Order Number 9002378

Female labor and regional economic development in Malaysia

Eden, Joseph Anfield, Ph.D.
The University of North Carolina at Chapel Hill, 1989

U·M·I
300 N. Zeeb Rd.
Ann Arbor, MI 48106

FEMALE LABOR AND REGIONAL ECONOMIC DEVELOPMENT IN MALAYSIA

by

Joseph A. Eden

A Dissertation submitted to the faculty of The University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the Department of Geography.

Chapel Hill

1989

Approved by:

Advisor

Reader

Reader

JOSEPH ANFIELD EDEN. Female Labor and Regional Economic Development in Malaysia
(Under the direction of Professor Melinda Meade.)

ABSTRACT

The research examines the roles of culture, capital and the state in the generation and mobilization of a female labor force. Set in a rapidly industrializing region on Malaysia's West Coast, the research examines the life cycle adaptations and career commitments of Malay, Chinese and Indian women to low wage factory work.in semiconductor and apparel assembly plants. The research contends that the demographic diversity of the assembly line work force derives from the labor requirements of different production regimes, from sociocultural constraints upon female labor force participation and from historical inequities of access to urban employment among Malaysia's ethnic communities. Fieldwork was funded by a Fulbright Dissertation Fellowship (1985-1986).

PREFACE

Studies of economic development in the Third World are often written from the vantage of either the city or the countryside, whereas, in reality, development is a systematic interplay of rural and urban processes. New modes of production compel a broad restructuring of regional labor markets and a redistribution of resources and populations at various scales. In Malaysia, the dereliction of traditional agricultural systems and the expansion of multinational industries are rapidly transforming the technological basis of ethnic and gender relationships.

The current industrialization of the Malay peasantry is directed by both internal and external economic forces. New technologies in the developed world permit a fragmentation of the manufacturing process for numerous types of goods and the out-sourcing of jobs to the Third World where labor is far cheaper and more docile than in the core industrial countries. Malaysia struck its own bargain with foreign capital after a wave of racially motivated violence convinced the government that a basic restructuring of society was necessary in order to stifle communal discord and provide a socioeconomic foundation for social harmony through industrialization. The principal aim of government policies is to create a modern industrial society in which ethnic Malays will play an increasingly important economic role. Specifically, the Malay technocrats who took control of the government in the 1970s hope to set in motion a labor process which will lead ultimately to a racially integrated workplace and which will include a large share, if not a majority of Malays at all levels of skill, expertise and earnings.

Against this policy background, the present research examines the changing nature of rural and urban female labor force participation of Malay women. It constructs a regional scenario of interrelated technological, social and economic trends, and it portrays the intersection of these trends in the lives of Malay women. First, the study documents changes in the rural labor market and in land use systems so as to depict the evolution of the region as a ready source of cheap labor for the modern firm. Next, in the urban arena, the study portrays, first, the scope and nature of industrial expansion in a middle-sized city, second, the involvement of rural and migrant Malay women in large numbers, and , third, the character of female labor force participation in the modern sector. Other than the intrinsic merit of gaining a better understanding of women's place in modern Malaysia, the gender perspective of the research focuses upon the sociodemographic consequences of new industrial modes in a transitional society.

The setting of the research is the southern state of Negeri Sembilan, an area which more or less typifies the rapidly changing economies and populations of the developed West Coast of Peninsular Malaysia. The entire overview and analysis of an evolving labor market is influenced by the various structuralist approaches in geography and labor history which focus upon the

articulation of local and translocal processes. The case of Malaysia is especially pertinent in this regard since the state has assumed such a major role in attracting multinational investment to the internal peripheries of the country.

ACKNOWLEDGEMENTS

The author expresses his gratitude to all who offered information, insights, and financial support in the course of this research. From the beginning, faculty members at the University of North Carolina, those in the Geography Department and others as well, freely contributed their scarce time and valuable advice. This applies especially to the members of the dissertation committee who proved to be careful and caring critics and editors of the work in its various incarnations. Of course, no scholarly work can be accomplished without the assistance of countless individuals inside and outside academe. The author regrets that only a few can be cited here.

Among my Malaysian friends the staff of the Town Planning Department in Seremban deserve special thanks. They tolerated my endless questions and answered them fully and in good humor , as did Jean Pala of the Demographic Division at the Department of Statistics, Malaysia. She and her coworkers were helpful beyond measure. So, too,were the staffs at the Negeri Sembilan Department of Agriculture, the State Economic Development Corporation, the District Office (Seremban) and the Negeri Sembilan Timor Development Project. Finally, very little of the industrial materials included in this work could have been collected without the very generous help of the Malaysian managements and personnel staffs in the factories studied, an American-owned semiconductor plant and a West German-owned garment plant. In order to maintain the anonymity of the firms, the managers and officers who aided my efforts will remain nameless here, but they are fondly and gratefully remembered nonetheless. The consent of both firms to use information collected at their plants reflects a shared concern for the welfare of their factory workers.

Of the many friends made during a year in Seremban, Malaysia, two stand out for their graciousness. Tony and Parma opened their home to me and introduced me to aspects of Malaysian life which, otherwise, I would have neither seen nor felt. Closer to home Dr. Melinda Meade of the Geography Department at the University of North Carolina deserves special mention. She endured endless drafts of this dissertation and proved a constant source of support, suggestions and well-placed criticisms. While specific mistakes, oversights and shortcomings of the research are the faults of the author, Dr. Meade is responsible for keeping him on track and in the harness. Of course, heartfelt words of thanks go to my parents and to

Ruth, all three of whom, in their own ways, helped the author through this personal and professional passage.

Funding for the field collection of materials was provided by a Fulbright Dissertation Fellowship and by an off-campus dissertation grant from the University of North Carolina Graduate School. In its adminsitration of the Fulbright award, the Malaysian American Commission on Educational Exchange was highly efficient, professional and hospitable. Enche Lokman and Kala in the Kuala Lumpur office became good friends and informative guides during my stay in their country. In addition to external funding, occasional teaching assistantships awarded by the Graduate School through the Geography Department made it possible for the author to complete much of the coursework for the doctoral degree.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

PROBLEMS AND SETTING OF THE RESEARCH

INTRODUCTION

On the eastern fringe of the British empire, distanced by the Indian Ocean from the Raj, the colony of Malaya once led the world in the production of rubber and tin. Far more important to the economy of modern Malaysia are its exports of electronics and textiles. Since the early 1970s, branch plant investments of corporations headquartered mainly in the United States, Western Europe, and Japan have launched and fueled a robust economic take-off. The current reliance upon foreign capital in the form of large, manufacturing operations came about as the result of a major shift in federal development priorities. After independence was achieved in 1957, the new state dedicated itself to the eradication of rural poverty, thereby winning support of the country's Islamic Malay majority. This appeal to a disaffected segment was justified on the grounds that, in the general scramble for a share of the wealth from European enterprises, the colonial order had left the masses of indigenous Malays far behind Chinese and Indian immigrants. Thus, rural development assumed the great importance that it did more for ideological than for pragmatic reasons. However, after a month of urban riots during May, 1969, when clashes between Malay and Chinese communities took the lives of thousands, it became clear that the vexations of joblessness in the cities were adding fuel to an already incendiary mixture of creeds. In fact, the very survival of a precarious ethnic alliance was threatened. In response, the federal government, led by Malays, proclaimed a New Economic Policy the aims of which were racial harmony and social equity among Malaysia's three communities through a restructuring of the national economy. A program of industrial expansion was launched in 1970 to provide entry-level employment for the hundreds of thousands of impoverished rural Malays who, ever since the end of the second world war, have streamed into the major cities of Malaysia in search of a better life. Within a year of the race riots, the government legislated a package of programs that greatly accelerated the pace of industrialization through export-oriented production. The simultaneous enactment of racial hiring quotas sought to ensure ethnic Malays nearly a third of all jobs.

Lured by an abundant supply of cheap labor, a stable political climate, a sound infrastructure (a happier legacy of British colonialism), and fiscal incentives such as tax holidays and depreciation allowances, foreign firms invested in Malaysia to such an extent that their operations in the country's several Free Trade Zones and industrial estates now dominate the country's export

sectors. Between 1970 and 1980, the export of electronics manufactured by American, Japanese, and West German firms, for example, increased in value from M$31million (M$2.5=US$1) to nearly M$3 billion. Meanwhile, the value of textile exports increased from M$44 to M$493 million. During roughly this same period, over 600,000 jobs were created in manufacturing. The numbers of entry-level manufacturing workers rose from 215,000 in 1968 to 805,000 in 1980 (Fong 1986, pp. 37-42). At least one-third of these jobs were filled by women operatives. Throughout the country, young, ethnic Malay women, foresaking the family holdings, are moving en masse into urban industrial production, especially into semiconductor plants specializing in the fabrication and testing of silicon chips and in the assembly of integrated circuitry. Still intended to uplift the low-income Malays, national policies have assumed a decidedly urban and ethnic bias. Under the guidance of the state, economic development increasingly favors the regional city over the village, and Malays over the other Asian ethnic groups.

Measured in terms of absolute economic growth, implementation of the NEP has been a success, despite a dramatic down-turn in 1985 and a lingering recession since. However, critics contend that beneath the surface of economic statistics lies a polarized society little changed for the better since the watershed year of 1969. At this juncture, then, it is appropriate to examine the recent structural changes in the labor market and to ask whether these trends are in line with the goals of the NEP. Set in an industrializing region on Malaysia's West Coast, the present research examines the roles of culture, global capital and the state in the generation of an internationalized labor force. The findings support the conclusion that the demographic diversity of the assembly line work force derives from the labor requirements of very different production regimes, from sociocultural constraints upon female labor force participation, and from historical inequities of access to wage employment. Throughout, the demographic adaptations of Malay women, many of them rural commuters or migrants, are compared to those of the more urbanized, more highly proletarianized Chinese and Indians.

Recognizing that the working lives of Malaysian women are affected by social and technological forces originating within and beyond the locality, this study invovles three scales of analysis. First, at the global scale, the internationalization of capital extends its operations into the low cost labor markets of the third world. At the national scale, governmental policies, technological forces, and political conditions constitute the investment environment of the multinational firm. Locational and labor strategies of large firms are generally formulated within the guidelines of the country's criteria. Third, at the regional scale, firms segment the local labor market along ethnic, gender and age dimensions to suit the firm-specific requirements of

assembly line production. This labor process occurs against the backdrop of an evolving political economy within which segments of the labor market are variously positioned by policy, history and culture to participate in the modern sector of manufacturing.

THE RESEARCH QUESTIONS

Industrialization in Malaysia engages rural and urban sociodemographic and economic processes. The effects of global capital upon social formations are as various as the regions themselves. The task of the geographer is that of elucidating the place-specific outcomes of on-going international technological trends as well as identifying universal aspects of regional change. At the center of interlocking rural and urban processes is the Malay woman, disenfranchised from the role of food provider and establishing a visible presence, for better or worse, on the assembly lines. The questions of research aim at a geographical understanding of how the pre-existing ethnic and gender divisions of labor in the region and the cultural systems which envelop those divisions impinge upon the modern labor process. Typical of the nation, the study region is in the midst of a transition from proto-industrial to industrial stages.

First of all, the research asks how technological and population changes in rural areas, specifically those changes connected with the decline of indigenous production systems, have affected the socioeconomic status of Malay women. Given the fact that modernization presents new options to certain segments of the rural labor force and revokes old options, the research identifies the spatial and structural mobility of genders and generations within the rural Malay community as they adapt differently to new circumstances.

The second area of enquiry is the new occupational specialization of Malay women in manufacturing. The research turns to urban dimensions of regional change and the recruitment of Malay women by modern firms. The activities of modern and highly capitalized firms reconstitute the labor market and the redistribution of the ethnic labor force among economic sectors and geographical areas of the manufacturing city. The research asks to what extent women are involved in manufacturing compared with their participation in 1970 at the beginning of extensive export-oriented manufacturing in Malaysia.

Third, beyond sheer numbers, it is necessary to consider as well the types of industries in which the women are employed. The industrialization of Malaysian cities is led by large multinational firms, mostly semiconductors and textiles. Their proliferation is encouraged by current state policies directed at providing jobs for the migrant poor, especially Malays. Under this guided industrialization, it is inevitable that Malays are experiencing considerable economic advancement. The research examines the recent increase of female Malay employment over the past decades of rapid industrialization and the specialization by Malay women in the large foreign

firms manufacturing goods for export. The research, then, seeks to evaluate the ethnic and gender exclusivity of the labor process and the spatial segregation of groups within the city.

Fourth, the research examines the quality of jobs in female-dominated light industries. A measure of economic gain which considers only the numbers of employed is hardly adequate to understanding the changing nature of the new labor market. Consideration must also be given to the stability and wage levels of the modern manufacturing industries. In assessing the job quality, the research compares annual job losses and gains in two industries, semiconductors and textiles. These trends are understood to have a disportionate impact upon Malay women workers and demonstrate the required flexibility of female labor.

Fifth, the research analyzes the demographic character of the female industrial labor force and relates differentials within it to the ethnic diversity of the labor force and to the differing technological requirements and management strategies of plants. The modern firm in Malaysia draws its labor from a diverse population cross-cut by differences of ethnicity and residence. In assessing the interplay of structure and human agency in the proletarianization of women, the research examines differences in the career patterns and life cycle adaptations of ethnic Malay, Chinese and Indian operatives working in textile and semiconductor assembly plants. Two questions are paramount: first, in what different ways women from different communities and places combine domestic lives and industrial careers; and, second, if and in what fashion these life orientations mesh with the work conditions ans technological requirements of specific industries. Citing a cultural ecology of industrial production, the research evaluates the different cultures of work within the context of the social, cultural and place backgrounds of the workers and within the context of different production regimes.

Within this general area of inquiry, the research interprets attitudes toward industrial work on the basis of microdemographic data collected at two plants. In the design of the research, the principal measure of labor force commitment or attachment to the workplace is, of course, length of employment. Among the other behaviors to be considered are education, marriage, fertility and remaining at the workplace during the years of family formation and highest parity. On the basis of such comparisons the research asks whether or not Malay semiconductor and garment workers, nearly all from peasant households, are industrialized to the same extent as are nonMalays, nearly all orginating in cultures long associated with urban and rural wage labor and capitalist formations. Once again, differences within and among ethnic groups as well as between factories would suggest that the labor process ultimately structures the work force along cultural dimensions in conformance to the labor needs of specific technological arrangements. The contrasting demographic behaviors which are manifested in the life cycle strategies of female

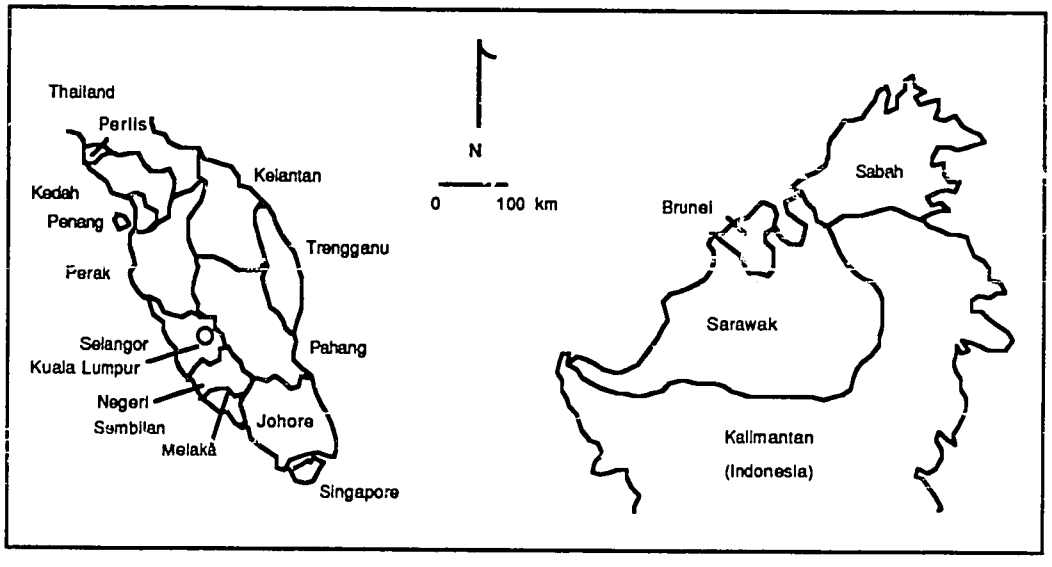
factory workers illustrate a dialectic of culture and technology mediated by state policies and the rationalization of production by management.

Finally, the research underscores certain contradictions of national industrial policies. These are located in the tensions between economic ends and social means of reforms undertaken to resolve interethnic conflicts. In view of this central goal, the research asks whether and in what manner the novel labor process initiated by multinational activities furthers or frustrates the achievement of social equity and ethnic integration under the New Economic Policy. The policy implications which follow apply equally in settings other than Malaysia. Throughout the third world, governments are relying upon mulitnational investment in industrial technology to resolve internal problems of uneven development and social unrest. As a corrective to studies paying inadequate attention to the heterogeneity of the proto-proletariate in the third world, the research posits the following: the gender, ethnic and class background of labor and managerial efforts to manipulate those distinctions are the critical factors in the realization of policy goals. To the extent that these structural tendencies are understood, the government, acting upon the findings of comparative research, will perhaps be better able to control and forecast the outcomes of the numerous interactions between capital and labor in assembly operations.

THE SETTING OF THE RESEARCH:NATION AND REGION

The study is set in the state of Negeri Sembilan and in its capital city, Seremban, a small metropolitan area of 132,000 persons located seventy-five kilometers south of Malaysia's million-sized capital, Kuala Lumpur, and the highly industrialized corridor of the Klang Valley that encircles it (Figure 1.1).

Figure 1.1. Peninsular Malaysia. States and Neighboring Countries.



On the peninsula, Malaysia consists of eleven states and the Federal Territory, an administrative unit encompassing the capital city, the planned city of Shah Alam, several peripheral housing developments and industrial zones. The nation also includes two states on the island of Borneo, Sabah and Sarawak. These are populated mainly by Christianized tribal peoples only distantly related to the majority population of ethnic Malays on the peninsula who are themselves a mixture of Indonesian-speaking Achinese, Buginese, Javanese, Minangkabau, and other peoples originally from the southern archipelago. The rest of the national population is comprised of Chinese, most of whose ancestors arrived from South China after the mid-1800s, and Indians whose presence in Malaysia dates from their voluntary indenture on the rubber plantations of British firms. Most are the descendants of South Indian laborers (mainly Tamil), although large numbers of Indians are Punjabi Sikhs.[1] estimated population of peninsular Malaysia (1985) is about 11,500,000 persons, of whom 6,300,000 are Malays (55.1%), 3,900,000 are Chinese (33.9%), and 1,200,000 are Indians (10.3%) (Fifth Malaysia Plan, 1985-1990).[2] Due to physiographic and climatic features of the peninsula and the geography of

---

1With regard to the occupational pluralism of Malaysia, Fisk (1982) observes that the nineteenth century ideological blend of liberalism and sentimentalism held by the colonial British permitted the immigrant races to gain a dominant position in the urban trades and in commerce, while casting the ethnic Malays in the role of a rustic aristocracy.

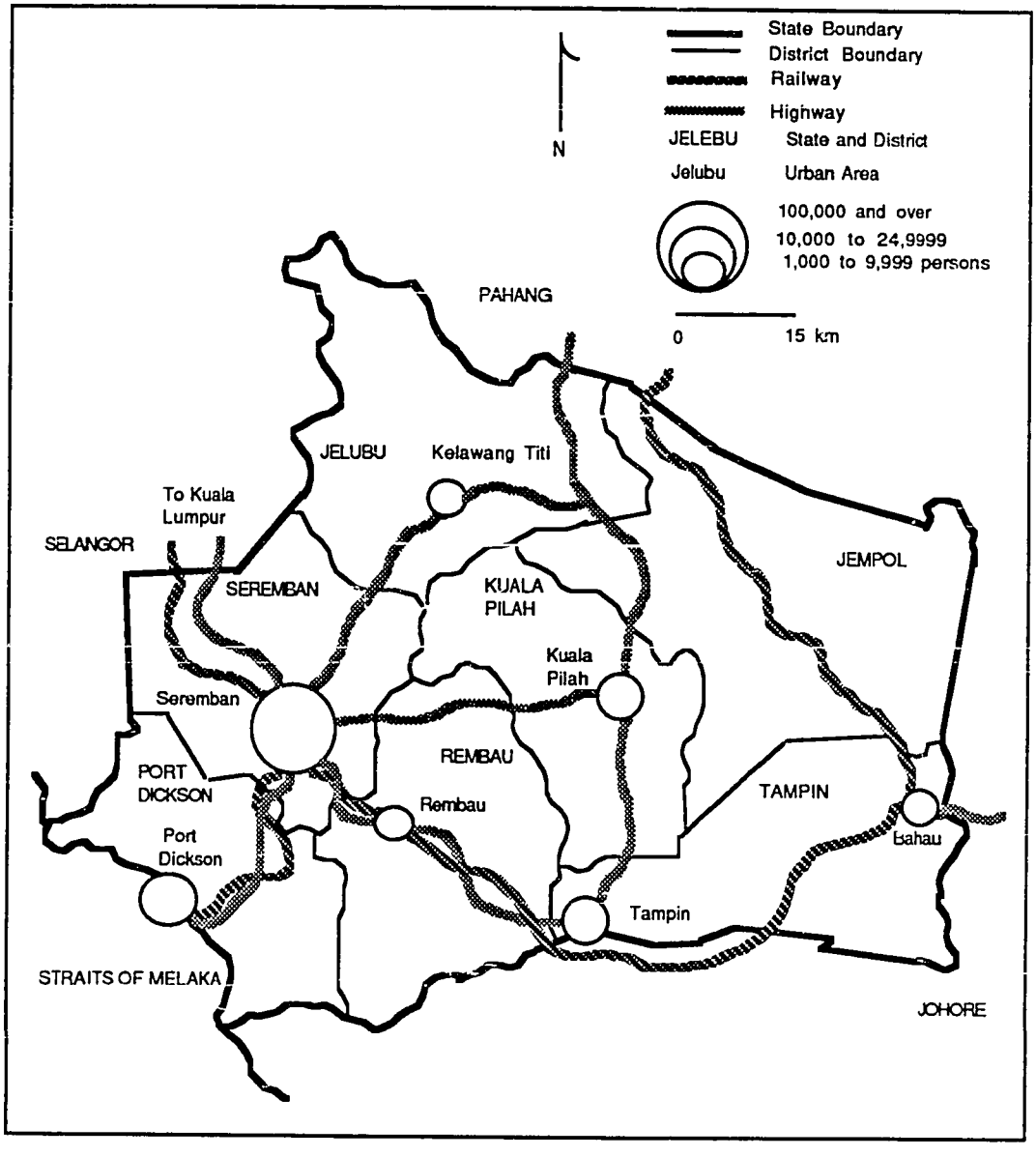
2 The growth of the Malay community is outpacing that of the Chinese through natural increase. Since 1980, the average annual rate of increase for Malays has reached 2.9% compared to 1.9% for Chinese (*Malaysian Digest*, December, 1984, p. 7).

colonial development, the country divides plainly into a relatively dynamic and pluralistic West Coast of maior cities and commodity-producing plantations and a less populous East Coast, an underdeveloped and predominantly Malay region of traditional padi-growing and fishing villages. The West Coast is the cosmopolitan face of the country, but its Islamic soul is on the East. As the Euro-centric economy of the West Coast boomed, the East was largely by-passed and left to its traditional ways, save for a plains region of the north which was put under intensive irrigation in the 1930s.

The West Coast possessed important initial advantages over the East. Its deepwater ports, its situation on the Bay of Bengal directly across from the Indian colonial centers of Calcutta and Madras, and the strategic location of the pre-colonial city of Melaka on the straits inclined the British interlopers to develop mining and trading centers almost exclusively on the western half of the peninsula. In addition, the rolling topography of the forested slopes that lay between the central mountains and the encircling sea appealed to the Europeans as a prime environment for rubber cultivation. A relatively dense transport network and urban pattern soon evolved to service the agriculture and mining economies. Since independence in 1957, large-scale industrialization has taken place almost exclusively on the West Coast--mainly along a railway axis stretching from coastal Butterworth in Penang state in the north through the Klang Valley at the center and southward to Johore Baharu opposite Singapore.

The state of Negeri Sembilan is transected by this urban axis. It consists of seven districts that together possess a degree of natural, cultural and functional integrity--a condition that derives from, first, its origins as a colonial confederation of Malay tribal units; second, its natural borders of the forested uplands in the northeast and the Melaka Straits in the southwest; third, the convergence of its two principal waterways upon Seremban before they continue to the sea; and, fourth, a radial network of roads linking towns to metropolis (Figure 1.2).

Figure 1.2. Negeri Sembilan State. Districts, Urban Places and Transportation Networks.



Source: Survey Office. Negeri Sembilan.

Seremban City is the nearest major industrial center to the capital outside of the Klang Valley concentration. The site of virtually all of the state's manufacturing facilities, Seremban anchors a diminutive urban hierarchy and services a mainly agricultural hinterland. Here village-dwelling Malays and estate-laboring Indians populate a landscape of rice fields and rubber plantings. Like nearly all Malaysian cities and towns, Seremban is populated mostly by Chinese

but has large and growing minorities of Indians and Malays. In 1980, Seremban's population included 69,000 Chinese, 42,000 Malays, and 21,000 Indians. In another important respect, too, Negeri Sembilan typifies the new Malaysia. The state, like the nation, is increasingly urban in character and increasingly reliant upon large-scale manufacturing to provide jobs for the migrant and resident poor of its urban population. Due to problems of job provision and its potential to deflect rural-urban migrants from Kuala Lumpur, Negeri Sembilan's capital of Seremban is high upon the list of the country's industrial areas scheduled for further development. Today a small industrial estate at the city's edge employs most of the city's operatives. As at all of the country's forty IE's, the largest employers at Seremban's estate are plants belonging to foreign semiconductor and textile firms. The labor force of these industries is comprised predominantly of Malay women.

The study region, then, is representative of several nationwide norms and trends. Most important, in this context, are the urbanization, feminization and deskilling of the labor force. A study of urban industrialization at this regional level affords insights into similar processes underway elsewhere on the margins of the global manufacturing system. The data are taken largely from primary sources such as public and corporate records and reports and a worker survey conducted in two multinational branch plants. In the following sections of this chapter, discussion of this empirical evidence and the methods of analysis precedes a quantitative and qualititative evaluation of female labor force participation in the newly transformed regional economy.

SOURCES OF THE DATA AND METHODS OF ANALYSIS

Five sorts of information are analyzed: first, census materials from the 1970 and 1980 national surveys; second, governmental documents such as annual and occasional agency reports, again both published and unpublished; third, the results of a female worker survey conducted by the author at semiconductor and textile plants in Seremban; fourth, employee rolls listing residential and income information from the textile plants and other large domestic manufacturing concerns; and fifth, interviews conducted with the personnel managers of the three plants on various subjects related to the firm's recruitment tactics and hiring criteria.

Much of the documentary evidence on rural and urban labor and development trends is taken from unpublished agency and departmental reports issued by the State Department of Agriculture, the State Economic Development Corporation, the Rubber Industry Small-holder Development Corporation (RISDA), and published materials from the Malaysian Ministry of Labor and the Federal Land Development Authority (FELDA). An unpublished feasibility study for an integrated rural development program in the state proved very helpful in understanding the nature of rural land use and demographic change in a subregion designated the most depressed

area in the state (Eastern Negeri Sembilan). The director of this project submitted to a lengthy interview session and guided the author on a tour of project sites in January 1986.

The various materials listed above are incorporated into the study with full confidence in their reliability and accuracy. Among developing nations, Malaysia's standards of data collection are among the highest in the developing world. Malaysia inherited and has built upon colonial legacies of a highly professionalized civil service engaged in extensive record-keeping for national planning purposes. As a result, the voluminous materials issued continuously by federal, state, and local governments in Malaysia on a great variety of subjects are widely recognized by demographers and development specialists as among the most trustworthy in the developing world.

The worker survey conducted by the author is the primary source of the data analyzed in the final substantive chapters on female labor force participation. The personnel officers at a semiconductor plant and a textile plant were approached for permission to conduct an in-plant survey of female operatives in order to gather information on various demographic aspects of the work force. The first preferred method of conducting first-hand interviews with individual workers was unacceptable to both personnel officers contacted; therefore, a questionnaire survey was circulated to female operatives with the assistance of plant personnel. The questionnaire was written in the national language of Bahasa Malaysia (Appendix 1). The women workers were asked to answer questions on the form within one week and to return the completed forms to the supervisor. A preamble to the survey explained its purpose and assured the women that their responses would remain anonymous. Of a total of 1800 forms so distributed, over 650 were returned, most of them answered fully or nearly so. The chief purpose of this phase of the research was to collect information on residential, employment and life cycle characteristics of a multi-ethnic industrial work force in order to contrast the labor force participation of Malay women with that of women from other ethnic communities.

The data are treated in a comparative manner over time and among ethnic and gender groups so as to evaluate the variety of industrial commitment to the work place. Overall, the study identifies significant differences between plants and among ethnic groups with regard to urban experience, career orientation, the acquisition of skills on the job and family formation. These qualities are inferred from such variables as job tenure, income, marital rates, parity and other quantitative measures. In isolating the differences among factories and ethnic groups, the usual test applied is the t-test of significance among means of continuous variables, between rural and urban women, and between ever-married and never-married women. In cases where the data are

categorical in nature, the nonparametric chi square test is employed in pairwise fashion among ethnic and factory segments.

THE CHAPTERS AND TOPICS

The analysis is preceded by a review of the literature on the new international division of labor. Chapter 2 considers the literatures of dependent development and labor processes in the third world, particularly studies of women and industrial development. The relationships among various theoretical frameworks are described, and their relevance to the present research is highlighted.

Chapters 3 and 4 concern economic development and demographic change in the study region and parallels in the national experience. Chapter 3 deals with past and current land use and demographic trends in rural Negeri Sembilan. The central topics are the demise of the traditional agricultural sector and the displacement of ethnic Malay women from the rural economy. Chapter four, on the other hand, deals with two aspects of urban industrialization: first, with the policy context of industrial expansion in Seremban after 1970 and, second, with the race and gender selectivity of a new labor market that concentrates Malay women in highly capitalized and volatile industries.

Chapters 5 and 6 present the findings of a worker survey conducted in two foreign-owned branch plant operations. Significant differences in labor force participation and family cycle are shown to exist among ethnic groups within the same plant as well as in different plants. Next, these demographic differentials are attributed to certain structural features of the production regimes. The analysis underscores the ways in which particular industries variously segment the labor force along ethnic, gender, and generational lines. These final sections demonstrate, first, that technological arrangements and market conditions establish the conditions of labor recruitment and management and, second, that these, in turn, elicit a variety of demographic responses from the labor force. In its conclusion, the research assesses the extent to which the current round of export-oriented industrialization advances the broader national goals of equity and integration.

CHAPTER II

STRUCTURALIST APPROACHES TO WOMEN'S WORK IN THE THIRD WORLD: A REVIEW OF THE LITERATURE

INTRODUCTION

The internationalization of local labor markets has received considerable attention as of late in academic publications as well as in popular media. Geographers, journalists, political economists, social anthropologists and sociologists have all investigated global capitalism in terms of its spatial structure and its social repercussions. Many writers are influenced by structuralist approaches depicting the interconnectivity of global markets. Framing as it does the inequitible nature of North-South linkages, the dependency model has proven especially useful in explaining the endemic poverty of Latin American societies. It is among labor scholars of this realm that the model is most popular, although among others, too, the model's influence is so pervasive that, whatever the orientation of the investigator, few current studies of third world development manage to stand free of it.

Three areas of interest within the general subject of dependent markets are especially relevant to the present research. This chapter begins with a consideration of scholars whose aim it is to moderate the determinism and dialecticism of original dependency theory. Since its rise in popularity during the early 1960s, dependency theory has undergone considerable rethinking. In general, the recent literature is more empirical in its content and conceptualization than were earlier contributions of the school. An emerging focus is upon multinational developments in particular regions where the activities of firms are examined within the context of the local political economies. This retreat from determinism and rigid structuralism is led by geographers of development such as Britton (1987) and Forbes (1981 and 1984) who argue that global models neglect the essential open-endedness of place-contingent labor processes. Second, the chapter considers structuralist approaches to the articulation of capitalist production systems and pre-capitalist social formations in the third world. Included within this research are works on the interrelationshps of modern and traditional social formations along with their formal and informal sectors. This line of enquiry commences with Amin (1976) and has been pursued, most recently, in the setting of Southeast Asia by McGee (1978), Rimmer (1980), and others. Finally, the present research turns to the literature of women and development. Much of this work considers women's economic status and worth in societies at different levels of technological organization. The modernization of the workplace through the spread of Western technologies has variously

affected the labor force status of women in developing regions. As the present study illustrates, Malay women find themselves presented with new obstacles and opportunities as the result of technological change and shifts in national priorities. In this regard, the Malaysian case is typical of those countries in the midst of broad economic and demographic transitions.

CHANGING VIEWS ON THE PEASANTRY AND PROLETARIAT

Geographical and anthropological studies of economic development in the postwar societies of Asia, Latin America and Africa were heavily influenced by modernization theory. Originating in the economics of Rostow (1960), modernization theory assumes a linear path of societal evolution leading to an advanced stage of social and technological organizations--from a "primitive undifferentiation and pre-rational social entity, *Gemeinschaft*, to a modern, more highly differentiated and bureaucratically rational social entity of *Gesellschaft*" (Rimmer and Forbes 1982:199). Progress from one state to another requires the direct diffusion of Western, i. e., capitalist values and technologies. The early leading examples of this diffusionary theoretical framework are the core and periphery model and the growth pole model of regional planners (Friedman 1966; and Perroux 1950) and the spatial analytical model of geographers (Soja 1968; Gould 1970; and Berry 1970). The enthusiasm with which modernization theory was greeted in the early 1960s, the years of ambitious international aid projects, is conveyed by this passage in Nash (1965):

> Economic development and social and cultural modernization is on the agenda of history for nations like Burma. Either they will make the transformation or they will disappear as social and political entities. The social sciences of the West, as well as its technology and science, are important ingredients in making the transition as humanly costless as possible (p. 323).

By the early 1970s, it was rapidly becoming apparent that the economies of many third world countries had stalled or retrogressed. The familiar assumptions about post-colonial economies and the ways to develop them soon came under attack from the Left. In an era when many third world regimes rejected capitalist models, when the large-scale development projects of foreign creditors and relief agencies appeared to degrade rather than to uplift the condition of the urban and rural poor, and when the prospects for cooperation between the South and the North dimmed following the emergence of rightist governments in the West, Lenin's internationalism proved too timely a credo to ignore. Scholars began to discern the structural obstacles to a just world order. The term "underdevelopment" was coined to describe the continuing subordination of the poor nations to the wealthy.

The transformation of an underdeveloped country into a modern one could not be accomplished, it was argued, merely by resource-based development. Rather the causes of poverty lay beyond boundaries of the third world.[1]

> Underdevelopment was no longer viewed as an original condition: it was the result of the incorporation of colonies and newly independent nations into a world economic system weighted heavily in favor of the rich countries (Forbes 1984, p. 58).

While underdevelopment, on its own, did not yet constitute a paradigm, it did serve well as a corollary of world systems theory. The historical arguments of Wallerstein provided a point of view that was especially compatible with the agenda of Marxist scholarship. For example, Wallerstein (1974, 1979, and 1980) argues that income differences between the first and third worlds are functional: the wealth of some nations requires the economic subjugation of others. In essence, Wallerstein conceives an evolving global market that incorporates states unequal in their power to control it. Poor states participate but seldom progress. Once the assymetrical economic, political, and cultural relations are struck among the constituents, first under classical mercantilism, next under imperial colonialism and now under global capitalism, the dependency of poor states upon the rich deepens as the world order crystallizes. Proponents of the earlier, unilineal (and more optimistic) model of development predicted the eventual achievement of sustained growth and self-reliance by third world countries. The later dependency theorists, however, began to ask "why poor people stay poor" (Weede 1985). The editorial philosophies of certain professional academic journals were and remain slanted toward a vigorous critique of capitalism in history. *Antipode* in the United States, *Pacific Viewpoint* in Australia, and *Capital and Class* in Great Britain are among the most prominent media of Marxist studies in geography and social history. The revisionist school gained momentum as Western capitalism and culture penetrated more deeply into the third world.

---

1 Bollen (1983) discusses the destabilizing, political aspects of economic dependency. A commentary on guided democracy in Malaysia and its role in the industrialization of the society is found in the journal *South* (London), May, 1988, pp. 24-25.

THE NEW INTERNATIONAL DIVISION OF LABOR

The proliferation of multinational companies in the 1950s and 1960s further motivated the shift in academic disciplines from village, urban, and regional studies to more broadly-based systems approaches. The watchword was globalism. For example, Frobel and others (1980) argue that the dilemmas of structural unemployment in the West stem from the technological capacity of capital to fragment the production process and to reassign the subprocesses "to whichever part of the world can provide the most profitable combination of capital and labor" (p. 14). The authors identify two corporate strategies that are central to the labor process: rationalization (the application of more efficient equipment and organization of production) and relocation (the shift to low-cost production sites). In reality, however, the two are joined. For instance, rationalization is often undertaken in order to permit the substitution of skilled labor in the core for unskilled labor in the periphery. This "deskilling" of labor (Braverman 1974) is a sociotechnical process with an important spatial component. Storper (1981) concludes that if nineteenth century industrialization is characterized by the accumulation and monopoly of capital in the metropole, then present-day capitalism is characterized by the global diffusion of capital and technology in search of far-flung labor reserves.

The firm's need for redundant labor and the spatial strategies adopted to meet that need are themes which recur in the literature. Third world countries that are annexed to this "global factory" find their relative positions in the production cycle unaffected by innovations in the core. Storper (ibid.) writes of a persistent diffusionary lag:

> Technological innovations have organizations and geographical points of origin, from which growth impulses imparted travel outward through the corporate and city systems . . . cities and regions farther away from the centers of innovation will be at a disadvantage in the contest for growth . . . (p. 25).

Of course, the distances separating developed and undeveloped industrial nations are cultural and economic as well as geographical. In the organization of global capitalism, Mexico and Malaysia are structurally equidistant from the United States.

Frequently, the modern firm locates in or near a large urban area of the third world country where the branch plant can benefit from both a modern infrastructure and a nearly limitless pool of unemployed youth, many of them permanent or temporary migrants to the city. The demands of the firm often take precedent over the needs of the low skill workers. The primacy of the labor cost factor over the transportation cost factor in the new international division of labor (NIDL) is justified by several features of the global manufacturing environment. These include, first, the labor-intensive nature of key industries such as electronics and textiles; second, modern

transportation systems that permit a greater distancing of the firm from its market; third, the militancy and negotiablility of labor in the participatory democracies of the first world; and, fourth, the responsiveness of elected governments in those societies to the demands of their working class constituencies. Besides immediate savings in labor costs, the firm operating in underdeveloped countries is assured of a plentiful and flexible supply of docile labor that can be utilized and idled as levels of product demand rise and fall. Moreover, the firm is freed from many of the social costs encountered in the core. Seldom does the firm compensate the worker on a long term basis in recessionary times. In fact, modern manufacturing capital takes much less responsibility for the welfare of the work force than did colonial agro-industrial capital. Management in the mulitnational factory exerts technical control over the speed of the assembly line, production oversight and despotic control over wage and benefit policies (Lipietz 1982).

Increasingly, the concept of core-periphery is applied to the labor process in particular industries. Sayer (1986) describes three tiers in the internal geography of standardized chip production for a typical United States semiconductor firm: (a) research and development are carried out in high amenity core areas close to instituitional sources of innovation--Silicon Valley, for example, with its proximity to universities and independent research and development facilities; (b) wafer fabrication, a highly capital-intensive process also located in the developed countries but not necessarily at the R&D sites; and (c) various labor-intensive procedures such as "dicing wafers into individual chips, mounting them on carriers and soldering wires to them, and testing . . . done in cheap labor locations in the third world, e.g., Taiwan, Malaysia, or the Philippines" (p. 109). These production processes are exceptionally mobile and capable of being transplanted from one region or country to another as relative levels of development, standards of living and, hence, levels of wages change. Munck (1988) compares the inherent instability of export-oriented industrialization to

> . . ."slash and burn" agriculture which exhausts the resources of one area and then moves on to fresh fields. The effect in industry is, of course, even more disruptive of social relations and its end result is at present unpredictable (p.34).

Throughout the third world, internal and international inequities of growth turn upon the dynamics of corporate management tactics interacting with the economic and demographic structures of newly industrialized regions. The branch plant operation requires a continual adjustment of its recruitment strategies to the evolving demographic profile of the labor market. This is an important point which is seldom made and which relates to the broader one of the need for more empirical and particularistic studies. Sayer (1986) voices this opinion:

> First, concrete patterns of uneven development are often wrongly treated as unmediated outcomes of the tendencies of capital accumulation in the abstract. But the tendencies always work through specific mediating technical and social forms, such as particular technologies, types of labor and management systems (i.e. ways of combining labor, materials and machinery) (p. 107).

In his approach to "industrial location on a world scale," Sayer pays close attention to the very diverse labor conditions created by different technologies.

ARTICULATION OF MODES OF PRODUCTION

The multinational firm benefits directly from the underdevelopment of the periphery. Geographers and others call attention to a close articulation of capitalist and precapitalist modes of production. Within this process, the latter mode reproduces and supports the labor reserve necessary to the assembly line industries of the former. Labor mobility in underdeveloped countries concentrates labor in the largest urban regions and depresses local wage levels. Within the *favelas*, *kampungs*, shanty towns and slums of third world cities, informal sectors of housing, food and services subsidize the living costs of low income families. Pressures of migration upon the transitional economic structures of cities causes them to become involuted as the city absorbs more and more workers into stagnant sectors. These also act as reservoirs supplying labor in boom times and absorbing the unemployed during downturns, a process of "urban involution" that is analogous to the structural mobility of labor across the sectors of dual agricultural systems (Geertz 1963; Rimmer 1978; Dick and Rimmer 1980).[2] Moreover, the subordinate economy services the marginal urban work force thereby dampening labor's demand for jobs and higher wages (Forbes 1981, p. 74). The economic historian Browett (1985) characterizes the advantageous position of capital in a changing world:

---

2 As Pryor (1984) suggests, the concept of urban "involution" is especially appropriate in the Asia-Pacific realm. In most studies, it is conceived as a varying set of processes whereby "unemployed and underemployed migrants are absorbed in urban areas" and maintained by various support systems (p. 30). Leinbach and Ulack (1983) note that Third World cities share an enormous capacity "to absorb more and more laborers and to split, share, or fractionalize employment opportunities" (p. 30). Much earlier, the urban geographer Breese (1966) termed this condition "subsistence urbanization" (p. 5). The argument that migration necessarily leads to a more efficient allocation of labor assumes a rationality in the process which may not exist. In the current phase of urbanization in the Third World, perverse streams of migration often swell the ranks of the urban poor while draining the human resources of the hinterland (Bradshaw 1987, p. 226). The role of capital in provoking and sustaining the urban bias of mobility is considered by Berliner (1977).

> With the modernization (capitalization) of agriculture, the population explosion and increasing landlessness in the peripheral nations, there has emerged a huge (and potentially inexhaustible) industrial reserve army of labor . . . productive, less expensive and less militant than either the reserve army of labor in the advanced capitalist nations or that potentially available through the operation of a controlled overseas migrant/guest worker labor market (p. 799).

Once deemed the engines of modernization, urbanization and industrialization, along with increasing labor mobility, are now recognized as the symptoms and sources of underdevelopment. This is the central contradiction of global capitalism: as the accumulation of capital proceeds, it monopolizes the formal sectors that it creates and conserves the informal sectors that it requires (McGee 1979 and 1987). Moreover, the dominant mode of production stifles the internal growth of local firms by siphoning off cheap labor. The poor persist because income inequality is inherent within the dependency relationships of modern capitalism. Amin (1976) explains:

> In [perpheral formations], the capitalist mode, which is dominant, subjects the others and transforms them, depriving them of their distinctive functioning in order to subordinate them to its own, without, however, radically destroying them (p. 22).

Indeed, the familial, noncapitalist formations are crucial to the reproduction of surplus labor. Saffioti (1977) argues that if the modern firm did not have access to traditional societies of the third world, then, in order to avoid excessive labor rent, it would be forced to restructure and redefine work relations within the core:

> Imperialism eliminates the need permanently to re-create pre-capitalist activities in developed nations: these can then rely on the advantages obtained in their relations with the precapitalist areas located on the periphery of the international capitalized system (p. 33). Under the assumptions of articulation theory, assembly line technologies have a global distribution for reasons other than the obvious wage diferentials among regions. The kin-based social formations found in third world villages and neighborhoods reproduce and subsidize low wage labor, making available an elastic and unregulated supply in the face of variable demand.3 The hegemony of the multinational firm in the peripheral economy stays the dissolution of pre-capitalist modes and formations.

The notion of articulation in peripheral formations, then, assumes both coexistence and hierarchy as well as "blocked development" (Foster-Carter 1978, p. 52-54). The multinational firm seeks out, in particular, those unskilled and semiskilled segments characterized by "lowest wage cost and highest performance and productivity" (Froebel, Heinricks, and Kreye 1978, p. 25). It trains this work force only to the minimal standards required by the low skill procedures. Subsequent increases in productivity are gained through technological innovation and not skill transfer. Truncated revolutions under multinationalism culminate in fragmented technologies and horizontal careers.

THE STRUCTURATIONIST CRITIQUE: OTHER FIELDS, OTHER GRASSHOPPERS

The most serious shortcoming in the writings of macro-theorists is their lack of interest in localities. In particular, as Munck (1988) argues: "world systems analysts grant explanatory privilege to the level of circulation (the world market) and thus downplay the importance of production. . ." (p. 18). They seldom consider either the diversity of internal labor markets or the political complexity of national societies. Yet the unskilled workers of the third world country are seldom a monolithic mass. Most of the states that emerged after the colonial era are pluralistic in ethnicity, creed and class. So, too, the labor requirements of industries are highly differentiated. A concentration of different groups in different industries (or stated otherwise, the selectivity of different industries for different groups) is a phenomenon that often escapes the attention of development economists and planners.

