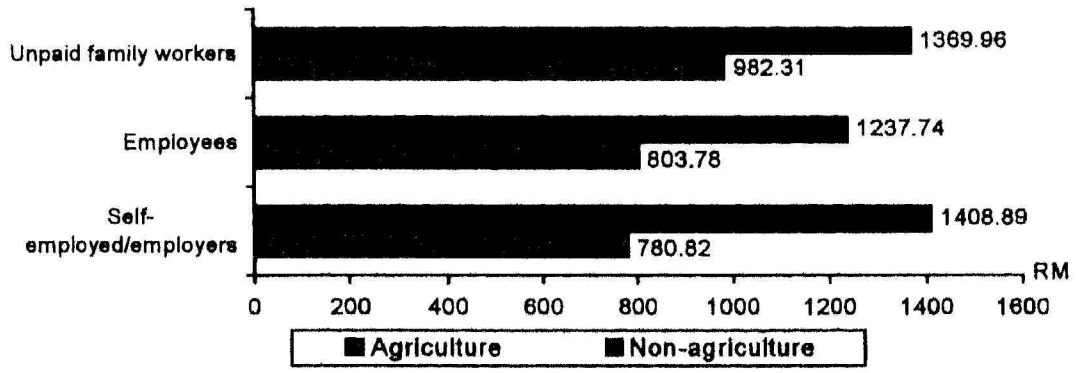
CHAPTER 4

EXPENDITURE PATTERNS IN THE AGRICULTURAL COMMUNITIES IN SELANGOR

4.1 INTRODUCTION

In Malaysia, private consumption amounted to RM118,198 million in 1998 and is expected to increase to RM143,492 million in 2000 (Ministry of Finance 1999). According to the 1993/94 Household Expenditure Survey (Department of Statistics 1995b, pp.5-16), the average household expenditure in Malaysia was RM1,160.59 per month[1]. As shown in Figure 4.1, the expenditure of households whose heads were in the agriculture sector was much lower than that of households whose heads were engaged in the non-agriculture sector.

Figure 4.1: Average Monthly Household Expenditure by Socio-Economic Status of Household Head, Peninsular Malaysia, 1993/94



[1] More than 80 percent of households surveyed were categorized in the non-agriculture sector (Department of Statistics 1995a, p.15).

This chapter provides an analysis of the expenditure pattern of farm households in Selangor and differentials in expenditure by the various sub-groups.

The Engel curve, based on double-logarithmic function, is used to study the relationship between expenditure and income in terms of elasticity. Household size is included along with income in the regression analyses as it expenditure would generally increase with the number of household members. The regression equation takes the form shown below:

$$ln\ C_i = \alpha + \beta\ ln(\text{income}) + \sigma\ ln(\text{household size}) + \varepsilon$$

where

C_i is the level of expenditure of the ith category.

The regression coefficients of *ln*(income) and *ln*(household size) represent the income elasticity and household size elasticity respectively. Income or household size elasticity indicates, at a given price, the percentage change in expenditure as a result of a one-percent change in income or household size. Analysis is based on monthly expenditure on each of the following six categories:

- Food
- Clothing
- Education
- Electricity, water and telephone
- Agricultural goods and services, and
- Other goods and services.

4.2 EXPENDITURE PATTERNS OF AGRICULTURAL HOUSEHOLDS IN SELANGOR

The agricultural households in Selangor incur, on average, RM432.9 per month on consumption expenditure. The median income indicates that half of the households spend less than RM376.7 per month, while the other half spend more than RM376.7. Table 4.1 shows that 14.4 percent of the households spend less than RM200; 40.3 percent spend between RM200 to less than RM400; 25.0 percent spend between RM400 to less than RM600; and 20.3 percent spend at least RM600 per month. The median expenditure (RM415.9) of households headed by those aged 50 years and below is considerably higher than that of households headed by persons over 50 years of age (RM340.8). Only 8.4 percent of the former spend less than RM200, as compared to 20.8 percent of the latter. The observed differences may be explained by the larger number of dependent children among younger heads of households as compared to their older counterparts whose adult children are living elsewhere. As expected, households with fewer members spend slightly less than households of larger size.

In terms of ethnicity, the median household expenditure of the Chinese, which amounts to RM885, is about 2.4 times higher than that of the Malays and Indians. As many as 62 percent of the Chinese households spend at least RM600 per month, while only 17 percent of the Malay households and 15% of the Indian households spend this amount (see Table 4.1). Data show that some 42.5 percent of the Malay households and 51.8 percent of Indian households spend between RM200 and RM400. Household expenditure is strongly and positively correlated with educational level of the heads of

Table 4.1: Percentage Distribution of Agricultural Households by Broad Category of Monthly Expenditure by Selected Variables

	Household Expenditure					
	<RM200	RM200–RM399	RM400–RM599	≥RM600	Total	Median (RM)
Overall	14.4	40.3	25.0	20.3	100(8092)	376.7
Age						
≤50	8.4	39.3	28.2	24.0	100(4211)	415.9
>50	20.8	41.4	21.5	16.2	100(3849)	340.8
Ethnicity						
Malays	15.5	42.5	25.0	17.0	100(7220)	362.4
Chinese	3.8	10.0	24.4	61.9	100(603)	885.0
Indians	6.7	51.8	26.5	15.0	100(253)	367.2
Education level						
No formal education	26.5	43.4	17.9	12.2	100(2381)	308.3
Primary	10.4	42.3	28.0	19.4	100(4011)	387.4
Lower secondary	8.8	33.6	27.9	29.7	100(818)	454.4
Upper secondary	5.7	31.4	29.2	33.7	100(742)	488.5
Tertiary	–	20.1	20.9	59.0	100(139)	630.5
Occupation						
Agriculture	15.9	45.0	23.0	16.1	100(4491)	351.4
Non-agriculture	7.3	32.4	30.1	30.2	100(2866)	468.4
Household size						
1–3	34.3	43.1	14.8	7.8	100(962)	272.8
4–6	12.8	43.5	24.6	19.1	100(3107)	370.8
>6	10.7	37.2	27.8	24.3	100(4010)	414.9
District						
Hulu Langat	12.9	33.4	31.8	21.9	100(566)	423.3
Klang	17.7	29.7	29.3	23.3	100(764)	417.9
Kuala Langat	9.9	45.3	31.1	13.7	100(395)	377.1
Kuala Selangor	16.7	47.7	23.2	12.4	100(3147)	399.8
Sabak Bernam	13.6	32.3	22.9	31.2	100(1817)	435.8
Sepang	9.3	40.8	25.8	24.1	100(1342)	399.6

Note: Median is calculated using group data.

households. Those who are engaged in the non-agricultural occupation are more likely to have a higher monthly expenditure as compared to those engaged in agricultural work.

