Boost Youth Employment: Challenges and Solutions

Socio-Economic Research Centre (SERC)

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Executive summary

Youth unemployment [1] is a growing global problem that has significant long-term ramifications on individuals, society and economy. If the current high youth unemployment trends are not contained or reversed quickly, it will have serious implications for future growth and social cohesion.

The International Labour Organisation's (ILO) report on Global Employment Trends for Youth 2017 indicated that though global youth unemployment rate has been settling at 13.0% during the period 2012-14 and rose marginally to 13.1% in 2017, it remains well above pre-crisis rate of 11.7% in 2007.

In Malaysia, the statistics on youth employment provide an overall trend of high youth unemployment, albeit easing from the recent peak. Malaysia's youth unemployment rate of 10.8% in 2017 is the third highest among the ASEAN-6[2]. The average youth jobless rate of 10.7% posted during the period 2001-2017 was higher than 9.2% registered during the period 1991-2000. Though the youth unemployment rate aged between 15 and 24, as a percentage share of total labour force had declined from a peak of 11.9% in 2009 to 10.8% in 2017, it remains above the long-term average of 10.1% during 1991-2014. Of particular concern is the rising number of unemployment in the "20-24" age group, which accounts for half of total unemployed youth.

The worrisome trend is a rapidly increasing unemployed graduates from 143,600 persons in 2008 to almost 203,500 persons in 2017 or equivalent to an unemployment rate of 7.7% of total youth labour force compared to 6.8% in 2008. This makes up 40.5% of total unemployment. In 2017, we have a total of 134,054 Malaysian graduates with a bachelor degree from both public and private universities.

Youth employment is a top policy concern. Both the policy makers, including educationists and private sector employers need to critically address the issues of unemployment and underemployment of the Malaysian youth.

The mobilisation of youth resources in economic and social developments not only enhance a country's national income growth via productivity and generate economic welfare growth but also reap enormous benefits from demographic dividend. As such, reducing the youth unemployment holds the key to transforming Malaysia's youth bulge into a demographic dividend.

This research paper will analyse the trends and developments of youth unemployment in Malaysia. What are the characteristics of youth unemployment, with emphasis on graduate unemployment? It also offers some policy recommendations to tackle both structural and cyclical issues, which are required to enhance the employability of our youth.

Our analysis of the state of youth unemployment development in Malaysia are summarised below:

- The majority (55.7%) of unemployed youth have secondary education, followed by tertiary education (34.9%). Unemployed tertiary education youth have increased by

[1] It defined as persons in age group 15-24 yrs

[2] Asean-6 comprises Malaysia, Indonesia, Thailand, Philippines, Vietnam & Singapore

6.6% per annum (pa) in 2006-17. The on-going intensification of technology disruptions will further pressurise them to stay on “unemployed” status.

- The upward trend in unemployed tertiary graduates are mainly caused by an oversupply in private higher educational institutions (PHEIs) and the lack of collaborations between what businesses’ needs and universities’ supply, resulting in a mismatch between the supply of skilled workers and jobs creation.
- 58.3% of unemployed youth have working experience and 75.7% of them were mainly from the “20-24” age group. They were unemployed because of inadequate skillset and insufficient qualification to seek for better jobs.
- While there are enormous supply of low-skilled jobs, the unemployed youths are equipped with at least secondary education, which can perform semi-skilled or skilled jobs.
- The unemployment is higher for female youth relative to males. Amongst the unemployed degree holders, 61.7% were females, reflecting some gender biasness in hiring and females stereotype in the workplace.
- By state, Sabah has a relatively higher youth unemployment compared to other states due to the lack of economic activities and investment to generate sufficient employment opportunities.
- The youth are feeling the pinch of rising cost of living on account of the slower growth pace of median monthly salary. In 2017, median monthly salaries of youths ranged between RM1,180 and RM2,000. Faced with limited bargaining power when comes to securing employment, thus making them as “price takers” in semi-skilled jobs being offered to them. Some have chosen to “wait-and-see” until they found their preferred jobs and asking salary.
- Unemployed persons normally have low awareness and lack of understanding about job market information and hence, hinder or slow down the process of jobs searching.

SERC recommended the following initiatives and outcome-based solutions to boost the employment of youth in Malaysia. The policy areas include regulatory, public employment and entrepreneurship strategies, labour market training and skill improvement, job market information as well as incentives for employment creation.

A. Enabling entrepreneurship
B. Establish a hiring platform for women
C. Aligning young people’s skills with job opportunities
D. Tracking the performance private higher education institutions (PHEIs)
E. Balanced regional economic development
F. Enhance awareness of job market information

Table of Contents

List of Tables

List of Figures

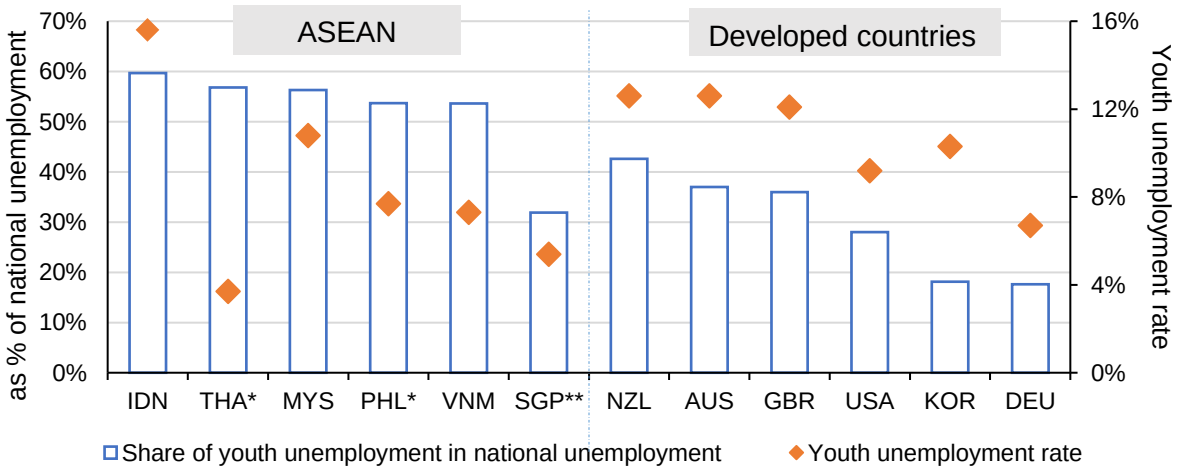
1.0 Youth unemployment in Malaysia: Trends and developments

Youth unemployment is a major issue around the world. Policy makers are struggling to address persistent youth unemployment crisis both in developed and developing countries. In developed countries, a majority of countries' youth unemployment rate was between 9% and 13% compared to developing countries (6.7%-12.6%). According to the International Labour Organization (ILO), global youth unemployment rate was estimated at 13.1% in 2017 vis-à-vis global total unemployment rate of 5.8%. Despite the number of unemployed youths declined by 0.9% pa from 77 million persons to 70.9[3] million persons between post 2008-09 Global Financial Crisis (GFC) and 2017, the pace of progress remains slow.

In ASEAN, with the exception of Singapore, youth unemployment is a norm making about half of national unemployment in 2017 (Figure 1). In Malaysia, youth unemployment rate stood at 10.8% in 2017, the third highest among the ASEAN-6[4]. The average youth jobless rate of 10.7% registered in 2001-2017 was higher than 9.2% posted in 1991-2000. Though the unemployment rate for those aged between 15 and 24, as a percentage share of total labour force had declined from a peak of 11.9% in 2009 to 10.8% in 2017, it remains above the long-term average of 10.1% during 1991-2014.

The worrisome trend is a rapidly increasing unemployed graduates from 143,600 persons in 2008 to almost 203,500 persons in 2017 or equivalent to an unemployment rate of 7.7% of total youth labour force compared to 6.8% in 2008. This makes up 40.5%% of total unemployment. In 2017, a total of 134,054 Malaysian graduates with a bachelor degree graduated from both public and private universities.

Figure 1: Youth unemployment in selected countries (2017)



*Note: *= refer to 2016 data, ** =refer to people who below 30 year old, DEU=Germany, NZL=New Zealand, GBR= United Kingdom.*
Source: International Labour Organization (ILO), Malaysia Labour Force Survey 2017, Manpower Singapore

[3] *ILO estimate*
[4] *ASEAN-6: Malaysia, Indonesia, Thailand, Philippines, Vietnam, Singapore*

A cohort perspective of workforce and youth unemployment

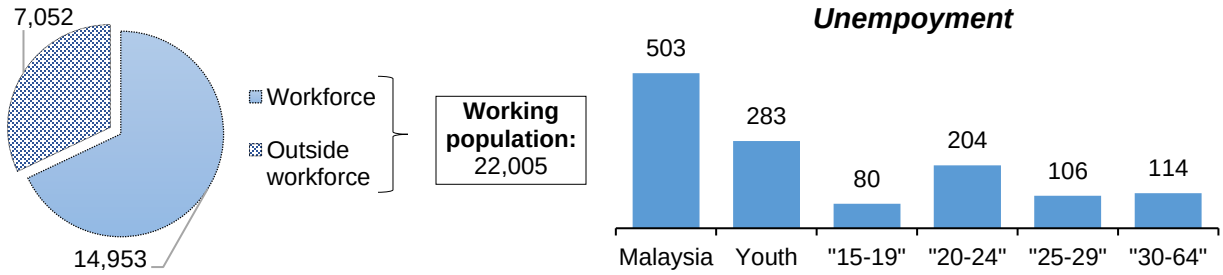
In Malaysia, the "15-19" age group makes up a small share of 3.5% of total workforce (14.9 million) in 2017 while the "20-24" and "25-29" age groups' participation were higher by four and five times respectively. We can infer that generally it is a norm for a young Malaysian to begin his or her working life starting from the age of 20. They have at least completed secondary education (17–18 years old) while most of them would further pursue tertiary education that will take another three to four years to complete. This partly explained why a relatively high share of 34.7% outside labour force for the "20-24" age group.

The "15-19" age group recorded a double-digit unemployment rate of 15.4% in 2017 and its share of outside labour force rose by 2 percentage points from 79.7% in 2013 to 81.9% in 2017 (Table 1). This indicates that the "15-19" age group were either drop-outs from secondary education seeking for employment; or those unemployed seeking for enrolment into polytechnics or tertiary education; or youth who frequently changing jobs.

Based on the ILO's definition, Malaysia's youth unemployment currently making up of about 56.4% of national unemployment in 2017. This was largely contributed by the "20-24" age group (2017: 71.8% share of total youth unemployment) compared to the "15-19" age group (28.2%). In terms of number, unemployed persons from the "20-24" age group had increased by 1.3 times, from 157,600 persons in 2011 to 203,500 in 2017, whereas those from the "15-19" age group ranged between 75,000 and 86,000 persons between 2011 and 2017. This underlies the urgency to address unemployment at the "20-24" age group.

In addition, the data flags alert on the unemployed persons from "25-29" age group, which made up nearly 20% of total workforce. Unemployed persons from the "25-29" age group increased significantly by 8% pa from 66,700 persons in 2011 to 105,900 persons in 2017, with the number and percentage share of national unemployment rising at a faster pace from 2013 onwards (Figure 4 and Figure 5). In 2017, this group held 21.1% share of total unemployment with an unemployment rate of 3.9%, which was above national unemployment rate of 3.4%. While they were unemployed likely caused by retrenchment or seeking for better job, but some of those in the "25-29" age group might be engineering or medical fresh graduates. This implies that some issues are hindering them to be employability.