---

3 McGee (1978) and Dick and Rimmer (1980) have been among the most vocal critics of the formal/informal dichotomy often employed to describe the urban economies of developing countries. Rather than employing this dyadic model of classic dependency theory, McGee stresses the integral nature of the peripheral economy. McGee points out that goods and services as well as labor flow readily between small, unregulated and family-owned businesses and the highly capitalized corporations of the formal economy. Recent migrants often resort to participation in the petty commodity sectors while seeking jobs in wage-paying industries (Ulack and Leinbach 1985).

In reaction to the excessively nomothetic slant of dependency writings, several geographers have called for more micro-scale, particularistic studies of international capitalism. Forbes (1984) is especially critical of dependency approaches:

> Marxist geography, capital accumulation theories of regional, uneven development, and the whole political economy of development . . . . are all characterized by strong notions of determination, no matter whether perceived at the international level (as in world systems theory), or at the regional level (regional uneven development), or even at the local level (the articulation of modes of production). Concurrently,this work is compositional by virtue of its emphasis on abstract laws and lack of historical and geographical specificity (p. 128).

Alternatively, Forbes advocates a closer attention to place. His interest is in the structuration of experience through the interplay of local and global forces. Others have proposed a similar departure from an earlier structuralism. In a review article, for example, Bedford (1987) attributes the lack of coherence in development geography to the current unfashionableness of regionalism.

> . . . theories that focus on the international dimension of underdevelopment fail to take into consideration adequately the economic and social histories of particular places (p. 157).

These later revisionists have as one of their most articulate precursors the French geographer Perrons (1981) who studies the exogenous sources of regional change:

> By facilitating further division in the labor process and allowing the simultaneous concentration of control functions and the decentralization of manual execution, [capitalism] further incorporates the regions of the world not only into the world economy, but into specific international firms operating within that international framework, such that the industrial structure of any region can be understood inthe context of an understanding of the principles of organization of international firms (p. 81).

While a temporal dimension is inherent in Marxian analyses, geographers are now turning to the local histories in order to reconstruct the sequence of changes in the evolution of regions. For Britton (1987), the integration of the region into a global order is incremental and continuous:

> A regional system at any one point of time is composed of emerging and declining forms of production (rounds of investment) identifiable with particular industries, areas, and enterprises (p. 58).

The edifice is stratified. And while each stratum is integral, each is also the foundation of the next. Change is seldom so thorough as to eradicate all predispositions to the future. These are the constraints upon change which the economist Gunnar Myrdal refers to as the historical necessity of "cumulative causation." In geography, the imminence of the past is captured in

Pred's (1984) concept of "place as a historically-contingent process" and by Massey's (1984) geological metaphor referring to the region as strata of events and environments laid down by investment cycles and economic waves.

Over time, the labor force is cross-cut by the conflicting and complementary demands of industries for certain types of workers. Different orders of capital raise and depress the statuses of groups according to the position of the region in the larger economy. This position is defined, only in part, by external factors such as the mobility of capital. In addition, the alignment of the region within the global order depends upon such localized demographic attributes as the ethnicity, age, education and gender compositions of the active and inactive labor force. The economic participation of a population thus increases when a constellation of such demographic features is aligned with the requirements of capital at a certain stage of its technological development and under a particular form of its organization. Technological change is a fundamental, if not a prior, condition "in the constitution of regional social formations, of regional articulations and regional transformations" (Gregory 1978a, p. 171). Thrift (1983) presents an agenda for such regional geographies: first, the geographer is advised "to commence with the regional setting" of productive relations-- "the class structure and the prevailing sexual division of labor, of course, but also the ethnic racial and religious divisions," and next the geographer must deal with the role of the state in regional development or decline (p. 39). Munck (1983) argues that the global context is "mediated" by local conditions:

> . . .the "general" determinants" only operate through interaction with "proximate" determinants and causes firmly based in the history of Third World nations themselves (p. 32).

While programmatic statements abound in the literature, the same cannot be said for real world applications. In what may be considered a pioneering study, Warf (1988) aims at a "new regionalism" in his study of technological change in the Pacific Northwest. Here Warf shows how the "historical trajectory" of the region was shaped by the successive impact of global production cycles that literally swept across the region, each rearranging the existing organizations of labor and capital. Unlike earlier chorologies, a revitalized regional geography will portray regions not as ahistorical entities but as dynamic formations situated within a wider division of labor (p. 342). The challenge, then, lies in tracing the more subtle linkages between global and local forces.

GENDER IN DEVELOPMENT

In the new international division of labor and the resulting transformation of regions, women in countless third world societies have become an important segment of the low wage labor market. Consequently, studies of women and industrialization have proliferated. Again, much of what has been written owes an obvious, if unstated, intellectual debt to Marxist thought. Three

themes are foremost: the marginalization of women as a by-product of development, the variety of the feminine experience in modernizing economies, and the politicization of female industrial workers or absence thereof. By and large, this literature is solidly ideographic concerned, above all, with the political and social context of labor mobilization. This is especially true of studies on women and industrial development in Latin America and Southeast Asia (Green 1983). Two sorts of studies are most common: case studies of gender relations national labor markets in particular industries and, at the local level, studies of the living conditions of factory workers in female-dominated industries. The thrust of these works is the novelty of the work experience under global capitalism involving dead-end, low wage jobs and unstable employment for women who occupy positions requiring least skills.

THE FEMININE LOT UNDER MODERN CAPITALISM: THE NEW CONTINGENT LABOR FORCE

As economic development proceeds, the role of women in development changes as the focus of public and private investment shifts from rural to urban spheres of activity, although, as cross-cultural evidence suggests, the consequences vary among places and periods. A frequent point of departure for many such studies is the notion argued initially by Boserup (1970) that the status of third world women is diminished by capitalist development. For example, Lele (1986) cites a situation common to rural Africa where public interventions circumscribe women's economic participation through the introduction of mechanized agricultural systems. Evidence from elsewhere, too, suggests that in rural areas women's roles in the dominant capitalist systems are marginal, especially since governments often design rural development projects for male householders (Aguiar 1976). Meanwhile, the employment options available to the female work force are limited by the eclipse of village-based technologies. Village society, itself, endures as a repository for this underemployed and poorly compensated population.

The urban condition, however, is less clearly a case of displacement. Prior and on-going capitalist activities in the South have structured local labor markets in which women are the preferred labor of highly capitalized, labor-intensive industries. In Guatemala, for example, Bossen (1984) attributes the diverse fortunes of women in towns and cities to the different levels of urbanization. In general, metropolitan women fare best in the job search and wage competition. Other studies also suggest a threshold of urbanization beyond which women's economic status rises. Based upon the performances of seventy countries, one typical model (Pampel and Tanaka 1986) postulates a curvilinear relationship of economic development and female labor force participation. According to this model, status gains are realized much more rapidly in the latter phases of large-scale, capital-intensive industrialization. But while poor women may find jobs in the factories of the city, urban industrial jobs are often contingent upon industry trends of product

demand, technological change, and access to cheaper labor markets. Under the current phase of foreign investment, the position of women may be enhanced with respect to rising rates of labor force participation, but they often find their participation restricted to the lowest paid operative positions that hold little hope for advancement (Blau and Jusenius 1976).[4] Instead of being thoroughly enculturated to an industrial, urban life, women remain entrenched in precapitalist social formations.

The literature on women and development contains numerous such examples of women's vunerabilty to job loss and wage exploitation due to the vagaries of global markets. The changes in status that occur with modernization can vary considerably not only with overall levels of urbanization and development, but also with the types of industries. In her study of textile and electronics workers in Cuidad Juarez, Fernandez-Kelley (1983) makes the point that industries segment the work force by age and ethnicity as well as by gender:

> On the one hand, by hiring mostly women for unskilled and semiskilled assembly operations, multinational corporations establish a subdivision of the labor market by gender which deeply affects the possibilities of employment for men and women. On the other hand, . . . differences in manufacturing activity and in the relationship between parent firms and their associates in underdeveloped areas result in varying adaptation strategies which involve employment possibilities and which, in turn, generate more subtle divisions within a predominantly female work force (p. 106).

Rather than a generally agreed upon picture of universal female exploitation, what emerges is a more situational understanding of working women's lives. Despite the tremendous diversity of the global factory work force, the potential for comparative studies has not been realized. Important tasks remaining in women's studies are the tracking of individual careers in particular industries and the comparison of worker profiles across cultures and industries, firms, and plants. So far, however, systematic comparisons of sociocultural and demographic processes are not typical of the literature.

FEMINIZATION AND POLITICIZATION OF THE WORK PLACE

In studying the new international division of labor and women's place within it, useful comparisons can be made between the historical experiences of Western and third world countries during the formative phases of industrialization. In general, industrialization in the third world is characterized by the relative quiescence of labor. This is certainly true in the case of factory women. Political action in female-dominated industries is rare and occurs mostly in urban

---

4 Schmink (1987) calls attention to the ambiguity of the term marginality and its indiscriminate use.

Latin America. Elsewhere in the developing world, apathy is more often the norm. Whereas primitive and monopoly capitalism in the nineteenth century catalyzed labor movements, global capitalism appears to retard rather than to promote militancy and a crystallization of class consiousness. Localized and narrowly focused labor actions seldom lead to sustained organizational efforts. In revolutionary Mexico, for example, women textile workers did organize a series of strikes, but these were directed as much against the oligarchical rule of the country as against unfair labor practices per se (Towner 1977). In modern democratic Mexico, the dozens of electronics and textile plants along the Mexican-American border have encountered sporadic opposition and pro-union sentiment manifested in slow-downs and walk-outs by the tens of thousands of Hispanic and Indian women workers (Gonzalez 1976; Fernandez-Kelley 1983).[5] Yet the formation of enduring collectives has been prevented by a range of retaliatory measures taken by management. These include the closure and relocation of plants or threats to do so (Pena 1986).

Marginalization and subordination of the labor force, then, are the historical conditions of production regimes and political economies. The position of women is always susceptible to the control tactics of management operating with the acquiescence of government. Multinationals around the world have earned a reputation for the docility of the female workers whom they recruit selectively from the youthful unemployed among the population (Weekes-Vagliani 1980). In summarizing studies of labor relations and resistance, Pena and Cardenas (1988) conclude that:

> . . .the universality of a gender based division of labor in microelectronics is . . .another aspect of capitalist global restructuring designed to politically decompose workers' power in the advanced capitalist societies (p. 102).

Selectivity for gender, then, is a means of diluting the power of men and women workers through its mobilization of a female labor reserve, a tactic made possible by new technologies. As Nash (1983) comments:

---

5 Fernandez-Kelley (1983) conducted anthropological research among women factory workers in the Mexican subsidiaries of American semiconductor plants in Mexico and in foreign-owned and domestic garment plants. As in Malaysia, the semiconductor firms generally hired younger, unmarried women, whereas most of the textile workers were married with children (pp. 102-104). The political activism of the Mexican apparel and textile work force stands in sharp contrast to its Malaysian counterpart. Perhaps because Mexico was already industrialized by the end of the nineteenth century, the traditions of unionism and protest are central to the class experience. Labor scholars frequently comment upon the naivete and docility of the female work force in Malaysia and the other newly industrialized countries of Southeast and East Asia (Ki-Nam and Stevens 1987).

> The net effect of the transfer of capital abroad has been to reinforce managerial decision making and weaken the control of organized labor . . (p. 28).

Capitalism precludes class activism on the shop floor in at least three ways. First, branch plants may not operate in a region long enough for class movements to take root; second, class formation is inhibited by the recruitment of young and inexperienced women; and third, governments and labor organizations in the third world, aware of capital's footloose nature and its potential to automate labor-intensive processes, may be reluctant to encourage or condone any action on the part of labor that might perturb management (Nash 1983: 28). Gender and the global organization of industries are linked as the means to the dominance of management in the labor process at all spatial scales.

WOMEN SEMICONDUCTOR OPERATIVES IN SOUTHEAST ASIA

The gender research on industrialization in Southeast Asia is largely empirical. Except for topical interests in the living conditions of factory workers and in their socioeconomic well-being, little else of a shared agenda unifies the literature. Out of the whole, however, certain general observations can be drawn that relate to problems of marginalization and proletaritization. Studies of factory workers in various industries over the years consistently portray their relative youthfulness, their lack of prior work experience, and their unmarried status. These features appear to be most pronounced in semiconductor plants (see, for example, Ackerman 1984; Arrifin 1978; and Lim 1980). Numerous studies have found that four to five years is the maximum career of semiconductor operatives, and industry representatives estimate that the typical length of employment is from four to six years (*Malaysian Digest*, October, 1988, p. 5). With respect to age, studies of women industrial workers in Malaysia, whether in semiconductors or in other types of manufacturing, find that the average age of the operatives is about 22 to 24 years old and usually slightly less. As many as 85% of these women have never-married, and most are first-time wage-earners. It is difficult to confirm or refute assertions by some that the semiconductor work force is aging at the workplace and becoming more stable since most studies were conducted in the late 1970s.

One study which does utilize more recent data suggests that older women worker are, indeed, becoming more prevalent in Malaysian and Singaporean factories. Lin (1987) presents evidence from 903 survey reponses collected at export manufacturing zones that seems to confirm this view, although her findings also attest to considerable demographic variation among work sites. In Penang, for example, Lin determines that the average age of Malay electronics operatives is 23.5 years with 19% married; in Singapore, however, the average age of Malay operatives is 26.5 years, and 47% have married. Lin also examines ethnic differences in age and

marriage. She determines that Chinese workers tend to be older than Malays in both Penang and Singapore, a fact that Lin attributes to the deeper "capitalist involvement" of an urbanized Chinese community which freely condones female participation in a wage economy. Moreover, Lin observes larger proportions of older, married women working at both sites than were observed by earlier students, evidence, according to Lin, of a nascent female industrial class with modern attitudes toward work and life:

> Increasingly, work is no longer a temporary, pre-marriage phenomenon. While the economic need to work is still the central motivation, women are increasingly realizing that work also means being valued as productive beings. Values central to capitalist development are becoming internalized. Working on the assembly line with members of different racial groups has begun to break down the colonial legacy of segregation and is helping to build a multicultural working class (p. 131).

While noteworthy, the results of Lin's study may be atypical of the industry as a whole. For instance, the data were collected from the oldest centers of export manufacturing where much of the work force is metropolitan and, as she notes, multi-ethnic. Certainly, the firms in Singapore have few alternatives to hiring older, married Chinese in expansionary times other than to encourage further migration of women from across the straits (which they do, in fact). More importantly, Lin conducted her study just prior to the slump of the electronics industry in 1985. At that time the work force may well have included many more older workers who would not have been recruited or retained in periods of normal and slack demand. Besides, Lin offers no evidence to support her contention that women, even if older, are remaining longer on the job than before. Finally, Lin makes no distinction between types of electronics manufacturing, thus lumping together data on low-skilled and semi-skilled workers in semiconductors (an industry that is highly selective for age) and data on those workers in smaller plants assembling electrical products such as flashlights and television sets (an industry that is much less selective for age).

Another recent study concerned exclusively with semiconductors and arriving at conclusions much different than Lin's is Salih and Young (1987). Studying employment trends in the semiconductor industry at Bayan Lepas (Penang's Free Trade Zone), the authors find that the operative level labor force is predominantly Malay (although the area is largely Chinese), young (a mean age of 22.6 years), and rarely married. Unlike Lin, the authors present data on the high volatility of employment levels. Between August 1984 and September, 1985, for example, over 10,000 electronic workers were summarily retrenched in Penang alone. Citing the narrow demographic profile of the multinational work force, the authors are less than enthusiastic over the possibility that the growth of the industry will lead to an autonomous development:

> Thus, in the future, as in the past, the realities of economic development in Malaysia will be determined by the articulation of changing global structures with political interests internal to the society itself (p. 199).

Due to the industrial mix in Malaysia's large-scale industrial sector, the division of modern labor arises from the differences in the fortunes of communities and genders in the prior political economies that prevailed under colonial and post-colonial rule.

WOMEN'S STATUS AS AN INDICATOR OF DEVELOPMENT

The many conditions of women in the third world are linked to the profoundly different forms that modernization takes among societies and to the inherently different structures of intrusive industries. The working lives of women are as diverse as are the cultures, histories and economies of the places where they live. Rather than documenting the successes and setbacks of women on a global scale, scholarly energy might be more efficiently spent by examining the role of agencies (capital, culture and the state) in structuring a peripheral labor force. By adopting a research venue that focuses too narrowly upon the living conditions of labor, scholars often slight the more important subject of its embeddedness in a rationalized process of production. In the cold light of objective analysis, the marginalization of women is a process that owes at least as much to the amoral technological requirements of modern capital, to the inherent cultural divisions of labor, and to governmental interventions as it does to any Western conspiracies of female exploitation, as real as the latter may indeed be. In order to make a greater contribution to the understanding of larger development processes, gender and development studies must advance beyond simply chronicling the working lives of women in multinational factories. Instead, scholarship must be informed by general theories on culture, class and capitalism. The concepts of dependency, the new international division of labor, the articulation of modes of production, and structuration are helpful in framing the problems of marginalization. The present research makes use of these in examining the generation of a peripheral female work force. The central interest of the study is the synergy of localized economic and demographic forces and the labor demands of assembly line technologies.

CONCLUSION: THE REGIONAL LABOR FORCE IN THE GLOBAL SYSTEM

Current geographical research on multinational activites is usualiy set within the theoretical context of Marxian dependency theory or some recent derivative of it. Many studies refer to phenomena at the scale of national or international capital flows and labor market structures. For example, despite its interest in the behaviors and strategies of management, industrial geography in the United States is still dominated by locational analyses at the macroscale. Even in the United Kingdom, where the history of a region receives much more consideration, industrial geographers often neglect the region's population structures and its internal political economy. Labor is

treated as an interchangeable commodity, and capital is factored as a blunt agent of change insensitive to ethnic, place, and gender differences. The present research contends, to the contrary, that industrial development is, in fact, highly selective for particular segments of the population and, furthermore, that labor force participation varies qualitatively according to such localized conditions as the mix of firms operating in the region, the vigor of the native economies, the ethnic and gender divisions of labor, interregional migration trends, and the historical association of populations with occupations and places.

Recent calls for a new regionalism in geography--one that is wedded to economic history and that is also conscientiously systematic and holistic--signal a heightened interest in variety. The movement away from an all-consuming concentration upon the spatial organization of economic activities leads to a fuller consideration of societies in time and place. This more holistic approach combines the history of labor and technology with an appreciation of regional cycles of ascendency and obsolescence.

The present research on the structuration of a female labor force proceeds in this general theoretical direction. It examines, first, the segmentary tendencies of multinational firms in a peripheral region and, second, the demographic diversity of multinational labor force. Its essential point is that global capital is not a uniform agency; its effects vary among regions and industries. Every localized production system is characterized by distinctive strategies of recruitment and distinctive modalities of labor force participation. The contingent nature of modernization opens the process to policy interventions by the state. Through its regulatory perogatives, the state can act to ease the burdens of marginality that commonly befall working women in third world societies.

CHAPTER III

THE AGRARIAN CONDITIONS OF SURPLUS LABOR: FEMALE WORKERS IN A TRANSITIONAL REGION

INTRODUCTION

The colonial powers in Asia transformed the societies they subjugated not so much through violence as through the more subtle re-orientation of native economies from subsistence to commodity production. Whether the export was rice from Annam, sugar from the Dutch East Indies, cotton from India, or tin and rubber from Malaya, the lasting legacy of colonialism has proven to be the irrevocable involvement of new states in the economies of the old. The penetration of Western technologies constantly reinvigorates this linkage of core and periphery and alters traditional divisions of labor. In the rural areas of third world countries, the status of women is particularly susceptible to technological change. Since highly capitalized systems of commodity production are dominated by male labor, successive rounds of investment displace the female labor force ever farther from its traditional prominence in village subsistence and orient it, by necessity, to urban sources of employment. The study seeks to place changes in the economic status of rural women within the context of regional land use and demographic trends. Related phenomena are analyzed at the national and regional levels. Three general topics are covered: the roles of capital and the state in the decline of the subsistence sector, the attendent structural changes in the rural labor force, and the sex-specific out-migration trends in response to a widening gap between rural and urban employment opportunities.

DIVERSITY OF AGRICULTURAL TYPES IN MALAYSIA

Rural Negeri Sembilan is a region of on-going and obsolescent technologies, each involving a labor force distinctive in its ethnic and gender composition. As these systems evolve, the relative statuses of races and genders associated with them undergo constant change as well. To understand the present-day configurations of rural labor, it is necessary, first, to appreciate the prominent structural features of different agricultural systems. To this end, Goldthorpe's (1987) typology of rural industries helps to facilitate a comparative study. Using examples from Malaysia, Goldthorpe identifies three major types of tropical systems: private plantations or estates, independent small-holdings, and public land resettlement schemes. Each of these types is characterized by a different level of capital investment, intensification of labor, and centralization of management functions.

The hallmarks of plantation agriculture (or, as it is referred to in Malaysia, estate agriculture) are, first, its crop specialization (usually rubber, palm oil, cocoa or tea in Malaysia); second, a

perennial wage-earning labor force in residence on the estate; and third, a bureaucratic management structure. The work regime, itself, generally resembles that of the modern factory more closely than it does that of other farming systems. A second, more widespread type of tropical agriculture is the mixed cultivation of cash and subsistence crops on individual small-holdings. This diversified production system is operated mainly by unpaid family workers whose labor is organized by a senior household membership often acting in unison with neighboring families. While small-holdings produce commodities, the organization of production replicates the noncapitalist formations of the subsistence economies. Indeed, the small-holding economy is often characterized in the literature as a quasi-feudalism referring to the fact that the utility of land and labor are not established by any external market.

An intermediate type is the public land scheme in Malaysia. In many respects, this type combines the managerial structure of the estate and the labor organization of the small-holding. The federal agency carves the holding from public (state) forest lands and deeds plots to individual settler families. In Malaysia, the settlers are almost exclusively ethnic Malays. Since 1958, the Federal Land Development Authority (FELDA) in Malaysia has resettled nearly 100,000 families on almost 400 land schemes covering 700,000 hectares. Most of the projects are located in the vast and largely undeveloped state of Pahang and in neighboring states of Johor, Negeri Sembilan and Selangor. The crops grown on the schemes, as on the estates, are exclusively export commodities, usually rubber and oil palm. Cropping and processing schedules are established and maintained by a bureaucracy comprising ". . . a hierarchy of managers, assistants, and field supervisors in an organizational structure analogous to that of a commercial plantation" (ibid., p. 31). In addition to the clearing of farm lands and the coordination of settler household activities, FELDA sells to farmers the technological in-puts of seedlings, fertilizers and pesticides. The agency also maintains the technical infrastructure necessary to processing and transporting the crop (Bahrin and Perera 1977)[1] A few other federal agencies are active in converting rural farm populations from individual holdings to cooperative schemes. For example, the Federal Land Cooperative and Rehabilitation Authority (FELCRA) organizes and subsidizes small-holding producers in mini-estate cooperatives.

1On all FELDA schemes, the agency originally deeded land holdings to the settlers. In 1984, FELDA announced a "share system" wherein the farmers, instead of owning tracts of land, would be awarded shares in a corporation and paid wages along with seasonal dividends and bonuses. According to FELDA:

> The primary objective of this System is to ensure a more stable income for the settlers, to reduce risks from price fluctuations and crop failures ..(p. 9).

As noted earlier, these agricultural types in the Malaysian context are distinctive with regard to ethnic participation. Plantation development in colonial Malaya forged a rural proletariat of immigrant workers. Labor immigration and importation accounted for the rapid growth of Indian and Chinese communities in Malaysia from the 1880s until the 1930s. The ethnic Malays, meanwhile, were left in the dualistic mode of small-holding agriculture combining commercial and subsistence cropping. The public land scheme, if not entrepreneurial, is at least a step closer to a genuine capitalism wherein the market establishes the values of land, labor, and product. On the land scheme, however, the state reduces many of the risks inherent in large-scale agriculture. In moving from the village to the land scheme the farmer forfeits a measure of autonomy in return for a measure of security. The agency replaces the household head as decision-maker and assumes a share of land development costs. Through such programs, the rural Malay families are gradually accustomed to a form agro-industrial capitalism, or more accurately stated, it is the male work force that is so accustomed. On neither the small holding nor the large scheme are Malay women as economically active as they were in an earlier subsistence economy of rice cultivation. For instance, the domestication of young Malay women is promoted on land schemes through adult education classes that teach such homemaking skills as cake-making and sewing.

THE HISTORICAL SEQUENCE OF RURAL INDUSTRIES

The proliferation of agricultural types and the dominance of the commodity sector are conditions which began under colonialism and continue to the present. In the long view of Malaysian history, successive foreign economies have steadily drawn Malay society into a series of international markets. During the ninetheenth century, the British extended their influence outward from the coastal and insular strongholds of Penang, Melaka and Singapore. Tin ore was the natural resource that first attracted large amounts of Western as well as indigenous capital. The mining, itself, was done mainly by Chinese gangs on deposits claimed by Malay sultans and often leased to British firms. The political climate of mining was, at the beginning, lawless and violent. Sultan fought sultan over deposits; rival Chinese gangs joined opposing sides; and the British, when they chose to send the colonial army into the fray, generally supported the sultan or usurper whom they judged most likely to yield the largest concessions. Thanks to the toil of the Chinese crews and the combined avarice of all races, the Malayan tin industry soon dominated the world market. With the opening of the Suez Canal in the British protectorate of Egypt and with the replacement of sailing vessels by steamships, the passage to European markets from Malaya was greatly reduced. Savings in transit times and transport costs led to an increase of mining activities. The resulting wastage of the land and the influx of Chinese labor into the towns of the West Coast proceeded apace.

Tin mining was eventually eclipsed by a rising star on the world commodity market. Innovations of ocean-going and land transport in the 1870s coincided with genetic

experimentation on Brazilian rubber plants in the Kew Gardens. Botanists soon perfected strains suitable to the soils and climatic regime of Malaya. By the end of the nineteenth century, the West Coast of the colony was virtually blanketed by the rubber plantings of British firms. Rubber warehouses proliferated in the old tin mining towns of Kuala Lumpur, Ipoh and Taiping to the north and Seremban to the south . While tin mining had already oriented the colonial economy to the global market, the rubber industry financed a more intensive development of the countryside. By 1890, Perak, Selangor, and Negeri Sembilan were core areas of the colony's production (Drabble 1973). The near monopoly of foreign capital virtually excluded the participation of ethnic Malays. The colonial government, fearful of distracting Malay villagers from rice production, discouraged European estate managers from employing them to tend and tap trees. Instead, Malaya was opened to the immigration of Indian males, mostly Tamils from South India and Ceylon. During periods of rapid expansion, indentured Indians were imported (Jackson 1961; Sandhu 1969).

Although village economies and populations were not affected at first by these changes, Malay farmers, by the turn of the century, had begun to cultivate rubber trees on plots carved from forested lands around the settlements and the *sawah*. The activity became especially widespread after World War I when rubber prices soared due to the demand in the West for automobile tires (Jackson 1965). In diverting the labor of village households into cash production, many Malays became directly involved, for the first time, in the colonial economy and were thus vunerable to its instability. Moreover, the rubber crop elevated the economic status of males by creating a monetary value for the lands which they cleared. Soon, in the dual economy of the village, rubber tapping took priority over rice in the allocation of household labor. Rural Chinese performed the critical profitable role of middlemen in the small-holder economy, purchasing the sheets of smoked latex from Malays and selling them to Chinese and British warehouses in the cities. Malays remained in the villages, and the vast majority of Indians remained on the labor lines of the estates, although eventually many opened shops in the towns or found employment on the rapidly growing railways.

Any major movement of nonMalays into rice farming was blocked by colonial land policies enacted early in this century. Commencing with the Malay Reservations Enactment of 1913 (Wong 1975, pp. 508-511), the colonial government entrusted to the Malay sultans, the symbolic heads and chief functionaries of the state governments, the power to designate certain types of land, such as *sawah*, forest and derelict mining lands, as Malay Reservations (National Land Code 1983). Of course, the continued stability of village culture and economy suited the colonial enterprise for it ensured the domestic supply of inexpensive rice for the largely nonMalay mining and plantation labor force. Unlike the situation in British Burma where Indian immigrants gained control of extensive agriculture lands, the rice lands of Malaya remained in the hands of the

indigenes. Today these areas are transferable solely to Malays with the intent of keeping them forever in the possession of ethnic Malays.·

This legal apparatus, while perpetuating Malay claims to traditional rice lands, effectively institutionalizes the not-so-subtle spatial pluralism that was at the heart of the colonial political economy.[2] Furthermore, this reservation policy prevents the sale of considerable resources to the NonMalays who command sufficient capital and managerial skills to develop less accessible rural areas. Instead, Malay farmers are left with a considerable stake in a stagnant traditional sector. At present, the entrustment of the reservations to the Malays has become an emotional issue overlaid by racial claims to the soil of the nation and nostalgia for a fading way of life.

CONTRADICTIONS OF DEVELOPMENT IN POST-COLONIAL SOCIETY

For reasons of *realpolitik* as well as Moslem charity, the state was inclined, early on, to direct its energies toward promoting the well-being of Malays in general and of rural Malays in particular. As the date of Independence approached in August 1957, Whitehall, in collusion with the Malay aristocrats, heaviiy favored rural areas over cities in the apportionment of parliamentary seats, thus ensuring the dominance of a Malay-led coalition party. Ever since, the Malay peasantry has been wooed by national and local politicans. The FELDA projects were among the earliest and most visible of these efforts. A costly program of direct crop subsidy payments was another.

Since the end of World War II, the government of Malaysia has maintained a base price for padi. During the 1960s and 1970s, living standards in rural areas were greatly improved by direct subsidy payments to small farmers and by a variety of agricultural extension services. Yet even while dispensing such relief, Malaysian politicians were quick to assure their rural constituents that they had no desire to leave them stranded in the out-moded and poverty-plagued niche of small-holder padi farming. The subsidies and services were simply expedients to alleviate rural poverty after a century of governmental neglect. For the long-term development of the villages, special agencies were established to promote rubber cultivation by Malay farmers and to finance aquaculture, horticulture and animal husbandry projects on village lands. At the same time, the government turned to policies of capital-intensive agricultural development and higher import quotas for rice.

Much of the domestic rice crop is now grown on large-scale irrigation schemes in favored areas of the country. In the 1970s, loans from the international community enabled Malaysia to finance projects in the northern Kedah plains where local farmers were recruited to take part in a Green Revolution. Throughout this ancient rice bowl of the peninsula, the government provided

---

2 In 1933, a Malay was defined by the government as "a person belonging to any Malayan race who habitually speaks the Malay language and professes the Muslim (sic.) religion" (Wong, ibid., p.512). The official usage referring to ethnic Malays is *bumiputera*, or "prince of the earth."

and continues to provide farmers with seeds of high yield varieties, fertilizers, pesticides, tractors and petrol (Gibbons, et. al. 1980). A federal regulatory agency operates milling and warehousing facilities throughout the region. While promoting agricultural modernization in targetted regions, Malaysia has increased dramatically its imports of relatively inexpensive rice from Thailand. In 1986, the government dropped it post-independence goal of achieving 80% to 85% self-sufficiency in rice to a level of 55% to 60% self-sufficiency (*New Straits Times*, January 27, 1986, p. 12). Small-scale household production has no place in the government's rural policy. In 1987, domestic padi production fell 12.3% from the previous year's level. At present, the amount of rice imported, 89,000 metric tons, nearly equals domestic production (*Malaysian Digest*, December 1987, p. 6). As capital-intensive methods produce higher domestic yields and as imports increase, prices continue to fall. Even in the northern "granary areas" of the peninsula, farmers currently earn only about M$254 (US$100) per month, less than one-half of the official poverty level income for a household of five. Since 1970, the poverty rate among the country's padi farmers has remained about 89% (*New Straits Times*, January 21, 1986, p.9).

The future agricultural economy of Malaysia depends, not upon padi, but upon the performance of two other crops, rubber and oil palm. In 1987, Malaysia was the world's largest producer and exporter of both. Indeed, the country's exports of palm oil amounted to 58% of the world's total consumption in that year (*Malaysian Digest*, ibid.). Yet neither the planners nor the planters foresaw the rollercoaster economy which were they creating. Throughout the 1970s and into the 1980s, the nation was an economic hostage to the cycles of world commodity markets. Boom years led inevitably to over-production and declining prices. The case of rubber is a good example. Following World War II, the country's balance of payments remained in the black thanks to a pent-up demand for latex. However, these years of prosperity were soon followed by years of recession. After the world price for rubber hit a postwar high of 87 cents per pound in 1980, it fell to a low of 39 cents in 1985 (CRB 1987, p.211). Today it hovers around 50 cents. While palm oil has been a somewhat more reliable source of earnings since the early 1970s, it, too, is highly susceptible to price fluctuations. For example, the commodity's price fell from 28 cents per pound in 1980 to 21 cents in 1982. By 1984, the price had recovered to 34 cents, only to plummet again to 27 cents in 1985 (ibid., p. 174). Nonetheless, Malaysia's revenues from palm oil have steadily increased due to rising levels of production. In 1987, exports of palm oil amounted to US$400 million compared to US$100 million for rubber (ibid.). Confident of an insatiable world demand for the commodity, the federal government, through its various agricultural development

agencies, has recently encouraged diversification into oil palm on private estates and on most FELDA schemes opened in the last ten years.[3]

From a social planning perspective, agrarian development presents a mixed bag of benefits and problems. The efficiency of the rural labor force has greatly improved, but modernization has precipitated severe dislocations in the form of rural underemployment. The commercialization and intensification of agriculture have idled all but the ablest male members of households, and many of these choose to work for higher wages in the cities or apply for a FELDA holding. Rural women, on the other hand, find their options more limited. Although economic forces set in motion by the state have steadily undermined their traditional place as primary household workers, the state provides few alternatives for village women other than that of unpaid labor on family holdings.

THE CULTURAL-HISTORICAL BACKGROUND OF SEPARATE DEVELOPMENT

The history of rural land use in the state of Negeri Sembilan follows much the same course as that of the country as a whole. Early on, foreign-owned holdings were opened alongside and prospered separately from village holdings. Few economic linkages joined the two. Malay farmers did, however, adopt and adapt the technology of rubber cultivation to the limited scope of their holdings. In the1960s, the earliest FELDA schemes were concentrated in the states of Negeri Sembilan and Selangor. Today the village household that does not maintain at least a few rubber trees is very rare indeed, and each year FELDA and a sister agency, the Rubber Industry and Small-holder Development Authority (RISDA), bring thousands more young Malay farmers into the rubber industry.

The environmental diversity of the state makes possible the varied agricultural systems which have prospered at different times. The state of Negeri Sembilan extends from a hilly and forested northeastern border--the cascades of the peninsula's montane spine--to a coastal plain on the Melaka Straits. Two major riverways collect in an uplands, snake through a rolling topography, and splay onto a coastal plain. For centuries, rice agriculture thrived in the river valleys, while European planters later cleared the forested slopes. The earliest inhabitants of the region were populations of forest dwelling Negritoes, the *orang asli* (orginal people), a foraging people loosely organized into scattered bands. Beginning in the fifteenth century, they were gradually pushed farther into the mountainous interior by waves of Moslem Minangkabau migrants from West Sumatra. Speaking a dialect distinct from other Malay groups, the Minangkabau migrants brought with them several other unique cultural complexes; among these were a house

---

3 In fact, the performance of all commodities in 1986 was dismal. Earnings from oil palm exports declined from M$1.9 billion in 1985 to M$1.3 billion in 1986. Earnings from rubber and cocoa in those years remained flat despite increased production (Asiaweek, June 15, 1986, p. 62).

form distinguished by steeply arched roofs resembling the horns of bullocks, a feudal political system of chiefs and retainers and, very much an oddity in a Moslem society, a matrilineal kinship system, the *adat perpateh* whereby the ancestral homestead and rice lands passed from mother to daughters (Josselin de Jong 1952). According to this traditional code, the *sawah* was divided and further subdivided among female heirs upon the deaths of the matriarchs.

Although men periodically assisted in the heavier tasks such as plowing, dyking, and threshing, padi farming was primarily the responsibility of women. Working together in a cooperative institution (the *sharikat*), mothers, sisters, and female cousins tended the seedlings, transplanted them into the prepared beds, tilled and weeded the greening fields, and cut the ripened seed heads from the stalks (Manderson 1979, p. 235). Thus, in the traditional division of labor, women's status was identified with and symbolized by the rice crop (Muhammed 1978). Beyond the village fields lay the world of masculine prestige, the world of the *haj* and of fortune seeking. Young men (very rarely young women) commonly undertook an extensive journey, the *merantau*, in search of wealth through trade or soldiering (Muhamed 1962; and Peletz 1987, p. 452). The *merantau* is a practice common in the Indonesian/Malaysian realm. It is, in effect, a temporary or circular migration undertaken to enhance the prestige of the sojourner within the village community (Goldstein 1978, p. 40). The achievement of male social status through geographical mobility is a subject that has attracted much scholarly attention. Naim (1976) offers a widely accepted definition of the phenomenon:

> . . . leaving one's cultural territory voluntarily, whether for a short or long time, with the aim of earning a living or seeking furtheir knowledge or experience, normally with the intention of returning home (p. 150).

In his analysis of Minangkabau mobility in West Sumatra, Naim documents an increase in the volume of district out-migration between 1930 and 1971. Furthermore, Naim suggests that the *merantau* in Sumatera became more prevalent under colonial and post-colonial capitalist development. Unfortunately, the author does not examine gender differentials in migration, nor does he comment upon the economy of villages in areas of high out-migration. In any event, circulation was, until recent times, a perogative of young men among the Minangkabau and among other Malay groups as well (Nagata 1975). Except for educated men who served for lifetimes in the colonial army or civil service, Minangkabau elders rarely left the village. Instead, they concerned themselves with the trappings and exercise of political power. A coalition of chiefs arbitrated land claims and imposed a head tax upon households in return for protection against raiders and rival clans. In traditional times, each chief rose in stature through the judicious application of terror by his underlings (Peletz, ibid., p. 450-451).

THE COLONIAL TRANSFORMATION

The modern state of Negeri Sembilan is a nineteenth century product of British economic ambition and the political maneuvering of Malays..[4] Rich deposits of tin ore along its central Linggi and Ujong River Valleys first attracted the attention of British interlopers in the mid-nineteenth century (Wong 1965). When the Europeans entered the picture, with their strange appetite for tin, the chiefs quickly recognized the importance of water courses in the transport of ore to the sea (Gullick 1951). Near the confluence of the Linggi and the Ujong, two rival chiefs constructed fortresses in an attempt to control and tax downstream traffic. Subsequently, the area became a focus of settlement--hence, the origins of Seremban, first called Sungei Ujong Town.

Vexed by this concentration of Malay power, the British dispatched a few score of troops to ensure the free passage of barges. Following a series of inconsequential skirmishes (the first of which the Malays nearly won), a treaty was signed conceding a permanent British presence. Shortly thereafter in 1875, a resident adviser was posted to Sungei Ujong and, over the next ten years, other Minangkabau chiefdoms came under British control. The powerful native chiefdom of Jelebu received a resident in 1886, and, in that same year, a resident was posted to Negeri Sembilan, a collection of nine (*sembilan*) chiefdoms situated east of the other two. Finally, in 1895, the three residencies were confederated, and together they became one of the Federated Malay States (Gullick 1958; and Parkington 1964). From this time forward, the state capital of Seremban flourished as an adminstrative seat and as a center of tin mining and ore shipment on to Port Dickson. In the 1880s, when a rail line was laid between Kuala Lumpur and Sungei Ujong, the centrality of the town in the colonial space economy was secured while, undisturbed in remote villages, Malay chiefs held their rustic courts.

THE REGIONAL STRUCTURE OF PRODUCTION

The rural landscape of Negeri Sembilan still bears the strong imprint of Minangkabau culture. The distinctive architecture and the vista of irrigated rice fields attest to a prideful past and a by-passed present. The populations of three rural districts to the east and south of Seremban--Jelebu, Kuala Pilah and Rembau--are over two-thirds Malay and mostly of Minangkabau ancestry . In many remote villages, wet rice cultivation is still practiced almost solely by women while much of the state's traditional rice land is located in this subregion (Lewis1962; Swift 1965; and interview with Director, Department of Agriculture, Negeri Sembilan). The lands, ostensibly under the control of the matriclans, comprise a vast proportion of the state's Malay reserve land. Approximately 172,000 hectares out of the state's total of 220,000 hectares of Malay Reserve Land lay in these three Minangkabau districts. The *sawah* area of Rembau and a portion of the

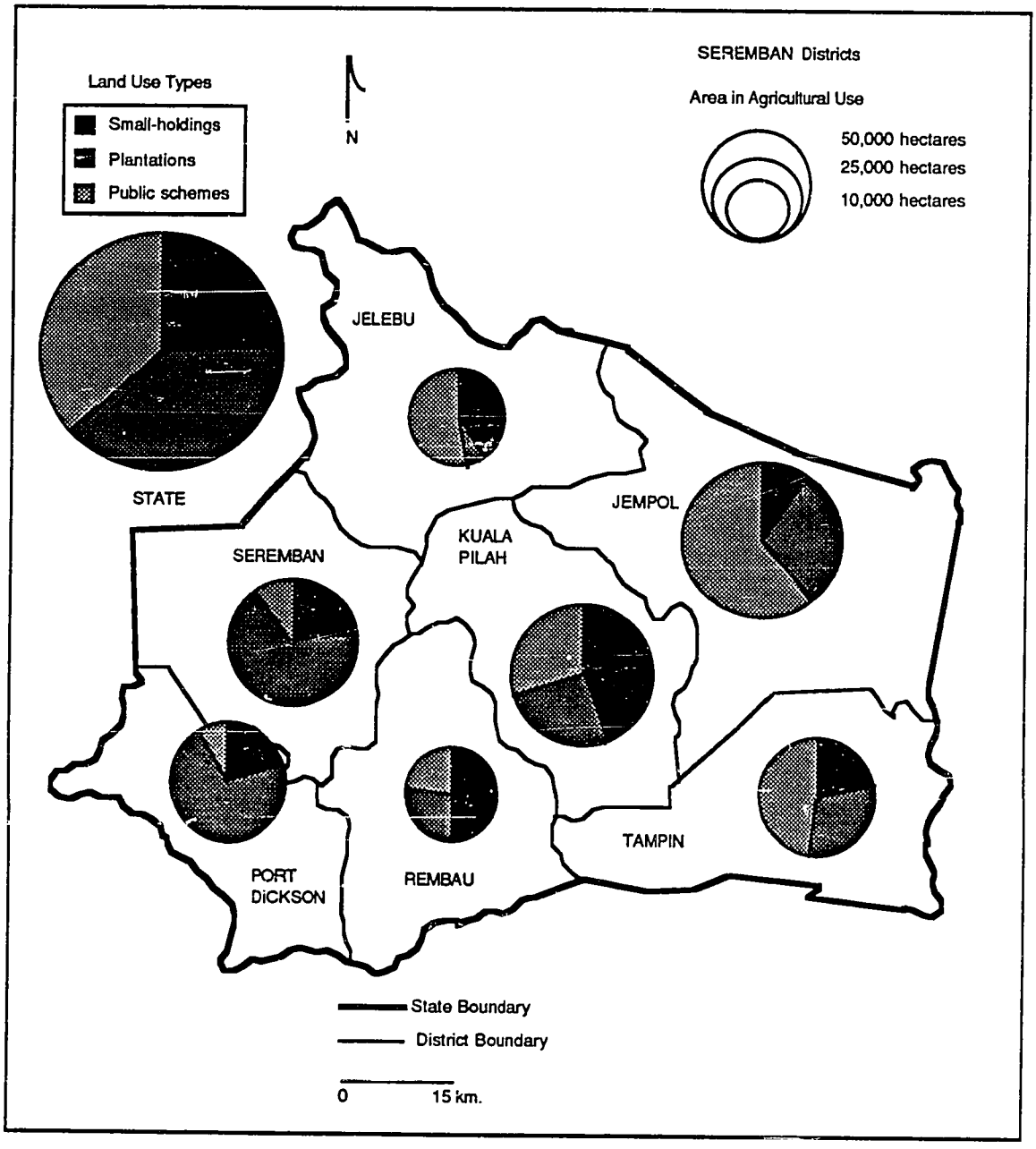
---

4 Parkinson (1964) presents a detailed political history of the state covering the formative decade of 1867-1877.

sawah in Tampin is a part of a much larger *sawah* region including nearly the whole of Alor Gajah District in Melaka State to the south.

Besides the Malay realm of riverine and valley villages, the area also includes a mix of other land uses (Figure 3.1).

Figure 3.1. Agricultural Land Use in Negeri Sembilan, 1985.



Source: Department of Agriculture. Negeri Sembilan.

Small-holdings are the most extensive land uses in Kuala Pilah and Rembau Districts. More prominent in the landscape of Jelebu, Jempol and Tampin are the estate rubber and oil palm plantings, the federal land schemes interspersed by scattered remnants of primary forest. In districts outside the riverine Malay core, these agro-industrial and agro-forestry land use types are predominant. Tampin District in the east and the districts of Seremban and Port Dickson in the west are largely areas of estates and land schemes, whereas Jempol, on the border of Pahang, shares with that state an expanse of forest and a logging industry. In all of these areas, the government and private firms have cleared much of the primary forest reserve and replaced it with rubber. In the Sepang District of Selangor State, joining Seremban District on the west, the predominant land use is also large-scale rubber production.