Pronounced variations in household consumption expenditure can be observed across the 6 districts under study. Sabak Bernam has the highest median household expenditure per month (RM435.8) and Kuala Langat the lowest (RM377.1). The proportion of households with monthly expenditure of more than RM600 is highest in Sabak Bernam and lowest in Kuala Selangor.

The median monthly household expenditure by selected variables within each category of household size is shown in Table 4.2. Regardless of the age of the heads of households, the median household expenditure increases with household size. For large households (with more than 6 members) the difference in median household expenditure between younger heads and older heads is relatively small (RM77.0) compared to that of medium household size (RM96.0) and small household size (RM102.5) households. For the Malays and Chinese, the median household expenditure increases according to the household size, but for the Indians, the median household expenditure is highest for household with 4 to 6 members. For all educational levels and occupations (of the heads of households), the median household expenditure is positively correlated with household size. With the exception of Klang, household expenditure increases monotonically with household size.

Table 4.2: Median Monthly Household Expenditure by Selected Variables by Household Size

	Household Size		
	1–3	4–6	>6
Age			
≤50	302.5	396.0	452.0
>50	200.0	300.0	375.0
Ethnicity			
Malays	240.0	350.0	393.0
Chinese	537.0	650.0	700.0
Indians	305.0	391.5	375.0
Education level			
No formal education	196.0	282.0	330.0
Primary	260.0	360.0	420.0
Lower secondary	355.0	422.0	542.5
Upper secondary	350.0	460.0	545.0
Tertiary	515.0	720.0	790.0
Occupation			
Agriculture	240.5	320.0	380.0
Non-agriculture	333.0	445.0	500.0
District			
Hulu Langat	201.0	402.5	455.0
Klang	260.0	420.0	410.0
Kuala Langat	200.0	332.0	400.0
Kuala Selangor	235.0	325.0	358.0
Sabak Bernam	305.0	430.0	470.0
Sepang	285.0	375.0	440.0

Table 4.3 presents the median monthly household expenditure by selected variables for the three main ethnic groups. Among the Malays and the Chinese, median household expenditure increases directly with the education level of household heads. However, among the Indians, the median household expenditure is highest among households headed by those with tertiary education (RM1075.0) followed by those who have primary education (RM383.0) and lower secondary education (RM377.5). The median expenditure of households with household heads in the non-agricultural activities is higher than that of households whose heads are in the agricultural activities,

and this is true for all ethnic groups. However, it is interesting to note that the occupational differences in monthly expenditure are much more pronounced among the Malays and the Indians as compared to the Chinese. Among the Malays, the median household expenditure is highest in Hulu Langat (RM417.5), followed by Klang and Sepang. As for the Chinese, the median household expenditure is highest in Sepang (RM830.0), followed by Sabak Bernam (RM720.0). Among the Indians, Sabak Bernam has the highest median household expenditure (RM480.0) and Kuala Selangor the second highest (RM391.0).

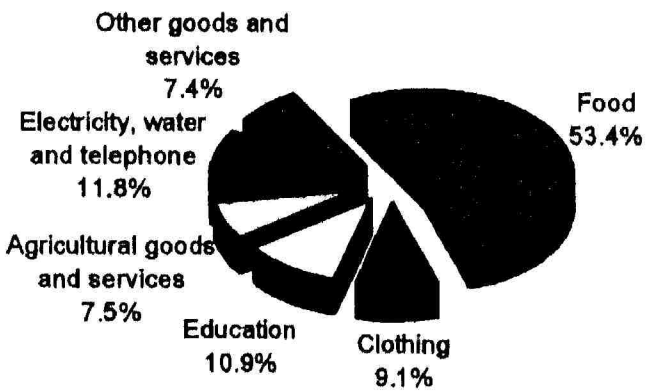
Table 4.3: Median Monthly Household Expenditure by Selected Variables by Ethnicity

	Ethnicity		
	Malays	Chinese	Indians
Education level			
No formal education	274.5	610.0	335.0
Primary	370.0	675.0	383.0
Lower secondary	420.0	740.0	377.5
Upper secondary	470.0	837.5	340.0
Tertiary	709.0	1200.0	1075.0
Occupation			
Agriculture	324.0	675.0	350.0
Non-agriculture	440.0	685.0	455.5
District			
Hulu Langat	417.5	–	–
Klang	400.0	–	–
Kuala Langat	360.0	400.0	–
Kuala Selangor	319.5	430.0	391.0
Sabak Bernam	350.0	720.0	480.0
Sepang	400.0	830.0	350.0

4.3 COMPOSITION OF MONTHLY HOUSEHOLD EXPENDITURE

Looking at the farm household expenditure patterns by the various expenditure categories, Figure 4.2 shows that the largest portion of their budget is incurred on food, which accounts for 53.4 percent of total expenditure. Expenditure on electricity, water and telephone ranks second, accounting an average of 11.8 percent of the household's budget. Expenditure on education ranks third, accounting for 10.9 percent. The remaining categories; clothing, agricultural goods and services as well as other goods and services carry relatively less weight in the expenditure pattern of the households. Less than 10 percent of the budget is allocated to each of these categories and together they account for about 24 percent of the budget.

