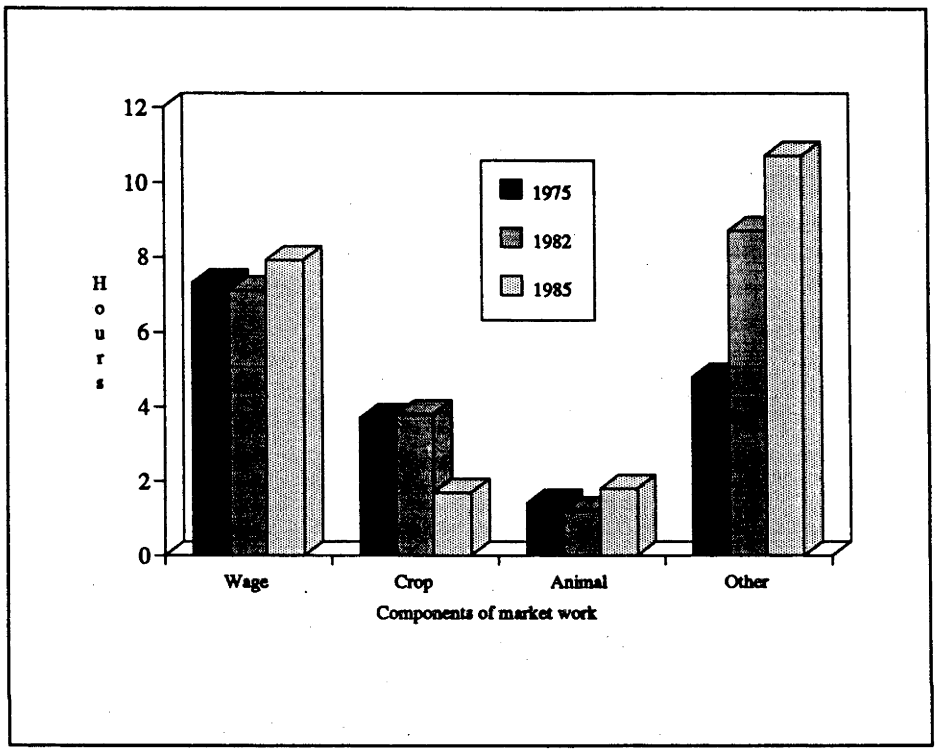
The lack of change in the amount of time devoted to shopping between 1975 and 1985 is evident in Figure 4.1. However, there could have been an increase in the actual time for buying food and other household necessities which was not reflected in the data because travel time was shortened by better roads and more vehicles plying between these *barangay*. The time saved from travelling to and from urban centres may thus have been shifted to the actual time spent buying food. As noted, the time devoted to preparing food declined which could have been due to the increased preference for cooked foods which could have increased the actual number of hours devoted to shopping.

4.3.2 Changes in the components of market work

The overall time spent in market work increased between 1975 and 1985, but the increase was not statistically significant (section 4.2). This was probably due to the opposing effects of an increase in the number of hours devoted to 'other market' activities and a decrease in the amount of time devoted to crop production, although

the decline was not statistically significant (Table 4.1 and Figure 4.2). The amount of time spent on 'other market' activities in 1985 was more than that in 1975.

Figure 4.2 **Mean number of hours (per week) that women devoted to components of market work, Laguna, Philippines, 1975-1985**



Source: Table 4.1

The stability in the amount of time devoted to working for wages by women contradicts the result of another study in Laguna (Hayami et al., 1990: 13). The villagers in Hayami's study experienced significant increases in non-village market activities, as well as non-farm economic activities, after highway improvements in 1977-79. The number of people permanently employed as salaried workers in local firms and government offices also increased significantly between 1974 and 1987. The conflicting patterns may be due to the differences in the characteristics of respondents between this study and Hayami's. Improvements had occurred in the mean educational attainment of Hayami's respondents, who were thus able to take advantage of the increased availability of employment opportunities in non-village and non-farm economic activities. This implies that the results of the current study

may be applicable only to women of similar age and educational attainment to those of the respondents in this study.

The increase in 'other market' activities was evidenced by the popularity of *sari-sari* stores and buying and selling in the study area. Unlike livestock raising, where profit is only realised after a number of months, profits from shopkeeping can be in hand after a day's business. A rapid increase in the number of small retail stores in the *barangay* was observed between 1975 and 1985 (Table 4.3). Except in seven *barangay*, the number of retail stores increased in every *barangay* over the ten-year period. For example, in Calabuso the number of retail stores increased from 10 in 1975 to 50 in 1985. The building of factories also contributed, both directly and indirectly, to an increase in the time spent in income-earning activities by people in that particular *barangay*. Many benefited directly from employment as factory workers, while others benefited indirectly from establishing small cafeterias for the factory workers. These eateries also functioned as variety stores, where everyday necessities could be obtained. A similar increase in the number of retail stores was also found in a particular village in Laguna (Hayami et al., 1990: 13). In addition, the amount of time spent on other non-farm economic activities, such as dressmaking and handicrafts production, increased through a subcontract arrangement by which corporations in Manila supplied materials to women in village households for processing and paid them at piece rates for the finished products.

An additional explanation may be found in the nature of work included in the 'other market' category. Women who devoted time to 'other market' work were self-employed women who operated their own shops or businesses and could control the number of hours they worked. To increase sales, they opened early in the morning and remained open until late at night, whereas women who worked for wages were unable to control the number of days and hours worked since this depended on the job and the employer.

Table 4.3 **Number of small retail stores by *barangay*, Laguna, Philippines, 1975 and 1985**

Barangay	1975	1985
Calabuso	10	50
Langkiwa	9	10
Loma	5	10
Timbao	5	50
San Felix	4	10
San Benito	5	10
Balayhangin	14	12
Dayap	15	4
San Ignacio	15	15
Sto. Angel	50	25
San Antonio I	8	8
San Antonio II	6	55
Sto. Niño	25	67
San Roque	13	17
Cabanbanan	6	24
Sabang	4	14
Bongcol	3	15
Sambat	3	22
Balian	20	7
Isla	7	4
Total	227	429

Source: Laguna data sets, 1975 and 1985

The aggregate pattern revealed that the time saved by Laguna women from domestic work was shifted to personal care since market time did not increase significantly over the ten-year period. To further examine the overall trend, the next section examines the changes in women's time allocation in relation to certain demographic and social characteristics.

4.4 Changes in women's time allocation and selected characteristics

In order to observe the process of change in activities for a set of households that were similar in all major respects between the three periods, only those characteristics that remained fixed (educational attainment of women and type of area) or change in a controlled manner (age) are examined in this section. The age

of the women represents stages in the life cycle, and it is hypothesized that the amount of time devoted to domestic work would decline with women's age. This is because as women grow older, it is likely that their children will be older and will need less care and attention. Even where young children needed constant care and attention from mothers, it is likely that there were more older children in 1985 than in 1975 who could have substituted at times for the mothers. Thus, the time saved from domestic work would have been shifted to market time, taking advantage of the increasing employment opportunities.

It is hypothesized that women with higher educational attainment would devote more time to market activities because women with better education were more likely to have been employed in the manufacturing companies. Their higher returns to labour would encourage better educated women to devote more time to market work, especially because the Philippines' economy deteriorated during this period. By contrast, the amount of time devoted to domestic work might have declined because the money gained from employment could have been used to pay someone else to do the housework. Alternatively the independent income from women's employment may have given women more power so that other household members were asked to contribute more to household maintenance.

The type of area may also have affected women's time allocation. It is hypothesized that the amount of time devoted to domestic work would be more likely to decline and market time to increase in more modern *barangay* because of the more rapid pace of development there than in less modern *barangay*. The proximity and accessibility of more modern *barangay* to towns and cities could have increased the availability of employment opportunities. Conversely, the time devoted to domestic work would be reduced because more services were available in the more modern *barangay* than in the less modern *barangay* in 1985. It is also more likely that labour-saving devices were more common in the more modern areas than in the less modern areas, and personal care might also have increased more in

the more modern areas because of the presence of cinemas and other recreational facilities.

Women's age. To illustrate the effect of age differences, women were classified into three groups: those below 30 years old, those between 30 and 39 years old and those 40 years old or over in 1975. On the whole, Table 4.4 shows similar results for all age groups, except for older women (40 years old or over). For all age groups, the time devoted to domestic work declined significantly, while no significant changes were observed for the number of hours devoted to market work. Most of the time saved from household chores was apparently shifted to personal activities, since the time devoted to market activities did not increase significantly during the period. For women less than 40 years old, the amount of time for leisure and other personal activities increased significantly. Women 40 years old or over partly shifted the time saved from domestic work to market work and partly to personal care, although the differences were not statistically significant.

The significant decline in the amount of time spent on domestic activities could be attributed to life cycle changes. Younger women in the earlier surveys had younger children who needed constant care, while the older women in the later surveys had older children whose needs were fewer. In fact, the mean age of children in 1975 (six years old) was nearly half the mean age of children in 1985 (13 years old). The paired t-test showed a significant decline in the amount of time devoted to domestic work between 1975 and 1982, and 1975 and 1985, but not between 1982 and 1985.

Table 4.4 **Mean number of hours (per week) that women devoted to activities by their age, Laguna, Philippines, 1975-1985**

Age in 1975/ Activity	1975	1982	1985	F-ratio
A. less than 30 years (n=45)				
Domestic work	68	50	53	4.6**
Market work	20	23	20	0.2
Personal care	80	95	95	3.1*
Total	168	168	168	
B. 30 - 39 years (n=34)				
Domestic work	61	39	41	9.9***
Market work	14	17	23	1.0
Personal care	93	112	104	4.0**
Total	168	168	168	
C. 40 years or over (n=22)				
Domestic work	61	41	45	3.4**
Market work	17	22	25	0.9
Personal care	90	105	98	1.2
Total	168	168	168	

Sources: Laguna data sets, 1975, 1982 and 1985

Notes: Except in 1985, the number of hours for personal care was computed by deducting home and market work from 168 (24 hours x 7 days). The number of hours for personal care in 1985 was asked from the respondents.
Total number of hours may not add to 168 due to rounding
The one-way analysis of variance with repeated measures was used to determine the significance of differences in the number of hours devoted to each activity by surveys.
***Statistically significant at $\alpha = 0.01$
**Statistically significant at $\alpha = 0.05$
*Statistically significant at $\alpha = 0.10$

Women's educational attainment. Differences according to educational attainment are shown in Table 4.5. Those women with no formal education and those who had attended the *caton** were classified in the primary category. The changes in women's time allocation in relation to educational attainment were similar to those shown in Table 4.1, but the shift between domestic and personal time by education was more obvious than the shifts according to women's ages. Women reported less time in domestic chores between 1975 and 1985 across all

**Caton* is a system of education inherited from the Spaniards where children were taught to read and write.

levels of education. The amount of domestic time reported for women with primary education declined from 65 hours to 48 hours per week, for those with intermediate education from 67 to 47 hours, and for those with secondary level or higher from 59 to 48 hours a week.

The number of hours devoted to market activities suggests an increasing pattern from 1975 to 1985 but not statistically significant (Table 4.5). It seems that development activities and the intensification in agricultural production in Laguna did not influence the income-earning activities of the better educated women included in the study (whose education levels were still quite low). As mentioned in section 4.2, the construction of factories probably did not enhance these women's opportunities to earn money because they lacked the training and education necessary for factory employment. Table 4.5 shows that 23 women had more than intermediate level of education, but only half of them had completed their secondary education. Their children and other younger and more highly educated women not in the survey were more likely to have been employed by these factories. The lack of increase in women's time with increased education could also be that more educated women were involved in permanent activities in 1985 than in 1975 with better pay so that women did not spend longer hours in market work.

Type of area. The domestic time of not only women from more modern areas, but also women from less modern areas decreased significantly during the period, so that this reduction could not be attributed to improved social services and availability of labour-saving devices in more modern areas (Table 4.6). The shift between domestic and personal time, however, applied only to women from the more modern areas, while that of women from less modern areas exhibited an uneven pattern. This pattern occurred because, contrary to expectation, the number of hours saved from domestic work by women from less modern areas was shifted to market activities while those of women from more modern areas was shifted to

personal care. Women from more modern areas reported 14 hours less time for domestic work in 1985 than in 1975 and this difference was solely transferred to personal care. The table also indicates that the number of hours devoted to domestic work increased from 41 hours per week in 1982 to 47 hours per week in 1985; however, the increase was not statistically significant.

Table 4.5 **Mean number of hours (per week) that women devoted to activities by their educational attainment, Laguna, Philippines, 1975-1985**

Educational attainment/ Activity	1975	1982	1985	F-ratio
A. Primary				
Domestic work (n=30)	65	42	48	5.9***
Market work	20	27	26	0.5
Personal care	83	100	94	2.4*
Total	168	168	168	
B. Intermediate (n=48)				
Domestic work	67	53	47	5.5***
Market work	18	18	23	0.7
Personal care	83	97	98	2.9*
Total	168	168	168	
B. Secondary or over (n=23)				
Domestic work	59	29	48	11.4***
Market work	11	18	15	0.7
Personal care	98	120	105	3.3**
Total	168	168	168	

Sources: Laguna data sets, 1975, 1982 and 1985

Notes: Except in 1985, the number of hours for personal care was computed by deducting home and market work from 168 (24 hours x 7 days). The number of hours for personal care in 1985 was asked from the respondents.

Total number of hours may not add to 168 due to rounding

The one-way analysis of variance with repeated measures was used to determine the significance of differences in the number of hours devoted to each activity by surveys.

***Statistically significant at $\alpha = 0.01$

**Statistically significant at $\alpha = 0.05$

*Statistically significant at $\alpha = 0.10$

Table 4.6 **Mean number of hours (per week) that women devoted to activities by type of area, Laguna, Philippines, 1975-1985**

Type of area/ Activity	1975	1982	1985	F-ratio
A. Less modern (n=42)				
Domestic work	67	49	48	4.7**
Market work	12	19	25	3.4**
Personal care	88	100	95	1.1
Total	168	168	168	
B. More modern (n=59)				
Domestic work	61	41	47	13.0***
Market work	19	21	19	0.1
Personal care	88	106	102	8.5***
Total	168	168	168	

Sources: Laguna data sets, 1975, 1982 and 1985
Notes: Except in 1985, the number of hours for personal care was computed by deducting home and market work from 168 (24 hours x 7 days). The number of hours for personal care in 1985 was asked from the respondents.
Total number of hours may not add to 168 due to rounding
The one-way analysis of variance with repeated measures was used to determine the significance of differences in the number of hours devoted to each activity by surveys.
***Statistically significant at $\alpha = 0.01$
**Statistically significant at $\alpha = 0.05$

Women from more modern areas rather than women from less modern areas were expected to benefit from the developmental changes in the province. Although direct benefits from manufacturing firms were unlikely, accompanying effects such as the establishment of eateries and other shops to serve the needs of the workers in the factories, may have helped women from more modern areas to increase their market activities. However, it was the amount of time spent on market work by women from less modern areas which increased significantly. The number of hours devoted to market activities by these women in 1975 (12) was more than doubled in 1985 (25).

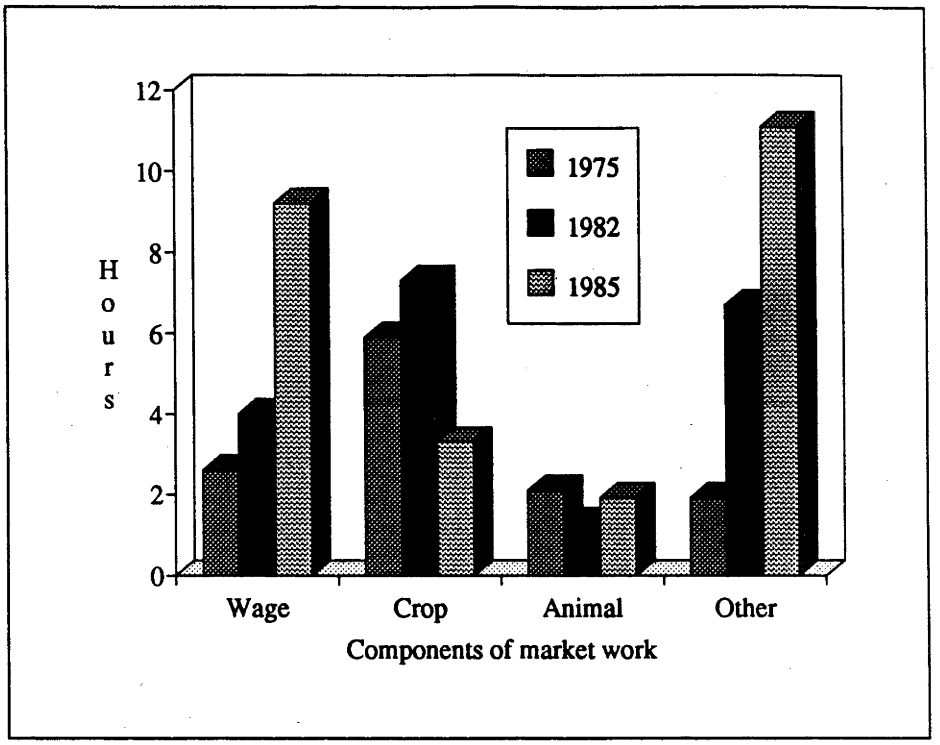
As noted, the lack of change in the time devoted to market work of women from more modern areas may have been due to lack of necessary educational

attainment and training. But what about the significant increase on time devoted to market activities of women from less modern areas? Educational attainment could not be the answer because both women from less and more modern *barangay* had nearly the same educational qualifications. Because of the unexpected increase in the time devoted to market activities of women from less modern areas, it is necessary to examine the component activities which contributed to its increase.

The number of hours devoted to 'other market' activities contributed most to the increased total market time of women from less modern areas (Figure 4.3). The amount of time spent on 'other market' activities increased from two hours per week in 1975 to 11 hours in 1985. The one-way analysis of variance revealed that there was no significant differences in the number of hours devoted to work for wages; however, the paired t-test showed a significant increase in the number of hours spent on work for wages between 1975 and 1985. It appears that women from less modern areas benefited more than women from modern areas from the installation of electricity and the improvement of road conditions. Electrification enabled these women to operate their businesses and extend the hours of businesses for existing business, while cemented roads meant more vehicles plying along routes in the less modern areas that permitted more women to market their own farm produce. The activities under 'other market' activities, unlike working in factories, neither required training nor higher educational attainment so that when the opportunities came in the form of electrification and improved transportation facilities, these women were able to increase their income-earning activities.

The decline in the amount of time devoted to crop production, although not statistically significant, reflects the fact that women from households which owned or operated farms, particularly those involved in rice production, relied mostly on hired labours. As noted in section 2.4, women in farm households engaged themselves in more profitable self-employed work than working in their own farm (Illo, 1985: 88; Kikuchi, 1983: 64).

Figure 4.3 **Mean number of hours (per week) that women from less modern *barangay* devoted to components of market work, Laguna, Philippines, 1975-1985**



Source: Appendix Table 4.1

4.5 Employment status and changes in time allocation

Two problems are associated with the use of panel data. First, the number of cases available for analysis is reduced and second, the use of unchanging characteristics limits cross-classification to a few subgroups, such as those by age and educational attainment. The reduction in the amount of time devoted to domestic work was largely due to the life cycle changes. Therefore, it can be assumed that not only the domestic time of employed women but also of non-employed women would be reduced between 1975 and 1985.

Other studies have shown that women move in and out of the labour market during the course of their lifetime for several reasons. This section focuses not only on women who were never employed and those who were previously employed, but also on those who changed their employment status between 1975 and 1985.

Women exhibited different patterns of change according to their employment status. A number of trends can be seen in Table 4.7. Life cycle changes did not influence the time allocation of those women who never participated in any market activity, whereas women who changed their employment status reported a lower number of hours devoted to domestic work in 1985 than in 1975, except for women who worked in 1975 and 1985 but not in 1982. The time devoted to personal care either increased or remained stable over the ten-year period. One might expect that the time saved from market work by women who became non-employed in 1985 would be transferred to domestic work. However, the expected shift did not occur. Instead, the time saved from market work was wholly shifted to personal care.

The invariability or constancy in the amount of time devoted to domestic work of those women who never participated in the market may be probably due to two reasons: Parkinson's Law and the unclear value of household work. According to Parkinson's Law, women keep housework at a constant level despite the time savings possible to occupy themselves (Robinson, 1980: 55). Because household work does not bring monetary income, non-employed women might have felt the pressure to spend long hours at it to ensure that equal contribution with their working husbands is made (Game and Pringle, 1983: 125).

The other interesting feature in Table 4.6 is the significant decline in the number of hours devoted to market time of women who were working in the market in 1975 and 1985 but not in 1982. The time devoted to market time in 1975 was reduced by more than half in 1985. These women also exhibited insignificant changes in the number of hours devoted to domestic work. Thus, the time devoted to personal activities increased significantly between 1975 and 1985. Perhaps the decreased market time spent by returning women to the labour force supports the argument that women did not benefit from the employment opportunities brought about by infrastructural improvement and the growth of urban centres in and near the province.