Since 1980, the federal government has attempted, so far with little success, to implement a variety of integrated development projects in the poor Malay villages of the eastern Malay districts. Funded by a grant from the World Bank, the *Negeri Sembilan Timur* (Eastern) program aims eventually to consolidate small-holdings and to convert rice lands to commercial uses (NST 1981). Despite the concerted efforts of its planning staff, progress has been hampered by a general reluctance on the part of older Malay farmers to risk scarce capital and labor on unproven methods and crops (interview with director, NST).[5] Certain complications arising from *adat perpateh* have also proven a barrier to change in the eastern districts. The fragmentation of land under traditional law leaves few plots of profitable size. Moreover, the resolution of conflicting claims among female siblings to the already scattered holdings of deceased matriarchs has stalled numerous projects. By 1985 only 440 hectares out of over 13,000 hectares of *sawah* in the state had been put under alternative crops (Negeri Sembilan. Department of Agriculture). The disinclination of the aging labor force to move into alternative production systems, the disinterest of the young in rural livelihoods, and the legal and practical complications of land ownership under Minangkabau *adat* contribute to the resource dilemma in the eastern districts. To these internal features of rural production are added the policies of the state toward the subsistence sector.

THE STRUCTURAL INERTIA OF RURAL LABOR

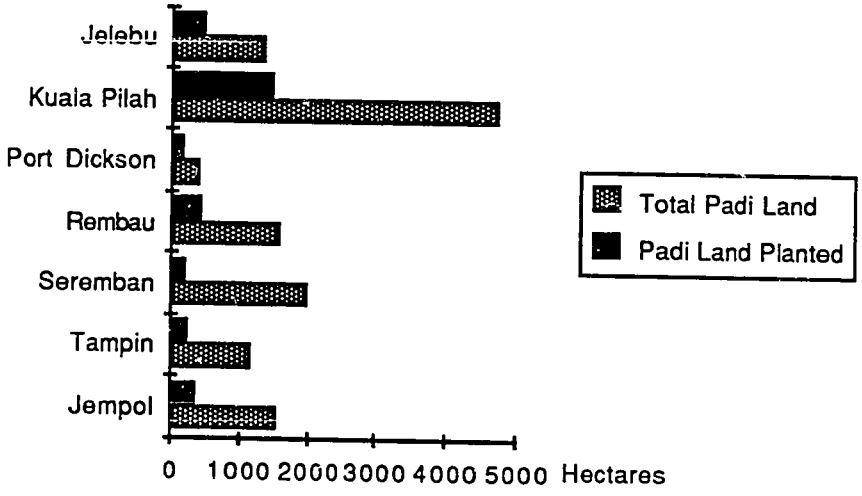
The government's recent free market stance has forced many small growers out of padi production and into the modern agricultural and urban manufacturing sectors. Everywhere, padi farming merely supplements household purchases for consumption. These days many older farmers graze their water buffaloes on the *sawah*, or else they rent their lands to Chinese who cultivate garden crops in addition to padi (interview with director, Department of Agriculture). The

---

5 Early in 1986, the state government committed itself to a M$1.7 million expenditure on the development of fish ponds in the eastern districts, although one-half of the 446 ponds already installed had fallen by this time fallen into disrepair (*New Straits Times*, January 12, 1986, p.4).

decline in the economic importanc- ice has resulted in a considerable shrinkage in land under rice cultivation and an accompanying drop in the size of the traditional padi work force. The state's rice lands comprise nearly 5% of the total agricultural land in the state, or 14,000 out of a total 285,000 hectares. Across the state, over 70% or about 9,200 hectares were idled in 1985. The levels of dereliction are uniformly high in all districts (Figure 3.2).

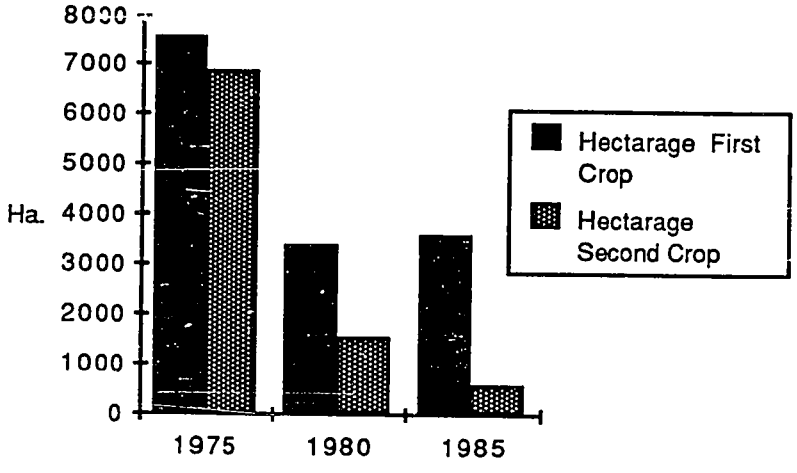
Figure 3.2. Padi Land Under Crop, 1985.



Source: State Department of Agriculture.

Besides the scope of the phenomenon, its abruptness is striking. In 1975, for example, about 7600 hectares, or 58% of the total, was planted during the primary cropping season (April-May), and another 53% of the state's *sawah* was planted during the secondary cropping season (January-February) in that year (Figure 3.3).

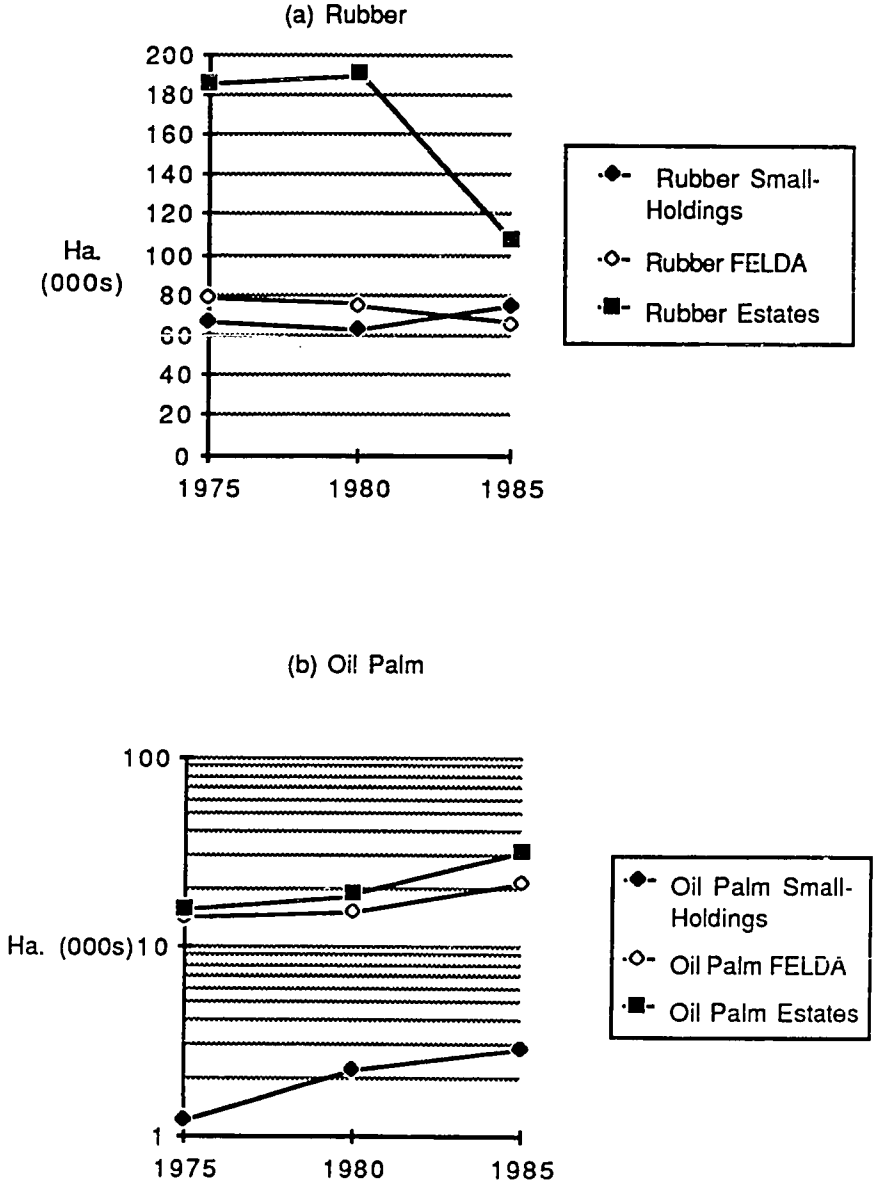
Figure 3.3. Padi Land Planted, 1975-1985.



Source: State Department of Agriculture.

By 1985, the hectarage of *sawah* planted in the primary season had fallen to 3600 hectares, or 28% of the total. The practice of second cropping had nearly ceased. The system also became more land-intensive, perhaps because of increased tenancy . The hectare per worker ratio decreased by one-half, from approximately 2.5 in 1970 to 1.2 in 1980 (Malaysia. Department of Statistics).Other land use changes between 1975 and 1985 reflect not only the increasing hegemony of large-scale capital in the countryside, but also the capacity of foreign capital in agriculture to shift quickly into the most profitable crops. Hectarage in rubber plantings, for example, has declined along with falling prices after 1980, while hectarage in the more stable commodity of oil palm has increased. Yet these trends are not uniform among agricultural types--plantations, land schemes and small-holdings. Plantations demonstrate considerably more flexibility in land conversions than other systems. Between 1975 and 1985, for example, the hectarage of rubber on private estates declined by 41.7% compared to a decline of only 16.6% on FELDA schemes (Figure 3.4a).

Figure 3.4. Land in Rubber and Oil Palm Plantings, 1975-1985.



Source: State Department of Agriculture.

While oil palm plantings increased in area on both types of enterprises, the rate of increase on private estates was almost twice the rate of increase on FELDA lands (Figure 3.4b). In fact, the ratio of FELDA land in rubber to oil palm is far higher in Negeri Sembilan than elsewhere in the Malaysia. For every hectare of FELDA land planted in oil palm 3.3 hectares are planted in rubber, far above the countrywide 0.5 ration of rubber to oil palm.

The relatively slow pace of conversion on land schemes is due, in part, to the reluctance of FELDA to interrupt the activities of settler households. Unlike corporate ventures, individual

settlers can ill-afford to destroy one crop and wait from five to seven years for its replacement by another. This aside, the FELDA plantings in Negeri Sembilan are, unlike those of the estates, only now reaching years of maximum productivity. FELDA stocks are generally in trees fifteen years of age and younger. Destroying trees of this maturity would mean the sacrifice of a tremendous economic potential. As a result, the land use policies of the government have remained relatively conservative throughout a period of great economic change. The estates, however, do not hesitate to convert their oldest plantings, many of them in excess of 30 years old, since the profits derived from these trees are marginal even in times of high prices.

Malay small-holders, meanwhile, have countered the movement of private capital into more profitable crops. While Malay farmers are cultivating more land in oil palm than a decade ago, they have also increased the hectarage under rubber. Their persistence in the uncertain and generally unprofitable rubber industry is partly a consequence, once again, of federal policies. RISDA, for example, encourages Malays to operate and to expand private rubber holdings by offering loans, subsidized prices and extension services. But more important factors are technological differences between rubber and oil palm cultivation in addition to logistical constraints within village agriculture. Unlike the rubber small-holding which can be worked or idled depending upon market conditions and household schedules, oil palm must be tended and harvested according to a rigid schedule, a regime ill-suited to *kampung* life with its diversified production and fluid labor supply. In addition, the processing of palm fruits is an economy of scale operation that requires a costly infrastructure of mills and tanker transport. Rubber, on the other hand, is far less capital-intensive. Trees around the house and fields can be tapped daily by family members, and the scope and pace of the activity can be adjusted to a variable labor in-put. The size of the work force can be as large as an entire household or as small as a single member, depending upon the profitability of rubber and the income-earning alternatives available to the household. The processing of the latex involves a very simple, low cost technology of buckets, vats, and presses. The semi-finished sheets of the coagulated sap are smoked in crude sheds and then easily transported to warehouses on bicycles and motorbikes. Nonetheless, the small-holding, at best, supports a marginal existence. According to FELDA, monthly household earning on its rubber schemes in 1984 ranged from M$460 for small-holdings of 2.4 hectares to M$1,183 for holdings double that size (FELDA 1984, p. 19). In Negeri Sembilan, the average size of the rubber small-holding off the schemes and registered with RISDA is only two hectares, and in several districts, notably the districts of Kuala Pilah and Rembau, the average size is well below two hectares, holdings that would not keep a household above the poverty line. Moreover, the individual farmer operates without the benefit of the infrastructure and services provided by FELDA. Average incomes from holdings on oil palm schemes are much higher. In 1984, FELDA settlers with

holdings of 4.4 hectares and 5.7 hectares in oil palm earned on average M$1200 and M$1720 respectively.

RURAL WOMEN IN HOUSEHOLD ECONOMIES

Malays, males and females, comprise the great majority of the small-holder work force in all crops--rice, rubber and oil palm. The estate work force, however, is largely Indian, about equally divided among males and females. Table 3.1 shows the representation (percentages) of ethnic and gender segments in certain key rural industries for the census year of 1980 (the figures in the total [All] industry column also include industries not tabled separately such as logging and fishing).

Table 3.1. Ethnogender Composition of Selected and All Rural Industries,1980.

	Padi	Rubber Farmer	Oil Palm Farmer	Rubber Estate	Oil Palm Estate	All Industries
Malays						
Males	26.2%	44.2%	83.3%	8.6%	13.5%	30.3%
	1232	16112	1780	1801	463	22297
Females	38.9%	15.9%	7.2%	4.9%	11.8%	12.8%
	1830	5893	155	1036	405	9444
Total	65.1%	60.1%	90.5%	13.5%	25.3%	43.2%
	3062	22005	1935	2837	868	31741
Chinese						
Males	13.5%	16.3%	4.6%	14.1%	8.3%	15.5%
	634	5961	97	2957	285	11424
Females	11.1%	14.9%	0.8%	21.2%	3.9%	17.0%
	521	5446	18	4442	132	12505
Total	24.6%	31.2%	5.4%	35.3%	12.2%	32.5%
	1555	11407	115	7399	417	23929
Indians						
Males	5.1%	5.1%	3.1%	24.4%	38.3%	12.2%
	240	1851	67	5114	1310	8948
Females	4.9%	3.3%	0.1%	26.6%	24.0%	12.0%
	229	1201	16	5581	820	8837
Total	10.0%	8.4%	3.2%	51.0%	62.3%	24.2%
	469	3052	83	10695	2130	1785
Total						
Males	45.0%	65.6%	91.2%	48.9%	60.3%	58.1%
	2117	23954	1949	10254	2062	42696
Females	55.0%	34.4%	8.8%	51.1%	39.7%	41.9%
	2583	12556	189	10705	1360	30808
Total	4700	36510	2138	20959	3442	73504

Source: Malaysia. Department of Statistics.

Despite the precarious status of the small-holding way of life, wage labor on the private estates attracts few Malays for historical and cultural reasons. The estate in Malaysia has always been a nonMalay sphere of activity. In British times, a European manager and an Anglo-Asian staff oversaw the resident Tamil crews. Today tappers and their families continue to live on the estate

in compounds of one-story, one-room rowhouses. Always close by is a small Hindu temple erected by management for the use of the labor community. In 1980, out of nearly 21,000 rubber estate workers, over one-half were Indians. Most of the remainder were ethnic Chinese, including a substantial majority of women, employed mainly on the smaller, Chinese-owned estates. In comparison, the Malay segment of about 2800 workers included just over 1000 females, roughly the same proportion as in 1970 when about 5800 Malay males and 3400 females worked on the estates. Indeed, the total number of rubber estate workers dropped by one-half since 1970 when 42,000 were employed. In the state's expanding agro-industry of oil palm, the smaller labor force is also predominantly Indian.

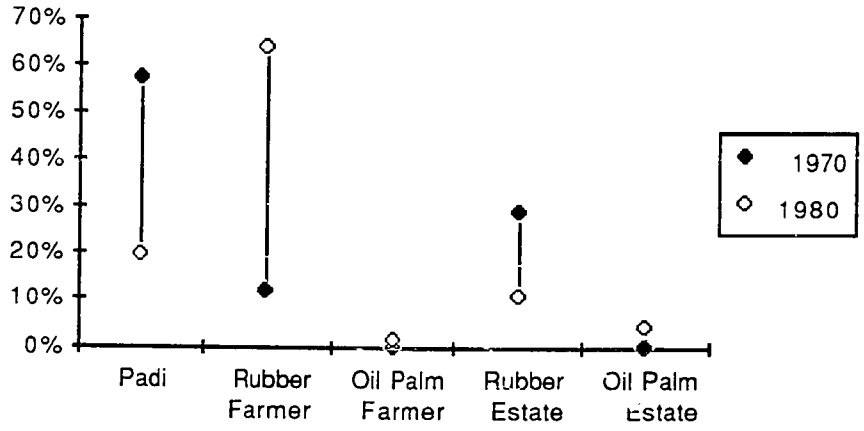
The general contraction of the estate work force in general is not due to any lack of employment opportunities. In Negeri Sembilan and in many other areas of intensive plantation development, the modern agricultural sector faces chronic shortages of labor. Planters, once the country's managerial and entrepreneurial elite, must now compete with manufacturing firms for low wage labor. In 1985 and 1986, years of severe recession across the country, an association of estate managers organized recruitment drives throughout Negeri Sembilan touting wage increases and improved estate housing. However, the response from the unemployed was disappointing (*New Straits Times*, March 19, 1986, p. 12). The federal government, itself, was forced to employ Indonesian and Bangladeshi migrant laborers on FELDA schemes to harvest the oil palm crop (*The Star*, March 19, 1986; *New Straits Times*, June 1, 1986, p. 3; *The Star*, October 1, 1986, p.2; and *Malay Mail*, June 15, 1986, p.4). What would seem an immediate source of employment for village women, the modern estate is made inaccessible by cultural and generational aversions to estate work.[6]

While Malay females are still predominant in padi production, they are steadily abandoning this traditional activity. In surveying structural changes in the employment of rural women, two trends become evident: first, the exodus of women from their traditional role of rice farmers and, second, their increased participation in the male-dominated small-holder rubber economy. Figure 3.5, for example, depicts the relative gains and losses in the concentration of Malay women workers in selected rural industries from1970 to 1980.

---

6 The problem of insufficient estate labor proved intractable and increasingly acute in the mid-1980s. Scholars argued that the inadequate housing and services on the estates were discouraging youths seelking jobs in the "green ghetto." In 1985, Malaysian estates faced an estimated shortage of 36, 500 workers, despite the efforts of the United Planters Association to improve conditions on the estate (*New Straits Times*, July 14, 1986, p. 8; and Lim 1981).

Figure 3.5. Distributional Change of Malay Female Work Force in Selected Rural Industries, 1970 and 1980.



Source: Malaysia. Department of Statistics.

The shift of workers out of padi was accompanied by a proportionate shift into small-holding rubber production. In fact, the number in small-holdings increased from 1430 in 1970 to nearly 5900 in 1980, while the number in padi fell from 6900 in 1970 to 1800 in 1980. The most probable reasons for this shift were the reduced levels of government price supports for padi, the rise of rubber prices during the 1970s, and the loan and subsidy programs of RISDA. In 1985, for example, RISDA registered 37,000 Malay small-holders . This number is far higher than the 1980 census figure (Table 3.1) because many of those on the RISDA register were part-time farmers with other occupations.

The structural mobility of the the Malay female work force leaves few young women in padi production. Figure 3.6, for example, portrays the age and sex structures of the Malay small-holder work force (padi and rubber) in 1980. The predominance of older women is especially apparent in padi, of course (Figure 3.6a). The male padi work force, not nearly as numerous as its female counterpart, exhibits a much different age distribution as well.

Figure 3.6. Age and Sex Structure of Malay Work Force in Selected Rural Industries, 1980.

(a) Padi.

(b) Rubber

Source: Malaysia. Department of Statistics.

This feature of village rice production, that is, the aged, female work force associated with it, is longstanding. Commenting on the sociology of rice production in Jelebu District some twenty-five years ago, Swift (1965) found that nearly all of the rice holdings were registered by women. By the early 1960s, the production of rice for wholesale was rare since households committed most of their labor to rubber tapping on small-holdings. "Only for the aged and for single women,"

Swift comments, "is rice an essential source of cash. . . Also the planting, which is women's work, is an onerous burden for a mother with young children" (p. 37).

As in the padi industry, the rubber small-holding work force is comprised mainly of older workers with substantial proportions of both men and women aged 40 years and older (Figure 3.6b). Yet adolescent females are more visible. The age structure of the rubber labor force demonstrates, above all, that, in addition to the core work force of male householders, the industry includes many aged and very young women. In both padi and rubber, the missing demographic segment are women in their twenties and early thirties. Thus, the employment gains made by women are restricted to workers at the age extremes of the active labor force. This segment of incidental household labor is idled or diverted when rubber prices drop below a certain level.

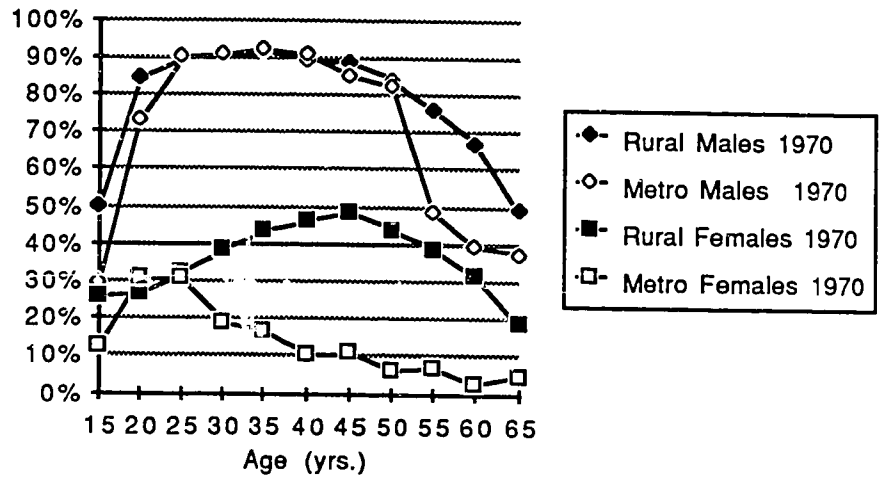
The loss of the padi economy, meanwhile, removes the economic basis of cooperative village bonds which, for generations, strengthened the society of rural women. Notwithstanding the importance of earnings from individual rubber holdings, the industry provides inadequate support for the rural population and little basis for the development of the rural sector. In the final analysis, earnings from rubber only supplement the incomes of absentee household members while effectively preventing the conversion of village lands and the consolidation of rural women's economic power within the indigenous economy and traditional division of labor.

SPATIAL AND GENDER INEQUITIES OF REGIONAL DEVELOPMENT

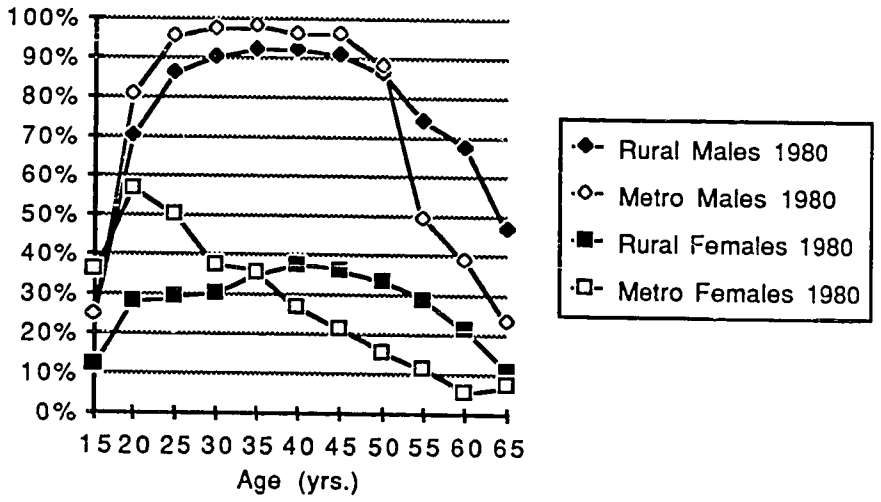
A comparison of rural and urban male and female labor force participation rates shows that employment opportunities for young women are increasing in the city while they are declining in the village. The graphs in Figure 3.7 illustrate age-specific labor force participation rates for rural areas of Negeri Sembilan and for Seremban City in 1970 (Figure 3.7a) and 1980 (Figure 3.7b).

Figure 3.7. Malay Age-Specific Labor Force Participation Rates For Rural and Metropolitan Areas.

(a) 1970



(b) 1980



Source: Malaysia. Department of Statistics.

As is evident from a comparison of the graphs, the rates for young rural Malay women fell considerably between 1970 and 1980. Contrary to the trends in male labor force participation, the gap between rural and metropolitan rates increased over the period especially for women in their early twenties. As discussed earlier, these youthful cohorts of women are least involved in small-holding rubber and padi production.

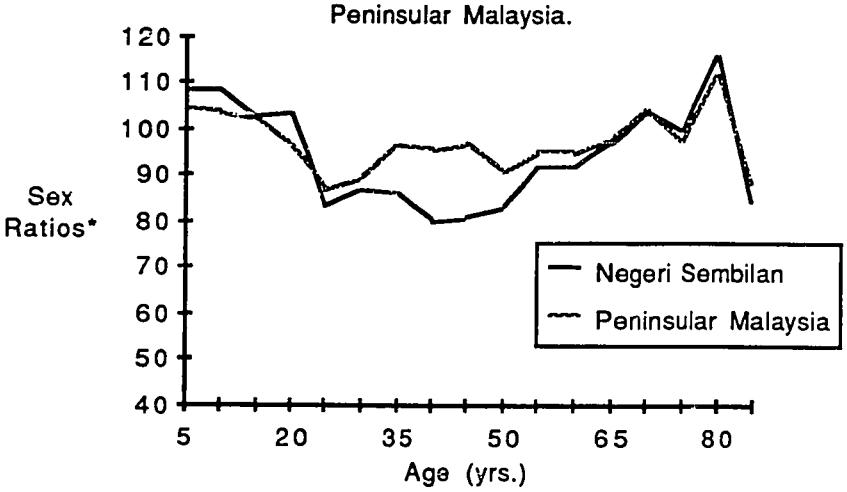
Despite the paucity of employment opportunities, young adult females have out-migrated from the rural districts at a much lower rate than have young adult males. As a consequence, rural women in their twenties greatly outnumber males of the same age. In particular, this is evident in the traditional rice districts of the Minangkabau core (Jelebu, Kuala Pilah and Rembau).[7] In order to convey an impression of this sex-selective pattern of mobility and to demonstrate the degree of regional demographic change, Figure 3.8 displays the sex and age structures of rural populations for 1980 by means of graphs. The analysis assumes, on this point, that low age-specific sex ratios (males per 100 females) indicate relatively high out-migration of males at those ages. The first pair of graphs (Figure 3.8a) illustrates the general imbalance of sex composition across age groups for the Malay population rural Negeri Sembilan and, by way of comparison, for the Malay population of rural peninsular Malaysia.

---

7 Several authors have commented on the sex-selectivity of migration among the Minangkabau of Negeri Sembilan. As early as the turn of the century, Hale (1898) remarked upon "a considerable majority of women" in the Minangkabau villages (p. 452). In traditional society, village households prospered mainly from the remittances of male migrants, but females wishing to gain employment outside the village met with resistance from their clan leaders. Lewis (1962) attributes the sedentism of females to their involvement in the *sharikat*, the female rice-growing cooperatives; however, Lewis's use of the term "incipient capitalism" is misleading since the Minangkabau Malays engaged in commercial rice production only on a small scale. Indeed, by the time of Lewis's field work (post-Independence), most rice grown in Negeri Sembilan was for household consumption. In addressing the cultural aspects of female domestication, Muhammed (1978) describes a symbolic identification of women and the customary, clan controlled rice lands (the *sawah*) through the ritualized legalisms of the native land code, the *adat perpateh*.

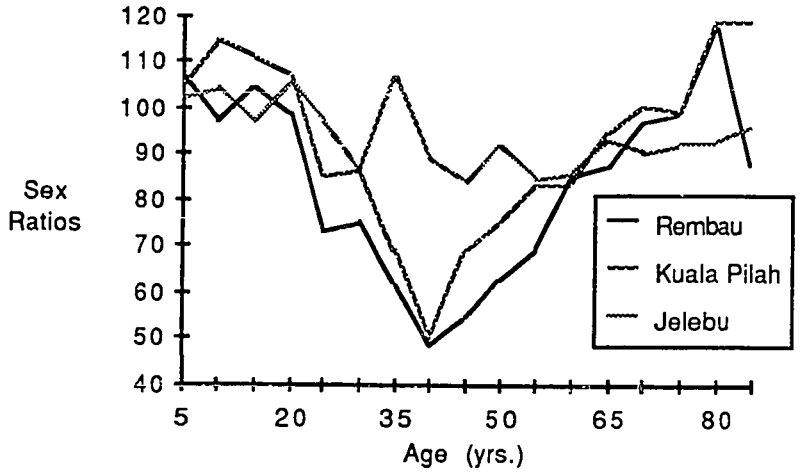
Figure 3.8. Age-Specific Sex Ratios of Rural Malay Population, 1980.

(a) Rural Negeri Sembilan and Rural Peninsular Malaysia.



*Males/Females X 100

(b) Major Padi Districts



Source: Malaysia. Department of Statistics.

As shown, the sex ratios for the state attest to an exaggerated version of national trends. In general, sex ratios for the young adult and middle age groups in the rural parts of the state fall well below the national level.

In the three principal rice districts of the state, particularly Kuala Pilah and Rembau, the shortages of males are especially acute as depicted by the following pair of graphs (Figure 3.8b). In the 35-39 year age group, for instance, the number of Malay females is about twice that of Malay

males (with sex ratios of 50.26 and 48.44 respectively). A lower rate of male outmigration from Jelebu may be explained by the considerable development of land schemes by FELDA in that district.

Faced with insufficient and unsuitable wage earning opportunities, young and middle-aged Malay males find few alternatives to urban migration while the more sedentary and underemployed female population remains behind in traditional villages. Idle land, structural inertia and population dislocations are characteristics of a peripheral labor force--a reservoir of potential urban migrants and the future low wage industrial labor force. At present, spatial and cultural factors prevent rural Malay women from finding employment in the modern sectors. In the future, any urban firm capable of engaging this reserve will be able to to vent the wage pressures of rapid industrialization in the small regional city.

CONCLUSION: URBAN DEVELOPMENT AND RURAL ALTERNATIVES

Colonialism articulated the primary economies of the peripheries with the core metropolitan economies of Europe and, later, the United States and Japan. Prior to World War II, the chief interests of the colonizers, beyond military ones, were the supply of their own industrial manufacturing economies with raw materials and, at the same time, the creation of markets in Asia, Africa and the Americas for finished goods. For the most part, the traditional and noncapitalist formations of the native societies survived their integration into a world order as facets of dual economic structures. Households divided their labor between the cultivation of food crops for consumption and cash crops for sale and eventual export. Family members were, whenever possible, diverted into wage-paying jobs on a seasonal basis and later re-absorbed into the household work force. Where native labor was deemed insufficient or inadequate for commercial agriculture, as in the case of the ethnic Malays in British Malaya, labor migration and importation relieved the shortage. From the beginning, foreign capital adopted a hands-off policy toward the indigenous society in Malaya, commoners and aristocrats alike.

The present transformation of the countryside is the latest phase of a collusion between foreign capital and the state. The regional economies of a modernizing Malaysia are still found at various stages of integration into the global economy. The most dynamic sectors in this transformation are the agro-industries of rubber and, increasingly, oil palm. Yet Malays have always avoided the labor-hungry estates, leaving the villages dependent upon the more precarious economies of rice and rubber. The out-migration of young males from these places creates a shortage of labor that militates against state-supported agricultural development. Female sedentism in rural areas stems from the stronger links of their gender to the land and to the village households, links that have survived so far the tensions and contradictions of development. Since few sources of paid employment are easily accessible to women, the old and the very young increasingly quit the rice fields and work the family rubber holdings.

As the domestication and marginalization of rural women in Negeri Sembilan continue and as the gap between rural and urban resources widens, more young women will be compelled to seek jobs in the nearby city of Seremban. Malaysian officials even now face the alternatives of providing local work for rural-staying populations or entry-level jobs for urban migrants and commuters. In cities and towns across Malaysia, local and federal policies are encouraging large-scale industrialization and thereby transforming the rural underemployed into an industrial reserve. In the coming decades, the middle-sized cities of Malaysia--surrounded by depressed village populations and designated by the government as regional growth poles--will figure more prominently in the locational planning of foreign and domestic industries. By extending the metropolitan labor shed into the village sphere, aggressive firms will be able to turn to their own advantage the region's long-standing spatial and social inequities among races and genders.

CHAPTER IV

MALAY WOMEN IN THE MANUFACTURING CITY

INTRODUCTION

In its drive to modernize and to improve the living standards of its poorest citizens, Malaysia has charted a course of industrial development that, in many respects, parallels the sort of agricultural development experienced under colonialism. The Malaysian modern industrial economy is dominated by a foreign-owned and managed export sector. The generation of entry-level jobs through multinational industrial investment is the keystone of the nation's economic policy. Closely related to the central aim of providing low skill manufacturing jobs for the urban poor is a spatial program of industrial decentralization intended to achieve a more even distribution of the nation's productive capacity among regional centers. In this program, the government targets the middle-sized cities outside the densely built-up industrial core, the nucleus of which is the primate capital, Kuala Lumpur. Heavily congested with factories of all sizes, with housing estates, decrepit slums, highways, and stretches of illegal housing, Kuala Lumpur is rapidly approaching the limits of sound growth. By providing sufficient intervening opportunities in outlying areas, the government hopes to stem a population tide that moves continuously into the central conurbation.

Another important goal of the government's industrial policy is to industrialize the Malay working class. Since colonial times, the Malay masses have largely been excluded from the urban world of commerce and trade. Now, having left the land, they are demanding a share of the city's resources and services, thus competing with the longer established groups of Chinese and Indians. Faced with the real threat of radicalism and racial violence, Malay leaders have promised a disproportionate share of new jobs to their Malay constituency. Industrial growth, social justice

and racial harmony are inseparable themes of Malaysia's economic charter, its New Economic Policy.[1]

Since 1970, the inaugural year of the NEP, the country has experienced a tremendous increase in manufacturing activity. Foreign firms have established hundreds of branch plant operations, mostly in and around Kuala Lumpur, but also in other, smaller cities. Malaysia is a favored offshore site of many global operations, particularly electronics and textiles. Judged by the number of jobs created, the NEP is a success, although earlier projections were, it now appears, overly optimistic. On the other hand, key questions about the nature of the work created by the foreign-led industrial boom remain largely unasked, and a thorough review of the labor process in the new industries has yet to be conducted. If industrialization is to be an efficacious agent of social reform, then the quality of industrial jobs, the ethnic milieu of the workplace, and the profile of the typical worker in modern industries must be continually scrutinized.

The labor force of this emerging modern sector has several important demographic characteristics which distinguish it both from the labor force of small-scale manufacturing in Malaysia and from the labor force of mature industrial systems. The most obvious difference is the predominance of women on the assembly lines, and, due to the biases of governmental and corporate policies alike, ethnic Malay women are far more prevalent than nonMalays. Besides the ethnic and gender segmentation of the labor force under multinationalism, the new industrial environment is characterized by its high volatility of employment levels. Yet these generalities belie the many differences among industries. Neither the demographic composition nor the stability of employment are uniform throughout the manufacturing sectors. These differences are related directly to the technological requirements of specific industries and to their individual product and market cycles. Yet just as important in the new division of labor are the occupational specializations associated with the pre-industrial urban economy.

This chapter examines the ethnic and gender dimensions of multinational development in the Seremban metropolitan area. The discussion advances the argument that the current phase of industrial expansion ghetto-izes the Malay female worker in highly unstable, low wage

---

1 The memories of the decade-long communist insurgency after the second world war (1947-1957) and the urban race riots of May, 1969 continue to influence the thinking of Malaysia's leaders. Both events demonstrated the potential of ethnic rivalry to spawn violence. Adding fuel to the volatile mix of races is the rapid urbanization of the Malay community that has led to the inculcation of Islamic radicalism among the Malay poor and prosperous alike (Pipes 1983, pp. 248-254). The high rates of unemployment in the current recession pose a real danger to the survival of constitutional democracy. In this contentious political environment, the government has felt compelled to act forcibly against those accused of rumor mongering and subversive speech (*The Economist*, December 26, 1987, pp. 45-46). A discussion of the historical background and a critique of the NEP from a leftist perspective is offered by Sundaram (1984).

industries. Four topics are covered: the extent and variety of industrial growth, the rising rates of female labor force participation (stressing the status of Malay women in particular), the spatial and structural segregation of Malays in the manufacturing economy, and the relative impact of job volatility upon Malay women. In concluding, the chapter weighs the extent to which development has advanced society toward the goals of the NEP within the middle-sized city. The chapter begins with an overview of urbanization and industrialization in the nation and region within the context of the post-1970 political economy. Next, the performance of industries and firms in Seremban is examined in detail.

URBAN PATTERNS IN WEST MALAYSIA: A FABRIC OF UNEVEN DEVELOPMENT

The colonial city system linked ports to inland centers of administration, processing and warehousing. Excluding the early Straits Settlements of Penang, Melaka and Singapore which were largely self-contained entrepots, the more typical urban pattern is exemplified by the road and rail linkage of coastal Port Swettenham and the inland center of Kuala Lumpur, the latter combining "the triple functions of a tin-mining town, adminstrative centre and commercial centre" (McGee 1964, p. 8). This dyadic, sea-oriented pattern is expressed, too, in the Port Dickson-Seremban linkage to the south. The later development of Malaya's interior awaited the technology of the steam locomotive that debuted in the 1870s. By the turn of the 20th century, a series of urban nodes along the West Coast were interconnected by a lineal rail and road system running nearly the length of the peninsular colony. The highest priority in transportion was the efficient circulation of raw materials, goods and labor. Courtenay (1972) provides this summary of colonial economic tendencies:

> By 1914, the economic geography of Malaya, outside the subsistence sector, had been moulded by the exploitation of minerals and soils to meet an overseas demand for products that the peninsula was in a favourable position to provide in increasing quantities at competitive prices. The ports, major inland cities, lines of communication and transport facilities were oriented to this end. Unhindered by restrictive economic policies, except in relatively minor ways which in the main were considered necessary to improve the efficiency of the export sector, those elements in the establishment of the export economy were developed, and a pattern was established that could not fail to influence the nature and location of all subsequent economic activity (pp.111-112).

Throughout the colonial period, the chief economic activities remained tin mining and rubber production. Manufacturing was a small-scale activity and, for the most part, an occupational specialization of the Chinese. The free port policies of colonial administrations discouraged local industrialization and drove up the consumption of foreign manufactures. These policies were, in fact, the most feasible for the colony's development since the domestic market was so small,

never more than 5 million persons. In 1957, the year of Independence, domestic manufacturing accounted for only 6.4% of the country's employment compared to 56.3% in primary industries (Lim 1986). Following independence, when political power was transfered to the United Malay National Organization (UMNO), a Malay-dominated coalition party, the government acted to reduce the country's dependency upon imports and to channel more funds into rural development programs. Between 1957 and 1968, the thrust of industrial policy was to encourage local operations through tax incentives and tarrif protection acts. As early as 1958, the federal government passed the Pioneer Industries Ordinance, a package of legislation draw up to stimulate industrial development in Malaysian cities. Under a principal article, domestic and foreign firms were granted pioneer tax staus for periods of up to five years and liberal depreciation allowances (Spinanger 1986, pp. 152-157). The substitution of domestic manufacture for imports was the first industrial strategy tried by the fledgeling state. As a result, manufacturing employment increased from 136,000 to 215,000 between the years 1957 and 1968. Despite these gains, the shortcomings of the import-substitution policy were becoming evident, notably a burgeoning trade deficit in manufactured goods. While the value of exports increased by M$50 million between 1963 and 1968 (M$3=US$1 in 1968), the value of imports increased by M$250 million (Lim 1986). Clearly, the policies of import-substitution had forced Malaysia to become even more reliant upon the earnings from primary commodity exports.

While planners were preoccupied with a worsening trade picture, politicians were faced with escalating numbers of unemployed in the cities and with sporadic outbreaks of communal violence. The rapid growth of urban areas following the second world war had transplanted the economic problems of the countryside to the city. The proportion of the population living in urban areas (defined as places with 10,000 persons and over) grew at an annual average rate of 3.2% between 1960 and 1970 and 4.7% in the following decade, double the overall growth rate of the national population. In 1960, 25.2% of the population lived in urban areas; by 1970 the percentage of city-dwellers had increased to 27%. Kuala Lumpur, Malaysia's primate capital, was growing at an annual rate of 7.6% (Yeung 1988, p. 158-160). Rising levels of urban migration called for more than the halfway measures of economic reform that had been tried so far. The government responded with a series of policies designed to address old dilemmas of ethnic separatism and the endemic poverty of the ethnic Malays. Ostensibly, the New Economic Policy addressed longstanding inequalities among the races. Yet, as every Malaysian understood, the NEP was devised, from the outset, to benefit Malays over others.

A LEGACY OF ETHNIC PLURALISM

The pluralistic character of Malaysian society is perhaps the most compelling fact of national life. Discussions of the Malaysian economy invariably touch upon and, at times, dwell upon the

racial issue. Indeed, the major theme of Malaysia's postwar history has been the accomodation of conflicting claims by Malays, Chinese and Indians to political power, cultural perogatives and economic resources. Few other countries are comprised of such different and inherently antagonistic races--Moslem Malays, Chinese with a syncretic Confucian-Buddhist-Taoist religion, and Hindu and Christian Indians. Each of these groups is represented in substantial numbers, and each claims occupational and place associations (Fisk 1982, p. 20). Furnivall's (1948) words, written over forty years ago to describe race relations in colonial Java, apply as well to modern Malaysia: "a plural society with different sections of the society living side by side but separately within the same political unit" (p. 304). Nagata (1975) affirms that pluralism is still unreformed in modern Malaysia. It remains, according to Nagata, "a situation in which all major social and structural cleavages, often based on ethnicity, tend to coincide and reinforce one another, hence are not conducive to integration" (p.1). The national hope is that the mutual processes of industrialization and urbanization will finally shrink the cultural and economic distances separating the races.

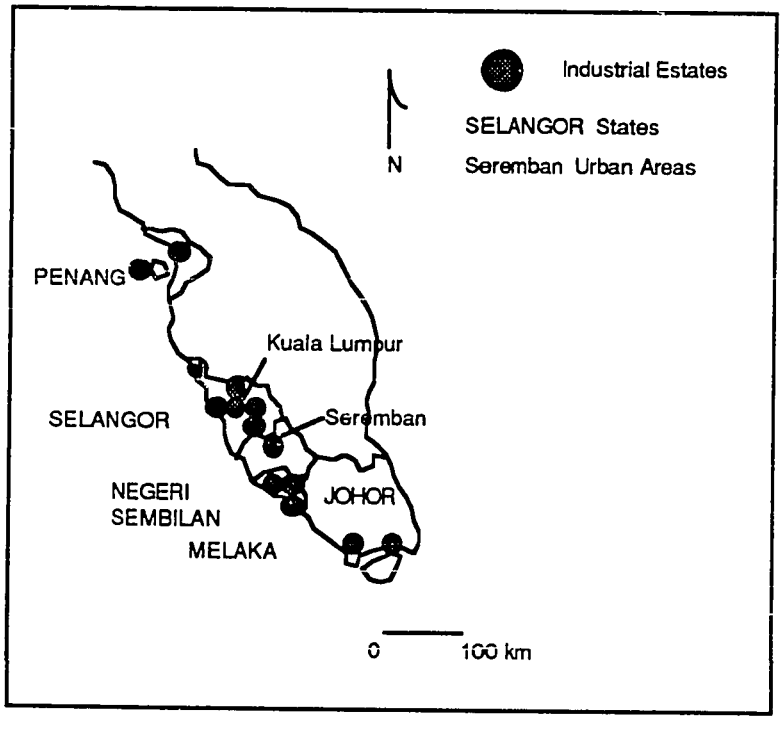
The urgency of restructuring is apparent from the fact that, at several moments in Malaysian history, such as during the communist Emergency (1948-1957) and the race riots of May 1969, the fragile inter-ethnic alliances, both formal and tacit, which unify the polity have very nearly dissolved. Successive five-year plans, from the first (1961-1965) to the latest (1986-1990), have all spoken to the necessity of creating equal opportunities for each of the three races. Yet in its haste to improve conditions of one group above others, the government has raised both the levels of expectation among Malays and the levels of frustration among nonMalays (Kasper 1974). In the future, it is critical that the new industrial economy be structured so as to neutralize the opposing forces.

PRIVATIZATION, MALAYANIZATION AND DECENTRALIZATION

Written in the wake of widespread and bloody racial disturbances of 1969 and issued the following year, the NEP represents a blending of the ideological and the rational within a comprehensive national plan: "a restructuring of Malaysian society so as to reduce and eventually eliminate the identification of race with economic functions" (Fourth Malaysian Plan 1981, p.4). In substantive terms, the industrial phase of the plan built upon the Pioneer Industries Ordinance by extending the lengths of tax holidays and by increasing depreciation allowances. The new investment climate, along with such advantages as a competent work force literate in English, an extensive and well maintained transportation system, air and sea connections to international markets, and a stable political climate have all bolstered the status of Malaysia among Western enterprises. Overseeing the industrialization drive is a host of alphabet agencies, the most important of which is MIDA, the Malaysian Industrial Development Authority.

The NEP signals a departure from past policies of public sector spending targetted at depressed regions and industries. Development is to be spurred by promoting private sector investment outside the Klang Valley in industries with expanding international markets and in regions where much of the necessary infrastructure is already in place (Aiken, et al.1982, p. 41-42). Firms are encouraged to set up operations in one of the forty industrial estates, or "rationalized growth centres," around the country (ibid., p. 253). The earliest and largest of the estates were situated in Selangor and in the neighboring states of Negeri Sembilan and Melaka (Figure 4.1).

Figure 4.1. Major Industrial Estates in Malaysia.