Figure 4.2: Composition of Monthly Household Expenditure



4.3.1 Composition of Monthly Household Expenditure According to the Levels of Expenditure

Table 4.4 shows that for all levels of expenditure, food accounts for the largest share of households' budget. However, it is interesting to note that the higher the level of expenditure, the lower the proportion is spent on food. Households with monthly expenditures of below RM200 use 65.5 percent of their total expenditure on food compared to 44 percent for households with monthly expenditures of RM600 and above.

The proportionate share of household spending on electricity, water and telephone is inversely related with total expenditure. The amount spent on these items is only about 10.9 percent for households with monthly expenditure of RM600 and above, compared to 17.1 percent among those with monthly expenditure of less than RM200. In contrast, the proportionate share of spending on clothing, education, agricultural goods and services; and other goods and services increases with the level of expenditure. Households with monthly expenditure below RM200 allocate only about 1.3% of their budget on other goods and services, as compared to 12.8% among households with monthly expenditure of RM600 and above (1.3%) and households with monthly expenditure of RM600 and above (12.8%).

Table 4.4: Composition of Monthly Household Expenditure by Household Expenditure Category

Type of Spending	Household Expenditure Category			
	<RM200	RM200–RM399	RM400–RM599	≥RM600
Food	65.5	62.3	55.9	44.0
Clothing	6.0	7.8	8.5	10.8
Education	6.1	9.5	12.2	11.6
Electricity, water and telephone	17.1	12.5	11.4	10.9
Agricultural goods and services	3.9	5.2	6.8	9.8
Other goods and services	1.3	2.7	5.2	12.8
Total	100.0	100.0	100.0	100.0
Sample size	1162	3265	2023	1642

4.3.2 Composition of Monthly Household Expenditure by Household Size

Household size provides sharp differentials in the expenditure patterns on clothing, education and other goods and services (see Table 4.5). The amount spent on clothing decreases from 10.8 percent of total expenditure among small households to 10.1 percent among medium households and 8.1 percent among large households. The proportion of expenditure on other goods and services also drops from 10.7 percent (small households) to 8.3 percent (medium households) and 6.2 percent (large households). On the other hand, the proportionate share of educational expenditure is directly related to household size, as the larger households are much more likely to have school-going children. The proportionate amount spent on food items to total expenditure does not seem to vary by household size, hovering around 53 percent regardless of household size.

Table 4.5: Composition of Monthly Household Expenditure by Household Size

Type of Spending	Household Size		
	1–3	4–6	>6
Food	53.0	53.4	53.4
Clothing	10.8	10.1	8.1
Education	3.6	10.3	12.5
Electricity, water and telephone	12.3	11.3	12.0
Agricultural goods and services	9.6	6.6	7.8
Other goods and services	10.7	8.3	6.2
Total	100.0	100.0	100.0
Sample size	962	3107	4010

4.3.3 Composition of Monthly Household Expenditure by Income Group

In this sub-section, income refers to that of the heads of households, as information on the earnings of other household members was not collected for this survey. The proportionate share of household expenditure on food to total expenditure decreases from 63.6 percent among the "lowest" income group to 44.5 percent among the "highest" income group in this sample. This conforms to Engel's Law, which states that the proportion of expenditure on food is inversely related to income.

The proportionate share of expenditure on clothing to total expenditure varies from 5.8 percent among those with a monthly income of less than RM200 to 10.6 percent among those with a monthly income of RM1,000. Educational expenses account for about 8.4 percent of total household expenditure among those with an income of less than RM200 per month; the figure increases to 10.3 percent among those in the RM200-399 income group and around 12 percent for those with an average monthly income of 400 and above. In terms of expenditure on agricultural goods and services, the proportion of household budget spent on this category for households with monthly income of RM1,000 and above is nearly 3 times that of those with a monthly income of less than RM200. The proportionate spending on electricity,

water and telephone decreases as income increases, ranging 10.7 percent to 16.2 percent. Expenditure on other goods and services (14.2%) makes up about 14.4 percent of total household expenditure among the "highest" income group, but it is much less for those from the "lower" income groups.

Table 4.6: Composition of Monthly Household Expenditure by Income Group

Type of Spending	Income Group				
	<RM200	RM200–RM399	RM400–RM599	RM600–RM999	≥RM1000
Food	63.6	59.4	57.2	52.3	44.5
Clothing	5.8	8.3	7.8	10.1	10.6
Education	8.4	10.3	11.9	11.0	10.7
Electricity, water and telephone	16.2	12.6	11.6	11.8	10.7
Agricultural goods and services	3.2	6.6	7.2	7.0	9.3
Other goods and services	2.8	2.8	4.3	7.8	14.2
Total	100.0	100.0	100.0	100.0	100.0
Sample size	508	2397	2156	1749	1076

4.4 ENGEL CURVE ANALYSIS

The results of the estimated Engel curves are shown in Table 4.7. For total household expenditure as well as all the six expenditure categories, the regressions are significant at the one- percent level. The R^2s indicate that the function fits the data fairly well. Income elasticity is less than unity for all six categories of expenditure. This indicates the expenditure is inelastic with respect to income. In other words, a one- percent increase in income produces less than one- percent increases in spending on these items. In this sample, a 1-percent increase in income will result in an increase spending of about 0.5 percent on food; 0.6 percent on clothing; 0.3 percent on

education; about 0.5 percent on electricity, water and telephone and nearly 1 percent on other commodities.

The elasticity of household size on expenditure is shown in Table 4.7. On the whole, these values are rather small, ranging from 0.007 to about 0.4. In terms of statistical significance, the coefficients for clothing and agriculture goods are not significantly different from zero while the rest are significant at 1- percent level. Household size elasticity for the other goods and services is negative while the rest are positive. These estimated values indicate that when household size is twice as large, expenditure on food; clothing; electricity, water and telephone; and on agricultural goods and services would increase by some 20 percent each, while educational expenses would increase by 37 percent The least affected is expenditure on clothing, increasing by a mere 0.7 percent.

