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SHIFTING TIDES

CHARTING CAREER PROGRESSION OF MALAYSIA'S SKILLED TALENTS

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ABBREVIATIONS

ADB	:	Asian Development Bank
AI	:	Artificial Intelligence
ALMP	:	Active Labour Market Policies
ASWARA	:	*Akademi Seni Budaya dan Warisan Kebangsaan*
BAP	:	Business Accelerator Programme
BNM	:	*Bank Negara Malaysia* (the Central Bank of Malaysia)
CAGR	:	Compound Annual Growth Rate
DOSM	:	Department of Statistics Malaysia
DTP	:	Digital Train & Place
DWCP	:	Decent Work Country Programme
E&E	:	Electrical and Electronics
EAP	:	Entrepreneurship Action Plan
EIS	:	Employment Insurance System (*Sistem Insurans Pekerjaan*, SIP)
EPF	:	Employees Provident Fund
EPU	:	Economic Planning Unit
ES	:	Employment Survey
ESG	:	Environmental, Social and Governance
ETP	:	Economic Transformation Programme
GAP	:	Global Accelerator Programme
GCTS	:	Graduate Career Tracking Survey
GDP	:	Gross Domestic Product
GER	:	Graduate Employability Rate
GLC	:	Government-linked Company
GLOW	:	Global Online Workforce
GOM	:	Government of Malaysia
GRACE	:	Graduate Capacity and Employability
GREaT	:	Graduate Reference Hub for Employment and Training
GTS/GTSS	:	Graduate Tracer Study/ Graduate Tracer Study System
HEIs	:	Higher Education Institutions
HRD Corp	:	Human Resource Development Corporation
ILKA	:	*Institusi Latihan Kemahiran Awam* (Public Skills Training Institute)
ILMIA	:	Institute of Labour Market Information and Analysis
ILO	:	International Labour Organization
INSPEN	:	*Institut Penilaian Negara*
IPDAS	:	*Institut Pengajian Islam dan Dakwah Sabah*
IPTA	:	*Institusi Pendidikan Tinggi Awam* (Public Higher Education Institutions)
IPTS	:	*Institusi Pendidikan Tinggi Swasta* (Private Higher Education Institutions)
ISCED		International Standard Classification of Education
ISCO	:	International Standard Classification of Occupations

ABBREVIATIONS

KKD	:	*Kementerian Komunikasi dan Digital (*Ministry of Communication and Digital*)*
KKR	:	*Kementerian Kerja Raya* (Ministry of Works)
KPIs	:	Key Performance Indicators
KRI	:	Khazanah Research Institute
LFPR	:	Labour Force Participation Rate
LFS	:	Labour Force Survey
MAFI	:	Ministry of Agriculture and Food Industry (*Kementerian Pertanian dan Industri Makanan*)
MASCO	:	Malaysia Standard Classification of Occupations (MASCO)
MDEC	:	Malaysia Digital Economy Corporation
MEDAC	:	Ministry of Entrepreneur Development and Cooperatives (*Kementerian Pembangunan Usahawan dan Koperasi – KUSKOP)*
MEF	:	Malaysian Employers Federation
MIDA	:	Malaysian Investment Development Authority
MITI	:	Ministry of Investment, Trade and Industry (*Kementerian Pelaburan, Perdagangan dan Industri*)
MNC	:	Multinational Corporation
MOE	:	Ministry of Education (*Kementerian Pendidikan Malaysia – KPM*)
MOHE	:	Ministry of Higher Education Malaysia (*Kementerian Pendidikan Tinggi – KPT*)
MOHR	:	Ministry of Human Resources (*Kementerian Sumber Manusia – KSM*)
MOTAC	:	Ministry of Tourism, Arts and Culture
MOYS	:	Ministry of Youths and Sport (*Kementerian Belia dan Sukan – KBS*)
MP	:	Malaysia Plan (*Rancangan Malaysia Ke- RMK*)
MQA	:	Malaysia Qualification Agency
MRANTI	:	Malaysian Research Accelerator for Technology & Innovation
MSME	:	Micro, Small, and Medium Enterprises
MTUC	:	Malaysian Trades Union Congress
MTUN	:	Malaysia Technical University Network
MWFCD	:	Ministry of Women, Family & Community Development (*Kementerian Wanita, Keluarga & Pembangunan Komuniti*)
MyCOL	:	Malaysia Critical Occupations List
MyNSR	:	Malaysia National Skills Registry
MySIP	:	National Structured Internship Programme
MySTEP	:	Malaysian Short-Term Employment Programme
NEET	:	Not in Education, Employment or Training
NEP2030	:	National Entrepreneurship Policy 2030
NETR	:	National Energy Transition Roadmap
NGO	:	Non-governmental Organisation
NGS	:	National Graduates Surveys

ABBREVIATIONS

NIMP	:	National Industrial Master Plan
NPI	:	National Policy on Internships
OECD	:	Organisation for Economic Co-operation and Development
PACE	:	Professional Certification
PAM	:	*Program Agropreneur Muda* (Young Agropreneur Programme)
PLMP	:	Passive Labour Market Policies
PSKG	:	*Pelan Strategik Kebolehpasaran Graduan*
RM	:	*Ringgit Malaysia* (Malaysian Ringgit)
RTW	:	Ready to Work
SDG	:	Sustainable Development Goal
SEMy2030	:	Social Entrepreneurship Malaysia 2030
SFSME	:	Soft Financing Scheme for Small & Medium Enterprises
SKM	:	*Sijil Kemahiran Malaysia* (Malaysian Skills Certificate)
SKSPS	:	Self-Employed Social Security Scheme
SME	:	Small & Medium-sized Enterprises
SMECorp	:	SME Corporation Malaysia
SOCSO	:	Social Security Organisation (*Pertubuhan Keselamatan Sosial – PERKESO*)
SSM	:	*Suruhanjaya Syarikat Malaysia* (Companies Commission of Malaysia)
STEM	:	Science, Technology, Engineering and Mathematics
STPM	:	*Sijil Tinggi Persekolahan Malaysia* (Malaysian Higher School Certificate)
SWS	:	Salaries and Wages Survey
TVET	:	Technical and Vocational Education and Training
UiTM	:	*Universiti Teknologi MARA*
UKM	:	*Universiti Kebangsaan Malaysia* (National University of Malaysia)
UM	:	*Universiti Malaya*
UPSI	:	*Universiti Pendidikan Sultan Idris*
USD	:	United States Dollar
WEF	:	World Economic Forum
YES	:	Young Employable Students

GLOSSARY

Active Labour Market Policy	Labour market policies that focus on stimulating employment and job creation through, for example, public works schemes, hiring subsidies, vocational training and retraining, and the promotion of small and medium enterprises and self-employment. *Source: ILO (2015b)*
Apprenticeship	Systematic training regimen of new generation of profession with on-the-job training. *Source: Gessler (2019)*
Compound annual growth rate (CAGR)	An annualised growth rate derived from a geometric progression ratio which provides a constant growth rate over a specified period. The formula is: CAGR = [(Ending value/Beginning value)(1/Number of time periods) – 1] x 100 *Source: Anson, Fabozzi, and Jones (2010)*
Cohort	Groups of graduates who participated in GCTS survey based on their graduation years i.e. fresh graduates (~2021 cohort) and experienced graduates (~2010 and ~2018 cohort).
Decent work	Employment opportunities that is productive and delivers fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organise and participate in the decisions that affect their lives as well as equality of opportunity and treatment for all women and men. *Source: ILO (2023a)*
Economic sector	Economic activity according to specified industrial categorisation outlined in the Malaysia Standard Industrial Classification (MSIC) 2008 i.e. agricultural, industrial, social services, modern services, and traditional services. *Source: DOSM (2008)*
Employment status	Classifications of employed person which include employer, employee, own account worker and unpaid family worker. *Source: DOSM (2023a)*
Family income	The amount of income received by the graduate's household members earned at frequent intervals and accrued either on a weekly, monthly, or yearly and are available for current consumption in which the graduate is a dependant. *Source: MOHE (2022)*
Filled Jobs	Paid employment (full-time and part-time) in the private and formal establishments only, and thus excludes proprietors and partners of unincorporated businesses, unpaid family workers, employees on strike and unpaid leave, and employees provided by other agencies as subcontractors and consultants. *Source: DOSM (2023a)*
Freelance	Employment in gig-sectors through services to multiple employers. *Source: MOHE (2022)*

GLOSSARY

Graduate	Graduate refers to respondents within the GTS and GCTS survey, with diploma qualification and above. In this classification, individuals with certificate qualifications (equivalent to SKM level 4) are grouped under diploma, while those with advanced diploma qualifications (SKM level 5) and above, including bachelor's and postgraduate degrees, fall under the category of degree and above. i. Fresh graduate refers to respondents in these surveys that finished their study in 2021 or after. ii. Experienced graduate refers to respondents in these surveys that finished their study prior 2021.
Graduate Employability	Referring to the status of graduates, which includes those who are employed, continuing their studies, participating in any forms of re- and upskilling programmes and waiting for job placement. *Source: MOHE (2022)*
Graduate Tracer Study	The GTS is a year-round survey conducted by the MOHE on graduates from local public and private higher education institutions (HEIs) upon graduation. The objectives of the study are to gain graduates' employment status as well as their views on academic programmes, institutions, and the impact of the teaching and learning processes. *Source: MOHE (2022)*
Homemakers	Individuals who stay at home and are normally fully occupied with non-paid care works i.e. childcare, eldercare and house chores. *Source: Lewis (2002)*
Higher education institutions	An educational institution, whether established under any written law, including private educational institutions providing higher education leading to the award of certificates, diplomas, degrees, or their equivalent. *Source: MOHE (2022)*
Institution type	Higher education institutions (HEIs) in this paper are classified as either IPTA (Public Higher Education Institutions, *Institusi Pengajian Tinggi Awam*) and IPTS (Private Higher Education Institutions*, Institusi Pengajian Tinggi Swasta*). IPTA comprise of public universities, polytechnics and community colleges under the purview of the Ministry of Higher Education. IPTA also covers skills institutions: Institusi Latihan Kemahiran Awam (ILKA) under the purview of seven different ministries namely: Ministry of Rural Development (KPLB), Ministry of Education (MOE), Ministry of Human Resources (MOHR), Ministry of Works (KKR), Ministry of Youths and Sport (MOYS), Ministry of Agriculture and Food Industry (MAFI), Ministry of Tourism, Arts and Culture (MOTAC). Additionally, IPTA also includes community colleges and other public HEIs such as MARA Professional Colleges, *Akademi Seni Budaya Dan Warisan Kebangsaan* (ASWARA) , Institut Penilaian Negara (INSPEN) and Institut Pengajian Islam dan Dakwah Sabah (IPDAS).

	IPTS refers to HEIs registered with the Ministry of Education under the Higher Education Act of 1996 as private businesses offering tertiary education programmes. For the purposes of the GCTS study, HEIs that are based overseas but have local branches in Malaysian are also included as IPTS. *Source: MOHE (2022)*
Intention to change job	Desire by the worker to find other jobs that are deemed decent and satisfactory employment as they imply that the current job does not fit their desired employment path. *Source: Elder (2009)*
Internship	The placement of students in an organisation to undergo supervised practical training in an industry of their choice, for a fixed duration of time during the pursuit of their certificate, diploma, or bachelors' degree. *Source: MOHE (2010)*
Jobs	Total labour required by establishments to produce goods and services which comprised of filled jobs and vacancies. *Source: DOSM (2023a)*
Jobs creation	Jobs that are created in an organisation which were not previously available, including newly created schemes, jobs created for the promotion of existing employees and increase in the number of jobs from existing structure. *Source: DOSM (2023a)*
Job search method	Mechanism that graduate used to find jobs in the market, which include: i. Online job platform ii. Personal network iii. Electronic and mass media iv. Job placement office v. Career fair
Job search support	Assistance for graduate to find jobs, which include: i. Resume and cover letter guidance ii. Job search allowance iii. Job matching services iv. Promotion of job search programme v. Career guidance and counselling
Labour force participation rate (LFPR)	A proportion of working age population (15 to 64 in Malaysia) who are either working or looking for work. *Source: DOSM (2023h)*
Malaysia Technical University Network (MTUN)	MTUN refers to Malaysia Technical University Network, introduced in 2006. It offers a variety of technical courses to suffice industrial needs and consists of four public universities which are Universiti Tun Hussein Onn Malaysia, Universiti Teknikal Malaysia Melaka, Universiti Malaysia Perlis and Universiti Malaysia Pahang. *Source: MOHE (2022)*

GLOSSARY

Modern services	Modern services include information and communication; financial and insurance/takaful activities; real estate activities; and professional, scientific and technical activities. *Source: Ng, Tan, and Tan (2019)*
Non-standard employment	Working graduates in full-time contract-based work, part-time work (regardless of permanent or contract basis) and self-employment (including business owners, sole proprietors, and gig/freelance workers). *Source: Hawati Abdul Hamid and Nur Thuraya Sazali (2020)*
Occupation skill level	The occupational category is regrouped into three level of skill type according to the Malaysia Standard Classification of Occupation (MASCO) 2020: i. High-skilled workers if the occupation category are Managers; Professionals and Technicians and associate professionals; ii. Semi-skilled workers if the occupation category are Clerical support workers; Services and sales workers; Skilled agricultural, forestry, livestock and fishery workers; Craft and related trades workers; Plant and machine operators and assemblers; iii. Low-skilled workers if the occupation category is Elementary occupations. *Source: MOHR (2020a)*
Passive Labour Market Policy	Policy that are concerned with providing replacement income during periods of joblessness or job search. *Source: ILO (2003)*
Qualification-job mismatch	There are two types of qualification-job mismatch used in this report namely the vertical and horizontal qualification-job mismatch: i. Vertical qualification-job mismatch is defined as the phenomenon where a graduate's qualification level does not match the occupation they work in, in which one can either be underqualified or overqualified. The mentioned statuses are assigned based on MASCO 2020 occupations and how they line up with the appropriate qualification levels (primary/secondary, diploma, degree and postgraduate); where high-skilled jobs are for high qualifications, minimum at diploma level. The phrases "skills mismatch", "qualification-job mismatch" and "vertical mismatch" refer to the same phenomena and will be used interchangeably in the report. ii. Horizontal qualification-job mismatch (or field of study mismatch) refers to the phenomenon where a graduate's field of study for their qualification level does not match the field of work they engage in; for example, a graduate who has a degree in engineering but works in retail. The phrases "job-study field mismatch" and "horizontal mismatch" refer to the same phenomena and will be used interchangeably in the report. *Source: MOHR (2020a); ILO (2015a), ILO (2012)*

GLOSSARY

Qualification level	Level in post-secondary education which covers academic education, skills education and vocational education. This report categorised these levels into three main categories namely: i. Diploma – including certificate and diploma level ii. Degree – including bachelor and advanced diploma iii. Postgraduate – including master and doctorate level *Source: MQA (2017)*
Skill-related underemployment	Those with tertiary education and working in the semi-skilled and low-skilled categories. *Source: DOSM (2023e)*
Social protection	Social protection is defined as a set of policies and programs designed to reduce poverty and vulnerability by promoting efficient labour markets, diminishing people's exposure to risks, and enhancing their capacity to protect themselves against hazards and interruption/loss of income. *Source: ADB (2003)*
Social services	Social services consist of education, health & social work and public administration & defence and utility services.
Standard employment	A full-time permanent work arrangement between an employer and employee. *Source: Hawati Abdul Hamid and Nur Thuraya Sazali (2020)*
Study field	Referring to the guidelines of the National Education Code (NEC), i.e. Science, Mathematics & Computing; Engineering, Manufacturing & Construction; Health & Welfare; Agriculture & Veterinary; Social Science, Business & Law; Education; Arts & Humanities; and Services & others. *Source: MOHE (2021a)*
Study stream	Study stream is classified as TVET and non-TVET streams. TVET refers to graduates who study at public technical and vocational institutions, including technical public universities (under the Malaysian Technical University Network, MTUN), polytechnics, college communities, vocational colleges, and other public skills training institutes. While Non-TVET refers to graduates from public universities and private institutions, regardless of whether they offer technical/practical courses. This is based on the nature of MOHE's current classification of TVET at the institution level rather than at the programme level. *Source: MOHE (2022)*
Traditional services	Traditional Services consists of wholesale & retail, transportation & storage, administration & support, accommodation & food and other services. *Source: Ng, Tan, and Tan (2019)*
Transition status	Condition where graduate has an intention to change their current jobs due to dissatisfied employment despite the jobs are decent or otherwise. *Source: Elder (2009)*

GLOSSARY	
Unemployment rate	The proportion of unemployed population to the total population in labour force, measured in percentage. *Source: DOSM (2023a)*
Vacancies	Jobs (full-time, part-time, permanent, short-term or seasonal) that are empty, employers are actively seeking for candidates and could start within 30 days if there are any available candidates. *Source: DOSM (2023a)*

EXECUTIVE SUMMARY

Tertiary education plays a pivotal role in fostering Malaysia's human capital development and driving economic growth. Its rapid expansion since the 1980s has enlarged the pool of tertiary-educated workforce, yet challenges persist with a growing number of graduates accepting employment that is not commensurate with their qualifications and study fields or resorting to non-standard work.

This report examines pertinent challenges that Malaysian graduates from local higher education institutions encounter during their transition from education to work, as well as their career progression over time. It encompasses a cohort study of fresh as well as experienced graduates who have completed their studies throughout the last decade using two key datasets—MOHE's Graduate Tracer Study System (GTSS) and KRI's Graduate Career Tracking Survey (GCTS). The findings contribute to essential policy recommendations, built upon existing government initiatives, to enhance the employability and employment outcomes of Malaysia's skilled talents.

Monitoring graduate employability is peripheral to the core reality

Despite the rise in graduate employability rate (GER) since 2010, the statistics do not reflect actual employment outcomes and changing behaviour among Malaysian graduates. Although the GER increased to 84.8% in 2021, this statistic, tracked by a nationally devised Graduate Tracer Study (GTS), primarily reflects graduate marketability and does not equate to employment as it also includes those who are continuing their studies, undergoing training, and waiting for job placements. In reality, only around 60.0% of graduates have secured a job upon graduation. While the GTS is useful in uncovering transition challenges, the discussion of fresh graduates' outcomes shortly after graduation provide a myopic perspective on their career trajectories.

Recognising that the impact of education takes time to manifest fully in a graduate's career trajectory, our study further investigates graduates' employment experiences through the newly conducted Graduate Career Tracking Survey (GCTS) in partnership with the Ministry of Higher Education (MOHE). GCTS delves into graduates' employment experiences, drawing from a nationally representative sample of 8,026 local graduates from two distinct cohorts, ~2010 (older) and ~2018 (younger). The survey explores diverse perspectives, including employment changes, labour market perception, intergenerational mobility, and graduates' job search process. The wealth of data points in GCTS helps establish an invaluable resource in shaping evidence-based policies and interventions in Malaysia's labour market. Moving forward, continuously conducting periodic and longitudinal career tracking surveys will be useful to monitor graduate employability over time and achieve a more comprehensive understanding of the evolving dynamics of the workforce.

Over the past decade, there are changing trends and mixed employment outcomes across graduate cohorts

In recent years, more fresh graduates are shifting towards non-standard employment. This includes contract workers, part-timers, and those self-employed whom typically lack career progression, wage growth, and social protection. Jobs of this nature are associated with adverse consequences because of their unpredictability and precarious characteristics, hence the rising trend in non-standard employment raises apprehensions on graduates' long-term outcomes and wellbeing. More worryingly, a growing number of unemployed graduates are staying as NEET (not in employment, education and training) in recent years, signalling greater detachment from the labour market.

Moreover, there are lingering issues of skills mismatch and dismal pay across different graduate cohorts. Poor employment outcomes are extended across cohorts, whereby both fresh and experienced graduates are willing to accept jobs that require lower qualifications and offer low pay, or work in sectors unrelated to their study fields. Interestingly, certain groups experience both issues simultaneously—especially diploma holders, women, those from IPTA, TVET, and low-income families.

Cohort comparison indicates a time advantage among older graduates against their younger counterparts. This includes lower prevalence of skills mismatches and higher shares with good pay (above RM3,000) among the ~2010 cohort. Nevertheless, younger graduates with less years of work experience seem to fare better in overall career mobility due to frequent job changes over a shorter time frame. Generally, the ~2018 cohort has attained faster skills alignment and salary progression post-graduation. However, given the persistent challenges faced by experienced graduates, many remain sceptical about the development of labour market conditions and the attainment of upward intergenerational social mobility.

Government interventions have facilitated graduates' transition from education to work, but existing policies still fall short of expectations

Support for graduates is widespread throughout the transition process, yet our findings suggest unfamiliarity with ongoing initiatives and limited impact on graduate outcomes. Only half of experienced graduates are aware of government job search support, whereas one-third are uninformed about existing up/reskilling training programmes. This is mainly attributed to the fragmentation and duplication of initiatives across various ministries and agencies. Furthermore, programmes that aim to assist graduates in securing jobs through internships and apprenticeships require more rigorous assessments to determine its impacts.

The government has established a range of policies and programmes to encourage youth entrepreneurship, but their potentials can be further unleashed. As it stands now, self-employed graduates are mostly sole proprietors with small businesses, followed by freelancers and employers. For some, self-employment give greater flexibility and higher earnings relative to standard jobs. For others, opportunities to enhance self-employment outcomes are available through increased utilisation of existing government assistance and customised support in an ever-changing market.

Social protection and labour market efficiency consistently emerged as critical areas, with deficiencies evident across multiple subgroups and aspects. Much emphasis has been placed on achieving an inclusive social protection system in Malaysia, however, a majority of freelancers and women are still left uncovered, rendering them highly vulnerable to future shocks. Lagging progress in high-skilled job creation, market inefficiencies in job matching, and weak connections between industry and higher education institutions point towards underlying structural issues within the labour market, and thus, exacerbate graduate outcomes such as skills mismatch and wage stagnation.

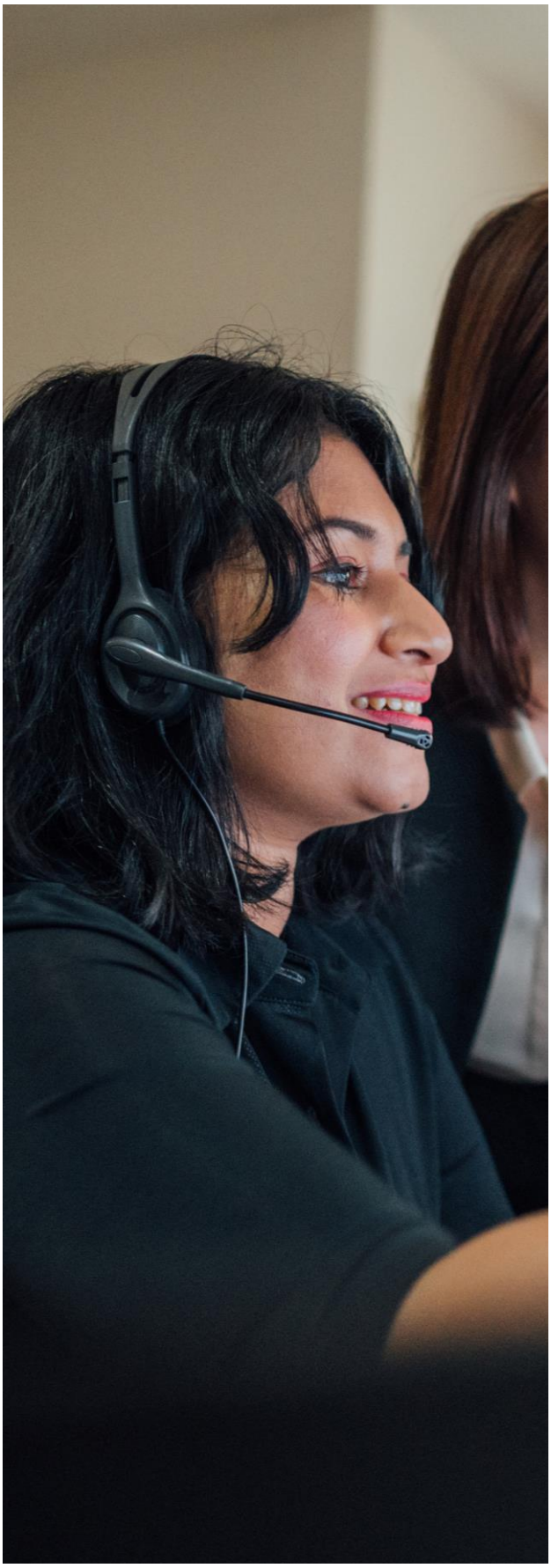
Policy reforms can further enhance graduate employment outcomes

Our five key policy recommendations include:

1. Improving the measurement and monitoring of graduate employment outcomes, including employment quality, career progression, and regular review of curriculum over time.
2. Strengthening the existing active labour market policies, through better quality internship and apprenticeship programmes as well as a centralised infrastructure for job search process.
3. Promoting greater inclusion through passive labour market policies, by increasing coverage of benefits and ensuring adequate social protection and overall support for vulnerable groups.
4. Developing the supportive and integrated entrepreneurial ecosystem, consisting of tailored support for different types of entrepreneurs and high value creation especially among TVET entrepreneurs.
5. Accelerating the progress of demand-side initiatives and regulations, encompassing high-skilled and well-paying job creation, a fair and decent wage guideline, improved job matching efficiency, and a stronger link between the demand and supply of skilled talents.

The future of work for graduates is excitingly unpredictable

The future of work will require graduates to adapt and amplify their career versatility. The dynamic nature of the job market calls for individuals who can pivot, embrace new technologies, and tackle unforeseen challenges with agility. These aspirations for Malaysia's skilled talents signal long-term implications for tertiary education institutions to shift their educational paradigms to equip the future workforce with these essential skills. Furthermore, the evolving roles of tertiary education institutions extend beyond individual development, playing a crucial part in fostering economic growth, innovation, and social progress. Thus, the synergy between educational institutions, industry, and the government will remain pivotal in shaping the future of work for graduates and, in turn, Malaysia's trajectory as it achieves a high-income nation status.



CHAPTER 01

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CHAPTER 1

CAREER TRANSITIONS OF SKILLED TALENTS: STATUS AND GAPS

The education sector is critical, not just as a means in cultivating first-class human capital and creating social mobility, but also as an engine of growth.

Dato' Seri Mohamed Khaled Nordin (2010)[1]
Minister of Higher Education

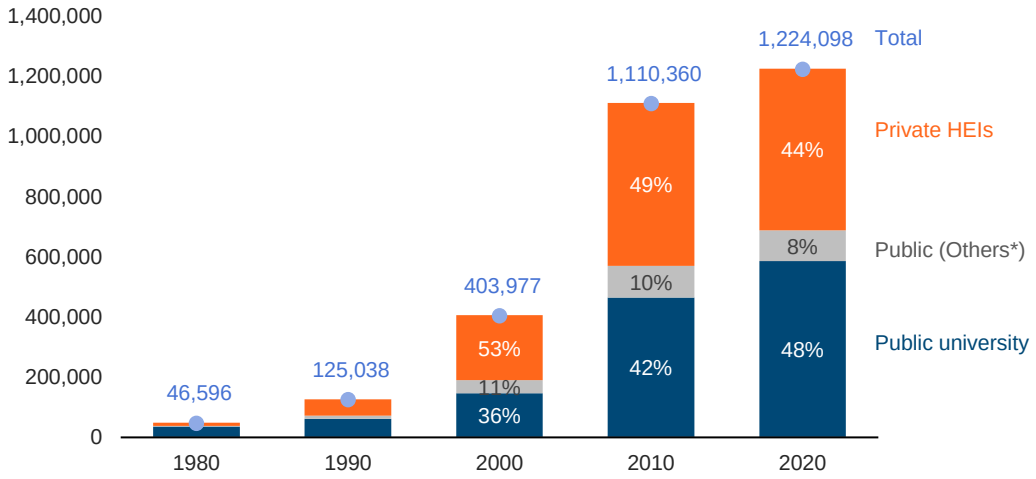
1.1 Skilled Talents and Nation Building

Conventional wisdom has it that education is a means to prosperity and is essential in promoting individuals' economic security and social mobility, as well as in securing countries' economic and social progress[2]. At the macro level, a skilled workforce with tertiary education and specialised knowledge is considered as a critical enabler for healthy long-term growth[3]. Augmentation of individuals' knowledge and skills fosters their productivity and therefore could further promote economic growth. Across all levels of education, tertiary education is argued to be the most effective in providing the skills to compete in a globalised economy and respond to technological revolution[4]. Hence, governments and organisations around the world often invest in the education and training of their talents to boost innovation and economic competitiveness.

This scenario is not uncommon in Malaysia, considering education and skills training have always been emphasised not only to create knowledgeable citizens with high moral and ethical values, but also to develop a pool of educated, skilled and motivated manpower required for nation building[5]. Accordingly, this has led to the expansion of the tertiary or higher education[6] sector over the last three decades, witnessing a nearly 26-fold increase in student enrolment—from 46,596 in 1980 to about 1.2 million in 2020[7] (Figure 1.1). During the same period, the share of tertiary-educated workforce increased from 6.1% to 32.0%, illustrating a significant rise in Malaysia's skilled workforce contributing to the country's development[8].

