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HUMAN CAPITAL FORMATION AND

LABOUR MARKET DYNAMICS:

A GENDERED PERSPECTIVE

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Abstract

The structure of the labour force in Malaysia has seen a major shift in the last three decades of the twentieth century. The changing face of the Malaysian labour force has been made possible by increased access to educational opportunities. Expanding economic opportunities have also increased demand for educated workers. Yet, there is gender imbalance as female enrolments in tertiary education exceed that of males. The main objective of the study is to understand the changing dynamics in the labour force arising from the changing dynamics in human capital formation in Malaysia. The study has considered two aspects: the linkages between education and occupation, and effect of gender on these linkages, and the world of work of young labour market entrants, a measure of the efficiency of the labour market. The results suggest that the impact of gender imbalance in education at all levels has been translated into the occupational distribution of young persons. There are implications for human resources planning. Although the educational system produces more women with tertiary education, a greater proportion of these women stay home compared to men, while the greater proportion of the less educated men are working. Furthermore, the female advantage in terms of tertiary enrolment does not translate directly into the labour market. Female graduates can be found across a wider diversity of occupational groups than male. Male graduates with a tertiary education are at an advantage in terms of employment and earnings perhaps because of choice of subjects. In considering Reich's (2005) argument for a three tier labour force structure with growing end tiers and a squeezed middle tier, we find that this may be truer of the males than for the females.

Keywords: gender, human capital, occupational structure

JEL classification: J16, J21, J24

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INTRODUCTION

In the "The Work of Nations," written almost 15 years ago, Reich (1991) described a three-tiered work force that would be found in most advanced economies of the future (paraphrased in Reich, 2005):

> "At the bottom would be workers who offer personal service.... In the middle would be production workers in factories or offices, performing simple, repetitive tasks. At the top would be "symbolic analysts," like engineers or lawyers, who manipulate information... the knowledge workers of the new economy."

Writing more recently, Reich (2005) observed that while his prediction in general was true, he did not foresee that:

> "the three tiers would change shape so dramatically. The top and bottom tiers are growing, and the middle shrinking, much faster than I expected....Two different groups of symbolic analysts are emerging: national and global. Most symbolic analysts still work within a national economy, manipulating various kinds of symbols with the aid of computers... accountants, engineers, lawyers, journalists.... Yet a new group is emerging at the very top. They're CEOs and CFOs of global corporations, and partners and executives in global investment banks, law firms and consultancies. Unlike most national symbolic analysts, these global symbolic analysts conduct almost all their work in English, and share with one another an increasingly similar cosmopolitan culture.... [national and global symbolic analysts] will eventually live and work in very different environments.

Malaysia has chosen to engage in the global information economy and to benefit from it (Malaysia, 2001). It will be interesting to evaluate how far Malaysia is along that path of advanced economies as expounded by Reich. The structure of the labour force in Malaysia has seen a major shift in the last three decades of the twentieth century (Lee and Nagaraj, 2006). The proportion in the labour force between 1970 and 2000 for professional, administrative and technical workers increased from 6 per cent to 19 per cent, for service workers increased from 21 per cent to 34 per cent and for agricultural and production workers declined from 73 per cent to 51 per cent. The changing face of the Malaysian labour force has been made possible by access to educational opportunities. Access to public education till Form 5 is available to all Malaysians who qualify by age. Tertiary education is now available from not only public providers but also

from a large number of private providers. In addition, much of these opportunities have been made affordable and therefore accessible through public sector educational loans.

The main objective of the study is to understand the changing dynamics in the labour force arising from the changing dynamics in human capital formation. Specifically, the study aims to examine changes in, and linkages between, educational attainment and occupational structure of the labour force. The study uses data from a two per cent sample of the 2000 Census as well as data from the Ministry of Higher Education's Tracer Study to do the analyses. This report is organised in six sections. In the next section, we provide a brief background to education and the economy. The following section is concerned the linkages between education and occupation, and effect of gender on these linkages. Then we examine the world of work of young labour market entrants, a measure of the efficiency of the labour market. Finally, the report concludes with a discussion.

The Setting: Education and the Economy

The expansion of education in Malaysia especially in recent years has been rapid. Between 1970 and 2005, the number of students in school almost tripled from 2.2 million to 6.1 million. The enrolment ratio in upper secondary education increased from 20.1 per cent to 71.7 per cent, while tertiary enrolment increased from 0.6 per cent to 9.1 per cent over the same period. Concomitantly, the structure of the education sector has changed. Primary education enrolment which was 75.0 per cent of enrolment in 1970 fell to 49.9 per cent in 2005, while enrolment in secondary school increased from 23.7 per cent to 34.3 per cent and post-secondary and tertiary education from 1.2 per cent to 15.9 per cent over the same period (Nagaraj and Kuppusamy 2008).