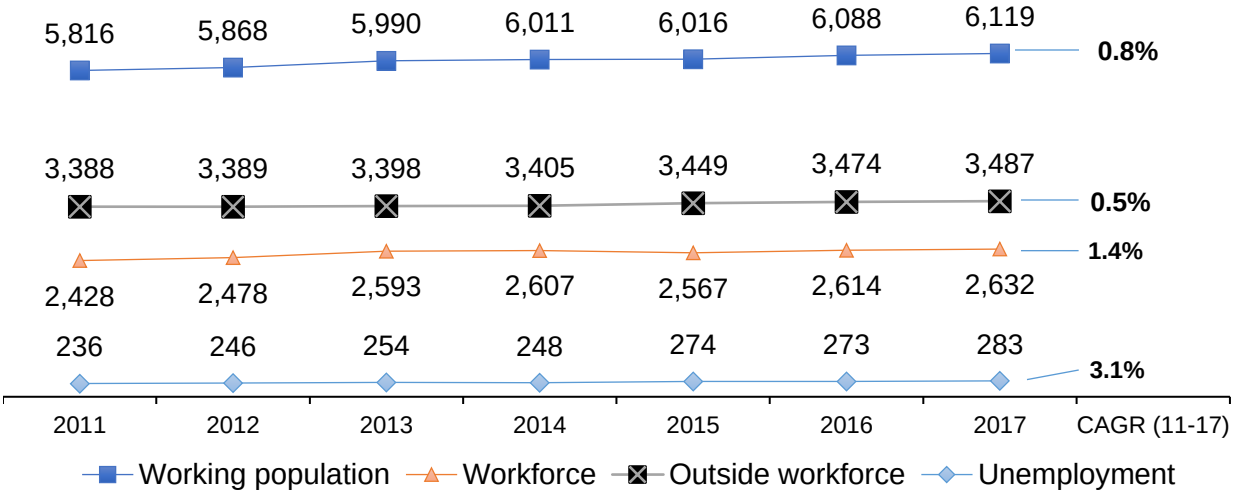
Figure 2: Malaysia's labour market outlook 2017 ('000)



Source: Department of Statistics, Malaysia (DOSM)

Figure 3: Workforce, outside workforce and unemployment by youth (15-24 age group)

('000 persons)



Source: DOSM

Table 1: Working population by age group

	2013		2017	
	Number (000')	**Share (%)**	**Number (000')**	**Share (%)**
	"15-19" age group			
Working population	2,868	100.0	2,880	100.0
Workforce	575	20.1	520	18.1
Outside workforce	2,293	79.9	2,360	81.9
	"20-24" age group			
Working population	3,123	100.0	3,238	100.0
Workforce	2,018	64.6	2,112	65.2
Outside workforce	1,105	35.4	1,127	34.8
	"25-29" age group			
Working population	3,025	100.0	3,184	100.0
Workforce	2,536	83.8	2,740	86.1
Outside workforce	489	16.2	444	13.9

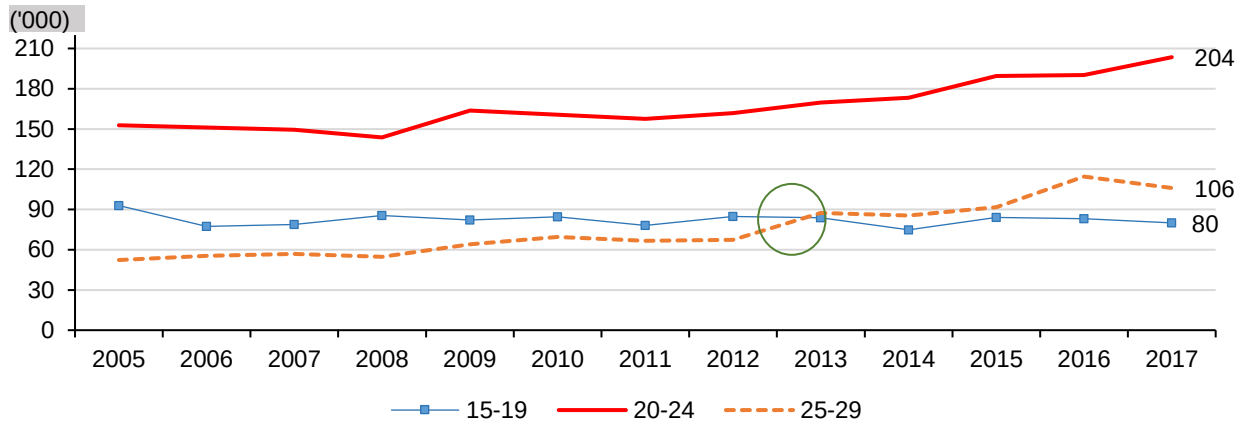
Source: DOSM

Table 2: Share and rate of youth unemployment

Unemployed	**2006**		**2013**		**2017**	
	Number (000')	**Share (%)**	**Number (000')**	**Share (%)**	**Number (000')**	**Share (%)**
"15-19"	77	33.9	84	33.0	80	28.2
"20-24"	151	66.1	170	67.0	204	71.8
Youth "15-24"	228	100.0	254	100.0	283	100.0
	Unemployment rate (%)					
National	3.3		3.1		3.4	
Youth	10.9		9.8		10.8	

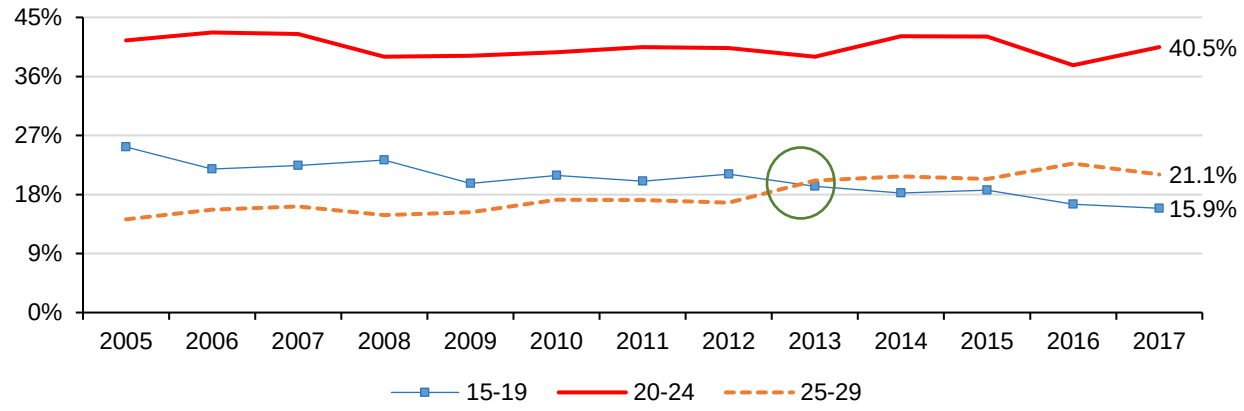
Source: DOSM

Figure 4: Unemployed persons by age group



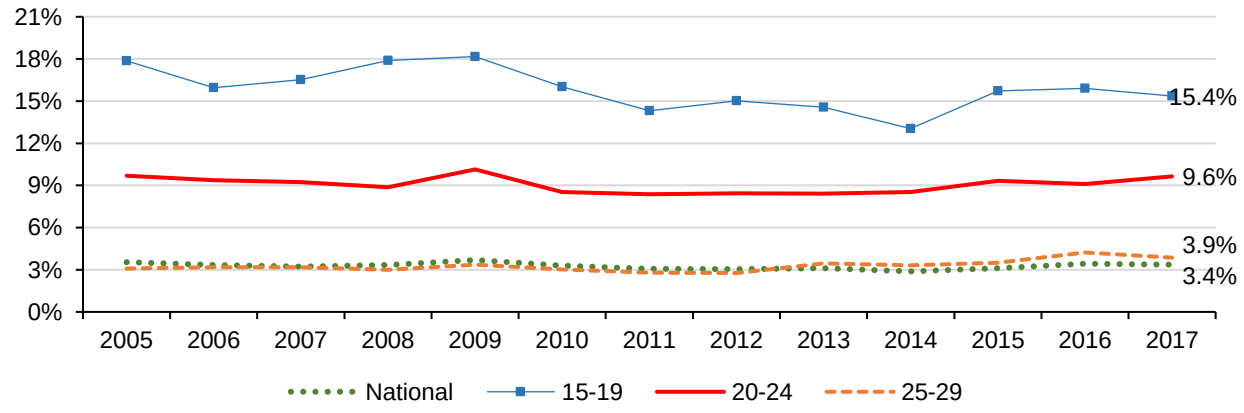
Source: DOSM

Figure 5: Unemployment share by age group



Source: DOSM

Figure 6: Unemployment rate by age group



Source: DOSM

2.0 The consequences of youth unemployment

The consequences of youth unemployment, if left unchecked and persisted will have a direct impact on the future economic growth and productivity of the country. Economic costs of unemployed youth would result in significant losses not only for the unemployed but also for society and community living. The severe unemployed youth reduces the overall labour participation and hence, dampens economic output due to lower productivity and also contribution of productive workforce (the loss of human capital).

Social problems also arise as the increasing unemployment levels will have direct implications on psychological well-being and adverse effects for the integration of young people in the society by triggering the danger of weakening social cohesion and economic exclusion in the society. It is because of self-inflicted pressure and felt being marginalised or non-participation in society, the unemployed youth, including school dropouts would indulge in anti-social activities such as crime and drugs.

The fiscal costs associated with high youth unemployment are high as the limited public resources to support social programs for both young and old people will have to be thinly spread. Social support programs meant for the elderly will be diverted for the unemployed young people. A productive youth generation is needed to support the elderly pension and health care. But, high youth unemployment means higher spending on social programs on them, lost income to the government through tax revenue foregone and higher spending on services such as the criminal justice system and social rehabilitation programs.

If the high rate of unemployment among young adults continues to rise, those remaining in the workforce will have to support an ever-growing number of retirees. This will permanently depress their earnings and savings, causing the funding conundrum of retiree pension and health care. The Government needs to consider strategies to boost youth employment before today's young people become additions to the growing population of retirees.

3.0 Characteristics of youth unemployment

In this section, we examine the characteristics of youth unemployment in Malaysia that will provide a clearer understanding of and the extent to which the issues of youth unemployment can be addressed more realistically and practically.

3.1 High incidence of female youth unemployment

Malaysia's workforce grew by an annual average growth of 3.2% pa in 2006-17 with males still dominating the workforce with a share of 61.5% while that of female workers increased from 35.6% in 2006 to 38.5% in 2017. Male youth constituted 60.6% of the 2.63 million youth workforce in 2017 (Table 3) while the share of female youth has remained relatively unchanged at 40% despite the increasing share of national female workforce. The 1.97 million increase in national female workforce between 2006 and 2017 was mainly from the "25-39" age group (Figure 7),

indicating the return to workforce by many homemakers, including those have taken a long break. Some of them whose had left the workforce due to personal reasons, including take care of their families, have returned to work.

Table 3: Workforce and unemployed by gender

Number (000)	*2006*	*2010*	*2016*	*2017*	*CAGR (06-17)*
Workforce	**10,629**	**12,304**	**14,668**	**14,953**	**3.2%**
Male	6,844	7,956	9,012	9,196	2.7%
Female	3,785	4,348	5,656	5,757	3.9%
Youth:	**2,097**	**2,411**	**2,614**	**2,632**	**2.1%**
Male	1,249	1,469	1,583	1,594	2.2%
Female	848	941	1,031	1,038	1.9%
“25-29”	**1,746**	**2,301**	**2,708**	**2,740**	**4.2%**
Male	1,050	1,416	1,580	1,633	4.1%
Female	697	885	1,129	1,107	4.3%
Unemployed	**354**	**404**	**504**	**503**	**3.2%**
Male	225	248	282	300	2.6%
Female	129	157	222	203	4.2%
Youth:	**228**	**245**	**273**	**283**	**2.0%**
Male	135	141	156	165	1.9%
Female	93	104	118	118	2.2%
“25-29”	**55**	**70**	**115**	**106**	**6.1%**
Male	34	41	55	62	5.7%
Female	22	29	60	44	6.7%

Source: DOSM

In 2017, the youth accounted for 56.4% of total unemployment. Despite male youth workforce had grown at 2.2% pa higher than that of female (1.9% pa), we observed that in 2016-17, unemployment amongst female youth have risen by 2.2% per annum, higher than male youth of 1.9% pa. Female youth constituted nearly 60% of total females unemployed and 23.5% of national unemployment. Male youth constituted 55% of total unemployed males.

We can conclude that despite female youth contributing only 6.9% of national workforce, this group accounts for 23.5% of national unemployment and 58.1% of females unemployed in the country, thus indicating higher incidence of being unemployed when compared to the male counterparts. Besides that, the ”25-29” age group made up 18.3% of total workforce and 21.1% share of total unemployment. By gender, although the “25-29” age group unemployed persons were majority contributed by males in 2017 (58.4% share), but female unemployed had a higher growth rate of 6.7% pa between 2006 and 2017 against the male unemployed growth rate of 5.7% pa. This implies that some gender biasness in hiring and firing in the workplace for some jobs.

