Gender Differences in Educational Attainments and Occupational Status in Thailand: A study based on Kanchanaburi DSS Data

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Introduction

There are divergent views as regards the status of women in the modern Thai society. On the one hand, Thailand's position in the Gender Development Index (GDI) of the United Nations Development Programme (UNDP) at 0.774 with a global ranking of 57 is one of the highest in the SEA region closely following Malaysia (0.791) (UNDP, 2005). Besides, the achievements, such as a relatively higher literacy level (91%) along with wider adoption of family planning measured in terms of high female contraceptive prevalence rate (CPR) are also important attributes ascribing higher social status of women (Sirirassamee, Setaput and Yoddumnern-Attig, 2003) in Thailand. On the contrary, it has been reported that the high aggregate GDI ranking often disguises the subservient positions occupied by women in many sections of the Thai economy and society (UNDP, 1999). Notably, there are two major developments having significant bearing on the social status of women in particular in the country, *viz.*, a) the problem of gender disparity in educational attainments; and b) the growing share of women labour force. The gender disparity in educational attainments is further evident from the fact that illiteracy rate among women was 9.5 per cent against only 5.1 per cent among men in 2003 (UNDP, 2005). However, despite the lower educational attainments, women occupy a significant share in the workforce in Thailand with a work participation rate (WPR) as high as 64 per cent compared to Philippines (49%) and Indonesia (38%). Reportedly, labour force participation rates in the 13-14, 15-19, and 20-24 age groups are significantly higher among women (Asian Development Bank, 1998, cited in Haque and Chapagain, 2005).

In fact, gender disparity in educational attainments is a cause for concern, as lack of education deprives women in accessing gainful employment opportunities on par with their male counterparts. As a result, despite high work participation rate, women tend to engage in relatively low-skilled, low-status and low and late paid

occupations in segments outside the purview of labour legislation and social protection. However, empirical evidences suggesting gender differences in educational attainments and the gender segregated occupational roles at the disaggregate level are rather limited in the country's context. Though aggregate level studies by National Economic and Social Development Board-NESDB (2004), Knodel and Wongboonsin (2004), and Pattaravanich *et al.* (2005) show that the gender gap favouring boys has narrowed down at the national with a marked transition among the girls to upper secondary and higher education levels, gender inequalities still persist across the rural-urban segments as well as socio-economic groups. A most recent study by Tangchonlatip *et al.* (2006) reported female favoured occupational segregation in Bangkok, which became much more pronounced after the launching of new economic policy driven by export led growth of manufacturing industries. Notwithstanding the above studies, further disaggregate level empirical evidences examining the extent and magnitude of gender disparities in educational attainments and gender segregated occupational roles are highly warranted for consolidation and targeting of national plans and achieving the much hyped gender-specific millennium development goals (MDGs) and eventually to evolve appropriate institutional interventions in region-specific contexts.

Objectives

Set in this backdrop, the present paper examines the gender differences in educational attainments and occupational roles in Thailand based on the Kanchanaburi Demographic Surveillance System (hereafter referred as the KDSS) data. The important objectives of the study are:

a) to examine the gender composition in educational attainments and delineate the magnitude and extent of inter-generational disparity in educational attainments across gender and strata over time;

b) to dissect the gender wise occupational composition of the economically productive age groups and thereby to bring out the occupational dynamism among women across strata over the KDSS rounds;

c) to examine the influence of demographic and socio-economic variables including education on occupational status of the households; and

d) to reflect upon the important policy imperatives emerging from the study.

Data and Methodology

The study makes use of the longitudinal database generated under the KDSS supported by the Wellcome Trust, UK and undertaken by the Institute for Population and Social Research (IPSR), Mahidol University, Thailand. The primary objective of the project is to monitor the changes in demographic and socio-economic fronts of the population in the field sites in Kanchanaburi province in Thailand. The project was also intended to bring out the effects of various development interventions both by the government as well as non-governmental agencies on the villagers living in the KDSS field sites. In the first phase involving five years 2000-2005, the project was envisaged to undertake the census covering 100 villages, categorized into five strata, viz., a) urban/ semi-urban; b) rice economy; c) plantation; d) upland; and e) mixed economy. Accordingly, the data collected during the five rounds of census (2000-2004) pertained to demographic and socio-economic information at three levels, viz., a) villages, b) households and individuals (IPSR, 2005).

However, for the present analysis, the database consists of household level information pertaining to age, gender, educational attainments and occupational status across five strata of villages, *viz.*, a) urban/semi-urban; b) rice economy; c) plantation; d) upland and e) mixed economy[1]. The analysis is confined to the economically active population aged 15-59 years. Since the aggregate level data on educational attainments includes both formal and informal education it poses methodological issues with respect to comparison across age groups. Hence, for analytical comprehension, the present study considers the population in the productive age group of 15-59 years with formal education and defines the same as economically active population (EAP). The educational status is defined in terms of five levels, *viz.*, a) no education; b) elementary education (1-6 years); c) secondary (7-9 years); d) high school (10-12 years); and e) university (13-20 years). Such a detailed break-up in educational levels also enables to understand the process of transition in educational attainments across gender over time.

The choice of method of occupational classification is a ticklish issue. For instance, in Thailand, official statistics published by the National Statistical Organization (NSO) follow two systems of occupational classification; *viz.*, a) the occupational classification followed by the census report on population characteristics (Survey of Population Change); and b) the national labour force survey classification. Methodologically, the Census and Labour Force Survey have used different definitions

of work which have led to varying degrees of underestimation of female labour force participation (Dixon, 1985). For instance, the Census classification which follows a nine fold occupational classification[2] provides only an abstraction of the wide array of occupational roles. On the contrary, the national labour force survey classification provides a broader classification of occupations and is also consistent with the International Standard Classification of Occupations (ISCO) followed by the ILO. As such, the former classification does not provide amble scope for understanding the occupational dynamism in terms of gender differentiated patterns circumscribing the occupational structure in the countryside. Understandably, the occupational dynamism among women as observed in the KDSS is such that some of the crucial occupations, such as factory work, sales, tourism, hotel and restaurants are dominated by females. As a matter of fact, it is important to capture this gender dynamism as most of the occupations as performed by women characteristically involve hazardous and uncongenial working conditions along with sub-optimal wages and inadequate welfare measures and social protection.

Hence, the occupational classification as adopted in the present analysis follows the national labour force survey classification (NSO, 2006). Accordingly, we decompose the occupational structure in the KDSS into 18 categories[3] in order to understand the gender differentiated pattern in occupational roles. Considering the economic significance of women engaged in household work, we define the domestic work performed by housewives as an important occupational category, though the national occupational classification does not consider this as an economic activity. The analysis pertains to the five rounds of KDSS starting from Baseline Survey in round 1 (2000) to round 5 (2004). The paper makes use of both descriptive and quantitative methods in analysing the data.

The rest of the paper is organised into five sections. Section one in its first part, provides a brief discussion on the demographic and socio-economic characteristics of the households covered in the five KDSS rounds. The section then examines the gender-wise composition of population with respect to educational status and the extent of disparity in educational attainments across strata over time. Section two discusses the gender-wise composition of occupational structure and the gender differentiated pattern in occupational roles. Section three examines the correspondence between educational attainments and occupational roles and tries to determine the relative influence of education per se on occupational status of the economically active population. Section four analyses the age and gender specific disparities in educational attainments and

occupational status of the households. Section five concludes the paper by bringing out the policy imperatives emerging from the study.

1. Educational status and gender disparity in educational attainments

At the outset, it may be noted that Kanchanaburi province, which is located in the western part of Thailand, accounts for hardly two per cent (1.2%) of the population in the country. However, the geographical setting of the province is important in that the province shares a long border with Myanmar and provides homeland for a variety of ethnic groups and migrants from Myanmar. A summary of the baseline information about the demographic and socio-economic profile of the households covered in the five rounds of the KDSS surveys are furnished in Table 1.

Table 1: Trends in demographic and socio-economic profile of KDSS households, 2000-2004

Household profile	Round 1 (2000)	Round 2 (2001)	Round 3 (2002)	Round 4 (2003)	Round 5 (2004)
1. Households covered (No.)	11,612	12,657	12,680	12,356	12,462
2. Total population (No.)	42,349	49,457	51,837	52,931	55,221
3. Female population (%)	52.2	51.8	51.9	52.5	52.5
4. Sex ratio (%)	91.6	93.0	92.7	90.5	90.1
5. Family size (No./ household)	3.7	3.9	4.1	4.3	4.4
6. Age distribution of total population					
a) Children (0-14 years)	30.0	29.3	28.6	28.1	27.5
b) Economically active population (15-59 years)	60.4	61.3	62.0	62.4	63.0
c) Elderly (60 years & above)	9.7	9.3	9.4	9.6	9.5
7. Economically active population (Female %)	53.4	52.6	52.1	52.3	52.1
8. Non working population (Male %)	7.3	5.8	6.3	6.4	6.1
9. Non working population (Female %)	17.4	9.1	8.4	8.2	8.5
10. 'No schooling' population (Male %)	8.7	9.8	9.9	9.1	8.4
11. 'No schooling' population (Female %)	14.9	15.4	14.8	14.4	13.4

Source: Household data, KDSS various rounds.

Table 1 shows that there was an increase in the total population in the KDSS from 42,349 in the first round (2000) to 55,221 in the fifth round (2004). As evident

from the Table, the proportion of female population hovers around 52 per cent over the years with the sex ratio showing a decline since 2001. The family size has increased from 3.7 in 2001 to 4.4 in 2004. Age distribution shows that the population in the productive age group of 15-59 years has increased from 60 to 63 per cent between 2000 and 2004. While there was a marginal decline in the 0-14 years' age group, the proportion of elderly has been hovering around 10 per cent since 2001.

While the proportion of economically active persons in the total population has been in the range of 60 to 63 per cent during the five rounds, the proportion of economically active female population has been in the range of 53-52 per cent over time.

