CHAPTER THREE

METHODOLOGY

3.1 Introduction

Before embarking on econometric analysis of female labour force participation of the elected communities, it is imperative to provide the background of the communities and descriptive statistics on employment. Such description will provide an overall picture that will complement the results from econometric analysis.

3.2 Background Information of the Study Sites

Due to the pluralistic nature of the Malaysian society, cultural differences have been an important criteria in identifying the study sites. Therefore, a stratified, purposive sample of communities has been selected to ensure the existence of homogeneity within each community.

Kota Baru was selected to represent the rural Malay women. Most of the working women comprise of hawkers from the Kota Baru market who live in villages in and around Kota Bharu. The non-working women originate from Palekbang and this location was selected because a substantial number of market women live in this province. The inclusion of this group provides a more comprehensive picture of the community and also provides a control group for the study.

Women from Pulau Ketam were selected to represent rural Chinese women. Pulau Ketam is an island off Port Klang. The women surveyed originated from three villages i.e., Bagan Pulau Ketam, Bagan Sungai Lima and Bagan Teochew. The main income generating activity in this island is fishing and most of the women interviewed processed food for sale.

Representatives of Indian rural women come from Carey Island which is an island situated about sixteen kilometers from Klang. The island mostly consists of oil palm plantations. Inevitably, most of the women included in this survey are agricultural workers.

Urban communities for all the three races are represented by women from Port Klang. Since they originate from the same vicinity, they are more homogenous in nature compared to the rural women. Most of the Malay women consist of families of port workers in that area while the Indians were a combination of families of port workers and families which migrated from plantations to towns. The Chinese were more diversified in terms of employment patterns and therefore it is more difficult to categorise them.

3.3 Data

The data used in this analysis comes from a survey that uses three modes of data collection. The first mode is a survey which used three sets of questionnaires; i.e. a household screening questionnaire, an eligible respondent questionnaire and a husband questionnaire to extract individual level information. For the purpose of this study, most of the data is derived from eligible respondent questionnaire. As the main objective of this survey was to analyse fertility patterns, eligible respondents are married women aged between 15 and 39. The eligible respondent questionnaire contains information on the

gible respondent's background, her birth history, contraception use, her work activities, :kground information of her husband and household possessions. About two hundred gible respondents, consisting of married women between ages 15 and 39 were targeted each community.

addition, a series of focus groups were conducted after the survey in which extensive cussions relating to issues of marriage, work and family structures were discussed. ese discussions provide complementary information that will supplement the ividual level information.

ta was also collected from community questionnaire. This questionnaire enabled us to ain information on demography, health, educational facilities, transport and nmunication.

Data Characteristics

.1 Employment Rates with Reference to Gender and Area

: term working, as used in this survey refers to all the people who did any work for ', profit or family gains during the reference period. On the other hand, the term not rking refers to all the people who are not involved in any income generating activities ing the reference period.

Table 3.1
Employment Rates by Gender and Area

Area	KB[1]		PK[2]		PC[3]		KM[4]		KC[5]		KI[6]	
Gender	M[7]	F[8]	M	F	M	F	M	F	M	F	M	F
Employed	307	225	199	86	195	150	214	92	199	106	202	99
Unemployed	9	91	1	115	7	52	0	122	0	93	3	106
Employment Rate	97.2	71.2	99.5	42.7	96.5	74.2	100	43.0	100	53.3	98.5	48.3
Total	**316**	**316**	**200**	**201**	**202**	**202**	**214**	**214**	**199**	**199**	**205**	**205**

Note: [1] = Kota Baru, [2] = Pulau Ketam, [3] = Carey Island, [4] = Klang Malays, [5] = Klang Chinese [6] = Klang Chinese, [7] = Male and [8] = Female.