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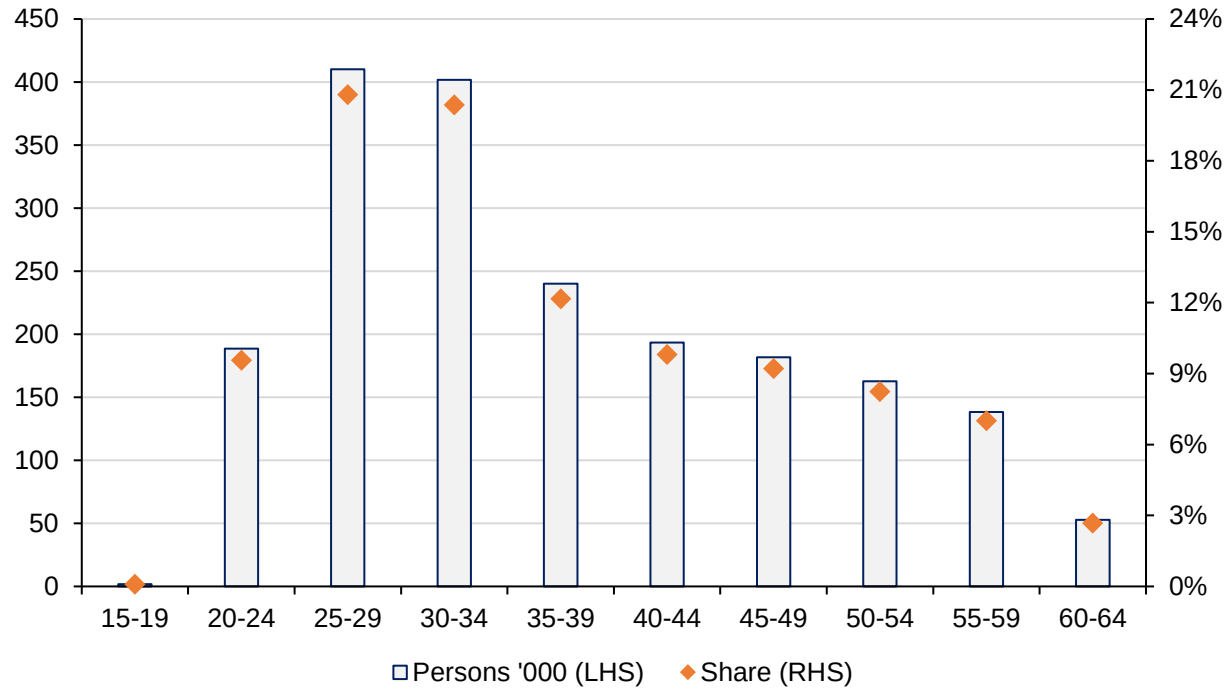
Table 4: Percentage share of workforce and unemployed by gender

Share (%)	*2006*	*2010*	*2016*	*2017*
Workforce	**100.0**	**100.0**	**100.0**	**100.0**
Male	64.4	64.7	61.4	61.5
Female	35.6	35.3	38.6	38.5
Youth:	**19.7**	**19.6**	**17.8**	**17.6**
Male	59.6	60.9	60.6	60.6
Female	40.4	39.0	39.4	39.4
“ 25-29”	**16.4**	**18.7**	**18.5**	**18.3**
Male	60.1	61.5	58.3	59.6
Female	39.9	38.5	41.7	40.4
Unemployed	**100.0**	**100.0**	**100.0**	**100.0**
Male	63.6	61.3	56.0	59.6
Female	36.4	38.8	44.0	40.4
Youth:	**64.6**	**60.6**	**54.2**	**56.4**
Male	59.1	57.5	56.9	58.3
Female	40.8	42.4	43.1	41.7
“25-29”	**15.7**	**17.2**	**22.7**	**21.1**
Male	61.0	58.3	47.6	58.6
Female	39.0	41.7	52.4	41.5

Source: DOSM

Figure 7: The contribution of 1.97 million in national female workforce by age group



Source: DOSM

3.2 Education system

The barriers on the supply and demand side of the youth employment are not only linked to mismatch or shortfall in both technical and non-technical (generic or soft skills), but also due to a deterioration in the standard of education system and academic qualification. Paper examinations are being overemphasized.

The employers often claimed that they cannot find suitable candidates with the right skills and right attitude to fill up the posts. A JobStreet survey found that 70% of the employers surveyed believed the standard of graduates from local universities were just average while 24% believed that they were 'bad' and only 6% believed they were 'good'. The main complaints were about attitude towards work and the lack of communication skills.

In 2006-17, 84.1% of national workforce have either completed secondary and tertiary education, increasing from 8.05 million to 12.57 million students (Table 5). In 2017, about 55.8% of workforce have completed at least secondary education while 28.3% have completed tertiary education. The number of workforces with no education or at least primary education have gradually declined from 24.2% in 2006 to only 15.9% during 2017. This reflects that Malaysian workers are gaining higher education or qualifications prior to joining the labour force.

In 2017, 55.7% of total unemployment had only secondary education while 35% had tertiary education (Table 6). The majority of those unemployed with secondary education had completed their SPM (77.1%), and mostly were males (65.4%). Since the youth unemployment accounted for 56.4% of national unemployment, we strongly believe that most of the youth unemployed had charted similar trend. We can also assume that with only SPM qualification or equivalent, these youth faced with higher risk of being unemployed. Looking ahead, we anticipate that those with only secondary education may also face tougher challenges of staying employed or face higher chances of being retrenched due to the disruptive forces of new technologies.

Table 5 also revealed that unemployment among those with tertiary education qualifications have gradually trending upwardly, rising by 6.6% pa from 86,700 persons in 2006 to 175,900 persons in 2017. This unemployment trend was driven higher by those having completed degree education (7.2% pa) against those with diploma education (6.7% pa). However, in absolute terms, those who have completed their diplomas education and remained unemployed were slightly higher than those with degree qualifications, i.e., 70,800 diploma graduates against 66,600 degree graduates. The unemployment of diploma holders amongst its own peers' workforce have also risen when compared with unemployment amongst degree graduates workforce. In 2016-17, unemployed diploma graduates have increased by 22.5% whereas unemployed degree holders declined by 9.8%. We can infer that employers may now prefer to hire degree holders vis-a-vis diploma holders.

Within the workforce with tertiary education, female workforce has shown a higher growth of 7.4% pa in 2017 compared to the growth of 6.2% pa for male workforce. Female workforce with degree qualifications had shown a significant increase of 9.6% pa from 366,500 persons in 2006 to one

million graduates in 2017, securing a 52.1% share of total workforce with degree qualifications. This shows a trend where females are advancing their jobs prospect through obtaining higher academic education and hence, may potentially surpass the male workforce for high skills job in the future. Meanwhile, it takes at least four to five years to build up a career-path progression after the completion of higher education. However, female youth are more likely to quit their jobs before 30 years old to start a family. As employers normally plan to minimize disruptions in the workplace and contain the turnover rate of female employees, they are more inclined to hire male youth rather than female youth if both have similar degree qualifications.

However, we observe that the share of unemployed females with tertiary qualifications are relatively higher than their shares in the tertiary workforce; and more apparent in workforce having degree qualifications. In 2006-17, unemployed female degree holders constituted 61.7% of total unemployed degree holders although female degree holders made up of only 52.1% of the degree graduates workforce. This may also reflect gender bias and stereotyping opinion on women performing work roles, thus affecting the existing recruitment of female job seekers.

Table 5: Workforce by education level

Number (000)			***2006***	***2010***	***2016***	***2017***	***CAGR (06-17)***
Labour force			**10,628**	**12,304**	**14,687**	**14,953**	**3.2%**
No education & Primary		**Total**	**2,576**	**2,621**	**2,505**	**2,377**	**-0.7%**
Secondary		**Total**	**5,989**	**6,792**	**8,098**	**8,344**	**3.1%**
		Male	4,031	4,600	5,286	5,426	2.7%
		Female	1,958	2,192	2,812	2,918	3.7%
	SPM	*Total*	*3,689*	*4,508*	*5,631*	*5,915*	*4.5%*
		Male	2,286	2,884	3,521	3,683	4.4%
		Female	1,373	1,624	2,111	2,232	4.5%
Tertiary		**Total**	**2,062**	**2,891**	**4,065**	**4,231**	**6.8%**
		Male	1,120	1,554	2,067	2,160	6.2%
		Female	942	1337	1,999	2,071	7.4%
	Diploma	*Total*	*866*	*991*	*1,409*	*1,463*	*4.9%*
		Male	461	514	708	740	4.4%
		Female	404	404	477	724	5.4%
	Degree	*Total*	*836*	*1,197*	*1,829*	*1,938*	*7.9%*
		Male	470	633	875	929	6.4%
		Female	367	564	955	1,010	9.6%

Source: DOSM

Table 6: Unemployment by education level

Number (000)			*2006*	*2010*	*2016*	*2017*	*CAGR (06-17)*
Unemployed			**354**	**404**	**504**	**503**	**3.2%**
No education & Primary		**Total**	**52**	**60**	**49**	**47**	**-0.9%**
Secondary		**Total**	**215**	**242**	**286**	**280**	**2.4%**
		Male	147	158	177	183	2.0%
		Female	68	85	109	97	3.3%
	SPM	*Total*	*146*	*171*	*223*	*216*	*3.6%*
		Male	90	101	132	134	3.7%
		Female	57	70	92	82	3.5%
Tertiary		**Total**	**87**	**102**	**170**	**176**	**6.6%**
		Male	41	49	79	83	6.6%
		Female	46	54	91	93	6.7%
	Diploma	*Total*	*35*	*33*	*58*	*71*	*6.7%*
		Male	19	15	28	38	6.6%
		Female	16	19	30	33	7.0%
	Degree	*Total*	*31*	*34*	*74*	*67*	*7.2%*
		Male	13	15	30	26	6.6%
		Female	19	20	44	41	7.5%

Source: DOSM

Last but not least, the upward trend in unemployed tertiary graduates can be attributed to two major reasons. Firstly, the oversupply in private higher educational institutions (PHEIs) can impact the quality of students and graduates. The number of PHEIs have increased dramatically from 245 in 2017 to 479 in 2018 while that of public universities remained unchanged at 20 units. In terms of number of students, both public universities and PHEIs have 534,183 and 794,112 students respectively in 2016.

The Government has implemented MyQuest and SETERA system to assess the quality of teaching and learning in higher education institutions in Malaysia. But, the participation of PHEIs in MyQuest and SETERA is voluntary or by invitation. In 2017, only 206 private colleges and 51 private universities have participated in the evaluation system. However, the quality of students hardly improves as PHEIs have never been evaluated by any other third party on whether they are on-track or off-track in delivering the latest knowledge or practical skills to students.

The second reason for high unemployment among tertiary graduates can be attributed to the lack of suitable candidates for employment, resulting in skills mismatch between the supply and demand. In some instances, universities offer courses that are marketable and popular to students but not necessarily based on the industries' or businesses' needs. For example, based on Afterschool website, 142 institutions are offering a total of 475 "Business Administration" diploma and degree programs. The lack of collaborations between businesses and industries with the universities can result in the missing gaps between the learning institutions' curriculum and industries' demands as well as industry expectations. The demand for skills in the labour market or industries' needs are increasingly less stable, and the knowledge know-how is changing rapidly.

Thus, the tertiary education curriculum should not be too rigid, but instead be more relevant, up-to-date and innovative to facilitate and support graduates' employability.

3.3 Education vs. working experience

Work experience provides certain soft skills such as team working, communication skills and commercial awareness and experience, all of which are sought after by employers, especially at a graduate level. While having a degree is a tremendous asset to enhance more employability, work experience is an important part of becoming 'workplace-ready'. A prospective employer will always look favourably on the efforts taken by those who have done work experience, which empowers new talent and gives them an edge to push for the most sought after graduate positions in the field.

Among the 283,400 unemployed youths in 2017, about 58.3% of them have working experience and 75.7% of them were mainly from the "20-24" age group. For "25-29" age group, unemployed persons with working experience rose by 6.1% pa from 43,000 people in 2006 to 82,100 people in 2017 (Table 7). As unemployed persons with secondary education accounted for about 55.7% of total unemployment, SERC strongly believes that the majority of unemployed Malaysian youth have secondary education with a few years of working experience as well. But they are unemployed because of the lack of soft skills and have insufficient qualifications to look for better jobs.

Unemployed youth with no working experience (118,800 persons) were dominated by those from the "20-24" age group (65.8%), followed by "15-19" age group (34.2%). Since Malaysia's tertiary education pathway is normally completed between 20 and 25 years old (*Appendix IV*), we strongly believe that these unemployed youth were mainly fresh graduates (diploma and degree holders) who have yet to be employed and are still actively looking for jobs. As for the unemployed 15-19 age groups, it can be construed that the job market requires secondary education is either limited or being filled by foreign workers.