[1] PEMANDU (2010)
[2] Ozturk (2001)
[3] World Bank (2018)
[4] Faggian, Modrego, and McCann (2019)
[5] 7th MP, EPU (1996), see Chapter 10
[6] Refers to all formal post-secondary level education. The terms "tertiary" and "higher" education will be used interchangeably throughout this report.
[7] MOHE, n.d.
[8] DOSM (2022c)

Figure 1.1: Student enrolment by type of institution, 1980–2020

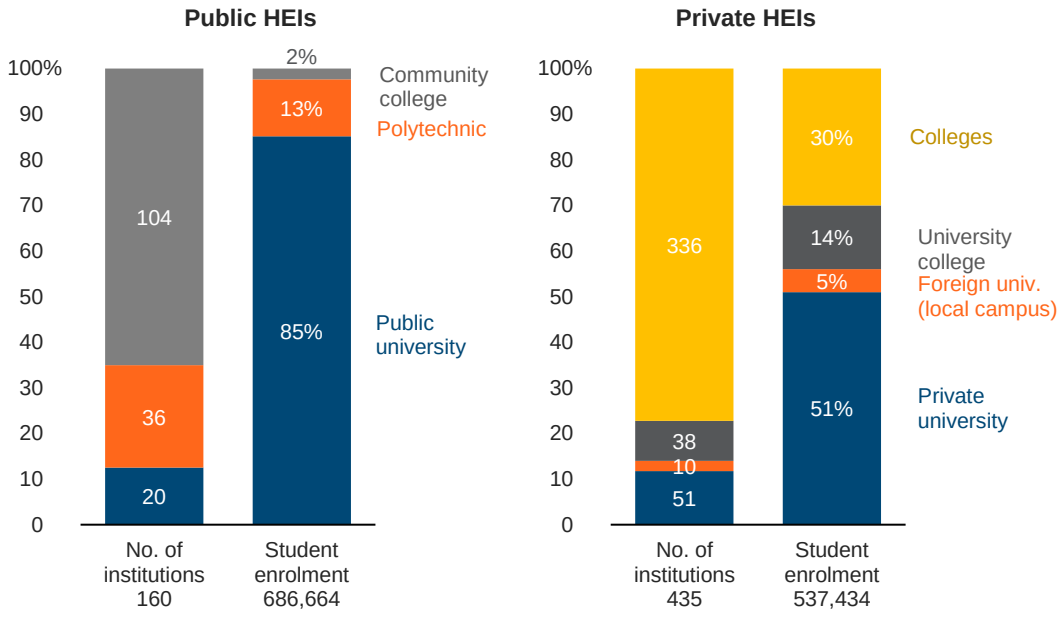


*Note: Public (Others) include polytechnics, community colleges, and other public training institutes

Source: As cited in Hawati Abdul Hamid (2022a) .

In 2020, Malaysia's higher learning institutions comprise of 20 public universities (excluding branches), 435 private universities and colleges, 36 polytechnics, 104 community colleges, 87 vocational colleges, and various training institutes. These institutions offer various study programmes at different qualification levels, including certificate, diploma, bachelor's degree, masters, and doctorate. The number of private higher education institutions (HEIs) has increased substantially from merely 13 in the early 1980s to 435 in 2020, with student enrolment rising from around 6,000 to 537,434 over the same period (Figure 1.2). Comparatively, total enrolment in public universities is similar with that of the private sector—at 584,576 students—despite having only 20 universities in 2020.

Figure 1.2: Number of institutions and student enrolment, by public and private, 2020



Source: As cited in Hawati Abdul Hamid (2022a)

Undoubtedly, the rapid expansion of higher education in Malaysia since 1980s has contributed positively to economic growth. A KRI study titled "Malaysian Higher Education and Economic Growth: A Causality Analysis" suggests a positive and bi-directional long-run relationship between higher education and economic growth, whereby higher education in the form of a skilled workforce contributes positively to the economy and that economic growth continues to expand the workforce with tertiary education[9].

At a more micro level, the importance of higher education is recognised by many. A survey in 2017 showed that 98% of Malaysian parents aspired for their children to go to a university to ensure they have a good start in life[10]. This perception is not unfounded as the average salaries and wages of tertiary-educated workers in Malaysia has consistently been twice as high as that of workers with secondary school qualifications over the past decade. The gaps are even larger—at three times of average income—against those with primary education only and those with no formal education[11].

An international study by the World Bank also found that the average returns to tertiary education is the highest with a 14.6% increase in labour market earnings for each additional year of schooling completed, as compared to secondary education (6.8%) and primary education (11.5%)[12]. Furthermore, the KRI study titled "Higher Learning, Higher Earnings? The Influence of Sociodemographic Factors on Graduate Starting Pay"[13] demonstrated that higher qualification translates into higher starting pay as degree holders consistently earned more than graduates with diplomas and certificates at the beginning of their careers.

1.2 Graduate Employability and Career Trajectory

While the returns to tertiary education appear to be more encouraging than other levels of education attainment, employability[14] remains a serious concern especially among fresh and young graduates. The imbalance between the supply and demand for graduates is manifested through higher rates of unemployment and skill-related underemployment among newly graduated workforce compared to the national averages. For example, between 2017 and 2020, unemployment rate among graduates aged below 25 years was four times higher, averaging at 16.7%, compared to 4.1% among graduates across all age groups[15]. The gap is also huge when compared to the national average unemployment rate which stood at 3.8% (across all levels of educational attainment) for the same period[16]. Moreover, wage growth has been sluggish with persistently high shares of graduates earning low wages (RM2,000 and below) and working in jobs that require lower qualifications[17].

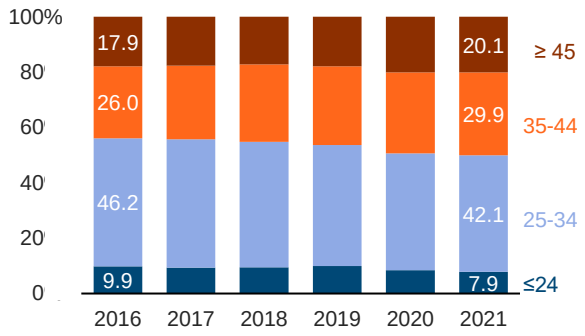
[9] Hawati Abdul Hamid (2022)
[10] HSBC (2017)
[11] In 2021, the mean salaries and wages of tertiary-educated workers was RM4,239, compared to RM2,169 for secondary, RM1,584 for primary, and RM1,454 for those with no formal education. Source: DOSM (2022d)
[12] Montenegro and Patrinos (2014)
[13] Hawati Abdul Hamid (2022)
[14] The term "employability" refers to an individual's capacity to obtain and maintain employment, including the ability to transition between jobs and roles within the same organisation to meet new job requirements, as well as to secure new employment if necessary. This concept applies to both employed individuals seeking career advancement and unemployed individuals searching for work. Source: Hillage and Pollard (1998)
[15] DOSM (2022a)
[16] DOSM (2023h)
[17] MOHE (2022)

As such, the notion that a university degree could guarantee a well-paying and stable career may no longer be valid with increasing gaps between the number of graduates produced and the absorption capacity of the labour market in recent years. The issue of skilled talents oversupply and graduates' struggles to transition smoothly from education to work subsequently becomes a national concern as young and newly graduated workforce face a unique set of challenges[18]. These include having to accept jobs outside their field of study or below their level of qualification, low starting pay, and non-standard employment such as part-time or contract jobs.

Malaysia's tertiary-educated workforce is relatively young, with half aged below 34 years old (Figure 1.3). However, this share has slightly decreased from 56.1% in 2016 to 50.0% in 2021 amid prevailing demographic changes caused by lower fertility and mortality rates as well as longer life expectancy[19]. Meanwhile, the share of tertiary-educated workforce in high-skilled jobs has significantly shrunk from 77.1% in 2016 to 66.1% in 2021 (Figure 1.4). In comparison, the share of those working in semi-skilled jobs has risen from 22.1% to 31.6% over the same period.

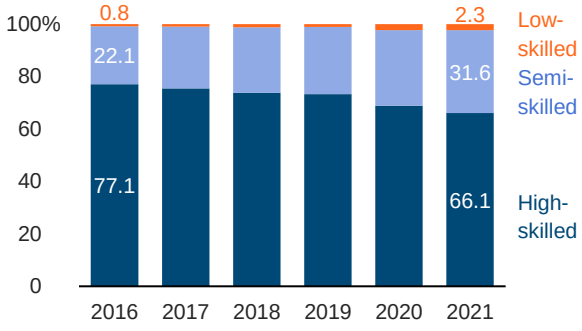
Similarly, the share of graduates in low-skilled occupations has gradually increased from 0.8% to 2.3% between 2016 and 2021. These reflect deeper structural issues within the labour market, given that more graduates have settled in low- or semi-skilled jobs in recent years despite having the necessary qualifications for high-skilled positions. We dive deeper into the nature of and gaps in labour demand in Chapter 6, with a specific focus on high-skilled job creation and vacancies.

Figure 1.3: Breakdown of tertiary-educated workforce, by age, 2016–2021



Source: DOSM (2022a) and DOSM (2020)

Figure 1.4: Breakdown of tertiary-educated workforce, by skill level, 2016–2021

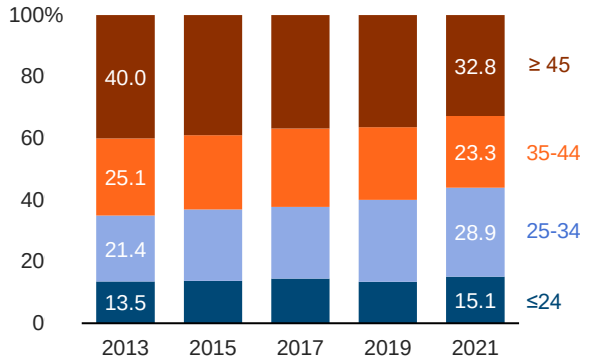


Source: DOSM (2022a) and DOSM (2020)

On this note, it is relevant to observe trends in non-standard employment. Regardless of educational attainment, the share of those ages 25-34 years in non-standard jobs has risen from 21.4% in 2013 to 28.9% in 2021 (Figure 1.5). Across different levels of education attainment, the share of tertiary-educated workers in non-standard employment has almost doubled from 8.6% to 15.8% during the same period (Figure 1.6). These are concerning trends as non-standard employment potentially suggest larger income insecurity and vulnerability among young graduates.

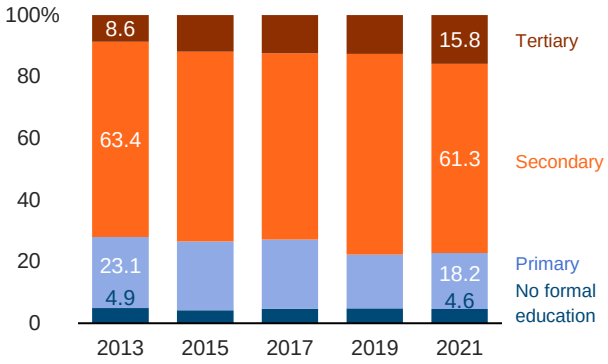
[18] Mohd Amirul Rafiq Abu Rahim and Shazrul Ariff Suhaimi (2022)
[19] Malaysia's fertility rate declined from 3.5% in 1990 to 1.8% on 2018, while mortality rate increased from 4.6% to 5.3% over the same period. In parallel, life expectancy among Malaysians has increased from 68.9 years in 1990 to 72.2 years in 2019 for men, and 73.5 years in 1990 to 77.3 years in 2019 for women. Source: DOSM (2022c)

Figure 1.5: Breakdown of non-standard employment, by age, 2013–2021



Source: DOSM (2022b)

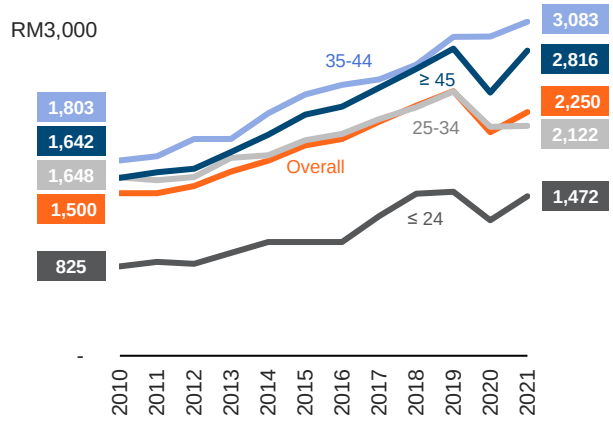
Figure 1.6: Breakdown of non-standard employment, by education attainment, 2013–2021



Source: DOSM (2022b)

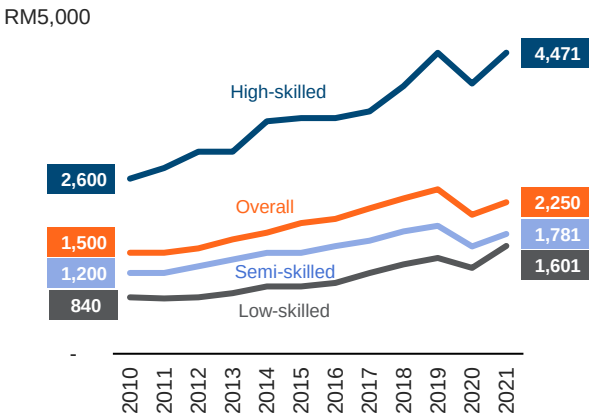
Furthermore, analysis on salaries and wages indicates that salary growth has been the lowest among 25 to 34 year-olds, with an annual rate of 2.1% between 2010–2021 compared to the overall rate (3.4%) and other age groups (above 4.6%) (Figure 1.7). In terms of absolute growth, workers of ages 25-34 years earned an average annual increment of RM43, while the overall average annual increment is RM68. Although salary growth for high-skilled jobs seems promising, earlier discussion noted an increasing share of young graduates in semi-skilled occupations. Figure 1.8 illustrates that the median monthly wages for semi-skilled workers have been below the overall median for the past decade, with only 3.3% annual growth translating into an average increment of RM52.

Figure 1.7: Median monthly wages, by age, 2010–2021



Note: The CAGR are as follows; ≤24 = 4.9%, 25-34 = 2.1%, 35-44 = 4.6%, ≥ 45 = 4.6%, Overall = 3.4%
Source: DOSM (2023g)

Figure 1.8: Median monthly wages, by skill level, 2010–2021



Note: The CAGR are as follows; Low-skilled = 5.5%, Semi-skilled – 3.3%, High-skilled = 4.6%, Overall = 3.4%
Source: DOSM (2023g)

The issue of graduate employability becomes even more apparent amid an increasing number of tertiary-educated talents engage in semi-skilled or non-standard jobs. In the Malaysian context, the urgency lies within a saturated supply of tertiary-educated workforce against the deteriorating returns to higher education investment and lack of fulfilling career opportunities in the labour market.

Persistent underemployment and sluggish wage growth among skilled talents signal more serious structural issues within the economy. It also highlights that existing policies aimed at developing a skilled workforce in the country should also look beyond the ambit of higher education alone. It is increasingly now acknowledged that employability is not solely determined by individual characteristics, but also by the social, economic, and environmental context in which employment is sought[20]. As a response to this, timely and appropriate interventions in the labour market should be undertaken to boost graduate employability and improve returns to higher education.

1.3 Background and Organisation of the Report

1.3.1. Research Objectives

This report is based on a research project initiated in 2022 by Khazanah Research Institute (KRI), with support from the Ministry of Higher Education (MOHE). The objectives of the study are as follows:

1. To examine pertinent issues and challenges that graduates encounter during their transition process from higher education to meaningful employment, as well as career progression.
2. To investigate the efficacy of the labour market ecosystem in addressing the employability of Malaysian skilled talents.
3. To propose enhancements of government policies in facilitating a smooth transition for young graduates as well as career advancement of Malaysian current and future talents.

Since 2022, we have published five working papers[21] and five short articles[22], with this report concluding the research project[23]. Two major sources of data for this report are the MOHE's Graduate Tracer Study Survey (GTS) and KRI's Graduate Career Tracking Survey (GCTS), supplemented by publicly available Malaysian and international data.

The GTS is a survey conducted by the MOHE on graduates from local public and private higher education institutions (HEIs) upon graduation. Meanwhile, the GCTS is a follow-up survey conducted by KRI in collaboration with MOHE on the same GTS respondents to track their employment experiences after specific time intervals. This effort is considered as a pioneering initiative in the Malaysian context, making it the first cohort study of graduate employability and career progression. The KRI's GCTS goes beyond the conventional bounds of the MOHE's GTS, which generally serves as an exit survey conducted on fresh graduates within a year of study completion. GCTS also represents a novel endeavour to explore the long-term trends of career outcomes of Malaysia's tertiary-educated talents. We discuss these surveys and datasets in the following section.

[20] Clarke (2018)
[21] Hawati Abdul Hamid (2022a); Mohd Amirul Rafiq Abu Rahim and Shazrul Ariff Suhaimi (2022); Hawati Abdul Hamid (2023a); Wan Amirah Wan Usamah (2023); Hawati Abdul Hamid and Tan Mei Yi (2023)
[22] Hawati Abdul Hamid (2022b); Mohd Amirul Rafiq Abu Rahim (2023); Mohd Amirul Rafiq Abu Rahim and Umi Maisarah Kamis (2023); Shazrul Ariff Suhaimi (2023); Hawati Abdul Hamid (2023b)
[23] Published on KRI's website.

Based on the first objective, the report selects three cohorts of graduates for deeper analysis of the issues and challenges faced by them, including:

1. **Fresh graduates (~2021 cohort):** Respondents who participated in the MOHE's GTS upon graduation. Data for fresh graduates involve a 12-year time-series dataset from surveys conducted by MOHE information from 2010 to 2021. The median age for this group is 22 years old. For the cohort comparison analysis, the 2021 cohort data are used to compare outcomes between fresh and experienced graduates. In this report, this cohort will henceforth be referred as the ~2021 cohort or "fresh" cohort.
2. **Experienced graduates (~2018 cohort):** Respondents who participated in KRI' GCTS in 2023 and have completed their study about half a decade ago and before the COVID-19 pandemic (between 2017–2019). The median age for this group is 28 years old and henceforth will be referred as the ~2018 cohort or "younger (experienced)" cohort.
3. **Experienced graduates (~2010 cohort):** Respondents who participated in KRI' GCTS in 2023 and have completed their study about a decade ago (between 2010–2012). The median age for this group is 35 years old and henceforth will be referred as the ~2010 cohort or "older (experienced)" cohort.

In addition, the first objective addresses three interrelated research questions: First, what is the general overview of graduates' labour market outcomes across cohorts? Second, how does one's demographics, education, and work experience increase (or decrease) the likelihood of attaining stable employment, qualification-job match, and good pay? Third, how long does it take for graduates to achieve job satisfaction, skills alignment, and wage growth?

Next, the second objective is to determine the effectiveness of active labour market policies (ALMPs). This consists of skills training, internship, and job search support. The relevant research questions are: First, what type of ALMPs work best and for whom? Second, how can ALMPs complement the potentially changing labour market landscape over time? Third, how can ALMPs be optimised to further enhance graduate employability in Malaysia?

The final objective is to turn the research findings into policy recommendations, including to create more high-skilled jobs, increase awareness of existing employment programs, and strengthen labour market policies to enhance employability and labour market outcomes of the Malaysian skilled workforce that commensurate with the investment made on higher education.

1.3.2. Report Organisation

This report encompasses eight chapters. Chapter 1 briefly introduces Malaysia's higher education trends and challenges, including the increasingly alarming issue of graduate employability and the importance of addressing it over the long-term. This chapter also includes research objectives and methodology used to study the issues.

Chapter 2 focuses on fresh graduates' employment outcomes as they transition from education to work. Chapter 3 investigates the similarities and differences in employment outcomes of experienced graduates between two cohorts, specifically focusing on their job quality and career progression.

Chapter 4 analyses alternative career opportunities explored by graduates through self-employment via freelancing and entrepreneurship. Chapter 5 discusses several forms of active labour market policies that potentially influence the job search process and support graduates in securing meaningful employment. Chapter 6 presents the labour demand trends and efficacy in filling vacant jobs against available labour supply. Chapter 7 develops a set of policy recommendations based on the gaps presented in preceding chapters.

1.4 Data, Methodology and Descriptive Statistics

As mentioned earlier, this report utilises microdata from the Graduate Tracer Study System (GTSS) and Graduate Career Tracking Survey (GCTS) for analysis of graduate employability and labour market outcomes. We also utilise publicly available data and past research findings to better understand the nature of graduate employability and its trends throughout the study period.

1.4.1. Graduate Tracer Study (GTS)

The GTS is a year-round survey conducted by the MOHE on graduates from local public and private HEIs upon graduation. The survey is filled up by graduating students during the convocation ceremony, typically held a few months upon study completion depending on HEIs. It covers a wide range of information on graduates, including gender, qualification level, study field, institution type, employment status, sector, and monthly wage. The survey has been conducted since 2006 and has gone through multiple design changes such as modifications to the questionnaire such as changes in the income information and employment status. Since 2018, GTS coverage has been expanded to also include graduates from public vocational colleges, Teachers Education Institute (*Institut Pendidikan Guru, IPG*), and the Public Skills Training Institutes (*Institut Latihan Kemahiran Awam, ILKA*). For this study, we analyse the GTSS microdata from 2010 until 2021, having standardised several categorisations to ensure comparability between different survey years.

As presented in Table 1.1, the GTS respondents substantially represent the entire local graduate population. This is supported by high participation rates in the survey, ranging from 78.9% to 89.1% each year. The majority of respondents fall below 30 years, with less than 10% of respondents aged above 30 years. Considering our first group of interest is fresh young graduates, only respondents aged 30 years and below are included in the analysis[24].

The graduates included in our analysis are categorised into two groups: (i) diploma or equivalent, and (ii) degree or above. Under this classification, individuals with certificate qualifications (equivalent to SKM[25] level 4) are grouped under the first group, while those with advanced diploma qualifications (SKM level 5) and above, including bachelor's and postgraduate degrees, fall under the second group. Hence on average, the selected sample for our study comprises is around 80.0% of the total graduate output between 2010–2021, on average.

[24] Youth in Malaysia generally spend up to the age of 30 years pursuing higher education. Source: KRI (2018)
[25] Referring to *Sijil Kemahiran Malaysia*, which is the Malaysian Skills Certificate.

Table 1.1: Graduate output and Graduate Tracer Study's respondents, 2010–2021

Convocation year	Total graduate output, N	Total GTS respondents		GTS respondent aged <30 years		
		Number, n_1	As % of total graduate output	Number, n_2	As % of total GTS respondents	As % of total graduate output
2010	284,887	224,776	78.9%	158,469	70.5%	55.6%
2011	229,400	185,126	80.7	171,133	92.4	74.6
2012	209,727	249,612	84.0	187,255	75.0	89.3
2013	259,510	220,912	85.0	196,550	89.0	75.7
2014	254,161	217,969	85.1	197,583	90.6	77.7
2015	273,373	237,288	86.8	201,214	84.8	73.6
2016	283,627	247,323	87.2	214,420	86.7	75.6
2017	299,635	264,278	88.2	234,728	88.8	78.3
2018	341,311	300,012	87.9	274,437	91.5	80.4
2019	346,686	308,897	89.1	281,968	91.3	81.3
2020	318,593	268,525	84.3	245,240	91.3	77.0
2021	333,546	296,328	88.8	266,352	89.9	79.9
Total	**3,434,456**	**3,021,046**	**-**	**2,629,349**	**-**	**-**
Average	**286,205**	**251,754**	**85.5**	**219,112**	**86.8**	**76.6**

Source: MOHE, n.d.

Based on our research criteria, the number of graduates aged below 30 years who responded to the survey (n_2) has increased from 158,469 in 2010 to 266,352 in 2021, with a peak of 281,968 in 2019. The composition of graduates by gender indicates a greater share of females compared to males. However, this gap has narrowed slightly, with the percentage of male graduates increasing from 38.2% in 2010 to 42.6% in 2021. Further breakdown of graduate selected demographic characteristics can be found in Table A.1 in Appendix A.

The majority of graduates are below 30 years (91.9% in 2021), though there has been a slight increase in the share of 26–30 year-olds who newly graduated from 6.6% in 2010 to 8.1% in 2021. In terms of qualification attained, there is a relatively even split between graduates who have a diploma or a degree, totaling 86.2% in 2021. By field of study, a large share of graduates is from (1) *Social Science, Business & Law* or (2) *Engineering, Manufacturing & Construction,* with a combined share of around 60%. This trend has been persistent throughout the 2010–2021 period.

By type of institution, there has been a significant decline in the share of graduates from public institutions (*Institut Pengajian Tinggi Awam*, IPTA), from 81.4% in 2010 to 67.5% in 2021. Concurrently, the share of graduates from private institutions (*Institut Pengajian Tinggi Swasta,* IPTS) has nearly doubled from 18.6% to 32.5%. This suggests that the decrease in the share of IPTA graduates within the GTS is influenced by a growing proportion of IPTS graduates participating in the same survey. Due to the expansion of GTS survey sample as discussed earlier, the share of TVET graduates also increased substantially especially in 2018, at 30.1% compared to 18.6% recorded in the previous year.

1.4.2. Graduate Career Tracking Survey (GCTS)

In addition to analysing the GTSS dataset, we conducted an online panel survey—the Graduate Career Tracking Survey (GCTS)—between May and July 2023, in partnership with MOHE. The support received from the MOHE has been instrumental, particularly in granting access to the GTS respondent database as the foundation for sampling frame and assisting in the distribution of the online survey through its database. The GCTS expands on the current GTS survey to further investigate graduates' employment experiences after specific time intervals in the labour market. It aims to highlight any similarities or differences in graduate outcomes between different cohorts. As such, the GCTS draws its sample from the full list of GTS respondents, which is a nationally representative sample of local graduates. The first cohort consists of "older" graduates from academic years 2010–2012 (henceforth will be referred as ~2010 cohort), while the second cohort comprises of "younger" graduates from academic years 2017–2019 (henceforth will be referred as ~2018 cohort).

The GCTS follows a pseudo-panel approach by categorising graduates into specific cohorts based on their graduation years (i.e., ~2018 and ~2010 cohorts). The design of the questionnaire incorporates information about graduates' first working experience after graduation (at each respective time period) and their current employment status. Additionally, we also include questions on graduates' perceptions of the labour market and intergenerational mobility, as well as their job search process—encompassing individual awareness of government programmes, personal preferences in job search methods, and the most effective support received during their education to work transition. See Box 1.1 for the details of GCTS methodology and its limitation.

Our GCTS data comprises a total of 8,026 responses collected from both cohorts. The survey obtained 3,697 responses for the ~2010 cohort from a sample frame of 161,663 graduates aged below 30 years. Meanwhile, for the ~2018 cohort, 4,329 responses were collected from a sample frame of 269,891 graduates. Appendix B Table B.1 illustrates the demographics of GCTS respondents, which remain largely consistent with the GTS respondents (Table 1.1), and thus, representative of Malaysia's local graduate population.

Similar to the GTS sample distribution across gender, the ~2010 and ~2018 cohorts from the GCTS involves relatively higher share of females than males. For the ~2010 cohort, 39.5% of the sample are male and 60.5% are female; while the ~2018 cohort consists of 41.9% male and 58.2% female. The median age is 35 years for the ~2010 cohort, and 28 years for the ~2018 cohort[26]. In terms of minimum qualification[27], 49.1% of ~2010 cohort have a diploma whereas 46.7% of ~2018 cohort have a diploma, thus suggesting the younger cohort has slightly higher share of degree holders. Following the GTS distribution, the GCTS also indicates two dominant fields of study across both ~2010 and ~2018 cohorts: *Social Science, Business & Law,* and *Engineering, Manufacturing & Construction*.

[26] The mean age is 35.1 years for the ~2010 cohort and 27.9 years for the ~2018 cohort, reflecting a symmetrical data distribution.
[27] "Minimum qualification" refers to the educational level that establishes the starting point for each individual's career trajectory. Within the context of GCTS cohort comparison, it signifies the baseline educational attainment from which we initiate our analysis. While our sample may possess higher educational qualification including postgraduate degree, this study will only focus on the two major categories—diploma and degree.

By type of institution, 67.1% of ~2010 cohort are graduates from IPTA, while for the ~2018 cohort, the share from IPTA is marginally higher at 68.9%. The corresponding shares of graduates from IPTS are 32.9% for ~2010 and 31.1% for ~2018. Moreover, 67.9% of respondents in ~2010 cohort are from non-TVET institutions, while the remaining 32.1% are from TVET institutions (7.8% from TVET, MTUN[28]) and 24.4% are from other public TVET institutions. Similar composition holds for ~2018 cohort, with 61.6% from non-TVET institutions, 10.9% from TVET (MTUN) and 27.5% from other public TVET institutions.

Box 1.1.1: GCTS research design

The Graduate Career Tracking Survey (GCTS) expands on the MOHE's Graduate Tracer Study (GTS) by delving further into various graduate employment outcomes across cohorts. This box article serves as a technical note on the research design that covers the components of its methodological, include sampling design, data collection and development of survey instruments.

Methodology and Questionnaire Development

1. The GCTS employs an online data collection method between May-July 2023. An email invite was sent to selected graduates by drawing samples from MOHE's GTSS database.
2. A two-staged stratified sampling design is adopted for GCTS to ensure a representative and diverse sample of graduates. The graduate population is divided into distinct strata based on three main criteria namely cohort years, qualification levels (diploma and degree), and gender. This stratification allows the study to create meaningful and homogeneous groups within the larger population, ensuring that graduates with different qualifications from both genders are appropriately represented. Graduates from each stratum are then randomly selected, with assistance from the MOHE to maintain confidentiality of respondents' background information.
3. The GCTS sample collected were adjusted through a combined ratio estimation method – (i) adjusted weight and (ii) population factor. The adjusted weight is used to take into account the non-response cases, while population factor is used to minimise sampling error and bias through a graduate population from the MOHE's GTSS database for each corresponding cohort years[29].
4. The GCTS instrument—a questionnaire—is designed to collect relevant information aligning with its objectives, beyond the GTS survey. To ensure the validity of the developed questionnaire, the research team sought an expert validity assessment from Professor Dr. Norzaidi Mohd Daud from Universiti Teknologi MARA (UiTM).
5. Two pilot tests were conducted before the actual survey to ensure the reliability of the questionnaire developed. The first pilot test involved the internal research team at KRI, to collect feedback on the questionnaire's content and structure. The second pilot test involved approximately 100 public respondents who met the GCTS criteria, i.e., graduates from the ~2010 and ~2018 cohorts from local universities, both IPTA and IPTS.