Considerable differences exist with respect to the educational as well as working status of the population as the proportions of 'non working' and 'no schooling' population have been the highest among the females compared to males. In absolute terms, though the proportion of non-working male population has declined over time from 7 per cent (2000) to 6 per cent (2004), that of female population has remained the same at above 8 per cent during the last four rounds. Notably, the proportion of females with no-schooling has been higher by about two times that of the male population in all the rounds.

1.1 Gender differences in educational status

In what follows, we examine the gender-wise composition with respect to formal educational attainments. The educational status is classified into five categories, *viz.*, a) no schooling/ education; b) elementary education (1-6 years); c) secondary (7-9 years); d) high school (10-12 years); and e) university (13-20 years). The gender-wise composition of the educational status of the population in the age group of 15-59 years is shown in Table 2.

Table 2: Distribution of total population (15-59 years) by educational status and gender differences

KDSS Round/ population (%)		Educational Status					
		No education	Elementary	Secondary	High school	University	Total (No)
2000	Total population	13.9	58.4	12.1	7.1	8.5	24,029
	Female	64.3	54.1	45.2	44.2	67.3	53.4
2001	Total population	14.9	55.3	11.5	10.2	8.1	28,813
	Female	61.3	53	44.6	45.3	53.5	51.9
2002	Total population	14.5	54	12.3	10.6	8.6	30,669
	Female	59.2	52.8	46	46.1	63.8	52.1
2003	Total population	13.7	53.7	12.8	10.3	9.4	30,879
	Female	60.5	52.7	45.4	47.7	66.9	52.4
2004	Total population	12.8	53	13.4	10.7	10.1	31,747
	Female	61	52.6	44.9	48.1	67.9	52.1

Note: Total figures exclude population with non-formal education and non-response observations.

Source: Household data, KDSS, various rounds.

Table 2 shows a marginal decline in the proportion of total population with no formal education over the five rounds with fluctuations in between. Overall, there has been a significant transition of population from the elementary level to higher levels of educational attainment as evident from the increase in proportion of population with secondary, high school and university education. While the proportion of population with secondary education increased from 12 per cent (2000) to 13 per cent (2004), the proportion of population with high school education has increased from 7 per cent (2000) to close to 11 per cent (2004). Similarly, the proportions of population with university level of education have also increased over time from 9 per cent to 10 per cent during the above periods.

Table 2 also reveals significant gender differences in educational attainments of the population. Primarily, the proportion of females with no formal education has been above that of their male counterparts and the proportion ranged between 60-64 per cent during the five rounds. Though there was a gradual decline in the proportion of women with no formal education, the reported levels are exceedingly high having deleterious effects on gainful employment opportunities accessible by women. The

gender differences in educational attainments is further evident from the contrasting trends that the proportion of females is higher than males at the elementary level while their proportion is lower than males at the secondary and high school levels. Notably, it is a welcome trend that more females enter into higher education as evident from their higher proportions (63-68% during the five rounds) at the university level of education.

Gender differences in education: strata-wise trends

The above analysis shows that the proportions of females outnumber males in the case of population with 'no schooling/ education and elementary level of education, while females lag behind at secondary and high school education levels. In what follows, we examine the gender differences in educational status across the five strata. To get a better understanding of the gender differences in educational attainments, we use the measure of female to male ratio (FMR) at the five levels of education. The ratio above 1 indicates higher share of women population over male population and ratio below 1 indicates lower share of women compared to males. The resultant gender differences in educational attainments across strata are presented in Table 3.

Table 3: Gender differences in educational attainments- strata-wise trends

Educational status/ Strata	2000		2001		2002		2003		2004	
	Total Popu-lation	F/M Ratio	Total Popu-lation	F/M Ratio	Total Popu-lation	F/M Ratio	Total Popu-lation	F/M Ratio	Total Popu-lation	F/M Ratio
Urban/ Semi-urban Economy										
No education	3.7	3.4	3.2	2.6	3.2	2.3	3.2	3.3	2.7	3.5
Elementary	44.9	1.4	42.2	1.4	41.7	1.3	41.2	1.3	40.5	1.3
Secondary	16.5	0.9	15.5	0.8	16.3	0.9	16.4	0.9	16.3	0.8
High school	13.4	0.9	18.4	0.9	18.4	0.9	17.2	1.0	17.5	1.0
University	21.5	1.5	20.7	1.2	20.4	1.0	22.0	1.2	23.0	1.2
Total	5,418	1.6	6,546	1.4	6,671	1.2	6,535	1.5	6,510	1.5
Rice Economy										
No education	7.1	3.5	6.5	3.7	5.7	3.5	5.5	2.5	5.5	2.5
Elementary	72.6	1.2	68.8	1.2	66.0	1.2	65.2	1.2	63.5	1.1
Secondary	11.6	0.9	12.1	1.0	13.2	0.9	14.1	0.8	14.2	0.8
High school	4.9	0.8	8.4	1.0	9.6	1.0	8.9	1.3	10.0	1.2
University	3.8	0.9	4.3	1.3	5.5	1.2	6.3	1.3	6.9	1.4
Total	3,912	1.2	4,462	1.4	4,811	1.3	4,879	1.2	5,265	1.2

Table 3: (Continued)

Educational status/ Strata	2000		2001		2002		2003		2004	
	Total Population	F/M Ratio	Total Population	F/M Ratio	Total Population	F/M Ratio	Total Population	F/M Ratio	Total Population	F/M Ratio
Plantation Economy										
No education	13.1	3.6	11.8	3.9	11.4	3.0	11.0	3.1	10.7	2.9
Elementary	69.5	1.0	70.3	1.0	67.0	1.0	66.1	1.0	65.0	1.0
Secondary	10.4	0.8	9.0	0.7	10.8	0.8	11.6	0.8	12.3	0.9
High school	4.5	0.8	6.1	0.9	7.4	0.8	7.3	0.7	7.0	0.9
University	2.6	1.2	2.8	0.0	3.5	0.8	4.0	0.9	5.1	0.7
Total	3,862	1.1	4,422	1.1	4,720	1.1	4,847	1.1	4,970	1.1
Uplands Economy										
No education	33.5	1.3	38.2	1.2	37.1	1.1	35.0	1.2	31.8	1.2
Elementary	50.3	1.0	45.6	1.0	45.0	1.0	45.1	1.0	45.0	1.0
Secondary	8.7	0.7	8.3	0.8	8.9	0.8	9.6	0.8	11.3	0.8
High school	4.0	0.6	4.7	0.5	5.3	0.7	6.0	0.8	7.2	0.7
University	3.5	0.9	3.2	0.9	3.8	0.8	4.4	0.7	4.8	1.0
Total	5,872	0.9	7,283	0.9	7,938	1.0	7,887	0.9	8,077	1.0
Mixed Economy										
No education	7.9	2.3	8.2	2.2	7.5	1.9	6.8	1.8	7.1	2.0
Elementary	62.7	1.3	60.4	1.3	59.2	1.2	58.9	1.2	57.5	1.2
Secondary	13.0	0.9	12.3	0.8	12.5	0.8	13.2	0.8	13.6	0.8
High school	7.7	0.7	12.0	0.8	12.3	0.8	11.9	0.9	11.7	0.9
University	8.7	1.2	7.1	0.9	8.5	0.9	9.3	0.8	10.1	1.0
Total	4,965	1.3	6,100	1.1	6,529	1.1	6,731	1.1	6,925	1.1

Note: Total figures exclude population with non-formal education and non-response observations. FM ratios indicate ratio of female to male population corresponding to the educational level. The ratio above 1 indicates higher share of women population over male population and ratio below 1 indicates lower share of women population compared to male population.

Source: Household data, KDSS, various rounds.

Table 3 reveals that the highest proportion of population (irrespective of gender) with no formal education has been found in the uplands stratum with the proportion of 'no schooling'/ 'non educated' population ranging from 32-38 per cent during the five rounds. The plantation stratum has shown the next largest proportion of non-educated population (11-13%), followed by mixed economy (6-8%) and the rice economy (5-7%) strata during the period. Conversely, urban/ semi-urban stratum

reported the lowest proportion of non-educated population which also declined from 4 per cent (2000) to 3 per cent (2004). Plantation and rice economy strata reported the highest proportions of population with elementary level of education and the proportions ranged from 70-65 and 73-64 per cent respectively. Urban/ semi-urban stratum reported the highest proportion of population with secondary and high school levels of education and the combined share both the levels increased from 30 per cent in 2000 to 34 per cent in 2004.

There was notable increase in the proportion of population with secondary and high school levels of education in all the strata, though the proportions differed across strata. For instance, while the mixed economy and rice strata reported relatively higher proportions of population with secondary education (20-25% and 16-24% respectively), the plantation and uplands strata reported lowest proportions (15-19% and 13-18% respectively). Similar trend was observed across strata in respect of university education also. For instance, urban/ semi-urban stratum had higher proportions of population with university education (20-22%), followed by mixed economy (8-10%), rice economy (4-7%), uplands economy (3-5%) and plantation economy (2-5%).

The gender differences in education as expressed in terms of female to male ratio (FMR) indicate higher ratios of women with no schooling in all the strata during the five rounds of the survey. Highest FMRs were observed in the plantation stratum, followed by plantation economy, rice economy, urban stratum and the mixed economy while uplands stratum indicated relatively lower ratios. In the case of elementary education also, the FMRs have been above 1, indicating higher proportions of women over males. Urban stratum reported highest FMRs, ranging from 1.3-1.4 compared to mixed economy (1.2-1.3) and the rice economy (1.1-1.2) while the FMR was 1 in the plantation and uplands strata, indicating the equal status of males and females. As observed at the aggregate level, gender disparity in educational status has been very high at the secondary and high school levels of education in all the strata (except rice at the high school level) as evident from the FMRs below 1. The highest gender disparity at the secondary and high school levels was observed in the uplands stratum (five year average of the ratios being 0.8 and 0.7 respectively), followed by plantation (0.8 and 0.8 respectively), mixed economy (0.8 each) and the urban stratum (0.9 and 0.9 respectively). In the case of university education, gender disparity has been more pronounced in the plantation, upland and mixed economy strata as indicated by the five year averages of the FMRs of 0.7, 0.9 and 1.0 respectively while the ratios were in favour of females in the urban and rice strata (1.2 each).