By gender, the unemployed "20-29" age group with no working experience exceeded that of males in 2016-17. This phenomenon clearly demonstrates gender discrimination. In SERC's opinion, this discriminatory gender practice could also be a manifestation of the Employment Act 1995 itself which requires employers to pay 60-day maternity leave. The proposal to have mandatory extension of maternity leaves to 90 days is seen as additional cost and productivity loss to employers. Thus, employers tend to prefer the hiring of male over female employees.

Table 7: Youth unemployment by work experience

Number ('000)	**2006**	**2010**	**2016**	**2017**	**CAGR(06-17)**
Unemployed youths	**228**	**245**	**273**	**283**	**2.0%**
Worked before	**120**	**135**	**157**	**165**	**2.9%**
"15-19"	*33*	*36*	*39*	*39*	*1.5%*
Male	23	26	26	26	1.1%
Female	10	10	13	13	2.4%

Number ('000)	2006	2010	2016	2017	CAGR(06-17)
"20-24"	*86*	*100*	*118*	*125*	*3.5%*
Male	55	60	71	79	3.4%
Female	31	40	47	46	3.6%
Never worked	**109**	**110**	**117**	**119**	**0.8%**
"15-19"	*44*	*49*	*44*	*41*	*-0.7%*
Male	25	28	26	24	-0.3%
Female	19	21	19	16	-1.3%
"20-24"	*65*	*61*	*72*	*78*	*1.7%*
Male	32	27	33	36	1.0%
Female	33	33	39	43	2.4%
Unemployed "25-29"	**55**	**70**	**115**	**106**	**6.1%**
Worked before	**43**	**53**	**93**	**82**	**6.1%**
Male	27	33	46	52	6.2%
Female	16	20	47	30	5.8%
Never worked	**12**	**16**	**22**	**24**	**6.1%**
Male	7	8	8	10	3.3%
Female	6	9	13	14	8.8%

Source: DOSM

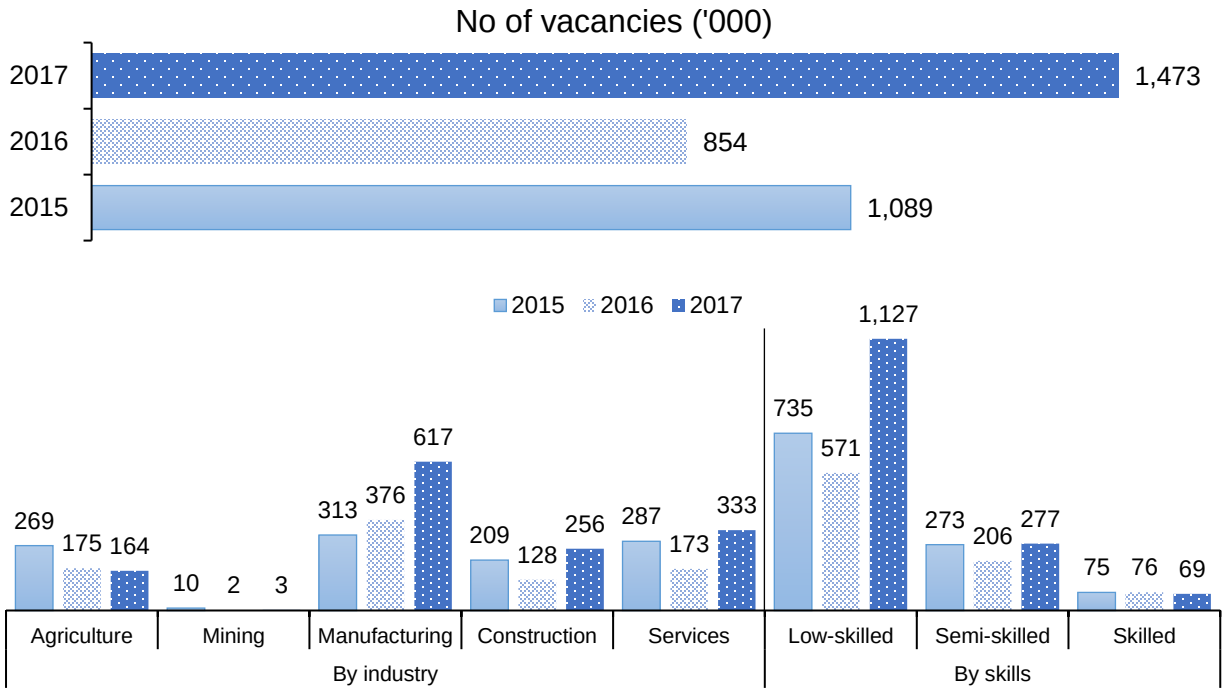
3.4 Mismatch between skills and job vacancies

According to Suruhanjaya Syarikat Malaysia (SSM), some 484,029 new businesses were registered in 2017, in addition to the 6.85 million businesses already registered. This implies that there are more job opportunities in Malaysia. Job vacancies increased substantially by 72.5% from 854,044 jobs in 2016 to 1.473 million jobs in 2017 (Figure 8). Jobs in the manufacturing sector alone contributed 42% of total vacancies, followed by 23% in services sector, 17% in construction sector and 11% in agriculture sector. Given these vacancies, what could possibly cause the rising youth unemployment?

The Malaysia Standard Classification of Occupation (MASCO) 2013 has classified occupations based on levels of education. Low-skilled jobs are associated with primary education or below; semi-skilled jobs are related to secondary education; and skilled jobs are usually for those equipped with tertiary education. In 2017, there were 1.127 million jobs available, which are considered low-skilled jobs (76.5% of total vacancies), but there were only 46,800 unemployed persons having primary education or below. Low-skilled jobs, which include 3D (*Dirty, Dangerous and Difficult*) jobs are not sought after by Malaysians, which explained why foreign workers are in demand to fulfil these job vacancies. Despite the availability of semi-skilled jobs, which increased from 206,000 in 2016 to 276,600 in 2017, the number of unemployed persons having secondary education stood at 280,000 persons. This is probably due to mismatch of skills required and the divergence of jobs locations in relation to the location of unemployed persons.

Next, in tandem with the transformation towards Knowledge economy (K-economy), the share of labour forces with tertiary education increased from 19.4% in 2006 to 28.3% in 2017. Unfortunately, the number of unemployed persons with tertiary education doubled from 86,700 persons in 2006 to 175,900 persons in 2017. The job market could only provide 69,239 high-skilled jobs. Three implications can be drawn: a) inadequacy of high-skilled jobs in relation to the supply of tertiary graduates; b) mismatch between graduates' competencies and job specifications; and c) unrealistic wage expectations.

Figure 8: Vacancies by industry and skills



Source: Bank Negara Malaysia (BNM), DOSM

3.5 Low wage/salary

In 2017, median monthly salary of skilled jobs ranged between RM2,840 and RM5,800; semi-skilled between RM1,450 and RM2,000 while low-skilled job was RM1,200 (Table 8). The minimum wage in Peninsular Malaysia and East Malaysia was RM1,050 per month respectively. In general, market roughly offers the salary entry level between RM920 and RM1,450 per month for young people completed secondary education.

Table 8: Median and mean monthly salary by occupation, 2017

Type of skills	Occupation	Median RM	Mean
Skilled	Managers	5,800	7,847
	Professionals	4,467	5,084
	Technicians & associate professionals	2,840	3,288

Type of skills	Occupation	Median	Mean
		RM	
	Clerical support workers	2,000	2,211
	Service and sales workers	1,600	1,817
Semi-skilled	Skilled agricultural, forestry, livestock & fishery workers	1,450	2,130
	Craft and related trades workers	1,650	1,919
	Plant and machine-operators, and assemblers	1,650	1,869
Low-skilled	Elementary occupations	1,200	1,531

Source: DOSM

In 2017, median monthly salary of the "15-19" age group was RM1,180 while for "20-24" and "25-29" age groups were RM1,400 and RM2,000, respectively (Table 9). Despite median monthly salaries of these youth have increased between 6.5% and 10.1% per year during the period 2010-17, the wages they earned were barely sufficient to cover the high cost of living, particularly in urban areas. Such low wages may discourage youths to work and they would rather stay unemployed. With the outdated or inadequate skillset, the application of new technology and automation will further weaken the youths' salary bargaining power with employers. As a result, unemployed youth would take a longer time to seek for a job.

The youth who enrolled in diploma and degree courses are most likely to complete the
at the age group of "21 to 25". The Ministry of Higher Education (MOHE) has compiled the Graduates Tracer Study to keep track of student employability after completion of tertiary education. In
Figure 10, the salary entry level for fresh diploma holders stood at RM2,000 or below per month from 2010 to 2017. For fresh degree holders, 55.7% and 40.9% of respondents rated "RM2,000 or below" and "between RM2,001 and RM3,000" per month as salary entry level respectively in 2017. These mixed results can be explained by geographical factor as urban areas most likely to pay more than rural areas.

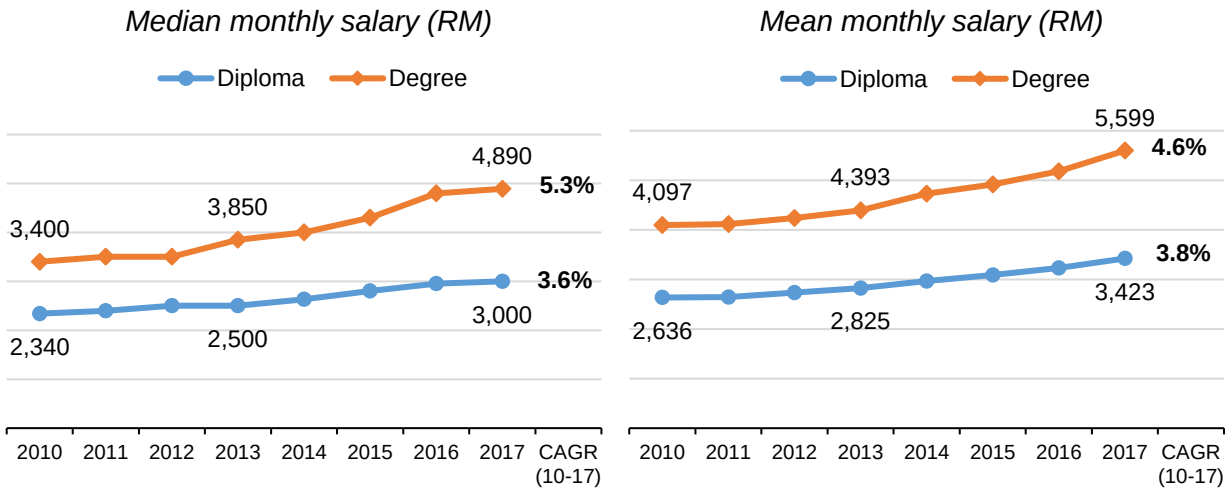
Prior to 2017, more than 10% of respondents (*fresh degree graduates*) indicated that companies were willing to hire them at a salary of no less than RM3,000 per month. But, during the 2017 study, only 3.4% of respondents had received salaries of RM3,000 and above per month. This shows that the youth have limited bargaining power when comes to securing employment, thus making them as "price takers" in semi-skilled jobs being offered to them. Youth with tertiary education set certain expectations on the remuneration they expect from prospective employers. But when they face with a big disparity between the actual salary offered and what they had expected, these youth would rather "wait-and-see" and choose not to work until they found their preferred jobs and asking salary, thus contributing to unemployment.