[28] MTUN refers to Malaysia Technical University Network and consists of four public universities, namely Universiti Tun Hussein Onn Malaysia, Universiti Teknikal Malaysia Melaka, Universiti Malaysia Perlis, and Universiti Malaysia Pahang. Source: MOHE (2022).
[29] Refer to Appendix D for data quality assessment of GCTS.

6. The research team also sought the survey ethics approval from the Research Ethics Committee of the National University of Malaysia (UKM) to ensure the study aligns with the ethical guidelines, safeguarding the rights and well-being of participants. This signifies our commitment to conduct the research responsibly and ethically, promoting trust and credibility in the outcomes of the survey[30]. Furthermore, field checks are carried out to identify any data errors or inconsistencies.

Method of data collection:
a. Online, through SurveyMonkey™ platform
b. E-mail invite to selected sample sent by the MOHE through GTS database

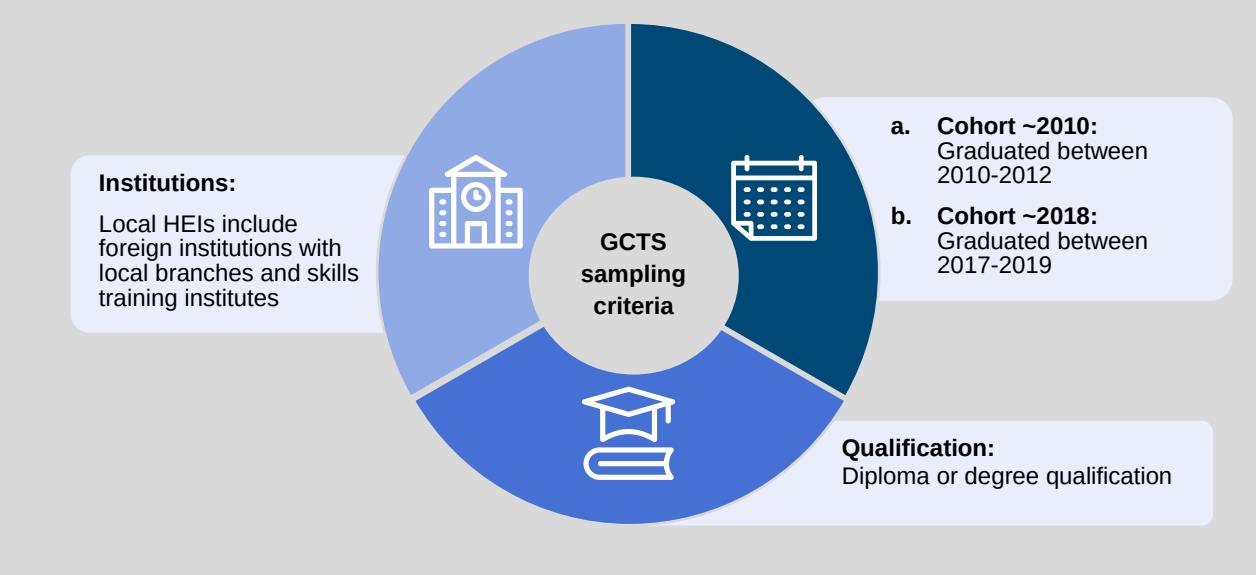
Sampling methodology:
a. Two-stage stratified sampling;
b. Sample is adjusted according to population weight by qualification level

Questionnaire reliability & validity:
a. Two pilot tests from internal research team at KRI, and 100 public respondents
b. Expert validity from UiTM

Scope and Limitation

1. The respondents for GCTS are drawn from the MOHE's GTSS respondent database. The first cohort consists of graduates from academic years 2010–2012 (referred as ~2010 cohort), while the second cohort consists of graduates from academic years 2017–2019 (referred as ~2018 cohort). Since the survey population is defined to cover graduates from these two cohorts, graduates from other years are excluded.
2. The sample selection process encompasses graduates who possess a minimum qualification of either diploma or degree. This standardised approach ensures a consistent and comparable baseline within each cohort, allowing for meaningful analysis and accurate comparisons across the study groups.
3. The GCTS only covers graduates from local IPTA (including public TVET institutions) and IPTS (including foreign universities with branches in Malaysia). Graduates who studied overseas are excluded, thus limiting further analysis and comparison of employment outcomes between local and overseas graduates.

[30] Ethics Committee Approval reference number: JEP-2023-450


Institutions:
Local HEIs include foreign institutions with local branches and skills training institutes
GCTS sampling criteria
a. Cohort ~2010: Graduated between 2010-2012
b. Cohort ~2018: Graduated between 2017-2019
Qualification:
Diploma or degree qualification

CHAPTER 02

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CHAPTER 2

FRESH GRADUATES, FRESH CHALLENGE

But while the world may be expecting big things from you right away, I want to give you permission, for a while, to not know. And to try different paths. And to change your mind. Especially in this world with new industries, new disciplines and new jobs emerging on every frontier.

Sally Kornbluth (2023)[31]
MIT President

2.1 Introduction

The transition from education to work can be a challenging phase for fresh and young graduates. It represents a significant change in their lives as they embark on a professional journey with newly acquired skills and qualifications. Moreover, realities within the labour market can further present unexpected adversities for fresh graduates, which could subsequently influence their future career trajectories.

Labour market outcomes are essential measures that gauge these graduates' initial experiences and the degree of success in their transition into the world of work. Statistics on employment status, first job skill level, and starting pay are valuable indicators in assessing the returns to education during the first phase of their careers. Our analysis in this chapter utilises time series data between 2010 and 2021 from the Graduate Tracer Study (GTS) administered by the Ministry of Higher Education (MOHE). Considering that the focus of this chapter is on fresh and young graduates, the term "graduates" throughout this chapter will only refer to GTS respondents aged 30 years old and below.

This chapter explores the conditions that Malaysian fresh graduates face during their transition from local higher education institutions (HEIs) to the labour market, while providing an updated and concise version of KRI's earlier paper titled "Fresh Graduate Adversities: A Decade's Insight on the Graduate Tracer Study"[32]. Section 2.2 presents the trends in graduate employability over the past decade. Next, Section 2.3 delves deeper into the quality of employment as we investigate the issues of skills mismatch and low starting pay among working graduates. In Section 2.4, we further dissect their employment outcomes by comparing between several demographic characteristics. Section 2.5 explores graduates' job satisfaction as indicated by their intention to change jobs and various reasons behind this dissatisfaction. Lastly, Section 2.6 summarises key findings on fresh graduates' labour market trends and outcomes before concluding the chapter in Section 2.7.

[31] Kornbluth (2023)
[32] Mohd Amirul Rafiq Abu Rahim and Shazrul Ariff Suhaimi (2022)

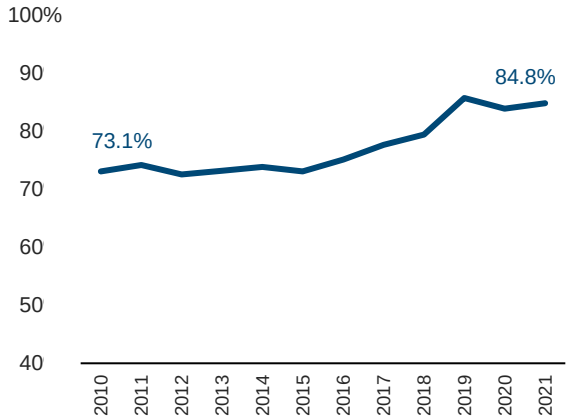
2.2 Employability of Fresh Graduates

2.2.1. Graduates' status after study completion

Recognising the growing demand for skilled talents to help propel the various industries with creativity and innovations, enhancing graduate employability has been prioritised on the national human capital development agenda. One of the indicators used by the MOHE in monitoring graduate employability is the Graduate Employability Rate (GER). Tracked through the GTS conducted upon graduation, GER aims to measure the marketability of graduates as they transition from education to work. It is also a key performance indicator set upon HEIs in producing competent graduates to fulfil national and international manpower needs. Furthermore, the 2021-2025 Graduate Employability Strategic Plan has set a target of at least 80% of graduates being employed in relevant study fields within six months of graduation[33].

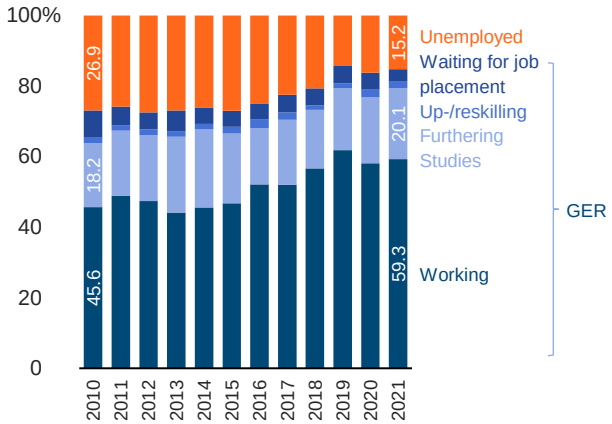
Headline statistics indicate that the overall GER has been trending upward, from 73.1% in 2010 to 84.8% in 2021 (Figure 2.1). This encouraging trend suggests that employability of Malaysian graduates has been improving in the last decade, with more finding themselves in favourable positions to secure employment. However, it is important to highlight that "employability" by this definition does not equate to "employment". The National Graduate Employability Blueprint 2012-2017 defined employability as the potential to secure, maintain, and grow in a particular job at the workplace. Meanwhile, employment is defined as the potential to secure a job at a workplace[34]. As such, the construct of GER takes into account not only graduates who are (1) working, but also those who are: (2) furthering their studies, (3) pursuing up/reskilling programmes, and (4) waiting for job placement (Figure 2.2).

Figure 2.1: Graduate Employability Rate (GER), 2010–2021



Source: MOHE, n.d., KRI calculations

Figure 2.2: Breakdown of graduate employment status, 2010–2021



Note: GTS classifies graduate employment status into five main categories as listed above. The dataset also captures those who are not actively seeking employment under "unemployed" and treats them as 'not yet working' rather than 'outside the labour force'.
Source: MOHE, n.d., KRI calculations

[33] MOHE (2021b)
[34] MOHE (2012)

Drilling down to graduate employment rate, Figure 2.2 shows that the percentage of graduates with employment status or those already working during the survey has increased from 45.6% in 2010 to 59.3% in 2021. Although this trend may seem promising, it underscores that less than two-thirds of graduates are employed soon after completing their studies. Other graduates included in the GER statistics—around 25.0%—are either furthering studies, in upskilling and reskilling programmes, or waiting for job placement.

Over the past decade, the proportion of graduates who opted for further studies has been relatively stable, only marginally rising from 18.2% in 2010 to 20.1% in 2021. The majority of those who continued studying had a diploma or certificate and were enrolling in a degree programme[35,36]. This could be due to the expansion of higher education in both public and private sectors[37] and greater recognition of the importance of higher qualifications in influencing labour market outcomes[38]. In addition, these graduates may have opted to undertake further studies rather than remaining idle during their transition process[39].

On the other hand, only 2.0% of graduates have opted to participate in up/reskilling programmes on average, between 2010–2021. The low share of fresh graduates on this path may be due to the prioritisation of employment post-graduation. Some might also believe that they have the necessary qualifications for the jobs they are applying to, hence upskilling or reskilling programmes seem less pertinent at the initial stage after study completion. Moreover, there has been a decline in the share of graduates awaiting job placement[40], from 7.7% in 2010 to 3.5% in 2021 (Figure 2.1). Among these graduates, the share of those awaiting job placement is typically highest from the Health & Welfare and Education study fields, at 24.5% and 21.8% respectively[41].

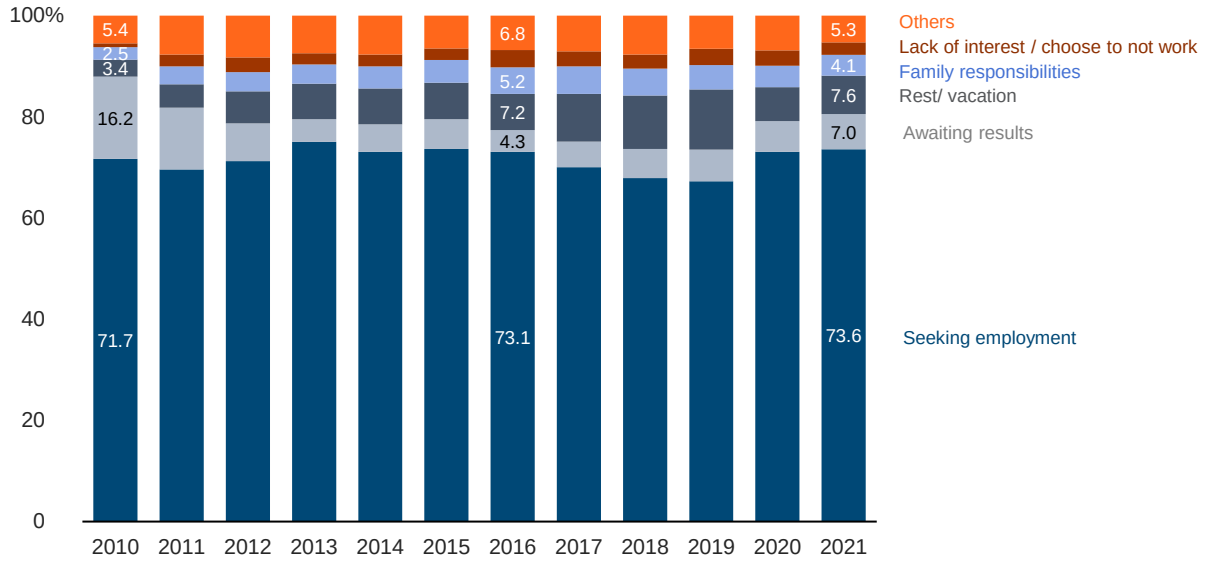
In tandem with the rising share of working graduates, the proportion of unemployed graduates[42] has seen a marked decrease from 26.9% in 2010 to 15.2% in 2021 (Figure 2.2). This could be attributable to numerous initiatives implemented by the government, as outlined in the National Graduate Employability Blueprint 2012-2017[43] and Graduate Employability Strategic Plan 2021-2025[44]. Based on Figure 2.3, most unemployed graduates cited that they are actively seeking for employment but face various difficulties, primarily due to "competitive job market" challenges[45]. There has also been a rise—albeit a small share—among unemployed graduates citing familial responsibilities or lack of interest as the main reasons for not working.

[35] Mohd Amirul Rafiq Abu Rahim and Shazrul Ariff Suhaimi (2022)
[36] Between 2010-2021, on average, 31.4% of diploma & certificate holders opted for further studies as compared to 5.8% of degree holders. Source: MOHE, n.d., KRI calculations
[37] Hawati Abdul Hamid (2022a)
[38] Graduates with a bachelor's degree consistently outperformed graduates with diplomas and certificates in terms of starting pay. Source: Hawati Abdul Hamid (2023a)
[39] MOHE, n.d.
[40] Awaiting job placement refers to graduates who have successfully secured a position but are waiting for their official job placement.
[41] MOHE, n.d., KRI calculations.
[42] Unemployed graduates are excluded from the graduate employability rate (GER) statistics.
[43] MOHE (2012)
[44] MOHE (2021b)
[45] Mohd Amirul Rafiq Abu Rahim and Shazrul Ariff Suhaimi (2022)

Furthermore, there has been an emerging trend amongst fresh graduates opting for rest or vacation post-graduation. This transitionary period may offer them an opportunity to have a short break before entering the job market. However, the growing number of graduates taking a break after study completion, coupled with a higher share of those not interested in employment, may signal increasing detachment among youth from the labour market.

Literature in international context on youth not in employment, education, and training (NEET) suggests that youth inactivity in the labour market could be due to discouragement resulting from encountering multiple barriers during the job search process[46]. Hence, the issue should be addressed now while still manageable to prevent a further rise in NEET among Malaysian fresh graduates. Box 2.1 offers some information on NEET.

Figure 2.3: Breakdown of unemployed graduates, by main reason for not working, 2010–2021



Source: MOHE, n.d., KRI calculations

[46] Quintini and Martin (2014)

Box 2.1: Background and definition of NEET (Not in Education, Employment or Training)

NEET is a term that refers to young people who are currently unemployed and not in the process of seeking any formal education, employment, or training[47]. According to the OECD, these individuals are at risk of being socially excluded, as they are susceptible to living below the poverty line, compounded by the lack of skills to improve their economic situation[48]. These youth also face the risk of losing the potential to achieve upward mobility and to improve their economic circumstances as they do not have the means of utilising education or employment for their betterment.

Globally, the issue of NEET has impacted women more than men. In 2017, the prevalence of NEET among young women (ages 15–24 years) is triple that of young men, at 34% versus 10% respectively. Additionally, more than half of NEET are from South Asian countries[49]. Besides several adverse effects of NEET commonly shared by women and men—including negative employment outcomes, drug or substance abuse, and involvement in criminal activities—young women with NEET status have also been associated with other risks such as early marriage and early motherhood[50].

In short, NEET not only impacts the lives of these individuals alone, but also affects those around them such as their families and local communities as they are unable to fully support themselves. Therefore, early intervention is needed to ensure that these youth are not trapped in poverty at an age where their potential is at its highest.

[47] Elder (2015)
[48] OECD (2022)
[49] ILO (2017)
[50] CEDEFOP, n.d.

2.2.2. Working graduates

While the GER is a useful employability indicator, the inclusion of graduates who are furthering their studies, participating in up/reskilling programmes, and waiting for job placement in the GER statistics arguably presents a shortcoming in the measure to capture real employment outcomes among tertiary-educated talents and the performance of HEIs[51]. As discussed earlier, a high GER may not necessarily translate into high share of working graduates. Among those employed, the GER also does not consider whether they are in jobs that are commensurate their qualification level or match their study field. We explore key characteristics of graduate employment outcomes to discern fresh graduates' employability across different employment types, study fields, economic sectors, and organisation types. Further details on the prevalence and breakdown of working graduates by selected demographic characteristics can be found in Appendix A Table A.2.

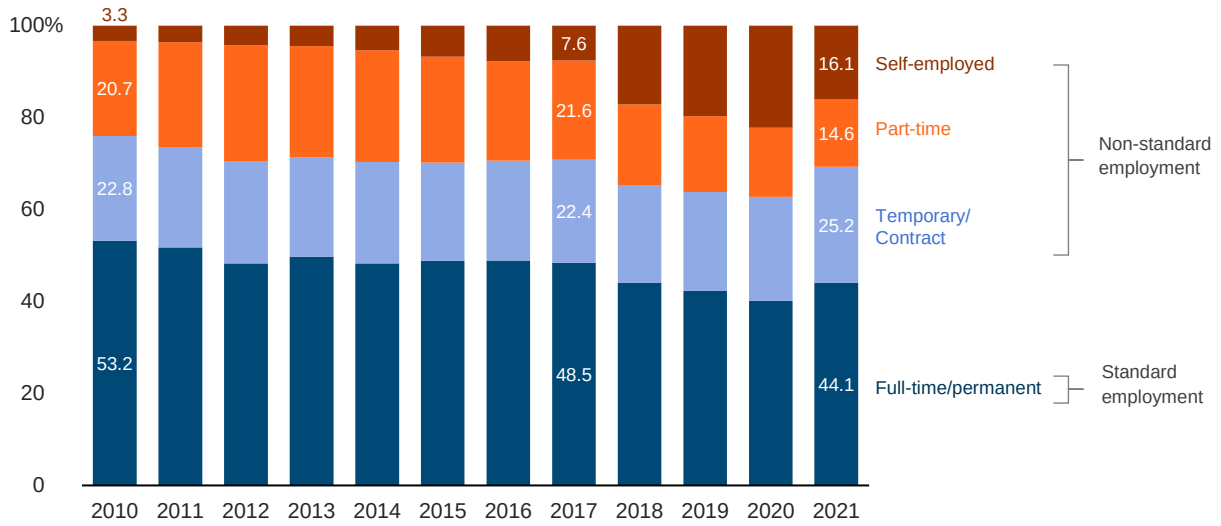
Employment type

It is worth noting that the definition of working graduates is quite expansive as it includes any type of employment. To narrow down, we divided graduates' work arrangements into four types of employment namely: (1) full-time permanent, (2) temporary/contract, (3) part-time, and (4) self-employed. Graduates in full-time permanent positions are considered to be in standard employment, while the remaining three are considered to be in non-standard employment.

The past decade shows a gradual decline in the share of graduates who are in full-time permanent positions, shrinking from 53.2% in 2010 to 44.1% in 2021 (Figure 2.4). Meanwhile, the collective share of graduates occupying non-standard employment has increased, mainly driven by a significant rise in self-employed graduates— from 3.3% in 2010 to a peak of 22.2% in 2020, before dropping to 16.1% in 2021. The sudden increase in self-employment in recent years occurred prior to the pandemic, and thus, could be attributed to the advent of gig work through popular platforms such as Grab and Uber since 2017[52]. According to MDEC, these platforms have created approximately 1.12 million opportunities in the gig economy as of March 2023[53].

[51] Dzulkifli Abdul Razak (2022) argued that this practice tends to weaken the understanding of graduate employability by providing an escape route to manipulate the outcome. He argued that by organising training or upskilling programmes, the KPI can be upgraded accordingly (by higher education institutions) and even exceeding the target set.
[52] Ahmad Naqib Idris (2017)
[53] The Star (2023a)

Figure 2.4: Breakdown of working graduates, by employment type, 2010–2021



Source: MOHE, n.d., KRI calculations

Some graduates may be forced into self-employment sustain themselves due to the lack of high-skilled positions in the job market (see Chapter 6 for further discussion). The rise in non-standard employment raises concerns as these arrangements often provide lesser job security, slower wage growth, limited career progression and a lack of social protection[54]. Furthermore, jobs of this nature may carry health implications as studies show an increase in psychological distress as well as lower overall wellbeing among those who are employed on a zero-hour contract basis[55]. Although the concept of flexible hours may be welcomed by many young workers, it also poses a higher financial risk due to the irregular income flow.

On the other hand, the rise in the share of self-employed graduates could also be a result of various efforts under the Malaysia Education Blueprint 2015-2025 (Higher Education)[56] to encourage Malaysian students in pursuing entrepreneurship, aspiring to turn job seekers into job creators (Chapter 4 for further discussion). Additionally, initiatives have been undertaken to nurture the entrepreneurial spirit among youths at an early age, starting from vocational colleges and technical schools[57]. Even so, GTS findings show that self-employed graduates tend to perceive this career path as unsustainable, considering they place a higher value on career progression, job security, and income stability[58].

[54] Hawati Abdul Hamid and Nur Thuraya Sazali (2020)
[55] This refers to a situation whereby the number of minimum working hours is not specified in the employment contract. Source: Wilson and McDaid (2022)
[56] MOE (2013)
[57] GOM (2016)
[58] Mohd Amirul Rafiq Abu Rahim and Shazrul Ariff Suhaimi (2022)

Study field

When analysing the distribution of working graduates by their field of study, the highest shares are among those who have studied *Social Science, Business & Law* and *Engineering, Manufacturing & Construction.* This is consistent with student enrolment numbers which have largely been concentrated within these two fields[59]. However, this distribution is not representative of the potential impact of study field on graduate employability. We further analyse the prevalence of working graduates within each field of study in Table 2.1.

One of the most popular study fields, *Engineering, Manufacturing & Construction*, has the highest share of working graduates at 64.3% in 2021. This is in line with a higher degree of employability among graduates with technical-related background, such as Science, Technology, Engineering, and Mathematics (STEM) or Technical and Vocational Education and Training (TVET). It also reflects that these graduates have the necessary practical skills highly demanded by employers[60].

In contrast, another technical-related field, *Science, Mathematics & Computing*, has somewhat a lower share of working graduates over the past decade. With one of the slowest increases in the share of working graduates, it might indicate a relatively serious shortage in opportunities for tertiary-educated talents in this field. Related to this, a recent employability report on Penang's labour market noted that individuals with applied sciences or life sciences background may have fewer job opportunities within the pharmaceutical industry[61]. Employers in the technology industry also raised issues of skills mismatch among local graduates, which makes them less employable in general[62]. Since the GTS is conducted shortly after study completion, this scenario might just highlight that these graduates have been taking longer to secure a job; yet, their outcomes over a more extended time frame could be better compared to others. We delve deeper into graduate's career progression in Chapter 3.

Table 2.1: Prevalence of working graduates, by study field, 2010–2021

Field of study	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Average
Science, Mathematics & Computing	43.9	47.5	44.8	41.8	40.7	42.8	49.3	45.6	51.8	57.8	53.4	55.5	47.9
Engineering, Manufacturing & Construction	49	50.8	50.7	47.5	47.9	49.8	57.3	57.6	61.5	65.4	60.7	64.3	55.2
Health & Welfare	50.8	51.8	43.7	43.9	49.7	47.2	44.1	44.1	44.4	54.7	51.6	57.3	48.6
Agriculture & Veterinary	37.7	38.2	37.2	35.1	36.8	34.6	42.6	47.1	51.2	56.6	50.7	50.8	43.2
Social science, Business & Law	44.8	50.4	47.1	43.8	45.3	46.4	51.8	52.2	56.4	60.8	56.8	56.9	51.1
Education	39.7	32.8	43.1	35.3	42.4	50.2	48	49.2	52.7	55.9	62.3	56	47.3
Arts & Humanities	40.4	46.3	48.5	42.1	43.2	42.3	47	48	53.5	61.7	58.9	58.8	49.2
Services & others	47	47.7	49.5	49	50.7	52.2	58.2	56.7	62.5	66.6	62	61.9	55.3
Overall	44.2	45.7	45.6	42.3	44.6	45.7	49.8	50.1	54.3	59.9	57.1	57.7	**49.7**

Lowest — Highest

Note: Study fields coloured in grey represent the top three fields with the best employment rates throughout the years, while study fields coloured in blue represent the bottom three fields in terms of employment rates. Similarly, under the "Overall" category, years with the top three highest employment rates and bottom three employment rates are coloured in grey and blue respectively.
Source: MOHE, n.d., KRI calculations

[59] MOHE, n.d.
[60] Hawati Abdul Hamid and Tan Mei Yi (2023)
[61] Penang Institute (2022)
[62] Dass (2022)

More worryingly, the *Agriculture & Veterinary* field has consistently been ranked the lowest in terms of working graduate prevalence. This could partly be due to the small size of the agricultural sector within Malaysia's economy, considering it only contributes approximately 6.0% as a share of GDP in Q1 2023[63]. Other potential factors for the lower employment percentage among graduates from agriculture programs could stem from demanding physical work, challenging working conditions, lower wages and lower productivity. Nonetheless, recent government initiatives—such as the Young Agropreneur Programme (PAM) introduced in 2016 to provide financial grants as well as technical training and guidance to youths aged 18-40[64]— contributed to an increasing employment rate among *Agriculture & Veterinary* graduates, reaching a peak of 56.6% in 2019 before declining to 50.8% in 2021 due to the COVID-19 pandemic.

At the onset of the pandemic in 2020, an interesting trend is observed with the overall decline in prevalence of working graduates across all fields of study, except for *Education*. With multiple lockdowns resulting in school closures throughout 2020, the rise of online learning may have increased demand for teachers and tutors whilst reduced entry barriers for graduates with *Education* qualifications. In fact, only the *Education* and *Health &* Welfare fields have regained higher shares of working graduates and exceeded their pre-pandemic levels. As these sectors continue to be priorities during the crisis, it is not surprising that they could offer greater employment opportunities for graduates.

Economic sector

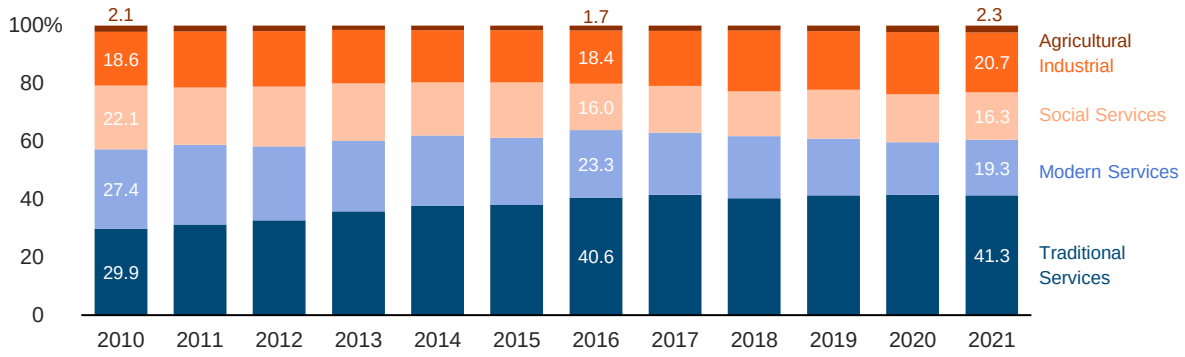
The sectors or industries that graduates end up in, to some extent, play a critical role in determining their long-term career prospects. Certain subsectors and industries possess higher potential for growth, including the *services* sector which accounts for 59.1% and *manufacturing* which accounts for 23.6% of GDP[65]. Accordingly, these two sectors serve as the main drivers of Malaysia's economy with the highest concentration of working graduates as reflected through the GTS data.