Table 3.1 presents distribution of the employed persons by gender and area. On the whole, the employment rates among males are very much higher compared to females. It is pertinent to point out at this stage that there is no age limit for males included in this survey. The percentage of employed males are also higher than the national level statistics of 64.4% in the year 1990 (Malaysia, 1990). Comparison of male employment rates across the urban-rural communities and ethnic groups do not show any discrepancy.

This is not the case for females. Among rural communities, the Chinese women have lower employment rates than the Indians and Malays. Comparison across urban communities reveals that Malay women have lower employment rates than the Indians and Chinese but the disparity among the ethnic groups is not very obvious.

Table 3.2 shows the most important reasons cited by women for not working. For women, the decision to participate in labour force is an important one, since it has significant consequences on herself, as well as her family. On one hand, participating in labour force means financial independence, a higher status and self satisfaction, while on the other hand, it also means increased responsibility. Often, women who participate in

Table 3.2
Distribution of Unemployed Females by Reasons for Not Participating in the Labour Force

Reason	KB	PK	PC	KM	KC	KI
Child care or household Responsibilities	72 (79.1)	97 (85.8)	27 (52.9)	89 (73.0)	77 (82.8)	72 (67.9)
Sick or inability	4 (4.4)	-	8 (15.7)	5 (4.1)	-	6 (5.7)
No vacancies	1 (1.1)	3 (2.6)	5 (9.8)	-	1 (1.1)	2 (1.9)
No need to work	1 (1.1)	2 (1.8)	-	2 (1.6)	3 (3.2)	1 (0.9)
Husband or older family Member objected	8 (9.1)	8 (7.1)	2 (3.9)	19 (15.6)	4 (4.3)	16 (15.1
Did not like to work	1 (1.1)	-	1 (2.0)	2 (1.6)	-	5 (4.7)
Other	1 (1.1)	3 (2.6)	8 (15.7)	5 (4.1)	8 (8.6)	4 (3.8)
Total	**88 (100)**	**113 (100)**	**51 (100)**	**122 (100)**	**93 (100)**	**106 (100)**

Note: Figures in the parentheses denote the column percentage
Respondent were asked to identify the most important reason from among all reasons cited
The total does not include the respondents who did not respond

labour force are faced with problems of child care, home management and maintaining a harmonious family. Hence, it is not surprising that the most popular reason cited by the women for not participating in the labour force is child care and household responsibilities, followed closely by objections from husband and older family members. Both the cited reasons are in fact related to one another as objections from husband or older family members usually arise when there is a disruption in family life.

This finding supports the hypotheses that married women who are at the peak of childbearing years are less likely to participate in the labour force. In order to observe the relationship between employment and the number of children, Table 3.3 was tabulated. However, from the table, no consistent pattern could be observed. This could be due to other factors that were not included in the table. For example, age of children was not included. It has been shown that young children have stronger adverse effect on

Table 3.3
Percentage Distribution of Employed Females by by Number of Children

Area	KB		PK		PC		KM		KC		KI	
Children	**E[1]**	**NE[2]**	**E**	**NE**	**E**	**NE**	**E**	**NE**	**E**	**NE**	**E**	**NE**
0	15.5	2.9	5.5	3.1	6.0	17.0	7.2	4.6	12.7	4.1	8.2	7.4
1	14.1	17.5	6.8	17.2	11.4	32.1	21.7	7.6	17.6	12.4	16.5	14.8
2	15.0	14.6	15.1	19.5	13.4	13.2	8.4	18.3	18.6	32.0	20.6	22.2
3	15.5	20.4	15.1	18.0	18.8	13.2	15.7	16.8	25.5	25.8	25.8	18.5
4	14.6	13.6	27.4	19.5	20.8	11.3	18.1	16.8	11.8	10.3	10.3	19.4
5	10.8	9.7	21.9	13.3	13.4	5.7	14.4	13.0	9.8	12.4	11.3	13.0
6	8.4	6.8	6.8	3.9	10.1	1.9	4.8	13.0	2.0	3.1	2.1	2.8
7	4.2	2.9	0	3.9	2.7	3.8	3.6	6.1	1.0	0	2.1	0.9
8 or more	1.9	11.6	1.4	1.6	3.4	1.9	6.0	3.8	1.0	0	3.1	0.9
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Note: [1] = Employed and [2] = Not Employed