The data indicate a shift towards increased provision of higher levels of education. In 2005, 630 public and private institutions offered tertiary education programmes (Malaysia 2006, Table 11-5) compared to just three public universities and a few private institutions in 1970. This is reflected in the proportion of the country's resources that has been allocated to education. For example, in 2000, about 18.1 per cent of the total public expenditure was expended on education, which amounted to 4.8 per cent of the Gross National Product (Ministry of Education, Malaysia 2000). The main growth of tertiary education occurred in the 1990s. In 1996, the Private Higher Education Institution Act was passed, making it easier for private educational institutions to offer

a variety of tertiary-level programmes. By 2000, about 35.4 per cent of places in all post-SPM programmes (certificate, diploma and degrees) was in private institutions (Malaysia 2001b). The expansion of education is also visible in the educational attainment of the population. An analysis of the 2000 Population Census (Tey 2006) shows that the proportion of population with tertiary education has been increasing steadily from 2.3 percent among the 1936-40 cohort to 19.9 percent among the 1976-80 cohort.

The economy has also changed over the last 35 years. The economy has successfully transformed from dependency on agriculture to include the growth sectors, manufacturing and services, with concomitant improvements in income levels. The growth of output of the manufacturing sector has been rapid. Its contribution to total GDP increased from 13.9 per cent in 1970 to 33.4 per cent in 2000 but shows a levelling off to 31.4 per cent in 2005. The share of the services sectors as a whole has also increased from 20.0 per cent in 1970 to 30.5 per cent in 2005. On the other hand, the share of the agriculture, forestry and fishing sector has declined from 29.0 per cent in 1970 to 8.2 per cent in 2005. In line with the structural transformation of the economy, the pattern of employment has also experienced changes. There has been a shift in the demand for labour away from agriculture to the secondary and tertiary sectors of the economy. For example, in 2005, professional, technical, administrative and managerial workers have increased from 5.5 per cent of the workforce in 1970 to 27.3 per cent of the workforce, while the agricultural workforce has declined from 53.6 per cent in 1970 to 12.6 per cent in 2005 (Nagaraj and Kuppusamy2008).

Education, Occupation and Gender

It would appear that the strategy to provide equal educational opportunities to all children has led to the growing imbalance in favour of the females. Prior to 1990, enrolment rates for males exceeded that of females. However, since the beginning of the 1990s, enrolment rates of females have been equal to, or have exceeded those of males at all levels of education (Ministry of Women and Family Development, Malaysia, 2003; Tey, 2006). Statistics on the intake, enrolment and graduates of the public universities show a widening gap in favour of female students in public universities (Ministry of Education, 2003). While enrolment ratios in primary education reflect the gender ratio (about 50%) in the country, female enrolment in public universities was 63 per cent in 2005. As a result, female labour force participation has not only

increased from 37.2 per cent in 1970 to 46.5 per cent in 2000, but was about 69.4 per cent among those with post-secondary education (Tey 2006). In fact, the female advantage in educational attainment was observable in the labour force by 2000 (Lee and Nagaraj 2006).

To explore these issues further, we first examine the changes in the relationship between education and occupation for the 2000 census. The variable on education was converted to years of education by assigning 0 to less than primary, 6 to primary, 9 to lower secondary, 11 to upper secondary, 13 to post-secondary and 15 to tertiary education. The effect of time is assessed by examining three cohorts, ages 15-24 (the early school-leavers), 25-44 and 45-64. The mean years of education for each cohort by occupational category are shown in Table 1. Also shown are the differences in mean years of education between the 15-24 cohort and the 45-64 cohort, and between the 25-44 cohort and the 45-64 cohort.

For all three age cohorts, we note that the mean years of education across occupations follows the same ordering, professionals have the highest mean years of education while skilled agricultural and fishery workers have the lowest mean years of education. This indicates that the relative requirements across occupations have not changed over time. The mean years of education, on the other hand, is lowest for the oldest age cohort across all occupations (the last two columns show all positive values). This reflects the increase in educational attainment among the younger cohorts compared to the oldest cohort.