Table 4.7: Result of Engel Curve Analysis

Type of Spending	Significance of Equation (p value)	R^2	Income Elasticity	Household Size Elasticity
Overall	0.000	0.522	0.616 **	0.177 **
Food	0.000	0.400	0.466 **	0.187 **
Clothing	0.000	0.211	0.559 **	0.007
Education	0.000	0.114	0.337 **	0.367 **
Electricity, water and telephone	0.000	0.216	0.459 **	0.2 **
Agricultural goods and services	0.000	0.081	0.405 **	0.022
Other goods and services	0.000	0.436	0.997 **	-0.105 **

** Significant at 1 percent level

4.5 DIFFERENTIALS IN HOUSEHOLD EXPENDITURE ACCORDING TO THE AGE OF HEADS OF HOUSEHOLDS

Households headed by those who are age 50 years and below spend on average RM472.8 per month on consumption expenditure while households headed by those who are above 50 years of age spend on average RM389.4 per month. Table 4.8 shows that households with younger heads spend relatively more on clothing, education and other goods and services compared to households with households headed by older persons. On the other hand, households with older heads spend relatively more on food, electricity, water and telephone; and agricultural goods and services. The age of household heads is related to the number of schooling children in a household. Household heads who are below 50 years of age are much more likely to have school-going children as compared to those who are older, and this explains the higher proportion of household budget on education among younger heads of households as compared to their older counterparts (Table 4.8).

Table 4.8: Composition of Monthly Household Expenditure by Age Group

Type of Spending	Age Group	
	50 and below	Above 50
Food	52.4	54.6
Clothing	9.9	8.0
Education	11.9	9.7
Electricity, water and telephone	10.5	13.4
Agricultural goods and services	6.4	8.9
Other goods and services	8.9	5.4
Total	100.0	100.0
Sample size	4211	3849

An analysis of the income elasticity with respect to expenditure by age group (Table 4.9) shows that among households with younger heads, a one-percent increase in income would result in an increased expenditure of 0.45 percent on food; 0.57 percent on clothing; 0.34 percent on education; 0.56 percent on electricity, water and telephone; 0.33 percent on agricultural goods and services; and 1.09 percent on other goods and services. As for households headed by older persons, a one-percent increase in income will lead to an increased spending of 0.45 percent on food; 0.49 percent on clothing; 0.34 percent on education; 0.42 percent on electricity, water and telephone; 0.48 percent on agricultural goods and services; and 0.84 percent on other goods and services.

The above analysis shows that, in the case of farming communities in Selangor, income is relatively inelastic with respect to household spending on food, clothing, education, electricity, water and telephone, regardless of the age of the heads of households. This is attributed to the fact that all these categories can be considered as necessities. However, a one-percent increase in income results in an increased spending on other goods and services by about one- percent. This indicates that people tend to spend more on these items if they have the extra income.

In comparing the income elasticity between households whose heads are of different age groups, it is found that households with younger heads have relatively higher elasticity with respect to spending on food, clothing; electricity, water and telephone; and other goods and services as compared to those headed by older persons. In contrast, households with older heads of households have higher elasticity for education and agricultural goods and services. The most significant difference in the

income elasticity of the two age groups of households is found in the expenditure on other goods and services (0.84 versus 1.07).

Table 4.9 shows the household size elasticity with respect to expenditure. Household size elasticity for older head households is higher than that of the younger heads of households for all types of spending except on educational expenditure. The sharpest age differentials in household size elasticity are noted in other goods and services category (i.e. between -0.2 and 0.1). Apart from education, household size elasticity with respect to spending is very small, ranging 0.01 to 0.2.

Table 4.9: Income Elasticity and Household Size Elasticity with Respect to Expenditure by Age Group

Type of Spending	Income Elasticity		Household Size Elasticity	
	50 and below	Above 50	50 and below	Above 50
Food	0.449	0.447	0.1890	0.2180
Clothing	0.572	0.491	–0.0551	0.1390
Education	0.339	0.341	0.4950	0.2110
Electricity, water and telephone	0.560	0.416	0.1760	0.1900
Agricultural goods and services	0.330	0.475	0.0110	0.0150
Other goods and services	1.067	0.840	–0.1970	0.0996

4.6 DIFFERENTIALS IN HOUSEHOLD EXPENDITURE ACCORDING TO THE GENDER OF HEADS OF HOUSEHOLDS

Data show that the expenditure patterns of male-headed and female-headed households are not significantly different (Table 4.10). Male-headed households allocated slightly more of their total living expenditure to education; electricity, water and telephone; and other goods and services as compared to female-headed households. This may be explained by the fact that female household heads tend to be

older and therefore have fewer school-going children. On the other hand, female-headed households spend relatively more on food, clothing and agricultural goods and services.

Table 4.10: Composition of Monthly Household Expenditure by Gender

Type of Spending	Gender	
	Male	Female
Food	53.2	54.0
Clothing	9.1	9.2
Education	11.1	10.2
Electricity, water and telephone	7.7	6.2
Agricultural goods and services	11.4	13.5
Other goods and services	7.5	6.8
Total	100.0	100.0
Sample size	6259	1833

Table 4.11 presents the differentials in income elasticity and household size elasticity with respect to the various expenditures by gender of the heads of households. Looking first at the income elasticity, a one-percent increase in income in male-headed households would result in an increased spending by 0.43 percent on food, 0.55 percent on clothing, 0.37 percent on education; 0.38 percent on agricultural goods and services; and nearly 1 percent on other goods and services. For households headed by female, a one-percent increase in income would result in increased spending by 0.52 percent on food; 0.55 percent on clothing; 0.21 percent on education; 0.45 percent on electricity, water and telephone as well as agricultural goods and services; and 0.97 percent on other goods and services. Generally, the differentials in income elasticity according to the gender of the heads of household is not profound

Overall, data show that expenditure on food, clothing, education; electricity, water and telephone; and agricultural goods and services are rather inelastic with an

increase in income, regardless of the gender of the heads of households. Income elasticity with respect to spending on other goods and services is close to unity.