female labour force participation. In addition, the availability of childcare is also an important factor that has been omitted. Childcare facilities makes it easier for the women to engage themselves in income generating activities. Therefore, Table 3.4 shows childcare arrangements for employed females with children aged below 10 years. It is apparent from the table that most of the working females with children aged 10 years and below have made arrangements to have someone to take care of their children. These arrangements have enabled them to participate in the labour force.

In some cases the respondents work from home, or within the vicinity. In such cases, it is common for women to carry out income generating activities, as well as take care of children. A good example is women from Pulau Ketam. Table 3.4 shows that in Pulau Ketam, 34.9 per cent of employed females with children below 10 years take care of the children themselves.

Table 3.4
Percentage Distribution of Childcare Arrangements for Working Females with Children Less Than 10 Years

Childcare Arrangements	KB	PK	PC	KM	KC	KI
ER	5.6	34.9	2.5	13.0	8.8	2.3
Daughter	5.0	4.6	3.3	7.2	1.8	6.9
Son	0	-	-	1.4	-	-
Husband	7.8	-	0.8	4.3	3.5	4.6
Relation	17.3	-	8.3	5.8	8.8	13.8
In-laws	39.7	27.9	30.6	29.0	35.1	39.1
Neighbour	9.5	2.3	5.0	30.4	12.3	8.0
Servant	1.7	-	2.5	-	8.8	-
School	1.7	-	1.7	1.4	-	3.4
Nobody	3.4	18.6	10.7	7.2	10.5	16.1
ER does not go out without the child	0.6	9.3	-	-	1.8	-
Others	7.8	2.3	34.7	-	8.8	5.7
Total	100	100	100	100	100	100

3.4.2 Trends in Employment with Reference to Gender, Age Group and Area

Table 3.5 shows distribution of the employed females by age groups, gender and area. The highest concentration of employed males were between the age group of 30 to 34, followed by the age group of 35-39 and 40 to 44. This finding is quite consistent with the national level statistics, that shows high participation rates for males aged 30 to 44 (Malaysia, various years).

Before the employment rates of women by age is discussed it is imperative to point out that the sample for this study only covers women who are aged between 15 to 39. Therefore, it is redundant to plot age curves to ascertain if the employment patterns resemble the bi-model or unimodel. All the communities, with the exception of Kota Baru, show a high concentration of employed females aged 35 to 39. This finding is inconsistent with the national level statistics that shows the highest level of participation

Table 3.5
Distribution of Employed Persons by Gender, Age Groups and Area

Age	KB		PK		PC		KM		KC		KI	
	M	F	M	F	M	F	M	F	M	F	M	F
15-19	-	4	-	1	1	4	-	-	-	1	1	1
		(1.8)		(1.2)	(0.5)	(2.7)				(0.9)	(0.5)	(1.0)
20-24	15	26	13	8	9	12	10	9	4	5	9	9
	(4.9)	(11.6)	(6.5)	(9.3)	(4.6)	(8.0)	(4.7)	(9.8)	(2.0)	(4.7)	(4.4)	(9.1)
25-29	57	65	31	22	29	38	37	16	25	30	32	15
	(18.6)	(28.9)	(15.6)	(25.6)	(14.9)	(25.3)	(17.3)	(17.4)	(12.6)	(28.3)	(15.8)	(15.2)
30-34	81	66	49	24	48	35	41	30	60	33	41	34
	(26.4)	(29.3)	(24.6)	(27.9)	(24.6)	(23.3)	(19.2)	(32.6)	(30.2)	(31.1)	(20.3)	(34.3)
35-39	68	64	59	31	60	61	48	30	64	37	67	40
	(22.1)	(28.4)	(29.6)	(36.0)	(30.8)	(40.7)	(22.4)	(32.6)	(32.2)	(34.9)	(33.2)	(40.4)
40-44	60	-	29	-	29	-	52	7	34	-	34	
	(19.5)		(14.6)		(14.9)		(24.3)	(7.6)	(17.1)		(16.8)	
45-49	16	-	18	-	18	-	22	-	8	-	16	
	(5.2)		(9.0)		(9.2)		(10.3)		(4.0)		(7.9)	
50-54	8	-	-	-	-	-	3	-	3	-	1	
	(2.6)						(1.4)		(1.5)		(0.5)	
55-59	1	-	-	-	1	-	-	-	1	-	-	
	(0.3)				(0.5)				(0.5)			
60+	1	-	-	-	-	-	1		-		1	
	(0.3)						(0.5)				(0.5)	
Total	**307**	**225**	**199**	**86**	**195**	**150**	**214**	**92**	**199**	**106**	**202**	**99**
	(100)	**(100)**	**(100)**	**(100)**	**(100)**	**(100)**	**(100)**	**(100)**	**(100)**	**(100)**	**(100)**	**(100)**