However, the gap for the middle age cohort compared to the youngest cohort is higher for the first three occupations - legislators, senior officials and managers, professionals and technicians - and lower for the last four occupations - skilled agricultural and fishery workers, craft and related trades workers, plant and machine operators and assemblers, and elementary occupations. The former most likely indicates the lower experience (as proxied by age) among the youngest cohort. It is also possible that educational requirements are now lower for certain occupations if, as suggested by Reich (2005), the top tier occupations are growing. We explore this idea further below. The latter, on the other hand, suggests that the middle cohort enjoyed a higher level of occupation for the same years of education as the youngest cohort. Furthermore, the gap between the oldest and youngest cohort is greater for the last four occupations compared to the first three occupations. The actual mean years of education for the youngest cohort for these four occupations (between 6 to 9 years) further shows that these workers have not availed themselves of the opportunities for free education for eleven years.

Table 1: Mean years of education by occupation and age group, 2000

Occupational categories	Ages 15-24	Ages 25-44	Ages 45-64	Gap in mean years, column2-column 4	Gap in mean years, column3-column 4
Legislators, senior officials and managers	10.8	11.1	9.0	1.8	2.1
Professionals	13.3	13.9	13.0	0.3	0.9
Technicians and associates	11.5	11.7	10.3	1.2	1.4
Clerical workers	11.0	10.9	10.1	0.9	0.8
Service workers and shop and market sales workers	9.1	9.0	7.0	2.1	2
Skilled agricultural and fishery workers	6.1	5.8	4.4	1.7	1.4
Craft and related trades workers	8.7	8.1	6.4	2.3	1.7
Plant and machine operators and assemblers	9.2	8.2	6.4	2.8	1.8
Elementary occupations	8.1	7.1	5.9	2.2	1.2

Source: Computed from a 2% sample of 2000 census

Table 2 shows the percentage male by occupational categories for different age cohorts for 2000. First, we note that the percentage male among the employed increases with the age cohort. Taking this into account, we see the proportion male is higher for the oldest cohort (aged 45-64) for professionals and clerical workers, and higher for the youngest cohort (aged 25-34) for skilled agricultural and fishery workers and craft and related trades workers. Comparing with our findings in Table 1, this suggests that males in the younger cohort have less higher education in non-technical areas than males in the oldest cohort. The evidence indicates a growing proportion of female labour force participation among the youngest age cohort in occupational

categories including legislators, senior officials and managers; professionals; technicians and associates; clerical workers; plant and machine operators and assemblers; and elementary occupations. This includes almost all the occupational categories except skilled agricultural and fishery workers; and craft and related trade workers, where the proportion of female workers has dropped over time. Looking across all age groups, almost two thirds of the clerical workers are now female, compared to 43.2 per cent among the 45-64 cohort.

Table 2: Percentage Male by Occupation and Age Cohort, 2000

Occupational categories	Percentage Male			
	All age groups	Ages 25-34	Ages 35-44	Ages 45-64
Legislators, senior officials and managers	77.5	67.8	76.0	82.2
Professionals	57.9	49.3	55.8	73.8
Technicians and associates	61.7	55.1	61.0	70.3
Clerical workers	36.4	28.2	36.1	56.8
Service workers and shop and market sales workers	65.0	52.2	67.6	71.0
Skilled agricultural and fishery workers	77.8	81.2	77.2	76.8
Craft and related trades workers	84.1	85.7	84.5	81.2
Plant and machine operators and assemblers	67.8	51.7	72.2	82.0
Elementary occupations	67.7	65.0	66.9	72.1
Total	66.8	57.6	66.6	75.0

Source: Computed from a 2% sample of 2000 census

Does the greater overall gain in educational attainment mean that for certain occupations the older cohorts were without high levels of education whereas the younger cohorts had high

levels of education? To explore this, we compute the Duncan's segregation index (Duncan and Duncan, 1955) for tertiary against non-tertiary education. This index is usually used to measure segregation but here we use it to measure labour market segmentation. A value of 0 indicates a completely segmented market with those in some occupations with tertiary education only and others in other occupations with non-tertiary education only. A value of 100 indicates that those with tertiary education can be found in types of occupations. Table 3 shows the index computed across all occupations at the single digit level, for males and females by age cohort. The proportions entering the computation were that for tertiary education. For the economy as a whole, the index of segmentation is smaller the older the cohort, suggesting that there is less segmentation in the labour market today. However, there is a difference between males and females. For the oldest cohort, the index is not very different between males and females. But for the younger age groups, the index is lower for the females. Nevertheless, the reduction in the index for females is dramatic for each cohort as the age cohort increases. For males, the value of the index is about the same for the three younger cohorts, and in fact slightly less for the youngest cohort. The gain in tertiary education among females has led to an increase in educational levels across more occupational groups. On the other hand, further declines in the proportion of males in tertiary education may lead to increased segmentation in the male occupational structure.