In sum, it may be observed that gender disparity in educational attainments is an empirical reality in the KDSS households and that the magnitude of disparity is more apparent at the secondary and high school levels. The absence of formal education on the one hand and the higher proportion of population with elementary level of education among the vast majority of females is a matter of serious concern, as it reflects on the extent of deprivation of females in accessing education facilities. Strata level analysis also confirms this trend of higher proportions of females with no formal education in sharp contrast to their male counterparts especially. Uplands stratum forms distinct in terms of dominance of population with relatively lower levels of educational status (irrespective of gender), though gender disparity is also an important concern.

1.2 Magnitude of gender disparity in education status across age groups and strata

This section further explores the gender disparity in educational attainments by disaggregating the economically active population (aged 15-59 years) into different age groups. This will also enable us to understand the inter-generational pattern and differences in educational attainments. Moreover, the age-specific analysis will also be useful to delineate the long-term impacts of policy changes[4] in education sector at the national level with their gendered dimensions. For instance, while the Thai children were reportedly provided with good quality primary education during the 1970s and 1980s, the country could not make similar strides in secondary school enrolments (International Bank for Reconstruction and Development, 1999 as cited in Pattaravanich *et al.*, 2005: 563). Probably, this explains the relatively lower proportions of population completing secondary education in the KDSS as observed above.

For analytical brevity, we classify the entire economically active age groups (15-59 years) into four classes, *viz:* a) 15-24 years; b) 25-29 years; c) 30-44 years; and d) 45-59 years. Given that the prevailing system of formal education involves a 20 year period to reach the highest reported level of masters and above (as revealed by the data), the four-fold age group classification would enable us to reflect upon the educational attainments and occupational composition of three generations of the population. Accordingly, the analysis of educational status of males and females in the age group of 15-24 years would help us to reflect upon the gender disparity in education among the younger generation, most of whom are either currently undergoing education or/ and are in the process of transition to enter the job market.

To determine the magnitude of gender disparity in educational attainments, we use a specific indicator as suggested in VanLoon *et al.* (2005: 99). Accordingly, the specific indicator in the present context measures the educational attainment of the population with respect to the four age classes. The indices were derived based on the formula:

$$I_{ED} = \frac{(X_i - X_{min})}{(X_{max} - X_{min})}$$

Where: I_{ED} represents the index of educational attainment; X_i represents the observed educational status (expressed in years) of the population in the reference age group and X_{max} and X_{min} represent the minimum educational level of 0 (no education) and the maximum educational level of 20 (years of education). The indices so derived are expressed on a scale of 0 to 1 with indices closer to 0 denoting lower status of the respective age groups in terms of educational status and *vice versa*. To capture the inter-temporal changes in gender disparity in educational status, the educational attainment indices have been derived for the first (2000) and the fifth (2004) rounds of the KDSS survey. The strata-wise trends in gender disparity in educational attainments across the four age groups for the first (2000) and fifth (2004) rounds of the KDSS survey are shown in Tables 4 and 5 respectively.

Table 4 indicates significant gender differences in educational attainments across the age groups and strata during 2000. The educational status (as expressed by mean years of schooling) of males has been above that of females in all the strata and age groups with an exception in the case of the urban/ semi-urban stratum. It is only in the urban stratum that females had a relatively higher educational status (9.3) as against their male counterparts (9.0) in the youngest age group of 15-24 years. Again, urban stratum also indicated gender equality in educational attainment with a mean score of 9.7 years in the age group of 25-29 years during 2000.

Educational attainment shows an inverse relationship with age as evident from the declining mean educational scores as the population moves to the higher age groups. This trend is similar across gender and strata. Among the strata, while the urban/ semi-urban stratum show higher educational status among its population (irrespective of gender), the uplands stratum show the lowest educational status among its population. It is also important to note that though wide variation exists in educational attainments of both males and females in all the strata, the variability is

more pronounced in the educational status of females as evident from the relatively higher values of coefficient of variation (CV), which is derived by dividing the standard deviation of the educational scores by the mean educational scores and expressed in percentages. Compared to rest of the strata, uplands showed the highest variability in educational attainments for both males and females.

Table 4: Gender disparity in educational attainments across age groups and strata (2000)

Age group (years)/ Strata	No. of persons		Mean educational score (years)		Coefficient of variation (CV) in educational score (%)		Index of educational attainment (I_{ED})	
	Male	Female	Male	Female	Male	Female	Male	Female
1. Urban/ Semi-urban economy								
15-24	486	570	8.9	9.3	31.5	35.2	0.56	0.58
25-29	325	381	9.7	9.6	39.9	46.3	0.60	0.57
30-44	1,013	1,278	8. 8	8.2	52.1	61.9	0.49	0.45
45-59	600	765	7.2	5.8	66.0	79.7	0.40	0.32
2. Rice Economy								
15-24	427	400	8.1	7.8	32.1	34.3	0.50	0.49
25-29	215	260	6.9	6.7	40.4	47.6	0.46	0.42
30-44	707	894	5.3	4.6	52.2	60.6	0.33	0.23
45-59	426	583	4.1	3.1	57.9	68.1	0.25	0.15
3. Plantation economy								
15-24	406	470	7.1	7.0	34.1	41.1	0.44	0.43
25-29	234	255	6.5	5.8	37.2	55.3	0.40	0.38
30-44	754	853	5.2	3.9	60.9	79.5	0.32	0.25
45-59	406	484	3.9	2.6	54.3	85.2	0.24	0.16
4. Uplands economy								
15-24	599	644	5.2	4.8	77.1	84.5	0.32	0.30
25-29	388	430	4.7	4.5	88.6	100.4	0.30	0.29
30-44	1,176	1,266	4.2	3.3	91.2	113.6	0.26	0.17
45-59	690	678	3.1	2.3	97.1	109.7	0.17	0.14
5. Mixed Economy								
15-24	461	550	8.3	8.0	40.5	42.0	0.52	0.50
25-29	272	330	7.4	7.3	49.3	51.6	0.48	0.46
30-44	895	1,076	6.3	5.2	60.8	69.3	0.35	0.29
45-59	638	735	5.2	3.7	68.7	77.5	0.32	0.18

Source: KDSS Household Data, 2000

Similar to the mean educational scores, educational attainment indices (I_{ED}) also indicated wide gender differences as well as an inverse relationship with age of the population across strata. Apparently, urban/ semi-urban stratum reported highest values of indices in educational attainments in all age groups, followed by mixed economy. Uplands stratum is distinct in terms of lower mean educational scores among its population irrespective of gender. While gender differences noticed in educational attainment indices in all the age groups across the strata, the magnitude of gender disparity has been more visible in the upper age groups of 30-44 years and 45-59 years (Table 4).

Table 5 reveals that there have been significant improvements in the educational attainments of both the sexes in the youngest age group of 15-24 years as the mean educational scores were higher in 2004 compared to those reported in 2000 (Table 4). Improvements in educational attainments have been notable among the female population in the 15-24 years age group in all the strata, as evident from the higher mean educational scores of females in the urban stratum (10.4), followed by rice (9.5), mixed economy (9.2) and the plantation strata (8.3) against their male counterparts (9.7, 8.6, 8.5 and 8.0 respectively). However, gender differences in educational attainments continue to persist across age groups and strata with varying degrees.

Table 5: Gender disparity in educational attainments across age groups and strata (2004)

Age group (years)/ Strata	No. of persons		Mean educational score (years)		Coefficient of variation (CV) in educational score (%)		Index of educational attainment (I_{ED})	
	Male	Female	Male	Female	Male	Female	Male	Female
1. Urban/ Semi-urban economy								
15-24	811	908	9.7	10.4	31.9	31.4	0.61	0.65
25-29	372	386	10.4	10.9	38.9	40.1	0.65	0.61
30-44	1,064	1,255	9.0	8.4	48.2	58.4	0.50	0.42
45-59	710	928	7.4	6.2	65.5	76.9	0.41	0.31
2. Rice Economy								
15-24	718	738	8.6	9.5	34.0	31.1	0.54	0.59
25-29	304	302	8.2	7.8	44.8	50.1	0.51	0.43
30-44	867	1072	5.8	4.7	52.2	74.8	0.31	0.26
45-59	548	681	4.2	3.3	58.2	64.2	0.26	0.21

Table 5: (Continued)

Age group (years)/ Strata	No. of persons		Mean educational score (years)		Coefficient of variation (CV) in educational score (%)		Index of educational attainment (I_{ED})	
	Male	Female	Male	Female	Male	Female	Male	Female
3. Plantation economy								
15-24	671	684	7.9	8.3	37.1	38.7	0.49	0.51
25-29	303	312	7.0	6.7	41.8	55.3	0.44	0.42
30-44	863	950	5.6	4.7	54.2	74.8	0.31	0.26
45-59	525	613	3.8	2.8	62.8	90.7	0.24	0.17
4. Uplands economy								
15-24	1,155	1,171	6.3	5.9	63.7	72.9	0.39	0.37
25-29	472	499	5.3	5.2	89.0	100.4	0.33	0.28
30-44	1370	1,440	4.3	3.8	96.7	113.3	0.23	0.21
45-59	880	917	3.2	2.5	109.2	119.0	0.18	0.14
5. Mixed Economy								
15-24	856	951	8.5	9.2	38.1	38.4	0.53	0.58
25-29	420	449	8.1	8.2	48.6	51.6	0.50	0.51
30-44	1,153	1,304	6.7	5.9	56.9	66.9	0.37	0.33
45-59	780	934	5.2	3.9	68.0	78.1	0.29	0.21

Source: KDSS Household Data, 2004.