Note: Figures in the parentheses denote the column percentage
The female respondents included in this survey are aged between 15 and 40

among those aged 20-24 (Malaysia, various years). This findings could be closely related to educational attainment and age of marriage. The highest educational attainment for most of the women in this sample is only primary level (refer to Table 3.6). Therefore, they would have entered labour force at a young age. In addition, this would also precipitate the age of marriage and childbearing. By the age of 35, they would have completed their childbearing years and re-enter the labour market.

In Kota Baru, most of the employed females were aged 30 to 34. This is slightly lower than the other communities. When the education level is compared, the women in Kota Baru have mostly completed their lower secondary and higher secondary education while

most of the women from the other communities have only completed their primary level (refer to Table 3.6). Consequently, they are likely to enter the labour force at a later age than women from other community. They are also likely to have a later age of marriage compared to those from other communities. As result, the peak of their childbearing years are likely be between 20 to 30. This may explain the high concentration of employed women between 30 to 34.

Table 3.6
Distribution of Employed Persons by Gender and Education Level

	KB		PK		PC		KM		KC		KI	
Education Level	M	F	M	F	M	F	M	F	M	F	M	F
None	-	-	2 (1.1)	-	-	-	-	1 (1.1)	-	-	-	-
Informal	3 (1.0)	-	-	-	-	-	-	-	-	-	-	-
Primary	66 (22.4)	37 (17.4)	130 (70.6)	58 (73.4)	100 (55.2)	90 (72.0)	75 (36.0)	36 (39.6)	72 (36.9)	54 (51.9)	74 (37.9)	44 (50.6)
Lower secondary	65 (22.0)	64 (30.0)	43 (23.4)	15 (19.0)	57 (31.5)	26 (20.8)	73 (35.1)	25 (27.5)	72 (36.9)	26 (25.0)	94 (48.2)	29 (33.3)
Upper secondary	119 (40.3)	83 (39.0)	8 (4.3)	5 (6.3)	19 (10.5)	6 (4.8)	50 (24.0)	26 (28.6)	41 (21.0)	17 (16.3)	23 (11.8)	11 (12.6)
Form six	25 (8.5)	26 (12.2)	-	-	2 (1.1)	3 (2.4)	4 (1.9)	3 (3.3)	3 (1.5)	4 (3.8)	3 (1.5)	3 (3.4)
College	13 (4.4)	2 (0.94)	1 (0.5)	1 (1.3)	2 (1.1)	-	5 (2.4)	-	2 (1.0)	2 (1.9)	-	-
University	4 (1.4)	1 (0.47)	-	-	1 (0.6)	-	1 (0.5)	-	5 (2.6)	1 (1.0)	1 (0.5)	-
Total	**295 (100)**	**213 (100)**	**184 (100)**	**79 (100)**	**181 (100)**	**125 (100)**	**208 (100)**	**91 (100)**	**195 (100)**	**104 (100)**	**195 (100)**	**87 (100)**

Note: This question was posed only to those who have been to school.
For the males, since the question was posed to the wives, some of them did not know the husband's education level.