Figure 2.5 shows that the *services* sector (including *social services*[66]*, modern services*[67] and *traditional services*[68]) currently account around 80% of the total job market for working graduates. Although there have been some efforts to spur growth[69] within *modern services*, the share of graduates employed in this sector declined from 27.4% in 2010 to 19.3% in 2021. Instead, the share of working graduates within *traditional services* has increased from 29.9% to 41.3% over the same period. These trends seem regressive considering *modern services* typically provide better labour market outcomes for graduates[70], compared to *traditional services* which tends to have lower productivity level and higher incidence of informality[71].

[63] DOSM (2023c)
[64] MAFI, n.d.
[65] DOSM (2023c)
[66] Social Services consist of education, health & social work and public administration, defence and compulsory, utility services.
[67] Modern Services consists of professional & technical, financial, information & communication, as well as real estate services.
[68] Traditional Services consists of wholesale & retail, transportation & storage, administration & support, accommodation & food and other services.
[69] GOM (2021b)
[70] BNM (2019)
[71] KRI (2020)

Furthermore, there has also been a reduction in the share of working graduates in *social services* from 22.1% in 2010 to 16.3% in 2021. This could be attributed to the shift in graduate employment from the public sector to the private sector, which is explored in the following discussion on organisation type. For the remaining two sectors, there have been minimal changes throughout the 2010–2021 period. The share of working graduates in the *industrial*[72] sector marginally increased from 18.6% in 2010 to 20.7% in 2021. On the other hand, the *agricultural* sector is relatively unchanged as the share of working graduates remain stagnant, averaging around 1.9% in the past decade. This is consistent with earlier discussions on the *Agriculture & Veterinary* field having lower prevalence of working graduates than any other study fields.

Figure 2.5: Breakdown of working graduates, by economic sector, 2010–2021



Source: MOHE, n.d., KRI calculations

Organisation type

A majority of working graduates are employed in the local private sector, consisting of *small & medium-sized enterprises* (SMEs) and *non-governmental organisations* (NGOs). This is in line with the national trend of SMEs being the main employer in the labour market[73]. Similarly, the public sector—including federal and state government entities as well as statutory bodies—experienced a large reduction in the share of working graduates, from 20.8% in 2010 to 9.4% in 2021.

Since the 10th Malaysia Plan (2011–2015), the government has shifted its role to act as a facilitator in non-core services by increasingly adopting privatisation and outsourcing. Moreover, the recent policy direction in 2019 to reduce public service jobs by 5.0% as well as the 2022 guideline on new public service vacancies are expected to contribute to the decline of fresh graduates working in the public sector.

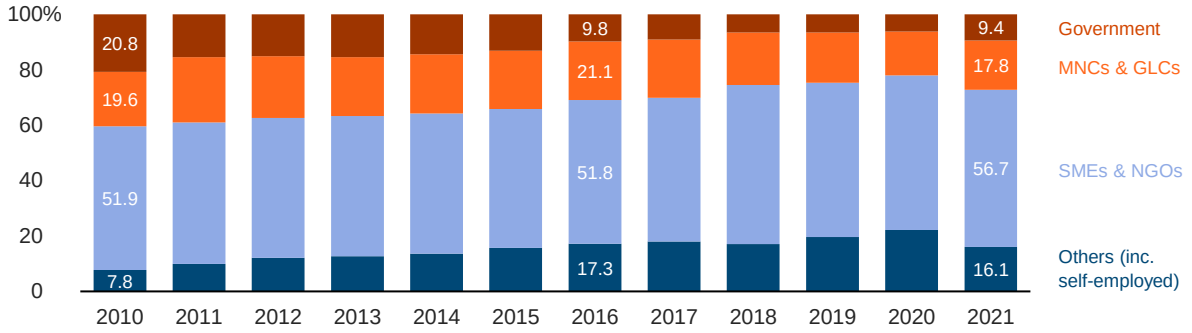
Figure 2.6: Breakdown of working graduates, by organisation type, 2010–2021 illustrates that the share of graduates employed in SMEs and NGOs has been relatively flat around 51.0% throughout the past decade, before increasing to around 56.7% from 2018 onwards. On the contrary, *multinational corporations* (MNCs) and *government-linked corporations* (GLCs) have seen a gradual decline from 19.6% in 2010 to 17.8% in 2021 in its share of working graduates. This could potentially impact future graduates' labour market outcomes as MNCs and GLCs usually offer well-paying jobs with better stability[74]. Similarly, the public sector—including federal and state government entities

[72] Industrial consists of manufacturing, mining and quarrying and construction.
[73] DOSM (2023f)
[74] Wan Amirah Wan Usamah (2023)

as well as statutory bodies—experienced a large reduction in the share of working graduates, from 20.8% in 2010 to 9.4% in 2021.

Since the 10th Malaysia Plan (2011–2015), the government has shifted its role to act as a facilitator in non-core services by increasingly adopting privatisation and outsourcing[75]. Moreover, the recent policy direction in 2019 to reduce public service jobs by 5.0%[76] as well as the 2022 guideline on new public service vacancies[77] are expected to contribute to the decline of fresh graduates working in the public sector.

Figure 2.6: Breakdown of working graduates, by organisation type, 2010–2021



Source: MOHE, n.d., KRI calculations

Lastly, there has been a significant rise in the share of working graduates within the *others* category, which includes those who are self-employed. This marked increase from 7.8% in 2010 to 16.1% in 2021 is primarily driven by the growth of graduates who have opted to embark on self-employment rather than traditional forms of employment. However, a growing concern exists for graduates working as gig workers given there is little opportunity for them to advance within the sector. This is further compounded by a study which found that 72.1% of Malaysian high school leavers have no plans to further their studies and prefer to work as online influencers, e-hailing drivers, or p-hailing food delivery riders[78]. Therefore, this emerging trend needs to be further assessed, particularly on the types of self-employment that graduates are venturing into, to ensure that they maximise their full potential and long-term innovation capabilities.

[75] GOM (2016)
[76] Malaysiakini (2019)
[77] Which states that new public service vacancies are only allowed via trade-offs or redeployment. Source: Aliza Shah (2022)
[78] Hafiz Mutalib (2022)

2.3 Quality of Employment

While improvement in the GER is a positive development, working status alone says little about the quality of jobs that graduates engage in. Despite a notable increase in the share of working graduates, this growth is contributed by a rise in precarious occupations such as contract work and self-employment. Thus, we look deeper into the quality of graduate employment among Malaysian skilled talents, mainly focusing on their qualification-job match and trends in starting pay over the past decade.

2.3.1. Skills mismatch among graduates

Ideally, a graduate should be working in a job that corresponds to his or her qualification level and field of study. Nevertheless, the challenges posed by a competitive labour market may result in different types of skills mismatches among graduates. Box 2.2 provides more details on the concept and measurement of skills mismatch[79].

Box 2.2: Skills mismatch: Concept and measurement

Skills mismatch refers to any imbalances between skills available and job requirements in the labour market. This term encompasses a range of scenarios, including overqualification (over-education), underqualification (under-education), over-skilling, under-skilling, skill shortages, field of study mismatch, and skill obsolescence[80]. Skills mismatch in the context of overqualification or underqualification in this report refers to the scenario where graduates have either more or less education than what is required for their jobs, respectively.

The different manifestations, measurement methods, determinants, and consequences of skills mismatch make each type distinct. Some relate skills mismatch to the experiences of employees, while others focus on difficulties faced by employers and firms. Qualitative and quantitative methods are used to assess different aspects of skills mismatch, although these measures often have limitations and weak correlation when measuring the same type of mismatch. While challenges in the measurement highlight the problematic nature of skills mismatch, the issue has a significant impact on the labour market and remains highly relevant for policymaking.

This report measures the incidence of skills mismatch by comparing workers' occupational skill level (classified based on the International Standard Classification of Occupations, ISCO) and their education level (classified based on the International Standard Classification of Education, ISCED). Workers who have the education level assigned to the occupational group are considered "well-matched". Meanwhile, those with a higher (or lower) education level are considered overqualified (or underqualified).

Table 2.2 maps the occupation classification into four skills levels according to the MASCO major groups (equivalent to the 2008 International Standard Classification of Occupations (ISCO-08)). These levels are also measured by formal educational attainments as listed in the 2011

[79] The phrases "skills mismatch" and "qualification-job mismatch" refer to the same phenomenon, and thus, used interchangeably in this report.
[80] ILO (2020)

International Standard Classification of Education (ISCED-11) in the rightmost column of Table 2.2.

Table 2.2: MASCO major occupation groups and the corresponding skill level

MASCO major group	MASCO skill level		ISCED-11 group
Managers	High-skilled non-manual	High-skilled	Doctoral or equivalent
Professionals			Master or equivalent
Technicians and associate professionals			Bachelor or equivalent
Clerical and support workers	Low-skilled non-manual	Semi-skilled	Short-cycle tertiary education
Service and sales workers			
Skilled agricultural, forestry, livestock and fishery workers	Skilled manual		Post-secondary non-tertiary education
Craft and related trades workers			Upper secondary education
Plant and machine operators and assemblers			Lower secondary education
Elementary occupations	Unskilled	Low-skilled	Primary education

Sources: MOHR (2020), UNESCO (2011)

We first look at the scenario of *vertical mismatch*—a situation whereby graduates are working in occupations that do not match their qualification levels. This is examined by analysing the proportion of graduates working in *high-skilled jobs*[81] as classified under the Malaysia Standard Classification of Occupations (MASCO) 2020. Figure 2.7 shows that 60.0% of graduates in 2021 are employed in high-skilled jobs. This is an encouraging development considering the downward trend observed between 2010–2018. However, the increase in recent years coincides with MOHE's expansion of the GTS survey, which includes graduates from public skills institutes from 2018 onwards[82]. As these graduates mostly have diploma or certificate qualifications and often work in high-skilled positions such as technicians & associate professionals, it could partly explain the rising trend in overall high-skilled proportion between 2019 and 2021.

Vertical mismatch can also be masked through differing layers of qualification requirement in each group of high-skilled occupations. For example, a degree holder working as a *technician* or *associate professional* is considered overqualified for the job because it only requires qualification at a diploma or certificate level; even though the position is high-skilled. Meanwhile, a diploma holder working as a *professional* can be considered underqualified for the job since it requires at least degree qualification.

Through a more granular MASCO classification, we find that only 43.4% of working graduates attained qualification-job match in 2021 (Figure 2.8). On the other hand, the share of overqualified graduates—those working in jobs that require lower qualifications—has been trending upward from 42.3% in 2010 to 57.3% in 2018, before gradually declining to 48.6% in 2021. This rate surpasses the national average for tertiary-educated workforce across all age groups, raising significant

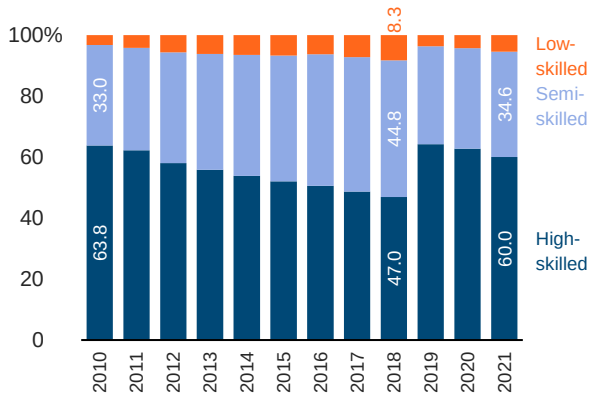
[81] High-skilled jobs are also referred to as graduate jobs as it requires higher education requirements (at least an STPM certificate or a diploma). Under MASCO 2020 classification, high-skilled jobs comprise of three major groups, namely: (1) *managers*, (2) *professionals,* and (3) *technicians & associate professionals.*

[82] This includes graduates from the Teachers Education Institute (*Institut Pendidikan Guru, IPG*) under MOHE; as well as TVET graduates from the Public Skills Training Institutes (*Institut Latihan Kemahiran Awam, ILKA*) administered by the Ministry of Human Resources, the Ministry of Youth and Sports, the Ministry of Agriculture and Food Industry, and the Ministry of Rural Development.

concern given its potential long-term impact on the career progression of fresh and young graduates. Overqualification tends to be more prevalent among fresh graduates compared to experienced ones. While this phenomenon may be common early in one's career[83] due to lack of experience and soft skills, it is crucial to address and consider its implications. Prolonged overqualification can significantly impact future career progression and outcomes.

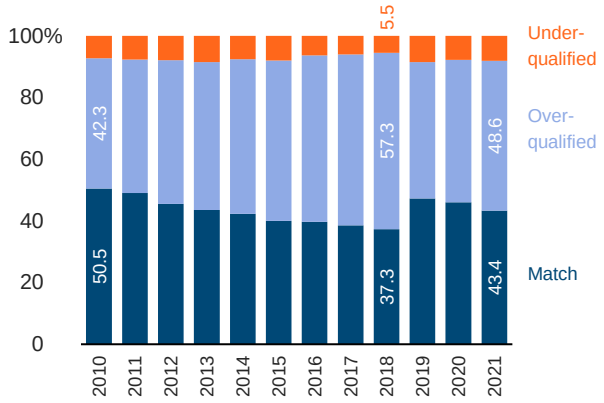
A report by DOSM also indicated that nearly 40.0% of the tertiary-educated workforce, involving approximately 1.8 million workers, are employed in semi-skilled jobs as of the first quarter of 2023[84]. Overqualification that is rooted in an ineffective education and training system indicates inefficiency in the utilisation of public and private sector resources as well as labour allocation[85]. As a result, skilled talents remain underutilised as employers fail to fully harness their capabilities, leading to a less than optimal labour market equilibrium.

Figure 2.7: Breakdown of graduates, by occupation skill level, 2010–2021



Source: MOHE, n.d., KRI calculations

Figure 2.8: Breakdown of graduates, by qualification-job mismatch, 2010–2021



Source: MOHE, n.d., KRI calculations

Moreover, graduates who are overqualified for their position often face a wage penalty compared to their peers with similar educational backgrounds who work in roles that match their qualifications[86]. This wage penalty typically leads to lower job satisfaction and higher likelihood to change jobs[87]. Overqualification also undermines the individuals' returns to higher education, besides increasing firms' costs due to high turnover rate. Although these challenges are typically attributed to shortcomings within the higher education community—including fresh graduates' lack of experience or expertise—it is also important to recognise deeper structural issues within the job market that lead to persistent overqualification, such as low wages and insufficient investment allocated for research and development (R&D) among employers, that fundamentally result in serious shortages of high-skilled jobs[88].

[83] Groleau and Smith (2019)
[84] DOSM (2023e)
[85] Boll et al. (2016)
[86] Congregado et al. (2016); Montt (2017); Erdsiek (2021)
[87] Bergin et al. (2019); Wachter (2020)
[88] BNM (2021)

Across different fields of study, Table 2.3 shows that the *Agriculture & Veterinary,* and *Services & Others* fields have the highest prevalence of overqualified graduates. Despite relatively small shares of graduates from these fields (see Appendix A Table A.1), overqualification is pervasive at around 70.0% in both fields. This potentially indicates inadequate high-skilled jobs for graduates in the agricultural and services sectors, coupled with an oversupply of graduates in this sector.

More worryingly, within the past decade, overqualification rate has doubled among graduates from the *Education,* and *Health & Welfare* fields. Even with rapid growth in these sectors[89], the number of jobs may not be able to accommodate the growing pool of skilled talents. This is supported by earlier discussion on high shares of graduates awaiting job placement in these fields. For instance, the availability of teaching positions especially at higher levels of education has been more limited[90]. Similarly, in the health sector, there may be a mismatch between the demand for specific healthcare professions against the supply of graduates produced[91].

Table 2.3: Prevalence of overqualified graduates, by study field, 2010–2021

Field of study	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Average
Science, Mathematics & Computing	47.4	47.1	50.2	49.1	50.5	51.7	53.4	55.5	57.3	38.7	36.0	37.3	47.8
Engineering, Manufacturing & Construction	32.4	32.0	36.0	41.4	39.5	43.7	45.5	47.5	52.4	38.1	42.6	44.5	41.3
Health & Welfare	15.7	19.5	31.6	31.3	26.1	27.5	37.2	36.4	33.8	24.7	29.9	30.2	28.7
Agriculture & Veterinary	64.7	64.7	67.2	68.7	68.9	66.8	72.3	75.4	81.7	65.1	65.8	70.2	69.3
Social science, Business & Law	55.8	54.0	56.6	57.6	60.0	61.8	60.9	61.8	61.6	50.9	51.6	54.9	57.3
Education	17.0	29.4	33.4	25.5	32.4	29.0	30.0	34.4	37.9	28.8	30.6	34.5	30.2
Arts & Humanities	45.5	45.5	49.4	46.8	47.0	51.0	51.6	53.8	58.8	41.7	45.9	47.6	48.7
Services & others	70.5	67.7	67.2	67.1	68.9	73.9	73.4	76.1	77.5	70.3	70.9	70.9	71.2
Overall	42.3	43.2	46.6	48.0	50.0	51.9	54.0	54.0	55.4	44.3	46.2	48.6	**48.7**

Lowest — Highest

Note: Study fields coloured in grey represent the three fields with the lowest overqualification rates throughout the years, while study fields coloured in blue represents the highest three fields in terms of overqualification rates. Similarly, under the "Overall" category, years with the top three lowest overqualification rates and highest three overqualification rates are coloured in grey and blue respectively.
Source: MOHE, n.d., KRI calculations

These alarming trends highlight the severity of skills mismatch issue among graduates, leading to underutilisation of their skills and potential. It could be due to multiple factors, including challenges for graduates to align their chosen study field with the evolving dynamics of the labour market. While graduates from *Social Sciences, Business & Law* field are highly demanded in 2020[92], more than half of them remain overqualified (Table 2.3). This suggests that job opportunities may be concentrated in low- or semi-skilled positions, highlighting a huge disconnect between graduates' fields of study and prevailing opportunities within the labour market.

[89] Kanapathy (2003) discusses the potential of education and health sectors as a dominant feature contributing to Malaysia's economic prosperity.
[90] Mohd Amirul Rafiq Abu Rahim and Umi Maisarah Kamis (2023)
[91] Augustin (2017) however claimed that there is still high demand for health sector, especially for nursing profession.
[92] Mohd Sahar Darusman (2020)

Field saturation[93] could be another factor affecting persistent skills mismatch among graduates. When the number of graduates greatly exceeds the number of high-skilled job openings within a particular field, the situation may push graduates to settle for jobs that require lower qualifications to meet their immediate needs[94]. Personal conditions, particularly financial constraints among those from low-income families or the pressure to earn an income due to recession[95] may also influence graduates' decisions to settle for any positions regardless of skills mismatch.

Relevant to this, we also examine *horizontal mismatch*, which occurs when graduates are employed in sectors that are not directly related to their study fields. Due to data unavailability, analysis on horizontal mismatch could only be done from 2018 onwards only. Table 2.4 reveals an increasing trend in the prevalence of horizontal mismatch[96], with 42.0% of working graduates in 2021 employed in a job outside of their study field. Higher shares of graduates from *Agriculture & Veterinary* (56.6%) face horizontal mismatch than any other fields. This is in accordance with previous discussion on the lack of graduate jobs in the agricultural sector. Given the pandemic's widespread impact on health, it is no surprise that more *Health & Welfare* graduates are employed in professions related to their study fields, with declining horizontal mismatch rates from 26.2% in 2020 to 18.0% in 2021.

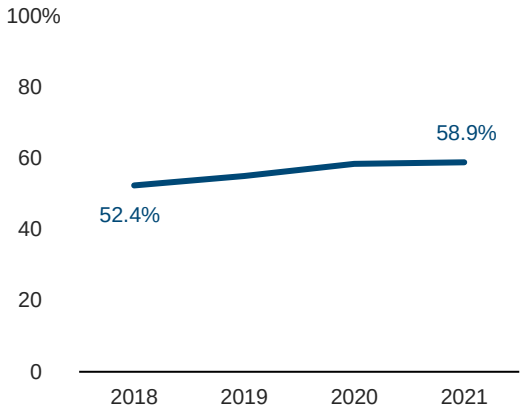
Table 2.4: Prevalence of horizontal mismatch (perceived by graduates), by study field, 2018–2021

Field of study	2018	2019	2020	2021	Average
Science, Mathematics & Computing	47.7	48.3	47.3	44.3	46.9
Engineering, Manufacturing & Construction	38.6	39.5	42.7	41.2	40.5
Health & Welfare	25.8	24.4	26.2	18.0	23.4
Agriculture & Veterinary	56.5	60.2	57.1	56.6	57.8
Social science, Business & Law	39.2	41.3	43.8	42.8	41.7
Education	26.6	28.5	31.6	31.3	29.6
Arts & Humanities	45.5	48.6	54.0	54.5	50.7
Services & others	36.8	37	44.4	49.2	41.7
Overall	**39.1**	**40.4**	**43.3**	**42**	**41.2**

Lowest — Highest

Note: Study fields with the top three highest prevalences of horizontal mismatch are highlighted in blue, and two of the bottom lowest are highlighted in grey.
Source: MOHE, n.d., KRI calculations

Figure 2.9: Prevalence of overqualified graduates perceived facing horizontal mismatch, 2018–2021



Source: MOHE, n.d., KRI calculations

[93] Field saturation is estimated by the ratio of graduates from a particular field to the number of workers in the corresponding occupational group. The indicator provides insight on the saturation of a particular field, but is not perfect, particularly because it does not clearly identify the source of the saturation. Ideally, field saturation and shortage would be measured using trends in vacancies or using wage pressure analyses.
[94] Montt (2017)
[95] Oreopoulos, von Wachter, and Heisz (2012); Wachter (2020)
[96] Note that this information is only available in the GTS questionnaire starting from 2018, based on graduates' self-assessment of whether their current job aligns with their field of study.

Our analyses on vertical mismatch (Table 2.3) and horizontal mismatch (Table 2.4) provide different ways of measuring skills mismatch among working graduates, with the latter having lower rates across most study fields[97]. However, the opposite is true in some cases. For instance, fresh graduates from *Arts & Humanities* are more likely to work in a different field (54.5% in 2021) rather than taking on jobs that do not match their qualification levels (47.6% in 2021). Similarly, this applies to graduates from the S*cience, Mathematics & Computing* field*.* The two can also co-exist, as shown in Figure 2.9. Among vertically overqualified graduates, a rising share has simultaneously experienced horizontal mismatch—from 52.4% in 2018 to 58.9% in 2021. As discussed, an oversupply of graduates within certain fields could lead to intense competition for jobs, which may explain how graduates end up accepting lower positions that do not align with their qualifications and fields of study[98]. Moreover, due to the nature of tracer studies, which typically engage graduates shortly after completing their studies, graduates themselves may have insufficient information to precisely evaluate the alignment of their field of study with their current employment.

While skills mismatches may be acceptable in the short run, one cannot deny that persistent mismatches will entail substantial costs in the future. These costs could include longer unemployment risks, unfavourable career prospects, and lower job satisfaction among the tertiary-educated workforce. To tackle these issues, policy interventions are necessary, contingent on the availability of accurate information regarding current and future skills demands[99]. The mismatch between graduates' qualification levels or study fields and high-skilled job creation within each sector may also indicate the urgent need to review existing gaps between Malaysia's higher education system and the labour market.

2.3.2. Graduates' starting pay

Starting pay is another meaningful measure of employment quality as it generally offers a baseline for graduates' earning trajectory. Conversations surrounding low wages are not new in Malaysia and many studies have cited the inherent problem of low-wage trap among workers[100]. Despite the implementation of minimum wage, KRI's recent study[101] highlights sluggish and suppressed wage growth in the last decade against a backdrop of low bargaining power among Malaysian workers and employers' high reliance on foreign workers.

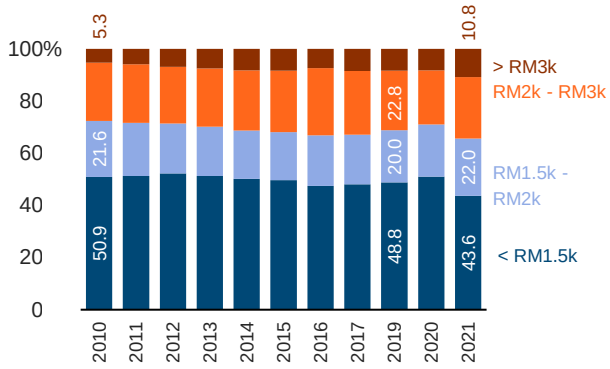
Correspondingly, the GTS findings reveal about half of fresh graduates receive monthly salaries below RM1,500 since 2010, with a slight drop in the share to 43.6% in 2021 (Figure 2.10). In parallel, there is a twofold increase in the share of fresh graduates receiving salaries above RM3,000 in 2021. Nevertheless, they only make up 10.8% of working graduates while two-thirds are still trapped in a low-wage structure with starting pay below RM2,000.

[97] It is important to note that the subjective assessment of horizontal mismatch may be influenced by various factors, such as personal interests, career aspirations, and job satisfaction. Hence, some individuals might perceive their job as more relevant to their field of study than it objectively appears, leading to a lower horizontal mismatch rate. Source: Pecoraro (2016)
[98] Verhaest, Sellami, and van der Velden (2017)
[99] OECD (2016)
[100] For example, Lee and Choong (2019); Tang (2014); KRI (2018a)
[101] Nithiyananthan Muthusamy, Jarud Romadan Khalidi, and Mohd Amirul Rafiq Abu Rahim (2023)

We also observe interesting trends in graduates' starting pay across skill levels. As shown in Figure 2.11, roughly half of graduates earning below RM2,000 are engaged in high-skilled jobs. Between 2010 and 2018, there seems to be an encouraging trend given the declining share of low-paid graduates in high-skilled jobs. Starting in 2019, there was a notable spike in the proportion of graduates engaged in high-skilled jobs earning below RM2,000, with half of them falling into this category. The expansion of GTS sampling criteria has resulted in a greater proportion of graduates in high-skilled yet low-paying occupations since 2019. These findings appear contradictory to the expectation of higher starting pay among graduates employed in matched, high-skilled jobs. The discrepancy could be due to most diploma or certificate holders working as technicians and associate professionals as discussed earlier, which is classified as high-skilled roles but typically have lower starting pay.

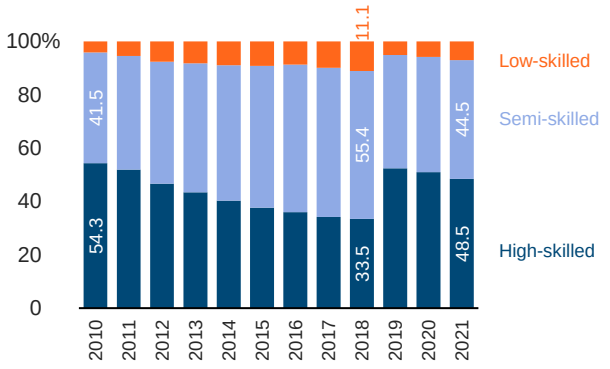
Therefore, these complexities emphasise the importance of a more nuanced understanding of the labour market dynamics as it involves various factors beyond skill levels. Policy analysis should take these intricacies into account while formulating effective strategies that can address the low-wage trap among fresh graduates, particularly those in high-skilled professions. A detailed breakdown of graduates earning below RM2,000 by other selected demographic characteristics is provided in Appendix A Table A.4.

Figure 2.10: Breakdown of graduates, by starting pay, 2010–2021



Source: MOHE, n.d., KRI calculations

Figure 2.11: Breakdown of graduates with starting pay less than RM2,000, by occupation skill level, 2010–2021



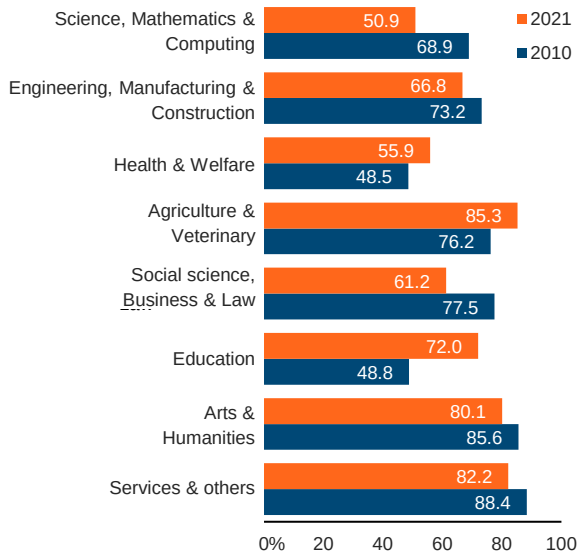
Source: MOHE, n.d., KRI calculations

Across most fields of study, there has been a decreasing trend in graduates receiving starting pay below RM2,000 (Figure 2.12). However, some fields including *Health & Welfare, Agriculture & Veterinary*, and *Education* saw a significant rise in the share of graduates with low starting pay. Although the *Education* field is often perceived to have more stable and promising job opportunities[102], there has been a striking 47.5% increase in graduates earning less than RM2,000 over the past decade. Additionally, *Agriculture & Veterinary* and *Health & Welfare* fields experienced a 11.9% and 15.3% increase, respectively, in the share of low-paid graduates over the same period.