Table 4.7 **Mean number of hours (per week) that women devoted to activities by employment status, Laguna, Philippines, 1975-1985**

Employment status/ Activity	1975	1982	1985	F-ratio
Never employed (n=7)				
Domestic work	56	39	55	2.6
Personal care	112	129	113	2.6
Total	168	168	168	
Ever employed in 1975, 1982 and 1985 (n=34)				
Domestic work	71	43	44	7.4***
Market work	25	35	34	1.3
Personal care	72	89	91	2.7*
Total	168	168	168	
Employed in 1975 and 1985 but not in 1982 (n=12)				
Domestic work	59	68	49	1.4
Market work	45	a	22	12.3***
Personal care	64	100	97	3.7**
Total	168	168	168	
Non-employed in 1975 but employed in 1985 (n=30)				
Domestic work	58	39	40	6.9***
Market work	0	19	28	19.4***
Personal care	110	110	100	1.7
Total	168	168	168	
Employed in 1975 but non-employed in 1985 (n=14)				
Domestic work	68	42	64	4.9**
Market work	22	10	a	6.2***
Personal care	78	116	104	6.9***
Total	168	168	168	

Sources: Laguna data sets, 1975, 1982 and 1985

Notes: Except in 1985, the number of hours for personal care was computed by deducting home and market work from 168 (24 hours x 7 days). The number of hours for personal care in 1985 was asked from the respondents.
Total number of hours may not add to 168 due to rounding
a = less than 0.05
Excludes four women who worked only in 1982
The one-way analysis of variance with repeated measures was used to determine the significance of differences in the number of hours devoted to each activity by surveys.
***Statistically significant at $\alpha = 0.01$
**Statistically significant at $\alpha = 0.05$
*Statistically significant at $\alpha = 0.10$

4.6 Summary

Overall, less time was reported for domestic activities in 1985 than in 1975. The time saved from domestic work was apparently shifted to personal care because that spent on market activities remained stable over the ten-year period. The general pattern of change was echoed when women were examined according to several socio-demographic, economic and environmental factors.

As expected, the decrease in the amount of time devoted to child care contributed significantly to the overall reduction in women's domestic time. However, it was the time devoted to cooking and related activities which was mainly responsible for the decline in domestic time, although these activities continued to be the most time-consuming domestic responsibilities. Changes in the life cycle largely accounted for the decrease in the amount of time devoted to child care. Perhaps life cycle changes also affected meal preparation time, but this can also be attributed to changes in food preparation methods and the availability of cooked meals.

The increasing employment opportunities brought about by development, as well as the hard economic times that might have forced women to work more in the market, did not increase women's market time. As a result of stable market and decreasing domestic time, the time devoted to personal activities increased significantly for employed women. Perhaps, despite an increase in employment opportunities, the time devoted to market activities failed to increase because women lacked the necessary skills for employment. The age of these women could also be a contributory factor: by 1985, the mean age of women was 40. Furthermore, the high growth in population through migration may have made it more difficult for these comparatively less educated women to obtain employment.

The stability of the number of hours devoted to wage work activities of women supports the notion that lack of training and age could have prevented women from employment in factories and other establishment. The other

explanation for the lack of increase in women's time spent on market activities was the conflicting patterns in the components of market activities. The significant increase in the number of hours devoted to 'other market' activities was somewhat negated by the decline in women's crop production time.

Neither age nor educational attainment influenced the amount of time women devoted to total market work. Only the type of area (more modern areas versus less modern areas) significantly increased their total market time, but this pattern was not as expected. Surprisingly, the number of hours devoted to market activities rose significantly for women from less modern areas rather than women from more modern areas; this was largely due to the increase in the number of hours devoted to 'other market' time.

An examination of women's time allocation by their employment status revealed that women who remained not employed between 1975 and 1985 reported a similar number of hours devoted to domestic work. However, for women who have been employed and worker either in 1975 and 1985, there was a significant decline in the number of hours devoted to domestic activities.

The examination of trends by employment status showed that employed women's daily activities were clearly affected by outside employment. Employed women did less household work, while their time devoted to market work remained stable; thus, their personal time increased. From these results, it is still not possible to know anything about the context in which these trade-offs were made. If employed women did less at home, for example, did other family members come to their support and do more? What is the relationship between employed women's routines and those of their husbands and children, in particular with respect to domestic work? What accounted for the unchanging average number of hours that non-employed women devoted to household tasks? Did they not receive assistance

from other household members? These questions are addressed in the following chapter.

Chapter 5

Intrafamilial Time Allocation

The interdependence of mothers' role within the family and their role in the labour market was examined in Chapter 3, while the changes in these roles between 1975 and 1985 were examined in Chapter 4. During that ten-year period, the total number of hours devoted to domestic work by mothers was reduced. However, a comparison of mothers and their employment status showed a significant decline in the amount of domestic work done by mothers who were at one stage employed, but no change for the never employed mothers. One possible explanation is that other persons in the household substituted for the employed women in doing tasks around the house. These intrafamilial patterns of time allocation are the focus in this chapter.

When one member of the family has to trade-off time for specific tasks, it is expected another might make complementary adjustments. In a nuclear family, when the mother participates in market production activities, the other adult member, the father, would be the most likely to make supportive trade-offs. Children, depending on their age, may also take over some of the mother's activities because much household production is usually shared between mother and children. In-laws,

other relatives or household help, especially in an extended family can substitute for parents to clean, cook and take care of children. The contributions of husband and children to the maintenance of the household are analysed in this chapter, but because of data limitations, the contributions of other relatives and household helpers are excluded.

This chapter is divided into six sections. The first introduces the hypotheses used to identify the factors influencing fathers' and children's participation (or lack of it) in domestic activities. Overall intrafamilial time allocation is presented in section 5.2 to compare the total number of hours devoted to domestic work by each household member. Section 5.3 examines the factors influencing household members' contributions to the maintenance of the households with the aim of adjudicating among three hypotheses about the domestic division of labour. Section 5.4 examines the share of mothers, fathers and children in the overall workload by analysing the number of hours devoted to combined home and market work according to household demands. To ascertain whether there was a change, or at least whether there were indications that the time use of household members, fathers in particular, has changed, a comparison of their time allocation between 1975 and 1985 is carried out in section 5.5. Section 5.6 presents a summary of household members' contribution to domestic work, the factors affecting it, and the changes in intrafamilial time allocation between 1975 and 1985.

5.1 Ideology, demand and resource hypotheses

A number of hypotheses have been offered to explain wives' and husbands' relative contributions to household work during the 1980s. Haas (1981: 960-964) summarises five hypotheses: exchange, resource, honeymoon, socialization, and time availability. Huber and Spitze (1983: 76-78) noted four: time availability, relative power, sex-role attitudes, and taste for housework, while Coverman (1985:

82-85) used three: ideology, demand/response capability and relative resources. Haas (1981: 960-965) defined her hypotheses as follows:

i) Exchange hypothesis. This suggests that a husband will become more responsible in performing housework and child care when a wife becomes more responsible in performing breadwinning activities. It is based on the exchange theory of Scanzoni (1970) who proposed that greater sharing in the domestic activities occurs when wives feel as obligated to provide income as their husbands.

ii) Resource hypothesis. This was introduced by Blood and Wolfe (1960) who suggested that the more power resources a wife has, the more she will be able to influence her husband to assume an equal share of the domestic work.

iii) Honeymoon hypothesis. This hypothesis proposes that domestic role sharing is more likely to occur in the early stages of the family life cycle. Couples who have recently joined would seem more likely to share the domestic activities because of their desire to be together most of the time and do things together. When the honeymoon is over, chores become more sex typed.

iv) Socialization hypothesis. This proposes that more domestic role sharing would occur if the couples' socialization experiences have been less traditional. In other words, men who adhere to a traditional sex role ideology perform fewer household chores than do men whose sex role ideology is characterized as nontraditional (Perucci et al., 1978 cited in Coverman, 1985: 84).

v) Time availability hypothesis.This proposes that when a husband works for fewer hours at his income-earning activities or has an opportunity to set his own working hours, he will participate more in domestic activities.

The time availability, relative power and sex-role attitudes proposed by Huber and Spitze (1983: 76-81) correspond with Haas' hypotheses so that only the taste for housework hypothesis is discussed. Huber and Spitze surmised that men

with a taste for housework assume more responsibility for it than do men with no taste for it.

Coverman's (1985: 81-86) proposed hypotheses are similar to Haas' and Huber and Spitze's hypotheses. However, she proposed further that the time availability hypothesis should be examined in conjunction with the demands on husbands. For example, a husband who is working part-time will not spend more time doing housework if there is little demand placed on him to do so.

Because of data limitations, the search for factors affecting household sharing of domestic activities in the Laguna study is guided by three general hypotheses, based on ideology, demand and resource considerations. Earlier studies have used these hypotheses in assessing the sharing of household chores between fathers and mothers. Children's contribution is also included in this analysis because much of household work is shared between mothers and children, and its inclusion could throw additional light on intrafamilial time allocation.

The ideology hypothesis. In this study, the ideology hypothesis is represented by father's age. This hypothesis suggests that the division of labour in the household is relatively undifferentiated when couples are younger and becomes more sex-typed when couples grow older (Smith and Fisher, 1982: 83-85; Huber and Spitze, 1983: 90). Both partners share more domestic labour while young, but as couples grow older, chores become specialized along individual preference or sex-typed lines. Coverman (1985: 85) questioned the use of age to measure a person's ideology because age could also reflect resources rather than ideology. As men gain higher occupational status and earnings through the life cycle, they would be expected to share less in domestic work. However, in this study age was used to reflect ideology rather than resources because most fathers were either farmers or hired workers in agriculture-related activities and had experienced little change in occupation and earnings. Fathers, like mothers, had only completed some

intermediate education. Most lacked other training so that even where other employment opportunities were available, fathers in the study area were unlikely to change jobs.

Evidence suggests that the effect of husbands' age on their contributions to domestic work is quite mixed. A number of researchers (Sheehan and Rexroat, 1987: 740-743; Stafford et al., 1977: 53; Huber and Spitze, 1983: 90; Farkas, 1976: 478) found that men who adhered to non-traditional ideology (presumed to be younger men) performed more household labour. By contrast, Coverman (1985: 93) found no significant differences in the number of hours devoted to domestic work by younger men compared to older men.

The demand hypothesis. England and Farkas (1986: 97-98) based the demand hypothesis on situational factors. It proposes that an event, such as the birth of a child, which drastically increases the work load in the home, may lead to greater male participation in housework because the mother cannot do it all, particularly if she is employed. Fathers are simply picking up chores which become virtually impossible for mothers to perform. Demand is represented in this study by the presence of young children and the number of children. The younger the children are, the greater the demands on fathers to participate in housework, while many children in the family means that more time has to be devoted to child care and housework. However, the evidence on the number of children as a significant predictor of men's domestic hours is inconclusive. Some researchers (Farkas, 1976: 480; Coverman and Sheley, 1986: 416) have found that the number of children is a significant predictor of men's domestic hours, while others (Vanek, 1974: 118) found it was not. Slocum and Nye (1976: 97) found a non-monotonic curvilinear association between the number of children and shared housekeeping. In families with less than four children, there was more sharing of the housekeeper role, but in families with more than four children, there was slightly less role sharing. The inconsistent effect of the number of children on men's domestic work could be

attributed to the fact that mothers relied more on help from older children to look after their siblings and help in other household chores than on help from fathers.

With respect to the age of the youngest child, it is hypothesized that the father would spend more time in domestic work when an infant is present in the household. Empirical studies show that the older the youngest child is, the less time a father spends doing housework, suggesting that older children perform some of the housework that fathers would do otherwise. Again, the results of studies have been mixed. Coverman (1985: 91) and Berardo et al. (1987: 387) found that fathers contributed more to housework if younger children were present in the households, whereas Farkas (1976: 479) found that fathers with young children spent less time in housework.

The resource hypothesis. Blood and Wolfe (1960: 63) suggested that the division of labour in the home is related to the amount of time that spouses are able to devote to housework. In the traditional family, a woman is expected to spend her time on household work while a man devotes his time to paid labour. As a woman devotes more time to paid labour, her time available for housework becomes limited. In a similar manner, the literature suggests that there is structured competition between occupational and familial roles for men, and that time and energy spent on work is at the expense of family involvement (Bell, 1974 cited in Clark et al., 1978: 10). When men work fewer hours at their jobs or have the opportunity to set their working hours, they may participate more in housework. The resource hypothesis also implies that when the wife and husband participate equally in the work force, they possess similar amounts of time available for housework.

The resource hypothesis is influenced by the New Household Economics theory in which the most relevant unit of utility maximization is the household rather than the individual. The household is viewed not only as a unit that consumes commodities such as meals or clean clothes, but also as a unit of production where

members combine their time inputs with market goods (DaVanzo and Lee, 1983: 63). Household members can either devote time to the production of goods or they can sell their time on the labour market and earn a wage. The household members' decision to allocate their time to market and domestic work is a result of men's and women's relative productivity in each sphere. Each person will devote more hours to the production of goods in which he or she has a comparative advantage relative to production of other commodities and to other household members (DaVanzo and Lee, 1983: 63). Thus, specialization may develop because men typically command higher wage rates in the market place, whereas women are more productive at home (Becker, 1981). The decision that men will perform little housework occurs jointly with the decision that they will spend more hours in paid employment.

To ascertain whether the resource hypothesis holds for the Laguna households, the number of hours devoted to market activities by mothers and fathers was employed in the analysis. If the decisions about household labour were made rationally, as suggested by the New Household Economics, then the more hours fathers devoted to market work, the smaller would be the fathers' share of housework and vice versa.

Before presenting the results of analysis of the factors affecting household division of labour, the next section examines the overall intrafamilial time allocation. It describes how much and what kind of work household members contributed to housework during the week preceding the survey.

5.2 Overall intrafamilial time allocation

Some researchers have used the proportional or relative contribution of household members to domestic work (for example, Blood and Wolfe, 1960) to examine the division of family work, while others (for example Coverman, 1985; Berardo et al., 1987) have examined the average number of hours allocated to different domestic activities. The latter approach has been adopted in this study. The use of the

proportion to investigate the relative contribution of a household member does not reflect the member's actual contribution to domestic tasks. Pleck (1979: 484) argued that the increased share of husbands in the performance of household tasks when women were employed that was observed by Walker and Woods (1976: 41) was due to their use of the proportion of time, instead of the number of hours devoted to different activities in the analysis. The proportional or relative contribution of the husband to total family work increased when the wife was employed, but his absolute contribution did not. That is, the husband's proportion increased not because he was actually doing any more, but only because his wife was doing less.

The significant differences across categories (for example, between younger and older fathers) and between household members (for example, sons versus daughters) were determined by the t-test and one-way analysis of variance. The sample analysed in this chapter included complete households only from the 1985 Laguna survey: that is both parents lived with their children at the time of the survey. A total of 142 households met this criterion.

Except for the last section in this chapter, only the 1985 Laguna data set was used because of differences in methodology. In the 1975 data, only the three most important children contributing to domestic and market work were included. In addition, mothers and fathers answered in behalf of their children in 1975. The methodology used in the 1982 and 1985 surveys were the same; however, the 1982 data were not included in the analysis because the focus of this chapter is on the factors affecting the time allocation of other household members and not on the changes over time. The changes in time allocation are briefly discussed in the last section of this chapter, where the 1975 and 1985 data were used, but confined only to fathers and mothers for the above-mentioned reasons.

The 1985 Laguna data revealed that the time and effort required to maintain the home were almost solely borne by mothers. Mothers did more than 70 per cent

of the total domestic work, while fathers and children performed the rest (Table 5.1 and Figure 5.1). For instance, children contributed 12 per cent of the households' domestic activities when mothers were not employed and 15 per cent when mothers were employed. The time of the father accounted for 8 per cent of total domestic time when the mother was non-employed and 14 per cent when she was. These figures were in the expected direction, but the differences between contributions of fathers and children according to the mothers' employment status were not statistically different.

Most studies analysing intrafamilial time allocation have also found that mothers' employment status did not influence fathers' domestic participation (Hartmann, 1981: 366-394; Nickols and Metzen, 1978: 85-97 cited in Berardo et al, 1987: 383; Meissner et al., 1975: 436-437; Vanek, 1974: 118; Walker and Woods, 1976: 257). The present analysis, however, is not consistent with a number of studies that have found a slight increase in men's domestic time when their wives were engaged in income-earning activities, suggesting that women's employment status may influence the overall division of home labour (Coverman, 1985: 93; Huber and Spitze, 1983: 86).

Children's contribution to domestic activities was relatively low, whether their mothers were employed or not. The uniformity of children's contribution to the maintenance of the household could be due to the fact that children were attending school, and those who had finished schooling may have been working for pay. The issue of children's education and domestic work is further examined in the following section, where children's time allocation is analysed by sex and age. It would have been more interesting to analyse the data for weekdays and weekends separately, but because data were collected for the entire week, this type of analysis could not be pursued.

Table 5.1 **Mean number of hours (per week) that household members devoted to domestic work by mothers' employment status, Laguna, Philippines, 1985**

Employment status/ Activity	Mother	Father	Children	Household
A. Non-employed mothers				
Shopping	2.8	0.8	0.4	4.0
	(70)	(20)	(11)	(100)
Meal preparation	17.9	2.3	2.4	22.5
	(79)	(10)	(10)	(100)
Clothes care	15.3	0.1	1.5	16.9
	(90)	(1)	(9)	(100)
Child care	17.9	1.3	1.9	21.1
	(84)	(6)	(9)	(100)
Cleaning	6.1	0.8	1.8	8.7
	(70)	(9)	(21)	(100)
Fetching water and collecting firewood	1.5	1.2	1.5	4.2
	(38)	(29)	(34)	(100)
Total	**61.5**	**6.4**	**9.6**	**77.4**
	(79)	(8)	(12)	(100)
Number of cases	33	33	143	
B. Employed mothers				
Shopping	4.0	0.8	0.2	4.9
	(80)	(15)	(3)	(100)
Meal preparation	15.8	3.8	2.9	22.6
	(70)	(17)	(12)	(100)
Clothes care	10.2	0.1	1.5	11.9
	(86)	(0)	(12)	(100)
Child care	7.4	1.7	1.5	10.6
	(69)	(16)	(14)	(100)
Cleaning	6.0	0.6	1.6	8.2
	(73)	(6)	(19)	(100)
Fetching water and collecting firewood	1.0	1.7	1.3	4.1
	(25)	(42)	(32)	(100)
Total	**44.5**	**8.7**	**9.1**	**62.3**
	(71)	(14)	(15)	(100)
Number of cases	109	109	444	

Source: Laguna data set, 1985

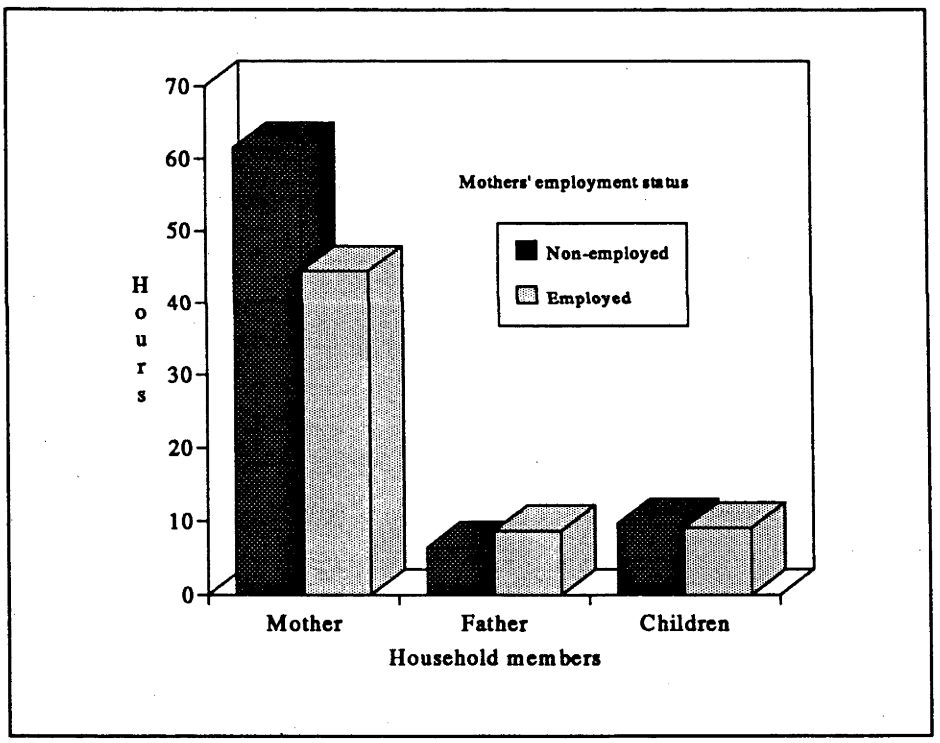
Notes: Figures in parentheses are percentages of the households' number of hours devoted to domestic work

Total may not to 100 due to rounding

The differences in the number of hours devoted to total domestic work and the component activities, except fetching water and collecting firewood, were statistically significant between household members at $\alpha = 0.01$.

The percentage of the total time contributed by children to domestic work increased with the employment of the mother. However, a reduction in mother's time rather than an increase in children's time was mainly responsible for this change. The proportion of time increased from 12 per cent if mothers were non-employed to 15 per cent if mothers were employed, but the absolute number of hours remained stable (Table 5.1). The proportion of time was only included in the first table to emphasize that the proportion of time does not really reflect the sharing of housework.