Thus, the above analysis contemplates the inter-generational differences in gender disparity in educational attainments of the KDSS households in 2000 and 2004. Though gender differences in educational attainments have tended to decline in the younger age groups (15-24 years), women continue to be deprived in terms of access to secondary education. The analysis also revealed that the population in the urban/ semi-urban stratum has achieved relatively higher educational status in all the age groups *vis-à-vis* rest of the strata during the two rounds of the KDSS survey. This reflects on the existing urban-rural divide in the access to education[5] in the country. Since an overwhelming majority of the population in the upper age groups of 30-44 years and 45-59 years have already assumed the parental status, the relatively lower levels of educational status of these age groups essentially tells upon their inability and lack of motivation in sending their children to schooling. This alongside the relatively lower occupational status of majority of the households coupled with the lack of formal (including the state) and informal institutional support mechanisms for education, especially in the countryside[6] further aggravates the scenario.

2. Occupational composition and gender segregated occupational pattern

Having discussed the gender disparity in educational attainments across strata and different age groups, it is important to understand the gender differentiated occupational structure as exist in the KDSS. As described, the analysis follows the national labour force survey classification of occupation by industry in order to bring out the gender dimensions in the occupational structure in the study villages.

Table 6 shows the five year trends in the distribution of population according to different occupations and the occupational shift over time. It is evident that there was considerable decline (18% in annual average percentage terms) in the proportion of non-working population over time from 11 per cent in 2000 to 4 per cent in 2004.

Table 6: Trends in occupational distribution and employment shift over time

Category of occupation	Distribution of total working population (%)					Annual average change (%)	Ranking of occupation (2004)
	2000	2001	2002	2003	2004		
1. No occupation	11.5	4.9	4.4	4.7	4.2	-17.7	7
2. Household work	0.4	6.5	7.3	7.8	7.5	394.9	5
3. Student	7.2	7.4	7.6	7.7	7.8	2.1	4
4. Agriculture/forestry/ fishing/hunting/animal husbandry	37.5	35.5	33.1	30.4	28.2	-6.9	1
5. Farm labour	11.5	12.8	12.3	10.9	12.5	2.7	2
6. Non-farm labour	3.1	3.0	3.4	3.7	2.8	-1.1	10
7. Whole sale and retail trade/business	8.6	8.5	8.6	9.2	9.8	3.3	3
8. Crafts and manufacturing	4.2	4.8	5.4	5.9	5.7	8.5	6
9. Construction and skilled work	1.4	1.9	2.2	2.3	3.3	26.1	9
10. Electricity and engineering services	1.5	1.5	2.1	2.2	2.4	13.0	12
11. Hotel & tourism	1.4	1.2	1.0	1.4	1.7	7.8	15
12. Transportation	1.9	1.8	2.5	2.4	2.6	9.6	11
13. Public administration, defense social security	1.5	1.7	1.5	1.5	1.5	-0.2	16

Table 6: (Continued)

Category of occupation	Distribution of total working population (%)					Annual average change (%)	Ranking of occupation (2004)
	2000	2001	2002	2003	2004		
14. Private sector services, including banking & insurance	3.3	3.4	2.8	4.1	3.7	5.6	8
15. Health and social work	0.5	0.4	0.5	0.4	0.5	5.0	18
16. Real estate/ renting and related services	0.7	0.8	0.9	0.8	1.0	7.8	17
17. Other community, social and personal services	1.4	1.7	2.1	2.3	2.4	13.9	13
18. Teaching and educational services	2.2	1.9	1.9	2.0	2.0	-2.2	14
Total (No)	25,570	30,206	31,825	32,407	34,162	7.68	

Source: Household data, KDSS, various rounds.

Note: Ranking of occupation is based on the proportion of population in each of the occupations.

Ranking of occupations based on population dependence shows that agriculture and allied activities including forestry, fishing, hunting and animal husbandry occupy the single largest category of occupation, though there has been considerable decline (7% in annual average percentage terms) in its relative share over time from 37 per cent (2000) to 28 per cent (2004). Farm labour constitutes the second largest category of occupation, the proportion of which has increased by 2.7 per cent per annum. Wholesale and retail trade and business is the third dominant occupational category and the dependence on the same has increased from 8.6 per cent (2000) to 9.8 per cent (2004). It is important to note that there was consistent rise in the proportion of population undergoing education, which increased from 7.2 per cent (2000) to 7.9 per cent (2004). This is an appreciable trend as the younger generation is increasingly integrated with the formal education system. The population dependent on manufacturing and crafts industries has increased from 4.2 per cent in 2000 to 6.0 per cent in 2003, followed by a drop in the share to 5.8 in 2004. There has been significant upward shift in occupational categories such as construction and skilled work, electricity and engineering services, transportation, crafts and manufacturing, hotel and tourism, etc as indicated by the notable positive changes in the annual average percentage values during the five year period.

As household work is yet to figure in calculations for its economic returns, it may be observed that those engaged in household work may be added up with the no occupation category. Accordingly, the combined share of population with no occupation and those engaged in household work remains at closer to 12 per cent in all the years, except 2001. It may also be observed that the decline in the proportion of non-working population as well as those engaged in agriculture and allied activities may be explained in terms of a cumulative effect of occupational shift characterised by: a) household mobility from either 'no occupation' to household work; b) shift from agriculture and allied activities to farm labour; and c) shift from non-farm labour to construction and skilled work, crafts and manufacturing or other occupations which have grown over time in tandem with the growth of the national and the provincial economies.

Now turning to the gender differentiated occupational pattern, it may be mentioned at the outset that females occupy predominant position with respect to most of the occupational categories as evident from Table 7. Analysed category wise, hotel and tourism sector is the largest female dominated occupational category reported by the KDSS households. Though there has been marginal decline in the proportion of females engaged in this occupation, the proportion still remains as high as 73 per cent in 2004. Apparently, health and social work as well as teaching and related educational services is the domain of females with an absolute share of 71-74 per cent and 67-71 per cent respectively during the five year period. The third largest occupation dominated by females is wholesale and retail trade and business where the proportion of females hovered around 63-64 per cent during the period. Women also occupy dominant share of the labour force in the crafts and manufacturing industrial sectors, despite a reduction in dependence on these segments from 67 per cent in 2000 to 59 per cent in 2004. Given the fact that female production workers constitute the largest chunk of the labour force in the manufacturing industrial sectors in Thailand (Asian Development Bank, 1998), the observed decline in proportion of females engaged in this sector in the KDSS may be attributed to gender-specific retrenchment policies adopted by the manufacturing firms[7].

Table 7: Trends in occupational distribution of females in KDSS households

Category of occupation	Share of women in various occupational categories (%)					Annual average change (%)
	2000	2001	2002	2003	2004	
1. No occupation	79.6	61.6	54.3	52.4	57.4	-7.1
2. Household work	97.0	98.5	99.8	98.6	99.4	0.6
3. Student	55.0	54.6	54.7	54.7	55.8	0.4
4. Agriculture/forestry/ fishing/hunting/animal husbandry	49.8	48.7	49.2	49.3	48.7	-0.5
5. Farm labour	49.7	46.8	47.2	46.7	47.7	-0.9
6. Non-farm labour	33.1	31.1	29.2	25.5	24.3	-7.4
7. Whole sale and retail trade/business	63.9	63.9	63.7	64.7	63.3	-0.2
8. Crafts and manufacturing	67.4	66.6	63.2	61.8	59.0	-3.3
9. Construction and skilled activities	30.0	26.6	20.9	24.6	22.3	-6.1
10. Electricity and engineering services	4.5	4.1	4.4	5.2	5.2	4.1
11. Hotel & tourism	79.6	73.7	75.5	76.1	73.2	-2.0
12. Transportation	3.9	3.1	2.7	3.7	3.1	-3.1
13. Public administration, defense social security	18.8	21.1	17.1	14.9	14.0	-6.4
14. Private sector services, including banking & insurance	46.7	48.5	55.4	52.3	56.9	5.3
15. Health and social work	71.8	54.5	74.3	72.3	74.5	3.1
16. Real estate/ renting and related services	15.7	9.2	8.4	8.2	8.5	-12.2
17. Other community, social and personal services	49.0	61.2	56.0	54.9	57.9	4.9
18. Teaching and educational services	67.2	68.8	68.6	71.3	71.0	1.4
Total (No)	53.4	52.6	52.1	52.4	52.1	-0.6

Source: Household data, KDSS, various rounds.

There has also been significant rise in the proportion of women engaged in private sector services over time, as evident from the rise in their proportion by almost 10 per cent from 47 per cent (2000) to 57 per cent (2004). Women also dominate in categories of community, social and personal services. However, the presence of women in occupational categories such as non-farm labour and construction and skilled work has been declining over time. The relative share of women in these two occupations was 24 per cent and 22 per cent respectively during 2004. Among the 18 occupational categories, only three occupations have shown an absolute male dominance in terms of population dependence which included: a) real estate/ renting and related services; b) electricity and engineering services; and c) transportation.

Female participation in these three categories ranged from the highest at 9 per cent in real estate/ renting and related services to 5 per cent in electricity and engineering services and 3 per cent in transportation during 2004.

Despite the higher levels of economic activism shown by women in terms of active participation in most of the occupational categories, women form the majority among the non-working population in the study areas, their share being as high as 57 per cent during 2004. If household work is added to this category, the proportion would be much more, further worsening the status of women. It is also important to bring forth the disquieting trend that the proportion of women in public administrative services has been notably low at 21 per cent in 2001 which declined to 14 per cent in 2004. The abysmal levels of female representation in public administrative services in the study areas conforms to the national scenario where women account for only 27 of the total employed persons in the government sector, as revealed by the National labour force survey (NSO, 2005).