[102] Wan et al. (2017)

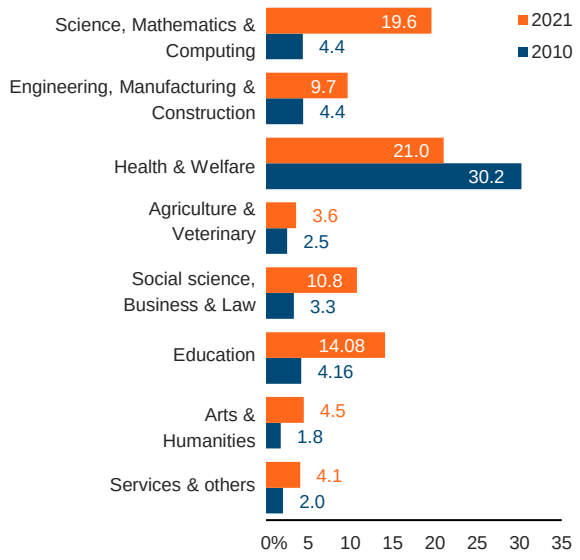
In contrast, the growing share of graduates earning high starting pay (above RM3,000) highlights a positive outlook for some graduates (Figure 2.13). This is observed for graduates from the *Science, Mathematics & Computing, Health & Welfare* as well as *Education* fields. In fact, *Science, Mathematics & Computing* graduates enjoy a fivefold increase in the share earning above RM3,000 while *Education* graduates experience a threefold increase between 2010–2021.

Figure 2.12: Prevalence of graduates with starting pay less than RM2,000, by study field, 2010 and 2021



Source: MOHE, n.d., KRI calculations

Figure 2.13: Prevalence of graduates with starting pay more than RM3,000, by study field, 2010 and 2021



Source: MOHE, n.d., KRI calculations

Within the *Education* field, there seems to be a stark contrast with the rise in both shares of graduates earning below RM2,000 and those earning above RM3,000 in the past decade. It may suggest that certain specialisations are in high demand, leading to higher starting pay for a specific set of graduates with relevant expertise compared to others. Meanwhile, for *Health & Welfare*, the increase in low-paid fresh graduates is accompanied by a huge decrease in those earning high starting pay in 2021. This indicates an issue of underpaid healthcare professionals, possibly attributable to the introduction of temporary or contract positions by the government in late 2016[103].

In summary, our analysis on the quality of employment reveals significant challenges related to skills mismatch and low starting pay among fresh graduates in Malaysia. Both vertical and horizontal mismatches are profound, with nearly half of graduates being overqualified for their jobs. Moreover, two-thirds of graduates continue to earn below RM2,000 despite higher education attainment. There are some positive shifts with more graduates earning above RM3,000, but there remain concerns with a growing share of low-paid graduates in certain study fields. Therefore, it will be crucial for the government to address the issues of persistent skills mismatch and low-wage trap, to ensure stable career growth and sustainable salary progression particularly among the tertiary-educated workforce.

[103] Anand (2021)

2.4 Employment Outcomes by Selected Demographic Groups

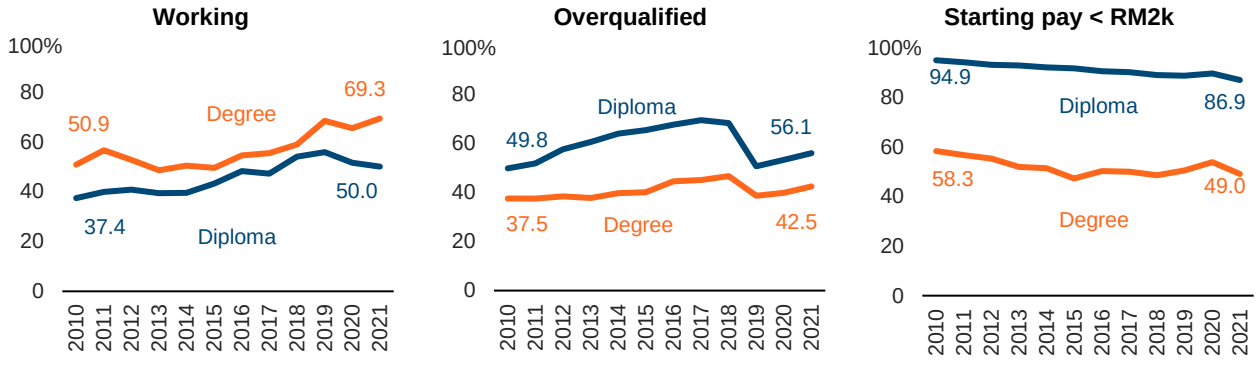
In this section, we further explore graduates' labour market outcomes through comparison of qualification level, institution type, study stream, gender, as well as family income, to highlight the varying outcomes experienced by different subgroups. For each group, we present the trends on three important outcomes, including the prevalence of: (i) working graduates, (ii) overqualification, and (iii) low starting pay. More details on these subgroup analyses are also available in Appendix A Table A.2 – A.4.

2.4.1. Qualification level: Diploma versus degree

Since 2010, the share of diploma holders who are working in GTS has always been lower than that of degree holders (Figure 2.14). In 2021, only half of diploma holders are working as compared to 69.3% of degree holders. A closer observation on skills mismatch reveals that graduates with degree qualifications typically fare better than those with diploma in terms of qualification-job match. Throughout the decade, differences in overqualification rates between diploma and degree holders have been over ten percentage points, with higher shares of the former facing skills mismatch in their jobs. The gap between the two has narrowed since 2018, owing to a large spike in matched jobs among diploma holders working as technicians and associate professionals.

In 2010, nearly all diploma holders received starting pay below RM2,000 but this has gradually improved in recent years, leaving 86.9% of diploma holders earning low starting pay in 2021 (compared to 95% in 2010). Comparatively, the share of degree holders who earn below RM2,000 fell from 58.3% to 49.0% over the same period. The significant disparity observed across qualification level aligns with an earlier KRI study which identified graduate qualification as the most important determinant that influences their starting pay[104]. Nevertheless, the study also found that the odds of earning higher pay among degree holders have now declined to less than 8.0 times from 10.0–12.0 times at the start of the decade, hence suggesting greater challenges for fresh graduates to earn higher pay.

Figure 2.14: Prevalence of graduates who are working, overqualified and with starting pay less than RM2,000, by qualification level, 2010–2021



Source: MOHE, n.d., KRI calculations

[104] Hawati Abdul Hamid (2023a) found that higher levels of education correspond to higher earnings, with degree holders consistently outperforming graduates with diplomas and certificates in terms of starting pay.

2.4.2. Institution type: Public versus private

Furthermore, we analyse the trends in employment outcomes among working graduates from public HEIs (*Institut Pengajian Tinggi Awam*, IPTA) versus those from private HEIs (*Institut Pengajian Tinggi Swasta*, IPTS). The proportion of IPTA graduates who are working has steadily increased from 44.7% in 2010 to 64.8% in 2021 (Figure 2.15). In contrast, the share of working IPTS graduates started off at 49.9%, but fluctuated throughout time and stands lower than that of IPTA at 56.0% in 2021. This potentially suggests public institutions' relative effectiveness in ensuring higher employment rates for their graduates.

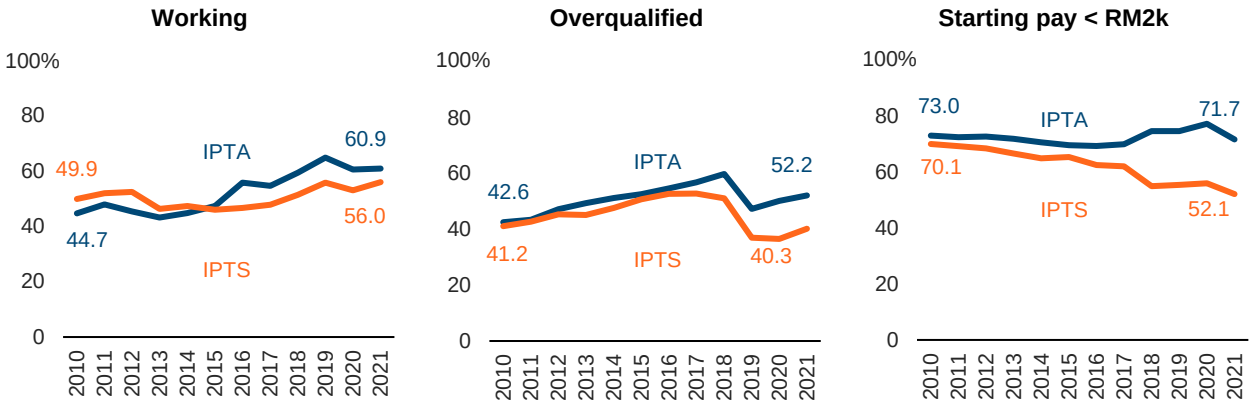
Past research emphasises that students' choice between public and private institutions primarily depends on several factors, including the overall value and reputation of the HEI, the structure of programmes offered, as well as academic quality and available facilities at the HEI. As such, rising employment rates among IPTA graduates could be attributed to improvements in the quality of education provided by these institutions, demonstrating tangible outcomes from investing in high-quality education[105].

After closely tracking each other for half a decade, the gap in skills mismatch between IPTA and IPTS graduates has widened since 2017, with higher shares of overqualified IPTA graduates than IPTS. Despite having higher shares of working graduates than IPTS, IPTA graduates face a greater challenge in attaining qualification-job match, which contributes to higher prevalence of earning low starting pay. Moreover, lower earnings for IPTA graduates may be attributable to their family income as it is one of the main factors influencing the choice of institution type that they enrol in. We discuss further on graduate outcomes by varying financial backgrounds in the following subsection 2.4.5.

In terms of starting pay, 71.7% of IPTA graduates earn below RM2,000 compared to 52.1% of IPTS graduates in 2021. Over the years, the share of low-paid graduates from IPTA has been relatively stagnant whereas IPTS saw a significant decrease in its share of graduates earning starting pay below RM2,000. The apparent pay gap between IPTA and IPTS fresh graduates is in line with the Public-Private University Worth Parity Index[106]. The study asserted that IPTA education has "higher worth" in terms of better skills gain, but "lower worth" in terms of graduate salaries. Additionally, Mohd Zaidi Hajazi (2017) argued that private universities often put more emphasis on commercial values[107]—beyond the general role of higher education to provide knowledge to students—thus explaining the difference in starting pay against public universities. This indicates a pressing need for targeted interventions to address the issue of overqualification and promote better employment outcomes among IPTA graduates.

[105] Ancheh, Krishnan, and Nurtjahja (2007)
[106] Soon, Lim, and Ismail (2021)
[107] Commercial values are defined as the emphasis placed by private universities on commerce and market-driven priorities in preparing students for the job market and establishing strong connections with industries. This emphasis is manifested through industry-relevant programmes, internship and job placement programmes, the application of research work in commercial contexts, and professional development for entrepreneurial support.

Figure 2.15: Prevalence of graduates who are working, overqualified, and with starting pay less than RM2,000, by institution type, 2010–2021



Source: MOHE, n.d., KRI calculations

2.4.3. Study stream: TVET versus non-TVET

In addition, we compare the outcomes between graduates who pursued *technical and vocational education and training* (TVET)[108] and those who pursued other study streams (non-TVET)[109]. Due to the nature of TVET classification in GTS[110], it is important to note that our analysis here strictly follows MOHE's existing classification of TVET and exclude graduates who pursued technical and vocational programmes at private institutions. We also focus on graduates with diploma or certificate qualifications, given that TVET programmes are primarily offered at these levels[111].

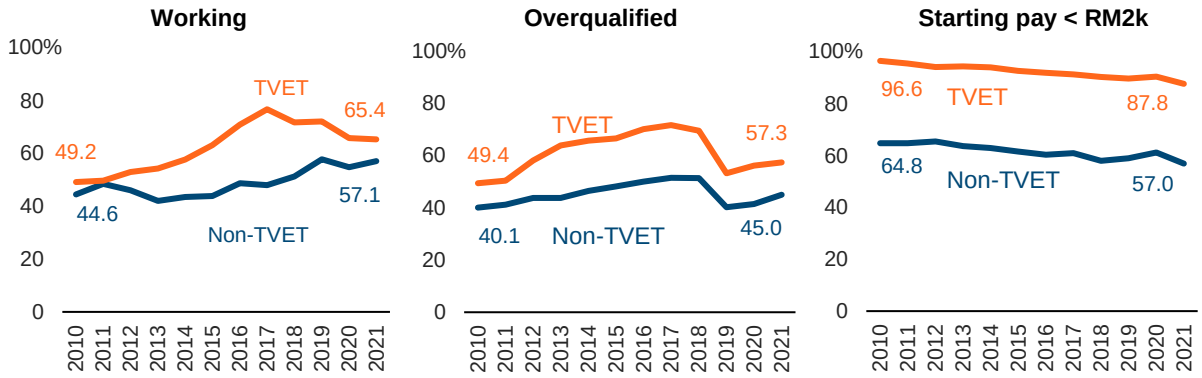
Figure 2.16 shows consistently higher prevalence of working graduates from TVET background compared to non-TVET. This could be linked to the hands-on experience gained from TVET courses[112] as well as greater support provided to help these graduates enter the industry after study completion rather than pursuing further studies[113]. However, the prevalence of working TVET graduates has been on a downward trend since 2017, dropping from 76.8% in 2017 to 65.4% in 2021. In contrast, the share of working graduates from non-TVET background has been on an upward trend since 2010, indicating more positive employment prospects for them than their TVET peers over time.

Despite relatively higher rates of employment, TVET graduates are more likely to face overqualification than non-TVET. In 2010, the share of overqualified TVET graduates stood at 49.4% compared to 40.1% of non-TVET graduates. Over the years, both groups have experienced increasing trends, with overqualification rates rising to 57.3% and 45.0% in 2021, respectively. The potential reason for the sharp decline in the incidence of overqualification among TVET and non-TVET graduates may be attributed to an improved labour market conditions in 2019, as evidenced by a slightly higher high-skilled job vacancy (see Figure 6.6).

[108] TVET refers to graduates who study at public technical and vocational institutions, including technical public universities (under the Malaysian Technical University Network, MTUN), polytechnics, college communities, vocational colleges, and other public skills training institutes.
[109] Non-TVET refers to graduates from public universities (excluding MTUN) and private institutions, regardless of whether they offer technical/practical courses. This is based on the nature of MOHE's current classification of TVET at the institution level rather than at the programme level.
[110] Based on the GTS, "TVET" only considers graduates from public technical and vocational institutions, hence it potentially risks undercounting other TVET graduates from private institutions.
[111] Mainly by public polytechnics, community colleges and *Institusi Latihan Kemahiran Awam* (ILKAs).
[112] Hawati Abdul Hamid and Tan Mei Yi (2023)
[113] The Asia Foundation (2022)

In parallel, there has been a decline in the proportion of graduates receiving low starting pay since 2010, observed in both TVET and non-TVET programmes. For TVET graduates, the percentage has decreased from 96.6% in 2010 to 87.8% in 2021, while non-TVET graduates experienced a decline from 64.8% to 57.0% over the same period. Notably, the prevalence of low-paid graduates is significantly higher among TVET graduates compared to their non-TVET counterparts. This trend might be attributed to the nature of TVET-related employment, which is predominantly concentrated among diploma holders, hence leading to lower starting pay. Furthermore, the higher incidence of overqualified TVET graduates exacerbates the challenges they encounter in securing well-paying jobs.

Figure 2.16: Prevalence of graduates who are working, overqualified and with starting pay less than RM2,000, by study stream, 2010–2021



Source: MOHE, n.d., KRI calculations

2.4.4. Gender: Male versus female

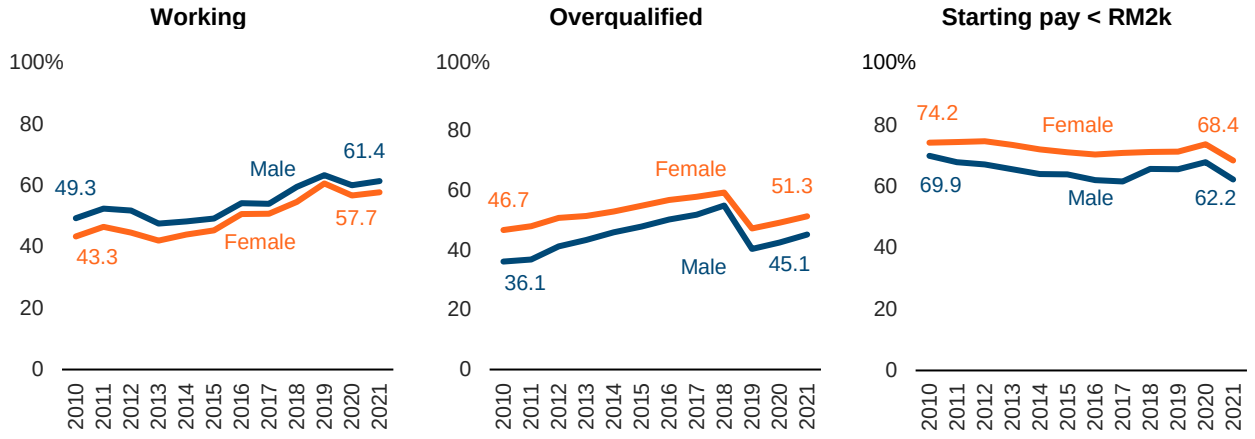
Consistent with official statistics[114], our analysis demonstrates that while females outnumbered males in terms of higher education enrolment, this scenario reverses in the labour market. Among those working immediately after graduation, Figure 2.17 shows consistently higher shares of male graduates working than their female counterparts throughout the last decade. The proportion of male graduates who are working has steadily increased from 49.3% in 2010 to 61.4% in 2021; and closely followed by female graduates from 43.3% to 57.7% over the same period. The faster growth in female employment rate may be partly attributed to government policies aimed at encouraging increased female participation in the workforce over the years[115].

Except for the apparent decline between 2018 and 2019, the incidence of skills mismatch has generally been trending upward for both male and female graduates in the past decade. Female graduates are more likely to experience overqualification, with over half of them working in low- or semi-skilled roles in 2021. In contrast, there is a slightly lower share of overqualified male graduates at 45.1% in 2021. Apart from higher instances of overqualification, we find persistent gender gaps in starting pay, with females more likely to earn below RM2,000. Our earlier work found that the odds of female graduates being in a higher income group at 0.6 times or 40% lower than that of males.

[114] DOSM (2022a)
[115] This trend might be attributed, in part, to government policies aimed at encouraging female workforce participation over the years. The situation of stagnating and low participation of women in the labour workforce in Malaysia is a major concern. The Government of Malaysia, recognizing this issue, set a target of achieving a 55% women participation rate in the workforce by 2015 as part of the 10th Malaysia Plan (10MP). However, despite these efforts, addressing this gender disparity remains a challenge. More targeted interventions and policies are needed to further enhance female graduates' participation and bridge the gender gap in the labour market (MWFCD and UNDP, 2015).

These findings indicate that females consistently lag behind males[116]—involving lower employment rate, higher overqualification, and persistent gender pay gap—and thus, underscore prevailing systemic issues in the labour market.

Figure 2.17: Prevalence of graduates who are working, overqualified, and with starting pay less than RM2,000, by gender, 2010–2021



Source: MOHE, n.d., KRI calculations

2.4.5. Family income: Low-income versus middle/high-income

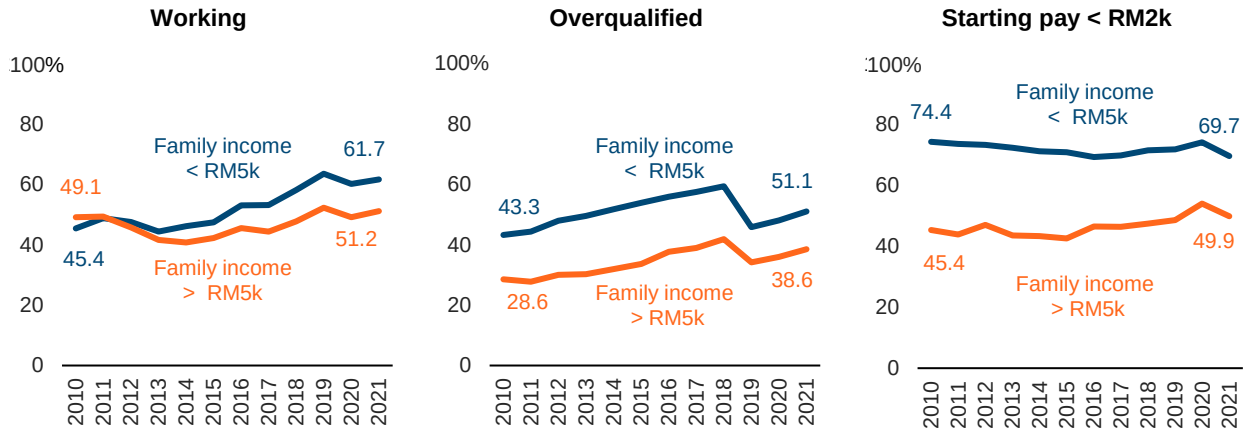
Distinct trends in employment outcomes emerge across graduates from varying family income brackets (Figure 2.18). Throughout the past decade, graduates from low-income families (earning below RM5,000) experienced a relatively faster growth in employment rate, rising from 45.4% in 2010 to 61.7% in 2021. In contrast, the share of working graduates from middle- or high-income families (earning above RM5,000) fluctuated and remained lower at 51.2% in 2021 compared to the earlier group.

Furthermore, we observe a concerning pattern in the overqualification rate among graduates from low-income families. In general, they experience significantly higher overqualification rates, at 51.1% in 2021 compared to 38.6% of those from middle-or high-income families. The analysis on low starting pay also reveals stark differences between these two groups, with 69.7% of graduates from low-income families receiving starting pay below RM2,000, against 49.9% of their peers from financially better off background in 2021.

These trends underscore the impact of family income on graduate employment outcomes. As fresh graduates from low-income families are more likely to experience overqualification and receive low starting pay than others, the expected returns to higher education are not evident in this context—and further limits their economic mobility and job prospects. Hence, government initiatives should focus on improving the marketability of graduates from low-income families, creating targeted programs to combat persistent overqualification, and promoting fair wages for all skilled talents. Additional support programmes through networking, mentorship, and job placement will also be essential to bridge the gap among graduates from varying financial backgrounds[117].

[116] Using the GTS 2013 dataset, Diana Abdul Wahab (2017) also highlights important differences in the employability and earnings among female graduates in Engineering fields as compared to their male counterparts in other courses.
[117] ILO (2019b)

Figure 2.18: Prevalence of graduates who are working, overqualified and with starting pay below RM2,000, by family income, 2010–2021

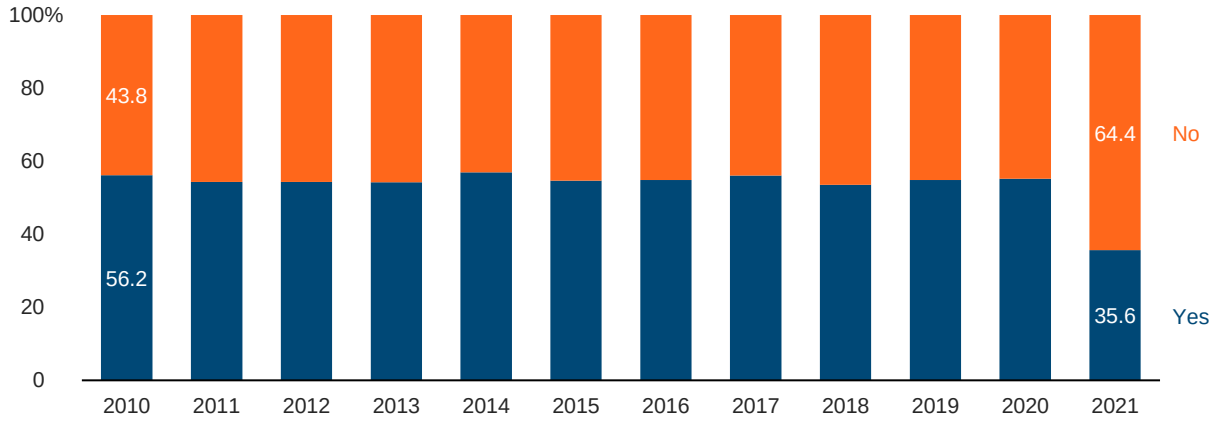


Source: MOHE, n.d., KRI calculations

2.5 Intention to Change Jobs

This section discusses graduates' intention to change jobs as a proxy indicating their level of job (dis)satisfaction in the past decade. As shown in Figure 2.19, over half of fresh graduates want to switch to another job since 2010, suggesting significant levels of job dissatisfaction with little improvements over time. Nonetheless, the share has declined to about one-third of working graduates who intend to change their jobs in 2021, potentially due to challenges in the post-pandemic labour market landscape, where uncertainties and difficulties may impact their pursuit of alternative employment opportunities[118].

Figure 2.19: Working graduates, by intention to change jobs, 2010–2021

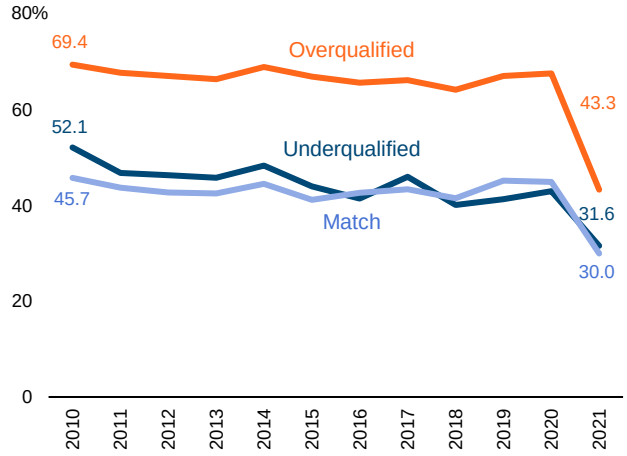


Note: Overall, the percentage of graduates who intend to change jobs throughout the decade is 54.9%, while the percentage of graduates who do not intend to change jobs is at 45.1%.
Source: MOHE, n.d., KRI calculations

[118] Bauer et al. (2023) stated that the increase in labour market competition may create a more cautious job market environment, making individuals more inclined to stay in their current positions rather than risk uncertainty in the face of intensified job competition.

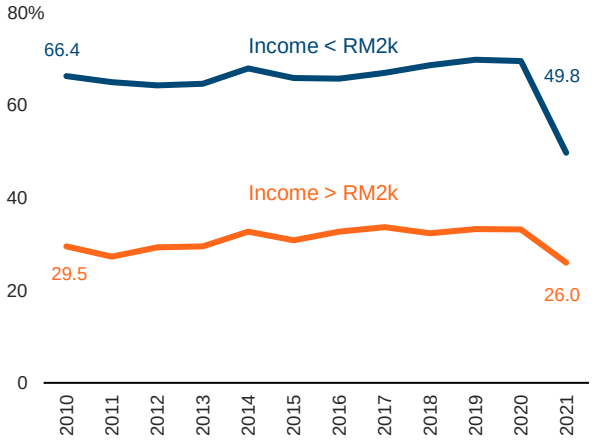
Based on Figure 2.20 and Figure 2.21, it is not surprising that higher levels of job dissatisfaction are seen among overqualified or low-paid graduates. Generally, overqualified graduates are 50% more likely to want to change their jobs than those who are in matched occupations. This could imply that the phenomena of overqualification is a greater concern for graduates compared to underqualification, resulting in higher levels of dissatisfaction towards their roles and jobs. Additionally, graduates earning starting pay below RM2,000 are twice as likely to want to switch jobs compared to those earning above RM2,000.

Figure 2.20: Intention to change job, by qualification-job match, 2010–2021



Source: MOHE, n.d., KRI calculations

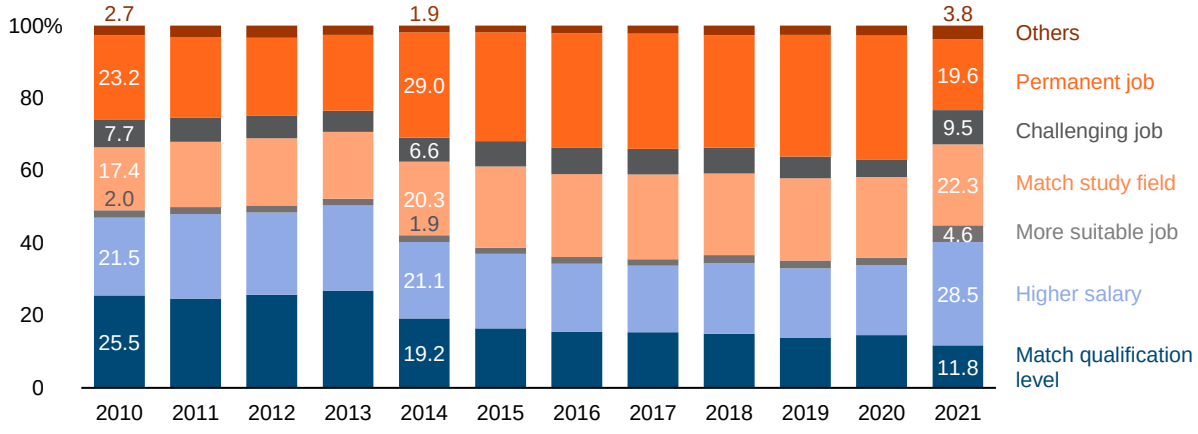
Figure 2.21: Intention to change job, by starting pay, 2010–2021



Source: MOHE, n.d., KRI calculations

Among graduates in non-standard employment, "looking for a permanent job" has been the main reason for graduates to seek other employment opportunities (Figure 2.22). Around one-fifth of working graduates are also looking for jobs with higher salaries, given that many have been stuck with low starting pay throughout the decade. Moreover, horizontal mismatches seem to become a larger concern compared to vertical mismatch, given the increasing share of graduates looking for jobs that match their study fields. In short, the context of precarious non-standard employment, qualification-job mismatch, and low starting pay act as the main drivers of graduate job dissatisfaction.