Table 9: Median and mean monthly salary by age group and by education level

	2010		2013		2017		CAGR (2010-17)	
	Median	Mean	Median	Mean	Median	Mean	Median	Mean
By age	RM						%	
15-19	600	676	800	867	1,180	1,323	10.1	10.1
20-24	900	1,085	1,100	1,307	1,400	1,643	6.5	6.1
25-29	1,300	1,552	1,650	1,912	2,000	2,256	6.3	5.5

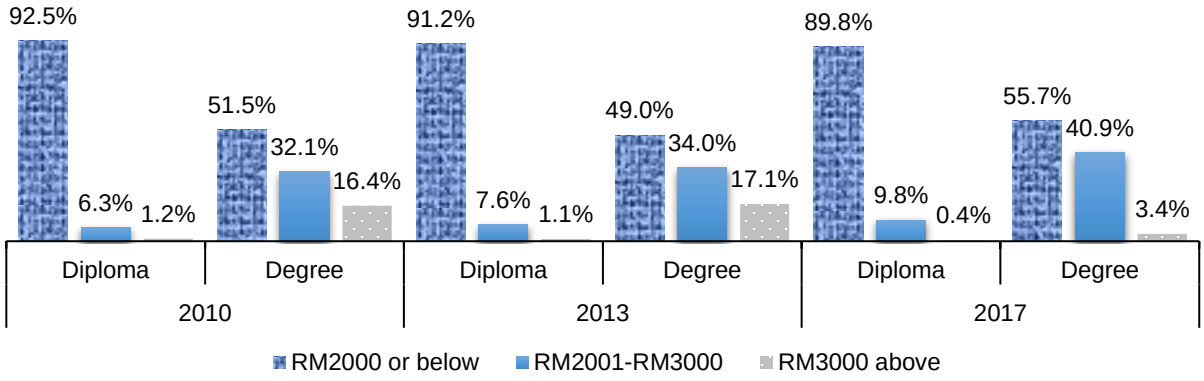
Source: DOSM

Figure 9: Median and mean monthly salary by diploma and by degree



Source: DOSM

Figure 10: Salary-entry level for diploma and degree holder

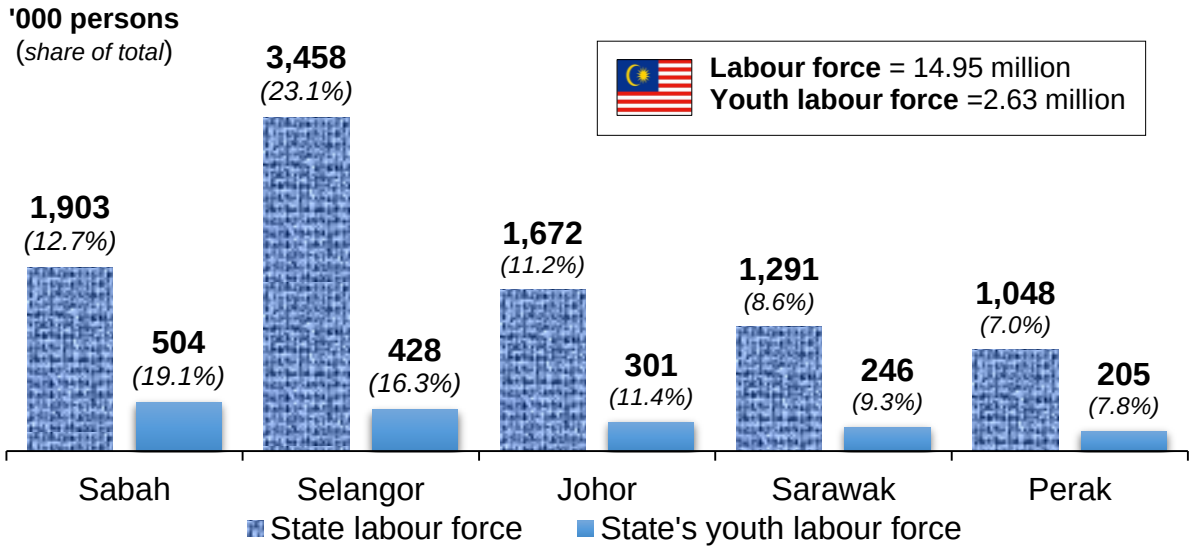


Source: DOSM, Minister of Higher Education (MOHE)

3.6 Geographical job locations

Of the total of 14.95 million labour force, 62.6% of labour force originating from these five major states: Selangor (3.45 million or 23.1%), Sabah (1.90 million or 12.7%), Johor (1.67 million or 11.2%), Sarawak (1.29 million or 8.6%), and Perak (1.04 million or 7.0%). Sabah, Sarawak and Labuan contributed a combine 21.6% of national labour force (Figure 11). Youth contributed 17.6% of national labour workforce. Sabah tops the states in having a young workforce with a 19.1% share of total youth workforce.

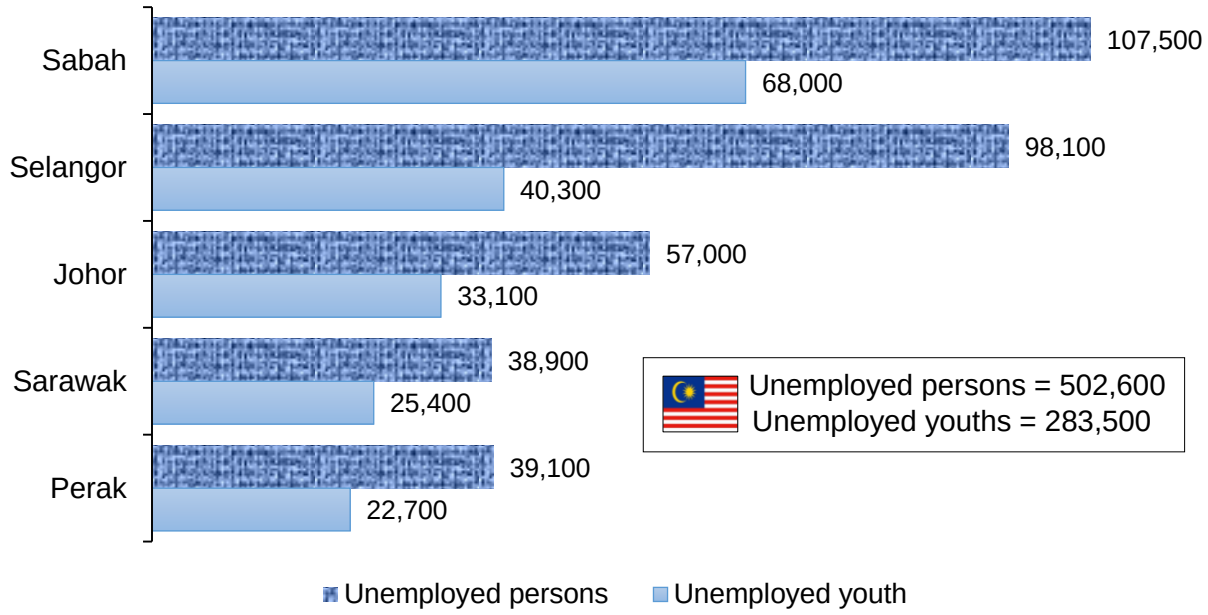
Figure 11: Labour force and youth labour force (2017)



Source: DOSM

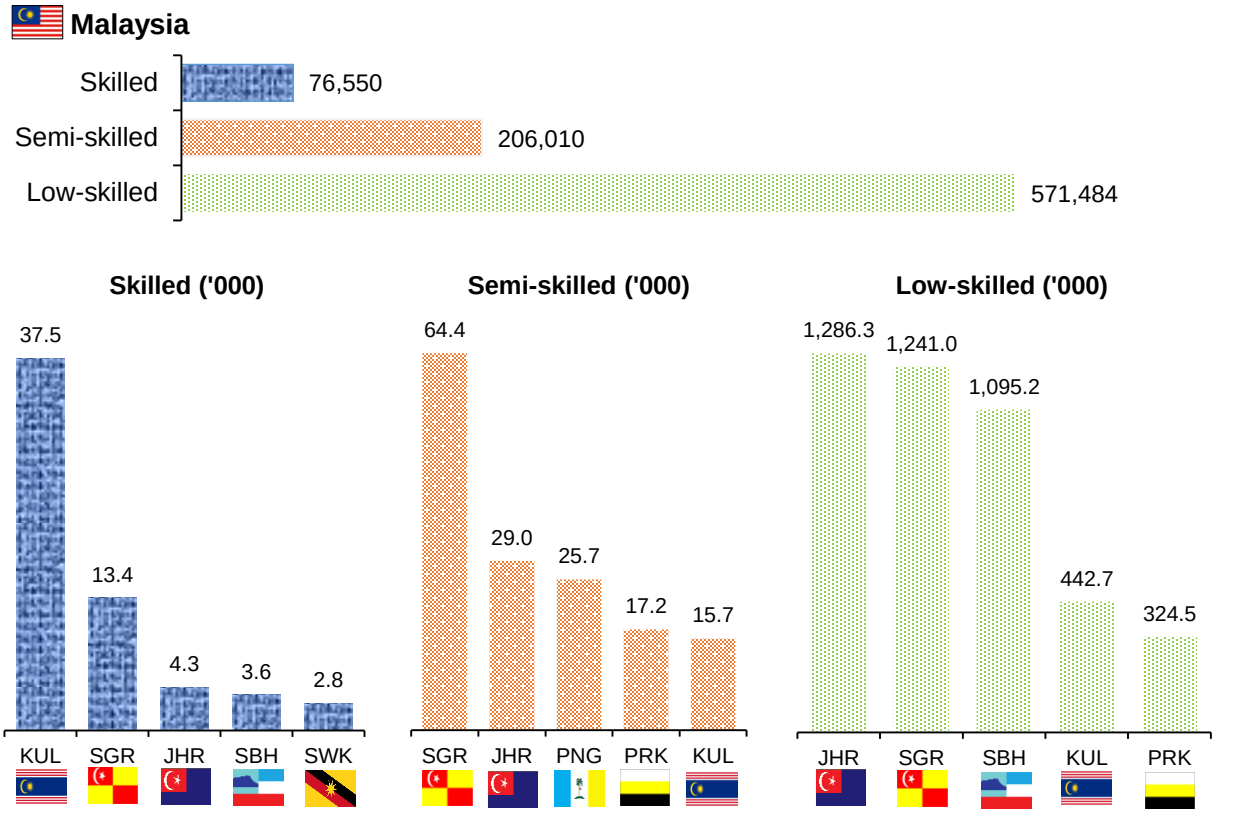
About 66.9% of youth unemployment can be found in Selangor, Sabah, Johor, Sarawak and Perak, mirroring the share of labour workforce mentioned in Figure 12**Error! Reference source not found.**. Sabah has a relatively higher youth unemployment compared to other states. Sabah's share of youth unemployment was 24.0% in 2017 against its share of 19.1% to national youth workforce. Figure 13 revealed 90.8% jobs available in Sabah were low-skilled in 2016. With higher cost of living relative to low wages in East Malaysia, this discourages youth in Sabah chosen not to work. Despite the youth in East Malaysia have indicated strong willingness to work in Peninsular Malaysia, they would face high migration or relocation costs, including flight ticket and high cost of living in urban. Most importantly, it is not 100% that youth from East Malaysia will be employed in Peninsular Malaysia compared to foreign workers. Next, the higher unemployment rate was attributed to lack of economic activities and investment projects to generate sufficient employment opportunities *(Appendix IX)*.

Figure 12: Unemployed youths and persons in top 5 states (2017)



Source: DOSM

Figure 13: Job available by Malaysia and top 5 states by type of job skill (2016)



Note: KUL=Kuala Lumpur, SGR= Selangor, JHR=Johor, PRK=Perak, PNG=Pulau Pinang SBH=Sabah, SWK=Sarawak

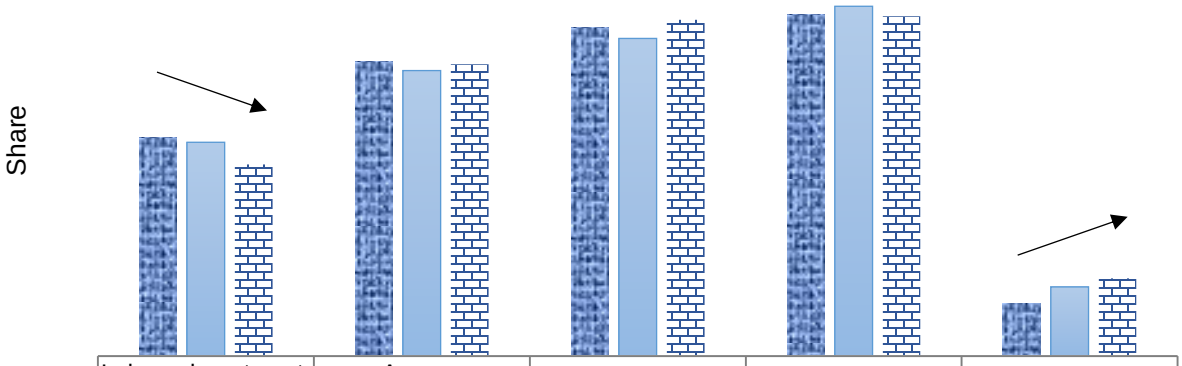
Source: DOSM

3.7 Job market information

It is undeniable that the internet and digitalised technology will increasingly have a profound change in the daily lives of Malaysian youth in the future. Based on the Internet User Survey 2016, the adoption rate of internet was negatively correlated with age. In 2015, 52.8% of internet users were from “15-29” age group.