3.4.3 Employment and Education Level

Table 3.6 above displays the distribution of employed persons by area and education level. The distribution of employed males by education level is similar to that of females. With the exception of Kota Baru and Klang Indians, most of the employed males have only completed their primary education. In Kota Baru, just like the female counterparts, most of the males have completed upper secondary education. In the case of Klang Indians, while the employed females were mostly primary educated, most of the males attained lower secondary education. The education disparity between the respondents from Kota Baru and the other communities are very obvious.

3.4.4 The Occupational Structure of Female Employment

Table 3.7 shows the distribution of labour force by broad occupational categories. Females from Kota Baru are mainly involved in sales related jobs. This is due to the fact that most of the respondents were selected from Kota Baru market. Meanwhile, women from Pulau Ketam and urban communities mostly fall into the production category. However, there is a big difference between the women from Pulau Ketam and urban areas. In Pulau Ketam, most the women are involved in activities related to fishing while women in urban areas mostly work in factories. In Carey Island, most women fall into agriculture and related jobs as oil palm plantation is the main source of income for the residents of this island.

Table 3.7
Distribution of the Employed Females
by Broad Occupational Category

Occupational Category	KB	PK	PC	KM	KC	KI
Professional	-	2	2	1	3	3
		(2.3)	(1.3)	(1.1)	(2.8)	(3.0)
Clerical	2	-	4	11	11	6
	(0.9)		(2.7)	(12.0)	(10.3)	(6.0)
Sales	205	27	6	15	21	7
	(91.5)	(31.4)	(4.0)	(16.4)	(19.7)	(7.0)
Service	1	5	5	17	27	16
	(0.4)	(5.9)	(3.4)	(18.4)	(25.5)	(16.1)
Agriculture	1	1	113	-	1	-
	(0.4)	(1.2)	(75.4)		(0.9)	
Production	16	51	20	48	43	67
	(7.1)	(59.2)	(13.4)	(52.3)	(40.6)	(67.6)
Total	**215**	**86**	**150**	**92**	**106**	**99**
	(100)	(100)	(100)	(100)	(100)	(100)

Note: Figures in the parentheses denote the column percentage

As mentioned earlier, working women in urban areas are mainly concentrated in production related jobs. Working in the factory is a popular choice among them due to the location of Port Klang, which is surrounded by some prominent industrial areas such as Kapar, Klang and Shah Alam. Over the last few years, rapid expansion of the urban economy and in particular the proliferation of labour intensive industries such as electrical, electronic and textiles products has also encouraged the women to work in factories. Also, these industries are gender-segmented and the majority of the jobs offered are for women rather than men. (Shamsulbahriah, 1989)

The service industry is also a popular choice among the urban women, followed closely by sales related jobs. Only a small percentage of the urban women are engaged in the professional category. Upon further scrutiny, it shows that these women are mostly teachers.

It is interesting to note that the distribution of employed women in rural areas are very diversified across the ethnic group, while the patterns among urban women are similar. This shows that socio-economic development is closely related to patterns of employment. Those who hailed from the same area share similar socio-economic background and employment opportunities.

3.4.5 Occupational Status of Employed Women

Table 3.8 below shows the distribution of employed women by their respective occupational status. The occupational status in this study is divided into five categories instead of four categories used by the Department of Statistics in Malaysia. The own account worker category in this study has been divided into two; own account worker without husband and own account worker with husband.