The higher proportion of females among the student population is a welcome trend, which may be attributed to the higher shares of female children enrolled in university education as already reported in Table 3. The proportions of women engaged in farming and farm labour show almost similar trend between periods with women occupying 49 per cent of the population engaged in agriculture and allied activities and 48 per cent of the farm labour force in 2004. In this regard, it is important to note that despite a drastic decline in the relative share of agriculture and allied activities in the occupational structure from 37 per cent in 2000 to 28 per cent in 2004 (Table 6), the dependence of women on this segment continues to be unequivocal.

2.1 Gender and occupational roles: strata-wise trends

The strata-wise trends in occupational composition and gender differentiated occupational pattern are shown in Tables 8a to 8e. The trends reveal disparate pattern in occupational composition and the gender roles in occupations. First of all, agriculture and allied activities forms the dominant occupation in all the strata, except the urban and semi-urban stratum, where the relative share of population dependent on agriculture has remained below 11 per cent during the five year period. However, it is important to consider that there was drastic decline in the proportion of population engaged in agriculture and related activities across strata, the decline being more pronounced in the rice stratum (36%), followed by uplands (30%), plantation (26%) and mixed economy strata (21%) between 2000 and 2004.

Table 8a: Strata-wise trends in occupational composition and share of women in various occupational categories, 2000-2004

1. URBAN/ SEMI-URBAN STRATUM

Category of occupation	Distribution of total working population (%)					Annual average change (%)	Share of women in various occupational categories (%)					Annual average change (%)
	2000	2001	2002	2003	2004		2000	2001	2002	2003	2004	
1. No occupation	12.6	5.6	5.6	5.7	4.7	-17.8	76.1	52.5	52.6	47.6	58.2	-4.5
2. Household work	1.2	8.3	8.4	8.6	7.7	145.9	95.8	98.9	99.8	97.9	99.4	0.9
3. Student	10.9	10.6	10.9	10.6	10.9	0.00	56.7	54.8	56.3	56.7	57.8	0.5
4. Agriculture/forestry/fishing/hunting/ animal husbandry	10.2	11.3	10.8	10.2	10.6	1.3	55.4	51.0	50.5	51.3	51.6	-1.7
5. Farm labour	2.5	2.4	2.6	2.4	2.4	-0.1	58.9	55.8	50.6	63.0	62.0	2.1
6. Non-farm labour	3.6	3.7	3.1	3.1	1.9	-13.0	31.8	28.3	31.7	27.6	30.8	-0.1
7. Whole sale and retail trade/business	19.5	18.6	17.8	18.1	19.4	0.1	61.7	61.2	61.4	63.1	61.9	0.1
8. Crafts and manufacturing	7.7	8.3	8.0	7.7	7.8	0.5	57.9	58.6	59.0	58.2	52.7	-2.2
9. Construction and skilled activities	2.1	2.7	3.4	2.8	4.8	27.4	27.0	22.7	18.3	18.5	18.0	-9.2
10. Electricity and engineering services	3.6	3.3	4.3	4.6	4.4	5.6	4.6	2.2	3.7	5.4	4.0	8.8
11. Hotel & tourism	3.2	2.3	2.0	2.4	2.4	-5.2	81.4	79.0	74.6	77.7	69.3	-3.8
12. Transportation	3.3	3.2	4.3	4.0	3.7	3.9	5.0	3.3	4.1	4.7	3. 6	-4.7
13. Public administration, defense social security, etc	4.1	4.3	3.3	3.8	3.5	-2.9	21.5	28.0	21.5	19.1	19.8	-0.1
14. Private sector services, including banking & insurance	5.1	5.8	5.7	6.6	6.1	5.2	57.3	60.4	59.1	65.0	65.0	3.3
15. Health and social work	1.3	1.1	1.3	1.2	1.7	8.6	83.5	82.7	80.5	79.3	82.7	-0.2
16. Real estate/ renting and related services	1.2	1.2	0.8	0.9	1.0	-3.8	20.5	12.6	10.2	8.3	8.8	-17.6
17. Other community, social and personal services	2.6	2.7	3.5	3.2	3.0	4.9	57.8	65.6	68.4	67.7	67.0	3.9
18. Teaching and Educational services	5.1	4.3	3.7	3.9	3.8	-6.6	69.4	70.7	71.9	72.6	72.6	1.1
Total	5,918	6,754	6,848	6,801	6,802	3.7	55.4	54.7	53.8	54.6	54.2	-0.5

Table 8b: Strata-wise trends in occupational composition and share of women in various occupational categories, 2000-2004

2. RICE ECONOMY STRATUM

Category of occupation	Distribution of total working population (%)					Annual average change (%)	Share of women in various occupational categories (%)					Annual average change (%)
	2000	2001	2002	2003	2004		2000	2001	2002	2003	2004	
1. No occupation	8.5	3.9	3.9	4.3	3.6	-15.4	74.2	57.9	48.2	42.6	53.9	-5.9
2. Household work	0.1	4.8	6.0	5.0	6.3	1,697.0	100.0	96.5	99.3	98.8	99.1	-0.2
3. Student	8.2	8.7	9.3	9.0	9.0	2.6	53.2	56.7	55.6	56.9	59.4	2.8
4. Agriculture/forestry/fishing/hunting/ animal husbandry	54.0	45.4	39.4	39.3	34.6	-10.3	52.3	51.9	52.2	52.6	50.5	-0.9
5. Farm labour	9.1	10.5	10.1	9.3	11.3	6.4	48.0	47.5	51.9	50.0	50.9	1.6
6. Non-farm labour	1.8	3.8	3.6	3.7	1.9	13.6	34.2	32.7	36.1	29.8	20.9	-10.3
7. Whole sale and retail trade/business	4.6	5.3	5.4	6.2	6.7	9.8	66.5	66.6	62.2	66.8	63.8	-0.8
8. Crafts and manufacturing	5.2	7.0	8.6	9.4	8.2	13.3	79.2	74.6	69.2	68.8	67.5	-3.9
9. Construction and skilled activities	1.9	2.3	2.9	2.7	5.0	30. 9	25.0	25.0	15.6	12.6	20.4	1.2
10. Electricity and engineering services	0.9	1.5	1.5	1.9	2.1	24.3	5.1	10.0	5.4	11.6	7.7	32.7
11. Hotel & tourism	0.5	0.3	0.3	0.4	0.8	25.9	80.0	46.1	66.6	63.6	76.1	4.3
12. Transportation	1.3	1.7	2.2	1.8	2.6	20.3	5.4	3.8	2.7	4.2	2.7	-9.4
13. Public administration, defense social security, etc	0.3	0.5	0.8	0.7	0.8	30.8	23.1	8.7	2.4	2.8	2.3	-33.3
14. Private sector services, including banking & insurance	1.0	1.0	1.8	1.7	2.1	25.5	52.4	64.6	59.6	55.2	49.6	-0.5
15. Health and social work	0.2	0.2	0.2	0.2	0.3	18.5	42.8	57.1	58.3	63.6	43.7	3.3
16. Real estate/ renting and related services	0.2	0.5	0.6	0.5	0.6	36.4	11.1	13.6	13.3	14.8	6.2	-6.5
17. Other community, social and personal services	1.0	1.6	1.9	2.3	2.7	29.7	47.6	45.4	43.4	44.6	58.2	6.0
18. Teaching and Educational services	1.0	1.0	1.2	1.4	1.3	7.1	67.4	66. 7	77.6	77.5	75.7	3.2
Total	4,216	4,771	5,030	5,191	5,612	7.5	54.1	53.6	53.4	53.1	52.7	-0. 7

Table 8c: Strata-wise trends in occupational composition and share of women in various occupational categories, 2000-2004

3. PLANTATION ECONOMY STRATUM

Category of occupation	Distribution of total working population (%)					Annual average change (%)	Share of women in various occupational categories (%)					Annual average change (%)
	2000	2001	2002	2003	2004		2000	2001	2002	2003	2004	
1. No occupation	9.1	5.8	4.7	4.2	4.8	-12.6	79.5	70.8	58.3	53.0	61.0	-5.7
2. Household work	0.1	2.4	4.5	5.4	3.9	1,190.5	100.0	99.1	100.0	96.1	99.1	-0.2
3. Student	5.0	5.6	6.0	6.3	5.8	4.0	55.8	52.1	52.5	52.5	58.0	1.1
4. Agriculture/forestry/fishing/hunting/ animal husbandry	47.9	43.3	40.8	38.6	35.4	-7.3	49.6	50.0	51.0	51.2	49.5	0.1
5. Farm labour	20.9	22.8	19.2	17.1	18.4	-2.5	52.0	48.3	50.4	48.2	50.7	-0.5
6. Non-farm labour	2.7	3.3	4.5	4.5	4.6	14.8	30.6	34.8	31.8	29.2	26.8	-2.8
7. Whole sale and retail trade/business	3.8	4.5	5.1	5.7	6.4	13.4	62.8	67.7	66.9	65.6	64.3	0.7
8. Crafts and manufacturing	3.0	3.3	4.1	5.0	4.4	11.1	72.9	69.6	65.7	60.8	61.6	-4.1
9. Construction and skilled activities	0.7	1.5	1.9	1.8	2.7	45.6	24.1	25.7	17.5	17.6	24.3	3.3
10. Electricity and engineering services	0.6	0.7	1.0	1.1	1.4	23.8	0	5.6	2.0	1.7	6.7	71.4
11. Hotel & tourism	1.1	1.2	0.9	1.3	1.8	14.9	82.6	82.1	89.6	91.0	85.9	1.1
12. Transportation	1.2	1.4	1.7	1.8	2.7	23.9	4.2	2.9	2.4	4.2	2.0	-6.0
13. Public administration, defense social security, etc	0.3	0.4	0.5	0.7	0.7	30.1	18.2	0	0	2.7	10.0	85.2
14. Private sector services, including banking & insurance	1.2	0.9	1.3	2.8	2.7	32.5	44.7	54.3	57.1	53.5	70.1	12.8
15. Health and social work	0.1	0.1	0.1	0.1	0.1	1.8	50.0	60.0	87.5	57.1	80.0	17.8
16. Real estate/ renting and related services	0.6	0.4	1.0	0.7	0.9	26.6	8.7	23.8	10.0	7.7	7.8	23.6
17. Other community, social and personal services	0.7	1.2	1.5	1.7	1.8	31.4	37.0	45.6	41.1	40.0	39.0	2.0
18. Teaching and Educational services	0.8	0.8	0.9	1.1	1.2	7.3	63.9	66.7	65.2	72.4	73.4	3.7
Total	4,046	4,726	4,940	5,174	5,450	7.8	52.8	51.9	51.9	51.5	51.3	-0.7