Figure 5.1 **Mean number of hours (per week) that household members devoted to domestic work by mothers' employment status, Laguna, Philippines, 1985**



Source: Table 5.1

As expected, mothers (whether employed or not) were the principal workers in all components of domestic work, except fetching water (Figure 5.2). For instance, 90 per cent of the households' time spent on washing, ironing and mending

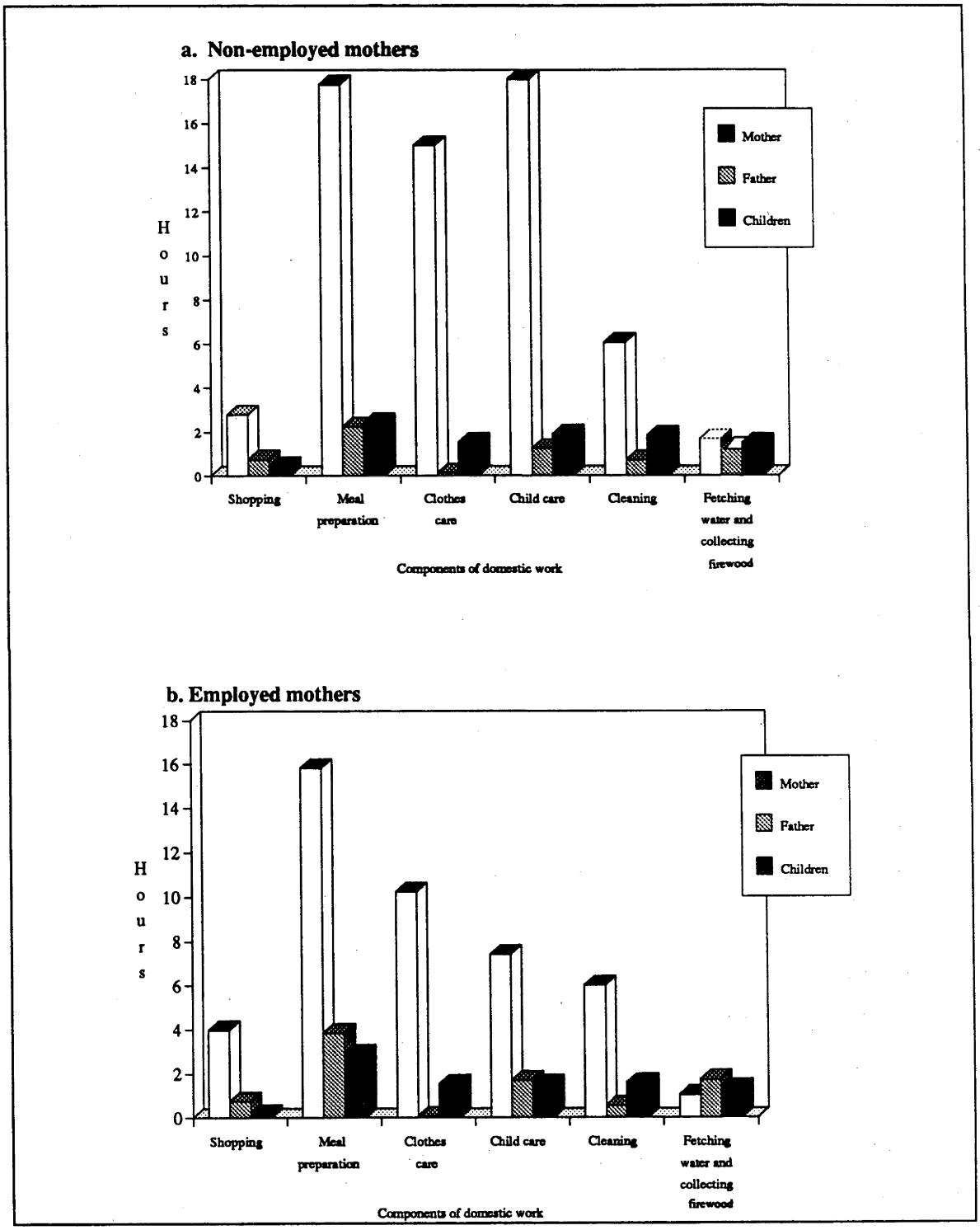
clothes was by non-employed mothers. The percentage was slightly lower (86 per cent) for employed mothers. One-way analysis of variance shows that children rather than fathers assisted mothers. If a mother was non-employed, children contributed a significantly higher number of hours to child care than their father, and if the mother was employed the children spent more time washing and ironing clothes than their father.

The activity in which fathers contributed most was cooking, irrespective of mothers' employment status. Fathers' time inputs to cooking increased by 65 per cent, that is, more than two hours per week to nearly four hours, if mothers were employed. As expected, fathers' share of washing and ironing clothes, a traditionally female activity in the Philippines, was almost nil. Cooking was also the activity to which children contributed most time, irrespective of mothers' employment status. However, the time devoted to the different aspects of children's domestic work was not significantly different when examined by mothers' employment status.

This study also confirms the findings of previous studies (Walker and Woods, 1976; Vanek, 1974; Coverman, 1985) that the participation of mothers in market activities resulted in lower overall levels of time allocated to households' domestic activities (Figure 5.1). This was largely the result of the large reduction in child care time devoted by employed mothers (Figure 5.2). Fathers and children did not contribute significantly to child care, even when mothers were employed.

Does this mean that among all the components of housework, child care could be most easily reduced or compressed if mothers worked in the market? If not, who was responsible for looking after the children? Perhaps neighbours or nearby relatives minded the children. A study in the Export Processing Zone in the Philippines (Feranil, 1982: 10) showed that 72 per cent of employed mothers entrusted their young children to parents, in-laws and other relatives. However, this

Figures 5.2 **Mean number of hours (per week) that household members devoted to components of domestic work by mothers' employment status, Laguna, Philippines, 1985**

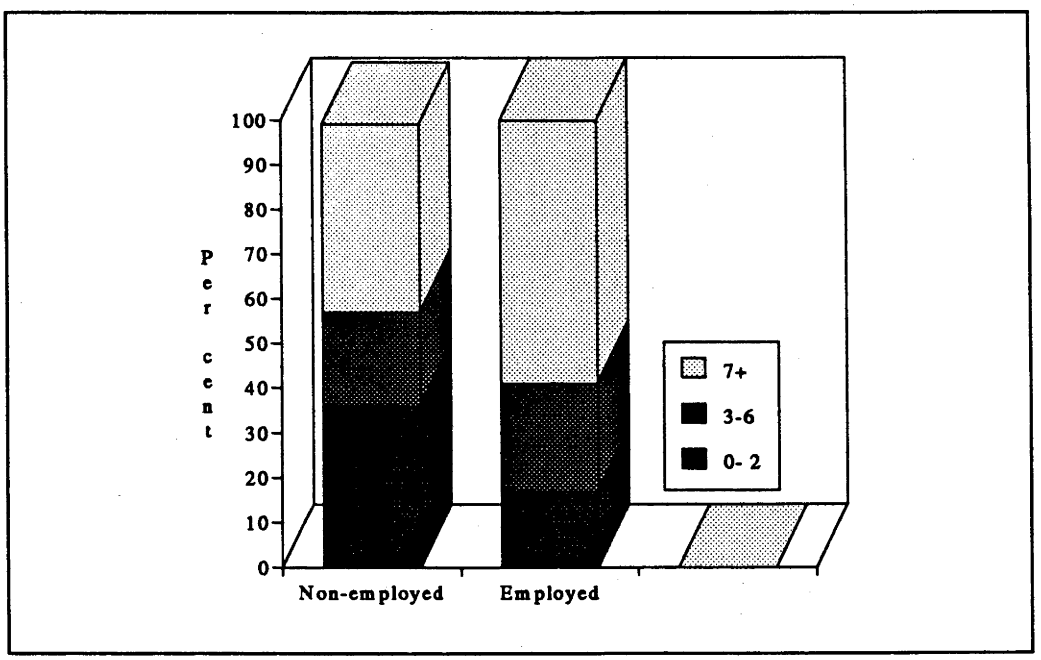


Source: Table 5.1

issue cannot be examined in this study as no questions were asked concerning help from neighbours and friends when mothers were employed. Another explanation could be that the mothers participated more in income-earning activities only when their children were already older and less in need of care. The percentage of mothers who engaged in market activities was substantially lower when infants (0-2 years old) were present in the households (Figure 5.3). Only 17 per cent of mothers with infants were employed compared to 59 per cent of women whose youngest children were seven years or older. A detailed discussion of the effect of the presence of infants on market work of all household members is presented in the next chapter.

The findings in this and in the succeeding sections should be interpreted with caution because of the methodology used in the data collection, as well as the small sample size. The small differences in the number of hours devoted to different activities might be because of memory lapse, although there is no reason to believe that there were systematic differences in recall ability.

Figure 5.3 **Age of the youngest child by mother's employment status, Laguna, Philippines, 1985 (percentage)**



Source: Appendix Table 5.1

5.2.1 Children's gender, age and domestic activities

The average number of hours devoted to domestic work by children in section 5.2 was computed for all children five years old or over. The mean time allocated to domestic activities does not reflect the separate contributions of males and females, but literature on the value of children has consistently demonstrated the existence of a gender division of domestic labour among children. Among Filipinos, the traditional division of labour is manifested early in life and is reinforced in school where girls attend home economics classes while boys attend carpentry and practical arts classes (Pineda, 1981: 106). Another issue that was not captured in the earlier analyses in this study was that as children grow older not only does their share of the many onerous and routine duties necessary for the maintenance of the households increase, but their monetary contributions also increase. Therefore, this section focuses on children's time allocation by sex and age. Comparisons of the time use of male with female children is confined only to the present section so as to avoid the complexity of analysis that would arise when all the other household members were included in the intrafamilial allocation of domestic labour.

This section is divided into three parts. The first investigates the number of hours devoted by sons to domestic work, according to their age and mothers' employment status, followed by a consideration of daughters' time allocation. The final part compares children's time allocation according to sex and age group in order to show how early sex stereotyping of domestic work occurs.

Sons' contribution to domestic work. Whether or not mothers were employed, there was a positive relationship between the time devoted to domestic work and son's age (Table 5.2 and Figure 5.4). The increase was linear for sons of non-employed mothers but revealed an inverted U-shape pattern for those with employed mothers. As a result, older sons (17 years or older) of employed mothers spent significantly less time in domestic work (6 hours a week) than those whose

Table 5.2 **Mean number of hours (per week) that children devoted to components of domestic work by sex, age and mothers' employment status, Laguna, Philippines, 1985**

Mothers' employment status/ Sex/Activity	Age of children 5-12	13-16	17+	F ratio
A. Non-employed mothers				
Son				
Shopping	0.0	0.4	0.1	1.5
Meal preparation	0.2	1.1	3.2	4.3**
Clothes care	0.0	0.1	1.0	3.9**
Child care	0.9	2.1	2.2	0.5
Cleaning	0.2	1.3	2.4	3.3**
Fetching water and collecting firewood	1.4	1.8	2.9	1.3
Total	**2.7**	**6.8**	**11.8**	**6.2*** **
Number of cases	29	22	29	
Daughter				
Shopping	1.3	0.2	0.7	0.3
Meal preparation	1.6	5.2	5.1	4.0**
Clothes care	0.3	5.2	5.1	6.4***
Child care	1.5	4.1	1.7	1.1
Cleaning	1.2	3.5	3.9	3.4**
Fetching water and collecting firewood	0.2	0.4	2.1	4.5**
Total	**6.1**	**18.6**	**18.5**	**7.1*** **
Number of cases	29	15	19	
B. Employed mother				
Son				
Shopping	0.0	0.3	0.1	4.2**
Meal preparation	0.7	2.7	1.5	4.1**
Clothes care	0.1	0.2	0.8	3.6**
Child care	0.3	1.0	0.8	1.5
Cleaning	0.4	1.2	0.7	3.0*
Fetching water and collecting firewood	1.6	2.2	1.9	0.7
Total	**3.0**	**7.6**	**5.7**	**5.1*** **
Number of cases	86	56	106	

continued...

Table 5.2 (cont'd.) **Mean number of hours (per week) that children devoted to components of domestic work by sex, age and mothers' employment status, Laguna, Philippines, 1985**

Mothers' employment status/ Sex/Activity	Age of children 5-12	13-16	17+	F ratio
Daughter				
Shopping	a	0.2	0.7	8.3***
Meal preparation	2.4	6.2	6.6	10.5***
Clothes care	0.6	4.0	5.7	19.3***
Child care	1.0	1.0	6.6	8.6***
Cleaning	1.0	3.2	4.9	20.8***
Fetching water and collecting firewood	0.6	0.5	1.0	1.8
Total	**5.7**	**15.2**	**25.5**	**31.8*** **
Number of cases	87	52	57	

Source: Laguna data set, 1985

a = less than 0.05

Total may not add due to rounding

The one-way analysis of variance was used to determine the significance of differences in the number of hours devoted to each activity work by children's age groups.

***Statistically significant at $\alpha = 0.01$

**Statistically significant at $\alpha = 0.05$

*Statistically significant at $\alpha = 0.10$

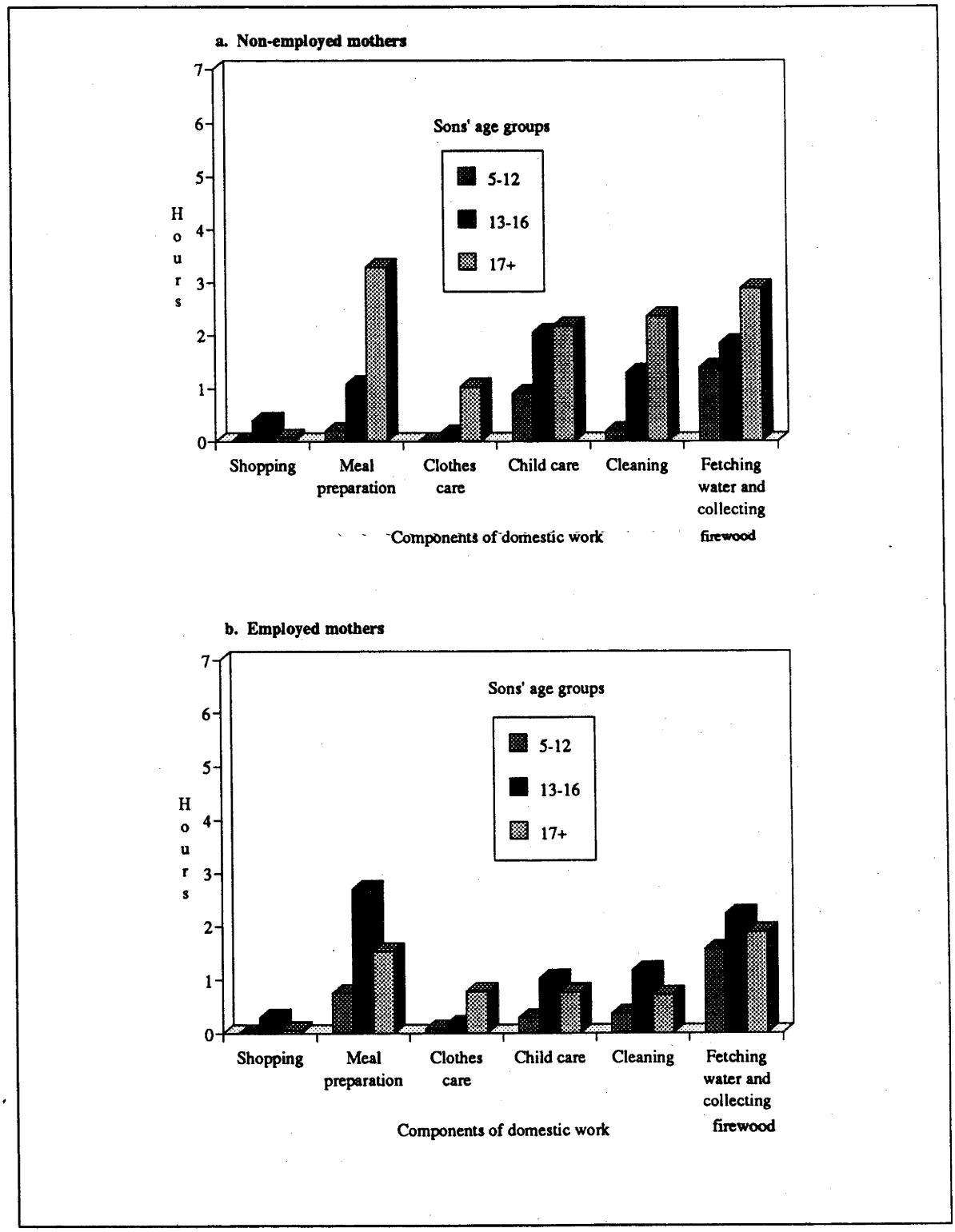
mothers were non-employed (12 hours a week). Older sons of non-employed mothers spent significantly more time on cleaning house and backyard, child care and meal preparation than older sons of employed mothers (Table 5.3). The explanation could be the presence in the house of non-employed mothers who could supervise their older sons in doing the various domestic activities.

Figure 5.4 **Mean number of hours (per week) that sons devoted to domestic work by their age and mothers' employment status, Laguna, Philippines, 1985.**

Source: Table 5.2

Table 5.2 and Figure 5.5 show differences in the type of activities performed by sons when examined by age. Sons who were less than 13 years old contributed most to providing the household with water for cooking, washing and drinking. By contrast, older sons (13 years old or older), spent most of their domestic time on different components of domestic work. For example, sons aged 13-16 years

Figure 5.5 **Mean number of hours (per week) that sons devoted to components of domestic work by their age and mothers' employment status, Laguna, Philippines, 1985**



Source: Table 5.2

whose mothers were non-employed spent the most number of hours on child care, whereas sons of the same age group whose mothers were employed spent most of their time cooking. Despite these differences, the time devoted to fetching water either contributed most to domestic work or came a close second for all older sons.

Table 5.3 **T-values comparing the mean number of hours devoted to domestic work between sons of non-employed and employed mothers, Laguna, Philippines, 1985**

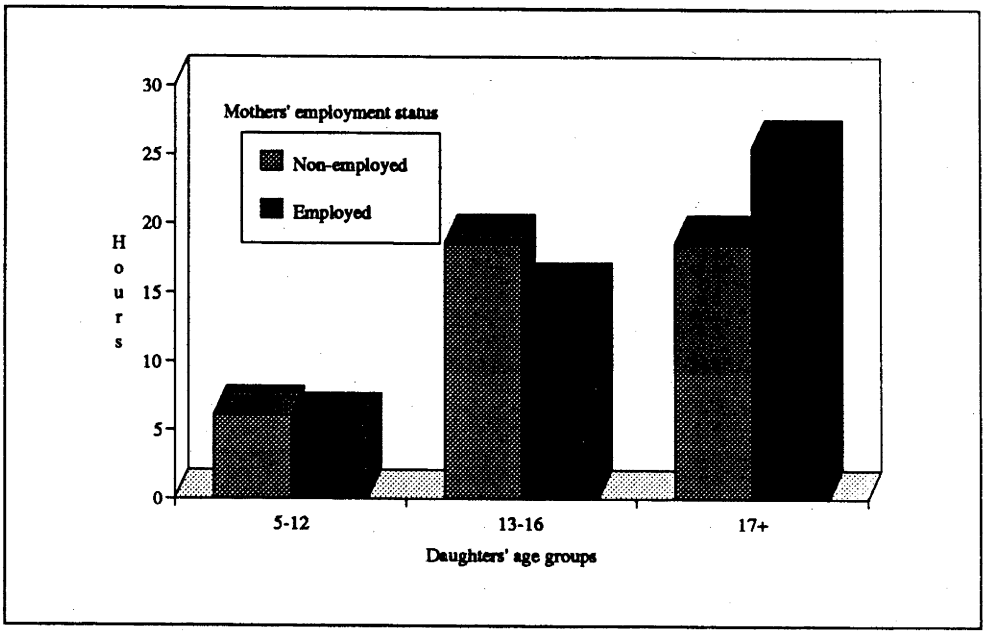
Activity	Age of sons		
	5-12	13-16	17 +
Shopping	-0.6	0.3	0.2
Meal preparation	-1.2	-1.2	1.9*
Washing clothes	-0.8	-0.2	0.4
Child care	1.4	0.8	1.8*
Cleaning	-0.9	0.2	2.8**
Fetching water and collecting firewood	-0.3	-0.5	1.4
Total	**-0.3**	**-0.3**	**3.2****
Number of cases	29[a] and 86[b]	22[a] and 56[b]	29[a] 106[b]

Source: Laguna data set, 1985

Notes: The mean number of hours devoted to different activities are shown in Table 5.2.
[a]Sons whose mothers were non-employed
[b]Sons whose mothers were employed
The t-test was used to determine the significance of differences in the number of hours devoted to each activity between sons whose mothers were non-employed and employed. The negative sign of the t-value indicates that sons of employed women devoted less time to that particular activity than sons of non-employed women and vice versa for the positive sign.
***Statistically significant at $\alpha = 0.01$
**Statistically significant at $\alpha = 0.05$
*Statistically significant at $\alpha = 0.10$

Daughters' contribution to domestic work. It was anticipated that daughters whose mothers were employed would contribute more housework time than daughters of non-employed mothers but this was observed only among older daughters (17 years old or over) (Table 5.2, Table 5.4 and Figure 5.6). The data also

Figure 5.6 **Mean number of hours (per week) that daughters devoted to domestic work by their age and mothers' employment status, Laguna, Philippines, 1985**

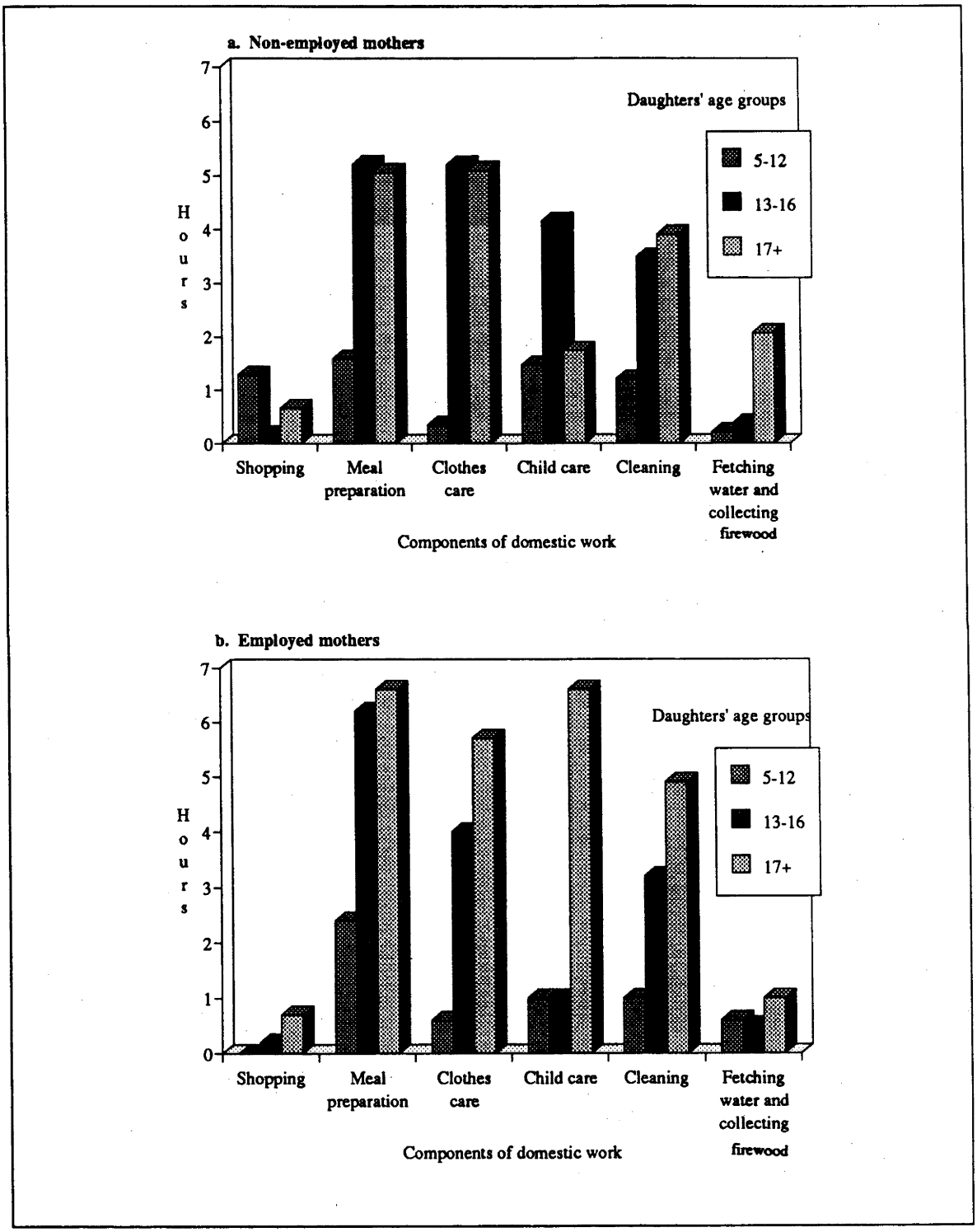


Source: Table 5.2

suggest that daughters of non-employed mothers who were 13-16 year old devoted three hours per week more than their counterparts whose mothers were employed, although not statistically significant.