At each site, large and small firms producing for the domestic and export markets are accommodated. Besides the estates, eight Free Trade Zones are set aside exclusively for export-production. In applying this model of decentralized industrialization, Malaysia is following the example of other Asian countries eager to attract off-shore producers (Wong and Chu 1984). Inside the well-serviced industrial parks of several Malaysian cities, American, German, and Japanese manufacturing firms have invested billions of dollars, creating over 200,000 jobs during the boom years of the mid-1970s to the mid-1980s. In establishing racial hiring quotas and providing low interest loans to Bumiputera entrepreneurs, the government promises Malays at

least a 30% share of the modern industrial sector by 1990, a share in the form of jobs for the poor and portfolios for the well-to-do.[2]

Malaysia's minor economic miracle has been made possible by a close cooperation of federal, state and local governments. Especially important in this undertaking are the individual State Economic Development Corporations (SEDC) which initiates projects, liasons with municipalities, and monitors the implementation of regional development plans. The commitment of the government to industrialization is reflected in its allocational of public expenditures over the years. During the second national plan (1966-1970), 2.5% of federal development funds went into manufacturing. Under the Third Malaysian Plan, however, that proportion climbed to 21.6% (Spinanger 1986, p. 13).[3]

SEMICONDUCTORS, TEXTILES, AND THE NEW DIVISION OF LABOR IN MALAYSIA

The success of the NEP hinges, in very large measure, on two industries, electronics and textiles. Of these, the former far outstrips the latter in the value of its exports. Consumer goods such as watches, calculators, flashlights and video games are assembled in small Malaysian factories and sold in Western markets. But a much more vital sector of the industry is semiconductors. Nearly 85% of the earnings from all electronics come from the export of integrated circuitry *(New Straits Times,* June 11, 1986, p.8; Malaysian Digest, November, 1988, p.5). Malaysia's industry, established in 1973, includes thirteen American firms, among them such industry leaders as Intel, Hewlett-Packard, Motorola, National Semiconductor, and RCA. Besides these, the West German firms of Philips and Siemens have established branch plants in Malaysia as have the Japanese firms of Hitachi, Matsushita, Sanyo, and Toshiba (Lim 1978, p. 2; *The Star,* May 21, 1986, p. 3; and *New Straits Times,* May 21, 1986, p. 1). Between 1973 and 1984, the nation's semiconductor work force grew at an average annual rate of 15.7% compared to a rate of 7.6% for all manufacturing industries (*New Straits Times,* June 17, 1986, p.7). During 1984, a year of peak activity, the semiconductor industry operated 27 plants around the clock with 44,000 workers, over one-half of all electronics workers in the country (although their numbers had declined to 36,000 in 1986). In addition, a few thousand Malaysians were employed by firms across the causeway in Singapore *(Asiaweek,* September 13, 1985, p. 65; *The Star,* May 21,

---

2The government has admitted that the chief goals of the NEP--the eradication of poverty and the 30% ownership of equity by Malays--will not be met by the target year 1990 (*Far Eastern Economic Review,* February 20, 1986, p. 52-53).

3 Although public expenditures on manufacturing have subsequently declined relative to other sectors, the absolute amounts spent in each five year plan period have increased, from M$1.5 million in 1971-1975 to M$5.3 million in 1981-1985 (calculated by the author from figures in Spinanger 1986, p. 13).

1986, p. 3; *New Straits Times*, May 21, 1986, p. 1, and June 17, 1986, p. 7). Malaysia's semiconductor exports totalled US$3.14 billion in 1986 and US$4 billion in the following year, nearly 16% of the value of total exports in that year. Among the primary importers of Malaysia's production are the United States, the European Common Market and Japan (*Malaysian Digest*, November 1987, p. 5, December 1987, pp. 6,7, and April 1988, p. 7, and November, 1988).

Next in importance is textiles. As in other developing countries, foreign textile firms arrived early on the Malaysian scene with the first commencing operations in 1957. The industry's technology is especially well-suited to third world out-sourcing. It is relatively unsophisticated, demands little of its operator work force by way of skills or education and, since the technology is relatively stable, little advantage is lost by separating branch plants from R&D facilities. As in electronics, production processes in textiles (the fabrication of bolt cloth, the patterning and cutting of pieces, and the sewing of the final products) are generally weight-neutral. So, distance to market is a minor consideration when transportation costs are weighed against savings in labor costs (Hoffman 1985, p. 373).

Malaysia's export earnings from textiles are considerably less than earnings in the higher value-added semiconductor industry. Earnings from all textiles were US$1.7 billion in 1986; the share of apparels amounted to US$468 million. In terms of employment, however, the textile work force is as large as that of electronics totalling 70,000 workers in 283 plants (*Malaysian Digest*, December 1987, pp. 6,7, and December, 1988, p. 5). In this industry, too, the major firms are headquartered in Western Europe and the United States, but a few are based in other Asian countries, such as India and Hong Kong. Several famous brands such as Ralph Lauren, Adidas, Nike and Puma carry "Made in Malaysia" labels. Malaysian factories ship finished goods mainly to the United States (40%), the EEC and Canada--countries where bilateral textile agreements admit relatively easy access.

CHARACTERISTICS OF THE MANUFACTURING LABOR FORCE

Semiconductor and textile firms favor third world sites primarily (although not entirely) for the same reason--an abundant and cheap pool of assembly line labor. Unlike the textile firm, however, the semiconductor firm enters the off-shore site in the middle phases of modernization when a sufficiently large number of technical and managerial personnel has already been trained (at the expense of the host), when the country is included on the routes of major international air carriers, and when the momenta of internal growth and political stability have reached levels great enough to justify the considerable investment in plant facilities. The post-war trend of escalating wages in industrialized Western countries and the abatement of the Communist threat in the East encouraged multinationals to relocate in the countries of the Pacific Rim. Once the first off-shore semiconductor facility had been located in Hong Kong (1962), there soon followed a search by

the industry for even cheaper labor markets--next in Taiwan (1964), then South Korea (1966), Singapore (1968) and Malaysia (1973).

As documented in the popular and academic presses, both the semiconductor and the textile industries are prone to relocate operations whenever rising standards of living in the producing country push wage levels beyond the margins of profit or whenever labor-saving automations permit production closer to Western markets (Sayer 1985). In general, the difference between the cost of labor and the expense of automation are such that firms usually opt for low wage labor and migrate to those less advanced regions possessing sufficiently large surpluses of educated workers and adequate infrastructures.[4] Job requirements in semiconductors are not greatly different from those in textiles, despite the technological dissimilarities. The same criteria of manual dexterity and good eyesight apply; education beyond basic literacy is unnecessary; and, perhaps most important, operatives must be able to retain concentration during repetitive and tedious tasks. In both industries, the assembly line work force is quickly trained and easily replaced. Despite these common features, critical differences can be found as well. These differences relate to the seasonal nature of product demand in textiles versus the more or less random fluctuations of product demand in semiconductors.

Semiconductor manufacturing is easily fragmented. The stages of production include mask-making, wafer fabrication and testing, and the assembly of integrated circuits and other items from imported components, such as chips, for export. While all of these are labor-intensive, skill levels vary considerably from mask and wafer fabrication where labor is highly skilled to IC and chip assembly and testing where the labor is mostly semi-skilled. Of course, it is these latter processes that are executed in Malaysian plants (Fong 1986, pp. 46-48). The work is tedious and the operations are dispered among sections. The overriding concern of management rests with the quality of output rather than with its quantity. Hence, the level of output per worker, irregardless of experience, remains fairly constant across the work force. On the other hand, world demand for ICs is erratic, swinging unpredicatably between periods of high and low product demand. Since output is closely closely tied to the size of the work force rather than to the speed of the assembly line, the semiconductor firm must be able to hire and release workers in the short-

---

4 Clad (1985) documents a regional wage spiral in the Southeast Asian electronics industry. Wages levels of countries are closely tied to levels of development. Monthly wages paid to semi-skilled and unskilled workers range from US$250 in Singapore and US$120 in Malaysia to US$40 in Indonesia and US$90 in the Philippines and US$100 Thailand (p. 81). For detailed surveys of the geographical distribution of international microelectronic firms see Green (1983) and NACLA (1977).

run. Within such an environment, high turn-over and an abundant reservoir of surplus labor are optimal conditions for capital.[5]

The textile industry shares with semiconductors a production process which is easily dispersed. It consists of five subindustries: (1) raw materials (natural and synthetic), (2) man-made fiber manufacturing, (3) fabric manufacturing, (4) wearing apparel assembly, and (5) textile end-products (thread, lace, twines, etc.). In contrast to semiconductors, however, the textile firm relies upon a more stable pool of workers who have acquired skills over time. This is especially true in the later cutting and assembly stages of the clothing industry. It is imperative that the firm retain from season to season a substantial number of its more experienced assembly line workers in order to ensure that it meets production schedules during peak demand periods. Of course, from the perspective of the long-term worker, the prospect of wage gains must be sufficiently realistic to justify waiting out the seasonal low wage lulls. Since wages are generally earned on a piece-rate basis, the clothing manufacturer is better able to carry excess workers through downturns. Labor costs in Malaysia's garment firms amount to only 8.6% of total production costs, while in semiconductors the cost of labor rises to 16.6% of the total (ibid., p. 188). Although frequent labor cut-backs are a feature of textile manufacturing, employment levels in all subindustries are, worldwide, more constant than those in electronics (Fernandez-Kelley 1983, p. 102).

Despite job insecurity, low wages and few benefits, walk-outs and strikes by textile and electronics workers in Malaysia have been few, and these few were restricted to Malaysia's oldest Free Trade Zone on Penang Island during a periods of frequent retrenchments and plant closures. The readiness of Malaysian women to join assembly lines of foreign-owned factories during upswings and to quit them peacefully during downturns is a key feature of this peripheral manufacturing economy.[6] On the positive side, multinational investment in semiconductors and textiles is largely responsible for the recent large-scale industrialization of Malaysia, and according to public officials, both industries will continue to figure prominently in national plans (*The Star*,

---

5 The country's dependency upon foreign capital appeared more dangerous in the mid-1980s than it did in the early years of the NEP. Lately, the demands for all of Malaysia's leading commodities and manufactured exports have fallen precipitously. So, too, has the demand for labor in all affected industries, particularly the urban industries under multinational control. Between 1984 and 1986, for example, 6500 textile jobs were lost, and in 1985, over 3000 semiconductor operatives were retrenched while hirings were held at a standstill (*New Straits Tmes*, May 11, 1986, p. 11; and *The Star*, May 21, 1986, p. 9). Singapore's economy suffered even more, losing 11,000 semiconductor jobs in 1984 out of a total work force of 56,000 (*New Straits Times*, June 21, 1986, p. 9).

6 Speaking at the International Women Workers' Day Assembly in Kuala Lumpur, Malaysia's Minister of Labor remarked that while he was aware of the movement to unionize electronics workers in the country, he feared the effects of such an action upon "the investment climate of the country" (*The Star*, March, 119, 1986, p. 12).

March 22, 1986; *Malaysian Digest*, December 1987, p. 8). To promote backward integration in semiconductors, for example, the government has established MIMOS, the Malaysian Institute of Microelectronic Systems (*Malaysian Digest*, April 1988, p. 7).

THE INDUSTRIALIZATION OF THE INTERMEDIATE CITY

A principal attraction of Seremban as an off-shore site is its large and growing migrant population. Although the state has proven a consistent net population loser in migration, its central capital city has grown rapidly since Independence through in-migration. Between 1957 and 1970, for example, the state experienced a net migration loss of 21,300 persons. Of these, over 25% settled in Kuala Lumpur. Meanwhile, Seremban city grew by over 29,000 persons, from a population of 52,000 in 1957 to one of 81,000 persons in 1970. In the following decade, the city gained another 51,000 persons (Malaysia. Department of Statistics).

The rapid urbanization of the population in Negeri Sembilan is part of a national trend. In 1980, 32.6% of the state's population resided in places of 10,000 persons and over, compared to 17.6% in 1957 and in 21.5% 1970 (ibid.). As in cities throughout the country, Seremban's Malay community is the fastest growing. It has increased from about 15,000 in 1957 to 20,600 in 1970 and to 42,000 in 1980, a figure which represents nearly 32% of the city's population . Of Seremban's total Malay population, nearly two-thirds (62.8%) are lifetime migrants into the city (ibid.).[7] As in other municipalities, migration presents Seremban with both dilemmas and opportunities. The city finds itself hard pressed to provide jobs and services for the new migrants. At the same time, it is adding a large, cheap labor pool that could become the labor reserve needed for its new manufacturing economy.

With the official blessings and financial support of the national government, the Seremban city council, in 1966, established an industrial estate, Senawang, on 100 hectares at the edge of the metropolis. The site is well-accessed by a major highway and railway running from Kuala Lumpur to Singapore. Adjacent to the estate, the municipality zoned another one hundred hectares for a planned unit residential development. Senawang New Town was conceived as a socially and ethnically mixed community with a projected population of 20,000 persons in the year 2000 (Seremban. Town Planning Office). Contractors entered into a covenant with the city

---

7 Average annual rates of increase for the largest urban centers in the state between 1957 and 1980 ranged from 45.2% for the coastal city of Port Dickson, a center of petroleum production and refining, to 15.5% for Seremban, a gain of 80,000 persons for the period, to 0.1% (500 persons) for the small market center of Kuala Pilah in the district of the same name. In their 1974 field study of rural Malay mobility in Negeri Sembilan, Selvaratnam and Dissanayake (1981) found that Kuala Lumpur was the primary destination of those Malays who had a clear intentions to migrate. Among this same group, Seremban was a close second choice. Yet most interviewees (55.1%) had no firm destination in mind.

agreeing to provide a variety of housing styles for families at different stages and to reserve at least 30% of the units for bumiputera purchasers. Today nearly 3500 persons occupy the 1250 units built so far. Over one-half of this population are Malays (Malaysia. Department of Statistics).

One of the earliest industrial estates in the country, Senawang was designed to attract clean, light industrial operations. Yet the first activities to locate in Senawang were mainly noxious. Sawmilling and poultry processing plants are typical of the several small concerns that arrived early and have since resisted the continual efforts of city and state officials to relocate them onto rural sites. The first real promise of success came in 1974 when a major West German knitwear apparel firm established a branch plant in Senawang. In 1977, Senawang was designated a "key development area" under the nation's on-again-off-again decentralization program. Shortly thereafter, two American semiconductor firms, lured by the special tax considerations available under the estate's new status, also set up branch plants.

By 1981, the estate production work force totalled over 8400 workers in 52 plants, about 16.5% of the city's total work force and 81.8% of the city's operator work force (State Economic Development Corporation). In recent years, Seremban's manufacturing base has expanded at a rate far greater than that of the country's industrial core around Kuala Lumpur. Between 1965 (just prior to the opening of Senawang) and 1972, the gross value of Seremban's manufactured goods more than doubled, from M$31.6 million to M$ 73.4 million. Thereafter, the impact of the semiconductor firms upon the local economy became clear as the gross value of manufactured output increased by ten-fold between 1972 and 1985 (Table 4.1).

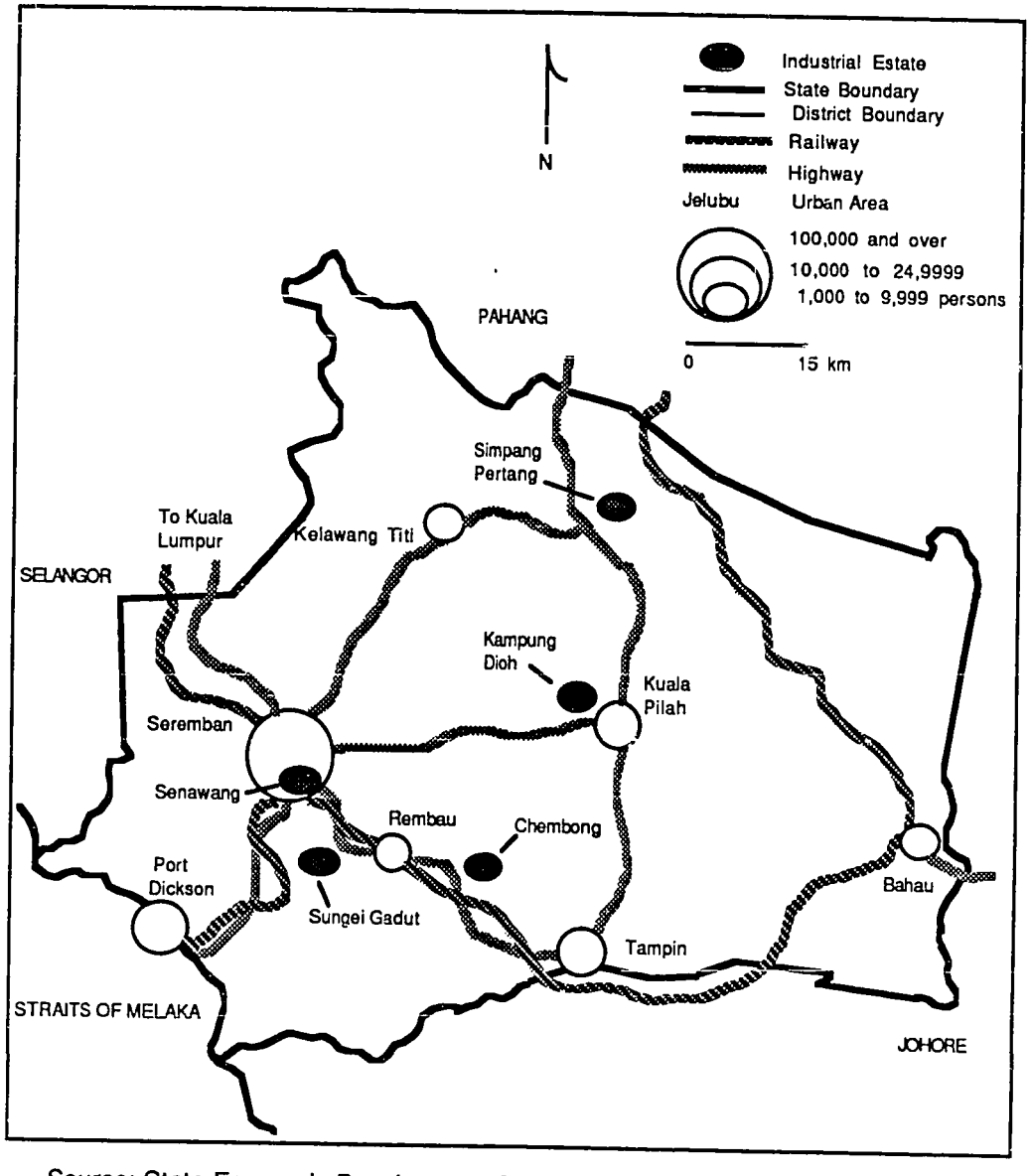
Table 4.1. Gross Value of Output in Seremban and Kuala Lumpur Manufacturing Districts, 1965-1985.

	Gross Value of Output (M$'000s)		
	1965	1972	1985
Kuala Lumpur	681,011	1,776,449	2,689,315
Seremban	31,613	73,363	724,289

Source: Aiken, et. al. 1982, p. 88; Malaysia. Department of Statistics.

As a result of state interventions, Seremban has evolved quickly from a "regional center" relying upon the processing and warehousing of locally produced commodities into a diverse metropolis with a range of economic activities at various scales including multinational manufacturing industries (Brunn and Williams 1983, p. 391). A concentration of capital at Senawang Industrial Estate further increases the regional primacy of Seremban and enhances its appeal as a migrant destination. The pace of economic expansion within the metropolis was certainly not matched by that in any of the five small industrial estates established in outlying areas (Figure 4.2).

Figure 4.2. Rural and Urban Industrial Estates in Negeri Sembilan.



Source: State Economic Development Corporation.

Despite the state's fairly well developed road and rail transport system, a large pool of rural underemployed and the comparatively low lot rents in the outlying estates, new industries gravitate to the metropolitan area while established firms have proven reluctant to move beyond it. Consequently, none of the rural sites contain more than nine plants nor employ more than 250 workers Most of these employers are engaged in the processing of rubber, palm oil, and wood, that is, processes tied to the existing agro-industrial and forestry economies of the state (Table 4.2).[8]

Table 4.2. Employment at Rural Industrial Estates in Negeri Sembilan.

Estate	District	Total Workers	Total Plants	Largest Employer
Chembong	Rembau	252	4	Plywood
Kg. Dioh	Kuala Pilah	226	9	Bakery
Nilai	Seremban	66	2	Chemicals
Simpang P.	Jelebu	15	1	Sawmill
Sungei Gadut	Seremban	73	1	Sawmill

Source: State Economic Development Corporation.

A small electronics plant operated in Kampung Dioh estate near Kuala Pilah, but it closed after several months. Due to the nature of the activities, the jobs in rural estates are mostly short-term, low wage, and highly seasonal. Male laborers are preferred in most operations. Despite their siting in districts with large Malay majorities, Malay workers are a minority of the work force. In 1984, for example, Malays represented only 32.4% of the total work force at Kampung Dioh. These small peripheral developments afford scant relief to the depressed rural populations and none at all to the households in villages, agricultural estates and land schemes that rely upon the earnings of women. Within the space economy created by decentralization policies, a large potential labor force gravitates to the metropolitan labor market.

ETHNIC AND GENDER CHANGES IN LABOR FORCE PARTICIPATION

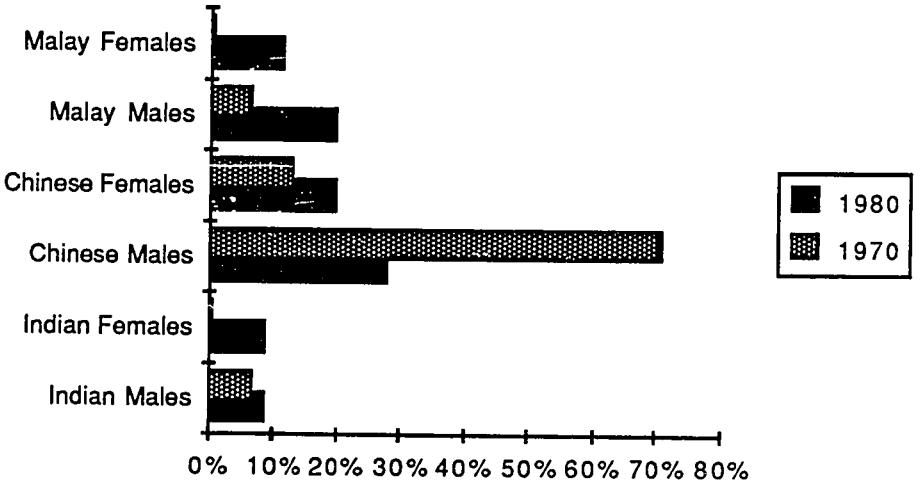
Senawang is largely responsible for the geometrical increase in the number of low skill operative positions for both men and women in the city. These gains, however, are far from equal among races and genders due to the nature of the new jobs, the traditional occupational structures in the city, and the hiring strictures introduced under the NEP. Proportionate gains by

---

8 After a number of plant closures in the estates closest to the city, Simpang Pertang and Dioh, the state government announced plans to redevelop them (*New Straits Times,* September 24, 1986, p. 4).. After a number of plant closures in the estates closest to the city, Simpang Pertang and Dioh, the state government announced plans to redevelop them (*New Straits Times,* September 24, 1986, p. 4).

Malays, males and females, and by Indian females are most pronounced. Figure 4.3 portrays the ethnic and gender composition of Seremban's manufacturing work force in 1970 and 1980.

Figure 4.3. Percentage Composition of Manufacturing Work Force, 1970 and 1980.



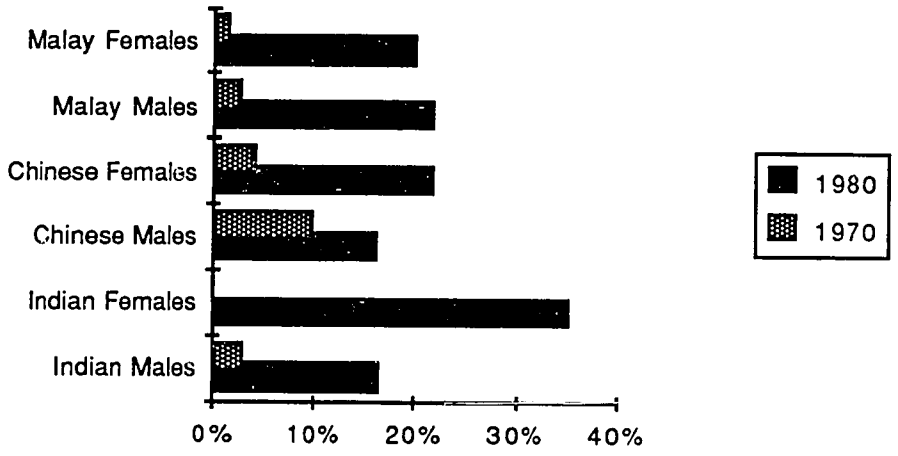
Source: Malaysia. Department of Statistics.

It is particularly apparent that the representation of Malay and Indian females increased substantially over the decade. For instance, the Malay female proportion of the work force rose from 1% (15 workers) in 1970 to 11.7% (1205 workers) by 1980. Just as dramatic is the occupational mobility of Indian females; their proportion rose from less than 1% (1 worker) to 9.1% (939 workers). While the rate is far lower for Chinese females (because there were so many more in manufacturing to begin), nonetheless, they retained a large share of the city's manufacturing jobs. However, the dominance of Chinese males in manufacturing declined substantially, a fact due, in all likelihood, to their persistence in small family operations in the central city and to their exclusion from or avoidance of low wage assembly line jobs in Senawang. The leading industries of the postwar economy of Malaysia were mining, railways, port servicing and commodity agriculture and processing. These are dominated by NonMalay males. The post-Independence economy is increasingly led by light manufacturing industries which are dominated by female Malays. While the old labor aristocracies persists in the traditional sectors and in metallics and machinery, its status and bargaining power are much diminished due to competition from migrant labor and the multinational labor force.

Another means of depicting the structural shifts of ethnic and gender groups is to compare the proportions of each ethnogender segment of the work force which is engaged in

manufacturing, that is, the relative concentrations (percentages) of each segment in the industry. From this vantage, Figure 4.4 portrays the trends outlined previously, namely the movement en masse of Malays and Indian females into manufacturing.

Figure 4.4. Percentages of Workers Engaged in Manufacturing, 1970 and1980.



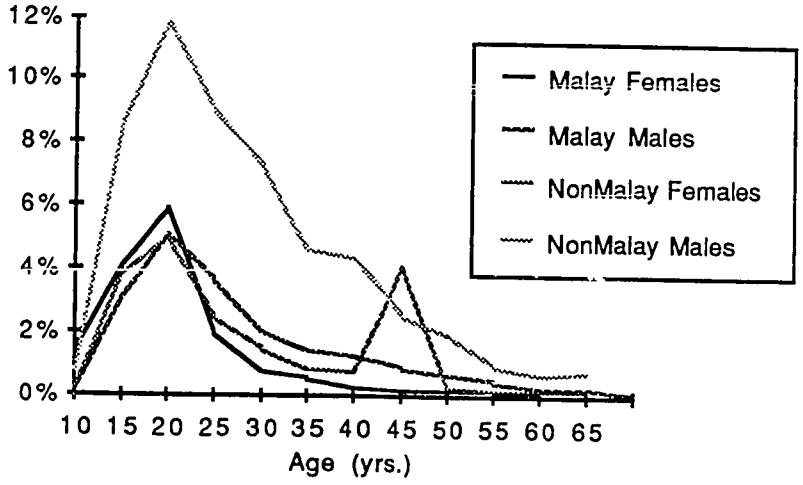
Source: Malaysia. Department of Statistics.

In 1980, for example, 20.5% of all Malay female workers were employed as manufacturing operatives compared to 1.7% in 1970. The specialization of Indian females is even more pronounced; it is up from less than 1% in 1970 to 35.6% in 1980. The considerable movement of Malay and Indian women onto the assembly lines was not matched by any comparable shift of Chinese males, a group which, in 1970, boasted a near monopoly of manufacturing jobs. Once again, this evidence suggest the structural novelty of recent economic growth and the new demographic dimensions along which firms segment an increasingly pluralistic metropolitan work force.

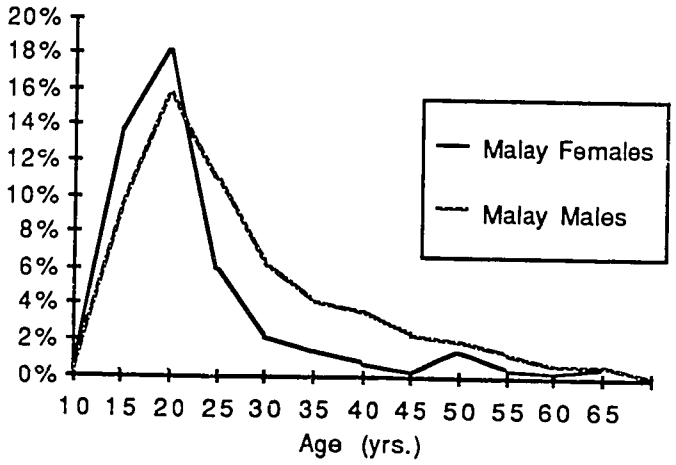
Besides the ethnic and gender differences in the work force, age is another important factor in the new division of labor. Distinct from the older traditional work force, the modern firm selects and structures a more youthful work force. Figure 4.5 depicts the age and sex composition of the city's manufacturing work force in 1980. The distributions shown in the graphs represent the age and sex compositions of the total work force (Figure 4.5a) and the Malay work force only (Figure 4.5b).

Figure 4.5. Age and Sex Structure of Seremban Operative Work Force, 1980.

(a) Total (Malay and NonMalay) Work Force



(b) Malay Work Force Only



Source: Malaysia. Department of Statistics.

The first example highlights in particular the large proportions of Chinese males and the relative concentration of all groups in the youngest age categories, especially Malay females. Viewed separately, the age and sex structure of the Malay work force (Figure 4.5b) is disproportionately comprised of the youngest cohorts. The mean age of Malay females employed in manufacturing for 1980 was 22 years, with over three-fourths of the work force under the age

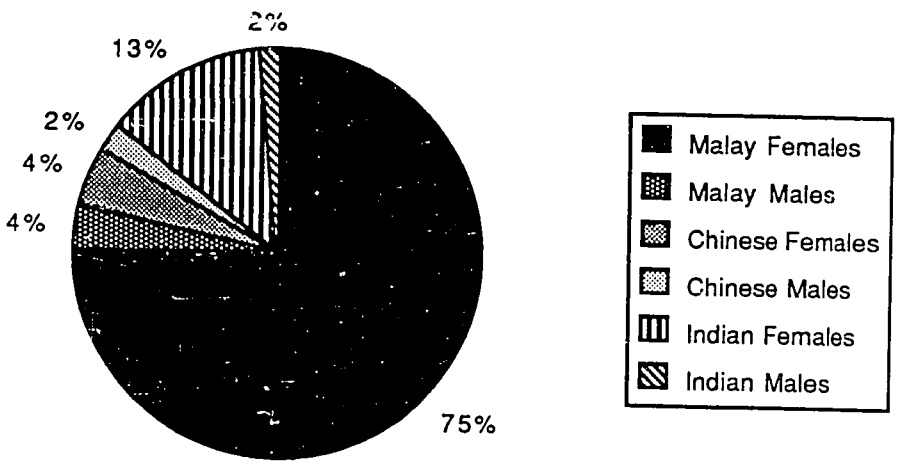
of 25 years (Malaysia. Department of Statistics). On the other hand, the participation of older Malay women is virtually nil.

Once again, the selectivity of the labor process is advantageous to modern capital. Its mobilization of a plentiful and underemployed regional female labor reserve effectively diminishes the bargaining power of a traditional urban manufacturing labor force and distances wage levels farther from their basis in local costs of living and mechanisms of supply and demand. Other important advantages of this peripheral labor force are its docility and its continual replenishment through rural-urban migration.

THE SILICON SAWAH: THE MALAY FEMALE SPECIALIZATION IN SEMICONDUCTORS

The size of the semiconductor work force in Malaysia is such that it influences labor policies at a national level. It sets the standards of wages and work conditions throughout the low wage labor market. The attainment of national goals hinges upon the performance of this industry. An indication of the close collusion between capital and the state is the favored status which Malay women enjoy in the industry. Only in Penang Free Trade Zone, where the population is predominantly Chinese, do other ethnic groups, Indians as well as Chinese, comprise substantial proportions of the work force, and, even here, Malays outnumber them. In Negeri Sembilan, the state census recorded over 1200 semiconductor operatives. Over three-fourths of these were Malay females representing over 72% of the state's total female production work force (Figure 4.6).

Figure 4.6. Ethnic Composition of State Semiconductor Work Force, 1980.



Source: Malaysia. Department of Statistics.

It is very likely that this figure of 1200 is too low, however, due to census undercounts. Data from the SEDC indicate that in 1980 at least 1500 semiconductor workers were employed at Senawang. Many of these women workers were likely to have been recent migrants to Seremban, and many were then domiciled, at that time, in places such as factory-run hostels or flats shared by several workers which are likely to be skipped by census enumerators. Furthermore, round-the-clock shift work, a universal practice of the industry, may have excluded some workers from the census enumeration. In addition, many workers probably commuted from neighboring districts in Selangor and Melaka adjacent to Negeri Sembilan and within one hour from Seremban. In Sepang District of Selangor, southeast of the city, and in Alor Gajah District, across the state line in Melaka, nearly 1300 Malay females were employed in semiconductors. Although many of these women probably worked in Batu Berendam Industrial Estate (located midway between the district capital and Melaka City on the Straits),[9] it is likely, too, that Senawang attracted a substantial number from these districts as well.

In manufacturing plants other than semiconductors, Malay women are a smaller, but still substantial and growing segment of the operative work force. According to the national census in 1980, for example, Malay females comprised only 3.4% of the state's textile workers out of a total work force of 1024. Chinese females were predominant, representing nearly 73% of the work force. The rest, of course, were Indians, again, virtually all females (Malaysia. Department of Statistics). A later survey conducted by the State Economic Development Corporation in 1985 shows that the proportion of Malays in the textile work force at Senawang was, by that time, much larger: 37.4% of the work force were Malay females out of a total of 1160 workers (Negeri Sembilan. SEDC). Clearly, the introduction of assembly line technologies at Senawang in conjuction with affirmative hiring policies has led to a much higher rate of labor force participation by Malays, although they remain far more visible in electronics than elsewhere.

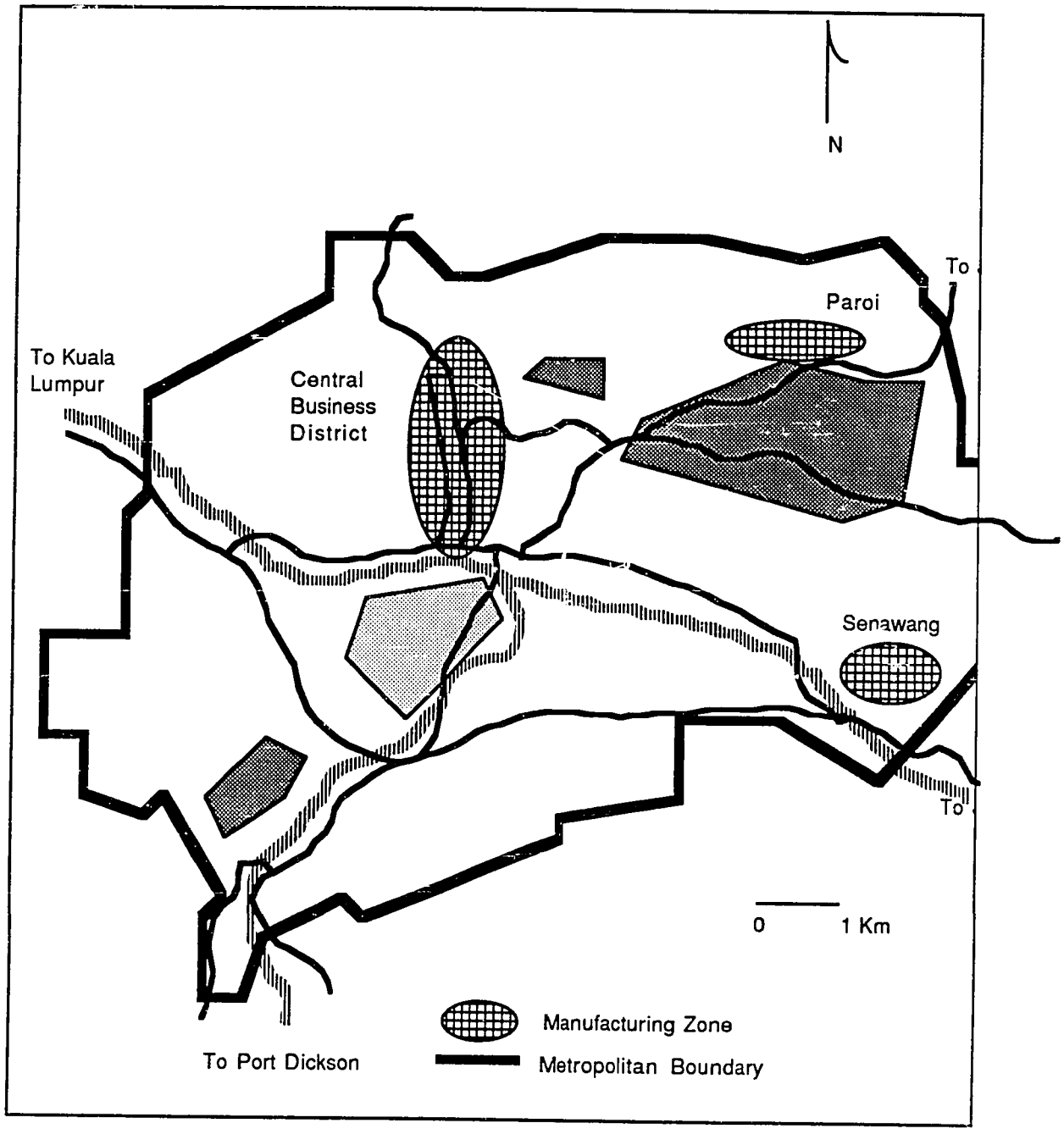
SPATIAL AND STRUCTURAL DISTRIBUTION OF MALAY OPERATIVES IN SEREMBAN

Because of the concentration of highly capitalized assembly line firms at Senawang and because of the specialization of Malays in these activities, the ethnic segregation of the work force is effectively spatial as well as structural. Seremban contains three major areas of industrial activity: a central zone of workshops, a periurban zone of medium-sized plants (Paroi), and Senawang (Figure 4.7). The industrial labor force in each of these zones exhibits a distinct ethnic compostion.

---

9 In 1986, seven semiconductor plants in the estate employed 5000 operatives, nearly of them all women (Melaka. SEDC).

Figure 4.7. Manufacturing Zones in Seremban City.



Source: Town Planning Office. Seremban.

In order to demonstrate this variety, the reseach analyzes employment data from representative plants throughout the city. In 1984, the State Economic Development Corporation (SEDC) conducted a survey of thirty-one licensed firms. Questions concerned the

size and ethnic composition (Malay versus nonMalay) of the work force and level of capitalization. These local data are, for present purposes, preferable to census data since they provide insights into segregation trends at the micro-scale. The findings, summarized in Table 4.3, reveal that Malay representation in Senawang and, to a lesser degree, in the periurban site was much higher than in the central city.

Table 4.3. Malay Representation Among Sampled Firms in Manufacturing Zones, 1984.

Urban Zone	Total No. Plants	Total No. Workers	No. Malays	Average No. Workers	Average No. Malays	Average % Malays	Average Investment (M$000s)
Senawang	10	6689	4498	668.9	449.8	58.2%	15660
Periurban	12	375	147	31.2	12.2	29.3%	541
CBD	9	86	15	9.6	1.7	10.2%	138
Total	31	7150	4660	230.6	150.3	33.9%	5296

Source: State Economic Development Corporation.

The mean percentage of Malays in a typical central city plant , for example, is 10.2%, while the mean size of the plant work force in a single plant or workshop is less than ten workers. In Senawang, however, Malays represent 58.2% of the average plant work force, while the mean size of the average work force is 669 workers. The periurban area is more or less intermediate in both plant size and in Malay representation with Malays comprising 29.3% of the average plant work force and an average plant size of about 31 workers. Integration at the workplace in Seremban is approached most nearly in middle-sized plants of this zone.

This spatial distribution of workers reflects the urban residential distribution. As is common in Malaysian cities, the Chinese are predominant in the central business district. Just to the south of the CBD, is the major concentration of Indians in the vicinity of the city's central river-rail corridor, a consequence of their specialization as laborers and staff on the Malayan Railway. Finally, a large Malay enclave of over 3,000 Malay households occupies a northeastern sector of Malay reservation lands adjacent to the periurban employment site and accessible to Senawang by a portion of the city's loop highway (Figure 4.7).

While unequal access may contribute to ethnic segregation of the labor force, a more fundamental factor is the distribution of industrial types. Malays are concentrated in the most highly capitalized activities such as those found mainly in Senawang. Segregation of the ethnic communities is most prominent in the largest and the most highly capitalized firms and in the smallest and the least capitalized firms (such as those in the central city). Using data from the state survey, Table 4.4 depicts levels of capitalization for types of industries.

Table 4.4. Malay Representation in Selected Urban Industries, 1984.

Product Type	No. Plants	Total No. Workers	No. Malays	Average No. Workers	Average No Malays	Average % Malays	Average Investment (M$000s)
Semiconductors	2	4204	3234	2102	1617	76.0%	38,600
Electrical	2	162	109	81	54.5	64.8%	1900
Misc. Assembly	1	49	25	49	25	51.0%	2550
Building Supp.	2	26	13	13	6.5	46.5%	1381
Textiles	1	1157	433	1157	433	37.4%	25,000
Plastics	9	1189	716	132	79.5	33.5%	6406
Agro-products	5	189	60	37.8	12	32.2%	1625
Metallic	3	130	65	43	21.7	24.5%	1855
Food	6	44	5	7.3	0.8	4.6%	54
Total	31	7150	4660	230.6	150.3	65.2%	5296

Source: State Economic Development Corporation.

It is apparent that Malays are most predominant in the most labor and capital-intensive plants: semiconductors, electrical (consumer) items and miscellaneous assembly in that order. On the other hand, Malays form the smallest segment of the work force in metallics and food processing and packaging plants. The metallics plants surveyed include one foundry and two plants in which engine parts are manufactured; all three plants are owned and operated by Chinese. Operatives in metals production comprise a working class elite, of sorts. Their jobs require a lengthy apprenticeship and pay well. At the other end of the prestige spectrum are plants producing food items. These are notorious for the low wages which they pay to a largely Chinese female work force. The plants are, again, mostly Chinese-owned and family-run concerns located in the central city. Their products of noodles, soy sauce and snacks are intended for the immediate urban and regional markets. The levels of investment and sizes of the work force in both metallics and food are relatively small.

These spatial and structural imbalances have a gender dimension as well. Except for building supplies, the largest urban firms hire mostly women Malay. In the smaller, male dominated industries of agricultural services, plastics, and metallics, the levels of Malay representation are much lower. While the New Economic Policy has succeeded in generating jobs for Malays in Seremban, the structure and spatial patterns of employment reveal a persistence of ethnic specializations and the patterns of segregation.

The narrow focus of Malay employment upon Senawang is related not only to the paucity of Malay work opportunities elsewhere in the formal economic sector, but also to the apparent reluctance of Malays as well as Indians to enter the informal sector where unskilled urban workers often find first jobs. Undoubtedly this situation will change when and if the pace of industrial expansion of the city slows, but in recent years, Malays have avoided the informal sector just as

they have avoided estate jobs in the countryside. For example, information from the national census and municipal sources on street vendors in Seremban indicates a very low level of participation in this occupation by both Malays and Indians (Table 4.5).

Table 4.5. Composition of Hawker Work Force, 1970-1985.

	1970a	1980a	1980b	1985b
Malays				
Males	3.1%	8.3%	8.9%	6.5%
	16	75	97	107
Females	0.0%	3.8%	6.4%	7.0%
	0	34	70	115
Chinese				
Males	66.7%	54.6%	52.2%	49.4%
	346	493	568	808
Females	18.1%	22.6%	21.4%	25.2%
	94	204	233	413
Indians				
Males	11.7%	9.5%	9.6%	10.1%
	61	86	104	166
Females	3.8%	1.2%	1.4%	1.7%
	2	11	15	28
Total				
Males	81.5%	72.4%	70.7%	66.0%
	423	654	769	1081
Females	18.5%	27.6%	29.2%	34.0%
	96	249	318	556
Total	100%	100%	100%	100%
	519	903	1087	1637

Source: (a) Malaysia. Department of Statistics; (b) Seremban. Municipal Licensing Bureau.

Census tabulations of the city's hawkers record a very small number of Malays compared to the numbers of Chinese women and men. In 1970, according to the census, no Malay women were employed as hawkers; by 1980, only 34 of the city's 903 hawkers were Malay women. Municipal records (probably more reliable on this score) list 70 Malay female hawkers. By 1985, the number of Malay women licensed by the municipality had risen to 115, a substantial proportionate change, but a small one in terms of their total representation in the hawker work force. The same can be said for the participation of Indian women. It is evident the hawker niche remains dominated by Chinese males and, to a lesser extent, by Chinese females who participate probably as unpaid workers in family enterprises. The stability in the ethnic composition of the hawker work force is not surprising since hundreds of unskilled Malays and Indians who might otherwise have become hawkers are able to find employment in the large factories.