Table 8d: Strata-wise trends in occupational composition and share of women in various occupational categories, 2000-2004

4. UPLANDS ECONOMY STRATUM

Category of occupation	Distribution of total working population (%)					Annual average change (%)	Share of women in various occupational categories (%)					Annual average change (%)
	2000	2001	2002	2003	2004		2000	2001	2002	2003	2004	
1. No occupation	14.5	3.3	4.0	4.7	3.4	-16.6	86.2	61.9	59.1	60.2	48.4	-12.6
2. Household work	0.1	10.2	9.9	11.1	11.5	2,518.3	100.0	98.8	100.0	99.4	99.5	-0. 2
3. Student	3.6	4.2	4.5	5.3	6.1	13.9	48.2	50.5	50.3	50.1	48.5	0.2
4. Agriculture/forestry/fishing/hunting/ animal husbandry	48.1	48.0	44.9	37.5	33.7	-8.3	45.4	45.0	44.9	45.2	44.9	-0.2
5. Farm labour	14.4	15.4	15.7	13.1	15.6	2.9	42.6	38.1	38.8	36.3	38.7	-2.2
6. Non-farm labour	2.3	1.7	2.6	3.1	2.8	8.3	23.2	22.6	19.0	22.2	22.0	-0.7
7. Whole sale and retail trade/business	5.2	4.7	5.2	6.7	6.4	6.2	72.1	68.6	68.1	67.3	64.5	-2.7
8. Crafts and manufacturing	0.7	1.4	2.1	2.9	4.0	54.0	62.2	66.4	50.3	51.7	50.7	-4.2
9. Construction and skilled activities	0.6	0.6	0.7	1.9	2.1	46.1	30.0	20.4	13.1	34.8	22.5	15.6
10. Electricity and engineering services	0.4	0.6	0.8	0.7	1.2	39.1	0	2.1	10.0	1.7	4.8	156.0
11. Hotel & tourism	0.8	1.0	0.7	1.4	1.8	26.7	73.1	59.5	70.9	72.2	70.8	0.1
12. Transportation	1.0	1.1	1.3	1.2	1.2	3.3	1.5	0	1.9	2.1	6.6	42.3
13. Public administration, defense social security, etc	0.7	0.7	0.7	0.9	0.8	5.9	11.9	13.2	12.7	9.2	1.4	-26.3
14. Private sector services, including banking & insurance	3.5	3.1	1.8	4.0	3.5	14.3	34.1	36.6	31.1	31.3	40.3	5.4
15. Health and social work	0.2	0.2	0.2	0.3	0.3	8.7	46.1	50.0	57.1	56.5	57.7	5.9
16. Real estate/ renting and related services	0.6	0.9	1.0	1.0	1.2	18.9	15.4	1.4	4.9	5.1	7.2	48.0
17. Other community, social and personal services	0.8	1.2	1.5	2.0	2.1	28.0	30.6	46.1	48.8	46.1	55.1	17.6
18. Teaching and Educational services	2.1	1.6	2.3	2.2	2.2	4.5	64.6	64.1	59.9	66.5	65.3	0.5
Total	6,117	7,562	8,278	8,184	8,992	10.46	51.1	49. 9	49.6	50.6	50.2	-0.4

Table 8e: Strata-wise trends in occupational composition and share of women in various occupational categories, 2000-2004

5. MIXED ECONOMY STRATUM

Category of occupation	Distribution of total working population (%)					Annual average change (%)	Share of women in various occupational categories (%)					Annual average change (%)
	2000	2001	2002	2003	2004		2000	2001	2002	2003	2004	
1. No occupation	10.8	6.2	4.0	4.4	4.9	-14.2	77.5	65.2	52.1	55.4	64.0	-3.6
2. Household work	0.4	4.5	6.0	7.2	6.0	297.9	100.0	98.3	99.5	99.2	99.3	-0.2
3. Student	8.1	8.1	7.7	7.8	7.8	-1.0	56.8	56.3	55.8	55.1	55.5	-0.5
4. Agriculture/forestry/fishing/hunting/ animal husbandry	34.8	33.2	31.1	29.0	27.6	-5.6	51.8	49.6	51.6	49.6	51.0	-0.5
5. Farm labour	12.8	15.3	14.7	13.1	14.4	3.6	54.8	53.8	51.9	52.6	52.6	-1.0
6. Non-farm labour	4.6	3.1	3.8	4.5	3.0	-6.2	40.9	35.7	28.6	21.4	21.9	-13.8
7. Whole sale and retail trade/business	7.1	7.6	8.3	8.5	9.8	8.8	63.1	64.5	64.4	63.6	64.3	0.5
8. Crafts and manufacturing	4.4	4.8	5.2	6.0	5.1	4.5	72.6	70.9	67.3	64.7	64.0	-3.2
9. Construction and skilled activities	1.6	2.5	2.6	2.3	2.7	18.4	41.5	34.6	33.3	37.0	30.3	-6.8
10. Electricity and engineering services	1.7	1.3	2.9	2.7	3.3	26.5	6.4	4.6	3.6	3.7	5.0	-2.6
11. Hotel & tourism	1.2	1.1	0.9	1.1	1.8	15.6	77.0	75.0	73.0	68.8	70.5	-2.2
12. Transportation	2.4	1.7	3.1	3.0	3.4	16.0	2.4	4.5	1.4	2.8	2.0	22.3
13. Public administration, defense social security, etc	1.5	2.0	1.9	1.3	1.5	4.2	13.0	14.2	19.5	17.6	15.4	6.2
14. Private sector services, including banking & insurance	4.4	5.0	3.0	4.5	3.6	1.0	44.0	39.0	63.7	55.0	60.1	11.9
15. Health and social work	0.4	0.3	0.3	0.3	0.3	2.8	58.0	58.8	70.8	72.2	72.0	5.9
16. Real estate/ renting and related services	0.9	0.7	0.9	0.9	1.1	6.2	13.0	6.3	7.7	9.4	11.5	4.2
17. Other community, social and personal services	1.8	1.4	2.0	2.2	2.3	9.0	50.0	63.3	57.5	63.0	60.9	5.9
18. Teaching and Educational services	1.2	1.1	1.2	1.2	1.2	0.7	64.1	71.4	74.1	72.0	73.3	3.6
Total	5,273	6,393	6,729	7,057	7,306	8.7	53.8	53.1	52.4	52.4	52.7	-0.5

While there was a decline in the proportion of population engaged in non-farm labour in the urban and mixed economy strata (annual average change being – 13.0% and -6.2% respectively), rice and upland strata reported an increase in the proportion of both farm and non-farm labourers, as evident from the annual average percentage changes during the five year period. Seemingly, the simultaneous decline in the share of population dependent on agriculture and allied activities and farm labour on the one hand and rise in proportion of non-farm labour may be explained in terms of the employment shift from agriculture to non-agriculture activities across strata. Such compensatory shift in employment has been noticed particularly in the rice, plantation and uplands strata. At the same time, it is also important to note that while the combined share of farm and non-farm labour increased in the rice and uplands strata between 2000 and 2004, the share declined in the urban stratum and remained at same levels in the plantation and mixed economy strata.

In the case of urban/ semi-urban stratum, whole sale/ retail trade and business has been the most dominant occupation with a dependency rate of 19.4 per cent in 2004. Notably, there was considerable rise in the proportion of population engaged in this segment in rest of the four strata as evident from the higher values of the annual average percentages in plantation stratum (13.4%), followed by rice (9.8%), mixed economy (8.8%) and the uplands strata (6.2%). There was also notable increase in the dependence on crafts and manufacturing sector in all the strata with the highest increase in population dependence reported in the uplands (from 0.7% to 4.0%), followed by rice (5.2% to 8.2%), plantation (3.0% to 4.4%), mixed economy (4.4% to 5.1%) and the urban strata (7.7% to 7.8%) between 2000 and 2004.

A notable trend in the occupational composition as observed across the rice, plantation and uplands strata has been that these three strata in particular are underway of the process of urbanization as revealed by the growth in the share of population depend on categories such as hotel and tourism; crafts and manufacturing industry; trade and business; transportation; electricity and engineering services; construction and private services. The rise in the combined share of population engaged in these six occupational categories has been the highest in the plantation stratum where it rose from 9 per cent (2000) to 18 per cent (2004), followed by rice stratum (10% to 20%), uplands (12% to 16%), mixed economy (18% to 25%) and the urban and semi urban strata (37% to 41%).

Uplands stratum had the highest growth in the proportion of younger population attending school (4% to 6%) compared to plantation (5% to 6%) and rice strata (8% to 9%) between 2000 and 2004, while the growth in proportion was almost negative in the mixed economy and saturated in the urban/ semi-urban strata. All the strata indicated considerable decline in the proportion population reporting 'no occupation' with highest drop reported from uplands stratum, followed by urban/ semi-urban stratum, rice economy, mixed economy and the plantation economy. Alongside, there was also significant rise in the proportion of population (mostly women) reporting household work as the main occupation. Highest proportions of population engaged in household work were noticed in the uplands stratum (12%), followed by urban/ semi-urban stratum (8%), rice economy (6%), mixed economy (6%) and the plantation economy strata (4%) during the fifth round of KDSS. However, the decline in the proportion of population with 'no occupation' as well as the rise in proportion of population reporting household work need to be viewed in part as a simultaneous outcome of the voluntary reporting by the 'non-working population' (mainly females) as engaged in household work.