Table 3: Duncan's Segregation Index by Gender for Tertiary Education

	Females	Males	Total
25-34	46.75	47.98	47.68
35-44	40.17	48.65	45.47
45-54	36.60	47.69	44.29
55-64	35.78	35.71	34.20

Source: Computed from a 2% sample of 2000 census

In order to understand the impact of gender imbalance in higher education, we consider next the patterns among graduates. Table 4 shows the employment status of graduates for year 2000. About 69.0 per cent of graduates are employees, 7.3 per cent self-employed, 4.9 per cent employers, 11.9 per cent outside the labour force and the remaining 6.9 per cent are unemployed (and those of unknown status), unpaid family worker or of unknown labour force status.

However, more than a fifth (22.1%) of female graduates are outside the labour force. Females are also less likely to be self-employed, or to become employers. Table 5 shows the sector of employment of working graduates. Females are more likely to be public sector employees, while males are more likely to be in the private sector or in their own business. The gender imbalance can be clearly observed in the labour force and occupational structures of graduates in the labour market in 2000.

Table 4: Employment status of graduates by sex 2000

Employment status	Male	Female	Total
Employer	6.8	2.3	4.9
Employee	71.8	65.2	69.0
Self employed	10.4	3.1	7.3
Unpaid family worker	0.1	0.3	0.2
Unknown status	5.4	5.8	5.5
Unemployed	1.2	1.2	1.2
Outside labour force	4.2	22.1	11.9
Total	100.0	100.0	100.0

Source: Computed from 2% sample of the 2000 Census

Table 5: Employment of male and female graduates by sector, 2000

Sector	Male	Female	Total
Government	27.2	44.3	33.7
Private	52.3	43.6	49.0
Own business	15.5	5.7	11.7
Unknown	5.1	6.4	5.6
Total	100.0	100.0	100.0

Source: Computed from 2% sample of the 2000 Census

Job Opportunities for Early Market Entrants

One indicator of the labour market efficiency (prospects for employment) is the market for early entrants. In this section, we examine the effect of education and gender on this market. Table 6 shows the occupational distribution of the employed aged 15-24. For comparison, the third column shows the figures for all the employed aged 15-64. Comparing the figures for all employed aged 15-64 against those aged 15-24, we can see certain differences. As expected, the young workers have a lower representation as legislators, senior officials and managers, professionals, technicians and associates and skilled agricultural and fishery workers.

Many jobs in the first three occupational categories require a higher level of education, which would be observable only for the older persons in the 15-24 age cohort. Hence, we would expect the participation of this cohort to be small in those categories. On the other hand the young workers have a higher representation as service workers and shop and market sales workers, craft and related trades workers, plant and machine operators and assemblers, and in elementary occupations. Since many of these jobs require less education, two situations are possible. Firstly it is possible that young people engage in these jobs while continuing their education. And secondly it is possible that many of these are drop-outs from the education system. Examining the gender profile may shed light on the reasons since females are likely to have more education as discussed previously. Considering just the 15-24 years old, compared to females, there is a slightly greater male presence in the first occupational category legislators, senior officials and managers and much greater male presence in skilled agricultural and fishery workers, craft and related trades workers and in elementary occupations.

Table 6. Occupational distribution of employed ages 15-24 by sex, 2000

Occupational categories	Males Ages 15-24	Females Ages 15-24	All Ages 15-24	All Ages 15-64
Legislators, senior officials and managers	2.6	1.8	2.3	6.7
Professionals	2.8	3.8	3.2	5.6
Technicians and associates	9.0	10.7	9.2	11.4
Clerical workers	6.6	23.1	13.2	9.2
Service workers and shop and market sales workers	14.3	16.1	14.0	12.6
Skilled agricultural and fishery workers	13.7	4.4	9.2	14.5
Craft and related trades workers	14.8	3.7	10.0	8.9
Plant and machine operators and assemblers	21.7	26.9	22.2	15.0
Elementary occupations	14.4	9.7	16.7	16.2

Source: Computed from a 2% sample of 2000 census

The analysis for 15-24 year olds is inadequate to understand the effect of the labour market for graduates as many of those in this age-group have not had enough years to complete tertiary education. Accordingly, we focus our analysis next on the graduates. Table 7 shows that the males made up 43.1 percent a total of 158,863 graduates in 2007. The table presents the distribution of these graduates by field of study and sex. The males dominate only in the technical discipline for their field of study. However, there are more females in all the other fields of study. We now consider the selected statistics on graduates and their employment.