Table 4.11: Income Elasticity and Household Size Elasticity with Respect to Expenditure by Gender

Type of Spending	Income Elasticity		Household Size Elasticity	
	Male	Female	Male	Female
Food	0.428	0.516	0.1680	0.1800
Clothing	0.553	0.547	–0.0371	0.1200
Education	0.372	0.208	0.4130	0.2600
Electricity, water and Telephone	0.465	0.454	0.2010	0.2080
Agricultural goods and Services	0.381	0.446	–0.0111	0.1060
Other goods and services	0.996	0.965	–0.1350	–0.0305

In examining the household size elasticity, we found that on the whole, the values are small ranging from 0.01 to 0.41. For clothing and agricultural goods and services, household size elasticity for male is negative as against positive values for female. Household size elasticity for other goods and services is negative for both male and female. Sharp differential in household size elasticity between male and female is observed on education category where the corresponding value for male is 0.413 as compared to 0.26 for female. Male-headed households which are larger by 1 percent in size tend to spend 0.41 percent more on education, as compared to 0.26 percent among female-headed households.

4.7 DIFFERENTIALS IN HOUSEHOLD EXPENDITURE ACCORDING TO ETHNICITY OF THE HEADS OF HOUSEHOLDS

The expenditure of Chinese households is found to be the highest among the three main ethnic groups. On average, Chinese households spend RM738.6 per month as against RM407.3 among Malay households and RM434.6 among Indian households. Table 4.12 shows profound differences in the expenditure patterns of the ethnic groups. Indian households spend proportionately more on food as compared to Malay and Chinese households. Expenditure on food accounted for 61.9 percent in Indian households compared to 53.4 percent for Malay households and 51.3 percent for Chinese households. Expenditure on clothing ranks second to food for Indian households, accounting to 14.3 percent of household's budget, compared to only 8.4 percent and 12.7 percent for Malay households and Chinese households respectively. Chinese households spend relatively more on electricity, water and telephone as well as other goods and services. Malay households, on the other hand, allocate relatively larger proportion of their budget to education and agricultural goods and services. The most significant difference in the expenditure pattern by ethnicity is found in other goods and services category with allocation ranging from 3.7 percent among Indian households to 15 percent among Chinese households. Marked difference in expenditure is also noted in the agricultural goods and services category where the corresponding allocation of Malay households is 8.6 percent, compared to 4.3 percent of Indian households and 0.9 percent of Chinese households.

Table 4.12: Composition of Monthly Household Expenditure by Ethnicity

Type of Spending	Ethnicity		
	Malays	Chinese	Indians
Food	53.3	51.3	61.9
Clothing	8.3	12.7	14.3
Education	11.6	8.0	6.1
Electricity, water And Telephone	11.8	12.1	9.7
Agricultural goods and Services	8.6	0.9	4.3
Other goods and services	6.4	15.0	3.7
Total	100.0	100.0	100.0
Sample size	7220	603	253

Further analysis of the pattern of expenditure on food by ethnicity is presented in Table 4.13. About 30 percent of Malay households spend RM100 to RM199 per month on food compared to only 5.6 percent of Chinese households and 16.6 percent of Indian households. Majority (44.7%) of Indian households spend between RM200 to RM299 per month on food. The proportion of Chinese households that spend RM300 and more on food (76.7%) is at least twice as large as that of Malay households (30.2%) and Indian households (36.4).

Table 4.13: Percentage Distribution of Households by Level of Expenditure on Food by Ethnicity

Ethnicity	Expenditure on Food				
	<RM100	RM100–RM199	RM200–RM299	≥RM300	Total
Malays	7.2	30.2	32.4	30.2	100(7170)
Chinese	0.3	5.6	17.4	76.6	100(591)
Indians	2.4	16.6	44.7	36.4	100(253)

As for the pattern of household expenditure on education, there are some variations between the Indian households and non-Indian households. About 92 percent of the Indian households spend less than RM100 per month on education compared to 69.8 percent for Chinese households and 57.9 percent for Malay households. Proportion of Chinese households that spend more than RM100 per month is marginally higher than the Malay households.

Table 4.14: Percentage Distribution of Households by Level of Expenditure on Education by Ethnicity

Ethnicity	Expenditure on Education				
	<RM100	RM100–RM199	RM200–RM299	≥RM300	Total
Malays	69.8	22.0	5.8	2.3	100(4414)
Chinese	57.9	31.7	6.5	3.9	100(356)
Indians	91.9	7.0	-	1.1	100(67)

Table 4.15 provides the income elasticity with respect to expenditure by ethnicity. It is found that among the Malay households, a one-percent increase in income would result in an increased expenditure of 0.4 percent on food; 0.5 percent on clothing; 0.3 percent on education; 0.4 percent on electricity, water and telephone as well as agricultural goods and services and 0.9 percent on other goods and services. Among the Chinese, a one-percent increase in income would lead to an increased spending of 0.6 percent on food as well as education; 0.7 percent on clothing; 0.5 percent on electricity, water and telephone; 0.06 percent on agricultural goods and services and 1.3 percent on other goods and services. As for Indian households, a one-percent increase in income would result in an increased spending of about 0.4 percent

on food as well as electricity, water and telephone; 0.2 percent on education as well as agricultural goods and services; 1.1 percent on other goods and services.

The estimated income elasticity for the various categories of expenditures also show that spending on food, clothing, education; electricity, water and telephone; and agriculture goods is rather inelastic with changing level of income. On the other hand, the expenditure on other commodities is fairly elastic for Chinese and Indians. For Malays, the income elasticity for other commodities is close to unity.

Comparing the differences in income elasticity between the three main ethnic groups, it seems that Chinese households have higher elasticity for five of the expenditure categories as compared to the Malay and Indian households. Malay households, on the other hand, have higher elasticity for agricultural goods and services (0.42) compared to the Chinese (0.063) and Indian households (0.2), and this can be explained by the fact that the Malays are more likely to be engaged in agriculture as compared to the Chinese and Indians.

Sharp differentials in income elasticity with respect to spending on clothing can be observed between Chinese households (0.672) and Indian households (–0.089); as well as in the agricultural goods and services category between Malay households (0.421) and Chinese households (0.063).