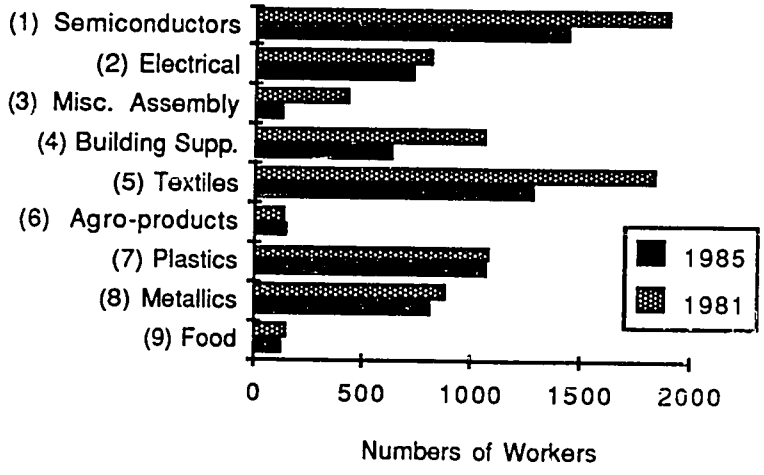
MARKETS AND NICHE VULNERABILITY

The peripheral economies created by multinationals are extensive but fragile. The large firms at Senawang all proved susceptible to the recent demand swings of global markets. At the

same time, employment losses and gains illustrate the compensatory capacity of these firms to move easily between the employment levels of market peaks and slumps by shedding excess workers. Large factories have access to a regional reserve of surplus labor, a reserve which is continually replenished by the economic dislocation and spatial mobility of rural populations. In many manufacturing industries, this elastic quality of labor is as important as its low cost.

Between 1981 and 1985, the size of the Senawang work force contracted by over one-fourth, from 8430 to 6507.[10] Using state survey data collected at Senawang for these two years, Figure 4.8 portrays average plant losses in a total of 58 plants of different product types.

Figure 4.8. Employment Change in Senawang Industries, 1981-1985.



Source: State Economic Development Corporation.

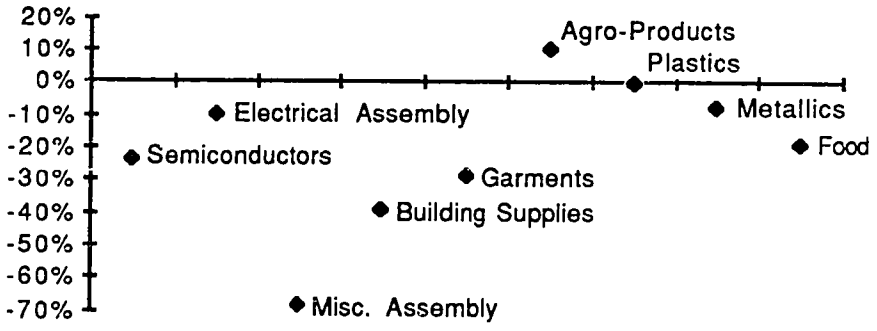
While all types of industries experienced job losses over this period, the magnitudes of the losses in textile and semiconductor plants were especially great, of course, since these employed the largest numbers of workers. As a proportion of total employment, on the other hand, average job losses amounted to larger percentage declines in industries producing building materials such

---

10 The early and mid-1980s were years of severe recession for Malaysia. Official and unofficial estimates placed the number of jobless between 75,000 and 100, 000 out the country's total labor force of 390,000. The official employment rate stood at 6.5% in 1984 and 7% in 1985 (*New Straits Times*, January 18, 1986, p. 8; and *New Straits Times*, January 27, 1986, p. 6). Nonetheless, some unofficial sources placed the unemployment figure at 10% in 1986 (*The Star*, March 22, 1986, p. 20; and *Asiaweek*, June 15, 1986, pp. 62-64). Early in 1986, a heated debate among politicians, union representatives, and academics over the causes of the recession was widely reported in the press. One professor of economics adamantly blamed the hard times upon the control that multinational manufacturing and agro-industrial firms exercised over wages and production levels (*New Straits Times*, January 27, 1986, p. 8).

as plywood and cement and in small plants assembling consumer goods such as video games, flashlights, cigarette lights and ballpoint pens (Figure 4.9).

Figure 4.9. Average Employment Change (%) in Plants, 1981-1985.

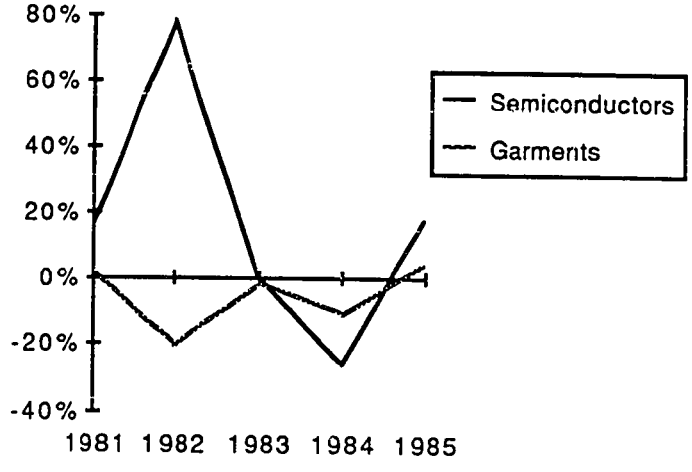


Source: State Economic Development Corporation.

Average rates of job losses in textiles and semiconductor were somewhat lower, but still high. The most stable employment levels were found in the heavy industries such as metallics and in industries producing plastics, ceramics and glass goods. The small agro-industrial firms actually gained employees. Overall, then, the assembly line operations at all scales as well as those tied to construction proved especially vunerable to job loss. It is these, however, that employed the largest numbers of workers and, in particular, the largest numbers of Malays. In contrast, Malays were least visible in the relatively recession-immune heavy industries of metallics and plastics.

A depiction of these net changes over a five-year period cannot convey the important short term trends that, from the position of management, are most difficult to meet. Therefore, the research considers the short term volatility of employment at Senawang's two major employers, a semiconductor plant and garment plant operating there in 1986. Using data supplied by personnel offices, Figure 4.10 tracks annual job losses and gains between 1981 and 1985.

Figure 4.10. Annual Employment Change (%) in Semiconductor and Garment Plants, 1981-1985.



Source: Personnel Offices.

Over the period, employment levels at the garment plant followed an erratic downward trend, falling by 29% (371 jobs). While net employment in semiconductors increased substantially over the period (by 79.8% or 889 jobs), the trend line is one of extreme oscillations between periods of labor force build-up and periods of lay-off. Annual rates of change range from +77.7% (1982-1983) to -26.2% (1984-1985). Adding to the impression of instability in the industry is the fact that a rival semiconductor firm shut down its Senawang operation entirely in 1985, resulting in a loss of another 850 jobs not reflected in the figure. The considerable volatility of semiconductor employment in this one case underscores the capacity of multinational capital to outbid local producers and to quickly adjust its low skill labor force to a variable demand for its goods.

Obviously, the instability of large off-shore manufacturers is a major drawback in this sort of top-heavy industrial development. Another is low wages. According to the Ministry of Labor (1984), the lowest wages at Senawang, for example, are paid to female operatives in electronics, about M$250 monthly. Such industries as sawmilling, food processing, and non metallic production (textile, watchbands, and golf balls) all include plants paying M$520 to male operatives and M$225 to female operatives. The highest wages at Senawang are paid in the heavy industries. For example, one foundry paid an average monthly wage of M$580 to male operatives and M$400 to female operatives.

As Seremban's industial base becomes more capital-intensive and as its assembly line industries proliferate, the much smaller inner city workshops are forced to bid against the large firm for cheap female labor. Inevitably, the fortunes of Seremban's lower classes will be tied to the

markets of a few global enterprises. Meanwhile, the social costs of labor volatility and uncertain revenues will be absorbed by labor since neither the foreign firm nor the state bears responsibility for those displaced or exploited in this restructuring of the low skilled labor force.

CONCLUSION

The internationalization of labor in Malaysia is the result of global and internal processes. As a means of addressing racial inequities, the state turned to branch plant industrialization at a time when technological advances permitted the out-sourcing of labor-intensive processes by Western and Japanese firms. Yet the success of Malaysia's industrial drive thus far must not be allowed to obscure the contradictions of the development policy. Multinational activities may boost, for a time, the export earnings of the country, but it does not address the more intractable issues of uneven development. Foreign capital has initiated a much deeper restructuring of traditional societies and redistribution of resources than were ever realized under foreign investment in mining and agriculture. Whereas earlier rounds favored the labor force participation of immigrant races of Chinese and Indians over the native Malays, latter-day industrialism realigns racial barriers and interjects a keen gender bias into the labor process. A question facing cities throughout the country is whether such export-oriented foreign capitalism will prove a reliable foundation for a more balanced growth.

Under the New Economic Policy, the chief criterion for favored industry status is the potential number of Malays to be employed in the new operations. Scant attention is paid to the quality of labor force participation, the character of the work force or the relationship of an industry to the social vision of the NEP. In summarizing the economic contributions of export processing zones and industrial estate developments to the economies of Pacific Basin countries, Wang and Chu (1984) caution planners to look beyond employment figures. The authors contend that these,

> by themselves, are quite meaningless and have to be compared with the original targets or expectations of the government before any assessment on their achievements can be made (p. 7).

Focused as they are upon the speed and scope of industrialization, planners generally miss the underlying trends of labor segmentation. Yet the demographic consequences of multinationalism have far-reaching implications for the public welfare. The Chinese manufacturing work force is being supplanted by a work force of young women who are employable at the lowest wage levels by the largest firms. Under the new industrial program, middle-sized cities exchange the variety and stability of small-scale production for the specialization and volatility of multinational assembly lines.

The thrust of industrial policy in Malaysia is to associate ethnic Malays with those industries least integral to the life, history, and internal economy of the city. By failing to anticipate the social costs of new labor markets, the state puts greater distances, physical and structural, between the races. In its dependency upon large multinationals to fund its economic development, the Malaysian government overlooks an essential prerequisite of the modern urban society--the emergence of a genuine proletarianized industrial class, one that embraces the heterogeneity of the society. The challenge is to move from a quantitative perspective upon industrialization to a more qualitative perspective. Future industrialization must bring the races and genders together in factories of all sizes and at all levels of sophistication across the urban surface. In light of the many frictions in Malaysian society, industrial work offers the greatest opportunity for intercommunal cooperation among the lowest classes. Unfortunately, the current industrial order simply maintains the old divisions of labor in the interest of capital and further places the nation's unity at risk.

CHAPTER V

TECHNOLOGY AND DEMOGRAPHY IN AN URBAN INDUSTRIAL ESTATE

INTRODUCTION

Multinational industries in third world countries are revolutionary. They alter an array of demographic patterns, from mobility to family formation. Of course, they directly affect macro-scale regional growth trends. While conforming to minimal state controls on labor relations, each firm seeks to position itself advantageously both within the regional labor market and within a competitive and, in some ways, unpredictable global market of product demand and alternative labor sources. In the search for suitable, proximate labor, the manufacturing enterprise recruits only certain segments of the population within the labor shed. The resulting regional demographic change is a consequence of the behavioral and attitudinal adjustments of labor to the new work environment. This chapter and the next examine the social impact of the foreign manufacturing firm in Malaysia from a structural perspective: its mobilization of labor and demographic variations in its female work force. The setting is the middle-sized city of Seremban, Malaysia. The site of the research is the industrial estate of Senawang where a questionnaire survey was conducted among female workers at two multinational plants, a semiconductor plant and a garment plant. In addition, information was collected from personnel offices at these plants and from a third, a large domestic producer of building tiles that also hires a largely female work force. Comparisons of these firms with the large domestic tile plant are made in order to illustrate the advantages which the foreign firms enjoy in the restricted labor market of the industrial estate. The research considers such demographic characteristics as ethnicity, residential distributions, urban experience and life cycle stages.

The present research asks: is the labor process under multinational development creating a stable, committed working class? The purposes of the research are, first, to examine the various modalities of labor force participation by women workers at large manufacturing plants in Malaysia and, second, to relate these specific styles to the ethnicity of the work force and the labor recruitment and management strategies that, in turn, proceed from certain technological arrangements, market conditions, and state policies. Concluding sections of the chapter consider the appropriateness of multinational development strategies to the long-term economic and social goals of state policies. A general theme of the discussion is that the recruitment of labor in a pluralistic society such as Malaysia is perforce an exclusionary process. The research identifies

certain aspects of the labor process that promote or inhibit labor force participation by ethnic groups within particular factories. The evidence for such patterns consists of micro-demographic trends.

Three general topics are discussed. The first is the significant differences which exist in the levels of labor force commitment among workers in the semiconductor and garment plants. For the purposes of the research, the quality of labor force commitment is measured by such factors as job tenure, income and age at entry into the work force. The second general observation is that levels of commitment vary across ethnic groups as well as between factories. Third, the timing of life cycle events exhibited in the biographies of women workers varies not only between factories but also among ethnic groups as each adapts in distinctive ways to the demands of the modern work place. The research contends that the ephemeral participation of Malays in semiconductor assembly is partly a demographic echo of that industry's erratic labor requirements. It is argued further that culture is equally a factor in distinguishing Malays from others, that is, the nature of the women's commitment to the factory depends upon the sociocultural background of the women as well as conditions at the workplace.

The findings and interpretations are presented in two parts. First, in this chapter, the place origins, socioeconomic backgrounds, residential mobility and ages of the ethnic groups in the semiconductor and garment factories are compared, and whenever appropriate and possible, the differences are tested for statistical significance. The analysis highlights how certain demographic features of the work force relate to the production regime and to the firm's rationalization strategies. While the behavioral modalities of all ethnic groups are discussed, the comparative inquiry focuses upon the adjustments of rural and urban Malay workers to various factory regimes. Next, in chapter six, the research turns specifically to the prolongation of the female industrial career beyond the life cycle markers of school-leaving, marrriage and parity. The purpose of this section is to track career trajectories, to understand how the careers of women in different factories intersect with domestic roles, and to measure and assess levels of income and skill-acquisition among the three ethnic groups.

These separate analyses, considered together, help to qualify the labor force commitment of the segments and to illustrate the demographic complexities within a multi-ethnic labor market which is crosscut by diverse industries. The relevance of this exercise to public policy derives from the emphasis which the New Economic Policy places upon a restructuring of the national economic order. Such a transformation necessarily turns upon the re-orientation of value systems from familialism and communalism to a class-based industrialism.

SOURCES OF THE DATA

Information on female operatives was obtained from two sources: a questionnaire survey of the work force conducted at both plants and the personnel offices of the firms. The questionnaire was circulated among the female operatives at both plants. Written in the national language (Bahasa Malaysia), the survey elicited information on such topics as ethnicity, age, household status, residential history, family formation, employment record, income, and education (Appendix 1). In addition, personnel officers provided general background information about the firms--on the history of their local operations, management policies and attitudes toward labor, recruitment tactics, wage schedules and turn-over rates. The field work was conducted between January and April 1986.

ETHNICITY AND THE FACTORY PRODUCTION SYSTEM

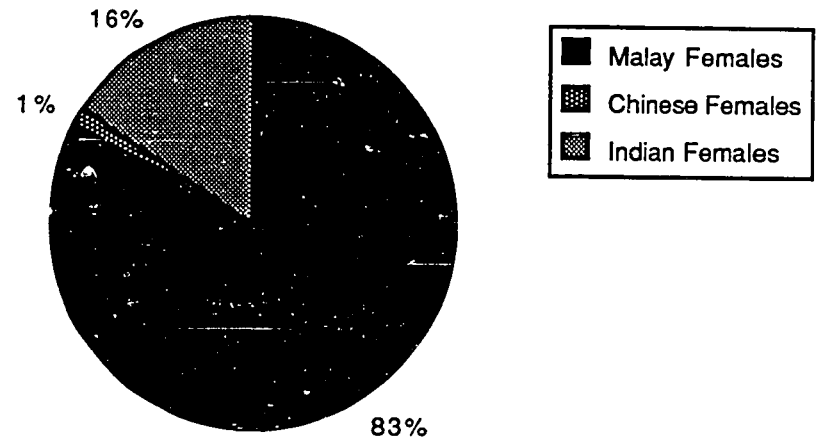
The semiconductor plant at Senawang, referred to here as Hitek, has been in operation since 1979. It is one of two Malaysian subsidiaries of an American firm, the other being a larger and older plant located in Sungei Way Industrial Estate near Kuala Lumpur. An American competitor preceded Hitek into Senawang having located there a year earlier; however, this firm consolidated its Malaysian operations at Kuala Lumpur in 1985 when worldwide sales of integrated circuitry fell by 19% (Uttal 1986). Since its beginnings, Hitek has remained the largest employer in the city with a peak work force of over 2300 operatives in 1983.

The apparel assembly plant, referred to here as Rediwear, is a West German-owned subsidiary. In operation since 1974 , Rediwear was the first multinational firm to establish operations in Senawang. It, too, is an export operation. Its entire line of hosiery, gloves, and caps is consigned exclusively to the European market. Currently, Rediwear is the only textile concern in Senawang. In 1985 an Indian-owned spinning mill closed at a cost to the city of over 400 jobs. During a deep recession in the early and mid-1980s, Rediwear maintained a work force in excess of 1000 making it Seremban's second largest employer after Hitek.

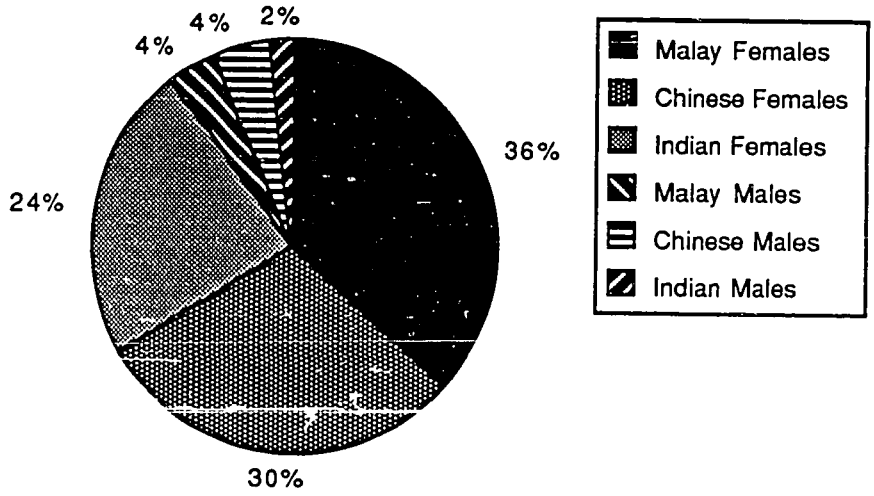
Women form the great majority of the operative work force at each plant. In fact, virtually all of the semiconductor operatives are women, mostly Malays along with a large minority of Indians. At Rediwear, 85% of the operatives are women of Chinese, Indian as well Malay ethnic backgrounds. Ethnic composition of the female work force varies greatly (Figure 5.1).

Figure 5.1. Ethnic Composition of Operator Work Force at Semiconductor and Garment Plants, 1986.

(a) Semiconductors (Total Work Force=2003)



(b) Garments (Total Work Force=802)



Sources: (a) Worker Survey; (b) Personnel Office.

For example, Figure 5.1a highlights a predominance of Malays at Hitek and a virtual absence of Chinese. The garment work force is much more diverse. While Malay women comprise a plurality of garment workers, their co-workers include large minorities of Chinese and Indians (Figure 5.1b). Together, in fact, the nonMalays outnumber the Malays. These differences between the plants derive from an apparent avoidance of certain work regimes by many Malays and from corporate perceptions about the suitability of ethnic groups for assembly line work.

These two factors, in turn, influence the firm's tactics of labor recruitment, the design of the work routine and physical setting and its scaling of wages. In ways both direct and indirect, ethnicity, then, enters as a critical dimension of the labor process leading to a subtle racial selectivity.

The two factory managements have created very different social milieux of production. Within each plant, ethnicity, social background and the assumptions made by management about the performance and temperament of workers contribute to distinctive settings. Certain of the work conditions are consciously fashioned by managements to achieve specific production goals. The structuring of production at Hitek and Rediwear is a central factor in the demographic differentiation of the work force.

In the case of Hitek, the technological constraints of integrated circuitry spare semiconductor workers from experiencing many of the abusive physical conditions found in other third world industries. Semiconductor work itself, while monotonous and tiring, has its appeals. It is scarcely as arduous as tapping rubber from before dawn till midday, and the factory is kept air conditioned and immaculate primarily because the assembly of circuits requires an atmosphere that is carefully controlled for temperature and particulate contamination. Technology also caps the pace at which the women work. Unlike the situation in other industries where output can be adjusted to demand by accelerating the assembly line, the ability of the semiconductor firm to alter the speed of production is limited by a low tolerance for error and rigid quality controls upon the final product. Indeed, the highest priority in semiconductors is the quality of output per worker, not its quantity. In order to eliminate the distractions of the clock, management strives to recreate the continuous tempo of a traditional craft occupation. Workers are constantly reminded by posters and pep talks that, given the miniscule margin of error, haste makes waste.

Since each worker accomplishes only a single step in a sequential process, the worth of the individual worker is tied to the performance of an entire line of workers. The inherently cooperative nature of production requires that management replicate the ethos of the village society and instill in the workers a selfless interest in high standards for the good of the firm. The wage schedule is a primary means of separating individual performance from reward. All operatives, regardless of skill levels, are paid a flat monthly wage starting with a trainee wage of M$220 and increasing about 4% biennially. Every worker thus labors under an income ceiling established by seniority rather than by individual productivity. Management spreads its occasional wage concessions as well as its praise of workers across all sections irregardless of individual or section performance.

To compensate for low wages and a lack of pension and other benefits and to encourage a sense of belonging among the workers, management provides numerous services for the convenience and comfort of workers. During meal breaks, the women gather in the company-run

dining hall where traditional Malay fare is served at nominal cost. Hitek also operates a clinic around the clock, and nearby a company canteen sells a variety of food staples, toiletries, and other items at cost. At a fair held periodically near the plant gate, the workers are informed about the corporation's recent achievements.

Yet the allegiance of the women to the firm does not extend beyond management to encompass a stable, surrounding society of co-workers. Management makes every effort to establish a close rapport among its staff and its operatives. A bureaucracy of personnel officers intercedes between management and the work force. Indeed, personnel officers constitute the only stable social entity that exists within the plant. The firm's policy of rotating all women around three eight-hour shifts effectively inhibits the formation of other groups at the workplace.[1] The anonymity of the assembly line is epitomized by the garb which all operatives are required to wear. Before entering the work areas where the circuits are soldered and tested, all women must don sterile white robes, caps, and masks in order to ensure that no dust particles contaminate the chips. In its brightness, the factory uniform seems a Manichean contradiction of Islamic femininity as embodied by the black dress and veil of feudalistic *purdah*, a costume seen increasingly these days on the streets of Malaysia.

Management believes that Malay women are best suited to the demands of semiconductor production. Malays are preferred because of their relaxed and patient demeanor, their superior manual dexterity acquired from the routine performance of household chores (a handiness easily transferable to the detailed tasks associated with integrated circuitry), their spirit of cooperativeness, and their willingness to accept supervision in conforming to the expectations of supervisors. In addition, management perceives for itself a definite social mission in Malaysia. It is sensitive to the economic plight of many Malay households, realizing that the wages it pays its workers represent an irreplaceable source of support. At the same time, management holds the view that semiconductor workers are supplementary and not primary income earners and that, therefore, they are content to work for low wages. As at all other electronic plants in Malaysia, the operative work force at Hitek is nonunionized. Commenting upon the images of the woman worker held by semiconductor firms, Morokvsavic (1984) identifies a self-serving motive: by defining the worker as a "subsidiary" income earner, the firm "justifies" the low wages paid to her (p. 888).

1The semiconductor industry in Malay is officially excused from compliance with a federal regulation which forbids women from working between 10:00 P.M. and 5:00A.M. (*Asia Labour Monitor*, April,1985, p. 30; and Perumal 1983, p. 42).

While management at Hitek does not discriminate directly against nonMalays (indeed the management staff, itself, is mostly Chinese and Indian), it claims that nonMalay workers, especially Chinese, typically leave after a few months. Purportedly, they are reluctant to work for wages that are lower than elsewhere in the city, and they are ill-at-ease in the predominantly Malay work force. Certainly, the nonMalays might well feel out of place. At Hitek as at other factories in Malaysia, the factory floor is, at times, the scene of dramatic expressions of psychocultural disturbances. For example, a routine occurence is the mass attack of spirit possession, an ethnic disorder seen more rarely among adolescent women in the villages. Afflicted workers are granted paid sick leave following initial episodes and complusory medical care for lapses that are especially severe or frequent. If enough of the women become incapacitated, the firm may resort to the services of a traditional curer in order to rid the plant of malevolent spirits. Muck's (1988) commentary on the elctronics industry in Southeast Asia points out the salient aspects of labor retment at Hitek:

> Productivity is high on the basis of an intensive exploitation of labour in which modern methods of job design are assisted by the "traditional" values of patriarchy deployed to maintain the submission of the largely young and female work force. Labour resistance in these conditions has sometimes taken the form of "mass hysteria" in which possession by spirits becomes a form of struggle (p.34).[2]

At Rediwear the work is organized and paced much differently. On the factory floor, workers find themselves in competition with others as well as with the clock. Beyond the basic monthly wage of M$220, the women are paid according to the amount of piece-work completed. The work is strenuous, noisy, and hot, but the wages can be quite high. During peak periods of production, the months of April through July, an exceptionally strong and skilled pattern cutter or sewer can earn as much M$800 per month. As at Hitek, however, these entry-level jobs pay scant benefits.

Management credits its Chinese and Indian workers with highest performance under the pressures of piece-work. Malays are generally viewed as disinclined to meet to the demands of apparel work. In explaining the differences, management cites a fundamental incompatibility of village and factory, whereas the Chinese are, according to management, inclined to wage-earning by their competitive, acquisitive urban culture. Indians, on the other hand, are thought to be pre-adapted to the factory by the regimented work of the rubber estates where, according to management, most Indian workers were born and reared. Regardless of race, all of the

---

2 Arrifin (1978) reports that 60.5% of the nearly 1300 female Malay factory women in her study had witnessed or heard about mass hysteria in the factories where they worked (p. 17). Assembly plants throughout Malaysia regularly turn to traditional doctors. In a brief ethnographic account of mass hysteria in semiconductor plants in Malaysia, Ong (1988) sets forth the view that management summons a traditional doctor (*bomoh*) in such circumstances in order to remove the onus of the disturbances from the factory, placing the blame instead upon the offending spirits.

employees at Rediwear are treated fairly and with respect by management, but little concern is given to corporate esprit. The national textile workers union to which the workers belong is, by and large, inactive at this local level, and so labor relations at Rediwear remain as paternalistic as those at Hitek.

The factory in the third world is commonly viewed as a center of diffusion and cultural change, a medium of Western value orientations toward work and time. However, as the contrast between Hitek and Rediwear illustrates, the ethos of industrial life can vary considerably from one factory to another. Rediwear selects for and inculcates urban-industrial values: the social milieu is pluralistic; the work routine is atomistic and individualistic. The schedule of the work, itself, remains fluid in response to the seasonal peaks and troughs of demand. Hitek, on the other hand, reinforces the values of the village and recreates its organization of labor: the social milieu is communalistic; the work routine is cooperative and anonymous. The pace of the work remains constant in order to ensure the high quality of its product. To the extent that the resulting work environments appeal to different groups and that management's perceptions of group behavior affect hiring practices, the ethnic compositions of the plants are determined by the production system.

TRANSPORTATION AND ETHNIC DIVERSITY

In order to recruit suitable workers, the plants target particular segments of the regional population through transportation policies. Although the plants stand literally side-by-side in Senawang, they occupy the centers of distinctive labor sheds. Hitek pulls workers from an extensive area reaching far beyond the immediate hinterland of the city and into the depressed villages of Negeri Sembilan and neighboring states. For the first two years of operation, Hitek and another semiconductor firm in Senawang actively recruited Malay workers in rural areas. Factory representatives traveled to villages touting the benefits of good wages and clean work conditions. They conducted tours of the plant for the parents of prospective employees assuring them of the women's safety and morality. Kuala Pilah District, due east of the city, was the first area canvassed intensively. Soon the focus of activity shifted to more remote areas. Lately, however, there have been more applicants than jobs so management relies instead upon newspaper and radio advertisements and word of mouth to fill the fewer openings. As a further incentive to women during the years of rapid build-up, the estate's two semiconductor firms housed workers near the plant. This practice was ended, too, after city council received complaints from neighboring families about the hundreds of young, single women livng unchaperoned in their midst. The hostels also threatened management's control of the work force. The residential concentration facilitated communication among workers pnd providied a political forum in which wages and work conditions could be compared and remedial collective actions planned.

Direct access to the rural labor pool is gained by means of a heavily subsidized worker transportation system. Hitek contracts a fleet of buses from a private company operating throughout the state and as far afield as the districts of Alor Gajah in Melaka and Sepang in Selangor. Commuters pay as little as 5 sen (about US 2 cents) and as much as 60 Malaysian sen per day depending upon the distances travelled. Since women are met by company buses only at designated pick-up points along main highways, and since the women's homes are located far from these points on back roads, the journey to work is often a time-consuming affair, one not without physical hardship and some danger. Of course, women living inside the city have the option of riding public buses to Senawang, but the company buses are far cheaper and more convenient. Their route schedules are synchronized to the plant's three eight-hour shifts commencing at 6:00 A.M., 2:00 P.M., and 10:00 P.M. The buses deliver the workers to the factory gates, and they meet them there at the end of each shift.

Hitek's liberal transportation policy is exceptional among Senawang plants. At most plants, the workers, themselves, contract with one of several private bus lines, each with a fleet of not more than three buses. The industrial expansion at Senawang concentrates workers to such an extent that several private transportation companies have been formed to serve this population. Since Seremban is a relatively compact city, pick-up stops in residential areas are all located within a feasible distance from the estate. Without this informal, and largely unregulated sector, commuting for many would be much more costly and inconvenient. Besides being cheaper, the private buses provide a direct service that is not duplicated by other modes of conveyance. Reaching Senawang by public bus from inner city neighborhoods and peripheral housing estates is, at best, time-consuming by day, but impossible at night after 7:00 P.M. and before 7:00 A.M. Since all of the largest plants run evening or early morning shifts, workers have little choice but to rely upon the "factory bus."[3] At six of the large Senawang firms, including Rediwear, operatives are reimbursed amounts ranging from 40 sen to 50 sen (about 20 US cents) daily for transportation expenses. This level is sufficient to cover only one transit by public bus but a round trip on the private line. Throughout the nineteenth century, capitalists in Germany, Great Britain and the United States attempted to secure a stable, orderly and cheap labor force by housing workers in company towns. In this latest phase of global capitalism, the link between the factory

---

3 In addition to serving the plants at Senawang, the factory buses also picked up passengers in the adjacent new town and ferried them into the central city. Given the inadequacy of the municipal bus service service to Senawang, it is not surprising that nearly all of the survey respondents relied upon what has become a large and essentially unregulated informal transportation sector.

trip on the private line. Throughout the nineteenth century, capitalists in Germany, Great Britain and the United States attempted to secure a stable, orderly and cheap labor force by housing workers in company towns. In this latest phase of global capitalism, the link between the factory and the home is the factory bus that plies a circuitous route through neighborhoods, rural towns, and villages.

The trade-off of longer commuting times for continued residence in rural areas is an option made possible by the transport subsidy at Hitek. Nonetheless, a distance decay effect shapes the residential pattern to some extent at Hitek as well. The different sizes of the labor markets can be inferred by the times of journeys to work. Table 5.1a shows the percentage distributions of approximate commuting times (estimated by the survey respondents) for ethnic groups within the plants.

Table 5.1a. Journey To Work.

	Minutes				
Hitek	<30	30-60	60-90	>90	Total
Malays	31.8%	42.7%	13.0%	12.5%	100%
	120	161	49	47	377
Indians	31.4%	34.3%	27.1%	7.1%	100%
	22	24	19	5	70
Rediwear					
Malays	68.7%	28.8%	2.5%	0.0%	100%
	81	34	3	0	118
Chinese	71.1%	22.9%	0.0%	0.0%	100%
	49	15	0	0	61
Indians	74.2%	25.8%	0.0%	0.0%	100%
	49	17	0	0	66
Total	46.1%	36.1%	10.3%	7.5%	100%
	319	250	71	52	692

Source: Worker Survey.

The higher time costs incurred by the semiconductor workers are most apparent. One-fourth of the Malays and Indians working at Hitek reside more than one hour away from the plant. By contrast, over three-fourths of the Chinese garment work force reside within thirty minutes of the work site. In order to apply the chi square test of significance to these distributions, the levels of the variable commuting time are reduced to two: less than 30 minutes and more than 30 minutes. A series of pairwise tests is conducted to include all possible combinations of factory groups. The resulting chi square probabilities indicate that the differences in commuting times between plants are highly significant (Table 5.1b). The differences found among groups within the same plants, however, are not significant.

Table 5.1b. Pairwise Tests for Contrasting Variable Levels of Commuting Times. Variable levels= <30 minutes and >30 minutes

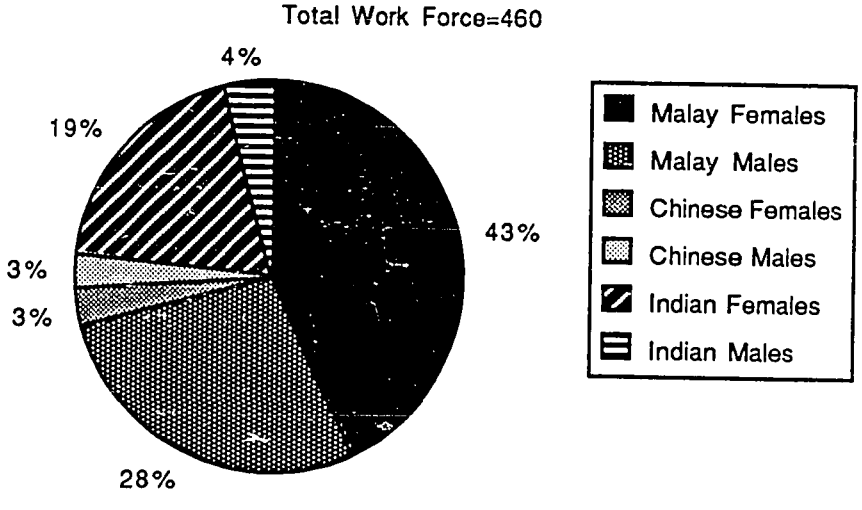
Paired Groups		Chi Square	Probability	N
Within Factories				
Hitek				
Malays/Indians		0.004	0.947	447
Rediwear				
Malays/Chinese		1.394	0.238	179
Malays/Indians		0.640	0.424	184
Chinese/Indians		0.135	0.713	127
Between factories				
Hitek	Rediwear			
Malays	Malays	50.502	0.000	495
Malays	Chinese	45.509	0.000	438
Malays	Indians	42.819	0.000	443
Indians	Malays	24.566	0.000	188
Indians	Chinese	27.213	0.000	131
Indians	Indians	24.956	0.000	136
Total	Total	104.354	0.000	692

Source: Worker Survey.

RURAL AND URBAN ORIGINS OF THE WORK FORCE

The Senawang industrial estate draws its labor force from all three ethnic communities and from across the state; however, the residential distributions of the work force vary considerably among individual plants. By comparing three of Senawang's largest firms, the research illustrates this demographic diversity. Besides Hitek and Rediwear, the research examines the residential distribution of workers in a large domestic plant, a manufacturer of ceramic tiles. Established in 1978, the Malay-owned and operated plant, referred to here as Decotile, is the sole production site of the firm. It is the third largest firm in the city, employing 460 operatives. The majority of its work force is engaged in such relatively light tasks as monitoring and adjusting the machinery that blends and applies the polycrome glazes to ceramic surfaces. In its ethnic and gender compostion, the Decotile work force is predominantly Malay (Figure 5.2); however, it includes more males than either Rediwear or Hitek where, as noted earlier, few male operatives are employed.

Figure 5.2. Ethnic Composition of Operator Work Force at Ceramic Tile Plant.



Source: Personnel Office.

While women are the preferred work force for most operations at Decotile, the firm employs a minority of men, mostly Malay, to perform the heavy tasks of casting, firing and stacking the finished tiles. The employee rolls show that the largest group of operatives at Decotile are Malay females (43%) followed by Malay males (27.8%) and Indian females (18.7%). Chinese of both genders and Indian males comprise very small minorities.

Data on worker residence come from two sources. In the cases of Hitek and Rediwear, the source is the worker survey. At the tile plant, it was not possible to conduct an in-plant survey. Instead, residential information was taken from the employee rolls kept by the personnel office. Although the rolls are not likely to record all changes in residence after the original job application was filed, management claims that the staff makes a continual effort to up-date worker information. Since the Decotile work force proved to be a mainly urban population, post-hiring residential moves between urban and rural areas probably would not be frequent enough to seriously affect the results. Table 5.2 gives the employee distributions of these Senawang factories among four types of places: first, "rural NS (Negeri Sembilan)" including all nonmetropolitan sites within the state expect those in Seremban District where the city is located; second, "periurban" including all sites in the nonurban parts of Seremban District, an area which fits Pryor's (1984) definition of the periurban fringe as "a zone of transition in land use, social and demographic characteristics" (p. 206); third, "urban" refers to residence in the city; and fourth, "other" refers to areas outside the state. These other places are mostly in the Sepang District of Selangor State to the west of the city and in the Alor Gajah District of Melaka State to the south.

The research finds that workers at all three plants are concentrated in the city proper and its periurban fringe (Table 5.2a).

Table 5.2a. Residential Distribution of the Work Force in Three Senawang Plants.

Hitek	Rural NS	Periurban	Metro	Other	Total
Malays	32.5%	20.3%	37.1%	10.1%	100%
	122	76	139	38	375
Indians	15.7%	31.4%	40.0%	12.9%	100%
	11	22	28	9	70
Rediwear					
Malays	9.5%	6.0%	84.5%	0.0%	100%
	11	7	98	0	116
Chinese	3.3%	3.3%	93.4%	0.0%	100%
	2	2	57	0.0	61
Indians	0.0%	4.7%	95.3%	0.0%	100%
	0	3	61	0	68
Decotile					
Females	Rural NS	Periurban	Urban	Other	Total
Malays	16.8%	17.9%	65.3%	0.0%	100%
	32	34	124	0	190
Chinese	0.0%	33.3%	66.7%	0.0%	100%
	0	4	8	0	12
Indians	3.5%	33.33%	63.2%	0.0%	100%
	3	29	55	0	87
Males					
Malays	21.6%	16.7%	61.7%	0.0%	100%
	26	20	74	0	121
Chinese	0.0%	31.3%	68.7%	0.0%	100%
	0	5	11	0	16
Indians	13.6%	13.6%	72.7%	0.0%	100%
	3	3	16	0	22
Total	18.5%	18.1%	59.2%	4.2%	100%
	210	205	671	47	1133

Source: Worker Survey.

The attractions of the latter area for industrial workers are many. It is close to urban employment, yet it offers a greater availability of cheap, low density housing than can be found in the city proper. Nonetheless, the transport advantage of Hitek is apparent in the larger proportion of the Malay semiconductor workers, nearly one-third, residing in more distant rural parts of the state and the 10% residing in rural areas outside the state, mostly in the padi region of Alor Gajah. In comparison, the workers at Rediwear and Decotile are generally urban dwellers, although a much larger proportion at the garment plant resides inside the city limits. In its residential pattern, the Decotile work force is intermediate between Rediwear (where nearly all of the workers live in the city) and Hitek (where most live in rural and periurban areas).

In order to apply the chi square test of significance to these distributions, the four levels of the residential place variable are reduced to the two contrasting levels of rural (including periurban and other) and urban. Table 5.2b gives the results of pairwise chi square tests of differences within and between factories.

Table 5.2b. Pairwise Tests for Contrasting Variable Levels of Residence in Three Senawang Factories.

Variable levels=Rural and Urban Residence

Paired Groups Within Factories			Chi Square	Probability	N
Hitek[a]					
Malays/Indians			0.216	0.642	445
Rediwear[a]					
Malays/Chinese			2.949	0.086	177
Malays/Indians			4.494	0.030	180
Chinese/Indians			0.207	0.649	125
Decotile[b]					
Malays*/NonMalays*			0.075	0.784	289
Between factories			**Chi Square**	**Probability**	**N**
Hitek[a]	Rediwear[a]	Decotile[b]			
Malays	Malays		79.770	0.000	491
Malays	Chinese		67.386	0.000	436
Malays	Indians		74.779	0.000	439
Malays	Malays*		40.296	0.000	565
Malays		NonMalays*	22.610	0.000	474
Indians	Malays		39.530	0.000	186
	Malays	Malays*	13.359	0.000	306
	Malays	NonMalays*	12.342	0.000	215
Indians	Chinese		40.860	0.000	131
Indians	Indians		45.859	0.000	134
Total	Total		172.072	0.000	686
Total		Total	64.579	0.000	892
	Total	Total	50.741	0.000	688

*includes females only.

Sources: (a) Worker Survey; (b) Personnel Office.

Two findings are especially pertinent to the matter of distinguishing the effects of plant policies. First, the chi square values for the differences between the plants prove to be highly significant, even the difference between Malays at Hitek and Rediwear. Second, except in the case of Malays and Indians at Rediwear, the differences between groups within the same plant are not significant. Clearly, long-range, interregional commuting is more characteristic of Malays at Hitek. By means of its internal transport infrastructure, the semiconductor plant may well delay or discourage a substantial migrant stream which would otherwise seek accomodations in the city.

The contrasting residential patterns of plants reflect differences in both wage and transport policies. Decotile, like Rediwear, pays a fixed transportation subsidy to its workers of 50 sen per day. This rate effectively restricts the labor shed of both plants to the immediate environs of the work site, thus placing the firms in competition with others for urbanized nonMalay workers. A fixed wage scale based upon tenure constitutes a further competitive disadvantage in the labor market. Starting wages at Decotile are just M$50 more than the base wage at Hitek with similar

biennial increments. This level of remuneration simply fails to attract and hold workers from the more urbanized ethnic communities, especially the Chinese. Within the same urban labor shed, however, Rediwear improves its position by adopting a piece-rate wage with no ceiling placed upon earnings regardless of seniority.

RURAL STAYERS AND MIGRANTS

The information on current residence alone is not sufficient to an understanding of the place origins of the work force. Rather the lifetime mobility of the workers must also be considered. Using survey responses to questions about residence at birth and current residence, the research compares the lifetime migration categories among workers at Hitek and Rediwear. Only migration into the metropolis is considered. The four variable levels are "rural stayers" (nonmigrants), "metropolitan natives," and "rural to urban [migrants]" and "urban to urban [migrants]." The distributions given in Table 5.3a indicate that the backgrounds of Malays at both plants are rural.

Table 5.3a. Migration Status.

		Rural Stayers	Rural-Urban	Urban Native	Urban-Urban	Total
Hitek						
	Malays	62.0%	33.3%	4.1%	0.6%	100%
		227	122	15	2	366
	Indians	61.8%	19.1%	14.7%	4.4%	100%
		42	13	10	3	68
Rediwear						
	Malays	15.8%	64.0%	19.3%	0.9%	100%
		18	73	22	1	114
	Chinese	6.8%	15.3%	78.0%	0.0%	100%
		4	9	46	0	59
	Indians	4.7%	34.4%	53.1%	7.8%	100%
		3	22	34	5	64
Total		43.8%	35.6%	18.9%	1.6%	100%
		294	239	127	11	671

Source: Worker Survey.

At Hitek, most Malays are "rural stayers" living outside Seremban. The Malays at Rediwear, on the other hand, are mainly rural-born migrants. In contrast, the nonMalay garment work force is largely urban-born, although many of the Indian garment workers are migrants, too. The high visibility of these rural-born Indian women at Senawang suggests an exodus of Indian women from the plantations paralleling that of Malays from the villages.

A chi square technique is employed to test the statistical significance of the residential differences among Malay workers only. Three levels of the mobility variable are collapsed into two: "rural stayers" and "migrants," rural-urban and urban-urban. The category of "urban natives" are

ommitted. As shown in Table 5.3b, the frequency distributions of the Malay garment workers and semiconductor workers prove to be significantly different with a larger proportion of "rural stayers" at Hitek.

Table 5.3b. Pairwise Tests for Contrasting Variable Levels of Migration Status.
Variable levels=Rural Stayers and Migrants

Paired Groups		Chi Square	Probability	N
Within factories				
Hitek				
Malays/Indians		1.325	0.250	409
Rediwear				
Malays/Chinese		0.863	0.353	105
Malays/Indians		1.453	0.228	122
Chinese/Indians		---	---	---
Between factories				
Hitek	Rediwear			
Malays	Malays	60.001	0.000	443
Malays	Chinese	---	---	---
Malays	Indians	34.529	0.000	381
Indians	Malays	41.398	0.000	150
Indians	Chinese	8.073	0.004	71
Indians	Indians	30.826	0.000	88
Total	Total	91.244	0.000	544

Source: Worker Survey.

HOUSEHOLD STATUS

Urban residence does not result in the same sorts of household arrangements for all ethnic groups, nor is the urbanward move a family venture for all women. While most women who work at Senawang generally reside in family households (either in the homes of parents or collaterals), a substantial variation is apparent among ethnic groups (Table 5.4a).

Table 5.4a Relationship to Household Head.

Hitek	Child	Spouse	Other Family	Self	Total
Malays	67.7%	2.6%	8.2%	21.5%	100%
	258	10	31	82	381
Indians	56.5%	18.8%	24.6%	0.0%	100%
	39	13	17	0	69
Rediwear					
Malays	38.8%	24.8%	17.4%	19.0%	100%
	47	30	21	23	121
Chinese	64.5%	21.0%	14.5%	0.0%	100%
	40	13	9	0	62
Indians	33.8%	44.1%	17.7%	4.4%	100%
	23	30	12	3	68
Total	59.1%	13.2%	12.1%	15.4%	100%
	407	96	90	108	701

Source: Worker Survey.

For example, large minorities of Malays at both plants, over one-fifth, live as single heads of households. In a chi square test, the results of which are shown in Table 5.4b, contrasting variable levels of the household status variable are "single" household heads and "family" members (including all other statuses). The analysis finds no significant differences between the distributions of household types at Hitek and at Rediwear. Perhaps, this tendency of Malay women to live in shared quarters harkens to the economic cooperativism of their Minangkabau forebearers in village society.

Table 5.4b. Pairwise Tests for Contrasting Variable Levels of Relationship to Household Head.