As expected, the amount of the various components of domestic work increased significantly with daughters' age (Table 5.2 and Figure 5-7). For daughters of non-employed mothers, the time devoted to four out of the six components of domestic work increased significantly with daughters' age. Shopping time remained stable as daughters grew older while child care time exhibited an inverted U-shaped pattern. Among daughters of employed mothers, nearly all types of domestic work (except fetching water and firewood) increased significantly. However, it was the

Figure 5.7 **Mean number of hours (per week) that daughters devoted to components of domestic work by their age and mothers' employment status, Laguna, Philippines, 1985**



Source: Table 5.2

Table 5.4 **T-values comparing the mean number of hours devoted to domestic work between daughters of non-employed and employed mothers, Laguna, Philippines, 1985**

Activity	Age of daughters		
	5-12	13-16	17 +
Shopping	1.7	-0.2	-0.2
Meal preparation	-1.0	-0.5	-0.8
Washing clothes	-0.5	0.6	-0.4
Child care	0.7	2.2**	-2.1**
Cleaning	0.4	0.2	-0.7
Fetching water and collecting firewood	-1.4	-0.3	
Total	**0.2**	**0.7**	**-1.9***
Number of cases	29[a] and 87[b]	15[a] and 52[b]	19[a] 57[b]

Source: Laguna data set, 1985

Notes: The mean number of hours devoted to different activities is shown in Table 5.2.

[a]Daughters whose mothers were non-employed

[b]Daughters whose mothers were employed

The t-test was used to determine the significance of differences in the number of hours devoted to each activity between daughters of non-employed and employed mothers. The negative sign of the t-value indicates that daughters of employed women devoted less time to that particular activity than daughters of non-employed women and the vice versa for the positive sign.

***Statistically significant at $\alpha = 0.01$

**Statistically significant at $\alpha = 0.05$

increase in child care time which contributed most to older daughters' (17 years old or over) domestic work. The time devoted to child care increased more than six-fold, that is, from one hour per week for daughters 12 years or younger to nearly seven hours for daughters 17 years or older. Perhaps employed mothers with infants and toddlers only worked in the market if older daughters were around the house. This arrangement would have been possible because even when daughters attended school; night classes were available in secondary schools and colleges in the province. In this manner, mothers could have taken outside employment until it was

time for their daughters to leave for school. The reliance of employed mothers on daughters for child care is not surprising. Unlike other household activities, such as cooking, washing and ironing clothes, which could be postponed, looking after younger children could not be delayed. Someone, daughters in particular, would have to do this in the absence of their mothers.

Sexual division of domestic labour among children. T-test indicates a pattern of gender differentiation in the distribution of housework among children (Table 5.5). Even in the youngest age group, a sexual division of labour in the household was evident and the gap between sons' and daughters' time spent on domestic work widened as they grew older. For instance, in households where mothers were non-employed, daughters aged 5-12 years performed an average of nearly three hours and a half per week more than sons of the same age group (Table 5.2). Among older children (17 years old or older) whose mothers were employed, the difference between sons and daughters was nearly twenty hours per week of housework.

In accordance with the traditional division of household labour, daughters devoted significantly more number of hours per week to traditional female activities, while sons devoted a significantly higher number of hours to fetching water and firewood, the only male-type of domestic activity in the data set. When analysed by mothers' employment status, the dependence of employed mothers on their older daughters to maintain the household is shown in Table 5.5. All the component activities of domestic work were significantly different between older sons and daughters when their mothers were employed, compared to differences in only two component activities (shopping and clothes care) when mothers were non-employed.

Housework activities were predominantly, but not exclusively, a female activity. The time devoted to clothes care (a female activity) by sons shows that they

Table 5.5 **T-values comparing the number of hours devoted to domestic work between sons and daughters according to their age and mothers' employment status, Laguna, Philippines, 1985**

Mothers' employment status/ Activity	Age of children		
	5 - 12	13 - 16	17 +
A. Non-employed mothers			
Shopping	-1.0	0.5	-1.8*
Meal preparation	-2.46	-3.5***	-0.9
Clothes care	-1.5**	-2.6**	-3.7**
Child care	-0.6	-0.85	0.3
Cleaning	-2.1**	-2.00*	-1.1
Fetching water and collecting firewood	2.5	2.3**	0.6
Total	**-1.7***	**-2.4****	**-1.8***
Number of cases	29 sons and 29 daughters	22 sons and 15 daughters	29 sons and 19 daughters
B. Employed mothers			
Shopping	-0.9	0.3	-4.2***
Meal preparation	-3.4***	-2.5**	-6.7***
Clothes care	-2.0*	-4.7***	-6.5***
Child care	-1.9*	0.0	-3.8***
Cleaning	-2.6***	-3.0***	-8.2***
Fetching water and collecting firewood	2.3**	3.5***	2.0***
Total	**-2.4****	**-2.8*****	**-9.1*****
Number of cases	86 sons and 86 daughters	56 sons and 52 daughters	106 sons and 57 daughters

Source: Laguna data set, 1985

Notes: The mean number of hours devoted to different activities are shown in Table 5.2
The t-test was used to determine the significance of differences in the number of hours devoted to each activity between sons and daughters. The negative sign of the t-value indicates that sons devoted less time to that particular activity than daughters and the vice versa for the positive sign.
***Statistically significant at $\alpha = 0.01$
**Statistically significant at $\alpha = 0.05$
*Statistically significant at $\alpha = 0.10$

also participated to some extent in female-dominated activities. Sons probably did not wash their clothes, but ironed them, which explains the very small amount of time devoted to clothes care. The larger number of hours devoted to washing and ironing clothes by daughters suggests that they cared for the clothes of other household members. As expected, fetching water and gathering firewood, considered to be masculine activities, dominated the domestic activity of sons of all ages. However, the aspect of domestic work which occupied most of daughters' time varied with their age and the employment status of their mothers. For example, cooking was dominant among daughters 16 years old or younger, while other domestic work such as clothes care and child care, and cooking were the major domestic activities for those 17 years old or over.

This examination of the overall distribution of intrafamilial time reveals that mothers who joined fathers in the labour market still shouldered the burden of the majority of their traditional household responsibilities. Fathers increased their participation in domestic work, although very minimally, if mothers worked in the market. Children rather than fathers shared more in the overall domestic work of the household, and their share in maintaining the household increased as they grew older. The next section moves away from the pattern of time use to a more detailed analysis investigating the factors that influenced the number of hours devoted to domestic activities by household members.

5.3 Domestic labour and selected factors

The detailed analysis is guided by the three hypotheses discussed in section 5.2. The ideology hypothesis was tested by using the age of husband, while the demand hypothesis used the number of children and age of youngest child. Finally, fathers' and mothers' time spent on market work were used in testing the resource hypothesis.

Age of fathers. The hypothesis that younger fathers would devote more time to household activities than older fathers was not confirmed in the 1985 Laguna data. Neither employment status of mothers nor the age of fathers influenced their total domestic time. There are indications that younger fathers (39 years old or younger) contributed slightly more domestic time than older fathers (45 years old or over); however, the difference was not statistically significant (Table 5.6). The time devoted to child care by older fathers was the only activity which was significantly lower than for younger fathers, and only if the mothers were employed.

Employed mothers' dependence on their children rather than their husbands for help around the house is shown in Table 5.6. There were significant differences in the total number of hours devoted on domestic work by children whose mothers were employed but none for children whose mothers were non-employed. Children whose mothers were employed and whose fathers were older spent more time on domestic work than children with younger fathers. A closer examination of the components of older children's domestic time revealed that their clothes and child care time were greater than that of their counterparts when their fathers were older. However, the increase was offset by the smaller amount of time spent fetching water and collecting firewood.

The inverse relationship between age of fathers and the time devoted to fetching water and firewood by children was quite unexpected. These are the activities to which children, especially sons, were assumed to contribute more time when their mothers were employed. In addition, older fathers were considered more likely to have older children who could be relied upon to provide the household with water and firewood. The significantly smaller amount of time devoted to fetching water and gathering firewood is probably a reflection of the additional income brought in by the mothers' market activities. Households where both parents worked in the market could have used gas for cooking instead of wood, and may also have

Table 5.6 **Mean number of hours (per week) that household members devoted to components of domestic work by fathers' age and mothers' employment status, Laguna, Philippines, 1985**

Mothers' employment status/ Household member/ Activity	Age of fathers			F ratio
	<40	40-44	45 +	
A. Non-employed mothers				
Mother				
Shopping	1.8	2.9	3.6	1.1
Meal preparation	14.3	19.6	19.7	0.9
Clothes care	10.5	21.1	15.2	2.2
Child care	34.4	11.8	8.1	5.2**
Cleaning	3.9	7.5	8.7	1.4
Fetching water and collecting firewood	0.8	0.0	3.1	2.9*
Total	**65.8**	**62.9**	**56.9**	**0.5**
Number of cases	11	9	13	
Father				
Shopping	1.5	0.7	0.3	0.6
Meal preparation	3.3	1.1	2.3	0.4
Clothes care	0.1	0.3	0.0	1.1
Child care	1.8	0.9	1.1	0.3
Cleaning	1.0	0.6	0.5	0.3
Fetching water and collecting firewood	1.3	0.9	1.3	0.1
Total	**9.1**	**4.4**	**5.5**	**0.6**
Number of cases	11	9	13	
Children				
Shopping	0.3	0.1	0.7	0.4
Meal preparation	2.1	2.1	2.8	0.4
Clothes care	1.8	0.9	1.7	0.4
Child care	3.1	1.8	1.3	1.3
Cleaning	1.8	2.5	1.6	0.7
Fetching water and collecting firewood	1.0	1.8	1.6	0.7
Total	**10.1**	**9.2**	**9.6**	**0.1**
Number of cases	37	34	72	

continued...

Table 5.6 (cont'd.) **Mean number of hours (per week) that household members devoted to components of domestic work by age of fathers and mothers' employment status, Laguna, Philippines, 1985**

Mothers' employment status/ Household member/ Activity	Age of fathers			
	<40	40-44	45 +	F ratio
B. Employed mothers				
Mother				
Shopping	3.9	3.6	4.1	0.1
Meal preparation	18.6	15.2	14.6	1.5
Clothes care	11.3	7.9	10.3	0.8
Child care	7.3	3.7	8.4	1.1
Cleaning	8.3	6.8	4.7	3.6**
Fetching water and collecting firewood	1.7	1.3	0.6	3.2**
Total	**51.1**	**38.4**	**42.7**	**2.2**
Number of cases	31	15	63	
Father				
Shopping	1.2	0.2	0.7	0.9
Meal preparation	4.3	6.9	2.9	1.7
Clothes care	a	0.4	0.1	3.2
Child care	0.8	1.7	2.2	3.8**
Cleaning	0.6	1.5	0.3	0.2**
Fetching water and collecting firewood	1.8	2.1	1.6	1.1
Total	**8.7**	**12.8**	**7.7**	**1.1**
Number of cases	31	15	63	
Children				
Shopping	0.8	0.2	0.2	1.0
Meal preparation	2.8	2.7	3.0	0.1
Clothes care	0.4	1.1	2.1	6.5***
Child care	1.3	0.1	1.9	2.4*
Cleaning	1.3	1.5	1.7	0.9
Fetching water and collecting firewood	2.2	0.9	1.1	6.5***
Total	**8.8**	**6.4**	**10.1**	**2.3***
Number of cases	96	66	282	

Source: Laguna data set, 1985
Notes: a = less than 0.05
Total may not add due to rounding
The one-way analysis of variance was used to determine the significance of differences in the number of hours devoted to each activity by age of fathers.
***Statistically significant at $\alpha = 0.01$
**Statistically significant at $\alpha = 0.05$
*Statistically significant at $\alpha = 0.10$

had their own wells for water, instead of fetching water from distant communal wells. This is the more likely explanation, because a positive relationship between the age of children and the time devoted to fetching water and firewood was found when the time devoted to domestic activities and the age and sex of children was investigated in section 5.2.

A counter-argument to the ideology hypothesis is that a younger husband is more likely to have young children who need to be cared for, leading to an inverse relationship between father's age and domestic time. In the same vein, the older the husband, the greater the possibility that there will be older children who can help around the house. However, it seems more likely that younger children would place greater demands on fathers, as will be discussed later in this section when the time devoted to domestic work by the age of the youngest child is examined.

The results of the overall intrafamilial time allocation where mothers were found to shoulder the responsibilities of domestic work, even if employed, were echoed when the allocation of household members' domestic time was examined by fathers' age. These findings, as can be seen later in this section, were almost uniform when examined with the other variables, so that the comparison between household members is discussed only briefly.

Number of children. Fathers' time allocation when analysed in conjunction with the number of children was not consistent with the situational hypothesis. The average number of hours that fathers devoted to housework remained stable, regardless of the number of children or employment status of mothers (Table 5.7). For children, a contrasting pattern emerged. Children whose mothers were non-employed spent less time on domestic work as the number of children increased, whereas the amount of time spent on domestic work by children whose mothers were employed remained unaffected by the number of children.

Table 5.7 **Mean number of hours (per week) that household members devoted to components of domestic work by number of children and mothers' employment status, Laguna, Philippines, 1985**

Mothers' employment status/ Household member/ Activity	Number of children 1-3	4-6	7 +	F ratio
A. Non-employed mothers				
Mother				
Shopping	3.3	2.1	3.3	0.7
Meal preparation	16.7	16.2	21.3	0.7
Clothes care	18.1	11.4	18.2	1.4
Child care	9.5	27.0	12.7	2.0
Cleaning	10.1	4.9	4.3	3.9**
Fetching water and collecting firewood	2.2	0.4	2.4	1.2
Total	**59.8**	**62.1**	**62.1**	**0.0**
Number of cases	9	14	10	
Father				
Shopping	0.3	1.1	0.7	0.2
Meal preparation	1.2	2.6	2.9	0.3
Clothes care	0.3	0.1	0.0	0.8
Child care	0.3	2.2	0.8	1.4
Cleaning	0.9	0.8	0.4	0.3
Fetching water and collecting firewood	1.9	1.0	0.9	0.5
Total	**5.0**	**7.9**	**5.6**	**0.2**
Number of cases	9	14	10	
Children				
Shopping	0.4	0.3	0.5	0.1
Meal preparation	4.3	2.9	1.6	2.9
Clothes care	2.6	1.3	1.4	0.6
Child care	0.4	3.3	1.3	2.6*
Cleaning	3.3	2.3	1.2	3.0*
Fetching water and collecting firewood	2.2	1.9	1.0	1.9
Total	**13.2**	**12.1**	**7.0**	**3.4****
Number of cases	18	52	73	

continued...

Table 5.7 (cont'd.) **Mean number of hours (per week) that household members devoted to components of domestic work by number of children and employment status of mothers, Laguna, Philippines, 1985**

Mothers' employment status/ Household member/ Activity	Number of children 1-3	4-6	7 +	F ratio
B. Employed mothers				
Mother				
Shopping	3.6	4.6	2.9	1.1
Meal preparation	17.1	16.0	12.1	1.3
Clothes care	10.8	10.1	9.2	0.2
Child care	4.0	7.0	16.6	9.0***
Cleaning	7.1	5.2	5.7	1.1
Fetching water and collecting firewood	1.3	1.0	0.5	0.9
Total	**43.9**	**44.1**	**47.2**	**0.2**
Number of cases	41	51	17	
Father				
Shopping	0.4	1.1	0.7	0.7
Meal preparation	4.4	3.5	3.7	0.1
Clothes care	0.1	0.1	0.0	0.3
Child care	0.5	2.2	3.0	1.8
Cleaning	0.7	0.6	0.1	0.9
Fetching water and collecting firewood	1.9	1.5	2.1	0.4
Total	**8.0**	**8.9**	**9.7**	**0.1**
Number of cases	41	51	17	
Children				
Shopping	0.1	0.2	0.2	0.4
Meal preparation	2.3	3.2	2.8	1.0
Clothes care	1.1	1.4	2.1	1.5
Child care	1.8	1.6	1.1	0.3
Cleaning	1.5	1.7	1.4	0.4
Fetching water and collecting firewood	1.8	1.3	1.0	2.5*
Total	**8.7**	**9.5**	**8.6**	**0.3**
Number of cases	90	230	124	

Source: Laguna data set, 1985
Notes: a = less than 0.05
Total may not add due to rounding
The one-way analysis of variance was used to determine the significance of differences in the number of hours devoted to each activity by number of children.
***Statistically significant at $\alpha = 0.01$
*Statistically significant at $\alpha = 0.10$

There are two possible explanations for these contrasting patterns of children's time allocation. First, it appears that sharing of the housekeeper role increased as the number of children increased only if mothers were present in the household to supervise them. Second, the additional income earned by mothers could have enabled families to buy more services rather than produce them at home, particularly cooked meals. Washing and ironing clothes may also have been done by laundrywomen, who were not live-in helpers but were paid for washing and ironing clothes.

Age of the youngest child. Table 5.8 does not support the demand hypothesis. The figures suggest an inverse association between the age of the youngest child and the number of hours allocated by fathers to domestic activities, irrespective of the mothers' employment status, although the differences were not statistically significant. None of fathers' activities in families with non-employed mothers were significantly influenced by the presence of infants.

The effect of an infant in the household can be seen only in households with employed mothers. Not only did child care time dominate the father's domestic work when an infant was present, but this was also the activity that was significantly reduced when the youngest child was older. When infants were present in the household, fathers spent more than six hours per week taking care of children, but where the youngest child in the family was of school-age, fathers' child care time was almost nil. This is probably because, as noted, younger fathers were more likely to have young children who needed care.

The negative effect of the presence of older children on fathers' housework is suggested in Table 5.8, although the differences were not statistically significant. When the youngest child was 7 years or older, the contribution of fathers to domestic work was less than the contribution of children, suggesting that older children

Table 5.8 **Mean number of hours (per week) that household members devoted to components of domestic work by age of the youngest child and mothers' employment status, Laguna, Philippines, 1985**

Mothers' employment status/ Household member/ Activity	Age of the youngest child 0-2	3-6	7 +	F ratio
A. Non-employed mothers				
Mother				
Shopping	2.4	2.6	3.3	0.3
Meal preparation	15.0	26.5	16.0	3.1*
Clothes care	14.1	13.5	17.2	0.3
Child care	36.9	9.0	6.0	9.6***
Cleaning	4.1	7.8	7.0	1.3
Fetching water and collecting firewood	0.1	4.3	1.4	4.2**
Total	**72.6**	**63.7**	**50.8**	**4.1****
Number of cases	12	7	14	
Father				
Shopping	1.3	1.1	0.2	0.5
Meal preparation	2.5	3.5	1.6	0.3
Clothes care	0.1	0.0	0.1	0.3
Child care	2.1	0.4	1.0	0.7
Cleaning	0.4	0.5	1.1	0.6
Fetching water and collecting firewood	0.7	1.4	1.6	0.4
Total	**7.0**	**6.9**	**5.7**	**0.1**
Number of cases	12	7	14	
Children				
Shopping	0.2	1.0	0.2	0.9
Meal preparation	1.5	1.5	3.8	4.1**
Clothes care	1.6	1.4	1.6	0.0
Child care	3.6	0.4	1.6	3.6**
Cleaning	1.7	1.2	2.4	1.3
Fetching water and collecting firewood	1.2	1.2	2.0	1.0
Total	**9.8**	**6.8**	**11.5**	**1.6**
Number of cases	46	40	57	

continued...