Table 4.15: Income Elasticity with Respect to Expenditure by Ethnicity

Type of Spending	Income Elasticity		
	Malays	Chinese	Indians
Food	0.433	0.562	0.418
Clothing	0.509	0.672	–0.089
Education	0.320	0.598	0.223
Electricity, water and telephone	0.411	0.532	0.442
Agricultural goods and services	0.421	0.063	0.201
Other goods and services	0.928	1.307	1.194

households whose heads have no formal education to RM500.5 for households headed by persons who have lower secondary and RM788.7 for those with have tertiary education. Table 4.17 shows that households whose heads have no formal education allocate larger proportions of their budget on food, electricity, water and telephone; and agricultural goods and services as compared to those who are better educated. In fact, expenditures on these three categories decrease as education level of heads increases. On the other hand, expenditures on clothing, education and other goods and services increase according to the education level. Large differentials in household expenditure are found in other goods and services across educational groups--the proportion of household budget on these items increases from 5.5 percent among heads with no formal schooling to 11.1 percent among those with lower secondary education and 15.8 percent among those with tertiary education.

Table 4.17: Composition of Monthly Household Expenditure by Selected Educational Levels of Heads of Households

Type of Spending	Education Level of household heads		
	No Formal Education	Lower Secondary	Tertiary
Food	55.4	49.9	43.4
Clothing	8.4	10.6	13.2
Education	9.8	10.7	13.4
Electricity, water and telephone	8.7	6.5	4.8
Agricultural goods and services	12.2	11.2	9.4
Other goods and services	5.5	11.1	15.8
Total	100.0	100.0	100.0
Sample size	2381	818	139

Looking at the household expenditure pattern on food (see Table 4.18), about 52 percent of households whose heads have no formal education spend less than RM200 on food per month, as compared to 25 percent of households whose heads

have lower secondary education and 11.5 percent of households whose heads have tertiary education. Fully 64 percent of households whose heads have tertiary education spend at least RM300 on food per month. Much of the observed differences in expenditure across educational groups may be explained by the strong positive correlation between education and income.

Household expenditure on education is directly related to educational level of the heads of households (see Table 4.19). Such differentials can be explained largely by the fact that the income effects are associated with education.

Table 4.18: Percentage Distribution of Households by Level of Expenditure on Food by Selected Education Levels of Heads of Households

Education level	Expenditure on Food				
	<RM100	RM100–RM199	RM200–RM299	≥RM300	Total
No formal education	12.8	39.1	26.3	21.8	100(2352)
Lower secondary	3.0	21.7	35.9	39.4	100(812)
Tertiary	2.9	8.6	24.5	64.0	100(139)

Table 4.19: Percentage Distribution of Households by Level of Expenditure on Education by Selected Education Levels of Heads of Households

Education level	Expenditure on Education				
	<RM100	RM100–RM199	RM200–RM299	≥RM300	Total
No formal education	71.9	21.1	5.1	1.9	100(1146)
Lower secondary	68.2	23.3	5.6	2.9	100(554)
Tertiary	29.3	38.4	19.2	13.1	100(99)

Table 4.20: Income Elasticity with Respect to Expenditure by Selected Education Levels

Type of Spending	Income Elasticity		
	No Formal Education	Lower Secondary	Tertiary
Food	0.478	0.400	0.426
Clothing	0.571	0.550	0.666
Education	0.310	0.270	0.453
Electricity, water and telephone	0.352	0.585	0.340
Agricultural goods and services	0.592	0.223	0.379
Other goods and services	0.849	0.946	0.985

Table 4.20 shows the differentials in income elasticity with respect to expenditure by education level of household heads. For those with no formal education, a one-percent increase in income would result in an increased spending in most expenditure categories: 0.48 percent more on food; 0.57 percent more on clothing; 0.31 percent more on education; 0.35 percent more on electricity, water and telephone; 0.59 percent more on agricultural goods and services; and 0.85 percent more on other goods and services. As for heads with lower secondary education, a one-percent increase in income would lead to an increased spending of 0.4 percent on food; 0.55 percent on clothing; 0.27 percent on education; 0.59 percent on electricity, water and telephone; 0.22 percent on agricultural goods and services; and 0.95 percent on other goods and services. On the other hand, among heads with tertiary education, a one-percent increase in income would result in increased spending by 0.43 percent on food; 0.67 percent on clothing; 0.45 percent on education; 0.34 percent on electricity, water and telephone; 0.38 percent on agricultural goods and services; and nearly 1 percent on other goods and services.

The estimated income elasticity in Table 4.20 also suggests that for the three education levels, household demand for all categories is inelastic. Next, we observe

that for heads of households with no formal education, income elasticity is relatively higher for food (0.478) and agricultural goods and services (0.592) compared to other groups. For households headed by those with lower secondary education, income elasticity for electricity, water and telephone is higher than the other educational groups. Lastly households headed by those with tertiary education, income elasticity is higher for clothing, education and other goods and services.

Table 4.21 shows that apart from the education category, household size elasticity is small across all education levels considered. For education category, household size elasticity of households headed by those with no formal education is only 0.296 compared to 0.681 and 0.615 among households headed by those with lower secondary education and tertiary education respectively.

Table 4.21: Household Size Elasticity with Respect to Expenditure by Selected Education Levels

Type of Spending	Household Size Elasticity		
	No Formal Education	Lower Secondary	Tertiary
Food	0.1910	0.1550	0.2550
Clothing	0.0967	–0.1410	0.0076
Education	0.2960	0.6810	0.6150
Electricity, water and telephone	0.1970	0.1990	0.0304
Agricultural goods and services	–0.0640	–0.0978	–0.1890
Other goods and services	0.0415	–0.2630	–0.1420

4.9 DIFFERENTIALS IN HOUSEHOLD EXPENDITURE ACCORDING TO OCCUPATION OF HEADS OF HOUSEHOLDS

In this section, we will examine the expenditure patterns between households with household heads are engaged in the agriculture sector and non-agriculture sector. The expenditure of households with household heads in non-agriculture activities is

higher than that of households whose heads are in agriculture sector. Total expenditure of households headed by those in the non-agriculture sector averaged RM514.1, compared to RM304.7 for household in the agriculture sector. According to Table 4.22, households in the agriculture sector spend relatively more on food and agricultural goods and services as compared to households in the non-agriculture sector. On the other hand, households in the non-agriculture sector spend relatively more on clothing, education; electricity, water and telephone; and other goods and services. As expected, the sharpest expenditure differential between the two groups occurs in the agricultural goods and services category where the difference is relatively large (see Table 4.22).