Approximately sixty percent of the women from Kota Bharu are own account workers who work without their husbands, followed by own account workers who work with their husband and employees. The sample produced a very low percentage of unpaid family workers and employers. In Pulau Ketam, about forty five per cent of the women are own account workers who work without their husbands, twenty two percent are employees, fifteen per cent are unpaid family workers, twelve per cent are own account workers who work with their husbands and six per cent are employers. More than ninety percent of the women from Carey Island are employees. This is followed by a small percentage of own account workers who work with their husband, unpaid family workers, and own account workers who work without their husbands.

Table 3.8
Distribution of Employed Females by Employment Status

	KB	PK	PC	KM	KC	KI
Unpaid family worker	4	13	4	-	4	2
	(1.77)	(15.12)	(2.67)		(3.77)	(2.02)
Own account worker without husband	134	39	3	38	35	6
	(59.5)	(45.35)	(2.0)	(41.3)	(33)	(6.06)
Own account worker with husband	53	10	6	4	8	2
	(23.56)	(11.63)	(4)	(4.35)	(7.55)	(2.02)
Employee	32	19	137	50	58	88
	(14.22)	(22.1)	(91.33)	(54.35)	(54.72)	(88.89)
Employer	2	5	-	-	1	1
	(0.89)	(5.62)			(0.94)	(1.01)
Total	**215**	**86**	**152**	**92**	**106**	**99**
	(100)	**(100)**	**(100)**	**(100)**	**(100)**	**(100)**

Note The figures in the parentheses denote the percentage

Among the three rural communities, Pulau Ketam yields the highest percentage of unpaid family workers. A substantial percentage of women in this community help their husbands (mostly fishermen) to preserve fish and to carry out other chores such as mending fishing nets.

Women from the urban communities are mostly employees. However, the percentage is visibly higher among the Indian women. Among the Malays and Chinese, the distribution by employment status is more diversified. Hence, a considerable percentage of them are own account workers without husband, followed by own account worker with husband.

3.4.6 Location of Work

The location of work is closely related to the type of jobs performed by women. In Kota Baru, as shown by Table 3.9 below, the percentage of women who worked within the

local vicinity and the percentage of women who work out of the local vicinity are almost equal. Only a small percentage work at home. On the hand, more than half of the working women in Pulau Ketam work at home, followed very closely by those who work within the local vicinity. Only a small percentage of the women work out of the local vicinity. This can be attributed to the location of Pulau Ketam, which is rather isolated, making it difficult for the occupants of the island to travel out of the local vicinity to work. Furthermore, it is convenient for the women carry out their tasks at home as they are mostly involved in food preserving activities such as making salted fish. In Carey Island, more than three quarter of the women work out of their homes but within the local vicinity, followed by approximately fourteen percent who work out of the local vicinity and a very small percentage who work at home. Although Carey Island is also isolated like Pulau Ketam, there is a bridge linking it to the main land, thus enabling some of the residents to go out of the local vicinity to work.

Among the urban communities, most of the women work within the local vicinity. Factories situated around Port Klang provide adequate employment opportunities; making it unnecessary for them to venture beyond the local vicinity to work. A substantial portion of the Malay and Chinese women work at home as some electronic companies allow women to assemble some of the electronic components at home at piecemeal rates. Comparatively, a higher percentage of Indian women work out of the local vicinity than Malays and Chinese.

3.4.7 Distribution of Employed Females by Hours Worked

The distribution of working females by hours worked are shown in Table 3.10. With the exception of Pulau Ketam, most of the women work between 6 to 9 hours per day. Pulau

Ketam women generally work shorter hours than the other communities. Again, this is related to the type of work carried out by the women in Pulau Ketam. Since substantial percentage of women in Pulau Ketam are merely assisting their husbands, they are not subjected to fixed working hours. Therefore, they spend a few hours on income generating activities, while denoting the rest of their time to household chores and taking care of children. Women from the other communities, especially those who are employees, are often subjected to approximately eight hours of work per day.