Table 5.8 (cont'd.) **Mean number of hours (per week) that household members devoted to components of domestic work by age of the youngest child and mothers' employment status, Laguna, Philippines, 1985**

Mothers' employment status/ Household member/ Activity	Age of the youngest child 0-2	3-6	7 +	F ratio
B. Employed mothers				
Mother				
Shopping	3.8	3.6	4.2	0.2
Meal preparation	17.5	14.9	15.7	0.3
Clothes care	9.9	9.9	10.5	0.1
Child care	24.1	6.9	2.9	46.6***
Cleaning	7.2	6.2	5.6	0.5
Fetching water and collecting firewood	1.2	1.4	0.8	0.8
Total	**63.7**	**42.9**	**39.8**	**9.6*** **
Number of cases	18	27	64	
Father				
Shopping	0.1	0.9	0.9	0.7
Meal preparation	3.7	4.3	3.7	0.1
Clothes care	0.0	0.1	0.1	0.3
Child care	6.6	1.0	0.6	10.9***
Cleaning	0.4	0.4	0.7	0.5
Fetching water and collecting firewood	2.5	1.6	1.4	0.6
Total	**13.3**	**8.3**	**7.6**	**1.7**
Number of cases	18	27	64	
Children				
Shopping	0.1	0.2	0.2	0.2
Meal preparation	3.4	2.6	2.9	0.5
Clothes care	1.5	1.7	1.5	0.2
Child care	1.9	1.5	1.4	0.2
Cleaning	1.0	1.4	1.9	2.4*
Fetching water and collecting firewood	1.9	1.4	1.1	2.5*
Total	**9.9**	**8.8**	**9.0**	**0.2**
Number of cases	80	126	238	

Source: Laguna data set, 1985

Notes: a = less than 0.05

Total may not add due to rounding

The one-way analysis of variance was used to determine the significance of differences in the number of hours devoted to each activity by number of children.

***Statistically significant at $\alpha = 0.01$

**Statistically significant at $\alpha = 0.5$

*Statistically significant at $\alpha = 0.10$

performed some of the housework that their fathers might otherwise have done. The difference was less marked among households where mothers were employed, than where they were non-employed.

Number of hours mothers worked in the market. Mothers' time spent on domestic activities was grouped into 15 hours or less, between 15 hours and 40 hours, and more than 40 hours. Part-time employment did not affect the amount of mothers' time used for household maintenance (Table 5.9). Only when the number of hours exceeded 40 was domestic time reduced by more than half, from 51 hours per week to 24 hours. The resource hypothesis predicts that there should be a positive relationship between mothers' market time and fathers' domestic time. Table 5.9 suggests that fathers did increase their domestic time as the number of hours devoted by mothers to market work increased, although this was not statistically significant. Only the shopping time of fathers was significantly affected when mothers worked for more than 40 hours a week.

When a mother worked for more than 40 hours a week, the combined domestic time of children and father (20 hours a week) nearly approached the amount of the mother's time used for housework. This was, however, due not to the father's and children's increased efforts but to the significant reduction in the mother's domestic time. All components of mother's domestic work declined, but the reduction on child care time was more marked than for other categories, suggesting reciprocal causation where mothers were more likely to spend more time on economic activities when they did not have to devote time to child care.

Children exhibited a pattern similar to fathers. When mothers worked for 15 hours or less, children contributed less time to household tasks than fathers, but as the number of market hours increased, the number of hours devoted to domestic work by children also increased. It appears that children rather than fathers responded to the demand for domestic activities when mothers worked for longer

hours. This finding is consistent with a study in America (Walker, 1970 cited in Hedges and Barnett, 1972: 11). When an American mother took a job, a portion of her chores was shifted to her children rather than to her husband. In that study, husbands averaged 1.6 hours a day on household jobs, whether or not their wives worked. Teenagers whose mothers worked less than 15 hours a week contributed 20 per cent to the time spent by the family on household duties, and 30 per cent when the mothers were employed 15 hours or more a week. (Walker, K., 1970 cited in Hedges and Barnett, 1972: 11).

In Laguna, all of mothers' domestic activities declined as the number of hours devoted to market work increased to over 40 hours a week but child care was the activity that suffered the greatest reduction in the mothers' time input. Neither the father nor the children increased their child care time when mothers were engaged in market activities for more than 40 hours a week. The explanation could be that mothers who engaged in market activities for more than 40 hours a week had fewer children than those mothers who worked part-time, so that child care time was less for mothers as well as other household members. However, the main reason for the decline was that households where mothers worked the longest hours had no children between the ages 0 and 2 (Table 5.10). The presence of infants not only meant an increase in the time spent looking after children, but also an increase in other associated housework such as cooking, washing and ironing clothes.

This finding also amplifies the fact that mothers were not only hampered by young children from entering the labour market but that young children also probably caused some mothers to reduce the number of hours spent working in the market. It also suggests that the traditional division of labour persisted in the area. Mothers stayed at home and looked after children. Only when the demand at home was reduced could they participate in other productive activities. Home obligations inhibited mothers from seeking employment, and working hours in the market

Table 5.9 **Mean number of hours (per week) that household members devoted to components of domestic work by the number of hours mothers worked in the market, Laguna, Philippines, 1985**

Household member/ Activity	Number of hours mothers worked in the market			F ratio
	1.00 - 15.00	15.01 - 40.00	40.01 +	
A. Mother				
Shopping	4.1	4.7	2.8	1.5
Meal preparation	17.6	18.8	8.7	9.0***
Clothes care	12.6	10.4	6.5	4.2**
Child care	9.3	9.2	1.7	5.0***
Cleaning	6.2	7.1	4.2	1.7
Fetching water and collecting firewood	1.3	1.1	0.6	1.0
Total	**51.1**	**51.1**	**24.5**	19.6***
Number of cases	42	40	27	
B. Father				
Shopping	0.8	0.1	1.7	3.4**
Meal preparation	2.9	4.0	5.1	0.7
Clothes care	0.1	a	0.2	1.6
Child care	1.6	2.3	1.1	0.4
Cleaning	0.6	0.6	0.5	0.0
Fetching water and collecting firewood	1.8	1.9	1.5	0.2
Total	**7.8**	**8.7**	**10.0**	**0.3**
Number of cases	42	40	27	
C. Children				
Shopping	a	0.2	0.3	3.8**
Meal preparation	2.0	3.2	4.0	4.7***
Clothes care	1.0	1.9	1.9	2.7*
Child care	1.1	2.5	0.7	3.2**
Cleaning	1.1	1.7	2.3	4.6***
Fetching water and collecting firewood	1.5	1.4	1.0	1.2
Total	**6.7**	**10.9**	**10.1**	**4.4****
Number of cases	172	167	105	

Source: Laguna data set, 1985

Notes: a = less than 0.05

Total may not add due to rounding

The one-way analysis of variance was used to determine the significance of differences in the number of hours devoted to each activity by number of hours mothers worked in the market

***Statistically significant at $\alpha = 0.01$

**Statistically significant at $\alpha = 0.05$

*Statistically significant at $\alpha = 0.10$

must be minimised to allow time and energy for household and child care. Another activity that was significantly reduced when employed mothers no longer had infants was cooking, which was reduced by more than 50 per cent. Children and fathers, to a certain extent, compensated for the smaller amount of cooking time spent by the mother.

Table 5.10 **Number of hours (per week) that mothers worked in the market by number of children and age of youngest child, Laguna, Philippines, 1985 (percentage)**

Characteristic	Number of hours worked		
	1.00 - 15.00	15.01 40.00	40.01+
Number of children			
1-3	36	33	48
4-6	52	48	37
7 or more	12	20	15
Total	100	100	100
Number of cases	42	40	27
χ^2= 2.82 not statistically significant at 0.10 level, df = 4			
Age of the youngest child			
0 - 2	19	25	0
3 - 6	24	25	26
7 +	57	50	74
Total	100	100	100
Number of cases	42	40	27
χ^2= 8.02, statistically significant at 0.10 level, df = 4			

Source: Laguna data set, 1985

The above findings suggest that the resource hypothesis applies to mothers' time allocation rather than that of fathers or children. Household labour continued to be a woman's responsibility, even when she works for long hours in the market. The decrease in the mothers' hours of housework was not accompanied by a concomitant increase in fathers' and children's hours of housework. The household labour of fathers and mothers, as suggested by Berardo et al. (1987: 387), does not seem to have been interchangeable, even though research has shown that fathers and mothers

are equally efficient in performing household tasks (Berk, 1985; Walker and Woods, 1976). This shows that, while time availability based on mothers' number of hours in the market may influence the division of home labour, it does not result in an equitable distribution of home labour. The result of this household work imbalance is a role overload on mothers. The whole family benefits from the mother's employment, but the mother bears most of the cost of the increased workload (Stein, 1984: 148).

Number of hours fathers worked in the market. This section investigates the hypothesis that the greater the husband's work time, the less he will participate in domestic activities. Fathers' hours spent on market activities were grouped into three categories: 40 hours or less, between 40 and 60 hours, and more than 60 hours a week. With increasing number of hours devoted to market activities, fathers' contribution to household work exhibited an inverted U-shaped pattern (Table 5.11). The time devoted to domestic activities peaked (at 11 hours a week) when fathers were employed for between 40 and 60 hours, and was reduced to half when they worked for more than 60 hours a week. The number of hours devoted to almost every aspect of domestic activity rose when fathers worked between 40 and 60 hours per week; time spent caring for children took the greatest share in the increase. However, when fathers worked for more than 60 hours a week the time spent on child care suffered most, falling to almost nil.

It is only when fathers worked for more than 60 hours a week that the findings were similar to those of earlier studies in America (Coverman, 1985; Walker and Gauger, 1973 cited in Clark et al., 1978: 10), which reported a negative relationship between fathers' contribution to domestic activities and the number of hours spent working in the market. Walker and Gauger (1973: 13) observed that fathers who were employed less than 40 hours a week did 2.1 hours of

Table 5.11 **Mean number of hours (per week) that household members devoted to components of domestic work by the number of hours fathers worked in the market, Laguna, Philippines, 1985**

Household member/ Activity	Number of hours fathers' worked in the market			
	1.00-40.00	40.01-60.00	60.01 +	F ratio
A. Mother				
Shopping	3.1	4.4	3.9	0.8
Meal preparation	16.6	17.9	15.4	0.6
Clothes care	10.2	11.2	12.0	0.3
Child care	4.7	13.1	9.6	2.6
Cleaning	5.3	5.7	6.6	0.6
Fetching water and collecting firewood	1.1	1.3	1.0	0.2
Total	**41.0**	**53.7**	**48.7**	**2.6***
Number of cases	31	39	64	
B. Father				
Shopping	0.3	1.1	0.9	0.8
Meal preparation	5.1	4.3	2.1	2.4
Clothes care	0.1	0.1	0.1	0.1
Child care	1.8	2.9	0.5	3.7**
Cleaning	0.8	0.9	0.4	1.7
Fetching water and collecting firewood	1.4	2.0	1.7	0.4
Total	**9.5**	**11.3**	**5.6**	**3.4****
Number of cases	31	39	64	
C. Children				
Shopping	0.2	0.2	0.3	0.3
Meal preparation	2.1	3.0	3.0	1.3
Clothes care	1.3	1.6	1.6	0.3
Child care	0.6	2.6	1.4	3.6**
Cleaning	1.5	1.4	1.9	1.3
Fetching water and collecting firewood	1.2	1.8	1.2	2.2
Total	**7.0**	**10.6**	**9.5**	**2.6***
Number of cases	126	156	273	

Source: Laguna data set, 1985

Notes: a = less than 0.05

Total may not add due to rounding

The one-way analysis of variance was used to determine the significance of differences in the number of hours devoted to each activity by number of hours fathers worked in the market.

**Statistically significant at $\alpha = 0.05$

*Statistically significant at $\alpha = 0.10$

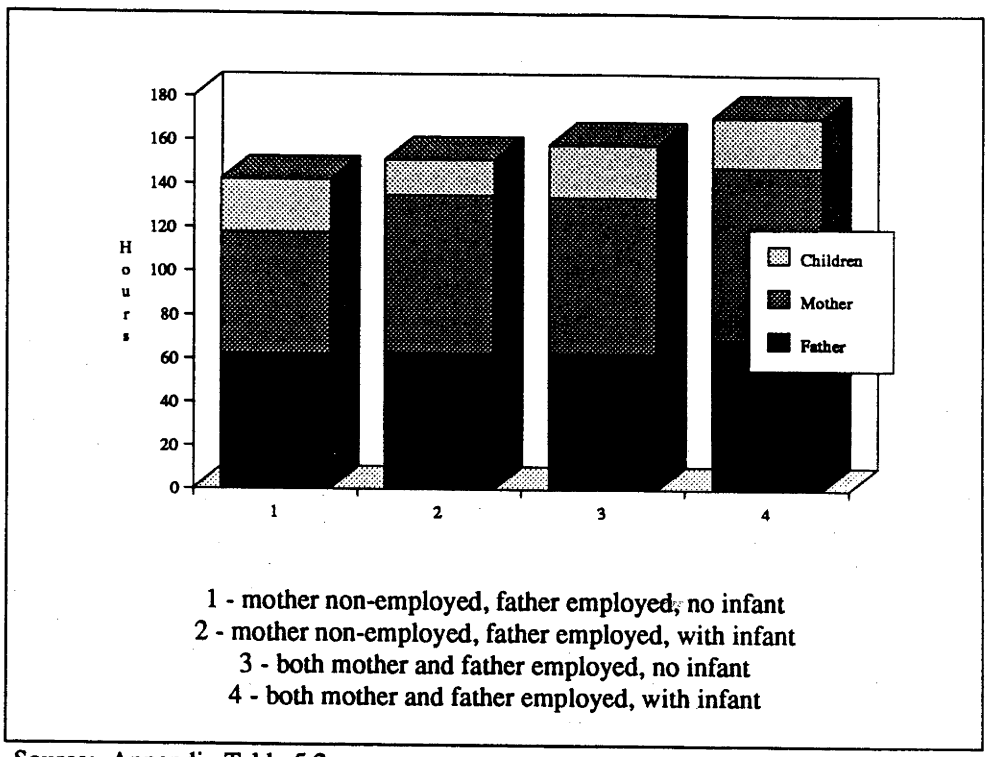
housework daily; those working 40-49 hours per week did 1.7 hours; and those working 50 hours or more weekly contributed an average of only 1.3 hours daily to household tasks.

5.4 The share of total workload

The contributions of household members to the components of domestic work have been described within a separate framework for each category of household member. Another question to be addressed is the relative share of mothers' and fathers' labour allocation in the overall workload. The overall workload of the household is computed by summing the father's, mother's and children's total weekly workload, estimated from the hours they devoted to work in the market and in the house. In section 5.3, it was found that time allocated to household activities was highest when there was an infant, and a father helped more when there was a baby and when the mother was employed. Based on this finding, an index was devised to measure the demand of the household for time. The demand was measured across four stages, with the demand expected to increase at each step: 1) mother non-employed, father employed, no infant in the household; 2) mother non-employed, father employed, infant in the household; 3) both mother and father employed, no infant in the household; and 4) both mother and father employed, infant in the household.

The data show that the workload of the household rose consistently over the four stages (Figure 5.8). From a weekly total of 142 hours when there was no infant and the mother was non-employed, the total workload rose to 171 hours when both parents were employed and there was an infant. Fathers' and mothers' total workloads increased relative to increasing demand. However, the increase in mothers' workload was much higher than in fathers'. For example, mothers' workload increased by 23 hours per week with increasing demand compared to fathers' 7 hours per week.

Figure 5.8 **Total load of family members according to demand, Laguna, Philippines, 1985**



Source: Appendix Table 5.2

When a married woman participates in the labour force, she must carry the additional burden of work in addition to her domestic responsibilities. As shown, fathers increased their workloads slightly with increasing demand so that mothers had to find their own ways of balancing their competing roles. In Meissner et al.'s (1975: 435-437) study, working wives either engaged more in part-time and less in overtime work or reduced their domestic work on workdays and made it up during weekends. Another solution adopted by wives in the study with paying jobs was to compress the necessities of the regular housework for the entire week. This tends to parallel the experience of Laguna mothers, although Laguna mothers tended to reduce their market time rather than housework time. A mother who was non-employed had nearly the same workload as the father and a heavier load when there was an infant, even if she did not work. Furthermore, in a household with an infant

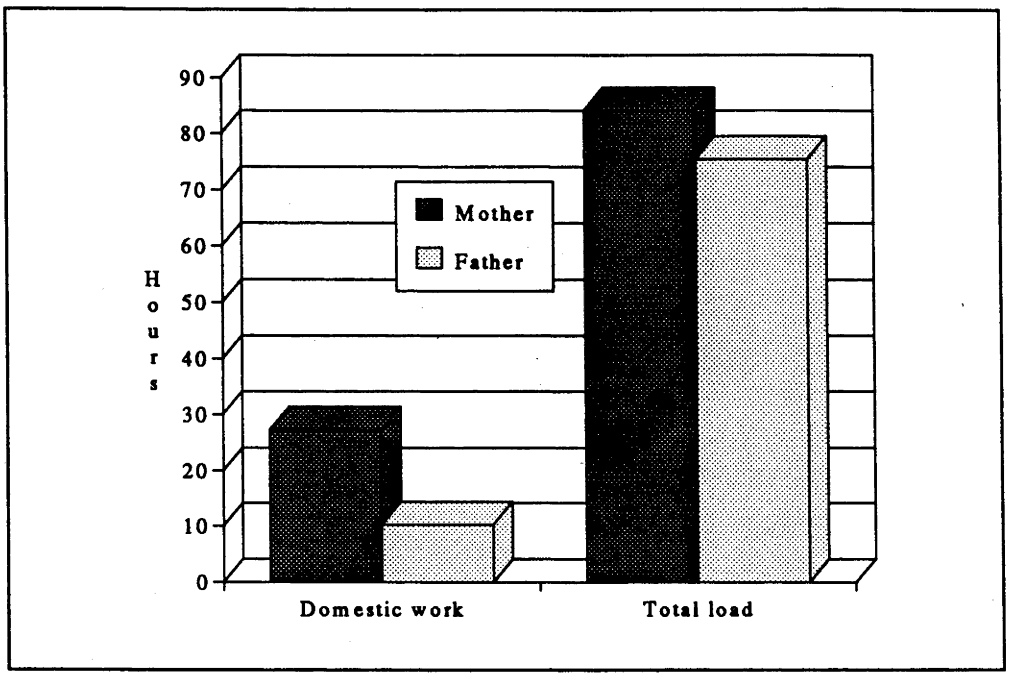
where the mother was employed, the wife worked an average of ten hours more than her husband on the combination of market and domestic work.

This finding is consistent with earlier reports (Kingston and Nock, 1985: 623-626: Berk, 1985: 152), which observed that a wife had to bear the responsibility of reconciling a couple's work schedule and family life. Mothers seemed to have been more responsive to fathers' work schedules than vice versa. Mothers continued to assume the primary responsibility of household duties and tended to see greater difficulty associated with the couple's work schedule.

The previous comparison was based on employment status of mothers and fathers, regardless of the number of hours devoted to market activities. Therefore, it can be argued that fathers' lack of response to increased demands could be due to the fact that more fathers than mothers were working full-time, that is, working in the market for more than 40 hours per week. Only 25 per cent of mothers worked more than 40 hours per week compared to 73 per cent of fathers (section 3). However, when the analysis was restricted to couples who were working full-time in the market, mothers still spent more time on domestic work than fathers, as shown in Figure 5.9. The domestic work of mothers was 17 hours per week more on average than of fathers and as a result the total work load of mothers was higher than that of fathers.

Up to this point the analyses have been purely cross-sectional; that is, the time-allocation data have referred to one point in time. With more mothers participating in the market, it is useful to examine how men responded to these changes over time, the topic for the next section.