There were two important findings. Firstly, the top five online activities are related to social: communication (92.7), getting information (90.1%), visit social networking sites (80%), watch TV (70.9%) and study (67.5%). Only 35.4% of internet users have rated for “convenience in applying for job online”. Secondly, 59% of internet users indicated that visiting the government official website was to search job vacancy in the public sector and agencies. Thus, internet has yet to be fully capitalized by the youth to seek for jobs despite the vacancies’ platform being provided by the Government. And, the unemployed have less preference to seek jobs from the labour department or employment agencies (Figure 14). Instead, they choose to find jobs through referrals from friends or relatives, job applications or job advertisements.

Figure 14: Steps taken to obtain jobs by unemployed person



	Labour department /Employment agency	Answer advertisement/ advertise	Send applications	Inform friends/ relatives	Others
2013	17.7%	23.8%	26.6%	27.6%	4.3%
2015	17.3%	23.1%	25.7%	28.3%	5.6%
2017	15.5%	23.6%	27.2%	27.5%	6.3%

Source: DOSM

4.0 Conclusion and recommendations

4.1 Highlights of the findings

The issues and challenges faced by Malaysian youth can be summarized as follows:

- Of the total of 2.63 million youth in the workforce, there were 283,400 unemployed youth against 502,600 national unemployed people. 71.8% of the unemployed youth are in the "20-24" age group followed by 28.2% in the "15-19" age group.
- There is an urgency to look into the "25-29" age group, which witnessed a significant increase in the number of unemployed persons with an increased percentage share in national unemployment after 2013, to 17.1% in 2011 from 21.1% in 2017.
- Males still dominate national workforce and youth workforce by a share of 61.5% and 60.6% respectively. Despite national female workforces have increased by 1.97 million between 2006 and 2017, it is mainly from the "25-39" age group. This indicates female youth may face difficulties to be employed.
- Unemployed female youth have increased by 2.2% pa, which is faster than the 1.9% pa increase of unemployed male youth between 2006 and 2017. And, female youth accounted for 60% of total female unemployed and 23.5% of national unemployment. The probability of female youth being unemployed is higher than that of male youth.
- The majority of current unemployed youth are equipped with only secondary education level (55.7% of total unemployment) whereas more than half of national unemployment came from youth unemployment.
- The unemployed with tertiary education accounted for 34.9% share of national unemployment with an increasing upward trend rising by 6.6% pa from 2006 to 2017. Most of these unemployed graduates had diploma and degree qualifications of 40.2% and 37.8% respectively.
- Amongst the unemployed degree holders, 61.7% comprise females. This reflects that the job market may be gender biased and stereotyping on women to perform corporate roles.
- An over-supply of graduates in private higher educational institution (PHEIs) and the lack of collaborations between industries and universities are major factors causing the upward trend in unemployed tertiary graduates.
- 58.3% of youth unemployed have working experience and 75.7% of them were mainly from the "20-24" age group. They are unemployed because of they are not adequately equipped with soft skills and working experience as well as the lack of qualifications to look for better jobs.
- Unemployed female in "20-29" age group with no working experience exceeded that of males in 2016-17, indicating gender discrimination.

- A share of 76.5% (1.127 million jobs) of total vacancies was low-skilled jobs whereas data showed only 46,800 unemployed persons with primary education or below. Malaysia is facing manpower shortage to handle 3D jobs.
- While the market has sufficient jobs availability for unemployed persons with secondary education, they are unemployed due to a mismatch of skills required and the diverse jobs locations.
- Unemployed graduates with tertiary education have exceeded at least two times the number of high skilled jobs vacancies, indicating the shortage of high-skilled jobs, mismatch between graduates' competencies and job specifications or unrealistic wage expectations.
- Despite median monthly salary of youth had increased between 6.3% and 10.1% pa during the period 2010-2017, but the median monthly salary of youth ranged between RM1,180 to RM2,000, which are insufficient to cope with the high cost of living, especially in urban areas. Low wage or salary entry level discourages the youth wanting to be employed.
- Fresh diploma holders were paid only "RM2,000 or below" per month and fresh degree holders had received "no more than RM3,000" per month in 2017. As the tuition fees of diploma or degree courses have increased year by year, the youth will place certain expectations on salary, which can help to repay their study loans or have better living standard. Unfortunately, this salary entry level has not changed or revised since 2010. As such, the current youth job seekers either become "price takers" to any jobs or adopt a "wait-and-see" behavior, which contributed to unemployment.
- Sabah, having the second largest youth workforce, has a relatively higher youth unemployment compared to other states. In 2017, Sabah's share of youth unemployment was 24.0% against its share of 19.1% of national youth workforce. This was caused by lack of high payroll job, lack of economic activities and investment to generate sufficient employment opportunities.
- Data showed that the favorite modes by unemployed persons to obtain jobs are via the submission of applications or being referred by friends and relatives. The Labour Department or employment agencies are rated as the last choice for unemployed persons. This infers that Malaysians have low awareness and lack of understanding about the job market information, especially offered by government services.

4.2 Recommendations

SERC recommended the following initiatives and outcome-based solutions to boost the employment of youth in Malaysia. The policy areas include regulatory, public employment and entrepreneurship strategies, labour market training and job skills improvement, job market information as well as incentives for employment creation.

A Enabling entrepreneurship

One of the ways of overcoming youth unemployment is to encourage graduates to be more entrepreneurial. The entrepreneurial ecosystem would support young people who can apply their creative potential and develop new micro-enterprises based on their ideas. The supporting entrepreneurship programs not only cover basis business skills training but supplemented by financial capital assistance, understand markets and customers and partners/contracting opportunities.

The Government and relevant agencies must foster collaborations with educators and businesses to promote a culture of entrepreneurship, targeting at the young creative and innovative people with business mindset.

In 2018 Budget, the Government will allocate RM20 million to finance the women training and entrepreneurship programs, which include the PEAK Entrepreneur under MyWin Academy. So far, MyWin Academy is located only in Kuala Lumpur. SERC suggests that it should be expanded to other states, especially Sabah. Since Sabah is lacking of economic activities, the women youth entrepreneurship programs can generate more employment opportunities and create positive multiple effects for the state. Furthermore, the Government should also utilize such funds to upgrade or re-skill unemployed women youths.

B Establish a hiring platform for women

The gender bias has placed female employees at a disadvantage to male employees on cost and productivity considerations. From the management's viewpoint, it is unfair to increase the workload for existing staff if a female employee is on maternity leave during her employment period. Moreover, it is hard to search for a suitable temporary worker as a short-term job relief measure. SERC recommends that the Job Malaysia website (*jobsmalaysia.gov.my*) to provide advisory and skills-jobs matching services to assist employers find temporary workers to relieve female employees on maternity leave. This will help to correct businesses' negative perceptions on the ease of a simple recruitment process, especially in getting temporary or replacement workers to relieve female employees on maternity leave.

The Government and employment agencies can use the database generated to analyze employment issues and problems, including as a source of reference to review the labour policy if needed.

C Aligning young people's skills with job opportunities

The disconnect and mismatch between the skills supply and job creation is masked by a paradox of increasing youth unemployment and the supply of youth with tertiary education exists alongside acute skills shortages and increased job vacancies. The accelerating pace of change in technology, business and market environment making it harder for the skills supply system to keep up with rapidly changing demand.

The stakeholders must work together to provide young people with a strong foundation of work relevant and on-the-job training, and to improve the market-place for specific skills training that can help align individuals with job opportunities.

These include labour market training and job improvement, mentorships, apprenticeships, internships and the provision of work experience programs, information and market-information solutions, job-search and matching support, outcome-based training solutions, career guidance/counseling programs for young people at all stages of the education process.

The Government can consider expand the Skim Latihan 1Malaysia (SL1M) to include SPM leavers as well in efforts to help providing skill training with a view of job placement matching their qualifications. In the SL1M website, the majority of participants are multi-national companies (MNCs). The low participation rate of SMEs is due to the SL1M tax-deduction incentive, which is not enough for SMEs (*Appendix X*). Moreover, SMEs only need small numbers of employees whereas MNCs require more employees. Therefore, SERC suggests that the Government should provide double-tax deduction and top up 10-15% salary to attract more SMEs to participate in the SL1M.

D Tracking the performance of PHEIs

There needs to place greater emphasis on enhancing education quality in helping young people to acquire specific education credentials. The Government has established MyQuest and SETERA system to evaluate the quality of teaching and learning in Higher Education Institutions in Malaysia. But, they have flexible rules and regulations and participation in the evaluation system is voluntary. The biggest disappointment is that no further actions have been or will be taken once the PHEIs maintain its status quo in MyQuest's Star 1 (*poor quality*) or SETARA's Tier 1 (*weak performance*).

SERC recommends that the Government to transform both systems from a voluntary participation to mandatory and that PHEIs with at least ten years operation must participate in the evaluation system. In addition, a timeframe or deadline should be set to ensure that PHEIs with low rating for a given number of years to upgrade their status. Also, the Government should take actions to ensure that PHEIs failing to meet the performance mark either have to enhance their quality of teaching and learning, including the syllabus or shutdown if necessary.

To create a competitive and excellent education institutions, the Government can consider to consolidate PHEIs, which is currently total 479 units in 2017. Through consolidation, PHEIs are able to improve their services, achieve the economies of scale, provide a better learning environment and become more financial sustainable. Lecturers could also have more time to upgrade themselves and engage in collaborative education and training projects with industries. Most importantly, securing better financial position to further investing in latest technologies to train more market-employable workforce.

E Balanced regional economic development

The regional economic growth disparities have resulted in the imbalance supply of jobs and high unemployment between developed and less developed states and also between urban and rural. The uneven manufacturing investments among the states also contributed to lower economic activities and jobs creations for less developed states (appendix XI). It must be noted that the general investment incentives such as income tax exemption, investment tax allowance and import duty and sales tax exemption are not applicable in all Malaysia Economic Corridors[5]. Thus, the Government should strike to achieve a balanced regional economic and industrial development though offering investment incentives to draw more investments into states with high unemployment rate.

G Enhance awareness of job market information

The Government and educators as well as employers must coordinate and collect data from job boards and other online services to assist young people on the job searching in different states and industries.

A comprehensive and efficiently-run support services for young peoples' carrier choices is needed at key career decision points. All stakeholders' industries must work together to develop a transparent, user-friendly online platform for job seekers, employers, and intermediaries (trainers/counselors). Young people at secondary and tertiary education must aware the career information programs made available by the public and private employment services and recruitment agencies. For example, manned-information and jobs market-making booth in high density locations such as selected LRT stations or shopping complexes to promote on-going government's and private's employment services and initiatives.

[5] *Northern Corridor Economic Region (NCER) and Sabah Development Corridor (SDC)*

4.3 Conclusion

Youth employment is a top policy concern. Both the policy makers, including educationists and private sector employers need to critically address the issues of unemployment and under-employment of the Malaysian youth.