Figure 2.22: Proportion of working graduates with an intention to change jobs, by main reason to change, 2010–2021



Source: MOHE, n.d., KRI calculations

2.6 Key Findings and Discussion

This chapter explores the reality of labour market scenarios for fresh graduates in Malaysia as they enter the workforce after completing their studies. Beyond examining employment status, our analysis extends to the quality of graduates' employment particularly the prevalence of skills mismatch and the level of starting pay. Additionally, we compare outcomes across several important demographic groups to gain insights on the patterns and disparities in the experiences. Finally, we examine graduate job satisfaction through their intentions to change jobs. The key findings from this chapter are as follows:

2.6.1. Monitoring of graduate employability must go beyond working status

The Graduate Employability Rate (GER) has been improving over the years, but this does not necessarily mean that more graduates are employed as the indicator also encompasses those who are studying, upskilling or reskilling, and awaiting job placement. Although the overall outcome has been largely positive—characterised by a growing share of working graduates and a decrease in the share of those unemployed—the quality of employment remains a key concern for fresh and young graduates in Malaysia.

Over the decade, the share of graduates in high-skilled jobs has been shrinking from 63.8% in 2010 to 47.0% in 2018; and 60.0% in 2021 given the expansion of the GTS survey to include graduates from public skills institutes. Nonetheless, our findings show that graduates are becoming increasingly overqualified for the job roles they first assume in the labour market, implying that many tend to accept low- or semi-skilled jobs to avoid unemployment.

Furthermore, fresh graduates are inevitably tangled with issues of dismal starting pay. Since 2010, half of the graduates entering the job market received starting pay below RM1,500. Even with a twofold increase in the share of fresh graduates earning above RM3,000 in 2021, they only comprise of 10.8% from the total which leaves the remaining two-thirds trapped in a low-wage plight. Similarly, 48.5% of graduates in high-skilled jobs still earn below RM2,000 in 2021. Therefore, these suboptimal employment outcomes underscore the need for a comprehensive assessment of employment conditions and quality of jobs among graduates, particularly focusing on qualification-job mismatch and wage growth over time.

2.6.2. Changing employment preferences among fresh graduates

In recent years, the share of graduates in standard employment—i.e. full-time permanent jobs—has been declining, with a notable shift among fresh graduates towards non-standard work such as self-employment and part-time or contract jobs. This is in part due to government initiatives to promote entrepreneurship among Malaysian youths, as well as the rise of gig platforms that allows for increased working hours flexibility.

For graduates in non-standard employment, their work arrangements are typically more precarious in nature and often provide weaker job security, sluggish wage growth, and limited career advancement opportunities. Hence, those who continue to work in this job are also at a risk of increased health complications, stemmed from the lack of financial security resulting in higher levels of financial and psychological distress.

Moreover, there has been an increasing number of unemployed graduates who are *Not in Education, Employment, or Training* (NEET). This phenomenon is not unique to Malaysia as there has been evidence that NEET is on the rise globally, due to young people being more and more disillusioned with the job search process. These individuals face an increased risk of poverty, apart from long-term implications on their career progression and wage growth. Thus, it is pertinent to have multifaceted and timely policies that can improve overall employment outcomes for tertiary-educated talents in both standard and non-standard employment.

2.6.3. Persistent disparities in employment outcomes across subgroups

Throughout the decade, there are noticeable differences in employment outcomes based on key subgroups. Firstly, degree holders are more likely to be employed than diploma holders. The latter group face higher overqualification rates and greater challenges in attaining starting pay above RM2,000. Secondly, IPTA graduates exhibit higher employment rates as compared to IPTS graduates. However, those from IPTA institutions are more likely to face difficulties in achieving qualification-job match and good starting pay as compared to their peers from IPTS.

Similarly, despite higher employment rates among TVET graduates, issues of overqualification and low starting pay remain more prevalent among this group than non-TVET graduates. This may be attributable to the high concentration of diploma or certificate holders within TVET who are often employed in semi-skilled, technical-related jobs. While females typically outnumber males in higher education enrolment, the reverse is observed in their employment outcomes. Female graduates consistently lag their male peers in terms of employability, with rising incidence overqualification and gender pay gap. This also holds true for graduates from low-income families (earning below RM5,000), who experience higher rates of overqualification and low pay, as compared to those from middle- or high-income families.

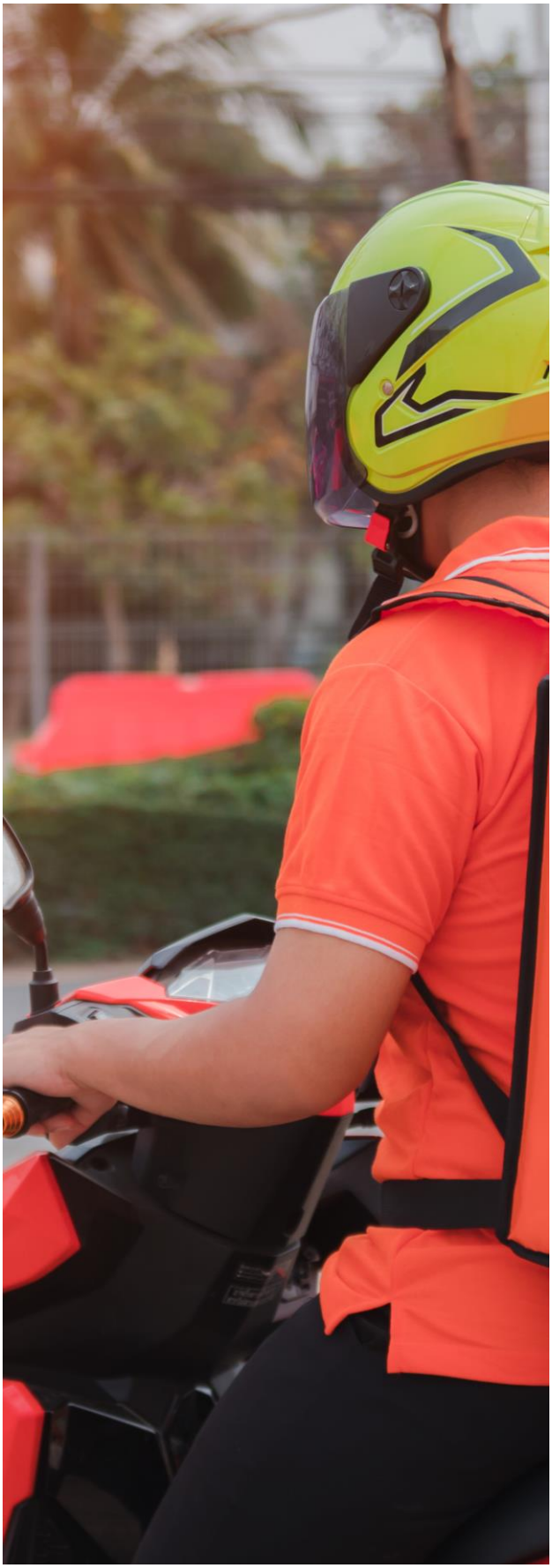
In short, these disparities emphasise the critical need for targeted interventions to improve employment outcomes among disadvantaged graduates, including the reduction in skills mismatches and promotion of fair wages for all.

2.7 Chapter Conclusion

Overall, the analyses in this chapter affirm our primary concern—fresh graduates encounter varying challenges while transitioning from education to work. A recurrent theme highlights that every bit of progress charted by our graduates over the years comes with its own set of caveats, such as an increasing number of graduates resorting to non-standard work arrangements hidden within the rise in graduate employability rate.

The phenomenon of qualification-job mismatch has steadily worsened throughout the decade, raising concerns about the return on investment in education for Malaysian graduates. Similarly, most graduates consistently earn low starting pay (below RM2,000) despite being employed in high-skilled or matched occupations. Amid the rising cost of living, the starting pay for fresh graduates remain low and have not grown since the past 10 years. Nevertheless, certain graduate demographics seem to enjoy better employment outcomes. Factors such as being male over female, holding degrees over diplomas, and non-TVET over TVET qualifications provide unique advantages in selected indicators like overqualification, salary levels, and employment prevalence.

Addressing these challenges and trends requires multi-pronged approaches, as it may be inaccurate to solely place the blame on graduates and higher education institutions. There is a need to recognise the severe shortages in high-skilled jobs that are meant to accommodate the influx of new graduates every year. Therefore, policymaking needs to evolve in response to the dynamic challenges faced by fresh graduates. As the GTS data covers only fresh graduates who have just completed their studies, Chapter 3 aims to explore the long-term trends in career progression among older graduates from Malaysia's local higher institutions.



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CHAPTER 3

CAREER PROGRESSION IN CHANGING TIMES

For decades, we have lived in a world with an optimistic expectation of progress. But the history did not end. The swollen amount of inequality and a lack of social mobility are challenging our ideas about everyone having the same possibilities and freedoms in life.

Sanna Marin (2023)[119]

3.1 Introduction

The shift from education to professional world is a gradual process with the initial period post-graduation often involves job searching, adjustment to work environment and skills refinement. Meanwhile, some graduates would accept temporary positions while actively seeking permanent for professional roles. While discussing fresh graduates' outcomes shortly after graduation in Chapter 2 is useful for uncovering transition challenges, it may provide a myopic perspective on their career trajectories. Recognising that the impact of education takes time to manifest fully in a graduate's career trajectory, this chapter further explores career progression of graduates over the past decade, after they have left education for several years. By examining the challenges encountered by experienced graduates, it aims to discover dynamics in the graduate employment landscape and factors that may influence the different career trajectories over time. The exploration will offer a deeper understanding to inform policymaking that is geared towards a productive, inclusive, and sustainable labour market for skilled talents in Malaysia.

From earlier observations using the GTS dataset in Chapter 2, significant gaps have been identified including the absence of a temporal perspective on graduates' progression and its differing impact[120]. Hence, we conducted the Graduate Career Tracking Survey (GCTS), which involves two graduate cohorts based on academic graduation years: (1) ~2010 i.e., "older" cohort who graduated approximately ten years ago; and (2) ~2018 i.e., "younger" cohort who graduated approximately five years ago[121]. This enables us to make comparisons between two experienced graduate cohorts and highlight any shift in employment outcomes over time. Therefore, this chapter is primarily based on the GCTS dataset involving the ~2010 and ~2018 cohorts and integrates insights from Chapter 2 for additional comparison.

This chapter analyses the trends and outcomes in employment among experienced graduates in Section 3.2 and Section 3.3, comparing them with the earlier observations in Chapter 2 on fresh graduates. In Section 3.4, we dissect employment outcomes by comparing between several demographic characteristics. Next, Section 3.5 deciphers the career transitions and development among the ~2010 and ~2018 cohorts through comparison of their first and current jobs before concluding the chapter in Section 3.7.

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[119] Sanna Marin (2023)

[120] Kupper et al. (1985)

[121] When referring to "experienced" graduates, it is important to note that the period of approximately five to ten years post-graduation does not strictly denote continuous work experience. This time frame encompasses the years after graduation and may include career breaks, which the study is unable to track.

The analysis in this report, particularly in Chapter 3, utilised the GCTS dataset and primarily relied on descriptive statistics such as the breakdown and prevalence by specific characteristics, rather than on empirical significance testing. To ensure its overall reliability, we assess the GCTS results evaluation in Appendix D.

3.2 Employability of Experienced Graduates

The literature on labour market outcomes for graduates provide valuable insights into the complexities of this pressing issue. Walters (2004) conducted an analysis using data from National Graduates Surveys (NGS), indicating labour market experiences of tertiary-educated talents remained relatively stable over the investigated period (1982, 1986, 1990, and 1995). Concurrently, a study by Naylor, Smith, and McKnight (2007) emphasised the complex nature of graduate outcomes in the United Kingdom, while underlining the significant impact of university attended, subject studied, and socioeconomic background on employment prospects.

Addressing the changing landscape, recent studies have extended their focus to involve longer timeframes and more specific contexts. For instance, labour market outcomes of vocational education and training graduates are largely positive among the experienced cohort, yet also portray challenges such as gender disparities and study field mismatches, thus highlighting the need for targeted interventions to improve outcomes[122]. Family socioeconomic background play a critical role in determining individual career trajectory for graduates. Those from disadvantaged backgrounds often face unfair employment and other adverse employment outcomes in the long-term[123]. In the context of Malaysia, Diana Abdul Wahab (2017) found that gender, ethnicity, family income, and locality significantly influenced graduates' earnings and occupational choices. Hence, the insights from these studies collectively highlight the pressing need to conduct in-depth study on graduate employment outcome and associated labour market dynamics in longer timeframes.

As discussed in Chapter 1, the GCTS study involves 8,026 graduates from the ~2010 and ~2018 cohorts, with the median age of 28 and 35 years respectively. Generally, both cohorts have higher shares of degree holders, graduates from public institutions (IPTAs) and non-TVET background. A detailed breakdown of respondents' characteristics can be found in Appendix B Table B.1. Following this, we discuss the labour market outcomes of experienced graduates and analyse the quality of employment across various subgroups.

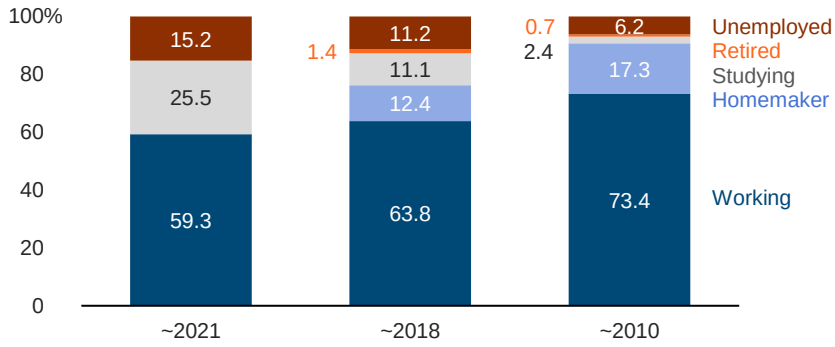
[122] Rivera, Azam, and Ajwad (2022)
[123] Tomaszewski et al. (2021); Pitman et al. (2019)

Current Employment Status

In 2023, 73.4% of ~2010 graduates and 63.8% of ~2018 graduates are working (Figure 3.1). These employment rates are slightly higher compared to ~2021 at 59.5%. It is not surprising that higher shares of the ~2010 cohort are currently working as the older cohort have more opportunities to secure and stabilise their employment throughout a longer period. Detailed breakdown of the characteristics of working graduates in each cohort can be found in Appendix B Table B.2.

In 2023, approximately one-third of experienced graduates are not engaged in employment, encompassing those who are unemployed, retired, pursuing further studies, and involved in homemaking. Figure 3.1 shows relatively high shares of ~2018 graduates pursuing further studies, as well as those currently unemployed as compared to ~2010 cohort. The former could be attributed to the increased emphasis on continuous education and upskilling in recent years, driven by evolving demands within the job market. New graduates may strive to keep up with current labour market needs, reflecting their proactive approach to enhance skills and maintain competitiveness in the workforce[124] (see Chapter 5 for further discussion).

Figure 3.1: Breakdown of graduate employment status, by cohort, 2023



Source: KRI (2023)

Lastly, the ~2010 cohort is more likely to consist of full-time homemakers, at 17.3% compared to 12.4% among ~2018 graduates. In both cohorts, women constitute over 90.0% of homemakers, which aligns with the broader trajectory of female labour force participation rate (LFPR) in Malaysia. Female LFPR peaks around the ages of 25-29, indicating active participation in the workforce. However, a substantial share of women chooses to exit the labour market in their early 30s, often due to childcare responsibilities and tend to struggle to re-enter the labour force afterward[125].

As the target for female labour force participation rate has recently been increased from 56.5% to 60.0%[126], it will be crucial to reduce barriers for women entering the workforce, particularly those who intend to return to work. According to OECD, women especially those who have been out of the labour market could greatly benefit from career guidance and targeted training initiatives, which are instrumental in enabling them to re-enter the workforce and fully utilize their skills[127]. We discuss further about the types of career comeback support needed by full-time homemakers in Chapter 4.

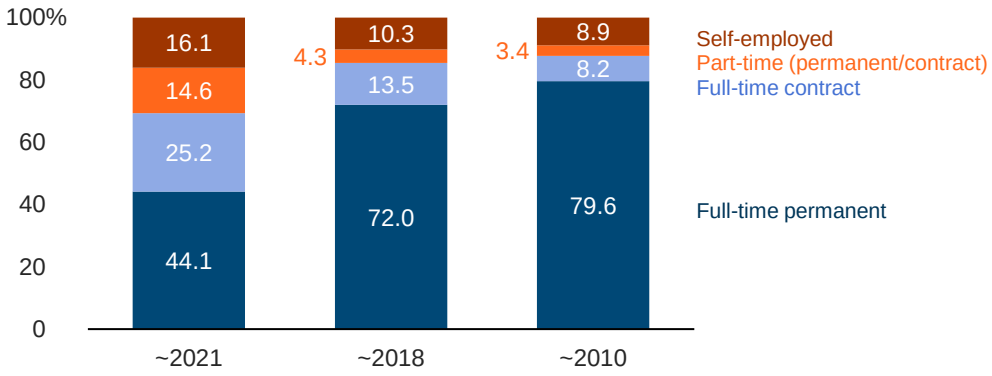
[124] Sawant, Thomas, and Kadlag (2022)
[125] KRI (2018b)
[126] Based on the MADANI framework and Budget 2024. Sources: Anwar Ibrahim (2023a) and Anwar Ibrahim (2023b)
[127] Espinoza and Vandeweyer (2019)

Employment type

The share of working graduates in *full-time permanent* jobs are higher among experienced cohorts—79.6% for ~2010 and 72.0% for ~2018 (Figure 3.2)—compared to 44.1% among ~2021 fresh graduates. Thus, it suggests more stable employment outcomes over a longer timeframe. Nevertheless, higher shares of ~2018 graduates are in non-standard employment, with 17.8% working in *contract* or *part-time* jobs as opposed to 11.6% of ~2010 graduates. Furthermore, 10.3% of ~2018 graduates are *self-employed* against 8.9% of ~2010 graduates.

Along with ~2021 cohort, the high shares of younger graduates working in non-standard employment may reflect the changing nature of Malaysia's labour market and its long-term implications on graduate employment outcomes. While non-standard employment offers flexibility, it often comes at the cost of job security and social protection. The gig economy, mainly characterised by short-term contracts and freelance work, provides immediate opportunities but often lacks income stability and long-term career prospects[128]. Additionally, the allure of non-standard employment can sometimes mask the challenges it presents. While some graduates may choose self-employment or freelance work for its flexibility and a more diverse experience, others may be compelled by the lack of accessibility to full-time permanent positions (see Chapter 4 for further discussion).

Figure 3.2: Breakdown of working graduates, by cohort and employment type, 2023



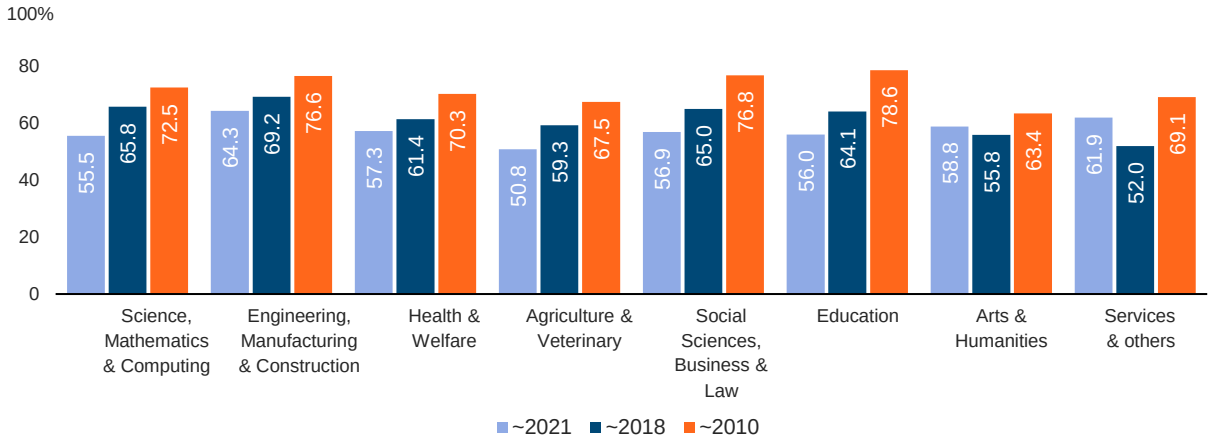
Source: KRI (2023)

Study field

Figure 3.3 shows the share of working graduates by cohort and study field. The trend across cohorts generally exhibits a downward trajectory, except for *Arts & Humanities* and *Services & others*. For the ~2018 cohort, the highest prevalence of working graduates is in *Engineering, Manufacturing & Construction* (69.2%), followed by *Science, Mathematics & Computing* (65.8%) and *Social Sciences, Business & Law* (65.0%). For the ~2010 cohort, *Education* field has the highest share of working graduates at 78.6%, followed by *Social Sciences, Business & Law* (76.8%) and *Engineering, Manufacturing & Construction* (76.6%).

[128] Hawati Abdul Hamid and Nur Thuraya Sazali (2020)

Figure 3.3: Prevalence of working graduates, by cohort and study field, 2023



Source: KRI (2023)

On the other hand, study fields with the lowest prevalence of working graduates are *Agriculture & Veterinary, Arts & Humanities,* and *Services & others*. This is somewhat consistent with findings for ~2021 fresh graduates, with a low prevalence of working graduates from *Agriculture & Veterinary* field as well. However, the ~2021 cohort generally have higher shares of working graduates from the *Arts & Humanities* and *Services & others* fields compared to experienced graduates.

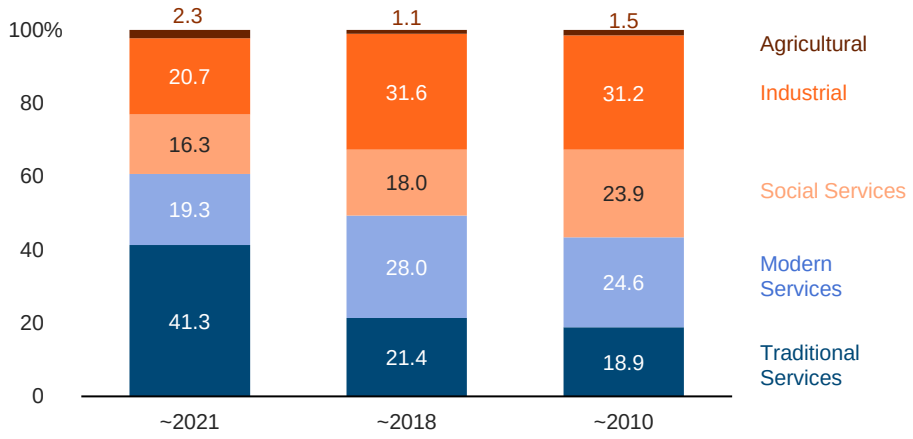
Economic sector

While fresh graduates are generally concentrated in the *traditional services* sector, there is a noticeable shift in economic sectors for experienced graduates, with concentrations in *industrial, social services* and *modern services* sectors (Figure 3.4). This pattern holds for the ~2018 graduates, with 31.6% working in the *industrial* sector, followed by *modern* (28.0%) and *traditional services* (21.4%). For ~2010 cohort, 31.2% working in the *industrial* sector, with a noticeable shift from for *social services* (23.9%) compared to ~2018 cohort. This trend suggests that fresh graduates may encounter challenges in finding jobs outside the *traditional services* sector, which often offers accessible entry-level positions requiring minimal experience. However, as graduates gain experience and exposure, they tend to transition towards better-paid sectors such as in *modern* and *social services* (see Appendix A Table A.2).

In terms of entrepreneurial opportunities, some *traditional services* particularly the wholesale & retail industries provide more opportunities for small business ownership, which is evident with almost half of self-employed graduates in *traditional services* (see Chapter 4). Moreover, higher earning potentials, as evidenced in our analysis for fresh graduates could be a leading factor motivating younger graduates to work in *modern services* (see Appendix A Table A.4). The *agricultural* sector remains the least popular among both fresh and experienced graduates, primarily due to factors such as lower income, labour-intensive nature, limited career advancement, and graduate preference towards industries perceived as more technologically advanced and financially stable[129].

[129] See for example Ridzwan Che Rus et al. (2019) and Mohd Amirul Rafiq Abu Rahim and Ahmad Ashraf Ahmad Shaharudin (2020)

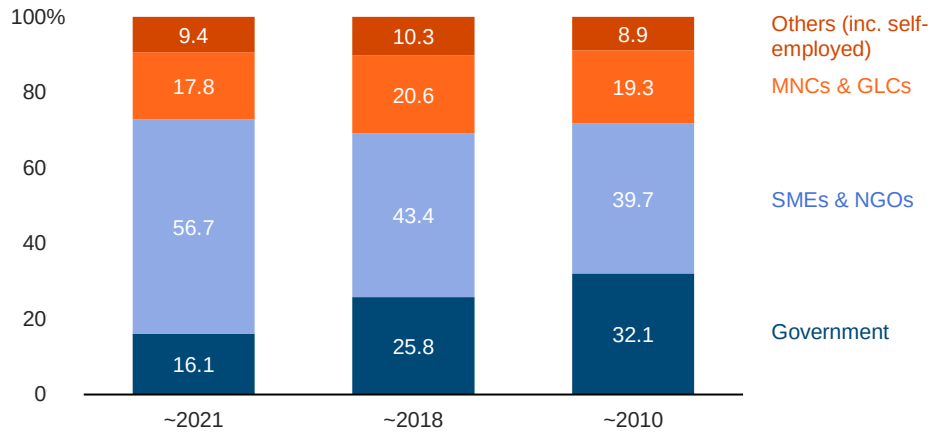
Figure 3.4: Breakdown of working graduates, by cohort and economic sector, 2023



Organisation type

Similar to our observation for fresh graduates earlier, Figure 3.5 demonstrates a higher proportion of experienced graduates working in the private sector (SMEs & NGOs) than in other types of organisations. Nonetheless, these percentages for ~2010 and ~2018 graduates, at 39.7% and 43.4% respectively, are lower than that of ~2021 graduates (56.7%). Notably, a significant share of graduates is working in the public sector, with 32.1% from the ~2010 cohort and 25.8% from ~2018. This is remarkably higher than the ~2021 graduates (16.1%), which may indicate shrinking job vacancies and opportunities within the public sector over time and securing public employment may require longer time. In addition, approximately one in five of experienced graduates work in MNCs and GLCs, whereas a tenth are in other types of organisations including own business or self-employment.

Figure 3.5: Breakdown of working graduates, by cohort and organisation type, 2023



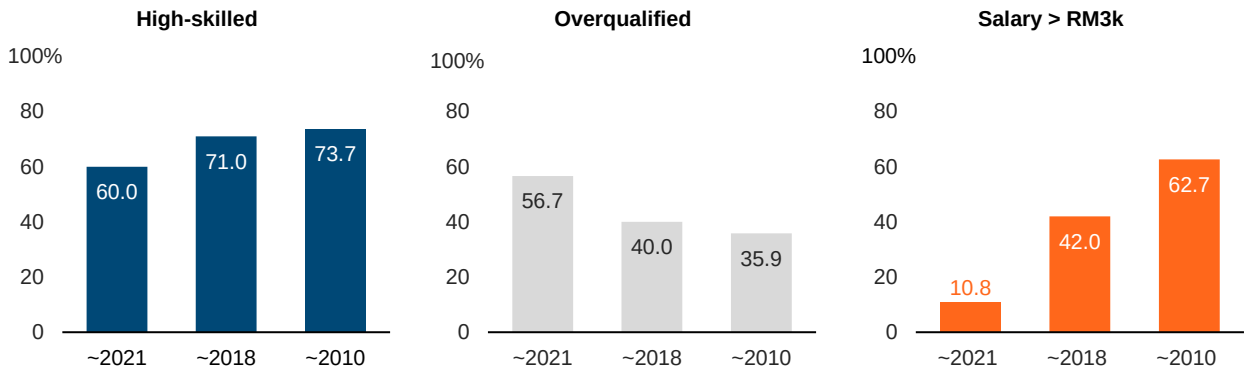
Source: KRI (2023)

3.3 Quality of Employment

Among working graduates, over 70% of experienced graduates (cohorts ~2018 and ~2010) are in high-skilled jobs (Figure 3.6) as compared to 60% of 2021 fresh graduates. This suggests improved employment career progression as graduates become more capable of securing high-skilled positions a few years after graduation. However, overqualification rates remain high among experienced graduates, with 40.0% of ~2018 and 35.9% of ~2010 cohort working in jobs that require lower qualifications. Simply put, even after more than ten years in the job market, a third of graduates are still overqualified. Compared to the ~2021 fresh graduates (48.6%), the gradual improvement in qualification-job match across cohorts shows the severity of this issue and potentially indicates an enduring effect of skills mismatch in the labour market.