Figure 5.9 **Mean number of hours (per week) that fully employed father and mother devoted to domestic work, Laguna, Philippines, 1985**



Source: Laguna data set, 1985

5.5 The changing contribution to domestic activities

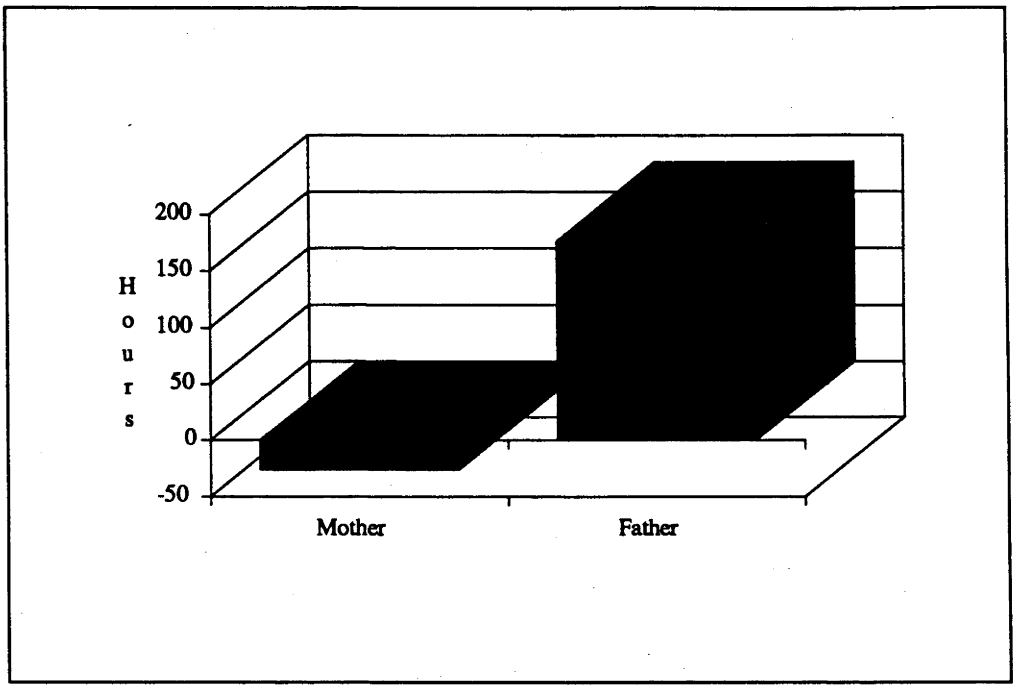
Changes in intrafamilial time allocation over time can provide information on whether the gender division of labour in the home persisted or whether there were signs that other members, fathers in particular, were beginning to increase their family work. The time allocation of children is excluded in this comparison because of data limitations: although time-use data were collected from household members in each of the several rounds of the Laguna survey, there were differences in survey coverage. In 1975 only the three most important children contributing to household maintenance were included, while in 1985 all children five years old or over were interviewed. Furthermore, in 1975 mothers answered for their children's time allocation for domestic work. By contrast, all children (except those who were not yet of school age) answered for their time allocation in the 1985 survey. Evenson,

King and Popkin (1980: 301) compared children's time allocation data collected in 1975, when the data were collected by recall, and in 1975-76, when the data were collected by direct observation. They found under-reporting in the number of hours children devoted to household and market activities in the recall survey. The domestic activities, as well as market work, of children were often viewed by parents as leisure rather than productive time.

The changes between 1982 and 1985 are not included because of the short time interval. Data for mothers are included for comparative purposes. Only the 101 respondents (the sample used in Chapter 4) present in each of the 1975 to 1985 surveys are included. The changes in domestic time are compared for the same sets of parents between 1975 and 1985.

The total amount of time allocated by fathers to domestic activities rose by 176 per cent between 1975 and 1985. The total domestic time of fathers rose from 2.8 hours a week in 1975 to 7.8 hours in 1985 (Figure 5.10). The time devoted to meal preparation and child care contributed most to the increase in fathers' domestic activities between 1975 and 1985 (Figure 5.11). The increase in child care time was not expected because most children were older in 1985 than in 1975. Perhaps it reflects the fathers increasing involvement in their children's social and mental development, in addition to the traditional concern for health, discipline and cleanliness. In contrast to fathers' time use, the total domestic time allocated by mothers dropped by 26 per cent. The number of hours devoted to child care and meal preparation declined during the period.

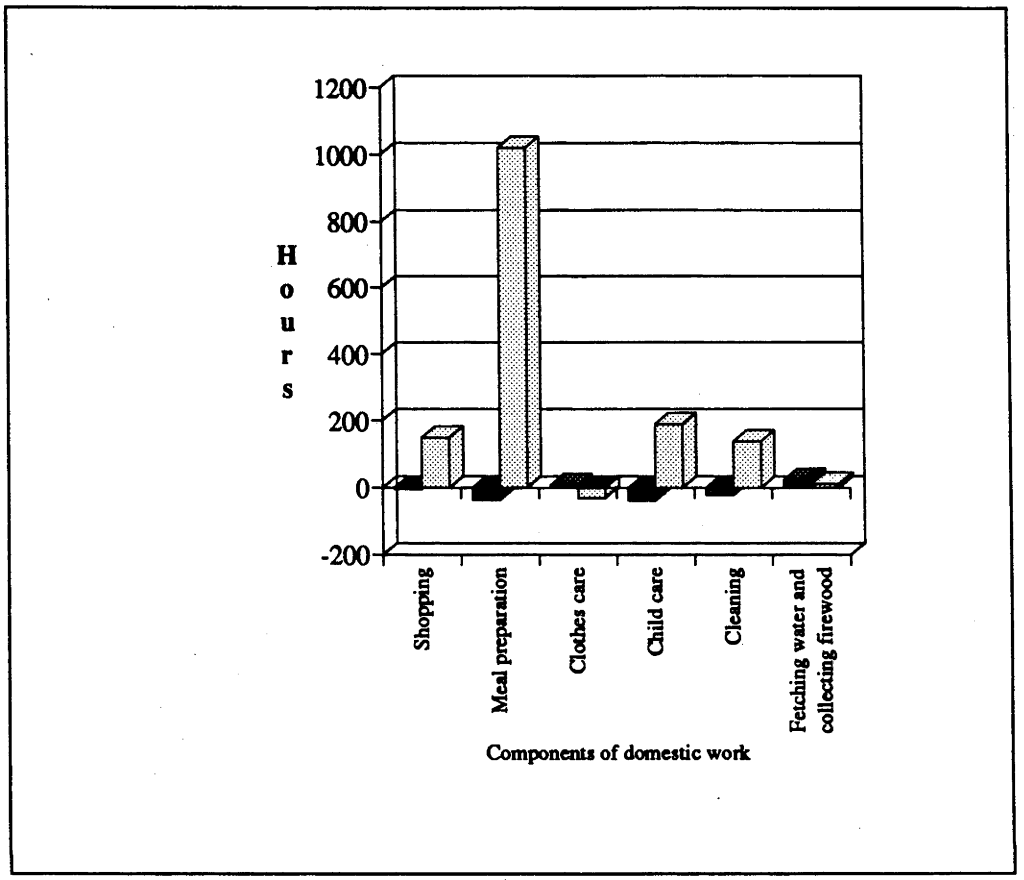
Figure 5.10 **Changes in the total domestic time of father and mother, Laguna, Philippines, 1975-1985 (percentage)**



Source: Appendix Table 5.3

The increase in the number of hours devoted to domestic work by fathers is probably an indication that the traditional sex division is slowly being eroded. However, the burden of maintaining the home still lies with mothers. Alternatively, it could simply mean that the gender division of tasks changed slightly over the life-cycle. This finding contrasts with the no change at all that was observed in American men's domestic time allocation between 1965 and 1975 (Coverman and Sheley, 1986: 420). That study found that men did not respond to mothers' disadvantaged position during the decade in question. Between these years, men decreased their paid work time but devoted the gained time to leisure rather than domestic work. Coverman and Sheley (1986: 420) concluded that the convergence of men's and mothers' domestic roles would depend upon men's willingness or ability to decrease either their labour force or leisure activities or both.

Figure 5.11 **Changes in the number of hours (per week) that father and mother devoted to components of domestic work, Laguna, Philippines, 1975 - 1985 (percentage)**



Source: Appendix Table 5.3

In another American study, Juster (1985a: 315-318) compared 1975-76 and 1981-1982 time-allocation data and found that for men, work in the home increased a little more than an hour during that period, while work in the home declined for mothers. Within the housework category, there was further evidence that activities had changed between 1975-76 and 1981-82 so as to weaken role stereotypes. Dividing housework into male (cleaning cars) and female (washing and ironing clothes) and undifferentiated (gardening) activities, the study found that the weekly hours spent by males on female type activities increased slightly, while total female weekly hours decreased substantially.

Finally, it should be noted that the improvements in data collection might have contributed to the increase in the number of hours that fathers devoted to domestic activities in the Laguna study. The same households were visited four times during the decade up to 1985 by the same enumerators, who thus increasingly gained the confidence of the respondents. Similarly, the enumerators might have also improved their techniques in soliciting information from respondents. However, in the case of mothers, the decline might be real because after ten years, the children were older and their demands for their mothers' time probably declined.

5.6 Summary

The major concern of this chapter has been the underlying persistence of a traditional orientation toward sex roles, which was manifest in differences in the amount of time fathers, mothers and children spent in household labour. Generally, fathers' contributions to the maintenance of the household were in the expected direction when mothers worked in the market, but the primary responsibility of maintaining the household remained with mothers. There were also indications that children, rather than fathers, relieved their mothers of some of the burden of housework. The absolute number of hours per week devoted to housework by children was higher than that of fathers, suggesting that fathers helped around the house only while children were too young to provide assistance. Examination of children's time allocation by sex and age established just how early the sex stereo-typing of work and gender-based roles occurred.

Three competing hypotheses concerning the division of labour between husband and wife were used to examine the differentials in intrafamilial time allocation: (1) the ideology hypothesis which states that the younger the husband is, the more domestic labour he does; (2) the demand hypothesis which proposes that events such as the birth of a child may lead to greater participation of fathers in housework; and (3) the resource hypothesis which maintains that the division of

labour at home is related to the amount of time that spouses are able to do housework. None of these hypotheses were supported by the Laguna data, irrespective of mothers' employment status. None of the effects of fathers' age, number of children, age of youngest child and the number of hours devoted to market activities of both parents attained statistical significance when the total number of hours devoted to domestic activities was examined. The component activities, however, revealed that fathers devoted significant number of hours to child care when infants (0-2 years) were present in the household only if mothers were employed. But as soon as the youngest child was more than two years old, the domestic time of fathers declined considerably.

The findings that fathers contributed a significant number of hours to child care if young children were present in the household and if mothers were employed imply that maternal employment status served primarily to create the conditions under which other variables emerged as significant predictors. Mothers' income earning activities may have mitigated and established the association between age of the youngest child and the number of hours fathers devoted to domestic activities.

The total workload of a mother who was not working in the market was almost equivalent to a father's total workload if there was no infant in the household. However, if there was an infant and the mother was working, a mother's total workload was almost ten hours more than the father. As mothers engaged in market work they had to find their own solution to the problem of reducing the excessive workload by compressing their housework or participating less in income-earning activities. There are also indications that some mothers had to wait until children were grown up before working in the market.

Sex stereo-typing of roles seems to be slowly changing. As revealed by the Laguna data, fathers' domestic time in 1985 was nearly three times as much as the time devoted to domestic work in 1975, while mothers' and children's domestic time

was reduced during that period. Among the component activities, meal preparation and child care increased substantially for men. Nevertheless, mothers were still carrying a heavier burden than men. When the share of household members in increasing the demand of the household was analysed, it was shown that fathers' responses to increasing demand were very slight and mothers had to bear the increasing demand such that when they were employed and had an infant, they spent ten hours a week more on average than their husbands on productive work (home and market production combined).

An explanation for the fathers' lack of response to the mothers' involvement in market activities may be due to lack of external support. It is possible that fathers may have wished to increase the number of hours devoted to domestic work, but sometimes experienced negative reactions from relatives and others who felt that sharing housework and child care was 'cute' and even 'unmanly' (Martorella and Stein, 1983 cited in Stein, 1984: 151).

It would have been helpful if the number of hours devoted to different activities had been supplemented by the attitudes of the respondents. The persistence of a gender division of labour might be associated with the fact that mothers were hesitant to delegate housework to fathers for fear that work would not be done properly or that they would be giving up a role they value. It might be that mothers preferred the existing domestic division of labour so that they would feel that they were 'the mother of the family' (Yogev, 1981: 868), even if they worked the same number or more hours in market work than fathers. The next chapter will examine the number of hours allocated to market work of mothers in comparison with other household members.

Chapter 6
The Economic Contribution of Women

In the previous chapter, the discussion centred on the contributions of household members to the domestic maintenance of the households. The mean number of hours devoted to shopping, meal preparation, child care, washing and ironing clothes, and other aspects of domestic work of mothers was examined in comparison with fathers' and children's domestic time. This chapter also compares family members' time, but focuses on the number of hours devoted to various types of market work with an emphasis on the contribution of mothers to the market activities of the household. Still, the problem of accounting for the economic activities of mothers in official statistics remains unanswered. Therefore, the various methods of measuring women's participation in market activities is also presented in this chapter.

This chapter is divided into three parts. The first section investigates the average number of hours spent on market work by household members. It also includes a detailed examination of the number of hours devoted to market activities by children. The different measures of women's economic activity are dealt with in

section 2. The comparison between reported occupations and employment status based on time-allocation data is also addressed in this section while the chapter concludes with a summary in section 6.3.

6.1 Market work of household members

The average number of hours devoted to market work by mothers, the factors affecting it and the changes that occurred between 1975 and 1985 were examined in Chapters 3 and 4. Those chapters did not examine other household members' utilization of their market time and the effect of mothers' market time on that of other family members. Therefore, this section investigates the mean number of hours devoted to market work by mothers in comparison with fathers and children.

As with the problem of identifying who is employed and non-employed, it is difficult to value the goods and services that do not pass through market transactions. Not only is a major portion of rice produced in the village consumed directly by producer households, but it is also extensively used as an exchange medium, including land rent and payments for hired labour. In rice production, particularly in the provinces of Laguna and Central Luzon in the Philippines, weeding in the rice paddies is often not paid at all. Under a contractual arrangement, known as the *gama* system, people who want to participate in harvesting agree to weed a field in exchange for the right to be employed as harvesters and receive a share of the produce. Therefore, the time spent on weeding has to be added to the time spent on harvesting and threshing before the income of each participating member is computed. Women and children are most affected because they do most of the weeding and harvesting.

A similar explanation also exists for the unpaid family helpers in family owned-farms and businesses. There are no agreed standards by which to value these activities. The use of wage rates as proxies for measuring women's economic

contribution is unwarranted, given the sex discrimination that is built into most labour markets (Dixon-Mueller, 1985: 86). The time spent on various market activities would at least give an idea as to how much women contributed to the economic welfare of the household. Nag et al. (1980: 269) have argued that there are many activities which are essential to the survival of the households but produce no tangible 'income' and have no acknowledged 'wage rate.' These characteristics make it reasonable to treat any unit of working time as being of equal value to any other unit, no matter which household member performs it and no matter what the immediate visible return from it is. In this manner, an hour of time spent by a child in washing clothes is 'valued' equally with an hour of time spent by the father in market work or an hour spent by the mother tending a store. The reason for this is that activities have to be done regardless of who among the household members will perform them. For example, if no other household member will look after the children or wash clothes, a mother has either to forego her market activities or lessen the number of hours devoted to leisure and other personal activities to be able to do such activities. If children are present in the household, then they can look after the younger siblings or wash clothes so that mothers or other household members can participate in market activities.

This does not mean that valuation of housework and unpaid economic activities is not important, but the number of hours reflects a more realistic measure of the contribution of women to the economic needs of the family and provides a basis for a better recognition of their true role in society.

6.1.1 Overall pattern of market work

The mean number of hours devoted by mothers to various components of market work is compared with those of other household members is used in this chapter. As mentioned earlier (Chapter 5, section 2), the use of proportion of time rather than the

absolute number of hours does not truly reflect the differences in the number of hours devoted to market activities among household members.

The analyses in this section are focused on the comparison of household members' time, that is, between fathers and mothers, between fathers and children, and between mothers and children. In determining whether there are significant differences in the mean number of hours devoted to market activities by household members, the one-way analysis of variance is used. In Chapter 3, it was mentioned that one-way analysis of variance gives an overall indication of whether there are differences in the mean number of hours devoted to different activities through the F-ratio. In order to distinguish which group is significantly different from the other, Scheffe's test is used. Similarly with Chapter 5, the data from 142 intact households of the 1985 survey are used in this section.

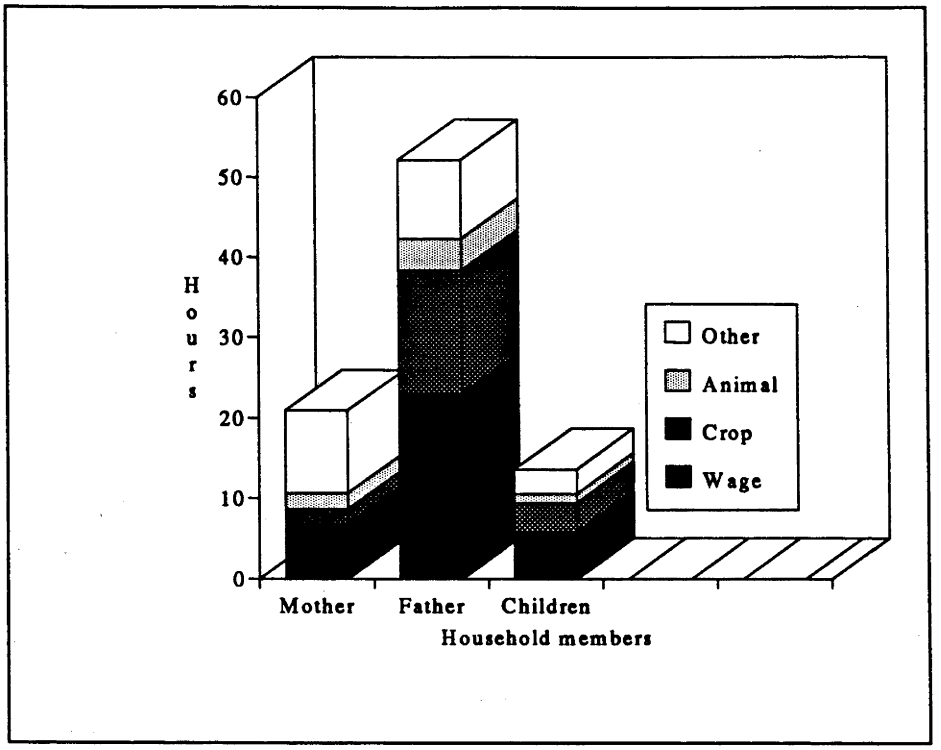
As defined in Chapter 3, market work included the number of hours devoted to work for wages, crop production, animal husbandry and 'other market work', whether the products were sold or consumed. There were two reasons why crop production and animal husbandry were considered economic activities, regardless of how the products were disposed. First, there were differences in the reference period between the disposal of the products of these activities and when time-allocation data were taken. Available information concerning the use of the households' produce in the Laguna data referred to rice production six months before the survey and one year before the survey for other crops, such as coconuts and vegetables, and livestock raised. Second, the products of these activities had to be bought in the market if they were not produced in the household.

Figure 6.1 presents an overview of market time for fathers, mothers and children. Patterns of time devoted to market work reflect the traditional division of labour between man the provider and woman the homemaker. Fathers spent two and a half times (52 hours per week) more time than mothers (21 hours per week) and

nearly four times more time than children (14 hours per week) on market work. On average, the time spent on market work by a father was beyond the number of hours required of him to be considered as a full-time worker. The Philippines' Department of Labour considers a person to be fully employed if he or she is engaged in income-earning activities for 40 hours a week or eight hours a day for a five-day work week (Foz, 1989: 14). On average, a husband spent more than seven hours on market time seven days a week (Figure 6.1). This comparison might not be tenable because the Philippines' Department of Labour definition of a full-time worker applied only to employees in establishments and undertakings whether for profit or not, whereas most of the respondents in this study were either agricultural workers, who were paid mostly on piece-rate and contract bases (and not on the number of hours worked) or farmers who worked on their farms from sunrise to sundown. Nevertheless, the comparison was made to show the long hours spent by these workers, and is a reflection of the very low returns to their income-earning activities.

Work for wages dominated fathers' market activities, with an average of about 23 hours per week or more than three hours per day. Crop production followed with more than 15 hours per week. Mothers spent the largest part of their market time on 'other market work', but this was not exclusively a female activity. There were no significant differences on time spent on 'other market work' between fathers and mothers.

Figure 6.1 **Mean number of hours (per week) that household members devoted to market work, Laguna, Philippines, 1985.**



Source: Appendix Table 6.1

Although fathers were primarily responsible for crop production, it can be seen that mothers also participated in these activities. Mothers participated in certain essential operations, such as hiring farm workers, preparing food during *bayanihan* (exchange labour), and buying fertilizer and chemical pesticides. These activities usually required only a relatively short period of time, which meant that the crop production time of mothers was significantly less. In coconut production, the amount of participation by mothers was even less. Women could help in gathering nuts during the harvesting period but all other activities, such as husking and transporting the harvested coconuts and clearing the land planted in coconuts, were done exclusively by men.

Children, like their fathers, spent most of their time working for wages. On average, children spent nearly six hours per week on this activity. Children's total time spent on market work together with all its components was significantly less than fathers. Between mothers and children, the total market time was

again significantly less for children. However, only the time spent on 'other market work' and animal husbandry was significantly less for children than for mothers. A detailed discussion of children's economic contribution to the household is presented in the next section.

6.1.2 Children and market production

The average number of hours worked in the market was computed for all children, regardless of their age and sex, in the last section. An examination of the time devoted to household maintenance activities by children in Chapter 5 revealed a division of domestic labour by sex among children. More daughters than sons assisted mothers in washing and ironing clothes, cleaning the house and backyard, cooking and taking care of their siblings. The time devoted to domestic activities also increased with age for children of both sexes. Thus it was expected that the time devoted to market work would similarly increase with age and that sons would contribute more time to market work than daughters. To explore whether these expectations were observed among children in Laguna, the mean number of hours per week devoted to market work by children's age and sex was examined.