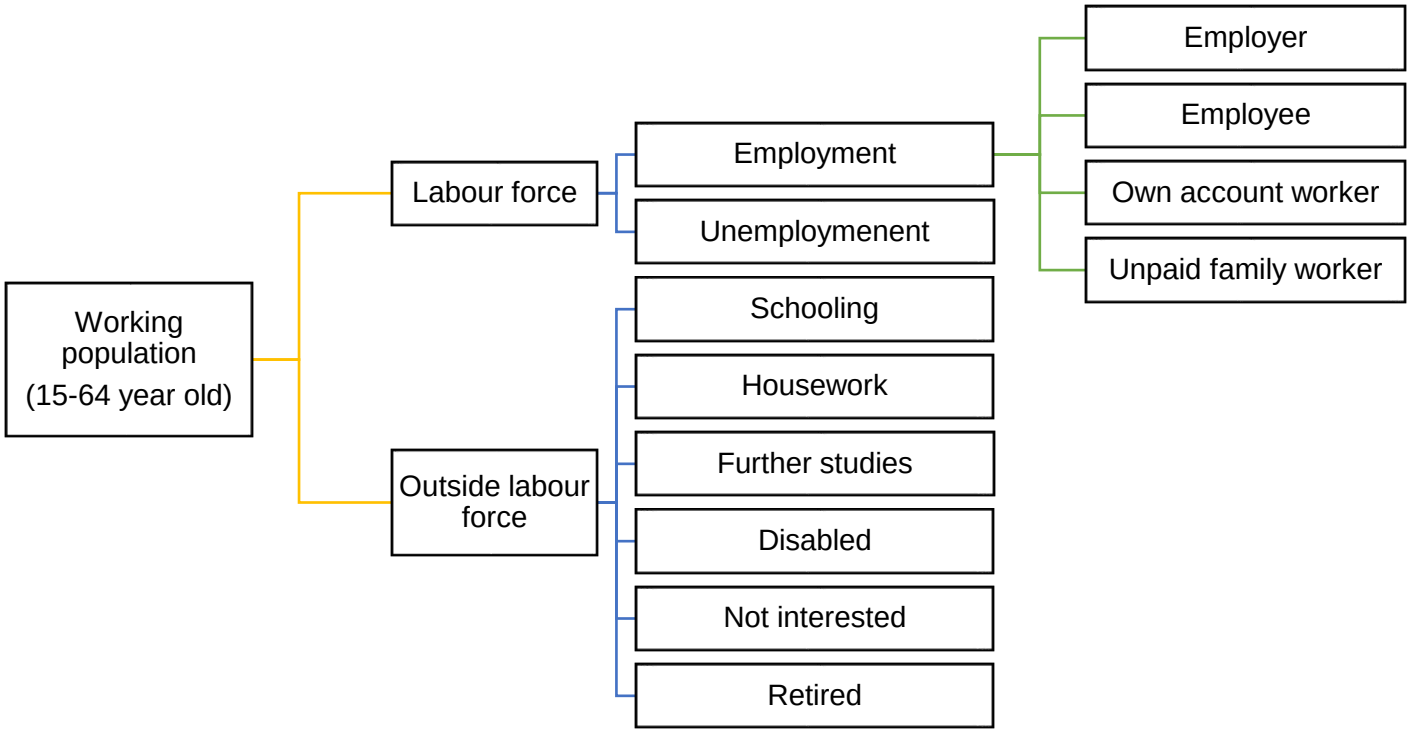
The mobilisation of youth resources in economic and social developments not only enhance a country's national income growth via productivity and generate economic welfare growth but also reap enormous benefits from demographic dividend. As such, reducing the youth unemployment holds the key to transforming Malaysia's youth bulge into a demographic dividend.

A mix of policies that tackle both structural and cyclical issues are required to enhance the employability of our youth. The policy framework must not only focus on skills and training development, but also entails labour market policies through building a functioning feedback mechanism between educational institutions and businesses.

It is expected that foreign workers and technology disruptions will further pressure the unemployed youth with secondary or tertiary education. Thus, the Government, businesses and educators must coordinate their efforts to transform unemployed youth into marketable workforce. Discriminatory women employment practices must be eliminated in order to increase the potential of female workforce participation. More importantly, youth must be nurtured and socialized to be more open-minded to accept any changes that initiate them to be more innovative and accept any task.

Both the public and private sectors must work together to reduce over-dependency on foreign workers. Domestic companies have to move quickly to integrate business model with automation or information, communication and technology (ICT) that can transform low-skilled jobs into semi-skilled jobs. Furthermore, more technology support and training incentives must be given to encourage domestic industries, especially SMEs to upgrade as well as utilize more technologies.

Appendix I: Population & labour force Malaysia



Source: Minster of Human Resource

Appendix II: Workforce, outside workforce and unemployment by age group

		2011	2012	2013	2014	2015	2016	2017	CAGR (11-17)
		Youth (15-24 age group)							
Total	(000)	5,816	5,868	5,990	6,011	6,016	6,088	6,119	0.8%
Workforce	(000')	2,428	2,478	2,593	2,607	2,567	2,614	2,632	1.4%
	Share,%*	19.1	18.7	18.5	18.3	17.7	17.8	17.6	-
Outside workforce	(000')	3,388	3,389	3,398	3,405	3,449	3,474	3,487	0.5%
	Share,%*	48.2	48.9	50.1	49.9	50.2	49.7	49.4	-
Unemployment	(000')	236	246	254	248	274	273	283	3.1%
	Share,%*	60.5	61.4	58.3	60.3	60.8	54.2	56.4	-
		"15-19" age group							
Total	(000)	2,851	2,851	2,868	2,855	2,840	2,869	2,800	0.2%
Workforce	(000')	545	564	575	573	535	523	520	-0.8%
	Share,%*	4.3	4.3	4.1	4.0	3.7	3.6	3.5	-
Outside workforce	(000')	2,305	2,287	2,293	2,282	2,306	2,346	2,360	0.4%
	Share,%*	32.8	33.0	33.8	33.4	33.6	33.6	33.5	-
Unemployment	(000')	78	85	84	75	84	83	80	0.4%
	Share,%*	20.0	21.1	19.2	18.2	18.7	16.5	15.9	-
		"20-24" age group							
Total	(000)	2,965	3,017	3,123	3,156	3,176	3,219	3,238	1.5%
Workforce	(000')	1,883	1,914	2,018	2,033	2,033	2,091	2,112	1.9%
	Share,%*	14.8	14.5	14.4	14.3	14.0	14.3	14.1	-
Outside workforce	(000')	1,083	1,102	1,105	1,123	1,143	1,128	1,127	0.7%
	Share,%*	15.4	15.9	16.3	16.5	16.6	16.1	16.0	-
Unemployment	(000')	158	162	170	173	190	190	204	4.4%
	Share,%*	40.5	40.3	39.0	42.1	42.1	37.7	40.5	-
		"25-29" age group							
Total	(000')	2,871	2,924	3,025	3,053	3,090	3,129	3,184	1.7%
Workforce	(000')	2,388	2,435	2,536	2,583	2,623	2,708	2,740	2.3%
	Share,%*	18.7	18.4	18.1	18.1	18.1	18.5	18.3	-
Outside workforce	(000')	482	489	489	470	468	421	444	-1.4%
	Share,%*	6.9	7.1	7.2	6.9	6.8	6.0	6.3	-
Unemployment	(000')	67	67	88	85	92	115	106	8.0%
	Share,%*	17.1	16.8	20.1	20.8	20.4	22.7	21.1	
		"15-64" age group							
Total	(000')	19,764	20,149	20,762	21,085	21,388	21,655	22,005	1.8%
Workforce	(000')	12,741	13,222	13,981	14,264	14,518	14,668	14,953	2.7%
Outside workforce	(000')	7,023	6,927	6,781	6,821	6,870	6,988	7,052	0.1%
Unemployment	(000')	389	401	435	411	450	504	503	4.4%

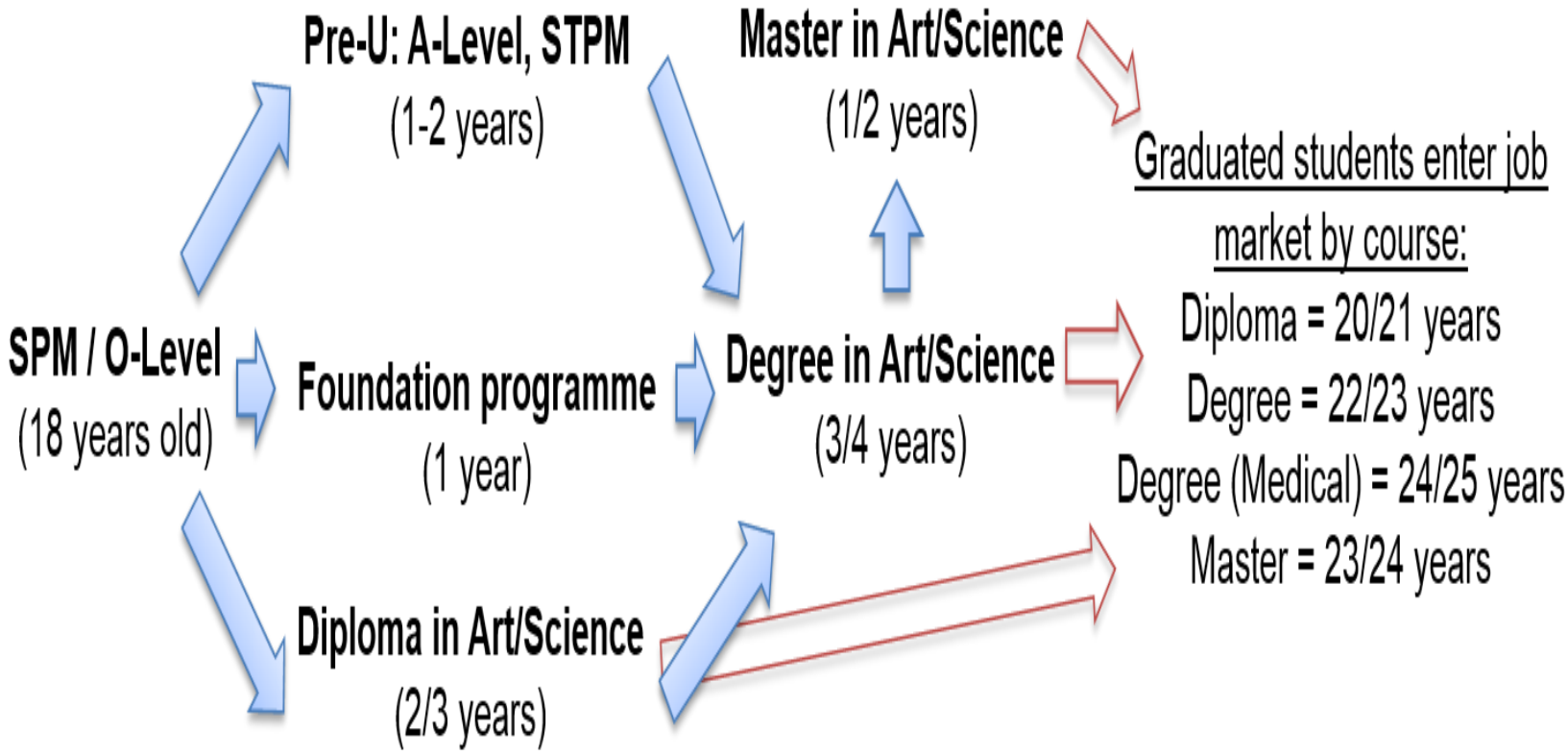
*Note: *= Share of total ("15-64" age group)*
Source: Department of Statistics, Malaysia (DOSM)

Appendix III: Comparison of country education system

	Age from	Duration of study (years)						
		Primary education (average)	Middle education (average)	Secondary education (average)	Tertiary education (General)			Age on Bachelor degree
					Under-graduate	Bachelor's degree	Master's degree	
Canada	6	6	3	3	-	3 – 4	1 – 2	21 – 22
China	6	6	-	6	-	4 – 5	2 –3	22 – 23
Hong Kong	6	6	3	4	4			23
India	6	8	-	4		3 – 4	2	21 – 22
Japan	6	6	3	3	4	-	2	21 – 22
Malaysia	6	6	3	2 – 4	4	-	1	22 – 23
Philippines	6	6	-	4	4	-	2	
Russia#	6	4	5	2		4		21
South Korea# at least two years for male	8	6	3	3		4	2	24
Singapore# 2 years for male	7	6	-	6		3	1	22
Taiwan	7	6	3	3*		Depend		23
Thailand#	6	6	-	3		4	2	19
United Kingdom	5	6	-	7	2**	3	1	21
United States	6	5	3	4	4		2	22
Vietnam	6	5	4	3				22

*Note:*May elect to go vocational school as same duration of study, **Diploma in Higher education, #Mandatory military*
Source: www.classbase.com