Table 4.22: Composition of Household Expenditure by Occupation of Heads of Households

Type of Spending	Occupation	
	Agriculture	Non-agriculture
Food	53.6	51.9
Clothing	8.6	10.0
Education	10.3	11.9
Electricity, water and telephone	10.6	12.5
Agricultural goods and services	11.5	3.2
Other goods and services	5.4	10.4
Total	100.0	100.0
Sample size	4491	2866

Table 4.23 shows the pattern of household expenditure on food by occupation of heads of households. About 40 percent of households whose heads are engaged in the agricultural activities spend less than RM200 per month on food compared to about 21 percent of households whose heads are engaged in the non-agricultural activities. For household expenditure on food that is RM300 and more, there are 46.4 percent of

households whose heads engage in the non-agricultural activities fall into this expenditure range as against 27.6 percent of households whose heads engage in the agricultural activities.

Table 4.23: Percentage Distribution of Households by Level of Expenditure on Food by Occupation of Heads of Households

Occupation	Expenditure on Food				
	<RM100	RM100–RM199	RM200–RM299	≥RM300	Total
Agriculture	7.6	32.7	32.1	27.6	100(4468)
Non-agriculture	2.8	18.3	32.5	46.5	100(1245)

The differences in income elasticity between two occupational groups of household heads are small as shown in Table 4.24. Among heads of households who are engaged in the agriculture sector, a one-percent increase in income will result in increased household spending by 0.46 percent on food; 0.54 percent on clothing; 0.3 percent on education; 0.4 percent on electricity, water and telephone; 0.66 percent on agricultural and 1.02 percent on other goods and services. For heads of households who are engaged in the non-agriculture sector, a one-percent increase in income will lead to increased household spending by 0.4 percent on food; 0.57 percent on clothing; 0.32 percent on education; 0.43 percent on electricity, water and telephone; 0.32 percent on agricultural goods and services and 1.01 percent on other goods and services. For both sectors, spending for electricity, water and telephone and agricultural goods and services is inelastic but spending for other goods and services is elastic with respect to increase in income.

The estimated income elasticity also indicates that households in agriculture sector tend to spend proportionately more on food and agricultural goods and services compared to household in non-agriculture sector. For the remaining categories, income elasticity is marginally higher for non-agriculture sector than the agriculture sector.

Table 4.24 also shows the household size elasticity on spending by occupation. The values for household size elasticity with respect to spending are generally small, except for spending on education. Furthermore, differentials in household size elasticity between occupations are not profound. For clothing as well as agricultural goods and services, the corresponding household size elasticity is negative in the case of agriculture sector and positive in the case of non-agriculture sector. However, these values are found to be not statistically significant at 0.01 level.

Table 4.24: Income Elasticity and Household Size Elasticity with Respect to Expenditure by Occupation of heads of Households

Type of Spending	Income Elasticity		Household Size Elasticity	
	Agriculture	Non-agriculture	Agriculture	Non-agriculture
Food	0.455	0.404	0.188	0.2180
Clothing	0.542	0.566	–0.025	0.0453
Education	0.304	0.315	0.360	0.4160
Electricity, water and telephone	0.409	0.432	0.228	0.2130
Agricultural goods and services	0.657	0.323	–0.043	0.1250
Other goods and services	1.022	1.010	–0.078	–0.1070

4.10 MULTIVARIATE ANALYSIS OF TOTAL MONTHLY HOUSEHOLD EXPENDITURE

This section presents the results of the multiple classification analysis (MCA) of total monthly household expenditure. The explanatory variables used are age, gender, household size, district, ethnicity, education, occupation and income.

Table 4.25: Analysis of Variance (ANOVA) on Household Expenditure by Selected Variables

Sources of Variation	Hierarchical Method			
	Sum of Squares	DF	Mean Square	F
Main effects	2.9E+08	31	9303872.0	220.1
Age	2.2E+07	4	5560770.0	131.5
Gender	9688414.0	1	9688414.0	229.2
Ethnicity	5.6E+07	2	2.8E+07	667.5
Education level	3.4E+07	4	8376794.0	198.2
Occupation	3.0E+07	9	3296873.0	78.0
Household size	9690467.0	2	4845234.0	114.6
District	4384045.0	5	876808.9	20.7
Income	1.2E+08	4	3.1E+07	726.2
Summary				
Explained	1.7E+08	31	9303872.0	220.1
Residual	4.3E+08	7096	42274.5	
Total	6.0E+08	7127	82559.3	

Note: All F values are significant at less than 1 percent level.

Table 4.25 presents the results of ANOVA of total monthly household expenditure. All the variables considered have significant effects on household expenditure. Two-way interactions are found to be mostly insignificant and hence MCA, which is an additive model, is deemed suitable for this analysis. Looking at Table 4.26, all the explanatory variables used in the analysis explain 49 percent of the total variance in household expenditure. Based on the eta values, income is the most significant explanatory variables of household expenditure at the bivariate level,

followed by ethnicity, occupation, and education in that order. Age, district, household size and gender provide little differentials in expenditure. Within the multivariate context, income still stands out as the most important explanatory variable, followed by ethnicity, education level and household size.

Table 4.26: Eta, Beta and Model Goodness of Fit

Variable	Eta	Beta
		Adjusted for Factors
Age	0.194	0.063
Gender	0.134	0.052
Ethnicity	0.316	0.155
Education level	0.266	0.090
Occupation	0.309	0.081
Household size	0.160	0.085
District	0.194	0.077
Income	0.661	0.566
$R = 0.70$ $R^2 = 0.49$		

Table 4.27 summarizes the effects of gender, household size, district, age, ethnicity, education, occupation and income on household expenditures. At the bivariate level, household expenditure tends to be negatively related to the age of the heads of households. While the same relationship generally holds true after controlling for the effects of all other variables in the model, the differentials have narrowed considerably. This may be explained by the fact that the younger heads of households are better educated and hence command better pay. Controlling for education and other variables explain away a large part of the difference observed across different age groups.