The mean number of hours devoted to market activities by sons and daughters according to their age is shown in Table 6.1 and Figure 6.2 while the significant differences between sexes in particular age groups is shown in Table 6.2 As expected, children of both sexes spent an increasing amount of time on market work as they grew older. For example, sons 5-12 years old spent around one hour and a half per week working in the market compared to more than 33 hours per week for older sons (17 years or older). This pattern was largely due to the effects of school attendance since more younger children than older children attended school. In the Philippines, the number of drop-outs increased with level of education. Most children finished elementary education (Lazo, 1984: 19), while others continued to secondary level but very few were able to finish the tertiary level (Chapter 3, section

Table 6.1 **Mean number of hours (per week) that children devoted to market work by sex and age, Laguna, Philippines, 1985.**

Activity	Age of children 5 - 12	13 - 16	17+	F-ratio
A. Son				
Wage work	0.0	3.8	13.1	24.8***
Crop production	0.4	3.5	12.9	33.2***
Animal husbandry	0.6	2.7	2.2	3.7**
Other market work	0.4	1.0	5.2	7.2***
Total	**1.6**	**11.0**	**33.4**	**88.6*****
Number of cases	115	78	135	
B. Daughter				
Wage work	0.0	4.1	15.1	21.7***
Crop production	0.1	0.2	1.0	2.5*
Animal husbandry	0.1	0.2	0.2	0.9
Other market work	0.5	4.2	7.4	6.7***
Total	**0.7**	**8.8**	**23.8**	**36.5*****
Number of cases	116	67	76	

Source: Laguna data set, 1985

Notes: The one-way analysis of variance was used to determine the significance of differences in the number of hours devoted to each activity by children and age.

***Statistically significant at $\alpha = 0.01$

**Statistically significant at $\alpha = 0.05$

*Statistically significant at $\alpha = 0.10$

1). Although there was no information about physical constraints in the Laguna data, these could also explain the limited involvement of children between the ages of 5 and 12 years in the labour market. This is suggested by Figure 6.2 where none of the children 5-12 years old was engaged in paid activities but some time was devoted to raising animals and farming. Examples of farming activities performed by young children were feeding chickens and handing seedlings to hired workers during transplanting periods.

Although the number of hours devoted to all components of sons' market activities increased significantly with age, it can be seen that wage work and crop production dominated their market activities. Sons aged 5-12 years old spent less than an hour per week on wage work compared to around 13 hours per week of sons aged 17 years old or over. In the case of daughters, wage work and 'other market work' dominated their market activities as they grew older.

Gender differences in the total number of hours devoted to market activities by children were apparent for children 17 years old or older, although significant differences in the component activities can be seen among children between 13 years old or older (Table 6.2). The significant differences in the mean number of hours devoted to crop production and animal husbandry were already evident for children 13 years old or older, which was not surprising. In the Philippines, these two activities were identified as male-dominated activities. Boys were mainly responsible for grazing farm animals, such as *carabao*, cows and horses, and collecting grass for fodder, which involved long periods of time. Similarly, farming activities, such as preparing the land for planting, checking irrigation water, and scaring away birds in the rice field, were carried out by sons. Although daughters were also engaged in activities related to farming and animal raising, their main contributions were in 'other market work' and in working for wages. However, the differences were not significant between boys and girls in each age group (Table 6.2).

Table 6.2 **T-values comparing the number of hours devoted to market work between sons and daughters, for broad age groups, Laguna, Philippines, 1985**

Age of children/Activity	t-value
A. 5-12 years	
Wage work	1.0
Crop production	1.6
Animal husbandry	1.6
Other market work	-0.1
Total	**1.7***
Number of cases	115 sons and 116 daughters
B. 13-16 years	
Wage work	-0.1
Crop production	2.9***
Animal husbandry	2.2**
Other market work	-1.9*
Total	**0.7**
Number of cases	78 sons and 67 daughters
C. 17 years or older	
Wage work	-0.6
Crop production	5.6***
Animal husbandry	3.5***
Other market work	-0.9
Total	**2.5****
Number of cases	38 boys and 34 daughters

Source: Laguna data set, 1985

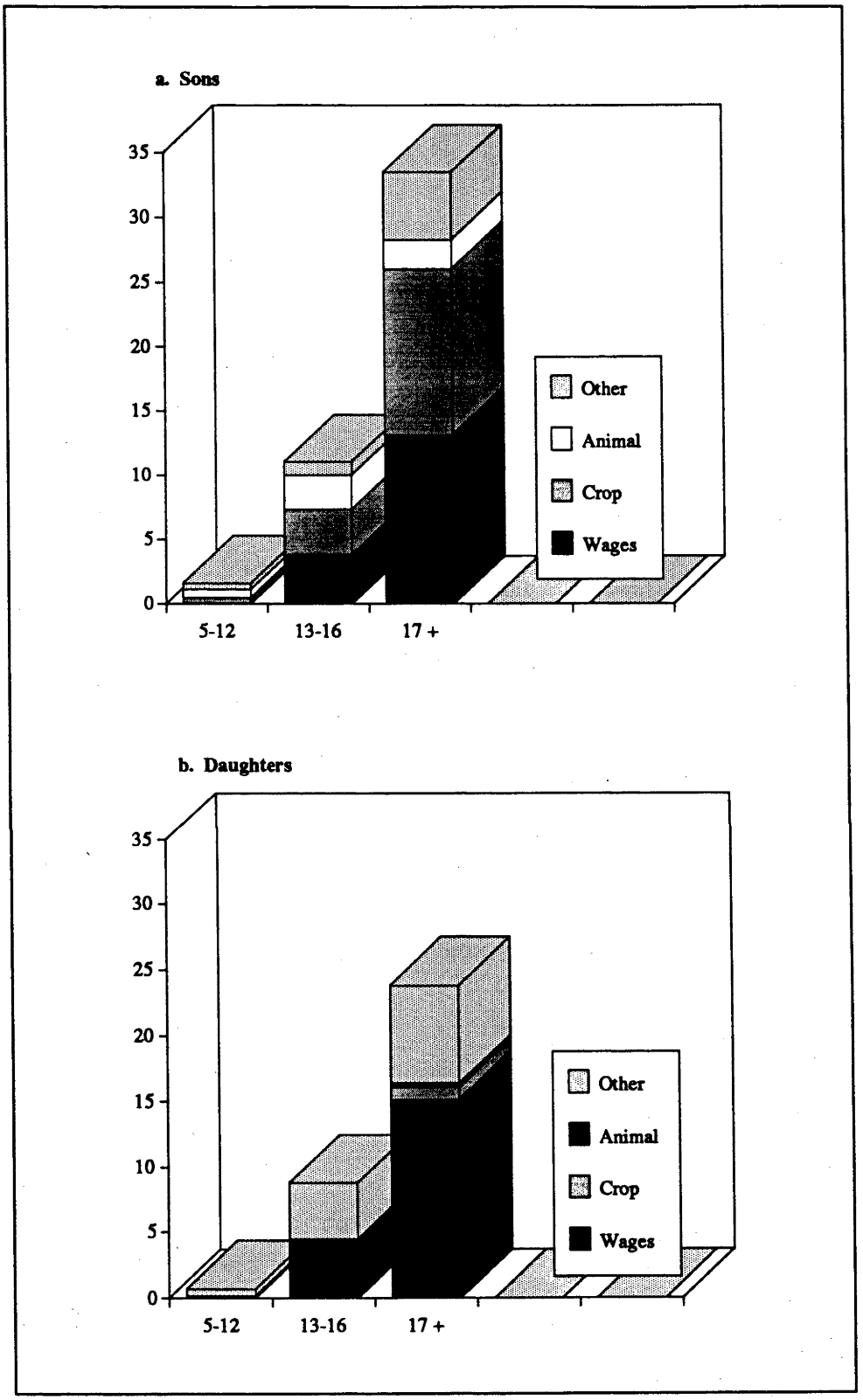
Notes: The mean number of hours devoted to activities are shown in Table 6.1. The t-test was used to determine the significance of differences in the number of hours devoted to each activity between children. The negative sign of the t-value indicates that sons devoted less time to that particular activity than daughters and vice versa for the positive sign.

***Statistically significant at $\alpha = 0.01$

**Statistically significant at $\alpha = 0.05$

*Statistically significant at $\alpha = 0.10$

Figure 6.2 **Mean number of hours (per week) that children devoted to market activities by their age, Laguna, Philippines, 1985**



Source: Table 6.1

The comparison between household members' market time is limited to overall comparison only because a cross-classification of household members' market time with available individual and household level characteristics showed that mothers' contribution to market work was representative of the overall pattern.

Although mothers' shares in the economic activities of the households were less compared with fathers' shares, it can be seen that they did participate in market activities, a recognition which is important in enhancing their status. Still there is the problem of accounting for women's economic contributions in official statistics; this is the main concern for the next section.

Up to this point, mothers' contributions to the economic welfare of the family in terms of the number of hours devoted to these activities have been investigated. However, the number of mothers who participated in these activities is still to be examined in the succeeding section to show how many of those mothers could be considered members of the labour force if time-allocation data were used. The results of the time-allocation data are then compared with the two other methods, the labour force and the gainful worker approach in measuring the economic activities of women.

6.2 Different measures of women's economic activities

Given the difficulties known to be involved in measuring women's economic activities (Birdsall, 1980; Beneria, 1988; Durand, 1975), this section uses several definitions of economic activity, ranging from a narrow to wider, based on the number of hours devoted to market work. To assess the extent of underestimation of women's economic activities when the gainful worker approach is used, the reported occupations (respondents were asked about their usual occupation) are compared with the economic activities of women based on time-allocation data.

The growing volume of research on women has been instrumental in achieving increased awareness of the inadequacies of available statistics in capturing the degree of women's economic activities. The two most common methods employed to measure the economically active population are the gainful worker and the labour force methods (UN, 1951: 5-6). Both have been criticised as inadequate in determining an individual's economic activity, particularly for women and children. On one hand, the gainful worker approach has been found to be seriously deficient because the information generated refers to the individual's usual occupation without referring to his or her current activity and first-time job seekers were effectively excluded. It therefore fails to measure current labour supply. On the other hand, the labour force approach is based on the notion of economic activity, which is unclear in developing countries because of the difficulty of defining work and because of the influence of perceptions of women's roles on the reporting of their work status. Economic activity is usually defined as any occupation by which a person receives compensation in money or in kind or an activity by which a person assists in the production of marketable goods and services. In many respects, this definition is inadequate because many workers are involved in family and exchange labour, which produces potentially marketable goods or services that are not marketed nor intended to be marketed. Such activities are ignored or excluded, leading to serious underestimates of the amount of work done and overestimates of labour 'available' for work (Standing, 1978: 26). A more detailed discussion of the gainful worker approach, the labour force method and the possible reasons for the underestimation of women's economic activities was presented in Chapter 1.

To compare the regional labour force participation rate with the rate derived from the current study in sections 3 and 4 and to show which approach has best captured women's economic activities, the labour force participation rates in Laguna are presented below. Information about the population's economic activity status at

the provincial level was taken from the third quarterly surveys of the National Statistics Office between 1975 and 1985. In those, a person 15 years old or over was considered to be member of the labour force if he/she had worked or looked for work during the reference period (NSO, 1988: xii).

As is generally expected, women had lower labour force participation rates than men (Table 6.3). There was a sizable labour force participation gap between men and women. For example, the recorded male participation rate was 63 per cent compared to only 37 per cent for females in 1975. However, there are indications that the gap was narrowing over the study period. A difference in the participation rates of more than 40 took place in 1976 and 1977 was not again reached in the later years.

Table 6.3 shows a sharp increase in the women's labour force participation rate in 1978. For men, the increase in rate was also evident, although not as marked as the women's. The sudden increase in participation rates was due to the use of different population projections. The participation rate was computed by multiplying the proportion of the economically active population obtained in labour force surveys by the projected population. In 1978, the labour force participation rate obtained from quarterly labour force surveys was multiplied by the projected population based on the 1970 Census while the 1980-1982 rates were applied to the population projection based on the 1975 Census. This problem also occurred in 1982 when the projection based on the 1975 Census was applied to the 1982 labour force participation rate and in 1983, the new projection based on the 1980 Census of Population was used (Marquez, 1987: 3). If the apparent increase in 1982 is ignored, the participation rates of men and women remained fairly stable after 1980.

6.2.1 Labour force methods and time allocation

A person of either sex who furnishes labour for the production of economic goods and services is considered to be employed (Hussmanns et al., 1990a: 342).

There are problems, however, in determining who is and who is not employed. One solution to problems arising from the ambiguities and arbitrariness in distinguishing of distinctions between economic and non-economic activity is to adopt several labour force definitions. A simplistic distinction between labour force/non-labour force activities for subsistence-type activities cannot be easily made, so that there must be more than one correct definition of labour force activity (Anker et al., 1988: 9).

Table 6.3 **Labour force participation rates, Southern Tagalog Region, Philippines, 1975-1985.**

Year	Male	Female	Differential (M-F)	Ratio (M/F)
1975	63	37	26	1.7
1976	83	36	47	2.3
1977	79	35	44	2.3
1978	84	52	32	1.6
1980	78	42	36	1.9
1981	79	45	34	1.8
1982	77	44	33	1.8
1983	79	49	30	1.6
1984	76	41	35	1.9
1985	78	45	33	1.7

Sources: Labour force figures were computed from Integrated Survey of Households Labor Force Series Nos. 46 48, 50, 51, 53, 53b, 54, 55 and Special Report No. 1. (various pages)
Note: Data not available for 1979

Anker et al. (1988: 27-32) suggested four types of labour force definitions: paid labour force, market-oriented approach, ILO labour force, and extended labour force. (See Chapter 1, section 1.2.3 for a detailed description of these four types of labour force definitions.) The suggested definitions, however, could not be wholly adopted in the current study because there was no information about the disposal of the goods and services produced by the respondents and their family members. Furthermore, water collection was not included in the extended labour force definition of Anker et al. (1988), while in this study the time devoted to fuel and

water collection was included because the time spent on these activities was jointly asked at the time of the survey.

The labour force definitions proposed in this study are based on four components of market work (working for wages, crop production, animal husbandry and 'other market work'), and two aspects of domestic work (fetching water and gathering firewood). Each successively broader definition includes all persons and activities included in the preceding narrower definitions. This is seen as an advantage because the activity that contributes most to the increase in the proportion of economically active women can be distinguished. The five categories - from the narrowest to the broadest - are as follows:

(i) Paid employment - persons in wage or salary employment paid in cash or in kind. This is equivalent to the paid labour force category of Anker et al., (1988: 29).

(ii) Paid and crop employment - persons in paid employment plus those engaged in crop production, regardless of whether the produce was sold or not. Included here are the activities involved in gardening and other agricultural production, such as weeding, harvesting, threshing, drying *palay*, food processing, cooking food for hired farm workers, and other related activities.

(iii) Paid, crop and animal employment - persons in paid and crop employment plus those engaged in animal production activities, such as feeding animals, cleaning pens and procuring animal feed, regardless of whether the produce was sold or not.

(iv) ILO-related definition of employment- persons in paid, crop and animal employment plus those engaged in a family business or enterprise, such as tending a *sari-sari* store, driving passenger jeepneys owned by the family, and operating

family-owned tractors for hire to other farmers. This is somewhat equivalent to the ILO labour force definition of Anker et al. (1988: 30-31).

(v) Extended employment - persons in full employment plus those engaged in fetching water and collecting wood, which is partly included in the extended labour force definition of Anker et al. (1988: 32).

In determining whether a person is in the labour force or not, the information on activities performed is by itself insufficient, particularly for subsistence activities (Anker et al., 1988: 33). Since 1954, there have been changes in the minimum time required devoted to unpaid family work by a household member before he/she would be considered a member of the labour force. The latest ILO definition adopted in 1982 did not specify a minimum time requirement and stated that an activity that comprises an important contribution to the total consumption of the household is considered as a labour force activity (Hussmanns et al., 1990a: 343). However, it was not possible to devise a practical, easy-to-use measure of 'important contribution to total consumption time' (Anker et al., (1988: 33). For this reason, a minimum time criterion as a basis for defining the labour force has been used in this study: one hour a week (based on the summation of time spent on all market work). As noted earlier (Chapter 3, section 3), the selection of one hour a week for the minimum time requirement was based on the definition adopted by the National Census and Statistics Office, where a person who devoted at least an hour to market work during the reference week was considered to be a member of the labour force (Marquez, 1987: 5).

The adoption of several definitions shows that a relaxation in the definition of labour force participation increased the measured level of women's labour force participation (Table 6.4). Mothers' labour force participation increased substantially when all components were considered as market work. By confining the economic activities of women to paid production activities, the highest participation rate of

mothers was 25 per cent (1975). This increased markedly when crop production was considered as market work (paid and crop employment), and increased slightly when animal production (paid, crop and animal employment) was added. More than half of the mothers in the three survey years became members of the labour force if crop and animal production were included, and 59 per cent of the mothers were considered in the labour force if 'other market work' was added. The large increase in the proportion of mothers in the labour force reflects the importance of subsistence activities in mothers' contribution to the economic activities of the household.

When fuel and water collection was added (referred to as extended employment in Table 6.4), the measured level of mothers' labour force participation rate in Laguna did not increase in 1975. The table shows, however, that the percentage of employed mothers increased in 1982 and 1985 when water and fuel collection were considered market activities. This does not mean that more mothers were involved in water and fuel collection in the later years. Data from the Laguna study showed that the percentages of women involved in these activities were only 38 per cent, 24 per cent and 35 per cent for 1975, 1982 and 1985, respectively. This is in contrast to the findings of other studies (Kumar and Hotchkiss, 1988; Mueller, 1984) where families depended mainly on women and girls for the water supplies needed for drinking, cooking, laundrying, bathing and cleaning. The explanation could be that water and fuelwood were more readily available in Laguna than in the locations of other studies, such as in Nepal (Kumar and Hotchkiss, 1988) and Central Africa (Mueller, 1984). The presence of rivers and irrigation canals throughout the survey area provided water for agricultural production and household needs, particularly washing clothes. Alternatively, more Laguna mothers may have been involved in fetching water than was reported. Women washed clothes near artesian wells to avoid carrying large quantities of water and only pumped water when needed. Since washing clothes was probably the main activity performed there, the

time devoted to fetching water was counted as laundry activity. Gathering firewood seemed not to occupy many of the mothers, perhaps because there were many coconut plantations in the whole province. Every part of the coconut tree was used for firewood. In addition, the rice hulls from rice mills were also used for cooking fires.

The other possibility for women's lower participation in fetching water and collecting fuelwood for cooking was that these activities were considered male activities so that the burden of performing these tasks fell on men. The percentage of men carrying these tasks rose from 35 per cent in 1982 to 48 in 1985.

The adoption of the several definitions of labour force participation also increased fathers' participation in the labour market but not as much as that of the mothers. In 1975, once the crop production activities of fathers were considered as market work, all fathers were already considered as working in the market. In the case of mothers, it was only when other market activities were considered as market work that their participation rate increased to 59 per cent.

Table 6.4 also shows that when all aspects of market work (combined wage, crop, animal and others - referred to as ILO-related definition of employment) were included, the proportion of mothers participating in the labour market increased between 1975 and 1985. The percentage of mothers in the labour market increased from 59 per cent in 1975 to 76 per cent in 1985. In contrast, fathers' economic participation declined slightly from 100 per cent in 1975 to 94 and 96 per cent in 1982 and 1985, respectively. It appears that the decline in fathers' participation in the market was due to the lower level of involvement of fathers in crop production activities.

Table 6.4 **Labour force participation rates by sex according to various definitions of economic activity, Laguna, Philippines, 1975-1985**

Definition	1975		1982		1985	
	Mother	Father	Mother	Father	Mother	Father
Paid employment	25	44	17	54	27	58
Paid and crop employment	41	100	29	82	38	86
Paid, crop and animal employment	52	100	51	89	54	91
ILO-related definition of employment	59	100	63	94	76	96
Extended employment	59	100	73	97	81	97
Number of cases	101	101	101	101	101	101

Sources: Laguna data sets, 1975, 1982 and 1985
Note: Activity rates based on reporting of relevant activity (excluding women who worked in the market for less than one hour during the week preceding the survey). For definition of measures, see section 6.2.1.

Chapter 4 showed that the increased participation of mothers in trading, selling and other self-employment activities comprised the largest part of mothers' economic activity. The percentage of both men and women engaged in wage work and crop and animal production decreased between 1975 and 1985; however, the percentage of women involved in 'other market work' increased, suggesting that a loss in one source of income did not deter women from participating in market activities. Instead, women looked for other ways of earning a living, perhaps because of financial need.

6.2.2 Reported occupation and the time-allocation data

Another way of analysing economic activity is by asking individuals about their usual occupation, which is the gainful worker approach. This information was only available in the 1975 Laguna data; thus the comparison of economic activities based on the usual occupation and time allocation is confined to this year.

To a certain extent, the reported occupation of the respondents could be compared with the employment status derived from the time-budget data.

Respondents who did not report any occupation during the previous twelve months were considered non-employed, while in the time-allocation data, non-employed mothers were defined as those who did not spend any time on market work. Mothers who spent less than one hour on market work during the week preceding the survey were also considered non-employed. The results of this comparison are presented in Table 6.5.

That usual occupation provides an incomplete picture of mothers' economic participation is borne out by the data. Based on the reported occupation, only 39 per cent of mothers were employed compared with 60 per cent derived from the time-allocation data. The percentage (39) of women employed in Laguna based on reported occupation was close to the labour force participation rate (37) of women for the region reported in the official statistics in 1975 (Table 6.3).