In terms of salary level, there is a striking time advantage among the ~2010 cohort, with 62.7% graduates earning more than RM3,000 (Figure 3.6). In contrast, less than half of the ~2018 graduates earn above RM3,000. This substantial gap may be explained by the older cohort's ability to enjoy higher earning potentials through a longer tenure in the workforce. In comparison with fresh graduates, this salary progression among experienced graduates also appears encouraging considering that only about 10% of fresh graduates receive starting pay above RM3,000. However, if we consider a slightly higher salary threshold, only 21.3% and 6.4% of the ~2010 and ~2018 graduates receive salaries of more than RM6,000, respectively.

Figure 3.6: Prevalence of working graduates in high-skilled job, overqualified position and salary more than RM3,000, by cohort, 2023



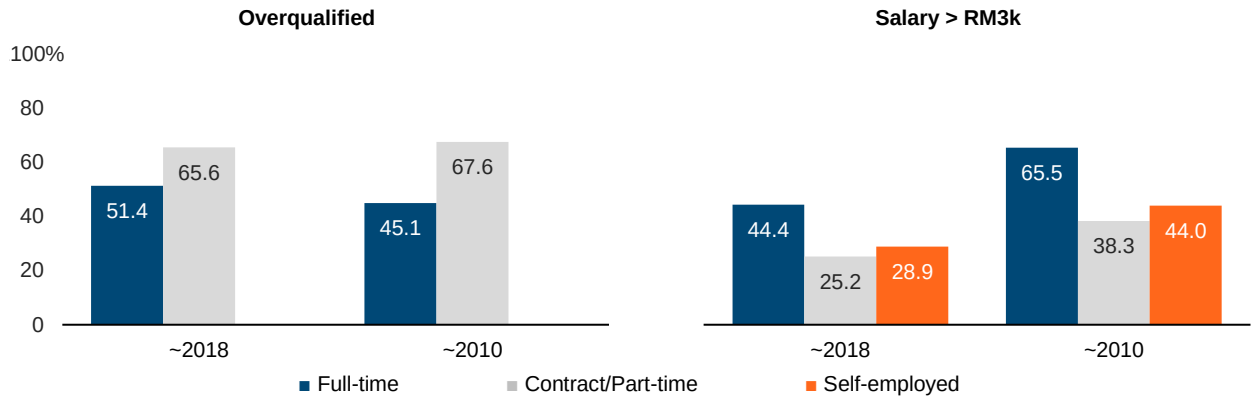
Source: KRI (2023)

As we dive deeper into qualification-job mismatch, we find that roughly half of graduates in full-time permanent jobs are overqualified across cohorts (Figure 3.7). For non-standard employment—the contract and part-time work—there are notably higher shares of overqualified graduates, at 67.6% for ~2010 and 65.6% for ~2018 cohort. This aligns with findings from existing literature on job mobility, whereby overqualification persisted among those in non-standard employment[130]. Given the unique nature of self-employment, there is no specific measurement available for qualification-job mismatch among self-employed graduates. However, our GCTS questionnaire has specifically asked graduates who engaged in self-employment about their perception regarding their skill mismatch status.

[130] Jackson and Li (2022); Arseneau and Epstein (2014).

Based on Figure 3.7, 65.5% of ~2010 and 44.4% of ~2018 graduates who are in full-time permanent jobs earn salaries above RM3,000. For the latter cohort, it reflects the difficulties faced by many in achieving higher salary despite having been in the labour market for approximately five years. Less than half of ~2010 and only a quarter of ~2018 graduates in non-standard employment earn salaries above RM3,000. Despite 10–13 years of experience in the labour market, Figure 3.7 indicates that only less than half of ~2018 self-employed graduates (44.0%) earn more than RM3,000 as compared to 28.9% among ~2010 cohort, emphasising the persistent challenge in achieving higher income levels for experienced graduates who engaged in self-employment. See Chapter 4 for further insights into the dynamics and challenges of self-employed graduates.

Figure 3.7: Prevalence of overqualified graduates and those earning more than RM3,000, by cohort and employment type, 2023



Note: Overqualification is not applicable for self-employed graduates, considering there are no fixed job requirements and those who are self-employed do not regard their roles as equivalent to managerial or professional positions.

Source: KRI (2023)

As observed in Figure 3.8, approximately 62.0% of experienced graduates from the *Agriculture & Veterinary* field are overqualified in their current jobs, regardless of cohort. Moreover, 51.5% of ~2010 and 62.6% of ~2018 graduates from *Arts & Humanities* face similar problems with overqualification. Consequently, these study fields have one of the lowest prevalence of graduates earning above RM3,000—about half of ~2010 and one-third of the ~2018 cohort—among others. Meanwhile, an interesting observation on those from *Services & others* highlights almost matching rates between cohorts, with 55.4% of ~2010 and 53.3% of ~2018 graduates facing overqualification against approximately 38.0% in both cohorts earning above RM3,000. Further investigation reveals that while almost 60% of graduates in the *Services & others* fields hold high-skilled positions, a majority of them are actually overqualified for their roles, consequently underscoring the prevalent trend of many earning lower salaries than expected.

In contrast, graduates from study fields that directly transition into professionals—such as engineers, lawyers, and IT specialists—are more likely to have positive employment outcomes given their highly transferable skills[131] (Figure 3.8-3.9). Similarly, numeracy skills tend to translate into better wages for workers in STEM-related fields[132]. Graduates from the *Education* and *Health & Welfare* fields are also significantly more likely to experience positive employment outcomes, including lower prevalence of overqualification and greater salary prospect, especially among the older cohort. The sustained demand in these two sectors may lead to better job opportunities, higher job security, and more competitive salaries for graduates compared to other sectors. Additionally, the nature of work in these sectors often necessitates specialised skills and qualifications, which can result in a better alignment between graduates' qualifications and job roles, thereby reducing the likelihood of overqualification.

Figure 3.8: Prevalence of overqualified graduates, by cohort and study field, 2023

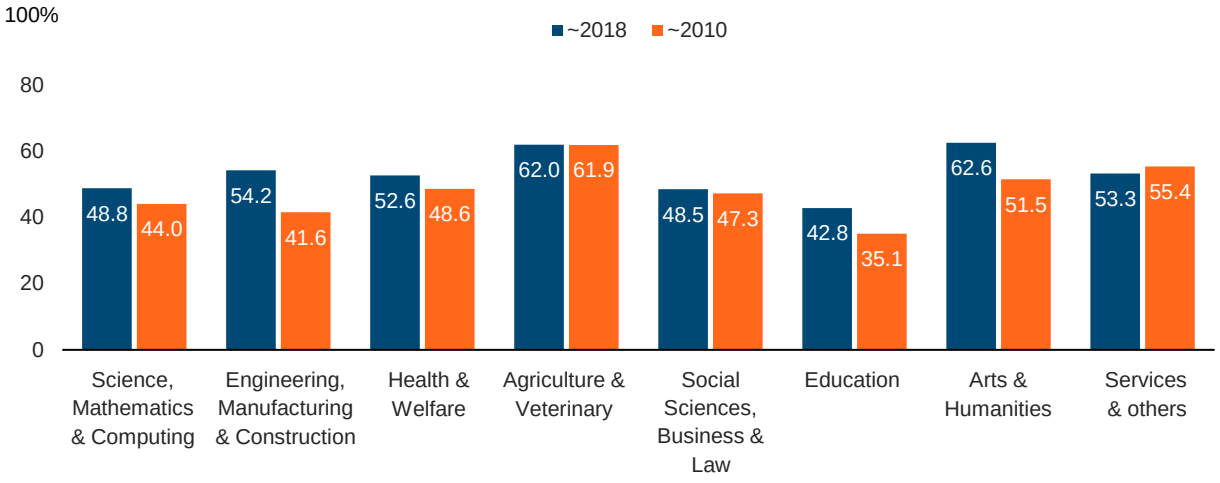
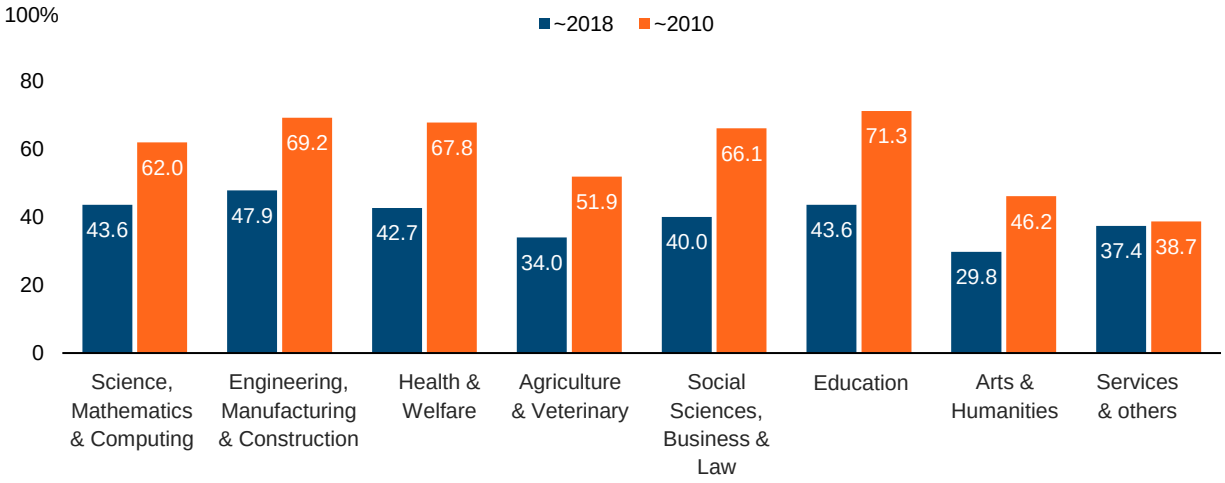


Figure 3.9: Prevalence of graduates earning more than RM3,000, by cohort and study field, 2023



[131] Poláková et al. (2023)
[132] Bol and Heisig (2021); National Center for Education Statistics (2022)

3.4 Employment Outcomes by Selected Demographic Groups

Qualification level: Diploma versus degree

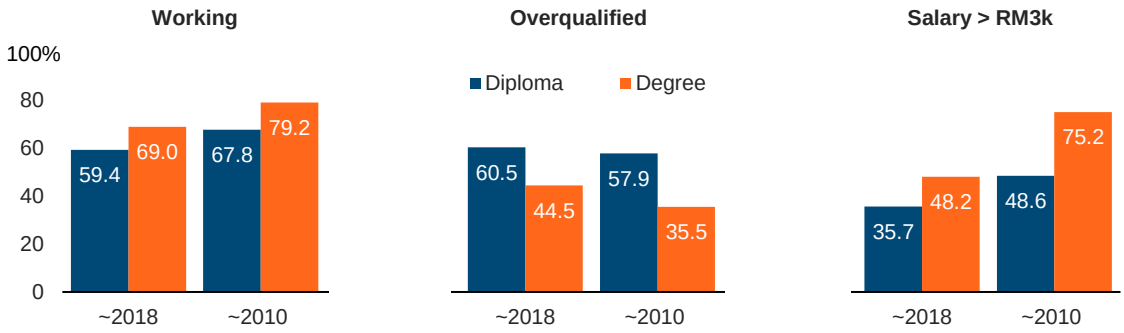
The focus of our analysis will centre around experienced graduates' initial qualifications from any higher education institutions, because it serves as the starting point for each cohort when they first entered the labour market[133]. The data reveals several notable trends as demonstrated in Figure 3.10. Across cohorts, graduates with at least a bachelor's degree have higher employment rates than those with diploma (about 10% percentage difference), thus underscoring the benefits of higher education. Among ~2010 graduates, 79.2% of degree holders are working compared to 67.8% of diploma holders. For the ~2018 cohort, these shares are lower at 69.0% and 59.4% respectively, which is understandable considering the shorter duration spent in the labour market (about 4–6 years) as compared to their older peers.

In terms of qualification-job mismatch, diploma holders consistently have higher prevalence of overqualification than degree holders in both cohorts. More than half of diploma holders are still working in overqualified jobs, against 35.5% of ~2010 and 44.5% of ~2018 degree holders[134]. The persistent overqualification rates witnessed across both cohorts imply a profound problem—scarcity of high-skilled jobs—that is plaguing Malaysia's labour market. Previous analysis on fresh graduates also noted this lasting issue over the past decade. Notably, overqualification remains prevalent among graduates even after they have worked for more than five years. This, in turn, highlights the urgency to create more quality jobs and other promising career opportunities in the labour market.

In a scenario of full employment, it is expected that wages would experience rapid growth, providing workers with ample opportunities for career progression[135]. Nevertheless, Blanchflower (2019) sheds light on the challenges faced by workers in the context of overqualification, particularly among youth workforce. It highlights that the expansion of temporary and precarious jobs as well as low bargaining power[136] contribute to restricted wage growth. This is in line with our findings of persistently high rates of overqualification among graduates, which leads to contained wage pressure over time.

[133] In this cohort study, the classification of the level of qualification is based on a standardised approach. Diploma and degree qualifications are considered the minimum qualifications for each respondent, ensuring a consistent starting point across both cohorts. Therefore, every participant in the study starts from the same minimum qualification level, either diploma or degree.
[134] It is noteworthy that many studies on overqualification tend to report a lower incidence among graduates with low to mid-level qualifications compared to those with a degree qualification. See for example Congregado et al. (2016); Montt (2017); Erdsiek (2021)
[135] Ehnts and Höfgen (2019)
[136] See also Baker (2013)

Figure 3.10: Prevalence of graduates who are working, overqualified and earning more than RM3,000, by cohort and qualification level, 2023



Source: KRI (2023)

Furthermore, we also find positive returns to higher qualification as more degree holders earn above RM3,000 compared to diploma holders. This is especially significant among the ~2010 degree holders, with 75.2% earning above RM3,000 compared to 48.2% of ~2018 degree holders. However, the time advantage seems weaker among those with diploma qualifications, with 48.6% of ~2010 diploma holders earning above RM3,000 against 35.7% of ~2018 diploma holders. This disparity could be explained by the large share—close to half—of diploma holders in the GCTS sample who are from TVET institutions. Aligned with earlier observations about TVET fresh graduates, our findings demonstrate the same trend with over 40% of TVET experienced graduates earning below RM2,000. Various factors such as employer preference for degree TVET holders and mismatch between labour supply and demand may compel them to work in lower skilled roles despite possessing higher qualifications and capabilities[137]. We unpack this when we discuss graduate employment outcomes based on study stream in the subsequent section.

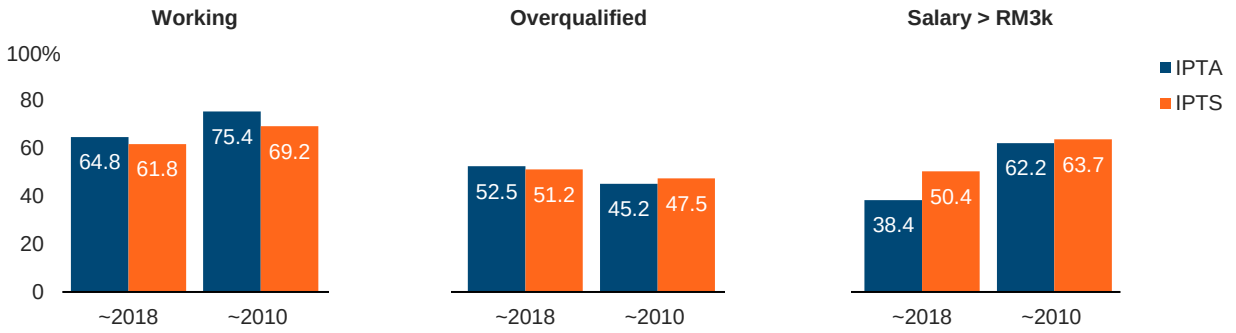
Institution type: Public versus private

Similar to fresh graduates, the employment rate for IPTA graduates is slightly higher than IPTS for both experienced cohorts. The time advantage holds for ~2010 graduates regardless of institution type, with 75.4% of ~2010 IPTA graduates working in 2023 compared to 64.8% of ~2018 graduates (Figure 3.11). However, there are mixed results for skills mismatch and salary outcomes between these two. When it comes to overqualification, there is little variation between IPTA and IPTS graduates, with about half overqualified across cohorts. This trend could indicate that institution type has little influence on their qualification-job match in general.

More interestingly, there is a distinct share of IPTS graduates earning above RM3,000, particularly among the younger cohort (~2018). Despite a small difference in overqualification rate, half of ~2018 graduates from IPTS earn above RM3,000 compared to about one-third of those from IPTA. Within the ~2010 cohort, 63.7% of IPTS graduates earn above RM3,000 against 62.2% of IPTA, although the former is more likely to be overqualified in their current jobs. Hence, salary outcomes seem to be more favourable for experienced graduates from IPTS institutions, in line with earlier findings for fresh graduates.

[137] Fauwaz Abdul Aziz and Nadya Subramaniam (2023); KRI (2018a)

Figure 3.11: Prevalence of graduates who are working, overqualified and earning more than RM3,000, by cohort and institution type, 2023

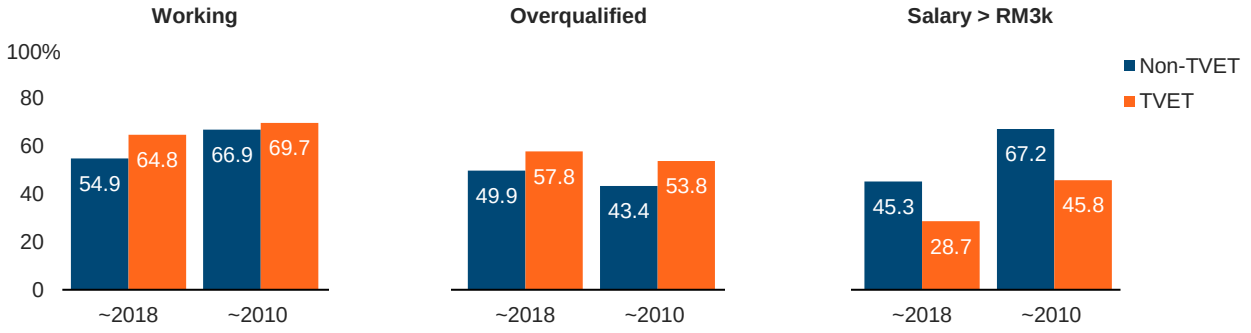


Source: KRI (2023)

Study stream: TVET versus non-TVET

Across experienced cohorts, TVET graduates exhibit slightly higher employment rates than non-TVET graduates (Figure 3.12). For example, 69.7% of ~2010 TVET graduates are working while 66.9% of non-TVET graduates within the same cohort are working. Among the ~2018 cohort, 64.8% of TVET graduates and 54.9% of non-TVET graduates are working in 2023. These rates are close to that of TVET fresh graduates' employment rate (65.4%), which signal little improvement in TVET graduate employability over time.

Figure 3.12: Prevalence of graduates who are working, overqualified and earning more than RM3,000, by cohort and study stream, 2023



Source: KRI (2023)

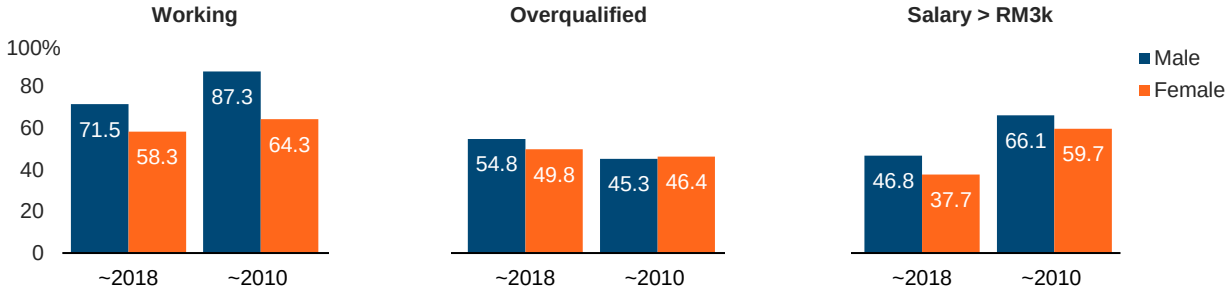
Additionally, our analysis shows that TVET graduates are more likely and stay being overqualified than their non-TVET peers in both cohorts. There is a consistent pattern in overqualification among experienced and fresh graduates, suggesting a systemic challenge in aligning TVET graduates' qualifications with suitable, high-skilled positions[138]. As a result, we observe higher shares of non-TVET graduates earning good pay (above RM3,000) than their TVET peers. Figure 3.12 illustrates that 45.3% of ~2018 non-TVET graduates earn above RM3,000, while only 28.7% of TVET graduates within the same cohort could attain such salary level in their current jobs. Similarly, for the ~2010 cohort, 67.2% of non-TVET graduates earn above RM3,000 against 45.8% of TVET graduates.

[138] The distinction between qualification and skill mismatch is crucial in understanding the broader aspects of job-qualification mismatch. Skill mismatch encompasses a misalignment between the skills possessed by graduates and those demanded by the labour market. TVET graduates, with a focus on practical and hands-on skills, may sometimes face challenges in aligning their skill sets with the evolving demands of the industries and labour market.

Gender: Male versus female

In 2023, male graduates continue to have higher employment rates than females, particularly among the older cohort (Figure 3.13). Of the ~2010 cohort, 87.3% of males are currently working compared to 64.3% of females. This pattern also holds for the ~2018 cohort, albeit at lower shares of working graduates (male: 71.5%, female: 58.3%). Thus, the gender disparity is more apparent within the ~2010 cohort, with a 23% gap between male and female graduates. Moreover, there is a smaller difference in female employment rate between the ~2010 and ~2018 cohorts, which raises important questions about the influence of family responsibility[139] and societal norms on female graduates' employment choices[140]. Even though the family responsibility reason could be questionable because majority of graduates is still single, employers often perceive these responsibilities as potential detractors for future performance, unfairly hindering female's advancement opportunities.

Figure 3.13: Prevalence of graduates who are working, overqualified and earning more than RM3,000, by cohort and gender, 2023



Source: KRI (2023)

In terms of overqualification rates, Figure 3.13 demonstrates no clear differences between male and female graduates across both cohorts, and this pattern improves as graduates gain more experience, particularly evident in the ~2010 cohort. In fact, the overqualification rate between male and female is almost similar for the ~2010 cohort, with a marginal difference of about 1.1 percentage points. This suggests that overqualification, although slightly higher among experienced males in the middle of their career trajectory, improves over time, gradually catching up with their female counterparts. Nevertheless, the persistent issue of overqualification by gender warrants attention, as it comprises almost half of graduates in both genders and both cohorts. Furthermore, overqualification rates do not demonstrate encouraging improvements when compared with the ~2021 cohort, and differences between genders are observed to fluctuate across cohorts. Although both genders are progressing towards better-qualified positions over time, the gender pay gap persists. More males in both cohorts are earning more than RM3,000 compared to females. The time advantage holds for the ~2010 cohort, given that over half of male and female graduates in this cohort earn good pay. In parallel, Figure 3.13 also shows that 46.8% of ~2018 male graduates earn above RM3,000 compared to 37.7% of females in the same cohort, despite the former having higher prevalence of overqualification. Therefore, our findings imply that the gender pay gap is real lasting across both cohorts.

[139] KRI (2019) highlights the need to recognise and value unpaid care work in addressing income inequality as more women enter the workforce, raising questions about the availability and affordability of care services in the context of evolving employment choices for women.

[140] Female graduates may be inclined to pursue their careers while balancing family life, potentially affecting their employment rates (Beauregard,2007)

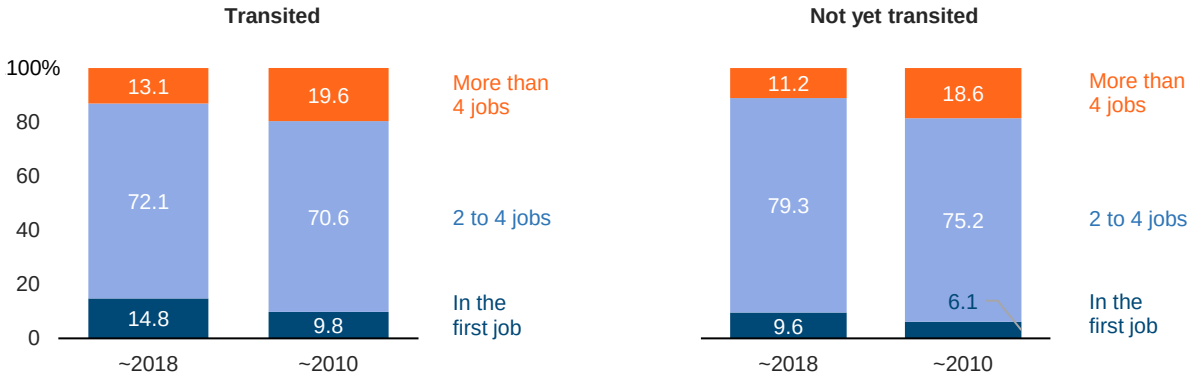
3.5 Career Progression of Experienced Graduates

3.5.1. Career Transitions

The GCTS polls on graduates' intention to change their current jobs, as a proxy to measure job satisfaction or "transition status". Graduates who intend to switch jobs have *not yet transited,* while those no longer intending to change jobs are considered to be fully *transited*. The difference in the share of *transited* graduates is about 10 percentage point between the two cohorts (~2018: 55%; ~2010: 65%)[141], suggesting greater job satisfaction and stability among older graduates in general. For the ~2018 cohort, lower share who have *transited* implies that younger graduates are more likely to be dissatisfied with their current jobs, and thus, actively seeking better opportunities.

Figure 3.14 demonstrates that a majority of graduates have changed their jobs between two and four times, especially those *not yet transited* among the younger cohort (79.3%). While it is not surprising that about one-fifth of ~2010 graduates have worked in more than four jobs, it is noteworthy to focus on the ~2018 cohort with 13.1% having frequent job changes (more than four times) as they only spent half a decade in the labour market. It may signal serious challenges in finding fulfilling roles or lasting dissatisfaction and unmet career expectations among the younger generations[142].

Figure 3.14: Breakdown of job change, by cohort and transition status, 2023



Source: KRI (2023)

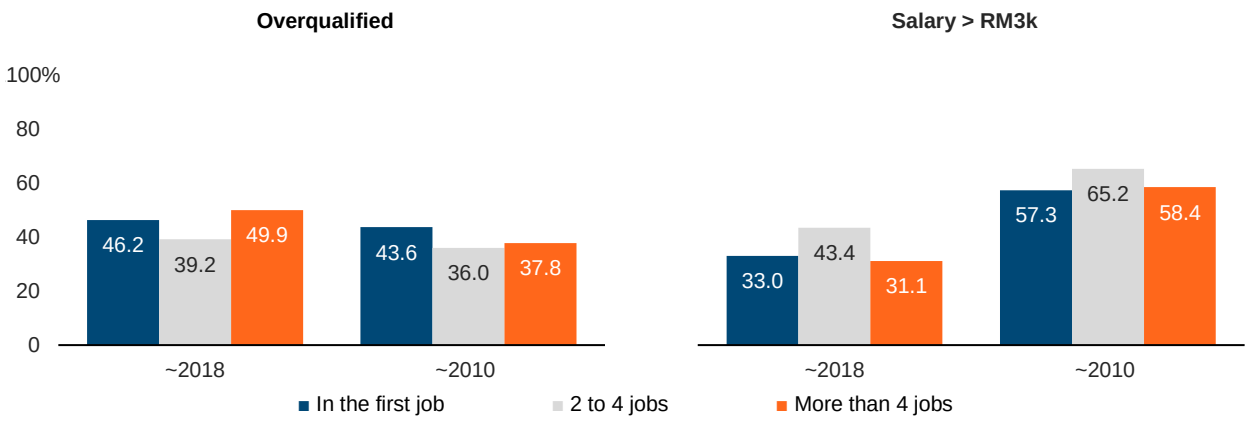
Typically, frequent job changes can be associated with better employment prospects for graduates. As shown in Figure 3.15, overqualification rate generally decreases with the rise in the number of total jobs held[143]. For both cohorts, the share of overqualified graduates is lowest among those who held two to four jobs, at 36.0% for ~2010 and 39.2% for ~2018 cohort. However, graduates who changed beyond four jobs remain more likely to be overqualified, which raises a cause for concern on their job satisfaction levels and the compounding effects of skills mismatches over time. One possible interpretation is that overqualification may lead to decaying skills, as evidenced by higher job turnover and inability to settle down in a matched job.

[141] Findings regarding career transitions only include graduates who are working at the time of the survey and whether they intend to change their jobs moving forward.
[142] Literature has documented that the trend of job change among younger people is normal, not just among the millennials and Gen Z, but for workers across generations with a general purpose to search for the right career fit. Source: Gallup Inc (2016)
[143] This aligns with the Theory of Career Mobility proposed by Sicherman and Galor (1990) that part of the returns to education is in the form of a higher likelihood of occupational upgrading, job change and interfirm occupational mobility.

In parallel, job changes tend to correlate positively with increased earnings among workers[144]. Our analysis revealed that the chances of earning good pay (above RM3,000) increase with job changes, up until four jobs (Figure 3.15). For example, 65.2% of ~2010 and 43.4% of ~2018 graduates who held two to four jobs earn above RM3,000 in their current jobs. On the contrary, 57.3% of ~2010 and 33.0% of ~2018 graduates who stayed in the same job have attained salaries above RM3,000. This further explains the younger generation's motivation for "job hopping"[145], in order to achieve greater job satisfaction through improvements in salary benefits, higher professional achievement, and better workplace conditions[146].