Table 3.9
Distribution of the Employed Females by Location of Work

	KB	PK	PC	KM	KC	KI
Home	13	49	9	34	51	10
	(5.77)	(56.98)	(5.92)	(36.95)	(48.11)	(10.1)
Within the local vicinity	91	35	122	39	52	68
	(42.32)	(40.7)	(80.26)	(42.39)	(49.06)	(68.69)
Out of the local vicinity	111	2	21	19	3	21
	(51.63)	(2.32)	(13.8)	(20.65)	(2.83)	(21.2)
Total	**215**	**86**	**152**	**92**	**106**	**99**
	(100)	**(100)**	**(100)**	**(100)**	**(100)**	**(100)**

Note: The figures in the parentheses denote the percentage

Table 3.10
Distribution of the Employed Females by Hours Worked Per Day

	KB	PK	PC	KM	KC	KI
Less than 6 hours	17	37	8	24	32	10
	(7.91)	(43.0)	(5.26)	(26.1)	(30.19)	(10.1)
Between 6 to 9 hours	124	15	133	59	44	79
	(57.67)	(17.44)	(87.5)	(64.13)	(41.51)	79.8)
Above 9 but below 15 hours	70	16	8	8	16	9
	(32.6)	(18.6)	(5.26)	(8.69)	(15.09)	(9.09)
Above 15 hours	1	6	2	-	7	1
	(0.46)	(6.97)	(1.32)		(6.6)	(1.01)
Not fixed	3	12	1	1	7	-
	(1.40)	(14.0)	(0.65)	(1.09)	(6.6)	
Total	**215**	**86**	**152**	**92**	**106**	**99**
	(100)	**(100)**	**(100)**	**(100)**	**(100)**	**(100)**

Note: The figures in the parentheses denote the percentage

Table 3.11
Distribution of the Employed Females by Type of Payment

	KB	PK	PC	KM	KC	KI
In cash	208 (96.7)	64 (74.4)	136 (89.5)	91 (98.9)	95 (89.6)	94 (95.0)
In kind	-	2 (2.3)	2 (1.3)	-	-	-
In cash and kind	2 (0.9)	4 (4.6)	10 (6.6)		4 (3.8)	3 (3.0)
Unpaid	5 (2.3)	16 (18.6)	4 (2.6)	1 (1.1)	7 (6.6)	2 (2.0)
Total	**215 (100)**	**86 (100)**	**152 (100)**	**92 (100)**	**106 (100)**	**99 (100)**

Table 3.11 shows the distribution of employed women by the type of payment that they receive. Most women across the communities receive their payments in cash. In Pulau Ketam, a significant percentage of women are unpaid. Similarly, among the urban Chinese, about seven percent were unpaid.

3.5 Model

3.5.1 Determinants of Work Participation

Economic models of female labour force participation have the same basic form: a conditional utility function as below

$$U = [W(H + e) + V]^{\alpha} [1 - (H + e)]^{\beta} \quad (3.1)$$

where W and V are real wage and real property income, total time T is normalised to 1 so that H is the proportion of time spent at market work. Therefore, 1-H is $\equiv L$, that is the proportion of time spent on leisure or nonmarket activities. e is the unobservable error term that takes interpersonal differences in tastes for leisure and consumption goods into consideration and therefore it differs from one person to another. The term in the first set

of square brackets is real goods consumption G. Equation (3.1) above implies that a person with similar W and V may derive different utility U from the same amount of H.

The utility function (3.1) implies that the marginal rate of substitution $M \equiv (\partial U/\partial L)/(\partial U/\partial G)$. It can also be written as

$$M = [b/(1-b)] \cdot [W(H + e) + V]/[1-(H + e)] \qquad (3.2)$$

where $b \equiv \beta/(\alpha + \beta)$. From the first order conditions, it follows that reservation wage W_r can be computed by evaluating M at the point where $H = 0$ and $L = 1$. At that point,

$$W_r = [b/(1-b)] \cdot [We + V] / [1-e] \qquad (3.3)$$

For an individual, condition for work with a given e is $W > W_r$. Setting $W > W_r$ and rearranging implies that $H > 0$ if and only if $\epsilon_h > -J$, where

$$\epsilon_h \equiv -e \qquad \text{and} \qquad J \equiv [(1-b) - bV/W] \qquad (3.4)$$