Table 6.5 **Employment status of mothers and fathers, Laguna, Philippines, 1975 (percentage)**

	Reported occupation		Time allocation	
Occupation	Mothers	Fathers	Mothers	Fathers
Non-employed	61	4	40	0
Employed	39	96	60	100
Total	100	100	100	100
Number of cases	517	517	517	517

Source: Laguna data set, 1975
Note: Activity rates based on reporting of relevant activity (excluding mothers who worked for less than one hour in the labour market during the week preceding the survey)

Higher participation rates based on reported occupation may have been expected because the past year was used as the reference period, compared to the past week used by the time-allocation data. This, however, was not observed in the current study. The use of the past year as a reference period could have opposing effects on how mothers reported their usual occupation. With a longer reference

period, it was more likely that mothers would report participation in a greater variety of market activities. Durand (1975: 9-10) noted that a longer reference period will result in a larger labour force measure. However, as most of mothers' market activities were of short duration and interspersed with domestic work, it is also possible that mothers might have forgotten many of these activities before the year was over, reducing the likelihood that they would be reported.

While the comparison presented here may not be the ideal method for determining the extent of underenumeration of mothers' economic contribution, it provides an idea of how much women's labour force activity is unaccounted for in official statistics. Another important finding is that mothers rather than fathers were most affected when usual occupation was utilized as the measure of economic activities. A 4 per cent difference between the labour force participation rates of fathers based on these two types of information was revealed compared to a 21 per cent difference for women. The different effect on fathers and mothers of using reported occupation could be for a number of reasons cited earlier, such as the short duration of women's market work, seasonality, and the failure of women themselves to recognise their activities as economic.

One shortcoming of the usual occupation approach is that only one market activity was reported. The occupation to which men and women devoted most of their time is reported, although it is recognized that many men as well as most women, are engaged in more than one economic activity. The failure to recognise the multiplicity of occupations in agricultural societies may be a reflection of the concept that each person normally has one 'job' or means of livelihood, a situation which is more common in developed countries.

6.3 Summary

The division of labour along sex lines was very clear when the number of hours devoted to market work was compared between mothers, fathers and children. Fathers spent two hours and a half times more time than mothers and four times more time than their children in working for wages, farming, raising livestock and engaging in other market activities.

As expected, the number of hours devoted to market work by children increased with age. The division of labour by sex among children existed, although it became more apparent as they grew older. The significant difference in market time between children 13 years old and older was mainly due to crop production and animal husbandry. Boys spent a highly significant number of hours on these activities but not girls, which was not surprising, as crop production and animal husbandry were identified as male activities.

The time spent on market work should make it possible to include at least some of the female activities that have been normally regarded as non-labour force work. Similarly, the availability of this kind of data would help to illustrate the importance of subsistence and small-scale activities in meeting the economic needs of the households in the developing countries and would thereby possibly affect government perspectives and policies.

This chapter also shows that the subsistence work of women is largely unaccounted for in official statistics. This was evident when several definitions of labour force participation were adopted. Labour force participation rates of women were very low when only working for wages was considered as market work. The incremental addition of the various aspects of market work increased the participation rates of women, especially when working for crop production was added. The reported usual occupation was found also to be insufficient in measuring the economic activities of women. There was a marked difference in the number of

women participating in the labour market when the participation rate was compared between reported occupation for women and the number of women who devoted time to market activities.

The current study reveals that women more than men are affected by the use of labour force methods and the usual occupation approach. Working for wages alone accounted for nearly all of men's economic activities and when the reported occupation and the number of men engaged in market activities were compared, there was a very small difference. The explanation could be that women more than men participated in seasonal and in market activities and were of short-duration and usually interspersed with their domestic activities.

Chapter 7
Conclusion

Widespread acceptance of the myth that women do not work is one of the greatest barriers preventing women from having adequate recognition and opportunities to participate in development. In the Philippines, this perception that women do not work is manifest in answers to the question of what women do with their time. The 1973 National Demographic Survey revealed that 74 per cent of rural women and 64 per cent of urban women reported housekeeping as their main occupation (Perez, 1973 cited in Castillo, 1979: 369). A similar pattern was again recorded in the 1980 census for rural women (69 per cent). Only 48 per cent of urban women in 1980 considered housekeeping as their main occupation (NCSO, 1983b: 91). Castillo (1979: 144) suggested that a higher percentage of urban women regarded work as their main occupation because the location and nature of their work distinguished it from housekeeping. On the other hand, rural women who were working found themselves mostly in farm work, running a *sari-sari* store, doing laundry and other tasks which were forms of self-employment or unpaid family labour carried out irregularly and quite often intermittently with domestic work. Given the difficulties involved in measuring women's work, this study used time-allocation data to analyse women's activities.

This research has been conducted to investigate the patterns of women's time allocation in Laguna employing various analytical methods to determine the socio-demographic and economic factors affecting their time use, the changes that occurred between 1975 and 1985, the gender division of labour at home, and the extent of undercounting women's participation in the labour force. The detailed analysis of time-allocation patterns was made possible through primary analysis of the data from the 1975, 1982 and 1985 surveys of the Laguna Household Study. Several researchers have used the time-allocation data from the Laguna study; however, most of them utilized the 1975 data while others who have used the 1985 data focused on the nutritional aspect of the Laguna data. This research is unique in the sense that it examines the changes in time allocation over time for respondents who were married and living with their spouses in 1975, who remained married to the same spouses between 1975 and 1985, and who also remained in the sample throughout the period.

The findings in this study substantiate the notion that women have double roles. Women's work was dominated by domestic work such as preparing food, washing and ironing clothes and taking care of children. However, women were also involved in market work such as self-employment and working for wages. Thus if a mother's economic contributions are based solely on market work, a large proportion of her contribution to the welfare of the household in the form of performing household chores is excluded.

The burden of employed women's productive and reproductive roles has affected their personal pursuits. As the number of hours devoted to market activities increased, a lower number of hours was spent on leisure, sleeping and personal activities because the time devoted to domestic activities remained stable. However, the time spent on total work (domestic and market work combined) by employed women was markedly less than the time spent on personal activities. This may

reflect the fact that even if women had wanted to participate more in income-earning activities, they would not be able to do so because jobs were not available.

The bivariate and multiple regression analyses showed that the age of the youngest child, rather than the number of children, influenced women's domestic time. The presence of an infant in the household not only increased the time spent on child care and related activities but also on other domestic activities such as washing and ironing clothes and preparing food. Once the youngest child was of school-age (seven years or older), the number of hours devoted to domestic work was significantly reduced. Other factors such as age of women and type of area (whether women were living in more modern or less modern area) also affected women's domestic activities.

The market work of employed women was significantly affected by their educational attainment, number of children, and type of area. However, these factors failed to explain a large part of the variance in the dependent variable. The small amount of variance explained in the number of hours devoted to market work by women when analysed with the available socio-demographic and economic characteristics suggests that other important variables, such as the structure of the labour market in the study area, should be included in collecting time-use data. Information about prevailing wages and available sources of livelihood in the study area would be useful.

The combination of work at home and work outside the home has shifted over the decade from 1975 to 1985, in response to the changing demands of the households. After ten years, there were more older children in the study households who not only needed less attention but who could also help around the house. As a result, the number of hours devoted to child care was significantly lower in 1985 than in 1975. The time devoted to cooking and related activities continued to be the most time-consuming domestic responsibility. The number of hours saved from

domestic activities, however, was not shifted to market activities. Women did not benefit from the increasing employment opportunities brought about by development in the province. Thus, the declining domestic work load and the stable level of market activities resulted in a significant increase in the number of hours devoted by women to personal activities. The unchanged number of hours devoted to market activities was probably due to their lack of necessary skills for employment and also their ages: the majority of the women had only an intermediate level of education and their mean age was 40 in 1985. One could also argue that women could 'afford' more leisure time because they had many children who could help in doing domestic work and working in the market.

Between 1975 and 1985, the small number of women who had never been employed devoted similar numbers of hours to domestic work throughout the ten-year period, whereas women who had worked at some time had significantly reduced their domestic time. This raises to the question of who substituted for the employed women by carrying out the tasks necessary to maintain the family. Non-employed mothers had to meet their families' needs by 'stretching' the husband's cash contribution with 'good housekeeping'. When prices rose, women had to cope and devise survival strategies, displaying considerable ingenuity in making ends meet, and involving extra stress and time.

Another strategy adopted by mothers was to earn income by engaging in barter and petty trade and other self-employment activities. However, as mentioned, mothers who participated in market activities had to carry an additional burden. They managed not to reduce child care time and other domestic work by sacrificing their leisure time. Chapter 5 revealed that husbands' contributions to the maintenance of the household were in the expected direction when mothers worked in the market, but the primary responsibility of maintaining the household remained with the mothers. There were indications that children, rather than fathers, relieved their mothers of some of the burden of housework.

A comparison of the total workload (the sum of the number of hours devoted to domestic and market work) of mothers and fathers showed that mothers had to find their own way to balance their competing roles. When an infant was present in the household, the total workload of a non-employed mother was almost equivalent to a father's total workload if there was no infant in the household. However, when there was an infant in a household where both parents worked, the mother's total workload was ten hours per week more than the father's.

The detailed analysis of the division of domestic labour between husband and wife showed that father's age, number of children, age of the youngest child and the number of hours devoted to market activities of both parents did not significantly influence the number of hours devoted to total domestic work by fathers. The component activities, however, revealed that fathers devoted a significant number of hours to child care when infants (0-2 years) were present in the household only if mothers were employed. But as soon as the youngest child was more than two years old, the domestic time of fathers declined considerably.

The increased contribution of fathers to child care was also evident when domestic time use of fathers and mothers was compared between 1975 and 1985. Other aspects of fathers' domestic work rose throughout the period; however, it was child care time which contributed most. While the time devoted to domestic work of mothers declined from 1975 to 1985, fathers' time increased. Thus in contrast to earlier time use studies, the Laguna study revealed that men were beginning to increase their household work. There is no question that women continued to bear the primary responsibility for family work; however, it is important to recognize that men's behaviour was changing, even if the pace of change may seem slow. It should not be dismissed or taken for granted.

Despite recent efforts (see, UN, 1986: paragraph 20), the strategies adopted by women to make ends meet are not accounted for in official statistics. Housekeeping activities, which occupied most of their time, are not considered to be

work and as such not included in the systems of national accounts. Then, their market activities are often undercounted if reported. A comparison of the different methods of measuring women's economic activities in Chapter 6 showed that by using the labour force methods, most of their activities were unrecorded. The adoption of several labour force definitions also revealed that the activities which occupied most of mothers' market time were not recorded. When other market activities such as trading and running *sari-sari* a store were considered to be economic activities, the percentage of working women increased dramatically. The gainful occupation approach was also insufficient in measuring the economic activities of women. There was a marked difference in the number of women participating in the labour market when the participation rate was compared between reported occupation for women and the number of women who devoted time to market activities.

While much of the labour force activity of women and their contributions to the economy often go unrecorded and unrecognized in official statistics, the use of time-allocation data can lead to a more complete measurement of women's labour force activity as well as documenting the long hours spent on domestic work. Buvinic (1983: 21) stressed that information from time-allocation data is particularly relevant to designing programs that seek to increase women's market activities by reducing the time required for household production, increasing the efficiency, output and returns of economic activities, transforming subsistence activities, and creating new employment opportunities for women.

However, there are some difficulties in interpreting the results of this study: first, representativeness of the sample size, and second, the type of methodology used in collecting the time-allocation data. It remains to be seen whether the results of this study are applicable only to this particular sample, or whether they may be replicated among different samples. The allocation of time is an important source of information which could permit examination of the amount of time (for example

part-time or full-time) spent by women in labour force activities, but much more research needs to be done to determine the degree of accuracy of retrospective time-use data. Time-use studies are also limited in detail. There is a need to incorporate questions about the respondents perceptions as well as interviewers' observations and opinions as an aid in interpreting results. Furthermore, the small variance in the number of hours devoted to market work by mothers when analysed with the available socio-demographic and economic characteristics suggests that other important variables, such as the structure of the labour market in the study area, should also be included in collecting time-use data.

Evidence from this study supports the view that women's issues are also development policy issues. Women participated in market activities which made them participants in the process of economic growth. As witnessed in this study, the economic activities of these women were not only relegated to traditional work or occupations but also did not increase significantly despite the increased employment opportunities brought about by the infrastructure and technological improvements in the province. There are indications that the innovations in agricultural production reduced the amount of men's labour needed in some agricultural practices and men who had been displaced by farm machinery competed with women in other activities, exacerbating the impact on women's employment opportunities. The corollary to this is that there is a need for policy makers to ensure that technological innovations should not result in losses for women or can be compensated for the creation of new sources of livelihood. Policies must be directed towards specific measures that facilitate women's fuller participation in the labour market and at the same time make it easier for women to combine their housewife and mother roles with paid work. Elson (1989: 58) stated that cash incomes for women would lessen their economic dependence upon men and may increase their bargaining power within the household. Access to an income of their own tends to be highly valued by women, not only for what it buys, but also for the greater dignity it brings.

Contract work which produces garments, footwear and handicraft products is an example of self-employment activities which can help women to increase their market activities. However, interventions are needed for better wages, better working conditions, legal protection and welfare measures. At present, women involved in these activities do not have health and other benefits enjoyed by others in private and public employment.

The increasing employment opportunities brought about by development should be matched with education and training. The respondents of the study were not able to take advantage of the increase in employment opportunities because the majority of them did not finish secondary education, a requirement for employment in most factories. Hayami et al.'s (1990) study in another Laguna village reported a significant increase in non-village market activities, as well as non-farm economic activities. The contrasting result of this study and that of Hayami's may be due to the higher educational attainment of their respondents compared with the respondents of this study.

Another issue of concern is the long hours spent by women on preparing food and related activities. Unlike in other developing countries where women spent most of their time collecting water and fuelwood, Laguna women devoted most of their time to cooking. Despite the fact that time devoted to this activity declined from 1975 to 1985, meal preparation dominated women's domestic work. Modern labour-saving devices are available, but these are too expensive. Furthermore, even if these modern appliances were affordable in the study area, the prospect of using too much energy prohibited women from using them because of the high cost of gas and electricity, rural areas in particular. Perhaps it is this area where appropriate technologies should be given more attention.

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Appendix A

Research studies on time allocation using data from the 1975 and1975-76 Laguna surveys

Researcher	Survey year	Number of sample households	Method of data collection	Title of study
1. Boulier, B.	1975	573	Recall	Children and Household Economic Activity in Laguna
2. Ho, T. J.	1975	488	Recall	Time Costs of Child Rearing
3. Jayme-Ho, T.	1975	573	Recall	Time Budgets of Married Women in Rural Households: Laguna
4. Popkin, B.	1975	573	Recall	The Role of Rural Filipino Mothers in the Determination of Child Care and Breastfeeding Behavior
5. Cabañero, T. A.	1975/76	99	Observation	Shadow Price of Children in Laguna Households
6. Estera-Espinas, V.	1975/76	58	Observation	Time Allocation and Full Income of the Laguna Households
7. Jayme -Ho, T.	1975/76	10	Observation	Time Allocation, Home Production and Labor Force Participation of Married Women: An Exploratory Study
8. Navera, E. E.	1975/76	99	Observation	The Allocation of Household Time Associated with Children in Rural Households, Laguna, Philippines
9. Quizon, E. K.	1975/76	99	Observation	Time Allocation and Home Production in Rural Philippine Households

Appendix B

Definition Of Urban And Rural Areas*

According to the 1980 Census (NCSO, 1983a), urbanized areas are as follows:

1. In their entirety, all cities and municipalities having a population density of at least 1000 persons per square kilometre.

2. *Poblaciones* or central districts of municipalities and cities which have a population density of at least 500 persons per square kilometre.

3. *Poblaciones* or central districts (not included in 1 and 2), regardless of the population size, which have the following:

   a. Street pattern, i.e., network of streets in either parallel or right-angle orientation;

   b. At least six establishments (commercial, manufacturing, recreational and/or personal services); and

   c. At least three of the following:

      1) A town hall, church or chapel with religious services at least once a month;

      2) A public plaza, park or cemetery;

      3) A market place or building where trading activities are carried out at least once a week;

      4) A public building like a school, hospital, puericulture and health centre or library.

4. *Barangay* having at least 1000 inhabitants which meet the conditions set forth in 3 above, and where the occupation of the inhabitants is predominantly nonfarming or fishing.

All areas not falling under any of the above classifications are considered rural.

*Source: NCSO, 1983a: xi.

Appendix C

Tables Related to Chapter 2

Appendix Table 2.1 **Age composition by sex, Laguna, Philippines, 1975 and 1980 (percentage)**

Age group	Male		Female	
	1975*	1980**	1975*	1980**
0-14	43	42	42	40
15-64	54	55	55	57
65+	3	3	3	4
Total	100	100	100	100

Sources: *Computed from Table 5, NCSO, 1975: 14.
**Computed from Table 3, NCSO, 1983: 4.

Appendix Table 2.2 **Private household population 7 years old and over by highest grade completed and sex, 1975 and 1980 (percentage).**

	Male		Female	
Highest grade completed	1975*	1980**	1975*	1980**
None	4	4	5	5
Elementary	57	54	61	57
High School	28	28	22	24
College	7	8	6	8
Academic degree holder	4	5	6	6
Not stated	1	0	1	1
Total	101	100	100	100

Sources: *Computed from Table 7, NCSO, 1978: 34.
**Computed from Table 5, NCSO, 1983: 80.

Appendix Table 2.3 **Gainful workers 15 years old and over by major occupation group and sex, 1975 and 1980 (percentage).**

Gainful occupation	Male		Female	
	1975*	1980**	1975*	1980**
Professional	4	4	13	16
Administrative	2	1	1	1
Clerical	3	4	6	10
Sales	6	6	24	21
Service	5	6	15	17
Agricultural	46	38	13	7
Transport	22	37	26	26
Other	12	3	1	3
Total	100	99	99	101

Sources: *Computed from Table 9, NCSO, 1978: 157-160.
**Computed from Table 9, NCSO, 1983: 168-171.
Note: Data for 1975 include population 10 years old or over

Appendix D

Table Related to Chapter 4

Appendix Table 4.1 **Mean number of hours (per week) that women devoted to components of market work from less modern *barangay*, Laguna, Philippines, 1975-1985**

Activity	1975	1982	1985	F-ratio
Market work				
Wage work	2.6	4.0	9.2	2.6*
Crop production	5.9	7.3	3.3	1.0
Animal husbandry	2.1	1.3	1.9	0.5
Other market work	1.9	6.7	11.1	3.8**
Total	**12.4**	**19.3**	**25.4**	3.4**
Number of cases	42	42	42	

Sources: Laguna data sets, 1975, 1982 and 1985

Notes: The one-way analysis of variance with repeated measures was used to determine the significance of differences in the number of hours devoted to each activity by surveys.

**Statistically significant at $\alpha = 0.05$

*Statistically significant at $\alpha = 0.10$

Appendix E

Tables Related to Chapter 5

Appendix Table 5.1 **Age of the youngest child and mothers' employment status, Laguna, Philippines, 1985**

Age of the youngest child	Employment status of mother	
	Non-employed	Employed
0 - 2	36	17
3 - 6	21	24
7 or older	42	59
Total	100	100
Number of cases	33	109

Source: Laguna data set, 1985

Appendix Table 5.2 **Mean number of hours (per week) that household members devoted to domestic work, total load, presence of infants and mothers' employment status, Laguna, Philippines, 1985.**

Mothers' employment status/ Household member	Without infants			With infants		
	Domestic work	Total load	Number of cases	Domestic work	Total load	Number of cases
A. Non-employed						
Father	6	62	20	8	63	10
Mother	56	56	20	72	72	10
Children	10	24	93	9	16	39
Total	**72**	**142**		**89**	**151**	
B. Employed						
Father	8	63	87	12	69	17
Mother	41	71	87	64	79	17
Children	9	24	347	10	23	76
Total	**58**	**158**		**86**	**171**	

Source: Laguna data set, 1985
Note: Excludes seven households because fathers were non-employed

Appendix Table 5.3 **Comparison of the number of hours (per week) that father and mother devoted to components of domestic work, Laguna, Philippines, 1975 and 1985**

Household member/ Activity	1975	1985	Per cent change
A. Mother			
Shopping	3.9	3.7	-5
Meal preparation	25.9	16.1	-38
Clothes care	9.9	10.5	6
Child care	15.9	9.8	-38
Cleaning	7.9	6.2	-22
Fetching water and collecting firewood	0.9	1.1	22
Total	**64.4**	**47.4**	**-26.4**
Number of cases	101	101	
B. Father			
Shopping	0.3	0.7	150
Meal preparation	0.3	3.5	1020
Clothes care	0.1	0.1	-31
Child care	0.5	1.4	189
Cleaning	0.3	0.7	137
Fetching water and collecting firewood	1.3	1.5	10
Total	**2.8**	**7.8**	**176**
Number of cases	101	101	

Source: Laguna data sets, 1975 and 1985

Appendix F

Tables Related to Chapter 6

Appendix Table 6.1 **Mean number of hours (per week) that household members devoted to market work, Laguna, Philippines, 1985**

Activity	Mother	Father	Children	F-ratio
Wage work	6.8	22.9	5.9	47.7***
Crop production	2.0	15.4	3.6	54.9***
Animal husbandry	2.0	4.0	1.1	16.4**
Other market work	10.2	9.9	3.0	23.0***
Total	**21.0**	**52.2**	**13.7**	**157.2*** **
Number of cases	142	142	587	

Source: Laguna data set, 1985

Notes: The one-way analysis of variance was used to determine the significance of differences in the number of hours devoted to each activity between household members.

***Statistically significant at $\alpha = 0.01$

**Statistically significant at $\alpha = 0.05$