Though urban/semi-urban and mixed economy strata have higher proportions of population working in the public administrative services, rest of the strata indicated a rising trend in the proportion of population in this category over the five year period. Similarly, though urban/semi-urban and uplands strata reported the highest proportion of population engaged in teaching and educational services, inter-year rise in employment was the highest in the plantation stratum as evident from the annual average change of 7.4 per cent, followed by rice (7.1%) and uplands strata (4.5%). Moreover, while urban stratum showed a decline in the proportion of population engaged in teaching and educational services (annual average change being -6.6%), the growth in proportion was only marginal in the mixed economy (0.7%) between 2000 and 2005.

2.2 Gender segregated pattern in occupation: strata-wise trends

In this regard, it is also worth exploring the gender segregated pattern in occupational distribution across strata (Tables 8a to 8e). Though there was a substantial decline in the proportion of non-working population over time in all the strata, the proportion of females outnumbered the males through out. Based on a simple measure of five yearly average of the proportion of female population with no occupation, it may be noted that the plantation stratum had the highest proportion of females at about 65

per cent, followed by uplands (63%), mixed economy (63%), urban/semi-urban (57%) and the rice strata (55%). This is indicative of the fact that women tend to be overcrowded in agriculture sector irrespective of agriculture being a remunerative occupation or not. The increase in proportion of females engaged in household work over time is yet another indicator of the magnitude of economic inactivism persisting in the study areas. The higher proportion of females reporting as students across strata is an important trend and it is suggestive of the narrowing down of the gender gap in educational attainments at the aggregate level. However, uplands stratum is an exception to this trend where the proportion of females engaged education is just close to 50 per cent unlike rest of the strata where the proportion is over 54 per cent during the five year period.

Notably, the proportion of women engaged in agriculture as well as farm labour has been lower in the uplands than rest of the strata. This is evident from the five yearly average of the proportion of females engaged in agriculture in the uplands at 45 per cent against 51 per cent in rest of the strata. Similarly, the five year average of the proportion of population working as farm labour was the lowest in the uplands stratum at 39 per cent compared to 58 per cent in urban/semi-urban stratum, 53 per cent in the mixed economy stratum and close to 50 per cent in plantation and rice strata. Again, all the strata indicated similar pattern in terms of lower proportion of women engaged in non-farm activities, the proportion being the lowest in the uplands stratum (22%) against 31 per cent in the rice and plantation stratum and 30 per cent in the mixed economy and the urban strata.

The gendered dynamics underlying the occupational structure in the KDSS become much more explicit from the extremely lower representation of females in public administrative services *vis a vis* their predominating presence in occupational categories, viz., a) trade and business; b) crafts and manufacturing industry; c) hotel and tourism; d) teaching; e) health and social work; and f) private sector services. Table 9 brings out this dynamics in terms of the five yearly averages of the proportion of females in total population in public administrative services and rest of the occupational categories across strata (Table 9).

Table 9: Gender dominated occupational pattern across strata

Strata	Trade & Business	Crafts & Industry	Hotel & Tourism	Teaching	Health & social work	Private sector services	Public administrative services
Urban	76.4	61.9	57.3	71.4	81.7	61.4	22.0
Rice	66.5	65.2	71.8	73.0	53.1	56.3	8.0
Plantation	86.3	65.5	66.1	68.3	66.9	55.9	6.2
Uplands	69.3	68.1	56.2	64.1	53.5	34.7	9.7
Mixed	72.8	64.0	67.8	71.0	66.3	52.3	15.9
Overall	74.3	64.9	63.8	69.6	64.3	52.1	12.3

Note: Figures are five year averages (2000-2004) of the proportion of women in total population engaged in respective categories.

Table 9 shows that women perform to be the dynamic actors in all the strata with dominating presence in the most vibrant occupational segments having greater significance in terms of contribution to the provincial and national output. The preeminent position of women is more distinct with respect to occupational categories such as trade and business, crafts and manufacturing industry, teaching and hotel and tourism. All the strata indicate almost similar pattern with some differences with respect to hotel and tourism in the case of urban and uplands strata and health and social work in the case of rice and uplands strata.

Differences are also noticed across strata with respect to share of females in private sector services. In this regard, while the highest proportion of women was found in urban and semi-urban stratum (61%), uplands reported the lowest proportion of women (35%). The dynamism shown by women with respect to high levels of participation in major occupational categories needs to be contrasted with their inadequate representation in public administrative services. As Table 9 indicates, the proportion of women engaged in public services was significantly low across strata, the highest proportion being found in the urban/semi-urban stratum (22%) followed by mixed economy (16%). Female representation in government services has been found at surprisingly lower levels in the plantation stratum (6%), rice (8%) and the uplands strata (10%).

Thus, the foregoing analysis brings out the gender differentiated pattern characterising the occupational structure in the KDSS households. Occupational roles

seem to be highly segregated in terms of high levels of economic activism shown by females especially in the most important segments like manufacturing industry, hotel and tourism and trade and business. Such occupational dynamism is reflective of the potential contribution made by women towards the provincial economy. As a matter of fact, the above findings open up immense scope for further empirical analysis as regards the nexus between the changing gender roles in occupation in the countryside and its influence on earnings and socio-economic status of women and the wellbeing of the households in the KDSS context.

3. Determinants of occupational status

An important point that needs some elaboration in the light of the above discussions is whether the demographic as well as socio-economic variables including educational status exert any influence on the occupational status of the economically active population in the KDSS context. While there are several considerations that influence the educational status and occupational choices of the individuals in diverse contexts, it is rather difficult to arrive at a balanced view of the effect of various demographic and socio-economic variables on the occupational status. Moreover, such an analysis needs to be supplemented with solid empirical data (both qualitative and quantitative) on various aspects of occupation related skill development and experience in specific occupations, stability of employment, wages and earnings, qualitative information on parental preferences and perceptions on childrens' education (irrespective of gender), long term economic and social returns arising from educational investments, etc., to mention a few.

However, given the paucity of the above parameters in the KDSS data, in the present analysis, we confine to a logistic regression analysis to determine whether the demographic and socio-economic characteristics, especially, educational status has any significant influence on the occupational status of the economically active population. The logistic regression takes the form:

$$\ln\left(\frac{P}{1-P}\right)OCSTAT = \alpha + \beta_1 x_1 + \beta_2 x_2 + \ldots \beta_i x_i + e$$

Where: ln is natural logarithm, p is probability that an individual is engaged in a productive occupational status given the demographic, locational and socio-economic characteristics including education and gender status. ln[p/(1-p)]OCSTAT is the log

odds ratio of a productive occupational status, α is the coefficient on the constant term, β_i's are the coefficients of the four independent variables (X_i's), and 'e' is error term. The four independent variables considered are: a) educational status (EDSTAT); b) age (AGE); c) strata (STRAT); and d) gender (GEND). Among the explanatory variables, EDSTAT is further classified into four levels, viz., a) no education; b) primary; c) secondary; and d) tertiary. Age is divided into four age groups, viz., a) 15-24 years Age1); b) 25-29 years (Age2); c) 30-44 years (Age3); and d) 45-59 years (Age4). Strata (STRAT) are classified into five, viz., a) urban/semi-urban; b) rice economy; c) plantation; d) uplands; and e) mixed economy. Occupational status (OCSTAT) is defined as a binary variable 0 = no or less gainful occupational status and 1 = more gainful and stable occupational status other than agriculture. Accordingly, no or less gainful occupational status (0) indicate population engaged in occupations from 1 to 6 and more gainful and stable occupational status (1) refer to population engaged in occupations from 7 to 18 as classified in the paper.

The results of the logistic regression analysis are shown in Table 10. For an easy comparison of the influence of variables in each case, we have specified the reference groups in the model and accordingly, for gender variable, females are taken as the reference group as the status of females differs in terms of educational attainments and occupational roles. For education status, population with no education has been taken as the reference group. For strata, uplands stratum has been taken as the reference category as this stratum forms a distinct one with respect to the demographic and socio-economic variables considered. For age, the last age group (45-59 years) has been taken as the reference group as this group differs from the rest of the age groups. The analysis uses the individual data from the fifth round of KDSS (2004).

Table 10: Logistic regression showing the influence of demographic and socio-economic characters on occupational status of the KDSS households (2004)

Variables	Coefficient	S.E.	Exp(β)/ Odds Ratio
GENDER- Male (ref. Female)	0.361	0.026	1.434**
AGE (ref. 45-59 years)			
15-24 (years)	-0.351	0.040	0.704**
25-29 (years)	0.478	0.045	1.613**

Table 10: (Continued)

Variables	Coefficient	S.E.	Exp(β)/ Odds Ratio
30-44 (years)	0.256	0.034	1.292**
EDSTAT (ref. No education)			
Primary	0.820	0.050	2.271**
Secondary	1.367	0.056	3.922**
Tertiary	2.270	0.064	9.680**
STRAT (ref. upland)			
Urban/semi-urban	1.052	0.040	2.865**
Rice	0.068	0.041	1.070*
Plantation	-0.205	0.044	0.814**
Mixed economy	0.170	0.038	1.185**
Constant	-2.066	0.053	0.127**
No. of observations		31336	
2 Log likelihood		36527.29	
LR Chi^2		4631.931**	
Pseudo R^2		0.188	

Note: For each coefficient associated with a variable, odds ratio is $e^{\beta i}$. If β_i is positive then odds ratio >1, whereas if β_i is negative then 0<odds ratio<1. * Denotes significance at p<0.05 and ** denotes p<0.01.