The model implies that a person who works will choose her hours of work based on the following condition:

$$H > 0 \text{ if and only if } \epsilon_h > -J \qquad (3.5)$$

$$H = 0 \text{ if and only if } \epsilon_h \leq -J \qquad (3.6)$$

By setting $M = W$ in equation (3.2) and solving for H, the empirical labour supply function will be obtained given $H > 0$ as

$$H = (1\text{-}b) - bV/W + \epsilon_{Hi} \tag{3.7}$$

Initially, assume that all the individuals in the population, including the nonworkers, have the measures of real wage W available. For equation (3.4), for the ith individual denote the value concerning work $\epsilon_{Hi} \equiv -e_i$ and the value of J given b, W_i, V_i, and e_i as J_i. It is assumed that e_H has a mean of zero, has standard deviation of σ_H, and is normally distributed in the population as a whole. This brings about the implication that the standardised normal variable i_{Hi} / σ_H has a mean of zero and a variance of 1.

Based on the assumptions concerning the population distribution of i_{Hi}, the probability that a given individual i will work is given by

$$\begin{aligned} P[\text{i works}] \quad & P[(\epsilon_{Hi} / \sigma_H) > (-J_i / \sigma_H)] \\ & \int_{-J_i/\sigma_H}^{\infty} f(t)\,dt = 1 - F(-J_i / \sigma_H) \end{aligned} \tag{3.8}$$

where f and F denote the standard normal and cumulative density functions, respectively. Based on equation (3.5) and (3.6), the likelihood function for samples of individuals who are either working or not working can be written as

$$\begin{aligned} L = & \prod_{i\in\Omega} \{1 - F[-(1-b)^* + b^*(V_i / W_i)]\} \cdot \\ & \prod_{i\in\Omega'} F[-(1-b)^* + b^*(V_i/W_i)] \end{aligned} \tag{3.9}$$

where Ω represents the women who are working and Ω' represents the people who are not working, $b^* \equiv b / \sigma_H$, and $(1 - b)/\sigma_H$.

on (3.8) above is the standard *probit* equation and b^* and $(1\text{-}b)^*$ can be estimated ximising the likelihood function l (or its logarithm) with respect to b^* and $(1\text{-}b)^*$. $)^*$ and $(1\text{-}b)^*$ is estimated, the likelihood estimates of σ_H as $1 / [b^* + (1 - b)^*]$ and $^*/ [b^* + (1 - b)^*]$.

Earning Functions

problem arises in estimating earning function because the data on wages is not ble for non-workers. Second generation researchers have developed many ative procedures to estimate earning functions. For the purpose of this paper, a dure developed by Heckman (1979) has been adopted. This procedure involves two

First, the participation function is estimated using the standard probit procedure as n by equation (3.8).

e second stage, the probit parameter estimates are used to compute the inverse Mills $\lambda_i = f(-I_i / \sigma_I) / [1 - F(-I_i / \sigma_I)]$. Then λ_i is added as an additional regressor to tandard Mincerian earnings function below:

$$LnW = b_0 + b_1S + b_2EX + b_2EX^2 + \lambda_i + \in_{Wi}$$

re;

LnW = the natural log of weekly wages,

EX = experience (potential: defined as age - years of school - 6),

EX2 = experienced squared,

S = years of schooling

$\in_{Wi}$ = is a mean zero normally distributed random error term representing the effects of unobserved factors such as motivation and abilities.

3.6 Summary

This chapter aims to provide readers with a comprehensive background on all the six communities included in this study. A detailed breakdown and explanation of the data characteristics are also provided to give readers a hindsight before one proceeds to the next chapter where results from the analysis of participation and wage equations will be discussed and compared across communities and urban and rural sector.