Variable levels=Single and Family (Child/Spouse/Other Family)

Paired Groups
Between Factories

Hitek	Rediwear	Chi Square	Probability	N
Malays	Malays	0.351	0.554	502

Source: Worker Survey.

Once again, despite appearances and professional opinions to the contrary (Siew-Ean Khoo, et al. 1984), single tenancy as practiced by these unmarried Malay factory workers is best viewed as a conservative, village-oriented strategy aimed at saving transit-to-work time while retaining a primary residence in the village. This residential adaptation may well be an aspect of household-level economic strategies and not necessarily the outcome of individual decisions to migrate on a permanent basis. Addresses and information on tenancy given by respondents indicate that all but one of these reside in urban rental units shared by numerous worker-tenants.

Residences of these women are concentrated at Senawang New Town adjacent to the industrial estate--out of the 108 single migrants who responded to the survey, 65 (60.2%) were domiciled there. The concentration of single workers suggests an informal network of housing information at the workplace, neighborhood and village.

Other significant ethnic variations are found in the household statuses of the work force. Excluding the single household heads, the research tests the differences in their relationships of women to the heads of family households. The two levels of the variable contrasted here are "child" and "other family." The latter is derived by combining "spouse" and "other family" into "other family." As indicated in Table 5.4c, differences between the Indian garment workers (most of whom reside with husbands who are also household heads) and all other groups (most of whom reside in households headed by other family members) are highly significant.

Table 5.4c. Pairwise Tests for Contrasting Variable Levels of Relationship to Household Head.

Variable Levels=Child and Other Family (Spouse/Other Family)

Paired Groups				
Within Factories		Chi Square	Probability	N
Hitek				
Malays/Indians		31.900	0.000	368
Rediwear				
Malays/Chinese		4.196	0.041	160
Malays/Indians		2.5222	0.112	163
Chinese/Indians		10.772	0.001	127
Between factories				
Hitek	Rediwear			
Malays	Malays	60.904	0.000	397
Malays	Chinese	16.896	0.000	361
Malays	Indians	78.594	0.000	364
Indians	Malays	1.189	0.276	167
Indians	Chinese	0.872	0.350	131
Indians	Indians	6.015	0.014	134
Total	Total	65.662	0.000	593

Source: Worker Survey.

Most Malays and Chinese remain attached to the larger family unit in a proionged dependency upon their natal households. Conservative behavior, once again, serves the aims of multinational capital. Official neglect of industrial worker housing allows the multinational firm to pass along the social costs to the women and to their parents residing in rural and urban areas.[4]

AGE OF THE WORK FORCE

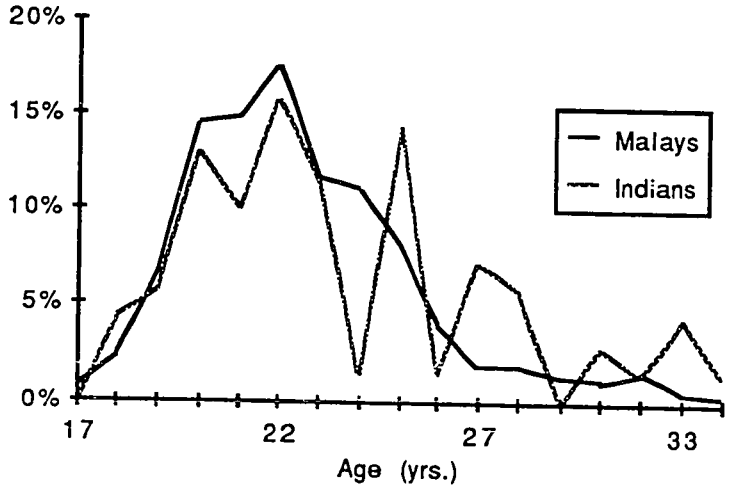
As depicted thus far, the labor process at Senawang is highly segmentary with regard to race, residence and ethnicity. Another dimension of this labor segmentation is age. More precisely, the semiconductor plant draws an exceptionally youthful work force from the countryside. It is a population comprised of those women not yet encumbered by the responsibilities of marriage and children and not yet involved in the small-holder rubber industry. The age distributions of

4 In a singularly detailed study, Arrifin (1978 and 1984) has documented the difficult living conditions of nearly 1300 single female migrant workers in various industries. Two-thirds of these women sought out their own accomodations, usually renting sleeping spaces in private homes or factory hostels where as many as a dozen women shared a room. Most of the migrants were employed by electronics firms (58.9%) with smaller numbers in textile plants (12.9%) and garment (12.8%). The Malaysian case, however, may not be typical of newly industrialized countries. Clark (1983), for example, found that female Korean migrants generally stayed with kin or secured housing with the assistance of kin (p. 75). The increasing urban opportunities for Malaysian women will lead inevitably to more frequent migrations of single women, a development which will, in turn, create problems of housing, health, and other services which the municipalities, large and small, are ill-prepared to meet. Scholars have recognized only recently the scope and potential social consequences of this trend (see, for example, Buvinic and Youssef 1978; and Siew-Ean and Pirie 1984, p. 132).

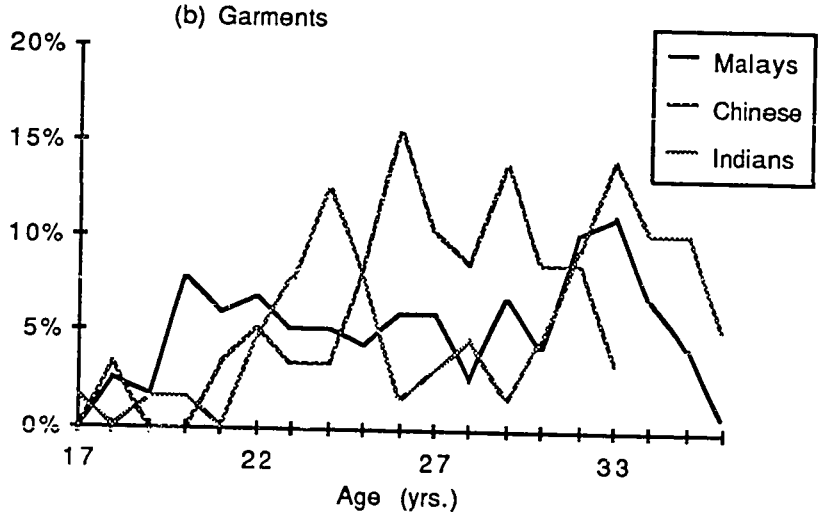
plants surveyed at Senawang exhibit a considerable variation that, the research contends, is attributable to different wage policies. The graphs of age distributions at Hitek and Rediwear in Figure 5.3 show that most Malay semiconductor workers are concentrated in the cohort of 20 to 24 years old, as are a slightly smaller proportion of their Indian co-workers (Figure 5.3a).

Figure 5.3. Age Structure of Operator Work Force at Semiconductor and Garment Plants.

(a) Semiconductors



(b) Garments



Source: Worker Survey.

In sharp contrast, the ages of garment workers, Malays and nonMalays, are more evenly distributed into the oldest age groups (Figure 5.3b). A clear difference among the ethnic groups is the greater number of Indian garment workers who remain in the factory beyond the age of 30 years old. The reliance of Hitek upon younger Malay females stands in sharp contrast to the situation at Rediwear. Rather than competing for the same urbanized, low wage labor force, Hitek and Rediwear target different segments of the regional labor pool through diverse wage and transport structures.

Central tendencies of these age structures reveal more precisely the variation among communities and factories. Among all groups, the mean age of the Hitek work force is significantly lower than the rest (Table 5.5). A least significant difference technique of pairwise testing of means is used in this and in subsequent analyses of means.[5] The results, given in the table, indicate significant differences not only between plants, but among some ethnic groups within plants as well. For example, Malay semiconductor workers are, on average, about eight years younger than Indian garment workers and three years younger than co-ethnics in the garment plant.

Table 5.5. Mean Ages of Workers at Hitek and Rediwear.

	A	B	C	D	E
Years	22.60	23.91	27.77	27.92	30.25
	(2.96)*	(5.42)	(4.10)	(6.11)	(7.31)

A=Malays Hitek
B=Indians Hitek
C=Chinese Rediwear
D=Malays Rediwear
E=Indians Rediwear

*Standard deviation

Note: Means underlined are not significantly different (t statistic alpha=0.05).

Sample size
Hitek Malays=372 Indians=70
Rediwear Malays=116 Indians=64 Chinese=58

Source: Worker Survey.

Differences between the mean ages of the Chinese at Rediwear and the Malays and Indians at Hitek are significant (as underlined in the table). The mean age of Indians at Rediwear is significantly older than the mean ages of all other ethnofactory groups. However, no significant difference exists between the mean ages of Chinese and their Malay co-workers.

---

5 The procedure of means testing employed in the study (Fisher's least significant difference or LSD) is discussed in L. Ott (1984). The SAS application of this procedure is explained in Cody and Smith (1987).

Since the majority of the Malay semiconductor workers are rural-dwelling women, it is possible that their relative youth is a reflection of residential differences. However, the relationship of residence and age is ambiguous. On the one hand, households in rural areas may, for example, send young women members earlier to the factory since fewer opportunities to earn wages may exist in rural areas for these women. Moreover, young rural women may also remain in the factory for a shorter period due to the difficulties of long-distance commuting, a turn-over that would be reflected in a youthful work force. On the other hand, rural women may enter the factories later in life only after they are released from adolescent chores in the home and fields. Even then, rural women may have more opportunities than urban women to engage in productive activities at home, and therefore, they may find themselves under less financial pressure to enter factory work early in life.

In order to determine which scenario is most likely to be the case, the mean ages of rural and urban Malay workers in each plant are tested in pairwise fashion. As shown in Table 5.6 significant differences are found between the ages of rural and urban women only between plants. Within plants, however, no significant differences are found between rural and urban groups of Malays.

Table 5.6. Mean Ages of Rural and Urban Malay Workers.

	A	B	C	D
Years	22.57	22.86	27.70	28.28
	(3.09)*	(2.88)	(6.12)	(6.19)

A=Rural Malays Hitek
B=Urban Malays Hitek
C=Urban Malays Rediwear
D=Rural Malays Rediwear

*Standard deviation

Note: Means underlined are not significantly different (t statistic alpha=0.05) .

Sample size
Hitek Rural=237 Urban=134
Rediwear Rural=23 Urban=93

Source: Worker Survey.

These findings support the view that demographic variations are the consequence of an on-going interaction primarily between the variables of factory and ethnicity in the labor process.

FATHER'S OCCUPATION

What Galkin (1983) calls the "socialization" of the modern worker to the production process begins in the household of childhood with an exposure to the values of wage earning on a perennial schedule. With regard to the prefiguration of an industrial lifestyle. The garment

workers and semiconductor workers are further differentiated by family backgrounds, a variable measured, in this analysis, by father's occupation. The frequency distributions of ethnofactory groups among six occupational types (Table 5.7a) shows that, while the women have in common family backgrounds of low socioeconomic status, the occupations of their fathers tend to be those of traditional ethnic specializations.

Table 5.7a. Fathers' Occupations.

	Clerk	Trades	Laborer	Farmer	Estate	Other	Total
Hitek							
Malays	6.4%	7.8%	10.7%	58.5%	15.8%	0.8%	100%
	24	29	40	218	59	3	373
Indians	4.6%	6.2%	27.7%	1.5%	56.9%	3.1%	100%
	3	4	18	1	37	2	65
Rediwear							
Malays	12.8%	9.4%	17.1%	47.0%	12.8%	0.9%	100%
	15	11	20	55	15	1	117
Chinese	6.8%	37.3%	40.7%	5.1%	5.1%	5.1%	100%
	4	22	24	3	3	3	59
Indians	6.3%	14.1%	35.9%	6.3%	34.4%	3.1%	100%
	4	9	23	4	22	2	64
Total	7.5%	10.8%	18.0%	37.6%	21.0%	1.2%	100%
	51	74	123	257	144	8	678

Source: Worker Survey.

The fathers of Malays, for example, are mostly small-holding farmers, particularly the fathers of women at Hitek. [6] The fathers of nonMalays are more often involved in capitalist economies. The fathers of Indians, for example, are mainly urban or agricultural laborers. As argued earlier (Chapter 3), the agricultural estate where so many of the Indian families live and work is essentially a rural factory closer in ethos and organization to the proletarian world of the urban worker than it is to the world of the peasant. In essence, the way of life on the estates prefigures that of the cities. Thus, many of the estate-born Indian women, unlike their Malay counterparts, are enculturated to factory work while still within the family setting. The Chinese, too, are the children of wage workers or petty capitalists (merchants/artisans). Few fathers of any group are of the clerical or managerial class. Most Malays, on the other hand, come from rural farm families with far fewer precedents for women's work outside the home, much less women's work in wage-paying jobs.

The demographic dimension most relevant here is the distinction between farm (small-holding) and nonfarm background, that is, between occupational specializations in capitalist and

6 In her study of 53 Malay women workers at a shoe factory in Alor Gajah, Melaka, Ackerman (1984) found that 44.2% of their fathers were unemployed or deceased.

non-capitalist sectors. Accordingly, the research tests the chi square distributions between these binary levels of the occupation variable (Table 5.7b).

Table 5.7b. Pairwise Tests for Contrasting Variable Levels of Fathers' Occupations.
Variable levels=Farm and Nonfarm

Paired Groups				
Within Factories		Chi Square	Probability	N
Hitek				
Malays/Indians		71.702	0.000	438
Rediwear				
Malays/Chinese		31.201	0.000	176
Malays/Indians		31.280	0.000	181
Chinese/Indians		0.078	0.780	123
Between factories				
Hitek	Rediwear			
Malays	Malays	4.721	0.030	490
Malays	Chinese	58.051	0.000	432
Malays	Indians	59.544	0.000	437
Indians	Malays	40.557	0.000	182
Indians	Chinese	1.246	0.264	124
Indians	Indians	1.921	0.166	129
Total	Total	37.312	0.000	678

Source: Worker Survey.

The findings indicate that significant differences exist only between Malays and other ethnic groups. Most importantly, the difference between Malays working in different factories is also significant, that is, Malay semiconductor workers are more likely to have been born and reared in the households of small-holders.

DIFFERENTIAL ACCESS TO EMPLOYMENT

Employment in the semiconductor and garment plants of Senawang is frequently the first wage-earning position held by the women. In response to a survey question about prior work experience, 81.4% of all women claimed that they had never before held paid jobs (Table 5.8a).[7]

7 Other studies of women workers in Malaysian industrial estates have shown that the vast majority had never been previously employed. For example, only 15.1% of the women interviewed by Ackerman (1984, p. 43) and 20.2% of the women in Arrifin's (1978, p. 9) had ever worked prior to their present employment.

Table 5.8a. Rates of Previous Employment of Workers at Semiconductor and Garment Plants.

Hitek	Prior Job	No Prior Job	Total
Malays	15.8%	84.2%	100%
	60	321	381
Indians	17.9%	82.1%	100%
	12	55	67
Rediwear			
Malays	21.2%	78.8%	100%
	25	93	118
Chinese	25.4%	74.6%	100%
	16	47	63
Indians	32.9%	67.1%	100%
	23	47	70
Total	18.6%	81.4%	100%
	136	563	699

Source: Worker Survey.

Differences among ethnic and factory groups stand out clearly in the findings. The semiconductor work force includes the highest proportion of first-time workers; the Indian garment work force has the lowest. In a series of pairwise chi square tests between two categories of women (those with a "prior job" and those with "no prior job") significant differences are found only between two pairs, between Malays at Hitek and Indians at Rediwear and between the groups of Indians at each plant (Table 5.8b). While the difference between the factory totals is not statistically significant, Hitek appears more likely at least to employ novice Malay workers .

Table 5.8b. Pairwise Tests for Contrasting Variable Levels of Previous Employment.

Variable levels=Prior Job and No Prior Job

Paired Groups Within Factories		Chi Square	Probability	N
Hitek				
Malays/Indians		0.198	0.657	448
Rediwear				
Malays/Chinese		0.416	0.519	181
Malays/Indians		3.147	0.076	188
Chinese/Indians		0.890	0.345	133
Between factories				
Hitek	Rediwear			
Malays	Malays	1.886	0.170	499
Malays	Chinese	3.548	0.060	444
Malays	Indians	11.527	0.001	451
Indians	Malays	0.287	0.592	185
Indians	Chinese	1.077	0.299	130
Indians	Indians	4.021	0.045	137
Total	Total	9.122	0.003	699

Source: Worker Survey.

Clearly, the industrial estate offers first employment to thousands of women from across the region. This is especially true in the case of rural Malays who might not otherwise have sought such employment in a wage-earning sector. The agglomeration of activities at Senawang lures young job seekers who possess few job-finding skills. The clustering of multinational firms, their reputations as major employers in Seremban, the location of Senawang outside the predominantly Chinese workshop zone of the inner city, and the readily available direct bus service to the estate are all factors that encourage unskilled Malay and Indian women to enter the formal labor force. The situation is comparable to what observers of third world cities have called the "bright lights" scenario: the very existence of the modern city in a developing country alters the self-perception of peasants and initiates a reordering of life priorities.

Despite the considerable influence of Senawang in the regional economy and its demand for female workers, most of the survey respondents indicated that they generally learned about job opportunities through word of mouth from families and friends rather than through formal, official sources such as the state's employment office in Seremban (Table 5.9a). However, the analysis finds considerable and, in some instances, significant variation among ethnic communities.

Table 5.9a. Source of Job Information.

Hitek	Social	Labor Office	Media/ Other	Total
Malays	87.1%	4.8%	8.1%	100%
	323	18	30	371
Indians	84.1%	1.4%	14.5%	100%
	58	2	9	69
Rediwear				
Malays	45.8%	53.4%	0.8%	100.0%
	54	61	3	118
Chinese	53.2%	45.2%	1.6%	100.0%
	33	27	2	62
Indians	75.4%	24.6%	0.0%	100.0%
	52	16	1	69
Total	75.5%	18.0%	16.5%	100.0%
	520	124	42	689

Source: Worker Survey.

Substantial proportions of Chinese and Malay garment workers cited formal job sources which, in addition to the employment office, include the media of the newspaper and radio. Although nearly one-fourth of Indians at the plant had learned of their jobs through the government office, the rest cited informal, social sources. Malays at Hitek showed considerably less sophistication. The tabled results indicate that the majority of Malay semiconductor workers learned of their jobs through informal channels. The job search of the semiconductor work force, for Malays and Indians alike, is apparently restricted to the social circle of family and friends. In order to determine the statistical significance of this frequency distribution among levels of the variable "source of job information," the research again applies the chi square test. Contrasting variable levels used in the test are "formal" (including "social" sources) and "informal" (including "media" and "labor office"). The results indicate that differences in the frequency distributions between factories are highly significant (Table 5.9b).

Table 5.9b. Pairwise Tests for Contrasting Variable Levels of Source of Job Information.

Variable levels=Formal and Informal Sources

Paired Groups				
Within Factories		Chi Square	Probability	N
Hitek				
Malays/Indians		0.452	0.501	440
Rediwear				
Malays/Chinese		0.907	0.341	180
Malays/Indians		15.537	0.000	187
Chinese/Indians		7.024	0.008	131
Between factories				
Hitek	Rediwear			
Malays	Malays	86.475	0.000	489
Malays	Chinese	41.589	0.000	433
Malays	Indians	6.325	0.012	440
Indians	Malays	26.582	0.000	187
Indians	Chinese	14.636	0.000	131
Indians	Indians	1.613	0.204	138
Total	Total	81.315	0.000	689

Source: Worker Survey.

Chi square values are most significant between Malays at Hitek and co-ethnics at Rediwear and between factory totals. The reliance of garment workers upon formal sources and of semiconductor workers upon informal sources is a telling contrast. It suggests place differences of access to urban-based media and cultural variations in the job search.

Since such a large number of Malays at Hitek are from rural areas and were living there when they undertook the job search, it is possible that the differences of job information sources between plants is more accurately described as a difference between rural and urban Malay women. It is hypothesized, then, that rural women in both plants rely more upon village-based social sources than upon the urban-based formal sources. In order to determine if, indeed, the difference is one between Malay garment and Malay semiconductor workers or , alternatively, between rural and urban Malays, the research tests differences of information sources among Malays grouped according to both place of residence at time of hiring (rural and urban) and factory. As shown in Table 5.10a, large majorities of rural and urban Malay women alike at Hitek relied upon social, informal sources.

Table 5.10a. Source of Job Information for Rural and Urban Malays.

	Social	Labor Office	Media/ Other	Total
Hitek				
Rural	87.8%	4.8%	7.4%	100%
	238	13	20	271
Urban	83.0%	5.6%	11.4%	100%
	73	5	10	88
Rediwear				
Rural	51.4%	48.6%	0.0%	100%
	18	17	0	35
Urban	43.8%	55.0%	1.2%	100%
	35	44	1	80
Total				
Rural	83.7%	9.8%	7.4%	100%
	256	30	20	306
Urban	64.3%	29.2%	6.5%	100%
	108	49	11	168
Total	76.8%	16.7%	6.5%	100%
	364	79	31	474

Source: Worker Survey.

The strategies of Malay workers at Rediwear, however, were more diverse. Both rural and urban women there had greater access to formal and social channels. In fact, Malay women at Rediwear who gave rural addresses at the time of hiring are almost as likely to have learned of their jobs through formal channels as are urban-dwellers. As before, pairwise chi square tests among groups of rural and urban Malays (residence at time of employment) reveal significant differences only between Malays in different factories (Table 5.10b).

Table 5.10b. Pairwise Tests for Contrasting Variable Levels of Source of Job Information. For Rural and Urban Malays.

Variable levels=Formal and Informal

Paired Groups of Malays Within Factories		Chi Square	Probability	N
Hitek				
Rural Malays/Urban Malays		1.359	0.244	359
Rediwear				
Rural Malays/ Urban Malays		0.578	0.447	115
Between factories				
Hitek	Rediwear			
Rural Malays	Rural Malays	30.034	0.000	306
Rural Malays	Urban Malays	69.415	0.000	351
Urban Malays	Rural Malays	12.930	0.000	123
Urban Malays	Urban Malays	28.053	0.000	168
Between Places				
All Rural Malays	All Urban Malays	61.800	0.000	486

Source: Worker Survey.

This and similar behaviors observed within the Malay work force are indicative of the same underlying differentiation of the work force into conservative and innovative segments. In this case, the prevalence of innovative life styles among the garment workers can be inferred from their greater reliance upon formal, urban-based sources of job information.

The social character of the job search at Hitek has important implications for the ethnic diversity of the workplace. The information flow at Hitek among friends and kin is more exclusive than the impersonal nature of the information flow at Rediwear. Such a diffusion process which is selective for ethnicity contributes to low levels of ethnic interaction on the factory floor. As Malays at Hitek alert co-ethnics to job opportunities and work conditions, the level of ethnic segregation at the factory increases over time and eventually becomes a fixture of the environment, one maintained by the very racial attitudes which the government hopes to dispell. At Hitek, such narrow channeling of information complements management's ethnic preference in hiring. The firm is able to attract a naive work force with less than complete job information. Despite the concern of state and city governments to provide jobs for low income Malays and their success in attracting large employers to cities outside the capital, oversight agencies such as the State Economic Development Corporations have not paid sufficient attention to the ways in which women learn about the range of urban employment opportunities or, for that matter, urban housing alternatives. The official neglect of diffusionary mechanisms, particularly those in rural

areas, unwittingly aids the semiconductor firm since it draws a segment of workers least knowledgeable of the city's possibilities.

CONCLUSION

This study has argued, so far, that the firm and the state in Malaysia catalyze and control a restructuring of the regional labor market. This process is far from uniform in its means and ends but varies among industries as well as among plants. Each firm aims not only to acquire the necessary number of workers, but, just as important, it aims to hire selectively those segments most accustomed or pre-adapted by ethnohistorical experience to the work regime of a particular technology. In the colonial and post-colonial economies, ethnicity was a critical dimension of labor recruitment and segregation. Apparently, ethnicity remains critical even in this current era of multinational manufacturing.

A fundamental difference among urban firms is the extent to which each seeks out those more traditional segments of the regional population, that is, the village-oriented Malays, either villagers or urban migrants. The greater access of the semiconductor firm to this segment is gained, obviously, by means of transportation subsidies and, less apparently, by means of a work environment that is more compatible with the cultural ethos and daily rhythms of rural Malay society. The ethnic exclusivity of the workplace and the noncompetitive ethos and unpressured pace of the work regime mirror the social and personal nature of village systems. The village orientation of the semiconductor work force is evidenced, too, by the conservatism of the job search and housing strategies in rural and urban areas. The relative youth of this work force, its demographic homogeneity and its embeddedness in the quasi-feudalism of the small-holding set it apart from the garment work force. All groups at the garment plant, Malays and nonMalays, exhibit behaviors more closely identified with a modern industrial lifestyle. Beyond these differences between the factories, clear differences exist as well among the backgrounds and career trajectories of ethnic groups within factories. The next chapter portrays in a more detailed fashion the different life paths and life cycle adaptations to factory work that emerge among women from different cultures and working under different conditions.

CHAPTER VI.

CULTURE AND CAPITAL:
LIFE CYCLE STRATEGIES IN A FEMALE INDUSTRIAL LABOR FORCE

INTRODUCTION

The intrusion of large-scale manufacturing into a traditional society alters concepts of time and the place of the individual in society. Apart from any skill that the industrial worker inthe third world may contribute to the system (and in most assembly line jobs the skill levels are minimal), the basis of the individual's worth becomes the time consumed in repetitive tasks. Extrinsic activities of commuting and caring for those left at home go unrewarded even though such duties may interfere with job commitment. Whereas in traditional societies, home and work are facets of a unified realm of experience, in modern industrial societies, home and work occupy distinct realms. Of course, the shift in values is incremental. There exists an interim, transitional stage wherein the boundaries between the two are indistinct, and life priorities remain unclear. While devoting most of the waking day to the factory job, the worker, especially the working woman, must perform the domestic chores and fill culturally sanctioned roles.

Society must eventually alter its institutions in order to accommodate this shift in consciousness; however, until this stage is accomplished, the psychic and economic costs of change fall to the individual. Innovative behaviors are adopted at the risk of public censure so that novelty of economic behavior is always dampened by pressures to conform. To some extent, of course, the life cycle strategies of individuals represent willful and solitary responses to a perceived environment of risks and opportunities, sacrifices and gains. Yet deviation from the norm is always constrained by circles of class, cohort and community. The outcome of the interplay between technology and society, capital and culture is apparent in the shared modalities of labor force participation which distinguish ethnic groups and social classes. Certain of these styles signal more complete departures from the tradition than do others. The hallmark of a nascent modernity is the combining of domestic and industrial roles in the course of the career, that is, an integration of labor force participation and family life. The capacity to span worlds, to orient old patterns of domesticity to the new realities of work, these are the innovative behavioral adjustments necessary for a deep transformation of the society from familial, precapitalist formations into more diffuse capitalist relations.

This chapter examines differences in labor force commitment and related life cycle strategies of Malaysian women working in different factories in the two plants surveyed at

Senawang, Hitek and Rediwear. The purpose is to evaluate career trajectories in terms of an underlying interaction of structure and human agency, technology and sociocultural background. Others have urged this line of inquiry. For instance, in his study of the coal and iron industries in South Wales, Cooke (1985) identifies:

> . . . important sociocultural variations that are contingent upon the uneven character of capitalist development. These variations arise from a combination of particular, spatially distinctive conditions of production, on the one hand, and spatially delimited social practices on the other (p. 238).

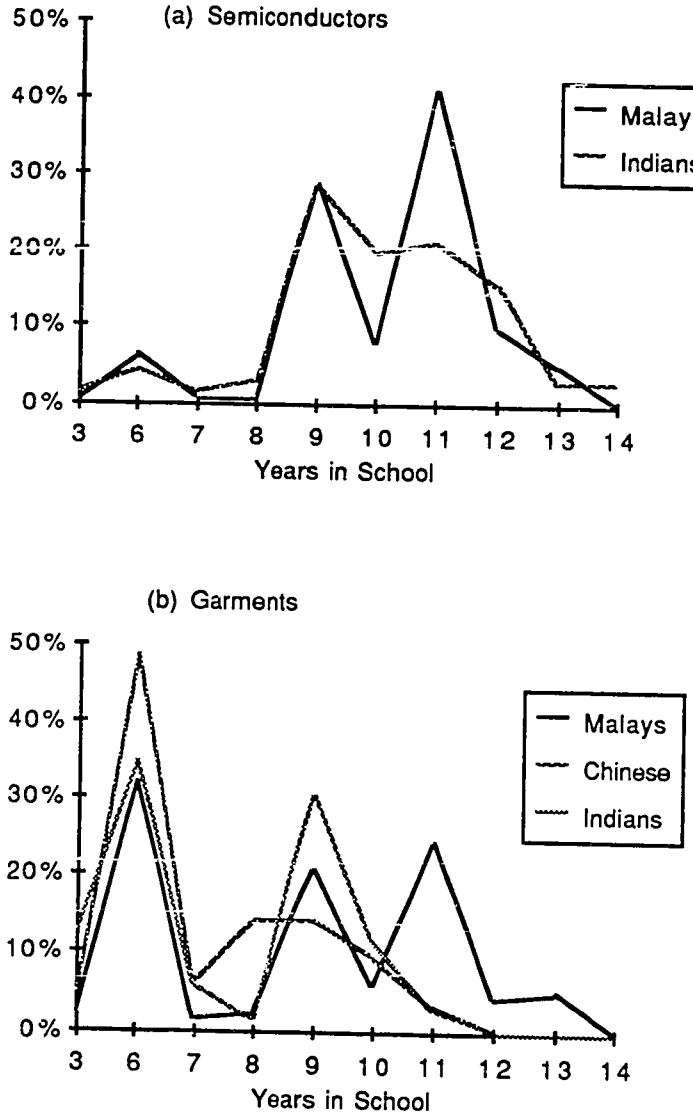
To a great extent, the differentiated character of the work force is a function of the multinational's need for flexibility in adjusting levels of employment to variable levels of product demand. As argued in the preceding chapter, the semiconductor firm maintains the flexibility of its labor ingredient by targetting an underemployed rural-urban reserve. The garment plant, on the other hand, must maintain a stable core of trained, experienced workers and, in periods of peak demand, a fluid pool of redundant workers that can be sloughed off during times of slack demand. At both Hitek and Rediwear, demographic diversity permits the firms to adapt quickly to changing markets without retaining workers in excess of levels dictated by product demand. Competitive bidding and appropriate recruitment strategies result in a conformance of demographic attributes and production systems. Thus, the life cycle stages evident in the work force are linked to the contrasting demands of a high technology firm that requires a contingent work force of high turn-over and a low technology firm that requires a more diverse work force of stable and transient workers.

LIFE CYCLE MARKERS AND LABOR FORCE PARTICIPATION: EDUCATION

The timing of four central events in the lives of working women are especially critical in shaping careers. These are school-leaving, marriage, parity and entry into the formal work force. The sequence and the timing of passages from one to the other indicate the extent and nature of the worker's commitment to work place. Length of schooling, the first of the life cycle markers considered here, predicts to a large degree subsequent life strategies. For instance, a lengthy school career postpones wage-earning and, when the school tenure is especially long, indicates preparation for life options beyond the factory. Levels of women's education that are greatly extended or abbreviated have implications for their subsequent proletarianization.

Multinationals at Senawang attract women of very diverse educational backgrounds. Analyses of the survey results indicate that the relationship of education and industrial career varies significantly among ethnic groups and industries. Hitek workers are, by far, more highly educated, Indians as well as Malays. Graphs in Figure 6.1 illustrate the various levels of educational attainment by ethnic and factory groups.

Figure 6.1. Education (Years in School) of Operator Work Force at Semiconductor and Garment Plants.



Source: Worker Survey.

As shown, most Malays and Indians at Hitek have spent at least nine years in school, far longer than workers at Rediwear.[1] In order to test these differences, the research conducts a

[1]Similar high levels of educational attainment by Malaysian factory women have been reported by others. Ackerman (1984, p. 41) found that nearly two-thirds of the women in her study had received at least a secondary education representing an investment of nine or ten years in school (see also Arrifin 1978, p. 10).

series of pairwise t-tests on the mean lengths of schooling for the ethnofactory groups. As shown in Table 6.1, the means for Malays and Indians at Hitek are significantly greater than the means of any groups within the garment work force.

Table 6.1. Mean Lengths of Educational Attainment (Years in School).

	A	B	C	D	E
Years	7.09	7.09	8.66	10.04	10.12
	(2.70)*	(1.97)	(2.59)	(1.86)	(1.74)

A=Indians Rediwear
B=Chinese Rediwear
C=Malays Rediwear
D=Indians Hitek
E=Malays Hitek

*Standard deviation

Note: Means underlined are not significantly different (t statistic alpha=0.05).

Sample Size
Hitek Malays=370 Indians=72
Rediwear Malays=116 Indians=70 Chinese=64

Source: Worker Survey.

In the garment work force, Malays have spent a significantly longer time in school than have Indian and Chinese co-workers. Yet Malay garment workers have spent a significantly shorter time in school than have their co-ethnics at Hitek. Although the commitment of Malay factory women to education is perhaps exceptional compared to women's education in other third world countries, such standards are typical of the state's Malay population. Economic development and the federal government's support of universal education since the second world war have increased dramatically the levels of educational attainment among Malaysian women. For example, the state census for 1970 shows that only one-fourth of Malay women age 20 to 24 years old had ever attended school, while less than 15% had completed 9 or more years. By 1980, about 94% of Malay women age 20 to 24 years old had attended school for some duration, while 81% had completed nine or more years (Table 6.2). In recruiting this literate and disciplined operative work force, the multinational realizes an important and gratis benefit from national policies.

Table 6.2. Education of Malay Women Negeri Sembilan Ages 20-24. 1970 and 1980.

	Years of School Attended					Total Women
	<9	9	10	11+	Total 9+	(ages 20-24)
1970	24.7%	3.9%	5.2%	5.1%	14.2%	—
	1885	296	401	390	1087	7639
1980	93.9%	47.5%	13.8%	32.6%	80.9%	—
	11091	5613	1627	3854	9524	11814

Source: Malaysia. Department of Statistics.

Since the work force is diverse with regard not only to education but to age (Chapter 5), it is possible that any systematic variation in one factor is an effect of the other. For example, younger factory workers may have received longer schooling than older women as a result of progressive educational policies. In other words, differences in length of schooling may simply reflect the different age compositions of the plants and the ethnic groups within them. In order to determine whether or not this is the case, the research employs two techniques. First, in order to assess the extent to which education varies with age among groups, the research correlates the continuous variables of age and years of schooling. Second, in order to remove the statistical effect of age upon differences of mean lengths of schooling, the research compares the age-standardized means of factory and ethnic groups.

First of all, when age and education (years of schooling) are correlated, the levels of statistical association vary greatly among the five ethnofactory groups. Pearson correlation r-values range from weak and statistically insignificant in the case of Malays at Hitek to negative and significant, as predicted, in the case of Malays and Indians at Rediwear (Table 6.3).

Table 6.3. Pearson R-Values for Education and Age of Worker.

Factory/ Group	Pearson R-Value	Probability P>F	N
Hitek			
Malays	+0.019	0.726	370
Indians	-0.366	0.002	70
Rediwear			
Malays	-0.419	0.000	113
Chinese	-0.346	0.007	60
Indians	-0.530	0.000	68

Source: Worker Survey.

To some extent, the lack of statistical association between age and education for the Hitek Malays, is due, in part, to the fact that the ages of most semiconductor workers fall within a narrow youthful range. Consequently, the central tendency of this large group may dilute variability in education at the extremes of the age range. Despite this possibility, the lack of correlation suggests that the production system at Hitek selects for higher education regardless of age and ethnic differences. Rediwear, on the other hand, is far less selective for education. The larger r-values suggest that the younger garment workers have spent longer in school, a trend of covariance reflecting that in the general population. The contrasts in the relationship of education and age within ethnic groups and between factories illustrate, once again, the plant and group variations in the labor force process. For the well-educated, the attractions of a more sanitary and sociable ambience at Hitek may outweigh the lower wages

The effect of age upon education is illustrated further by a comparison of age-weighted mean lengths of schooling. In the age standardization technique, the age-specific mean of each group is weighted so as to reflect the age composition of a standard population, in this case, the average of all groups in the two plants.[2] As seen in Table 6.4, once the effect of age differences through standardization is removed, the rank order of the means, if not the magnitude of differences among them, remains the same.

Table 6.4. Age-Weighted Mean Lengths of Schooling*.

	A	B	C	D	E
Years	7.6	7.7	9.2	10.0	10.1

A=Chinese Rediwear
B=Indian Rediwear
C=Malays Rediwear
D=Indians Hitek
E=Malays Hitek

Standard population is the average of age distribution of plants among 5-year cohorts (19 to 34 years).

Sample size
Malay Hitek=370 .Indians Hitek=71 .
Malays Rediwear=116 Chinese Rediwear=64 Indian Rediwear=70

Source: Worker Survey.

---

2 In direct standardization of demographic rates, the actual rates of two or more study populations are weighted by the age distribution of a standard population--either a separate control population or, as in the case of the present research, the average distribution of the study populations. This technique eliminates the effects of differential age structures upon the rates for the purposes of comparison. For a comprehensive discussion of the technique and the special application of indirect standardization see Shryock 1973.

The educational level of the semiconductor work force remains well above that of the garment work force. Of greatest interest is the amount of schooling which age adjustment adds to the mean years of schooling for Malays and Indians at Rediwear. In these two cases, it seems clear that the actual lengths of education are dependent upon period trends, as expected.

An additional factor that may well affect levels of education among the Malay women is residence. Since a large proportion of the Hitek Malay work force live in rural areas and since most of the Malays at Rediwear are city-dwellers, it is possible that educational differences are due to the contrasting origins of the women rather than the selectivity of the firms for educational background. For instance, village traditions and a lack of immediate employment opportunities may contribute to higher levels of education for women, or, conversely, the greater availability of education in the urban setting may contribute to higher levels of attainment among urban Malays. In order to examine these possibilities, the research tests differences among the means of Malay residential groups in the two plants: rural and urban residents at Hitek and Rediwear. The results of a series of pairwise t-tests indicate significant differences between groups by plants rather than between by rural and urban residence (Table 6.5). Here, plainly, the labor process discriminates among Malay women for education, and in general, then, the educational level of Malays depends not upon residence but upon factors inherent within the production regime, itself.

Table 6.5. Mean Lengths of Schooling For Rural and Urban Malays.

	A	B	C	D
Years	8.2	8.8	10.1	10.1
	(2.06)*	(2.71)	(2.45)	(1.61)

A=Rural Rediwear
B=Urban Rediwear
C=Urban Hitek
D=Rural Hitek

*Standard deviation

Note: Means underlined are not significantly different (t statistic alpha=0.05).

Sample Size
Hitek Rural Malays=231 Urban Malays=132
Rediwear Rural Malays=19 Urban Malays=94

Source: Worker Survey.

FEMALE EDUCATION AND URBAN ASPIRATIONS

Setting aside these disparate interactions of firms and populations, much of the female work force is overeducated for the nature of the work performed (a notable expection is the Chinese garment work force). The number of years spent in school by most Malay and Indian semiconductor workers amounted to several more years than the number required by either the

government or employers. By statute, all Malaysians are required to complete only six years of primary school. Hitek requires the same of its hirees; whereas Rediwear sets no minimal standards beyond literacy.

The several as-yet-unrewarded years of schooling may evince, as some have suggested, a common miscalculation on the part of rural households concerning the value of education in the industrial city (Stark 1982, p. 73). On the other hand, the education of village women may be one facet of a long-term household strategy to secure for daughters a civil service clerical position or a favorable marriage. Among the Minangkabau, for example, highly educated women are considered most likely to enter into a marriage with a soldier or salaried civil servant. Underlying such strategems, ill-conceived or not, is a traditional respect for education among Malay households, formerly for sons and increasingly for daughters as well. This attitude derives, first of all, from the importance which Islam places upon literacy in Koranic studies. In Malay villages, boys and girls alike are taught the Arabic text of the Koran by villages clerics. Annually, young pupils are inspired by the acclaim accorded the man and woman who win a nationally broadcast Koran recitation contest. During the colonial era, Islamic enthusiasm for learning was reinforced when educated Malays were given positions in the civil bureacracy, police force and the army.

For whatever reasons, the educational aspirations of lower class Malays are out of synch with urban realities. While the country's educational system may be indeed exemplary in the third world (Hirschman 1979), it is misdirected for those destined to work in rural estates and factories. Women rarely receive vocational training. Among the several hundreds of Senawang workers surveyed, only two had ever attended trade school. This is typical of general trends. In 1980, out of all Malay women in Negeri Sembilan aged 20-24 years, fewer than sixty had any technical training. The semiconductor firm is most representative of those multinationals for which the gap between educational policies and job requirements in the third world is advantageous. The firm has ready access to labor that is cheap, literate and disciplined to formal instruction. NonMalay workers at Rediwear have committed fewer of their wage-earning years to schooling, but they are nonetheless as capable of acquiring the routine skills of apparel work. The more urbanized, proletarianized communities to which these women belong assess more realistically the importance of formal education, or lack thereof, in the careers of the lower classes. As Malaysia industrializes, the economic value of women will lie increasingly beyond the traditional marriage exchange and within the urban labor market. If this proves to be the case, then the educational levels of the garment work force will be more appropriate to that future economy.

THE TEMPO OF MARRIAGE, FERTILITY AND EMPLOYMENT

Further indication of the diverse cultural responses to new technological arrangements is found in the different ways in which factory women combine domestic roles of wife and mother

with a factory career. The marital statuses of the work force at Hitek and Rediwear indicate considerable variation between the plants (Table 6.6a).

Tabie 6.6a. Marital Status.

Factory/ Group	Currently Married Before Hired	After Hired	Divorced	Total Ever-Married	Total Never-Married	Total
Hitek						
Malays	3.4%	2.1%	1.0%	6.5%	93.5%	100%
	13	8	4	25	359	384
Indians	22.5%	1.4%	1.4%	25.3%	74.7%	100%
	16	1	1	18	53	71
Rediwear						
Malays	26.9%	7.6%	9.2%	43.7%	56.3%	100%
	32	9	11	52	67	119
Chinese	11.5%	13.8%	0.0%	31.3%	67.7%	100%
	12	9	0	20	44	64
Indians	44.9%	2.9%	4.4%	52.2%	47.8%	100%
	31	2	3	36	33	69
Total	14.7%	4.1%	2.6%	21.4%	78.5%	100%
	104	29	19	152	556	708

Source: Worker Survey.

The married Malay worker, while a rarity at Hitek, is very common at Rediwear. Within the Indian work force, likewise, those at Rediwear are also more apt to be married. In fact, married Indian women represent a far larger proportion of the Indian garment work force than do women who have never married. Among most groups of married women, those at either plant tend to be married at the time of hiring. An exception is the somewhat greater proportion of the Chinese women who married subsequent to gaining employment. Otherwise, women who are unmarried when hired tend to remain unmarried throughout the duration of their tenure on the job.

A series of pairwise chi square tests is conducted among the ethnofactory groups for distributions of ever-married and never-married women. The results indicate that the proportion of ever-married Malay semiconductor workers is significantly lower then the proportions of ever-married women in all other groups (Table 6.6b). On the other hand, the distributions of ever-married and never-married women Malay garment workers are not significantly different from those of Indians and Chinese. In fact, the proportion of married women among the Malays at Rediwear is intermediate between the rates for the other two groups.

Table 6.6b. Pairwise Tests for Contrasting Variable Levels of Marital Status.

Variable levels=Ever-Married and Never-Married

Paired Groups				
Within Factories		Chi Square	Probability	N
Hitek				
Malays/Indians		24.859	0.000	456
Rediwear				
Malays/Chinese		1.260	0.262	188
Malays/Indians		2.279	0.131	184
Chinese/Indians		5.404	0.020	134
Between factories				
Hitek	Rediwear			
Malays	Malays	96.901	0.000	503
Malays	Chinese	40.232	0.000	449
Malays	Indians	104.665	0.000	453
Indians	Malays	6.432	0.011	190
Indians	Chinese	0.803	0.370	136
Indians	Indians	10.625	0.001	140
Total	Total	109.085	0.000	708

Source: Worker Survey.

Other marital trends appear isolated or more pronounced within certain ethnic and factory groups. For example, the Malays at Rediwear are distinguished by the several divorcees in the survey. The fact that few co-ethnics at Hitek are divorced is not surprising, however, considering the youthfulness of the work force (Chapter 5). The high rates of divorce among the older garment workers may be due to cultural factors which distinguish Malay attitudes toward the institution from those of other communities. Scholars have attributed the higher divorce rates to egalitarian gender relations among Malays and to the ease of divorce in Moslem society (Kassim 1984). Divorce in both Hindu and Confucian societies is, in contrast, perceived as a threat to the social order. The female divorcee is an anomaly. Among all Malay dialect groups, moreover, it is the Minangkabau women who are most renowned for their economic independence as well as their proclivity to divorce.

Prior to World War II, at least, the practice was a fairly common one., Writing in the early 1960s, just prior to the industrialization of Malay women, Swift (1965) suggests that as traditional society and its village rice economy declined in the 1950s, divorce was less and less frequently condoned by the Minangkabau clan leaders. The primary reason was economic: the divorced woman would have had difficulty supporting herself. Not anticipating the profound technological and social changes about to occur, Swift predicted that divorce rates among the Minangkabau would continue to decline until they reach a level not markedly different from rates in other dialect groups. However, the new economic power of the female work force may, in a roundabout fashion, return the Minangkabau to an earlier condition of high divorce rates.

As in the case of other demographic variables, marital rates for different populations cannot be accurately compared until variations in age differences among the populations are taken into account. Since older women are more likely to be married, it is possible that differences in marriage trends may be simply a reflection of the different age compositions of the ethnofactory groups. Applied to the present case, this would suggest that more Indians garment makers are ever-married because they are older. In order to demonstrate that variation in marriage rates is due to behaviors of factory groups rather than age groups, the raw rates, again, are standardized so as to eliminate the distortionary effects of age structures. Accordingly, the rates of marriage given in Table 6.7 are adjusted by the direct standardization technique described earlier. Following this technique, the age-specific rates of the populations are weighted and averaged by the age distribution of a standard population. Here, as before, a standard population is derived by averaging the age distributions of ever-married women at the two plants.