Appendix IV: Malaysian tertiary education pathway



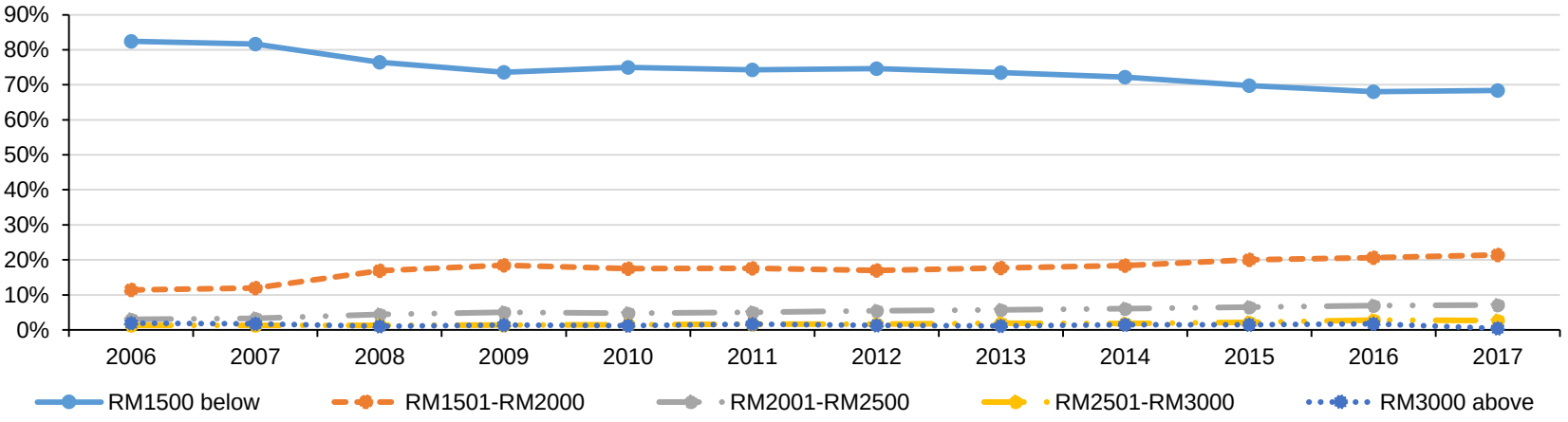
Source: SERC

Appendix V: The world university rankings

2016			2018		
Country	Name	Rankings	Country	Name	Rankings
Malaysia	Universiti Teknologi Malaysia	401-500	Malaysia	University of Malaya	351-400
	Universiti Kebangsaan Malaysia	601-800		University Tunku Abdul Rahman	501-600
	Universiti Putra Malaysia	601-800		Universiti Kebangsaan Malaysia	601-800
	Universiti Sains Malaysia	601-800		Universiti Putra Malaysia	601-800
	Universiti Teknologi MARA	601-800		Universiti Sains Malaysia	601-800
Indonesia	University of Indonesia	601-800		Universiti Teknologi Malaysia	601-800
Singapore	National University of Singapore	26		Universiti Teknologi Petronas	601-800
	Nayang Technological University, Singapore	55		Universiti Tenaga Nasional (UNITEN)	801-1000
Thailand	Mahidol University	501-600		Universiti Utara Malaysia	1001+
	Chiang Mai University	601-800	Indonesia	Bandung Institute of Technology (ITB)	801-1000
	Chulalongkorn University	601-800		Universitas Gadjah Mada	801-1000
	Khon Kaen University	601-800		University of Indonesia	801-1000
	King Mongkut's University of Technology Thonburi	601-800		Bogor Agricultural University	1001+
	Prince of Songkla University	601-800	Singapore	National University of Singapore	26
	Suranaree University of Technology	601-800		Nayang Technological University, Singapore	55
Hong Kong	University of Hong Kong	44	Thailand	Mahidol University	501-600
	Hong Kong University of Science and Technology	59		Chulalongkorn University	601-800
	Chinese University of Hong Kong	138		King Mongkut's University of Technology Thonburi	601-800
	City University of Hong Kong	201-250		Suranaree University of Technology	601-800
	Hong Kong Polytechnic University	201-250		Chiang Mai University	801-1000
	Hong Kong Baptist University	351-400		Kasetsart University	801-1000
				Khon Kaen University	801-1000
				King Mongkut's Institute of Technology Ladkrabang	801-1000
				Prince of Songkla University	801-1000
				King Mongkut's University of Technology North Bangkok	1001+
			Hong Kong	University of Hong Kong	40
				Hong Kong University of Science and Technology	44
				Chinese University of Hong Kong	58
				City University of Hong Kong	119
				Hong Kong Polytechnic University	182
				Hong Kong Baptist University	401-500
			Philippines	University of the Philippines	601-800

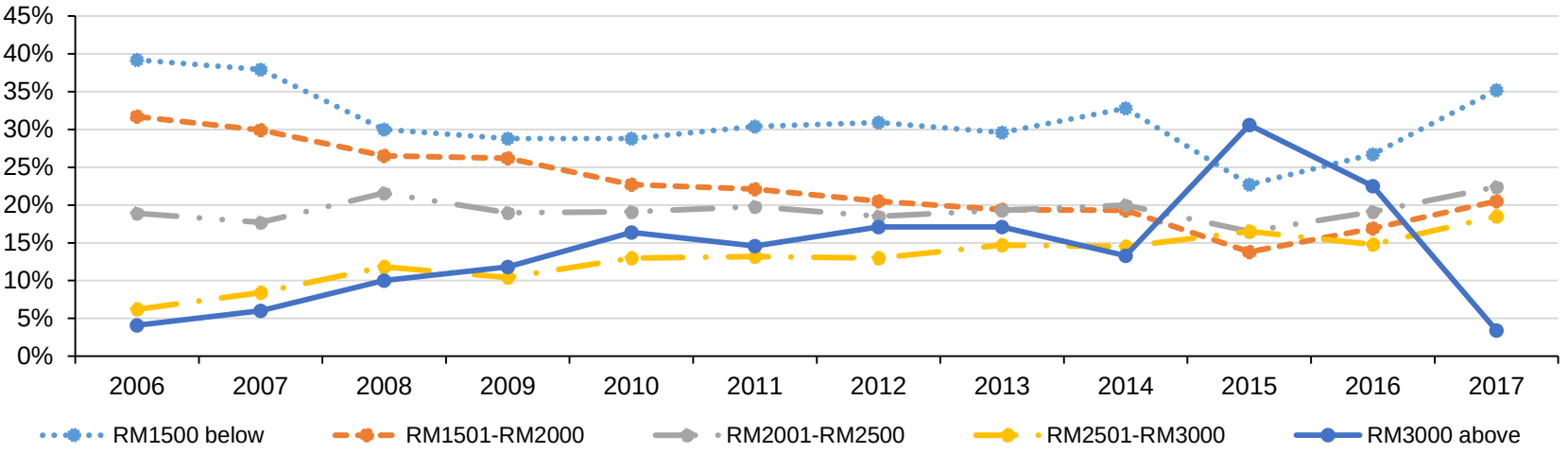
Appendix VI: Trend - Salary entry level of diploma and degree holders

- *Monthly income of diploma holders from 2006 to 2017*



Source: Ministry of Higher Education

- *Monthly income of first degree holders from 2006 to 2017*



Source: Ministry of Higher Education

Appendix VII: Labour force and unemployment by state (2017)

('000 persons)	Labour force	Youth labour force	Unemployed	Unemployed youth
Malaysia	**14,953**	**2632**	**503**	**284**
Selangor	3458	428	98	40
Sabah	1903	504	108	68
Johor	1672	301	57	33
Sarawak	1291	246	39	25
Perak	1048	205	39	23
Kedah	931	163	26	16
Kuala Lumpur	868	99	27	11
Pulau Pinang	840	131	17	9
Pahang	711	124	21	14
Kelantan	695	143	25	17
Negeri Sembilan	491	93	14	8
Terengganu	456	90	21	12
Melaka	409	76	4	2
Perlis	101	18	4	2
Labuan	42	8	4	2
Putrajaya	38	2	1	0*

*Note: *= less than 1,000 unemployed persons*
Source: DOSM

Appendix VIII: Job available by state by type of job skill (2016)

	Number of job available				Share (%)			
	Total	**Skilled**	**Semi-skilled**	**Low-skilled**	**Total**	**Skilled**	**Semi-skilled**	**Low-skilled**
Malaysia	**854,044**	**76,550**	**206,010**	**571,484**	**100.0**	**9.0**	**24.1**	**66.9**
Selangor	201,861	13,370	64,395	124,096	23.6	6.6	31.9	61.5
Johor	161,911	4,329	28,952	128,630	19.0	2.7	17.9	79.4
Sabah	120,676	3,584	7,568	109,524	14.1	3.0	6.3	90.8
Kuala Lumpur	97,452	37,505	15,673	44,274	11.4	38.5	16.1	45.4
Pulau Pinang	57,737	2,041	25,743	29,953	6.8	3.5	44.6	51.9
Perak	50,595	925	17,223	32,447	5.9	1.8	34.0	64.1
Melaka	32,413	2,329	11,722	18,362	3.8	7.2	36.2	56.7
Negeri Sembilan	32,173	2,125	10,229	19,819	3.8	6.6	31.8	61.6
Pahang	23,510	1,566	3,196	18,748	2.8	6.7	13.6	79.7
Kedah	18,650	836	7,227	10,587	2.2	4.5	38.8	56.8
Sarawak	12,484	2,756	4,477	5,248	1.5	22.1	35.9	42.0
Kelantan	11,540	1,827	3,138	6,575	1.4	15.8	27.2	57.0
Terengganu	7,421	1,367	1,831	4,223	0.9	18.4	24.7	56.9
Perlis	1045	131	793	121	0.1	12.5	75.9	11.6
W.P. Labuan	603	33	197	373	0.1	5.5	32.7	61.9

Source: DOSM

Appendix IX: GDP by state and kind of economic activity, 2017 at constant 2010 prices

States	RM billion	Share (%)	Five main of economic activity (% share to state GDP)				
			Agriculture	Mining	Manufacturing	Construction	Services
Malaysia	**1174**	**100.0**	**8.2**	**8.4**	**23.0**	**4.6**	**54.5**
Selangor	270	23.0	1.2	0.3	29.4	5.8	60.0
W.P. Kuala Lumpur	183	15.6	0.0	0.1	3.2	7.9	87.1
Sarawak	114	9.7	13.2	21.0	27.3	3.2	34.9
Johor	111	9.5	13.7	0.5	30.8	6.0	47.4
Sabah	80	6.8	18.7	31.3	7.3	2.4	39.9
Pulau Pinang	78	6.6	2.0	0.1	44.8	2.6	49.3
Perak	64	5.4	16.7	0.5	18.9	2.8	60.9
Pahang	50	4.3	24.4	1.2	21.8	4.1	48.3
Negeri Sembilan	41	3.5	9.8	0.3	39.7	3.6	44.3
Kedah	39	3.3	13.7	0.3	28.6	1.8	54.8
Melaka	36	3.1	10.5	0.2	40.1	3.9	44.8
Terengganu	30	2.6	8.7	0.2	37.6	3.6	49.6
Kelantan	22	1.8	24.5	1.3	5.6	2.1	66.5
W.P. Labuan	6	0.5	1.4	0.0	18.7	1.9	75.6
Perlis	5	0.4	21.8	0.8	8.1	1.9	65.3

Source: DOSM

Appendix X: The comparison of double tax deduction between SME and MNC under the SL1M

	SME	**MNC**			**SME**	**MNC**			**SME**	**MNC**
Tax	18%	24%		Tax	18%	24%		Tax	18%	24%
Profit (month)	RM10,000	RM10,000		Profit (month)	RM10,000	RM10,000		Profit (month)	RM10,000	RM10,000
Profit (year)	RM120,000	RM120,000		Profit (year)	RM120,000	RM120,000		Profit (year)	RM120,000	RM120,000
Ori Tax	RM21,600	RM28,800		Ori Tax	RM21,600	RM28,800		Ori Tax	RM21,600	RM28,800
Ori Net Profit	RM98,400	RM91,200		Ori Net Profit	RM98,400	RM91,200		Ori Net Profit	RM98,400	RM91,200
RM1,000 allowance per month				RM1,500 allowance per month				RM2,000 allowance per month		
New Gross Profit (year)	RM108,000	RM108,000		New Gross Profit (year)	RM102,000	RM102,000		New Gross Profit (year)	RM96,000	RM96,000
New Tax	RM17,280	RM23,040		New Tax	RM15,120	RM20,160		New Tax	RM12,960	RM17,280
New Net Profit	RM90,720	RM84,960		New Net Profit	RM86,880	RM81,840		New NP	RM83,040	RM78,720
Loss	**RM7,680**	**RM6,240**		**Loss**	**RM11,520**	**RM9,360**		**Loss**	**RM15,360**	**RM12,480**

Appendix XI: Manufacturing projects approved by state (RM million)

	2012	2013	2014	2015	2016	2017
Johor	5,536	14,445	21,176	31,102	26,411	21,928
Sarawak	4,728	8,276	9,640	11,817	4,635	10,534
Selangor	11,735	9,833	7,042	7,964	7,881	5,592
Melaka	1,053	1,494	4,520	6,859	1,355	4,655
Pulau Pinang	2,472	3,912	8,162	6,724	4,294	10,812
Perak	2,281	2,361	1,708	3,887	3,946	2,007
Negeri Sembilan	2,730	1,688	3,095	1,709	1,918	1,106
Terengganu	2,411	184	1,568	1,400	2,112	73
Kedah	589	2,535	5,285	1,357	2,183	2,535
Pahang	2,091	2,819	5,200	1,161	883	2,962
Kelantan	115	996	1,243	354	514	4
Kuala Lumpur	253	81	49	4	189	165
Perlis	0	44	213	3	0	525
Sabah	5,060	3,434	2,951	351	2,172	785

Source: MIDA

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