While discussing the results, we use the odds ratio, $e^{\beta i}$, instead of coefficients, as the interpretation of odds ratio (OR) is more intuitive. It signifies that for a unit increase in the independent variable there would be a corresponding change in the odds ratio with probability of a household reporting a gainful occupational status. In this case, an odds ratio above one means that the explanatory variable in question is positively associated with productive occupational status in the non-agriculture sector, while an odds ratio below one means that the variable is negatively associated with the productive occupational status.

Table 10 reveals that overall the model fairly explains the influence of the demographic and socio-economic variables on the gainful occupational status of the population with most of the variables showing OR above 1 at p <0.01. The analysis shows that compared to females, the gainful occupational status of males are highly

influenced by the selected variables as the OR is 1.434. Age group-wise analysis shows that in relation to the highest age groups (45-59 years) the occupational status of the youngest age group (15-24 years) is negatively associated with age. This may be due to the reason that a significant share of the population in this age group (15-24 years) do not work as they are either still engaged in education or are seeking for occupations relevant to their education status and aspirations. However, there are significant changes in the age groups of 25-29 years and 30-44 years with respect to attainment of occupational status in the non-agriculture sector as the coefficients and the odds ratios are higher than the reference age groups.

Looking at the association between education and gainful occupational status in the non-agriculture sector, it may be observed that there is significant upward mobility among the population in the probability of achieving gainful occupational status with increase in educational status. For instance, with reference to the population with 'no education' status, the probability of achieving gainful occupation status in the non-agriculture sector is moderately high among the population with primary and secondary education levels (ORs being 2.271 and 3.922 respectively) and very high among the tertiary educated groups with an OR of 9.680. Strata wise analysis shows that compared to the uplands stratum, the probability of the population achieving gainful occupational status in the non-agriculture sector is the highest in the urban/semi-urban stratum (OR at 2.865), followed by mixed economy (OR at 1.185) and rice economy (OR at 1.070). However, the plantation stratum shows less likelihood of achieving gainful occupation (OR at 0.814) compared to the uplands stratum.

Thus, the analysis shows that the demographic and socio-economic variables reasonably explain the occupational outcomes of the economically active population in the KDSS households. However, though the odds ratios are highly significant ($p < 0.01$) in explaining the variations in occupational status across gender, age groups and strata with differences in education status, the overall fitness of the model is constrained by its relatively lower Pseudo R square value at 0.188. This suggests that there are factors other than those explained above, which exert influence on the occupational attainments of the population irrespective of gender status. For instance, evidences (Asian Development Bank 1998; Tangchonlatip *et al.,* 2006) suggest that there has been significant rise in employment opportunities especially for women in the country after the financial crisis mostly driven by the growth of export led manufacturing sector as well as growth of urbanization and tourism industries[8]. The above analysis also underscores an important point that despite the dynamic presence of women in a host of

occupational categories, such as trade and business, crafts and industry, hotel and tourism, etc, the likelihood of achieving gainful occupational status has been lower for women compared to males as evident from the higher OR at 1.434 for males. This may be partially explained in terms of the lower wages and incomes and wage related incentives offered for women in comparison to their male counterparts. However, this point needs to be further explored with respect to the gender differences in wages and earnings and their effect on the socio-economic status of females across the different occupational categories and strata within the KDSS context.

4. Conclusions and Policy Imperatives

The paper makes a modest attempt at examining the gender differences in educational attainments and gender segregated occupational pattern in the KDSS based on household level data for the five year period 2000 to 2004. The paper also attempts to develop an occupational classification for the KDSS consistent with the National Labour Force Survey which enables an easy comparison of occupational status of the households in KDSS with the national economy. Though at the aggregate level gender differences in educational attainments tend to be of marginal significance especially with respect to secondary and the university levels in the younger age group of 15-24 years, there are significant variations in educational attainments at the strata-level. For instance, wide differences exist across strata with respect to population with no formal education with the uplands stratum reporting the highest proportion of population with no formal education in sharp contrast to the lowest proportion reported in the urban/ semi-urban stratum. Though an overwhelming majority of the population with no formal education are in the upper age groups, this points to the historic process by which education development in the country has perpetuated a definite bias towards the urban areas as well as the relatively richest in the society who could afford investment for education. The most disquieting aspect in this regard is that women are the worst sufferers of this development bias. This calls for further empirical investigations on the strata-wise differences in access to educational facilities and parental preferences and perceptions towards educating children along with the underlying gender bias in such preferences.

A natural corollary of the above dynamics is that women with no formal education either remain unemployed or engage in unpaid domestic work or work in less dignified, low and late paid occupations, including hazardous factory work as well as less rewarding farming operations, vegetable vending and related agri-business

activities. Though the aggregate level trends indicate a decline in the proportion of non-working population from 11.5 per cent in 2000 to 4.3 per cent in 2004, the proportion of women in the non-working population remains as high as 57 per cent in 2004. Data also reveal that proportion of women reportedly engaged in household work has significantly increased from 0.4 per cent (2000) to 8 per cent (2004). While a rise in proportion of women engaged in household work is an outward reflection of a host of factors, including lack of education, old age and absence of employment opportunities, an eventuality of this sort needs further empirical scrutiny for a better understanding of the changing gender roles and the socio-economic implications in the KDSS context in a time use analytical framework.

The analysis clearly demonstrates that despite lower levels of educational attainments, women in particular seem to be assuming dynamic occupational roles with greater potential for contributing towards the national wealth. However, as evident from the logistic regression analysis, the likelihood of higher proportions of women achieving gainful occupational status is largely constrained by their low educational status. This further suggests that despite females occupy dynamic occupational roles, they are deprived in terms of low wages and earnings in the pretext of low educational status and work related skills. In this regard, the paper suggests that it is important to determine whether the high levels of economic activism shown by women is adequately rewarded in terms of better wages and earnings, employment security, socio-economic status and social protection across occupations and strata. This makes it imperative to have detailed empirical analysis as regards the stability and security of employment as well as the working conditions and gender disparity in wages and earnings across various occupational categories using the KDSS data. Given that an overwhelming majority of females lag behind in terms of formal education and gainful employment opportunities in the non-agriculture sector, the study also highlights the need for launching various employment and support programmes targeted towards non-educated women who are reportedly engaged in non-productive household work.

A yet another point emerge from the analysis is that the proportion of younger population (15-24 years) attending school has increased by about 9 per cent during the five year period from 7 per cent in 2000 to 8 per cent in 2004. As per the fifth round of the KDSS survey (2004), about 30 per cent of the population aged 15-24 years is studying at higher secondary and tertiary levels. Obviously, this segment of the population is in the process of transition to enter the labour market in the near future which calls for immediate plans and strategies for strengthening their technical skills

and capabilities to get adequate employment opportunities. This invariably calls for developing and strengthening the infrastructure facilities especially in the rice, plantation and upland villages for providing technical and professional education (including information technology, engineering and medical educations) to the younger age groups (especially, women) to enable them tap the potential employment sectors in the countryside.

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Notes

1 By definition, the urban/ semi-urban (industrialized) strata cover the population living in municipal areas. The strata also cover villages that have a significant proportion of their labour force employed in industries. Rice strata villages are those located in lowland areas where the main occupation is rice cultivation. The plantation strata comprise villages that are also located in lowland areas, where the major occupation is cultivation of cassava or sugarcane. The upland strata contain villages located in the three highland districts. The mixed economy strata contain villages that cannot be classified into rest of the above categories (IPSR, 2001, p.7).

2 The national census classification of occupation include a nine fold occupational classification, *viz.*, a) not working; b) professional; c) administrative/ clerical; d) sales; e) services; f) agriculture; g) transport & communication; h) craft and labour; i) other occupation; and j) student/ education.

3 The 18 occupational categories considered in the analysis are: 1) no occupation; 2) household work; 3) student; 4) agriculture, forestry, fishing, hunting, animal husbandry; 5) farm labour; 6) non-farm labour; 7) wholesale and retail trade and business; 8) crafts and manufacturing; 9) construction and skilled enterprises; 10) electricity and engineering services; 11) hotels, restaurants and tourism; 12) transportation; 13) public administration, defense, social security and retired public servants; 14) private sector services, including banking and insurance; 15) health and social work; 16) real estate, renting and related services; 17) other community, social and personal services; and 18) teaching and educational services.

4 In historic perspective, since 1960, the Royal Thai Government has made four years of compulsory schooling as mandatory, which was followed by a policy in 1978 making six years of compulsory primary education. A provision of the new constitution (as adopted in 1997) now makes 12 years of compulsory schooling (Keyes 1991; Mason and Campbell 1993; Knodel 1997; Pattaravanich *et al.*, 2005).

5 The growing urban-rural inequalities in educational investments have already been reported as an important concern. Indications are that children in urban areas continue to be advantaged over their rural counterparts in educational attainments and the rural families face economic constraints as the most important barrier to education (NSO, 1999 as cited in Pattaravanich *et al.*, 2005). In most cases, education is financed by familial resources. Educational costs include direct costs such as tuition fees, cost of instructional materials, transportation and opportunity costs including income from all sources foregone while the child is in school.

6 An earlier study (Naranong, 1998) examines the effects of gender and credit constraints on rural students' advancement to secondary education, which is arguably the major bottleneck in Thailand's education system. The empirical evidences from two provinces in Northern and Northeastern Thailand confirm that gender differences affect investment in boys' and girls' secondary education differently.

7 Most manufacturing firms in Thailand require women to retire at 55 years and many industries, such as those producing electronic components have reduced the female retirement age to 45 years. They also tend to lay off older workers in favour of younger ones with perfect eye sight and better education (Asian Development Bank, 1998).

8 Archavanitkul and Guest (2000) contends that these industries have favoured female over male labour as it is thought that women will accept lower wages than men and that they are better able to adjust to repetitive work without indulging in strikes and disruptive activities.

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