Table 6.7. Age-Standardized Marital and Fertility Rates.

	Married	Marital Rates		Children	Fertility Rates	
Hitek	Women	Actual	Adjusted*	Ever-Born	Actual	Adjusted**
Malays	25	0.065	0.076	16	0.640	0.529
Indians	18	0.254	0.242	33	1.833	2.319
Rediwear						
Malays	52	0.437	0.311	86	1.654	1.620
Chinese	20	0.313	0.161	22	1.100	0.531
Indians	36	0.522	0.400	87	2.417	2.268
Total	151	0.213	0.242	244	1.616	1.454

Note: Standard population*=the average age distributions of all women in the plants; standard population**=the average age distributions of ever-married women in the plants.

Source: Worker Survey.

A comparison of the adjusted rates does not support the notion that differences in marital status are due to differences in age compositions. Rather, it appears that factory and ethnic groups are distinguished by differential rates of marriage and fertility regardless of age. The adjusted rate for semiconductor workers is still far lower than the rates for all groups of garment workers, while the adjusted rate for Indian garment workers is higher than those of co-workers. It should be noted, however, the rates for the garment workers in general are lowered by age-standardization due to the predominance of older workers at Rediwear compared to the youthfulness of the work force at Hitek.

In addition to marital rates, Table 6.7 also indicates levels of cumulative fertility (mean number of children born to ever-married women). These values, too, have been adjusted by the same standardization procedure (within which the means are weighted by a standard population

which is the average age distribution of the two plants). As shown in the table, the rates of fertility among the few ever-married Malay at Hitek and Chinese at Rediwear are far lower than rates among ever-married Malays at Rediwear and Indians at either plant. Again, the Malays at Rediwear approach the rates for Indian co-workers more closely do than the Chinese who display a greater tendency to delay marriage and childbirth while in the formal work force.[3] Of course, they may well resume work after marriage and close the first birth interval while working as unpaid workers in family-owned businesses in Seremban. In any event, the two urbanized groups exhibit distinctive styles of life cycle adjustment in their industrial careers. The life cycle profile of Malay garment workers is medial between those of Indians and Chinese.

It is important, however, that the foregoing discussion of differential rates of marriage and fertility not distract from the essential point, namely, that Malay semiconductor workers and Chinese garment workers seldom extend careers beyond the life markers of marriage and child-bearing. For the purposes of the research, the key question of marriage and employment compatibility actually turns, not upon the different age-trends of marriage and childbirth among workers, but upon the relative numbers of women in certain ethnofactory groups who exit the work force prior to marriage and childbirth[4]. In regard to these distinctive patterns, the research contends that culture in conjuction with site-specific work conditions inhibit the continuation of the factory career beyond marriage. It is important to note that Malays and Indians, for example, behave differently in different plants.

Among all segments, the Indian garment workers exhibit the steadiest commitment to the workplace throughout the life cycle despite a cultural ideal of femininity which prescribes the complete domestication of adult women (Oorjitham 1984). On an evolutionary continuum of cultural orientations ranging from familism to urban industrialism, Indian garment workers and Malay semiconductor workers are located closest to opposite poles. Somewhere between these two extremes is situated the Malay garment worker--closer, in many respects, to her Indian co-workers than to her co-ethnics at Hitek. Indeed, it appears that the touted phenomenon of the Malay "factory girl" (*Minah kilang*) is most typical of the semiconductor industry.

---

3 Federal law obligates an employer to provide two months paid maternity leave for all full-time employees (Perumal 1983, p.42).

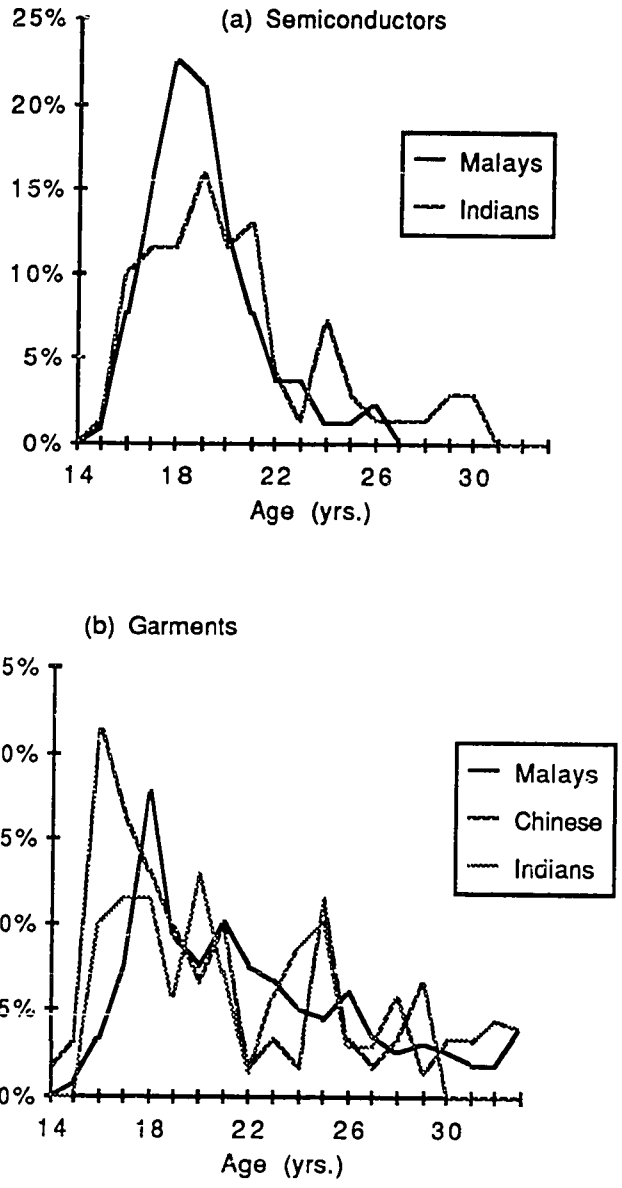
4 According to the demographic literature on marital patterns in Peninsular Malaysia, Malay females tend to marry earlier than NonMalays. Mean age of first marriage, according to Anderson (1981), is 21.4 years. Anderson also reports a mean age of 23.8 years for Chinese females and 22.0 years for Indians.

ENTRY INTO THE WORK FORCE

Participation in the labor force is not an isolated episode of life. In the changing societies of the third world, the woman's commencement of wage work whether in factory or field is a phase of an entire life scenario scripted by her household and nested within a pre-ordained sequence of occupations and statuses. For some, industrial employment may be extended continuously throughout these passages. For others, formal work outside the home is a hiatus in the more typical life course. The different ages at which the women of Senawang enter the work force provide further evidence for the diverse ways in which women approach factory work and synchronize their labor force participation with other events. Turning to this question, the research analyzes data on age at entry into the wage-earning work force. Respondents to the survey questionnaire were asked to give the date on which they were first hired by any employer on a wage-basis. The age of entry into the formal work force is then determined for each respondent by calculating the interim between this date and the date of birth provided elsewhere in the survey.

The age distributions graphed in Figure 6.2 show that the greatest variation in age of entry occurs between Malay semiconductor workers and Chinese garment workers, on the one hand, and Indian garment workers, on the other.

Figure 6.2. Age of Entry into Work Force at Semiconductors and Garment Plants.



Source: Worker Survey.

In general, Hitek workers entered the formal labor force at about the same ages, around 18 years old (Figure 6.2a). At Rediwear, far more women, especially Indians, entered in their late twenties and some even in their early thirties (Figure 6.2b). Chinese at Rediwear entered the work force earliest; Malays later; and Indians latest of all.

These impressions are confirmed by the central tendencies of these distributions. Mean ages of first employment differ significantly among ethnofactory groups. For both the Malays at

Hitek and Chinese at Rediwear, the mean age of first employment is about 19 years compared to nearly 23 years for Indians at Rediwear (Table 6.8).

Table 6.8. Mean Ages of Women at Entry into Work Force.

	A	B	C	D	E
Years	19.0	19.1	20.6	21.9	22.6
	(2.18)*	(3.43)	(5.02)	(4.61)	(6.38)

A=Malays Hitek
B=Chinese Rediwear
C=Indians Hitek
D=Malays Rediwear
E=Indians Rediwear

*Standard deviation

Note: Means underlined are not significantly different (t statistic alpha=0.05).

Sample Size
Hitek Malays=380 Indians=70
Rediwear Malays=119 Chinese=61 Indians=69

Source: Worker Survey.

The behavior of Indians at Hitek is at variance with the behavior of co-ethnics in the garment plant. These women entered the work force at ages nearly two years younger than co-ethnics in the garment plant. Once again, the Malays at Rediwear exhibit a work adaptation which is more similar to that of Indian co-workers. The table indicates that no significant difference is found between the means for the two groups.

As in the case of educational attainment, the age of entry into the work force is likely to be influenced by such period effects as the gradual liberalization of attitudes toward women's work. With modernization, more women are freed from traditional constraints upon working outside the domestic unit. Contrariwise, under certain conditions, women in developing countries may be encouraged to remain longer in school and to enter the work force at a later age.

In order to make statistical comparisons that are not so apt to be confounded by differences in the age structures of those groups, the various actual means must, again, be adjusted in order to eliminate the effects of differences in the age compositions of the various ethnic and factory groups. In general, the technique of age standardization yields much lower ages for the Rediwear populations than for Malays and Indians at Hitek (Table 6.9). The weighted mean age for the Chinese, for example, falls a full year below that of the Malay semiconductor worker. Nonetheless, the relative rankings of weighted values are the same as those of the actual means.

Table 6.9. Actual and Age-Weighted Mean Ages of Women At Entry into Work Force.

		A	B	C	D	E
Years	Wtd*	18.2	19.5	20.5	21.1	21.2
Years	Actual	19.1	19.0	21.9	22.6	20.6

A=Chinese Rediwear
B=Malays Hitek
C=Malays Rediwear
D=Indians Rediwear
E=Indians Hitek

*Standard population is the average age distributions of the plants among 5-year cohorts (19 to 34 years).

Source: Worker Survey.

One additional factor that may affect the age of entry into the formal work force is the residential character of the Malay work force. At Hitek, for example, it is possible that, since most of the women reside in rural areas, economic necessity may encourage or compel these women to enter the work force earlier in life than their urban counterparts at Rediwear. Alternatively, urban women may enter the work force earlier since employment opportunities are closer at hand. To determine if the age differences are somehow reflections of rural-urban residence, the research tests differences between the mean ages of rural and urban Malays at the two plants. As before, a series of pairwise t-tests of means is conducted for the four residence/factory groups.

The analysis finds no significant differences within the plants, that is, between the means of the residence groups within the same factory: either between rural and urban Malays at Rediwear or between rural and urban Malays at Hitek (Table 6.10). However, significant differences are found between the means of all Malays at Rediwear and all Malays at Hitek, thereby strengthening the impression that the labor process is often related to the structural agencies of culture and technology alike.

Table 6.10. Mean Ages of Rural and Urban Malays At Entry into Work Force.

	A	B	C	D
Years	18.9	19.1	21.6	22.8
	(2.09)*	(3.24)	(4.47)	(4.98)

A=Rural Hitek
B=Urban Hitek
C=Urban Rediwear
D=Rural Rediwear

*Standard deviation

Note: Means underlined are not significantly different (t statistic alpha=0.05).

Sample size
Rural Hitek=238 Rediwear=23
Urban Hitek=134 Rediwear=93

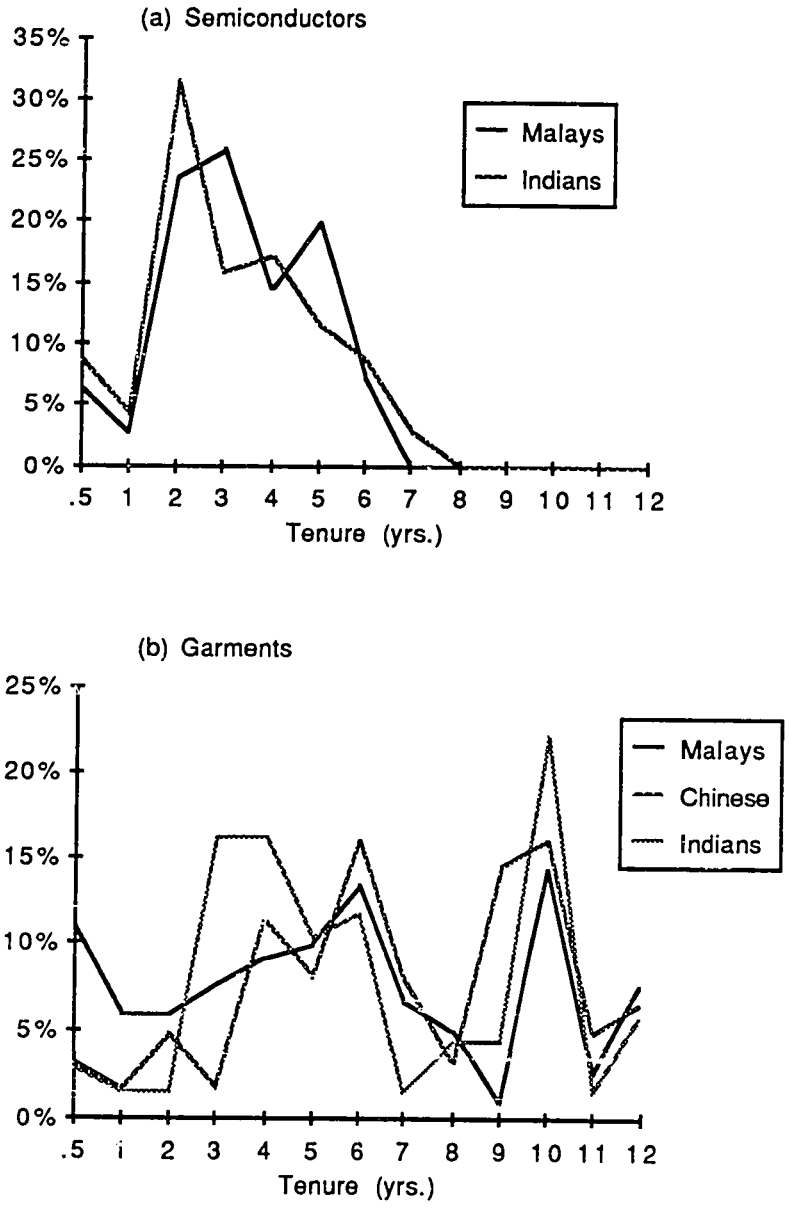
Source: Worker Survey.

It is noteworthy that Malay semiconductor workers and Chinese garment workers follow a similar sequence. They enter the work force at significantly earlier ages and appear to exit it prior to forming a family. The Indian women at Rediwear, however, tend to enter the work force much later in the family cycle. Such behavioral variations are attributable to cultural differences in women's status and to cultural perspectives on women's work outside the home. Indian factory women, working into the years of child-bearing and child-rearing, are following the precedent of rural Indian women long established as field workers in the plantation economies of rubber and tea. Nonetheless, a later age at entry into the work force than single Malays suggests that Indian women still bear primary responsibility for the care of children and delay entry into the labor force at least until the eldest children or aged parents are able to assist at home.

DURATION OF EMPLOYMENT

Perhaps the most summary measure of labor force commitment is how long the women have remained at their present employment. Around the variable of job tenure cluster an array of other life cycle variables, all connected into more or less adaptive patterns. In the present case, tenure was found to vary considerably both among ethnic communities and between plants. Malays at both Hitek and Rediwear have worked for shorter periods than have the nonMalays, especially the Chinese; however, Malays at Rediwear tend to remain at work much longer than co-ethnics at Hitek. Graphs in Figure 6.3 illustrate the considerable variation in labor force participation among the ethnic and factory groups.

Figure 6.3. Lengths of Tenure at Semiconductor and Garment Plants.



Source: Worker Survey.

Judged visually, the greatest separation of tenure trends clearly occurs between factory groups rather than between ethnic groups. As indicated earlier, relatively few of the semiconductor workers have worked as long as five years (Figure 6.3a). Compared this to the garment work force where most members have worked as long as seven or eight years (Figure 6.3b).

Turning to an analysis of average lengths of employment, a series pairwise t-tests of mean lengths of tenure indicates that differences between Malay semiconductor workers and Indian and Chinese garment workers are highly significant (Table 6.11).

Table 6.11. Mean Lengths of Tenure.

	A	B	C	D	E
Years	3.1	3.2	5.5	6.3	6.9
	(1.76)*	(1.55)	(3.65)	(3.22)	(3.13)

A=Indians Hitek
B=Malays Hitek
C=Malays Rediwear
D=Indians Rediwear
E=Chinese Rediwear

*Standard deviation

Note: Means underlined are not significantly different (t statistic alpha=0.05).

Sample size
Hitek Malays=384 Indians=71
Rediwear Malays=120 Chinese=62 Indians=68

Source: Worker Survey.

Malay garment workers occupy their usual mid-point status along this continuum of career commitment. In fact, the mean length of employment for this group varies significantly from those of all other groups. It should be added that these variations occur in the absence of direct intervention by management. Neither Hitek nor Rediwear managements has ever resorted to worker lay-offs during periods of slack product demand. Instead, the firms counted on normal attrition and, during severe downturns, upon "voluntary retrenchment," a "form of self-sacking" common at off-shore production sites in Malaysia and entailing the provision of financial incentives to women who willfully leave the work force (*Asia Labour Monitor* 1985).

The same ordering of the segments is found for tenure as for several other key demographic variables examined in the research. Consistently, the Malay semiconductor workers exhibit behaviors least suggestive of any but a temporary commitment to factory life. The Indians and Chinese at Rediwear form a stable core of the work force that is surrounded by a somewhat more volatile pool of Malays. The relative brevity of their tenure provides management with the necessary flexibility in adjusting output to demand. However, the greater instability of this Malay contingent presents certain problems as well. Without the extensive transport system of Hitek, Rediwear management experiences some difficulty in maintaining the 30% bumiputera work force as decreed by the government. According to information supplied by management, Malay women represented on average 36% of the work force but 49.6% of leavers and 53.4% of hirees

for a three-year period (1983 to 1985). Obviously, to compensate for high turn-over management regularly has to exceed the 30% hiring quota for Malays. The average annual turn-over rate for these Malay garment workers (Malay job leavers as a percentage of the entire Malay work force) is 24.2% compared to 15.5% turn-over rates for both Chinese and Indians.

JOB TENURE AND LIFE CYCLE ADJUSTMENTS

As discussed thus far, factory women combine work and labor force participation in diverse ways. The opportunities for a women to enter and remain in the formal work force are frequently restricted by the conflicting demands of family, society and the firm. Although the obstacles to full economic participation by women are especially evident in the third world, they are found as well in technologically advanced societies. Women more often than men are expected to assume domestic responsibilities while supplementing household incomes. This is especially the situation of older, married women in traditional rural societies. Thus, in evaluating the differing levels of commitment to industrial employment, it is important to consider the background effects of certain demographic variables. The effects of three such variables are examined here: age of the worker, residence (rural-urban) and marital status.

AGE AND TENURE

The age of workers affects length of employment in an obvious fashion: put most simply, older workers have had more years in which to work. In Western nations, the industrial, blue collar working class originates in a labor culture that encourages early entry into the work force and steady participation in pursuit of skills, seniority and status on the job. Under such circumstances the typical worker's age increases with tenure such that the factors of age and tenure are highly and positively correlated. In order to determine if similar conditions prevail in the multinational work force, the research examines the effects of age upon tenure in the surveyed population. Two methods are employed: a direct age standardization of tenure and a simple correlation of the variables.

Since the age compositions of the various ethnic and factory groups at Senawang vary considerably, a comparison of mean lengths of employment requires a preliminary weighting of actual values so as to eliminate the effects of age on tenure. The direct standardization procedure, while yielding different values, does not produce a different ranking of the group means (Table 6.12). However, in the case of Indian and Malay garment workers, age standardization yields a much lower value for tenure.

Tabie 6.12. Actual and Age-Weighted Mean Lengths of Tenure.

		A	B	C	D	E
Years	Wtd.*	3.1	3.2	4.6	5.6	6.5
Years	Actual	3.1	3.2	5.5	6.3	6.9

A=Indian Hitek
B=Malays Hitek
C=Malays Rediwear
D=Indians Rediwear
E=ChineseRediwear

*Standard population is the average distributions of the plants.

Source: Worker Survey.

This suggests that age and tenure are most highly interrelated among these groups. This analysis supports the view that, to an extent, the longer tenure of the Malay and Indian garment workers is a reflection of their relatively older ages. At Hitek, however, the opposite does not seem to be the case, that is, the youthfulness of Malay workers there cannot be held to account for the generally brief tenure of semiconductor work force. Nor can the longer tenure of the Chinese garment work force be attributed to any age differential among groups.

The same conclusion is supported by a correlation of the continuous variables tenure and age. Here, it is assumed that a strong, positive correlation of values is evidence of career continuity such that the older workers have worked longer. The results indicate that the correlation of age and tenure is significant among all groups; however, the strength of the correlation varies (Table 6.13). For example, age and tenure are most weakly correlated among Malay and Indian semiconductor workers and among the Chinese garment workers (indicating a more staccato career profile).

Table 6.13. Pearson r-values for Tenure and Current Age.

Factory/ Group	Pearson R-Value	Probability P>F	N
Hitek			
Malays	0.343	0.002	374
Indians	0.319	0.007	69
Rediwear			
Malays	0.529	0.000	118
Chinese	0.310	0.000	58
Indians	0.454	0.000	64

Source: Worker Survey.

Factory work for these groups appears to fill a brief interim of life prior to the assumption of mature roles. Such a pattern is distinct from that of the Malays and indians at Rediwear. The higher correlation among these garment workers indicates a stronger tendency to pursue a career steadily over the life course. Such a career path points to a nascent modernity in labor force

participation styles. The somewhat lower level of correlation for Indians may be attributed to the older ages at which they enter the work force. Nonetheless, the garment workforce overall exhibits a greater degree of career continuity over the life cycle.[5] The findings indicate, then, that both culture and technology structure the careers of women. Malay and Indian women adapt to the regime at Rediwear by continuing the factory career beyong marriage and childbearing. On the other hand, trends in the semiconductor plant reveal the discontinous nature of women's careers under certain forms of peripheral capitalism.

RESIDENCE AND TENURE

On the problem of ethnic and factory variations in job tenure, a question arises as to whether rural and urban women are apt to work as long,in either plant that is, are the results of the above analysis confounded by the factor of residence, rural versus urban. Residence can affect tenure in at least two ways. First, urban women may remain in the work force longer since, having been exposed to modern attitudes, they would, presumably, be under less pressure to quit work after reaching the culturally prescribed age of marriage. Second, urban women do not have to contend with the rigors of long-range commuting and so do not encounter the disincentives of time and distance to the same extent that rural women do. In order to determine if the participation of rural and urban women varies within the same plants, the research tests the differences among mean lengths of employment for the two residential (rural and urban) groups of Malays. The comparative analysis is limited to groups of Malays since most of the nonMalays are urban women.

A series of pairwise t-tests conducted upon mean lengths of tenure reveal no significant differences between rural and urban women within the same plant (Table 6.14) . However, significant differences are found between the mean lengths of tenure of all Malay semiconductor workers (rural and urban) and all Malay garment workers (rural and urban).

---

5 Evidence exists to suggest that a deterioration of eyesight may shorten the time which a semiconductor operative can remain on the job. Studies indicate that after four or five years the typical worker is no ionger able to execute detailed tasks due to eyestrain (International Labour Organization 1981, p. 45).

Table 6.14. Mean Lengths of Tenure for Rural and Urban Malays.

	A	B	C	D
Years	3.1	3.3	5.3	5.6
	(1.49)*	(3.14)	(3.27)	(3.63)

A=Rural Hitek
B=Urban Hitek
C=Rural Rediwear
D=Urban Rediwear

*Standard deviation

Note: Means underlined are not significantly different (t statistic alpha=0.05).

Sample size
Hitek Rural=241 Urban=135
Rediwear Rural=23 Urban=94

Source: Worker Survey.

The relatively short tenure of the semiconductor work force, then, is not attributable to rural and urban differences in the composition of the work force. Instead, the source of variation appears to be located in the selectivity of the factories for workers possessing distinctive norms of work commitment. The background characteristics of ethnicity and residence. are not always directly and consistently associated with these normative orientations within the work force.

EDUCATION AND TENURE

In modern societies, low status and low wage jobs are mainly filled by the untrained and undereducated. Those workers more highly educated can be expected to move out of low wage jobs sooner than the literate and the inept. Given an adequate flow of information about jobs and the will of the working class to maximize the abilities of its members, an inverse relationship is expected between variables of education (length of schooling) and tenure (length of employment) in a factory. Whether or not such a configuration is found at Senawang is a question that relates to the larger one of whether and to what extent the workers behave in ways expected under the conditions of modern capitalism. In this section, the analysis seeks to determine whether the labor process at Senawang is selective for education in the manner expected under modern industrial capitalism. The technique of simple correlation of variable tenure and education is employed to measure their interrelatedness among ethnofactory groups.

As shown in Table 6.15, the analysis yields a range of very different r-values for the groups. Significant (<0.05) relationships, while not exceptionally strong, are found both for the Malay garment workers and Indian semiconductor workers.

Table 6.15. Pearson r-values for Education and Tenure.

Factory Group	Pearson R-Value	Probability P>F	N
Hitek			
Malays	-0.098	0.060	365
Indians	-0.371	0.002	69
Rediwear			
Malays	-0.393	0.000	113
Chinese	+0.025	0.848	61
Indians	-0.068	0.586	68

Source: Worker Survey.

These negative correlations support expectations about the relationship between educational attainment and tenure. For other groups, including Malays at Hitek, educational attainment is a not a good predictor of job tenure. In terms of labor recruitment by the firms, Hitek is able to retain the more highly educated Malays as easily as it is those with less education.

On the basis of these findings, then, it is not possible to attribute the high turn-over and attrition at Hitek to the predominance of well-educated women in the work force who might quit in order to seek more highly rewarded positions. The tenure of workers at Rediwear, on the other hand, seems more closely related to education. The workers there tend to be less well educated (in part because they are older) whereas the more highly educated Malays among them tend quit work sooner. Apparently, the work regime at Rediwear discourages many better educated women from remaining.

MARRIAGE AND TENURE

A final background factor which the research considers in its relationship to job tenure is marital status. In several ways, marriage may interfere with female labor force participation in third world countries. Traditional societies often impose strictures upon married women working outside the home. After marrying, men assume the wage-earning role leaving to women the role of unpaid labor within the household. Nevertheless, this situation is changing. In developing countries such as Malaysia where the grip of tradition upon women's lives is weakening and where industries are encouraging women to enter the work force, older women are often inclined (or compelled) to work outside the home. Indeed, their wages may be critical to poor households on the margins of inflationary economies in the newly industrialized South.

In exploring these possibilities, the research hypothesizes an effect of the marital status upon their tenure for Malays. Since such a large proportion of the Malays at Hitek have never married and since such a large proportion of Malays at Rediwear have married, it is possible that differences marital status is reflected in the different lengths of employment. If marital status has no such effect then unmarried women and married alike will have worked for the same length of

time, more or less, regardless of the factory in which they are employed. To determine which is, indeed, the case, the research analyzes mean lengths of tenure among ever-married and never-married Malays at both plants. Table 6.16 gives the results of pairwise t-tests of means among all groups.

Table 6.16. Mean Lengths of Tenure for Ever-married and Never-married Malays.

	A	B	C	D
Years	3.2	3.6	4.6	6.8
	(1.55)*	(2.96)	(3.50)	(3.80)

A=Never-married Hitek
B=Ever-married Hitek
C=Never-married Rediwear
D=Ever-married Rediwear

*Standard deviation

Note: Means underlined are not significantly different (t statistic alpha=0.05).

Sample size
Hitek Never-married=355 Ever-married=24
Rediwear Never-married=64 Ever-married=52

Source: Worker Survey.

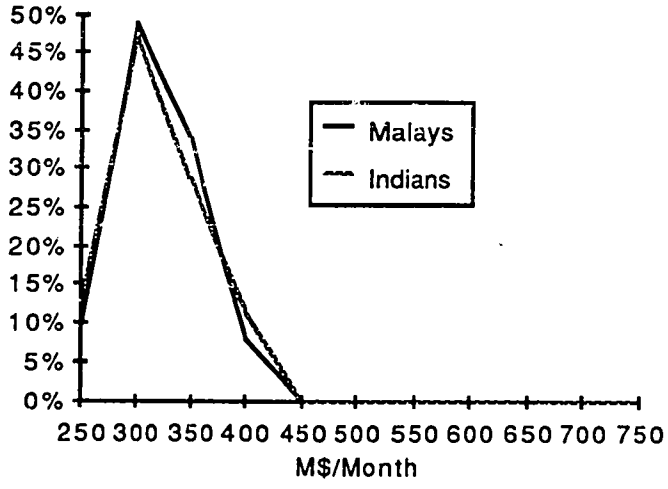
Contrary to expectations, no significant difference is found between married and unmarried Malay women at Hitek; however, the difference between mean lengths of tenure among ever-married and never-married women at Rediwear is significant. Married women appear to be the most stable workers. More to the point, perhaps, is the observation that brevity of employment is a characteristic of all workers at Hitek regardless of marital status and, for that matter, age, residence and education.

WAGE DIFFERENCES AMONG GROUPS

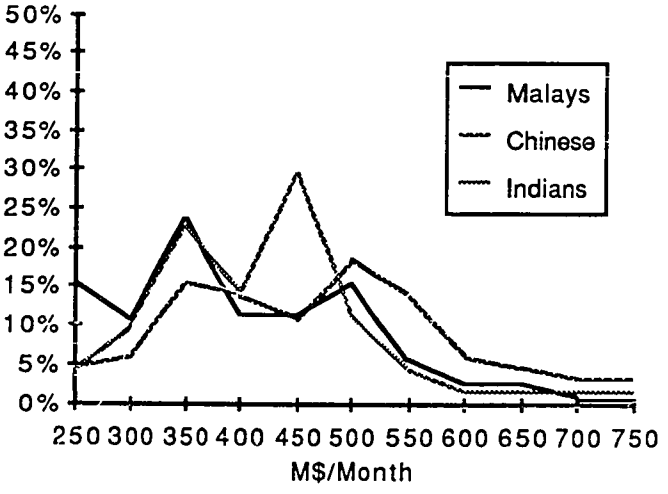
In addition to constraints imposed upon labor force participation by the ethos of the factories, transportation policies and daily work regimes, wage levels are an additional means by which the firm manipulates and molds its labor force. For instance, Rediwear is able to attract and retain an older, more urbanized and more stable work force by offering a potential higher wage earnings on a piece-rate schedule. Graphs in Figure 6.4 portray income trends among the ethnic and factory groups.

Figure 6.4. Monthly Incomes at Semiconductor and Garment Plants.

(a) Semiconductors



(b) Garments



Sources: (a) Worker Survey; (b) Personnel Office.

As the charts show, the earnings of Malay and Indian semiconductor workers are uniformly less than those of co-ethnics in the garment plant. Most women at Hitek earned under M$300 in the month prior to the survey (March 1986), whereas only a small proportion of garment workers earned so little .[6] The wage curves also illustrate differences among ethnic groups within the garment plant, most notably the higher wages earned by the Chinese and the concentration of Malays and Indians in the lower wage categories. Since the labor force participation of Indians is often combined with motherhood, this multiplicity of roles may explain their lower wages relative to those of the Chinese.

When differences among the means of monthly wages are tested, the wages of the Chinese garment workers are found to be significantly higher than the wages of Indian and Malay co-workers who earn similar amounts. Moreover, the earnings of all groups at Rediwear are considerably higher than those of semiconductor workers whose earnings are limited by job tenure (Table 6.17).

Table 6.17. Mean Monthly Incomes at Semiconductor and Garment Plants.

	A	B	C	D	E
M$	288.3	291.8	374.5	389.7	440.7
	(42.54)*	(38.44)	(127.18)	(93.31)	(134.51)

A=Indians Hitek
B=Malays Hitek
C=Malays Rediwear
D=Indians Rediwear
E=Chinese Rediwear

*Standard deviation

Note: Means underlined are not significantly different (t statistic alpha=0.05).

Sample size
Hitek Malays=384 Indians=71
Rediwear Malays=123 Chinese=65 Indians=72

Source: Worker Survey.

The income advantage of Rediwear's wage schedule for the workers is apparent. For the more conservative semiconductor workers, on the other hand, the accessibility of the factory, its ethnic

6 These wage levels were not unusual for women workers. In fact, the garment workers surveyed in the study are relatively well-paid judged by national standards. For example, Hing Ai Yun (1984) found that, in 1980, 90% of all women employed in Malaysia earned a monthly income of less than M$400. Moreover, women's wages appear to be rising, at least in textiles and semiconductors. In 1977, Arrifin (1978) found that 90.5% of the female factory workers in her survey (which covered Senawang) received a monthly income of between M$70 and M$200 (p. 13).

homogeneity, its sociable atmosphere and the pace of the work must compensate for an income shortfall.

INCOME AND RESIDENCE

The attitudes and values to work held by different groups are reflected in the levels of wages earned under comparable work conditions. Yet wages may also be subject to factors outside the workplace. For example, the comparative disincentives which rural Malay women experience in working at Senawang, longer commuting times and the encumberance of domestic duties in traditional households are likely to be contributing factors in differentiating income levels among segments of the Malay work force. Seeking to determine if, indeed, residence affects income levels, the research tests the differences among mean incomes of rural and urban Malays at both plants.

As Table 6.18 shows, the mean income levels range from a high of M$382 among urban-dwelling garment workers garment workers to a low of M$290 among rural-dwelling semiconductor workers.

Table 6.18. Mean Monthly Income of Rural and Urban Malays.

	A	B	C	D
M$	289.6	295.8	345.9	382.5
	(36.01)*	(99.59)	(100.27)	(142.05)

A=Rural Hitek
B=Urban Hitek
C=Rural Rediwear
D=Urban Rediwear

*Standard deviation

Note: Means underlined are not significantly different (t statistic alpha=0.05).

Sample Size
Hitek Rural=241 Urban=135
Rediwear Rural=23 Urban=96

Source: Worker Survey.

Differences among these means prove significant between plants; however, differences between rural and urban groups prove significant only within the garment plant. Rural/urban residence has no such effect at Hitek. In fairly assessing the results, some thought must be given to the different wage schedules of the two plants. At Hitek, wages are indexed to tenure such that background factors must operate upon wages through tenure, if at all. Nonetheless, the research does demonstrate that the rural character of the Malay work force at Hitek does not account for their low income. On the other hand, urban residence among Rediwear workers is significantly related to wage differences. In general, then, given a production system in which

wages are tied to output, urban Malays outperform their rural counterparts, although, as noted previously, they probably do not remain longer at the factory.

INCOME AND MARITAL STATUS

As noted earlier, marriage can affect female labor force participation in various ways and to various ends. The same applies to marriage and the earning potentials of women. Domestic responsibilities of womanhood are likely to increase following marriage. At the same time, financial pressures upon third world households may lead women to seek higher wages through working longer hours and working more intensely. Thus, a question is raised in the research regarding the effect of marital status upon earnings: do the incomes of never-married and ever-married Malays differ significantly? Stated otherwise, are the income differences observed between plants actually reflections of differences in marriage rates?

In answering this question, the research tests differences of mean incomes for marital groups of Malays (ever-married and never-married). As mentioned previously, since the wage scale at Hitek is graduated by length of tenure, the effects of background factors upon wages alone are impossible to assess. However, the differences in wage levels at Rediwear are more reliable surrogate measures of productivity. A series of t-tests between the mean incomes of married and unmarried women indicate that, as with tenure, married Malay women at the garment plant appear to be the most committed segment (table 6.19). In addition to its nonMalay work force, then, Rediwear is able to include married Malay workers within its core work force. Unmarried (and better educated) women more often fill the ranks of its contingent reserve.

Table 6.19. Mean Monthly Income of Never-married and Ever-married Malays.

	A	B	C	D
M$	291.0	301.5	359.6	394.0
	(38.15)*	(108.71)	(108.00)	(175.84)

A=Never-married Hitek
B=Ever-married Hitek
C=Never-Married Rediwear
D=Ever-married Rediwear

*Standard deviation

Note: Means underlined are not significantly different (t statistic alpha=0.05).

Sample size
Hitek Never-married=355 Ever-married=24
Rediwear Never-married=67 Ever-married=52

Source: Worker Survey.

TENURE AND SKILL ACQUISITION

In the tenets of monopoly capitalism, the primary economic rationale for a rise in wages is a corresponding increase in worker productivity. Capital and labor in the Western world have struck a bargain in this respect. Together, technological innovation and skill acquistion add to the surplus value of production. In participatory industrial societies, wage negotiations capture a portion of that value for labor in rising wages. In modern industry, then, individual wages increase as the workers acquire skill and as these skills are applied to improved technologies. The situation is far different under peripheral capitalism. In the lowest paid assembly line positions, individual skills do not much improve. Instead, increases in productivity are realized primarily through technological innovation, while wage concessions remain the perogatives of management. Wages are not subject to the sort of contractual reciprocity that has evolved between capital and labor in the industrialized world. Standing (1978) makes a useful distinction in this regard between "progressive" and "static" jobs. The former are career-oriented such that they lead to increases of skills and income over time. The latter are dead-end positions where promotions are unlikely, where pay increases are mostly limited to those which are legislated or negotiated by regulatory agencies, and where few skills are acquired over the course of employment.

To what extent does increased tenure leads to higher wages at Senawang? In answering this question the analysis is restricted to the garment plant since, as discussed before, wages at Hitek are indexed to length of employment and not to individual performance, whereas at Rediwear higher wages represent increased output by the individual worker. Thus, income in this case can serve as a rough measure of productivity. If the relationship between capital and labor at Senawang is structured as it is under modern organizations of capital, then a strong correlation is expected between tenure and income among all segments, that is, time spent on the job ought to lead incrementally to higher individual productivity and, hence, higher wages.

The results of correlations (r-values) of tenure and income at Rediwear indicate a variable and moderately strong relationship (Table 6.20).

Table 6.20. Pearson R-values for Tenure and Income at Rediwear Garment Plant.

	Pearson R-Value	Probability P>F	N
Malays	0.276	0.002	119
Chinese	0.274	0.003	62
Indians	0.374	0.085	68

Source: Worker Survey.

The largest significant correlation value is found for the Malays; for Indians no significant correlation is found. In the case of the Chinese, the correlation is clearly significant and nearly the

same as the correlation for the Chinese. These differences among groups underscore the variety of cultural orientations toward factory work. On the one hand, the Chinese, mostly unmarried or married with few children, attempt to maximize earnings during a life cycle stage when marriage and motherhood are postponed. On the other hand, Indians, most of them older and married with higher parity, adopt a long-term attitude toward wage work, pacing themselves in a schedule that they may well maintain for years to come. The Malays, in this instance, as for other measures of labor force commitment, adapt in ways more similar to those of their Indian coworkers.

The relationships between tenure and skills at Rediwear proceed from the firm's rationalization of production. The garment firm rewards individual productivity and tenure directly through its piece-rate wage scale. This scale, too, is largely dictated by technological arrangements. Paying workers on a piece rate basis, the firm maximizes the return on its capital investment during peak demand periods while cutting labor costs during demand valleys by restraining production. The women themselves and their households are made to absorb the social costs through their lowered wage-earning potentials. Moreover, since technological innovations are infrequent, the need for a steady influx of novices is less acute. In any event, labor, once again, partially absorbs the costs of training and retraining since individual incomes remain close to the base wage while the workers adjust to new procedures, fashions, and machineries. The semiconductor firm, on the other hand, requires a continual influx of new workers that can be trained in the new procedures at far lower cost than would be incurred if older and more highly paid workers were to be retrained. In this regime, skill-acquisition by the individual worker benefits the firm only in the short-run. In Standing's terminology, jobs at Hitek are relatively more "static" due to the random nature of demand, the frequency of technological innovations in semiconductors, and the contribution of labor to output. Likewise, the more "progressive" nature of jobs at Rediwear arises from the predictable seasonality of demand, the simpler, more stable and more durable technology, the longer product cycles and the indispensability of individual skills in the production process. All of these conditions favor the retention of some experienced workers and dictate a wage policy tied to individual output. Each firm's formula of recruitment and reward results in a work force with a distinctive demographic profile.

In light of the ethnic and industry differences observed in this case study, a worthwhile goal of future industrial development in Malaysia would be that of providing entry-level jobs which encourage the acquisition of and compensation for skills. The roles of worker skills in the plants is a telling contrast. At Hitek increases in productivity depend mainly upon new technological inputs rather than skill transfer; however, in the garment factory, individual skill-acquisition and commitment are critical to meeting production levels. At least it can be argued that, under the work conditions at Rediwear, the relationships of tenure, skill-acquisition, individual output and

income are left open-ended and subject to group and individual variation. What remains to be contrived in both industries is a political forum where the skills of women workers can serve as grounds for their empowerment.

CONCLUSION

The large-scale industrialization of Malaysia has been hailed as the beginnings of true modernity. For centuries, European investment was concentrated in extractive and entrepot economies, not the sort of activities to transform the native poor into an urban proletariat fully conscious of class affinities. Malays, in particular, were left outside of the modern capitalist society which the British were building in Malaya. Only lately, through interventionist programs after Independence, have Malays seen their fortunes advance in the urban arena. But is the nature of the new urban industrialization such that Malay lifeways and outlooks will be aligned to a modern production regime? The answer lies in the particular characteristics of the regional labor process at sites across the country. Patterns of work and life among the industrial class are the results of a complex structuration enjoined by the agencies of society and the firm. It follows that the equity goals of the NEP will either be fulfilled or frustrated within the context of the specific and varied structural constraints imposed by individual industries and firms upon labor force participation. While it is certain that the employment levels among Malays in Seremban and throughout the country have risen considerably as a direct result of the NEP, it would be wrong to assume that the experiences of Malays, Chinese and Indians are uniform across all industries, firms and factories whether or not the capital is multinational in its origins.

Beyond the obvious capacity of foreign firms to generate jobs and accumulate trade surpluses for Malaysia, it is germane to the ends of the NEP that the rounds of foreign investment contribute to the inculcation of modern industrial values and to the elevation of class interests over those of race. The many contrasts, qualitative and quantitative, between the labor processes at Hitek and Rediwear illustrate the differential demographic "pulls" and cultural influences of the firms upon local communities as capital seeks low cost, redundant labor within the surplus labor pool. For Malay semiconductor workers, Senawang proves a half-way house of industrialization, or as one personnel officer phrased it, a "quasi-industrialization" where the logistics of transport permit a dual cultural orientation to village and town (Strange 1974). In essence, the semiconductor factory mirrors the FELDA scheme in its reinforcement of traditional Malay values and a deep-seated preference for exclusivity at the workplace. This policy outcome is a far cry from the government's professed goal of eradicating the identification of race, place and occupation.

The garment plant, by contrast, represents a more heterogenous, urbanized environment. The nature of work there is more competitive, better paid and, hence, more conducive to long-

term participation and career commitment. As such, the garment factory appears more capable of accomplishing a genuine proletarianization and a more complete reorientation of the national society from its current racial separatism. Malays in garment assembly appear very capable of adapting life cycle strategies to meet the demands of an industrial regime. In many respects, the modal patterns of their labor force participation and life cycle strategies approach those of the urbanized Indians and Chinese whose ethnic backgrounds appear to have pre-adapted them to an industrial urbanism. In sum, the evidence from Rediwear indicates that Malay culture is plastic enough to adapt to industrial life but that the character of the work environment is a critical element in the transition. This contrast between production regimes must be taken as a warning that multinational models of development do not necessarily support authentic class formations. Rather the divisiveness of global capital is a more prominent characteristic. As Timofeev (1983) observes, the processes of modernization increasingly:

> . . .are distorted under the influence of capitalist relations, the existence of productive forces brought to life by a higher level of development of science and technology in the former metropitan countries, the greatly developed international division of labor, and the emergence of transnational corporations (p. 225).

A central contradiction of development in Malaysia is that the conditions of rural marginality combined with the commoditization of rural life create a countrywide labor market that is highly favorable to the offshore assembly line operation. The surplus of female labor ensures that an elastic supply of cheap, ephemeral and redundant labor can always be tapped to meet the specific need of its technology and the variable demand levels of its market. Subsidized by the wages of modern capital and burdened with the costs of labor reproduction, the traditional social formations of rural and migrant urban societies are well articulated with the modern firm under this current phase of economic development. As modernization and urbanization proceed, low income Malays may well identify with the collective entity of a laboring class. They may jointly demand more from the firm by way of benefits and wage concessions. Until such a commonality of labor interests is recognized, the prevailing demographic diversity and cultural division of the regional labor pool enhances the competitive resilience of multinational firms.

CONCLUSION: PLANNED INTERVENTION AND TECHNOLOGICAL TRANSFORMATION

The mobility of labor and management's ability to rely upon a modern transport infrastructure greatly extend the economic and sociodemographic impacts of urban industrialization and force a regional perspective on the labor process. Gradually cities and villages are drawn into more ramified linkages involving the acculturation of the work force to an urban lifestyle and value system and, under certain technological arrangements, the formation of an incipient working class. The geography of development in the newly industrialized Third World must adopt a regional approach in order to be true to the scope of the interactions. In this age of multinational assembly lines, even the student of peasant societies in change must be always aware of the urban possibilities which confront the most remote households. The regional city increasingly attracts that element of rural household labor already displaced from traditional sectors by techological modernization. In comparing the different experiences of communities during a period of development, the present study highlights the underlying social and economic structures of the region. It examined in detail and against a background of recent economic history an ecology of the labor force and the multinational firm.