Table 7. Distribution of graduates by field of study and sex, 2007

Field of study	Male	Female	Percent Males
	%	%	%
Arts	26.4	47.9	29.5
Science	8.6	13.6	32.4
Technical	47.5	16.6	68.5
ICT	10.9	9.7	46.0
Education	6.6	12.2	29.1
Total number	68548	90315	43.1

Source: Ministry of Higher Education Malaysia

Table 8 presents information regarding the current status of 107,920 of the 2006 and 121,730 of the 2007 graduates who responded to an online survey at the time of graduation. About a half of these early market entrants were employed, and more than a quarter unemployed. About a fifth were preparing for further education. The incidence of unemployment is higher among the female graduates, although the gap between male and female unemployment is reduced in 2007.

Table 8: Current status of graduates soon after completion of study, 2006 and 2007

Curent status	2006		2007	
	Male	Female	Male	Female
	%	%	%	%
Employed	50.9	40.4	53.2	45.1
Further studies	17.0	18.1	18.3	19.2
Graduates training scheme	1.4	1.5	1.1	1.2
Waiting for job placement	3.4	7.2	2.7	6.5
Unemployed	27.4	32.8	24.6	27.9
Total number	42634	65286	48531	73199

Source: Ministry of Higher Education Malaysia

Table 9 shows the occupational structure of the 2007 graduates who responded to the online survey. About 62.4 per cent are in professional, technical and related jobs. The gender distribution for these occupations is not very different. However, in line with the gender pattern of fields of study, more males are in technical jobs. It is rather alarming that a significant proportion (34.8 per cent) of the female graduates is in clerical jobs, or work as service and sales workers. It appears from the data that not only the unemployment problem is more serious among the female graduates, they also have the tendency to be underemployed soon after graduation.

Table 9: Distribution of graduates by occupation and sex (per cent), 2007

Main Job Sector	Male	Female	Total
Administrative & managerial workers	6.0	4.5	5.2
Professional workers	46.2	45.5	45.8
Technical & related workers	23.0	11.5	16.6
Clerical & related workers	7.8	27.4	18.8
Service & sales workers	6.5	7.4	7.0
Agriculture, forestry & fishing	1.3	0.4	0.8
Craft and related trades	0.3	0.5	0.4
Production & related workers (Operators, transport equipment & labourers)	5.3	1.8	3.3
General workers	3.6	1.1	2.2
Total	100	100	100

Source: Ministry of Higher Education Malaysia

Table 10 shows the employment status of the 2007 graduates. The data show that 60.6% was in permanent employment, while more than a third (36.5%) was in contract or temporary positions. The male graduates were more likely to be in permanent positions while females were more likely to be in temporary positions. A small proportion of them have managed to start their own business and they are mostly among the male graduates.

Table 11 presents the sector of employment of these graduates. The majority (65.4 per cent) of the graduates was working for the private sector, among them almost a third were in multi-national firms. Less than a quarter of the graduates were working for the government. Females were more likely to be in government jobs, while males were more likely to be in multinational firms.

Table 12 shows the earnings of these early market entrants. Less a third (28.1 per cent) of the graduates earned less than RM1000. More than a half (55.4%) earned between RM1000 and RM2500. The rest obtained more than RM2500, and a small percentage (2.3%) earned more than RM5000. Again differences by gender are visible. A higher percentage of females (31.2 per cent)

earned less than RM1000 compared to males (24.1%) and a much lower percentage of females (14.2 per cent) earned more than RM2500 compared to males (19.6 per cent).

Table 10: Employment status of graduates by sex (per cent), 2007

Status	Male	Female	Total
Permanent	63.7	58.2	60.6
Contract	19.3	19.7	19.5
Temporary	13.2	20.0	17.0
Self-employed	2.3	0.9	1.5
Working for family	1.5	1.1	1.3
Total	100	100	100

Source: Ministry of Higher Education Malaysia

Table 11: Job sector of graduates by sex (per cent), 2007

Sector	Male	Female	Total
Government	20.6	25.8	23.5
Statutory body	4.6	4.3	4.5
Private (multinational)	22.6	17.8	19.9
Private (local)	45.1	45.8	45.5
Own business	6.1	4.8	5.3
Others	1.1	1.5	1.3
Total	100	100	100