Table 4.27: Multiple Classification Analysis (MCA) of Household Expenditure Selected Variables

Variable	N	Unadjusted means	Adjusted means
Age			
<30	472	423.60	399.49
30–39	1387	490.60	448.09
40–49	1746	498.73	466.69
50–59	178	465.07	460.94
≥60		356.92	433.69
Gender			
Male	5648	468.87	456.84
Female	1480	373.76	419.68
Ethnicity			
Malays	6307	421.76	433.85
Chinese	575	755.31	593.60
Indians	246	435.07	503.01
Education level			
No formal education	2013	363.04	421.68
Primary	3546	451.19	450.23
Lower secondary	762	510.87	467.41
Upper secondary	677	557.50	478.29
Tertiary	130	799.29	584.82
Occupation			
Paddy farmers	1746	463.02	466.61
Rubber tappers	165	483.38	515.22
Oil palm growers	639	411.40	439.40
Other crops growers	752	320.79	427.75
Livestock keepers/ estate workers / fishermen	363	415.03	412.96
Other agricultural workers	688	316.43	316.26
Businessmen	493	611.27	491.43
Factory workers	364	472.52	442.93
Government servants	818	591.59	457.59
Other non-agricultural workers	1110	438.39	440.86
Household size			
1–3	787	331.40	398.12
4–6	778	439.81	435.72
≥6	3563	482.39	470.84
District			
Hulu Langat	423	493.70	447.57
Klang	673	449.94	457.54
Kuala Langat	390	407.82	478.91
Kuala Selangor	2712	390.91	457.53
Sabak Bernam	1710	529.97	459.53
Sepamg	1220	462.50	402.21
Income			
<200	363	182.18	238.34
200–399	2131	287.53	313.77
400–599	1945	396.92	398.40
600–999	1652	531.71	515.10
≥1000	1037	840.99	791.10

In terms of gender, average expenditure is higher for male-headed households (RM468.87), as compared to female-headed households (RM373.76). After controlling for all variables, average expenditure for male-headed households remains practically unchanged (RM456.84) while that of female-headed households increases to RM419.68. The increase in income of female heads of households in the multivariate context can be attributed to their disadvantaged position with respect to education and occupation, hence controlling for these variables would have statistically removed part of this disadvantage.

In terms of ethnicity, the reported expenditure ranges from RM421.76 among Malay households to RM435.07 among Indian households and RM755.31 among Chinese households. Adjusting for the variations in other variables only reduced the differential marginally. Had all other factors been the same for the three ethnic groups, monthly household expenditure would range from RM433.85 among Malay households to RM503.01 among Indian households and RM593.60 among Chinese households.

We observed earlier the positive correlation between household expenditure and education level of household heads. At the bivariate level, household expenditure ranges from RM363.04 (no formal education) to RM799.9 (tertiary). Adjusting for all other variables in the model has the effect of reducing the mean difference from RM436.25 to RM163.64. Controlling for the differences in other variables, the monthly household expenditure would be RM421.68 for households headed by those with no formal education, compared to RM450.23 among households headed by those with primary education, RM467.41 among those with lower secondary education, RM478.29 among those with upper secondary and RM584.82 among those with tertiary education.

At the bivariate level, occupation of heads of households produces sharp differentials in household expenditure; ranging from RM316.43 (other agricultural workers) to RM611.27 (businessmen). After adjusting for variations in other variables, expenditure differential is reduced from RM294.84 to only RM102.28, reflecting the significance of the indirect effects of other variables.

As for household size, it is found that unadjusted expenditure increases as household size increases; rising from RM331.40 among households with 1 to 3 members to RM470.84 among households with more than 6 persons. After adjusting for all other variables in the model, expenditure differentials by household size still exist but with a much smaller range between of RM398.12 and RM470.84.

Examining the differentials in expenditure by districts, the unadjusted means show that expenditure is highest among households in Sabak Bernam (RM529.98) and lowest among households in Kuala Selangor (RM390.91). However, after adjusting for all variables in the model, the differential is reduced and the highest expenditure is now found among households in Kuala Langat (RM478.91) while households in Sepang has the lowest expenditure (RM402.21).

Among all the variables considered, income of heads of households produces the sharpest differentials in household expenditure, at the bivariate (a range of RM658.81) and multivariate level (a range of RM552.76). At the bivariate level, mean expenditure is RM182.18 for households headed by those who earn less than RM200 per month, and at the other extreme, RM840.99 for households headed by those with income more than RM1000. After adjusting for all variables in the model, mean expenditure increases for households headed by those with income less than RM600 and declines for households headed by those who earn more than RM600.

4.11 SUMMARY

In this chapter, it is shown that in the agricultural communities in Selangor, total monthly household expenditure is relatively higher among households headed by those with higher income, less than 50 years of age, Chinese, have tertiary education, engage in non-agriculture activities, among large households and those living Kuala Langat. The largest portion of the consumption expenditure is incurred on food. The higher the level of expenditure or the income, the lower the proportion spent on food as well as electricity, water and telephone. Pronounced variations occur in the expenditure patterns on clothing, education and other goods and services as household size varies. From the Engel curve analysis, it is found that household expenditure is inelastic with respect to income and household size.

Pronounced ethnic differential in household expenditure, income elasticity and household size elasticity are noted in almost all expenditure categories. The category of agricultural goods and services provides the most significant occupational differentials in household expenditure, income elasticity with respect to expenditure and household size elasticity with respect to expenditure. Large variations in income elasticity with respect to expenditure by education level are observed in the categories of education and agricultural goods and services, while wide differences in household size elasticity with respect to expenditure by education level is noted in the educational expenditure. Multivariate analysis of total monthly household expenditure shows that income is the most important explanatory variable, followed by ethnicity and education.