Most often overlooked by investigators of the new international division of labor is the internal, localized segmentation of the labor force, a result of the differences between production process and skill demands in male and female industries, ethnic preferences in hiring, spatial inequities of access to employment, and pre-existing value orientations to production or, as Scott (1983) puts it, "old ways of working" (p.251). Ethnic pluralism and uneven development in the region offers in situ cultures differently positioned along the transition from industrial to proto-industrial stages. The population diversity of the population in Negeri Sembilan, for instance, is a boon to the industries seeking greater control over the labor component and greater ability to align its labor policies to the demands of its technology. Labor recruitment as well as its reproduction are the summary interactions of demographic tendencies driven by technological forces.

Through regional development capital, culture and the state catalyze a sequence of interrelated phenomena, namely, the increasing marginalization of young, rural Malay women, the growth of urban employment through state-directed multinational activities, the mobilization of redundant female labor by large, foreign-owned firms, and finally, the variable life cycle adaptations of the female industrial work force to the conflicting demands of tradition and modern technological arrangements. This concluding section briefly summarizes the findings of the

research and considers the possibilities for social advancement under the current model of industrialization. To facilitate this overview, the discussion returns to the questions posed at the beginning of the study. It begins by investigating the economic and social forces which have generated the rural female labor reserve in Negeri Sembilan and surrounding areas. It concludes by citing the implications of the findings for Malaysian development and for a geography of regional industrialization in an era of global capitalism.

The question of women's economic status leads to a consideration of the economic geography of the region and the traditional division of labor in rural society. Prior to the commercialization of agriculture under colonialism, the Malay women of the state occupied a preeminent role in household production. Although arbitrated by tribal chiefs, actual control of the village rice lands remained with the matriarchical core of siblings. Outside the male-dominated cash-earning sectors and the foreign-owned plantations, women inherited a high status through their affiliation with the land. Recent technological changes along with urban-biased development have undermined the postion of young women in village society and weakened their links to land. This reworking of the economic landscape resulting in the dislocation of Malay labor is the consequence of international and internal agricultural markets, the introduction of new manufacturing technologies, and national development policies which are biased in favor of urban, female-dominated industries and rural, male-dominated industries.

Yet patterns of female sedentism endure despite the availability of jobs in the city and the out-migration of males. The rubber small-holdings occupy adolescents and middle-aged and older women, while women in their twenties and early thirties, who have not moved into commercial production in numbers nearly as great, are left without economic alternatives in the villages. This population comes under increasing pressure to join the ranks of the labor force as industrial expansion in the regional city widens the gap between rural and urban employment opportunities. Economic and population imbalances in the hinterland translate into important labor advantages for the multinational firm.

With modern transportation, the modern firm is able to tap the cheap and malleable rural labor reserve. The major locational goal of the labor-intensive operation is a comparatively ready access to an internal periphery where few intervening employment opportunities exist for these job-seeking women. Foreign capital, thus, seeks not only direct savings in labor costs but, in addition, an elasticity of labor supply which permits micro-adjustments of employment levels to demand levels. The multinational is willing and able to outbid the small, domestic producers or to outreach them by extending the urban labor shed. Usually first time workers, the young, unmarried Malay women accept the drawbacks of employment in the semiconductor plant such as low wages and a lack of useful skill transfer for the trade-offs of cheap transportation to work and a homogeneity of shopfloor society. Although the rural women of Malaysia have entered a new

arena of economic opportunity, their choices within the modern sector are highly constrained by culture and technology, and most options involve a disruption of traditional lifestyles and a further severance of place-ties.

Following the chapter on the rural female labor reserve and the conditions which generated it, the research examined the sociospatial and structural character of the urban industrial environment. The major research questions concerned variations in ethnic and gender segregation and job volatility among large multinational and small domestic producers.

As a result of local and national policies, the expansion of export-oriented industries in Seremban account for the greatly increased participation of women, mostly Malays and Chinese, in the modern labor force since 1970. The largest and most highly capitalized plants in the industrial estate employ the largest proportions of Malay women in operative positions. Malay women are especially predominant in semiconductors and the production of consumer electronics. Because the industrial types in Seremban are unevenly distributed among manufacturing zones, differences in levels of segregation and job volatility among industrial types have a spatial expression. Malays are greatly underrepresented in the central workshops and overrepresented in the large factories in the peripheral industrial estate.

Meanwhile, gains made by the established, centrally located labor elite, Chinese males, have failed to keep pace with the overall growth of manufacturing. Their shrinking proportion of the urban labor force evinces the selectivity of the modern labor process for youthful migrant and female labor from the Malay villages, agricultural estates and Indian neighborhoods of the city. Nonetheless, the manufacturing jobs held by these women are not comparable to those held by males. On two counts, the female-dominated industries lag behind the male-dominated industries in the quality of jobs created. First, employment levels are more volatile in the largest firms, especially in electronics, and second, wage levels in these light industries are far below those of the heavy, male-dominated industries such as metallics and machinery. In effect, Malay women fill the ranks of a new contingent labor force which can be enlarged or contracted as the market demands for unskilled and semi-skilled workers.

In a demographic analysis of the labor force, the research described and compared the distinctive modalities of labor force participation associated with factory and ethnic groups. Critical and generally overlooked aspects of labor's accomodation to capital are the differing degrees of attachment to the factory work among communities and rural and urban groups. The most prominent differences discovered by the research occur between the factories, although ethnicity is clearly a factor in the differentiation of work styles as well. The contrast is most apparent and, in statistical terms, most consistently significant between Malay semiconductor operatives and Indian garment workers--the one originating in the peasantry and the other in the wage labor of the city and the estate. The semiconductor workers exhibit a conservative

orientation toward the factory life, an orientation which the research characterizes as familialism, that is, a primary orientation to domesticity and a shallow attachment to the workplace. For example, with few other outlets for employment in the rural areas, they remain in school longer than female workers in garments, Malays and nonMalays alike. In searching for employment, the semiconductor worker usually relies upon social, informal sources of information. Residence is commonly retained in the village household or in temporary urban housing shared among several workers. The typical length of employment in semiconductors is between two and four years with an average of less than three years, significantly shorter than the length of employment for Malays and nonMalays in garment production. Married women are extremely rare among the semiconductor operatives, and birth rates among those few married women are much lower than birth rates among co-ethnics in the garment plant. These inherent traits are selected for and encouraged by means of the recruitment and management tactics of the firm.

The various ethnic groups at the garment plant, Malays as well as Chinese and Indians, adapt to the factory regime in ways indicative of a more thorough industrialization. The firm recruits most of its workers from the city. The garment workers from all communities generally have spent less time in school than have semiconductor workers. Their sources of information are more often formal and urban-based (the labor office or the media) rather than informal and social. While all groups tend to remain longer at the plant, the Chinese and Indians typically remain a few years longer than the Malays. The Indians and Malays at the garment plant are generally married, and most have children. The greater degree of acculturation to factory work among Indians is traceable, perhaps, to the ethnohistorical association of the Tamil community with the work regime of plantation systems. The Chinese, on the other hand, appear to exit the work force prior to starting families. Chinese, in particular, are the industrial nuns of the labor force--capable of high output while postponing marriage and motherhood. The life cycle strategies of Malay women, on the other hand, are intermediate between those of the nonMalay groups. Malays at the garment plant marry and bear children at somewhat higher rates than do the Chinese but at much lower rates than do the Indians. On certain productivity measures, essentially estimates of skill acquisition based upon piece rate wage levels, the Malays lag well behind the Chinese, but they are about on a par with the Indian workers who are, indeed, the mainstays of the core assembly line work force.

Most importantly, the research contends that demographic differentials in the work force ultimately conform to the labor requirement of firms and mesh with the production regimes of individual firms. The critical factors in the structuration of labor are, primarily, the strategies of the firm and, secondarily, the restraints imposed by sociocultural systems upon female labor force participation. Depending upon the industry-specific requirement of the firm for labor stability and specialized skills, the labor process is more or less selective for more thoroughly proletarianized

women workers capable of combining industrial employment and family formation. In industries such as semiconductors which are characterized by cyclical and random variability in product demand, by abbreviated product cycles, and by continual innovation, it is essential that the firm maintain a very elastic supply of short-term, contingent workers. The rationalization of local production under such conditions requires a redundant and dispensable work force with an attenuated commitment to factory life. As output per worker is kept fairly uniform by rigid quality controls, the firm must be able to adjust employment levels quickly and quietly through the hiring and attrition of women whose career horizons are limited. The transience of the semiconductor work force permits the firm a measure of flexibility which is essential in meeting the fluid demands of a volatile market.

Because of a work environment which is compatible with Malay culture and because of recruitment strategies which are selective for gender, age and race, rural-born Malay women fill most of these low wage operative positions despite their relatively high levels of educational attainment. Kelley's (1986) critique of peripheral industrialization on St. Lucia is especially relevant to the present case:

> It could well be that a permanent class of low-skilled, female factory workers is being created rather than a skilled, stably employed female labor force which would contribute to national development in the long run (p. 834).

The status of Malay women in semiconductors finds a close parallel in the rural economy. There they are incidental workers mobilized in times of high commodity prices. In the modern urban manufacturing sector, as on the small-holdings, the social costs of their contingent status such as health care, housing and social security are absorbed neither by the firm nor the state but by households. Semiconductor factories and FELDA schemes alike enforce old patterns of communalism and familialism, while neither mode of production restores the traditional economic equality of men and women.

The garment factory presents a sharp contrast in its labor strategies since management there faces a very different set of production constraints. Market demand in Europe for Malaysian exports varies cyclically or rather seasonally, reaching its nadir during the European autumn and its zenith in during the European spring season. Since output per worker can fluctuate and since the wage schedule is piece-rate, production levels can be lowered and raised without extensive changes in employment levels simply by permitting the women to work longer hours and more intensively. Although the base wages paid at the garment plant are lower than those paid at the semiconductor plant, the substantial incentive of the piece-rate wage enables the former to retain its most skilled and competitve cutters and sewers. The very different careers of Malays in semiconductors and apparel assembly underscore the diversity of the labor process, its

grounding in the labor demands of technological systems, and its sociocultural and demographic consequences.

A critical aspect of the garment firm's strategy is the concession of higher income during the demand peaks to the long-term worker. The piece-rate wage strategy of Rediwear is a crude approximation of a progressive, merit pay system, but it does result in the entrenchment of a core, mostly Indian, work force. Within a static organization such as that of semiconductor production, the worker conforms to a fixed skill requirement. This redundant work force is perforce a tractable one since it lacks the political leverage of negotiable skills. Because skills are uniform in the short-term labor force, Hitek, for example, is freed from prolonged commitment to an aging core. Malay women, the intended beneficiaries of reform and the group least attuned to the industrial work regime, are segregated in factories of advanced technologies an high employment volatility. On the other hand, Chinese and Indians, working in factories of less technological sophistication and more stable employment, are more closely identified with the lifestyle and value orientation of modern industrial urbanism. The pressures of adjusting to product markets and avoiding the occasional excesses and shortages of labor incline the multinational firms to selectively recruit from the labor market a work force which exhibits both core and contingent qualities to some degree.

The policy implications of the research concern the proletarianization of women from different backgrounds and engaged in different kinds of work, the possibilities for interventionism by the state, and the extent to which export-oriented industrialization advances the social goals of the state--goals of racial harmony, social justice, and a general improvement in the standards of living for urban migrants. Above all, it is emphasized that the governments of the South need to become more aware of the sociological and demographic diversity among multinational firms and of the particular capacities which these firms possess to stifle or to stimulate the evolution of a genuine urban industrial culture. As shown by the research, the limits of change in this situation are established by the dominant technologies interacting with certain behavioral proclivities of labor. Given the pluralistic nature of Malaysian society and the historical associations of communities, occupations and places, the attributes of ethnicity and urban experience discriminate core from contingent manufacturing workers.

The presence of a more committed and heterogenous work force at the Rediwear garment plant in this study suggests that the labor process is susceptible to manipulation once the dialectic of corporate strategies and population structures is understood. Possibilities exist for a variety of modalities depending upon prefigurative cultural orientations to the workplace, technological conditions and the rationalization strategies of the firm. Given this variety, it appears that Malay culture is plastic enough to be capable of adapting to industrial work on an equal basis with other groups. The managed technology of garment assembly carries the modernization process farther

and comes closer to achieving a pluralistic and stable work force resembling that of a more mature industrial society. The social impact of semiconductor activities, on the other hand, is seen in a labor market within which the jobs tend to be of short duration, static in terms of skill acquisition and wage gains, and vunerable to recessionary trends. While the differences are a matter of degree, the garment factory enforces a structuration of careers which is more progressive, that is, more open-ended and capable of realizing greater degrees of individual commitments to the industrial career at later stages of the life cycle.

In the smaller cities of Malaysia's West Coast the firm enjoys the best of both worlds: it has access to the almost inexhaustible pools of rural-dwelling and migrant labor, to an international communication facilities, and to pools of managerial expertise in and around the city. As the country's decentralization program proceeds, more secondary cities such as Seremban will become export-oriented production sites, and more women will be absorbed into the modern work force, most remaining interregional commuters for the duration of relatively brief industrial careers. Already, for example, the semiconductor corporation surveyed in this research has begun the installation of another branch plant at Senawang Estate where all operations of IC production will be executed under one factory roof (*Malaysian Digest*, March, 1988, p. 9).

Future industrial growth in Malaysia may well have to include a larger proportion of industries and firms that provide for skill-acquisition and job mobility. If the industrial program is to serve better the social purposes of the NEP, smaller, domestic firms should be encouraged to locate in the rural and urban industrial estates, not only to absorb the growing numbers of male and female urban migrants and commuters but to structure lifetime career paths for Malays and nonMalays alike. The responsibility of the government to the internal peripheries, to by-passed places and populations, lies in revitalizing local economies without committing them to a dependency upon a narrow labor market in the regional city. Focused as they are upon the speed and scope of industrial growth and the Malayanization of industry, policy makers and planners generally fail to consider the detailed and varied nature of labor force participation in terms of job tenure, worker turn-over, family formation trends, wage differentials, and rural-urban commuting. They overlook the fact that the labor recruitment, transport, and wage policies of the large multinational firm have direct and important consequences in establishing the course of sociocultural and demographic change under industrialization. These contigencies are intrinsic to rather than incidental to the development process.

By restricting the firm's charter to decide unilaterally such matters as wages, benefits, and work conditions, the developing country can anticipate and perhaps control the transformative tendencies of global capitalism. At the very least, the goverment must pay greater attention in the planning stages to the typical labor strategies of specific industries. When weighing the admission of foreign firms and when planning the industrial mix of estates, a preliminary

consideration, based upon the experiences of other countries, must be given to the structural consequences of capital's diverse agenda. The achievement of NEP goals requires open production systems employing a socially diverse work force. At this juncture, the assembly lines of Malaysia are not the agents of social cohesion and equity which they could yet become.

APPENDIX I

SURVEY OF FACTORY WORKERS AT SENAWANG.

1. Worker's name_____

2. Ethnicity _____Malay _____Chinese _____Indian _____Other

3. Sex _____Male _____Female

4. Birthdate _____Day _____Month _____Year

5. Marital status _____Married _____Unmarried _____Divorced _____Widowed

If you are now married or have ever been married, please state:

a. date of marriage _____Day _____Month _____Year

b. birthdays of children in order of birth:

First-born _____Day _____Month _____Year

Second-born _____Day _____Month _____Year

Third-born _____Day _____Month _____Year

Fourth-born _____Day _____Month _____Year

Fifth-born _____Day _____Month _____Year

Sixth-born _____Day _____Month _____Year

6. Worker's place of birth_____

7. Do you still live in your place of birth? _____yes _____no

a. If not, where do you live now? _____

b. How long have you lived in this place?

_____ less than one year _____1-2 years

_____3-5 years _____more than 5 years

8. What is your relationship to the head of your household?

_____child _____spouse

_____other family _____self

9. Do you live in:

_____a house owned by your family

_____a house rented by your family

_____a room/flat rented by you alone

_____a room/flat rented by you and other workers

10. How many years did you attend school? _____years

11. Did you ever attend technical/vocational school? _____yes _____no

12. Before you worked at this plant, did you ever earn wages elsewhere?

_____yes _____no

13. When did you begin working at this plant? _____Month _____Year

14. How did you learn of this job?

_____from friends or family members _____from the labour office

_____from newspaper/radio _____other (please state)

15. When hired by this plant, where did you live?

_____present address

_____elsewhere (please state:_____)

If elsewhere, how long did you live at that place?

_____less than one year _____1-2 years

_____3-5 years _____more than 5 years

16. Is your father:

_____working _____not working (unemployed or pensioned) _____deceased

17. When employed, what is/was your father's occupation?

_____clerk/teacher/police _____sales, artisan

_____ laborer _____farmer

_____Felda settler _____agricultural worker

_____other

18. How many persons live in your household (usually eat and sleep in your home)?_____

19. Approximately how much income does your household usually earn each month?

_____less than $400 _____$400-599

_____$600-800 _____more than $800

20. In your household, how many women work outside the home?_____

21. In your household, how many men work outside the home?_____

22. What conveyance do you take to and from work?

_____company bus _____public bus _____other (please state _____)

23. How many minutes do you travel one way from your house to Senawang?

_____less than 30 minutes _____30-60 minutes

_____60-90 minutes _____more than 90 minutes

Thank you for your cooperation.

REFERENCES

Ackerman, S.E. 1984. "Impact of industrialization on the social role of Malaysian women," In Hing Ai Yun, N.S. Karim, and T. Rokiah. (eds). *Women in Malaysia.* Petaling Jaya:Pelanduk Publications, pp. 40-60.

Aguiar, N. 1976. " The impact of industrialization on women's work roles in the Northeast of Brazil," In Nash J. and H. I. Safa. (eds.) *Sex and class in Latin America.* New York: Praeger.

Aiken, S.R., C.H. Leigh, T.R. Leinbach, and M.R. Moss. 1982. *Development and environment in Peninsular Malaysia.* New York: McGraw-Hill International Book Co.

Amin, S. 1976. *Unequal development: an essay on the social formations of peripheral capital* (translated by B. Pearce). New York: Monthly Review Press.

Anderson, K. 1981. " Age at marriage in Malaysia," In *Population Association of America Annual Meeting, Washington, D.C. Collected Papers,1,* pp. 178-202.

Anker, R. and Catherine H. 1986."Introduction and overview," In R. Anker and Hein C. (eds.). *Sex Inequalities in Urban Employment in the Third World.* New York: St. Martin's Press.

Arriffin, J. 1978. "Rural-urban migration and the status of factory women workers in a developing society: a case study of Peninsular Malaysia," a paper presented at the 1978 Conference of the Sociological Association of Australia and New Zealand.

_____. 1984. "Migration of women workers in Peninsular Malaysia: impact and implications," In Fawcett J. , Siew-Ean Khoo, and P. Smith (eds.). *Women in the Cities of Malaysia: Migration and Urban Adaptation.* Boulder: Westview Press, pp. 213-232.

Asia Labour Monitor. "Malaysia--'Voluntary' sackings as industry weakens," 2, April, 1985, p. 16.

_____."Malaysia: MTUC deputy recounts employer apathy: cites lay-offs," 2, April, 1985, p. 30.

Asiaweek. "How long before the upturn?" June 15, 1986, pp. 62-64.

_____."Hanging on for the next boom," September 13, 1985, p. 65.

Baharuddin, S.A. 1979. "Development of the undevelopment of the Malaysian peasantry," *Journal of Contemporary Asia,* 9, pp. 434-454.

Bahrin, T.S. and P.D.A. Perera. 1977. *FELDA: 21 Years of Land Development.* Kuala Lumpur: FELDA (Federal Land Development Authority).

Berliner, J. 1977."Internal migration: a comparative disciplinary view," In Brown, A. and E. Neuberger (eds.). *Internal Migration: A comparative perspective.* New York:Academic Press.

Blau, F.D. and C.L. Jusenius. 1976. "Economic approaches to sex segregation in the labor market: an appraisal," In Blaxall, M. and B.B. Reagan (eds.). *Women in the marketplace: the implications of occupational segregation.* Chicago: University of Chicago Press.

Bollen, K.A. 1983. "World system position, dependency, and democracy," *AmericanSociological Review*, 48, pp.468-479.

Boserup, E. 1970. *Women's role in economic development.* London: Allen and Unwin.

Bossen, L.H. 1984. *The redivision of labor: women and economic choice in four Guatemalan communities.* Albany: State University of New York Press.

Bradshaw, Y.W. 1987."Urbanization and underdevelopment: a global study of modernization, urban bias, and economic dependency," *American Sociological Review*, 52, pp. 224-239.

Braverman, H. 1974. *Labor and monopoly capital: The degradation of work in the twentieth century.* New York: Monthly Review Presss.

Breese, G. 1966. *Urbanization in newly developing countries.* Englewood Cliffs, New Jersey.

Britton, S. 1987. "Spatial division of labour: theory and method in regional political economy," *Pacific Viewpoint*, 28, pp. 55-62.

Browett, J. 1985. "The newly industrialized countries and radical theories of development", *World Development*, 13, pp. 789-803.

Brunn, S.D. and J. F. Williams (eds.). 1983. *Cities of the world: world regional urban development.* New York: Harper and Row.

Buvinic, M. and N.H. Youssef, with B. von Elm. 1978. *Women-headed households:the ignored factor in development planning.* Washington: International Centre for Development Research.

Clad, J. 1985."Penang and the road to growth on shifting foundations,"*Far Eastern Economic Review*, September 19, 1985, pp. 79-84.

Cody, R. P. and J.K. Smith. 1987. *Applied statistics and the SAS programming language.* Elsevier Science Publishing Co., pp. 103-106, and129-132.

Cooke. P. 1985. "Class practices as regional markers: a contribution to labour geography," In Gregory, D. and J. Urry (eds.). *Social relations and spatial structures.* New York: MacMillan, pp. 213-241.

Commodity Research Bureau. 1987. *CRB commodity year book.* prepared and published by Commodity Research Bureau. New York.

Courtenay, P.P. 1972. *A geography of trade and development in Malaysia.* London: G. Bell & Sons, Ltd.

Dick, H.W. and P.J.Rimmer. 1980. "Beyond the formal/informal dichotomy: towards an integrated alternative," *Pacific Viewpoint*, 21, pp. 26-41.

Drabble, J. 1973. *Rubber in Malaya, 1876-1922: The Genesis of the Industry.* Kuala Lumpur: Oxford University Press.

Economist (The). December 26, 1987, pp. 45-46.

Far Eastern Economic Review. 1986."New economic policy," February 20, p. 52-53.

Faud, D. 1986."Estate jobs go a'begging," *New Straits Times*, July 14, p. 8.

FELDA (Federal Land Development Authority). 1984. *Annual Report.* Kuala Lumpur.

Fernandez-Kelley, M.P. 1983. *For we are sold, I and my people: women and industry in Mexico's frontier.* Albany: State University of New York.

Fisk, E.K. 1982. "Development in Malaysia," In E.K. Fisk and H. Osman-Rani (eds.). *The political economy of Malaysia.* Kuala Lumpur: Oxford University Press.

Fong, Chan Onn. 1986. *Technological leap: Malaysia industry in transition.* Singapore: Oxford University Press.

Forbes, D. K. 1981. "Geography of development," *Singapore Journal of Tropical Geography*, 2, pp. 68-80.

_____.1984. *The geography of underdevelopment: a critical survey.* London: Croom Helm.

Foster-Carter, A. 1978. "The modes of production controversy." *New Left Review*, 107, pp. 47-77.

Friedman, J. 1966. *Regional development policy: a case study of Venezuela.* Cambridge, Massachusetts: MIT Press.

Frobel, F., J. Heinrichs, and O. Kreye. 1980. *The new international division of labour..* Cambridge: Cambridge University Press.

Furnivall, J.S. 1948. *Colonial policy and practice: a comparative study of Netherlands India.* Cambridge University Press.

Galkin, A. 1983. "The working class in the social structure of developed capitalist countries," In I. Wallerstein (ed.). *Labor in the world structure.* Beverly Hills: Sage Publications, pp. 228-236.

Geertz, C. 1966. *Agricultural involution.* Glencoe: The Free Press.

Gibbons, D.S., R. DeKonick, and I. Hasan. 1980. *Agricultural modernization, poverty, and inequality: The distributional impact of the Green Revolution in regions of Malaysia and Indonesia.* Westmead, England: Saxon House.

Goldstein, S. 1978. "Circulation in the context of total mobility in Southeast Asia," In*Papers of the East-West Population Institute*, 53. Honolulu, Hawaii.

_____ and P. Tirasawat. 1977."The fertility of migrants to urban places in Thailand," *Papers of the East-West Population Institute*, No. 43. Honolulu, Hawaii.

Goldthorpe, C.C. 1987."A definition and typology of plantation agriculture," *Singapore Journal of Tropical Geography*, 8, pp. 26-43.

Gonzalez, S.G. 1976. "Participation of women in the Mexican labor force," In Nash J. and H.I. Safa. (eds.). *Sex and class in Latin America.* New York: Praeger.

Gould, P. 1970. "Tanzania, 1920-1963: the spatial impress of the modernization process," *World Politics*, 22, pp. 149-170.

Green, S. 1983. "Silican Valley women workers: a theoretical analysis of sex-segregation in the electronics industry labor market," In J. Nash and M.P. Fernandez-Kelly (eds.). *Women, men, and the new international division of labor.* Albany: State University of New York Press.

Gregory, D. 1978. "The discourse of the past: phenomenology, structuralism, and historical geography," *Journal of Historical Geography*,4, pp. 161-173.

Gullick J.M. 1951. "The Negri Sembilan economy of the 1890s," *Journal of the Malayan Branch of the Royal Asiatic Society*, 24, pp. 38-55.

_____ 1958. *Indigenous political systems of Western Malaya.* London: Athlone Press.

Hale, A. 1898. "Folklore and the Minangkabau code in Negeri Sembilan," *Journal of the Straits Branch of the Royal Asiatic Society*, 31, pp. 43-61.

Hamilton, Ian. 1978. "The changing milieu of spatial industrial research,"In F.E.I. Hamilton. ed. *Contemporary industrialization: spatial analysis and regional development.* New York: Longman, pp. 1-19.

Hing Ai Yun . 1984. "Women and work in West Malaysia," In Hing Ai Yun, N.K.Karim, and R. Talib (eds.). *Women in Malaysia.* Petaling Jaya, Malaysia: Pelanduk Publishers, pp. 1-25.

Hirschman, C. 1979."Political independence and educational opportunity in Peninsular Malaysia," *Sociology of Education*, 52, pp. 67-83.

_____. 1981. "Labor markets and ethnic inequalities in Peninsular Malaysia," Paper presented at the annual meeting of the Population Association of America, March 26-28. Washington, D.C.

Hoffman, K. 1985. "Clothing, chips, and competitive advantage: the impact of microelectronics on trade and production in the garment industry," *World Development*, 13, pp. 371-392.

International Labour Organization. 1981. *Rural development and women in Asia. Proceedings and Conclusions of the ILO Tripartite Asian Regional Seminar.* Mahabaleshwar, Maharashtra, India. Geneva: ILO.

Jackson, J.C. 1965. "Small-holding of cash crops," In Wang Gungwu (ed.). *Malaysia: a survey.* New York: Frederick A.Praeger, Publishers, pp. 246-273.

Jackson, R.N. 1961. *Immigrant labour and the development of Malaya, 1786-1920.* Kuala Lumpur: Government Press.

Jamilah, M.A. 1981. *Industrial development and Malay female rural-urban migration in Malaysia.* Institute of Southeast Asian Studies. Republic of Singapore.

Josselin de Jong, P.E. 1952. *Minangkabau and Negri Sembilan: sociopolitical structure in Indonesia.* The Hague: M. Nijhoff.

Kasper, W. 1974. *Malaysia: a study in successful economic development.* Washington, D.C.: American Enterprise Institute for Public Policy Research.

Katz, N. and J. Kemnitzer. 1983. "Join the future, now! Women in the electronics industry: sexism, structure, and profit," In Nash J. and M.P. Fernandez-Kelley (eds.). *Women, men, and the international division of labor.* Albany: State University of New York Press.

Kelley, D. 1986. "St. Lucia female electronics factory workers: key components in an export-oriented industrialization strategy," *World Development*, 14, 823-838.

Ki-Nam Jin and G. Stevens. 1987. "Occupational sex segregation in Korea, 1960-1980," *Sociology and Social Research*, 71, pp. 99-102.

Kung, L. 1983. *Factory women in Taiwan.* Ann Arbor, Michigan: UMI Research Press.

Kusnic, M. W. and J. DaVanzo. 1980. "Income inequality and the definition of income: the case of Malaysia," In *Population Association of America. Annual Meeting.* Denver, Colorado, April 10-12. Collected Papers.

Leinbach, T.R. and Richard Ulack. 1983. "Cities of Southeast Asia", In Brunn, S.D. and J.F. Williams (eds.). *Cities of the world: world regional urban development.* New York: Harper and Row, Publishers, pp. 371-407.

Lele, U. 1986. "Women and structural transformation," *Economic Development and Culture Change*, 34, pp. 196-221.

Lewis, D.K. 1962. *The Minangkabau Malay of Negeri Sembilan: a study of sociocultural change.* unpublished Ph.D. dissertation. Cornell University.

Lim Lin Lean. 1981 (?). "Labour shortages in the agricultural sector--a search for explanations and solutions," In *Report of the Population Seminar: Population and Sectoral Development. Cameron Highlands. Pahang, Malaysia.* Population Studies Unit. Faculty of Economics and Administration. Universiti of Malaya.

_____. 1978. "Women workers in multinational corporations: the case of the electronics industry in Malaysia and Singapore," *Occasional Paper, University of Michigan Series.* Ann Arbor: University of Michigan.

Lim, Linda Y.C. 1978. "Women workers in multinational corporations: the case of electronics in Malaysia and Singapore," *Michigan Occasional Papers*, IV Fall.

Lin, V. 1987. "Women electronics workers in Southeast Asia: the emergence of a working class," In Henderson, J. and M. Castells (eds.). *Global restructuring and territorial development.* Beverly Hills: Sage Publications, pp.112-135.

Lipietz, A. 1982. "Towards a global Fordism?" *New Left Review,* No. 132, pp. 41-44.

McGee, T.G. 1964a "Population: a preliminary analysis," In Wang Gungwu (ed.). *Malaysia: A Survey.* New York: Frederick A. Praeger, Publishers, pp. 67-81.

_____. 1964b. "An aspect of the urban geography of Malaysia," *New Zealand Geographical Society Record*, 3, pp. 9-11.

_____.1973. "Peasants in cities: a paradox, a paradox, a most ingenious paradox." *Human Organization*, 32: pp. 135-142.

_____. 1976. "The persistence of the proto-proletarat: occupational structures and planning the future of the future third world cities," *Progress in Geography*, 9, pp. 1-38.

_____. 1978. "An invitation to the 'ball': dress formal or informal," In Rimmer, P.J., D.W. Drakakis-Smith, T.G. McGee (eds.).*Food, shelter, and transport in Southeast Asia and the Pacific: challenging the unconventional" :wisdom of development studies in the third world.* Research School of Pacific Studies, The Australian National University, Canberra, pp. 101-110.

_____. 1979. *Labour mobility in fragmented markets, rural-urban linkages and regional development in Asia.* United National Centre for Regional Development. Nagoya, Japan.

_____. 1987. "Domains of analysis: perspectives on the study of inequality and economic growth in Malaysia, review article, " *Pacific Affairs*, 59, pp. 655-674.

McGee, T.G. and Y.M. Young. 1977. *Hawkers in Southeast Asian cities: planning for the bazaar Economy.* Ottawa: International Development Research Centre.

Malay Mail. June 1, 1986, p. 3. June 15, 1986, p. 4.

Malaysia. 1971. *Second Malaysia plan, 1971-1975.* Kuala Lumpur.

_____. 1981. *Fourth Malaysia Plan, 1981-1985.* Kuala Lumpur.

_____. 1985. *Fifth Malaysia Plan, 1986-1990.* Kuala Lumpur.

Malaysia. Department of Statistics. *1970 population and housing census. Malaysia. vol. 1-basic population tables. part 4-Negeri Sembilan.* Kuala Lumpur (1977).

_____. *1980 population and housing census of Malaysia. State Report. Negeri Sembilan.* (1983).

_____. 1980 *population and housing census. Population report for administrative districts.* (1984).

Malaysia. Ministry of Labour. 1984. *Wages in the manufacturing sector.* Kuala Lumpur.

Malaysian Digest, December, 1984, p. 7; November, 1987, pp. 5 ,8; December, 1987, p. 5-7; March, 1988, p. 9; April, 1988, p. 7; October, 1988, p. 6; November, 1988, p.6; and December, 1988, p. 5.

Manderson, L. "A women's place: women and development in Peninsular Malaysia." In *Issues in Malaysian development, No. 3. Asian Studies Association of Australia.* Singapore: Heinemann Educational Books, pp. 233-272.

Mason, K.O. and V.T. Palan. 1981. "Female employment and fertility in Peninsular Malaysia: the maternal incompatibility hypothesis reconsidered," *Demography*, 18, pp. 549-575.

Massey, D.B. 1984. *Spatial divisions of labour: social structures and the geography of production.* London: MacMillan.

Muhammed, K. 1978. *Migration and the matrilineal system of Negeri Sembilan.* Unpublished Ph.D. dissertation. University of Pittsburg.

Munck, R. 1988. The new international division of labor studies: an introduction. London: Zed Books, Ltd.

Mydral, G. 1973. *Against the stream: critical essays on economics.* New York: Pantheon Books.

NACLA (North American Congress on Latin America). 1977. "Electronics: the global industry," *Latin America and Empire Report*, April.

Nagata, J.A. 1974. "Urban interlude: some aspects of internal Malay migration in West Malaysia," *Internal Migration Review*, 8, pp. 301-324.

_____. 1975. "Introduction," In *Pluralism in Malaysia: myth and reality. contributions to Asian studies, Vol. 7.* Leiden: E.J. Brill, pp.1-16.

Nash, J. 1985. "Segmentation of the work process in the international division of labor," *Contemporary Marxism*, 11, pp. 25-45.

_____. 1983. "The impact of the changing international division of labor on different sectors of the labor force," In J. Nash and M.P. Fernandez-Kelly (eds.). *Women, men, and the international division of labor.* Albany: State University of New York Press.

Nash, M. 1965. *The golden road to modernity: village life in contemporary Burma.* Chicago: University of Chicago Press.

National Land Code . Act No. 5 of 1965. 1983. Kuala Lumpur: International Law Book Services.

New Straits Times, January 12, 1986, p. 4; January 18, 1986, p. 8; January 21, p. 9; January 27, 1986, p. 6,12; and April 24, 1986, p. 6; May 11, 1986, p. 11; May 21, 1986, p. 1; June 11, 1986, p. 8; June 17, 1986, p. 7; June 21, 1986, p. 7; and September 24, 1986, p. 4.

Ooi, Jin-Bee. 1976. *Peninsular Malaysia.* London: Longman.

Ott, L. 1984. *An introduction to statistical methods and data analysis. Second Edition.* Boston: Prindle, Weber, & Schmidt, pp. 364-371.

Oorjitham, K.S.S. 1984. "Indian women in urban Malaysia--a sociological approach," In Hing Ai Yun. N.S. Karim, R. Talib (eds.). *Women in Malaysia.* Petaling Jaya: Pelanduk Publications, pp. 113-125.

Osman-Rani, H. 1982. "Manufacturing industries," In E.K. Fisk and H. Osman-Rani (eds.). *The political economy of Malaysia.* Kulala Lumpur: Oxford University Press, pp. 260-286.

Pahl, R.E. 1985. "The restructuring of capital, local political economy, and household work strategies." In Gregory, D. and J. Urry (eds.). *Social relations and spatial structures.* New York: MacMillan Education, pp. 242-264.

Pampel, F.C. and K. Tanaka. 1986. "Economic development and female labour force participation: a reconsideration." *Social Forces,* 64, pp. 599-619.

Parkinson, N. C. 1964. *British intervention in Malaya, 1867-1877.* Kuala Lumpur: University of Malaya Press, pp. 163-184.

Peletz, M. G.1987. "The exchange of men in nineteenth century Negeri Sembilan," *American Ethnology,* 14, pp. 449-469.

Pena, D. 1986. "Between the lines: toward a new perspective on the industrial sociology of women workers in the transnational labor process," In T. Cordova, et al. (eds.). *Chicana voices: intersections of class, race and gender.* Austin: Center for Mexican American Studies and University of Texas Press.

_____ and G. Cardenas. 1988. "The division of labor in microelectronics: a comparative analysis of France, Mexico, and the United States," Studies in Comparative International Development, 23: 89-112.

Perrons, D.C. 1981. "The role of Ireland in the new international division of labor," *Regional Studies*, 15, pp. 81-100.

Perroux, F. 1950. "Economic space: theory and applications," *Quarterly Journal of Economics,* 64, pp. 89-101.

Perumal, S. 1983. *A Guide to the employment act of 1955, of Malaysia. Incorporating all amendments.* Petaling Jaya, Malaysia: International Book Service.

Pipes, D. 1983. *In the path of God. Islam and political power.* New York: Basic Books, Inc., Publishers.

Pred, A. 1984. "Place as historically contingent process: structuration and the time-geography of becoming places," *Annals of the Association of American Geographers*, 74, pp. 279-297.

Pryor, R.J. 1968. "Defining the rural-urban fringe," *Social Forces*, 47, pp. 202-215.

_____. 1975. "Migration and the process of modernization," In L.A. Kosinsky and R.M. Prothero (eds.). *People on the move: studies on internal migration.*. London: Metheun & Co., Ltd., pp. 23-38.

_____. 1984. "Methodological problems in population geography," In Clarke, J.I.(ed.). *Geography and population: approaches and applications.* Oxford: Pergamon Press, pp. 25-34.

Purcell, V. 1967. *The Chinese in Malaya.* Kuala Lumpur: Oxford University Press.

Rimmer, P.J. and G.C.H. Cho. 1981."Urbanization of the Malays since independence: evidence from West Malaysia, 1957-1970," *Journal of Southeast Asian studies,* 12, pp. 349-363.

Rimmer, P.J. and D.K. Forbes. 1982. "Underdevelopment theory: a geographical review," *Australian Geographer*, 15, pp. 197-121.

Rondinelli, D. 1983a. *Secondary cities in developing countries: policies for diffusing urbanization.* Beverly Hills: Sage Foundation.

_____. 1983b. "Towns and small cities in developing countries," *Geographical Review*, 73, pp. 379-395.

Rostow, W.W. 1960. *The stages of economic growth.* Cambridge University Press.Saffioti, H.I.B. 1977. "Women, mode of production, and social formations," *Latin American Prespectives*, 4, pp. 27-37.

Sandhu, K.S. 1969 *Indians in Malaya: some aspects of the immigration and settlement (1786-1957).* Cambridge: Cambridge University Press.

Sayer, A. 1986. "Chapter one. Industrial location on a world scale: the case of the semiconductor industry," In Scott, A.J. and M. Storper (eds.). *Production, work, and territory: the geographical anatomy of industrial capitalism.* Winchester, Massachusetts: Allen and Unwin, Inc.

Schmink, M. 1987. "Dependent development and the division of labor by sex: Venzuela,"*Latin American Perspectives* , 4, pp. 153-179.

Scott, A. J. and Michael Storper (eds.). 1986. *Production, work, territory: the geographical anatomy of industrial capitalism.* Boston: Allen & Unwin.

Scott, J.W. 1983. "Questions for future discussion and research," In I. Wallerstein (ed.) *Labor in the world structure.* Beverly Hills: Sage Publications, pp. 249-254.

Seaward, N. 1986. "New economic policy," *Far Eastern Economic Review*, 20, pp. 52-53.

Selvarathnam, V. and B.W. Dissanayake. 1979. Migration and development with reference to employment, income, and migration in Negeri Sembilan Timur," In B.A. R. Mokhzani (ed.). *Rural development in Southeast Asia.* New Delhi, India: Vikas Publishing House.

Sendut, H. 1962. "Patterns of urbanization in Malaya," *Journal of Tropical Geography,* 16, pp. 114-130.

Shryock, H. 1973. *The methods and materials of demography.* Washington, D. C. U. S. Bureau of the Census, pp. 240-243.

Sidhu, M.S. 1976. "Chinese dominance of West Malaysian towns, 1921-1970," *Geography,* 61, pp. 17-23.

Siew-Ean Khoo and P. Pirie. 1984. "Female rural-to urban migration," In Fawcett J.T., Siew-Ean Khoo and P. Pirie (eds.). *Women in the cities of Asia: migration and urban adaptation.* Boulder, Colorado: Westview Press, pp. 125-142.

Snodgrass, D.R. 1975. "Trends and patterns in Malaysian income distribution, 1957-1970," In D. Lim. (ed.)*Readings on Malaysian economic development.* Kuala Lumpur: Oxford University Press , pp. 251-268.

Soja, E. W. 1968. *The geography of modernization in Kenya: a spatial analysis of social, economic, and political change.* New York: Syracuse University Press.

South (London), May, 1988, pp. 24-25.

Spinanger. 1986. *Industriaiization policies and regional economic development in Malaysia.* Singapore: Oxford University Press.

Standing, G. 1978. *Labour force participation and development.* Geneva: ILO Office.

Star (The), March 19, 1986, p. 12; March 22, 1986, pp. 16, 20. ; and May 21, 1986, p.3; October 1, 1986, p.1.

Stark, O. 1982. "Research on rural-to urban migration in ldc's: the confusion frontier and why we should pause to rethink afresh," *World Development,* 10, pp. 71-79.

Storper, M. 1981. "Towards a structural theory of industrial location," In Rees, J. , J. Hewings, J.D. Geoffrey, and H.A. Stafford (eds.). *Industrial location and regional systems: spatial organization in the economic sector.* New York: J.F. Bergin, Inc., pp. 17-40.

Straits Times (Singapore), June 21, 1986, p.9.

Strange, H. 1976. "Village paths and city routes," *paper presented at the Conference on Women and Development, Wellesly, Massachusetts,* cited in Goldstein, S. (ed.). 1978. *Circulation in the context of total mobility in Southeast Asia. Papers of the East-West Population Institute. Honolulu, Hawaii,* 53, pp. 38-39.

Sundaram, J.K. 1988. "Malaysia's New Economic Policy: a class perspective," *Pacific Viewpoint,* 25, pp. 153-172.

Swift, M. 1965. *Malay peasant society in Jelubu. London School of Economic Monographs on Social Anthropology.* No. 29. London: Athlone Press.

Thrift, N. 1983."On the determination of social action in time and space," *Environmental and planning d: society and space,* 1, pp. 23-57.

Timofeev, T. 1983. "World capitalism and the working class," In I. Wallerstein (ed.). *Labor in the World Social Structure.* Beverly Hills. Sage Publications.

Towner, M. 1977. Monopoly capitalism and women's work during the porfiriato," *Latin American Perspectives*, 4, pp. 90-95.

Ulack, R. and T.R Leinbach. 1985. "Migration and employment in urban Southeast Asia:examples from Indonesia and the Philippines," *National Geographic Research*, 1, pp. 310-331.

Uttall, B. 1986. "Who will survive the microchip shakeout?" *Fortune International*, 113, pp. 20-23.

Van Der Mark, A. 1983. "The impact of industrialization on women: a Caribbean case." In J. Nash and M.P. Fernandez-Kelly (eds.). *Women, men, and the international division of labor.* Albany: State University of New York Press.

Wallerstein, I. 1974. *The world system: capitalist agriculture and the origin of European world economy in the sixteenth century.* New York: Academic Press.

_____.1979. *The capitalist world economy.* Cambridge University Press.

_____. 1980. *The modern world system II: mercantilism and the consolidation of the European world-economy, 1600-1700.* New York: Academic Press.

Warf, B. 1988. "Regional transformation, everyday life, and Pacific Northwest lumber production," *Annals of the Association of American Geographers*, 78, pp. 326-346.

Weede, E. 1985."Rent-seeking or dependency as explanations of why poor people stay poor," *paper presented at the 26th annual meeting of the International Studies Association, Washington, D.C.*

Weede, E. and J. Kummer. 1985. "Some criticism of recent work on world system status, inequality, and democracy," *International Journal of Comparative Sociology*, 26, pp. 135-148.

Weekes-Vagliani, W. [in collaboration with B. Grosset]. 1980. "Malaysia," In. *Women in development at the right time for the right reasons.* Organization for Economic Cooperation and Development. Paris: Development Centre,, pp. 57-149.

Wong, D.S.Y. 1975. *Tenure and land dealings in the Malay Straits.* Singapore: Singapore University Press.

Wong, K. and D. K. Y. Chu. 1984. "Export processing economic zones as generators of economic development: the Asian experience," Geographafiska Annaler 66B, pp. 1-16.

Wong, L.K. 1965. The Malayan tin industry to 1914. *Association for Asian Studies. Monographs and Papers.* No. 14. Tucson: University of Arizona Press.

Yeung, Yue-Man. 1988. "Great cities of East Asia," In Dogan, M. and J.D. Kasarda.*The Metropolitan Era. Vol. 1. A world of giant cities.* Beverly Hills: Sage Publications, pp. 155-186.

UNPUBLISHED MATERIALS

Negeri Sembilan.Department of Agriculture.
Malaysia. Department of Statistics.
Melaka. State Economic Development Corporation.
Negeri Sembilan. Land Office.

Negeri Sembilan. State Economic Development Corporation.
Negeri Sembilan. Town and Regional Planning Department.
Negeri Sembilan Timur. Feasibility Study. Integrated Agricultural Development Project. Kuala Pilah.
Personnel Offices. Selected Firms. Senawang Industrial Estate, Seremban.
Rubber Small-Holder Development Authority. Negeri Sembilan. Seremban.
Seremban Municipality. Town Planning Department.

INTERVIEWS

Dato Malik bin Rani, Seremban, December 8, 1985.
Director, Department of Agriculture. Negeri Sembilan. Seremban, January 1, 1986.
General Manager, State Economic Development Corporation. Negeri Sembilan. Seremban, May 15, 1986.
Lokman bin Abdul Manan, Seremban, April 10, 1986.
Personnel Officers. Selected Firms in Senawang Industrial Estate. January-April, 1986.
Project Director, Negeri Sembilan Timur. Kuala Pilah, January 10, 1986.