Source: Ministry of Higher Education Malaysia

Table 12: Monthly earnings of graduates by sex (per cent), 2007

Income	Male	Female	Total
RM500 & below	4.2	6.1	5.3
RM501 - RM1000	19.9	25.1	22.8
RM1001 - RM1500	21.2	22.2	21.8
RM1501 - RM2000	20.9	21.1	21.0
RM2001 - RM2500	14.2	11.3	12.6
RM2501 - RM3000	8.0	6.5	7.1
RM3001 - RM5000	8.2	6.3	7.1
RM5001 & above	3.4	1.4	2.3
Total	100	100	100

Source: Ministry of Higher Education Malaysia

Conclusion

The foundations of a knowledge economy are human ingenuity and skills and commitment to innovation through research and development. Education is the single most important factor in stimulating the creation of a knowledge-based economy. In this context education encapsulates

all activities intended to increase the knowledge and skills set of individuals. The expanding opportunities for education in Malaysia have made access to higher education accessible and affordable. That is, both supply and demand for education have shifted upwards. Expanding economic opportunities have also increased demand for educated workers. The main objective of the study is to understand the changing dynamics in the labour force arising from the changing dynamics in human capital formation. The study has considered two aspects as highlighted below

First, we considered the linkages between education and occupation, and effect of gender on these linkages. Generally the gains in educational attainment are reflected across all occupations. Furthermore, the relative positions of various occupations in respect of educational requirements have not changed over time. On the other hand, the youngest cohort, the 15-24 year olds appear to have benefited less from their education than the middle cohort of 25-44 year olds. In particular, the gain in the mean years of education for primary occupations is greater than that for tertiary occupations. The issue of gender is important in labour force dynamics as it affects occupational choices, career patterns and earnings (Nagaraj et al. 2002; Goh 2004; Goh and Rohana 2008; Lee and Nagaraj 2006). The analyses show that the percentage of males in occupations requiring secondary and higher education, other than technical occupations, was less in 2000 for the younger cohorts (aged 15-34) compared to the oldest cohort (aged 45-64) in 2000. Furthermore, the gain in tertiary education among females has led to an increase in educational levels across more occupational groups. On the other hand, further declines in the proportion male in tertiary education may lead to increased segmentation based on tertiary education in the male occupational structure. Apart from gains in tertiary education amongst the females, the findings seem to suggest that there were stronger segmentation for the females in the older days, a possible indication of sex discrimination. Over time, equality of gender rights appears to have brought about the parity in job segmentation among the two sexes. Among the youngest cohort, job segmentation is gender-blind.

The second aspect examined is the world of work of young labour market entrants, a measure of the efficiency of the labour market. Comparing the occupational distribution of young school leavers with the whole labour force in 2000, we find that young people have a smaller presence in tertiary occupations (not surprisingly) and a greater presence in primary and some secondary occupations. Though it is possible that young people engage in these jobs while

continuing education, the analysis by gender suggests that a second reason, that of lower educational attainment, may be more pertinent. Focussing just on graduates, we find that the fields of study have dimensions, with more females in all except the technical subjects. Female graduates were more likely to be unemployed, in contract or temporary jobs, and in government service. In contrast, male graduates were more likely to be employed, in permanent positions, in private sector employment or self-employed. Not surprisingly, the percentage of males with high earnings was higher than that for females.

The results suggest that the impact of gender imbalance in education at all levels has been translated into the occupational distribution of young persons. There are implications for human resources planning. Although the educational system produces more women with tertiary education, a greater proportion of these women stay home compared to men, while the greater proportion of the less educated men are working. About 1 in 5 female graduates stayed out of the labour force compared to 1 in 20 male graduates. Labour supply will be affected to the extent that female workers are less prepared to work in localities far away from family or are constrained by family and marital demands. Furthermore, the female advantage in terms of tertiary enrolment does not translate directly into the labour market. Female graduates can be found across a wider diversity of occupational groups than male. Male graduates with a tertiary education are at an advantage in terms of employment and earnings perhaps because of choice of subjects. In considering Reich's (2005) argument for a three tier labour force structure with growing end tiers and a squeezed middle tier, we find that this may be truer of the males than for the females. In particular, if his arguments hold, the demand for education would be affected by the prospects of work in a multi-national company that offers a higher return to skills than a national company. Further, as Vidal (1998) shows, the prospect of emigration to a higher returns to skill country also provides an incentive to invest in human capital. It is therefore possible that males do consider the long term prospects when deciding to continue with tertiary education.

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