Similar to overqualification rates, graduates who changed beyond four jobs are less likely to earn above RM3,000 (Figure 3.15). Individuals with a history of frequent job changes may face adverse employment outcomes due to higher likelihood of continuing skills mismatches and reduced ability to build specialised expertise—especially when they are job hopping between different skill level and industry—thus hindering overall career progression. In addition, the increased job turnover, indicative of shorter job tenures, might cause employers reluctant to offer higher pay, further impacting their perceived stability and potential for long-term contributions for a given role.

Figure 3.15: Prevalence of graduates who are overqualified and earning more than RM3,000, by cohort and total jobs held, 2023



Source: KRI (2023)

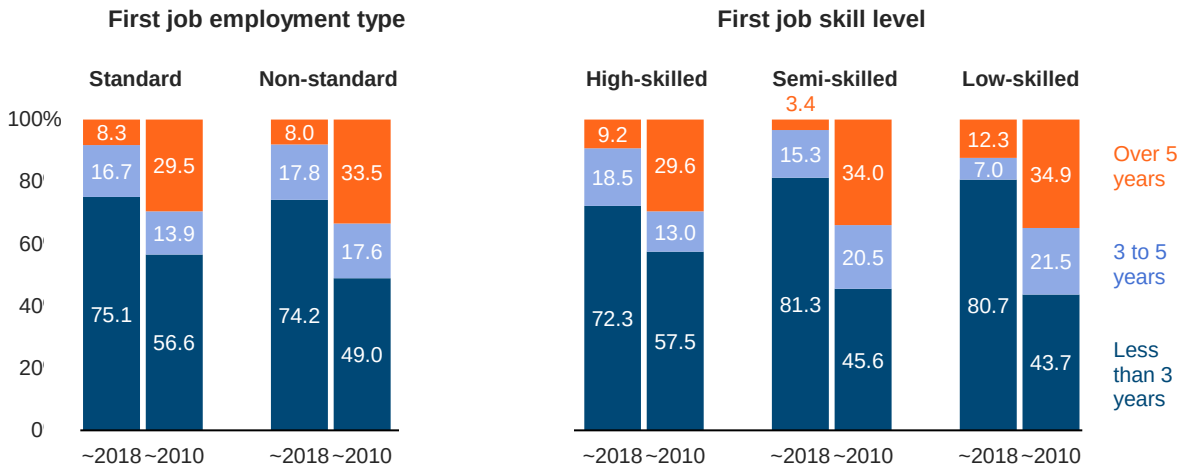
Apart from the frequency of job change alone, we examine the speed at which experienced graduates reach *fully transited* status, measured among those who no longer intend to change their jobs. Our findings show that the ~2018 cohort tend to spend less time than their older counterparts to be fully *transited*. This pattern holds true regardless of their first job type or skill level (Figure 3.16). Higher shares of ~2018 graduates *fully transited* within the first three years of employment than ~2010 graduates, even if they are working in non-standard or low- or semi-skilled jobs.

Although seemingly unusual, this potentially indicates a perception shift among the younger cohort, whereby they become more willing to accept certain levels of skills mismatch as part of the job market reality and economic condition[147]. In addition, younger graduates may prioritise other factors such as job stability, work-life balance, and other career prospects over perfect qualification-job

[144] According to ADP Research Institute (2021), wage growth in the United States increased by 5.8% for job switchers as compared to those who stayed in the same job.
[145] Zahari and Puteh (2023)
[146] Sicherman and Galor (1990)
[147] Congregado et al. (2016)

alignment[148]. Hence, our findings reflect mixed experiences of graduates throughout their career transitions over time. For some graduates, frequent job changes could enable them to gain exceptional career mobility and growth within a short timeframe[149,150]; while others may settle with a less than ideal job due to varying reasons.

Figure 3.16: Breakdown of time taken to transit, by cohort and first job characteristics, 2023



Source: KRI (2023)

3.5.2. First Job Status and Quality

The analyses on experienced graduates' current job status and quality have shed some light on the crucial facets of employment outcomes among the ~2010 and ~2018 cohorts. We saw that many remain dissatisfied with their current jobs despite multiple job transitions throughout the decade. This could be linked to earlier discussions on starting one's career "wrong" and how it could affect long-term career progression. While various factors can influence the quality of employment, we delve deeper into experienced graduates' first jobs to understand its implications on their career trajectories throughout the past decade. For this analysis, we focus on the pool of graduates who are currently working to understand their initial employment characteristics post-graduation.

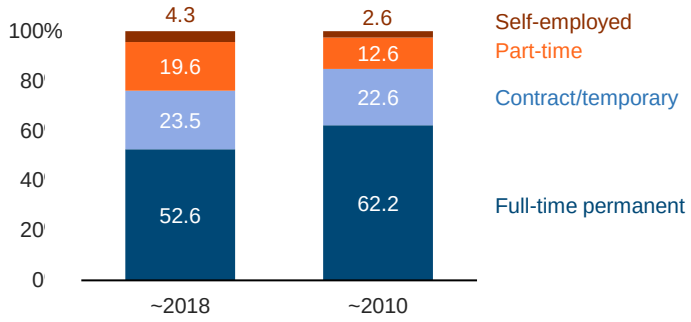
Our prior analysis using the GTS dataset revealed that majority of fresh graduates are able to secure their first job in less than three months after study completion. Interestingly, the GCTS findings indicate about half of experienced graduates take less than a year to obtain their first job after graduation, with the ~2018 cohort generally taking longer to secure their first employment as compared to the ~2010 cohort. This could be due to the ~2018 cohort's greater aspirations to pursue further studies, or even suggest lower career readiness among younger graduates[151]. This raises a pertinent question: *Does a longer job search duration necessarily lead to higher quality employment?* Hypothetically, one might assume that spending more time searching for jobs could increase the

[148] Erdsiek (2021); Maltarich, Reilly, and Nyberg (2011)
[149] Based on a study by Wachter (2020) that reports heightened career mobility among the younger generation.
[150] The duration for transition status, in fact, is much longer than previously believed. A recent study by Pastore, Quintano, and Rocca (2020) for European context indicated that the average duration for young people aged 18–34 years, after completing education, equalled 2.88 years (or 34.6 months) in 2017. A shorter STWT duration was found for the highly educated (about less than 24 months).
[151] Salleh et al. (2017)

likelihood of securing better quality employment[152]. On this account, we explore the quality of graduates' first jobs to interpret the variation found in job search duration between cohorts.

We classify certain employment outcomes as "positive" to facilitate the following analysis. *Positive* employment outcomes include attaining a full-time permanent position[153], securing a job that aligns with one's qualification level[154], and earning a starting pay above RM2,000[155]. Based on Figure 3.17, 62.2% of ~2010 graduates initially worked in standard employment as compared to 52.6% of ~2018 graduates. As such, the younger cohort is more likely to have started their career in non-standard work, including 23.5% contract jobs, 19.6% part-time, and 4.3% self-employment. The difference between cohorts may indicate an increasingly competitive labour market with less opportunities for younger graduates to start working in full-time permanent positions post-graduation.

Figure 3.17: Breakdown of first job's employment type, by cohort, 2023



Source: KRI (2023)

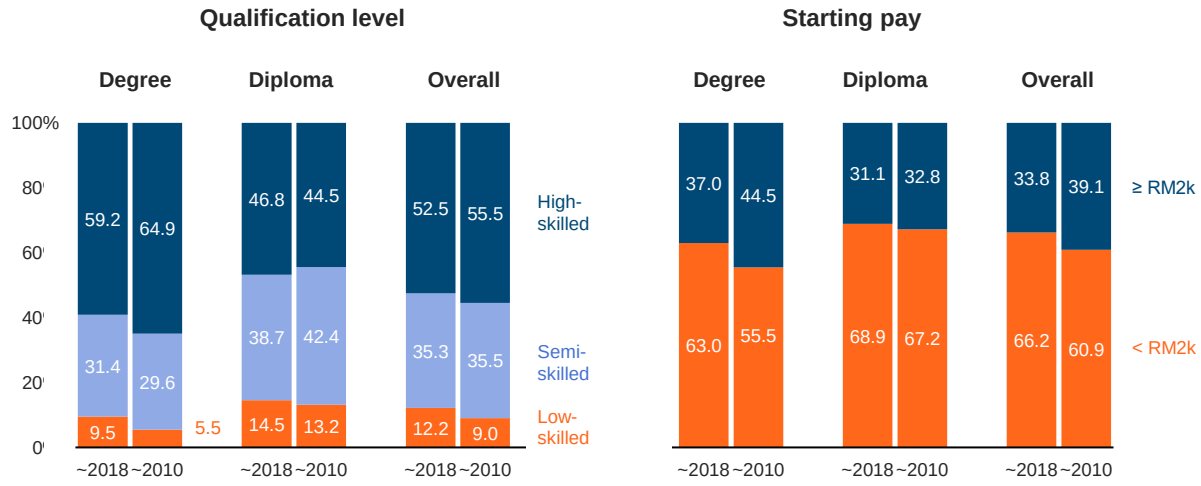
In terms of skill level, over half of experienced graduates are employed in high-skilled occupations after graduation (Figure 3.18). This is more prominent among degree holders, with over 59% employed in high-skilled first jobs compared to less than 47% of diploma holders across both cohorts. Overall, the ~2010 cohort has marginally higher share of graduates employed in high-skilled occupations at the start of their career, at 55.5% compared to 52.5% from the ~2018 cohort.

Moreover, the ~2010 cohort also enjoyed better employment outcomes in terms of starting pay, with 39.1% of graduates who earned above RM2,000 in their first job compared to 33.8% of ~2018 graduates. Considering the starting pay discussed here is in nominal terms, it indicates that the labour market condition has been more conducive ten years ago for the older cohort than the last five years for the younger cohort. Notably, there is a divergence in the starting pay between diploma and degree holders, irrespective of cohort. Degree holders in the ~2010 cohort are 11.7% more likely to have received starting pay above RM2,000 than diploma holders within the same cohort; whereas ~2018

[152] For fresh graduates, a prolonged job search often results in a better likelihood of employment success outcomes (van Hooft et al., 2021)
[153] It is important to note that while our classification of "positive" employment outcomes only includes full-time permanent employment, we do not imply that non-standard employment (including temporary/contract, part-time, and self-employment) are inherently negative outcomes. However, for the purpose of analysis, we limit positive employment outcomes to graduates who attained full-time permanent employment as their first jobs post-graduation based on earlier findings by Mohd Amirul Rafiq Abu Rahim and Shazrul Ariff Suhaimi (2022). The authors found that outcomes such as salary level and job security have not been consistently favourable among graduates in non-standard employment.
[154] As we discussed about skills mismatch earlier, the ideal is for graduates to be employed in roles that fully utilise their skillset, thus maximising their own potential as well as their contribution to the economy in terms of productivity.
[155] In Malaysia, the average salary for fresh graduates remains low, where majority earn less than RM2,000 (Ibid.). Therefore, individuals earning above this threshold in their first job post-graduation are grouped under those with positive employment outcomes.

degree holders are 5.9% more likely than diploma holders to earn a starting pay above RM2,000. This further underscores the increasing labour market challenges faced by the younger cohort.

Figure 3.18: Breakdown of graduates' first job skill level and starting pay, by cohort and qualification level, 2023



Source: KRI (2023)

3.5.3. Career Paths Over Time

In this section, we analyse experienced graduates' career progression throughout the decade. We provide a snapshot analysis of their qualification-job match and salary growth by comparing between first and current job characteristics to decipher their career paths and transition experiences. Subsequently, we gauge their perception of the current labour market condition and social mobility to understand their expectations and perspectives.

Overall career mobility

The theory of Career Mobility[156] suggests that workers move between different jobs throughout their careers to seek better pay, working conditions, and opportunities for skill development. These factors are also important in determining the speed of transition for workers[157]. Table 3.1 reveals that for the ~2018 cohort, if they started with low- or semi-skilled jobs, it takes them an average of 3.1 years to moves to high-skilled jobs. In comparison, the ~2010 cohort takes, on average, slightly longer—5.4 years—to achieve qualification-job match.

Similarly, the younger cohort takes less time to transition from non-standard to standard employment than their older counterparts, on average. The time taken to transition from low/semi-skilled jobs to high-skilled jobs is also faster for the ~2018 cohort, with diploma holders showing a marginally shorter period than degree holders. Similarly, the differences in the time taken to shift from non-standard employment to standard employment follow a comparable pattern, with the ~2018 cohort displaying a shorter period. Diploma holders also outperform degree holders for both cohorts, albeit with small margins. This implies that, while the younger cohort experiences a more favourable period of upward job mobility, the type of qualification held may not provide a strong

[156] Sicherman and Galor (1990)
[157] Howell and Kalleberg (2022)

influence on these specific employment outcomes, unlike the patterns observed in our earlier analysis. But interestingly, the observed pattern of diploma holders being initially overqualified and engaged in non-standard employment at the start of their careers, yet catching up to achieve upward mobility comparable to their degree-holding counterparts. This suggests that employer preferences for specific skills or industries may vary at different career stages, enabling diploma holders to bridge the gap and demonstrate their value over time. The findings however emphasising the importance of further research on different skills levels and labour market settings over the later phases of individuals' career progression[158].

Table 3.1: Time taken (in years) for graduates to achieve upward career mobility, by cohort, job skill level, employment type and qualification level, 2023

First job	Current job	Time taken (years)*					
		~2018			~2010		
		Total	Degree	Diploma	Total	Degree	Diploma
Low/Semi-skilled	High-skilled	3.1 years	3.2	3.1	5.4	5.7	4.8
Non-standard	Standard	3.1	3.3	3.0	5.0	4.8	5.3

Note: * The time taken (in years) is calculated by determining the duration between graduates' first job and their current job, taking into account their qualifications (diploma and degree) and occupational types (low/semi-skilled and high-skilled) for the first and current jobs.

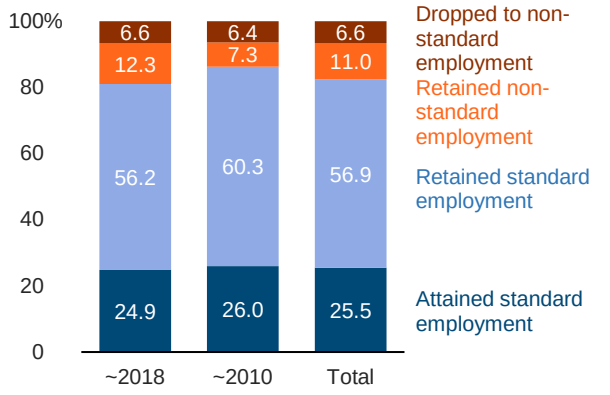
Source: KRI (2023)

Taking a closer look at graduates' career mobility, Figure 3.19 shows that only a quarter of experienced graduates successfully transitioned from non-standard first jobs to standard employment in their current jobs. Worryingly, there is also 6.6% of graduates facing downward career mobility through a change from standard to non-standard employment. Between the two cohorts, higher shares of ~2018 graduates remain in non-standard employment than ~2010 graduates after study completion. Hence, these observations challenge the widely held notion that an individual's career would naturally improve with more years of working experience[159], particularly for those who initially secured non-standard employment.

Official statistics also reveal constantly high rates of skill-related underemployment[160], with over 65% of Malaysian young workers with at least a diploma (or equivalent) qualification aged 15–34 who are underemployed in recent years. Figure 3.20 illustrates that 22.1% of experienced graduates attained high-skilled jobs whereas 36.3% remain working in jobs that require lower qualifications even after several years of working experience. Despite expectations for the older cohort to achieve greater qualification-job match, our analysis shows similar proportions of graduates transitioning from low- or semi-skilled to high-skilled jobs in both cohorts. However, higher share of ~2018 graduates remain in jobs with skills mismatches than ~2010 graduates.

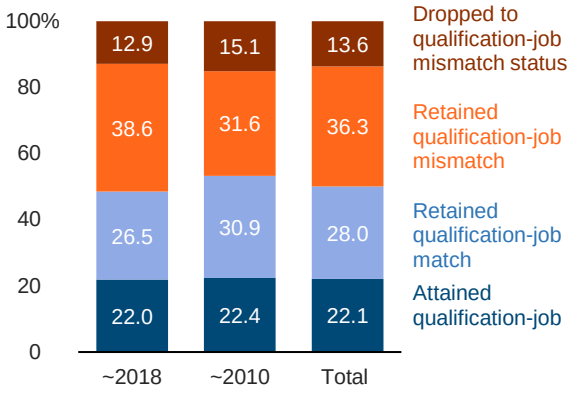
[158] Grønning and Kriesi (2022)
[159] Sicherman and Galor (1990)
[160] This involves tertiary-educated workers in semi-skilled and low-skilled job categories. Since 2017, the rate of skill-related underemployment among tertiary-educated workers aged 15-24 has been above 65% and around one-third for those aged 25-34. Source: DOSM (2023)

Figure 3.19: Breakdown of progression from non-standard to standard employment (first vs current jobs), by cohort, 2023



Source: KRI (2023)

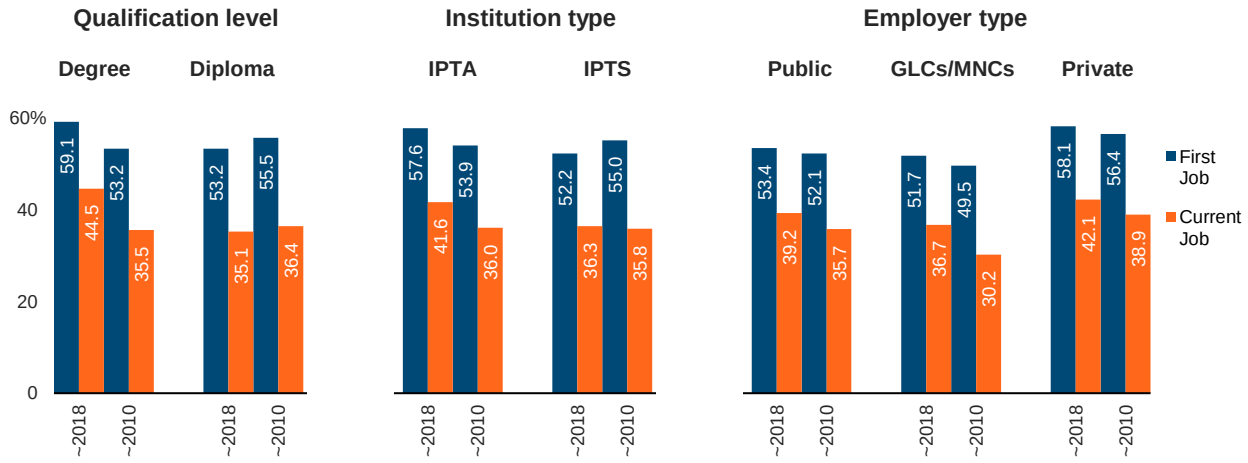
Figure 3.20: Breakdown of progression from unmatched qualification-job to matched (first vs current jobs), by cohort, 2023



Source: KRI (2023)

Across selected demographic groups, the prevalence of overqualification generally declines from more than half during graduates' first jobs to roughly one-third in their current jobs (Figure 3.21). This trend holds across both cohorts and various subgroups, including degree and diploma holders, graduates from IPTA and IPTS institutions, as well as those working in public, GLCs/MNCs, and private organisations. As per usual with the time advantage argument, the gap in overqualification rates between initial and current jobs is more pronounced among older individuals, given their extended period for career progression and skill development. Notably, certain groups of graduates tend to overcome the issue of overqualification faster than other groups, as indicated by a greater positive change (CAGR) in overqualification rate. These groups include diploma holders, graduates from private institutions, and individuals who started their careers in multinational corporations (MNCs) and government-linked companies (GLCs) for both their first and current jobs. This suggests that graduates with these characteristics are more likely to eventually align their qualifications with their job requirements.

Figure 3.21: Prevalence of overqualified graduates in the first and current job, by qualification level, institution type and employer type, 2023

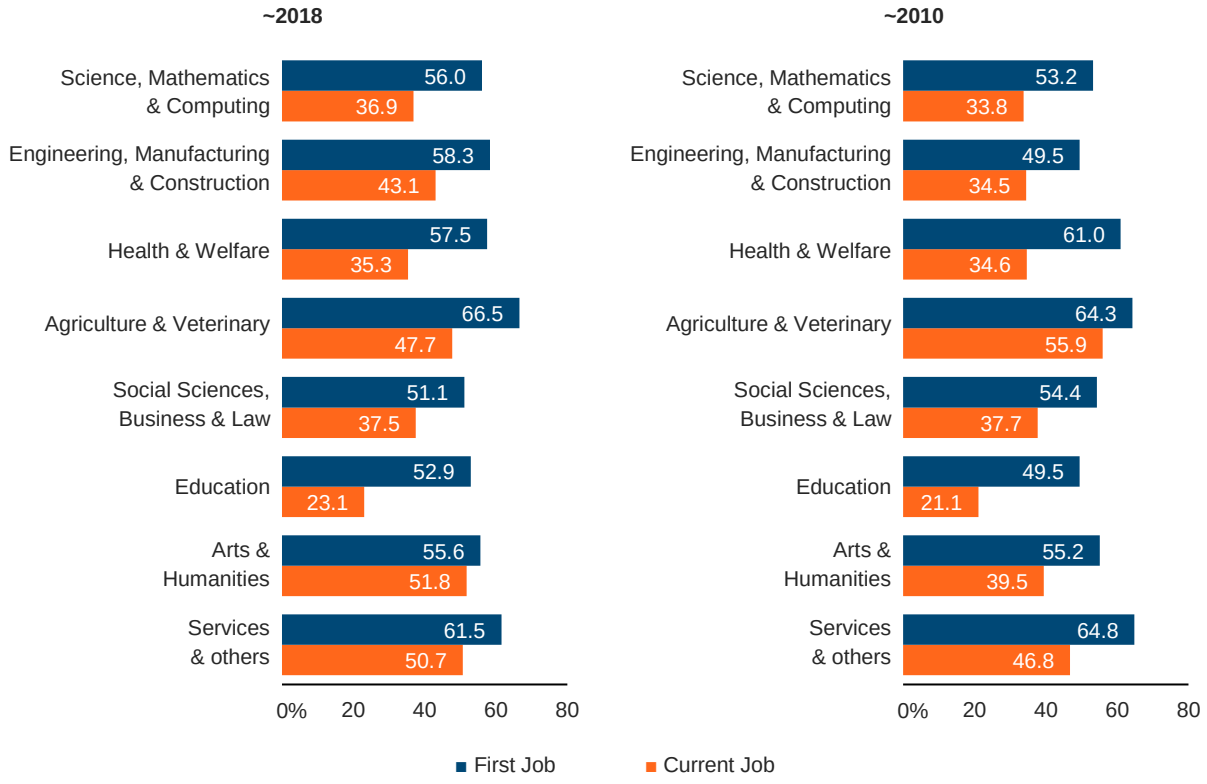


Source: KRI (2023)

According to the fields of study, Figure 3.22 yields valuable insights on particular fields that are associated with higher overqualification rates across cohorts. Those from the *Education* and *Health & Welfare* fields experienced large improvements as the share of overqualified graduates decreased sharply in both cohorts. For *Education*, the share of overqualified graduates in the current job is 23.1% (compared to 52.9% in the first job) for ~2018 cohort, and 21.1% and 49.5% respectively for ~2010. Meanwhile, *Health & Welfare* is 35.3% (current job) compared to 57.5% (first job) for ~2018 cohort and 34.6% and 61.0% respectively for ~2010 cohort.

On the contrary, some fields—including *Agriculture & Veterinary*, *Arts & Humanities*, and *Services & Others*—did not change much in overqualification rates over time. To put things into perspective, these study fields are known to have higher incidences of overqualification[161]. After a decade of working, around half of ~2010 *Agriculture & Veterinary* and *Services & Others* graduates are still grappling with skills mismatches. In other words, the accumulation of their experience, skills, and job changes has not resulted in better employment opportunities that enables for effective utilisation of their skills. Compared to their younger counterparts, the ~2010 cohort only has slightly lower overqualification rates across most study fields. As such, this could indicate an increasingly oversaturated supply of skilled talents coupled with limited creation of high-skilled jobs in these fields.

Figure 3.22: Prevalence of overqualified graduates in the first and current job, by cohort and study field, 2023



Source: KRI (2023)

[161] A study by Capsada-Munsech (2019) in measuring the prevalence of overqualification using various indicators across field of study indicated that compared to education graduates, *Humanities & Arts*, *Social Sciences, Business & Law*, *Agriculture & Veterinary* and *Services* graduates are more likely to be overeducated, regardless of the measurement used.

While the differences are subtle across cohorts and across different subgroups, the implications on graduate employment outcomes are concerning as the issue of overqualification remains largely unresolved through time and job changes. It may appear as improvements in qualification-job match, but the compounding effects of skills mismatch on graduates' lifetime earnings and career progression cannot be overlooked[162]. When they are forced into jobs below their qualifications, it can lead to lasting consequences[163]. This mismatch may limit their future job opportunities and delay overall career mobility, creating enduring difficulties for graduates to achieve job stability and higher income[164].

Salary progression

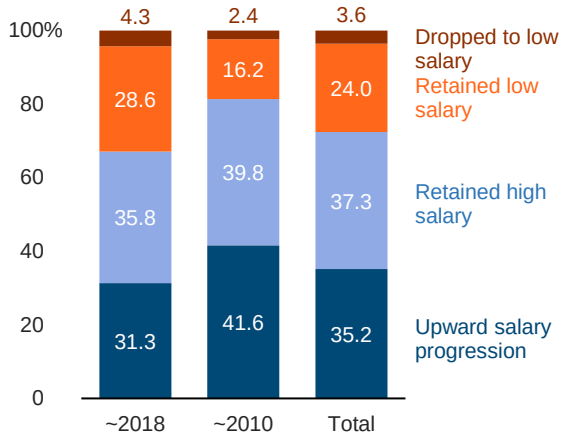
When fresh graduates first enter the job market, it is common to assume that they are bounded by low starting pay and limited room for negotiation. Factors such as workplace seniority[165], unrealistic salary expectations[166], and the impact of economic conditions[167] on businesses have contributed to this presumption. This raises important questions about long-term wage growth and the overall compensation structure for graduates as they progress in their careers. Hence, we examine the trends in graduate salary progression as well as specific points in their career when they successfully obtain higher salaries.

Overall, Figure 3.23 illustrates the salary progression between graduates' first and current jobs across cohorts. Among the ~2018 cohort, 31.3% of graduates experienced upward salary growth, whereby their current salary is higher than the initial salary. Additionally, more than one-third of ~2018 graduates are able to retain high salaries (above RM3,000) throughout their career. Nonetheless, 28.6% of graduates in the same cohort continue to earn low salaries (below RM2,000), implying profound difficulties to improve their earnings even after working for about five years. A small share (4.3%) also faced downward salary growth with job changes.

Comparatively, 41.6% of ~2010 graduates experienced upward salary growth while 39.8% in the same cohort continue to earn high salaries throughout their career (Figure 3.23). In parallel, a lower share (16.2%) of ~2010 graduates retained low salaries in their current jobs compared to ~2018 graduates, suggesting that most older graduates have been able to achieve positive salary progression. Similarly, a lower percentage of ~2010 graduates faced downward salary growth as opposed to ~2018.

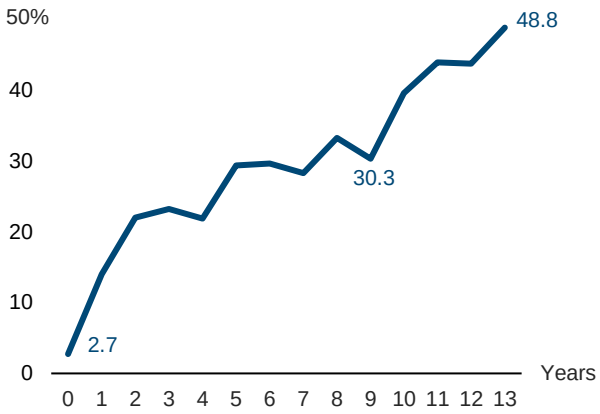
[162] Sianesi and Reenen (2003)
[163] Brunello and Wruuck (2021)
[164] Arseneau and Epstein (2014)
[165] Cheng (2021)
[166] Diana Pfordten (2023)
[167] Malay Mail (2021)

Figure 3.23: Breakdown of salary progression (first vs current jobs), by cohort, 2023



Source: KRI (2023)

Figure 3.24: Prevalence of graduates earning above RM3,000, by years of experience, 2023



Source: KRI (2023)

Alternatively, we observe graduates' income at different time points to better understand the relationship between salary level and work experience. Figure 3.24 reveals a consistent upward trend in the share of graduates earning high pay (above RM3,000) as they accumulate more years of working experience in the labour market. Starting at only 2.7% of graduates earning high pay initially, the percentage of graduates earning above RM3,000 steadily rises to 48.8% among those with 13 years of working experience. Hence, our findings further support the well-established relationship between work experience and salary growth[168].

However, Table 3.2 also suggests that the younger cohort is able to achieve upward salary growth at a faster pace than their older counterparts. The analysis reveals higher shares of ~2018 graduates who took less than three years to obtain higher salaries as compared to ~2010 graduates, which is consistent with earlier discussions on potential gains from frequent job changes among the ~2018 cohort. In contrast, a higher share of ~2010 graduates spent more than four years to attain salaries above RM3,000, especially degree holders. Although diploma holders often start with low pay, they tend to catch up and even surpass degree holders in terms of salary progression. The difference stems from the shorter duration of diploma programmes, enabling graduates to enter the workforce earlier and gain valuable skills and experience. Meanwhile, degree holders spend more time in education, thus delaying their entry into the job market. This early start for diploma holders provides them with a head start in climbing the career ladder, emphasising the importance of practical skills alongside theoretical knowledge for sustained career growth.

[168] Abraham and Medoff (1980)

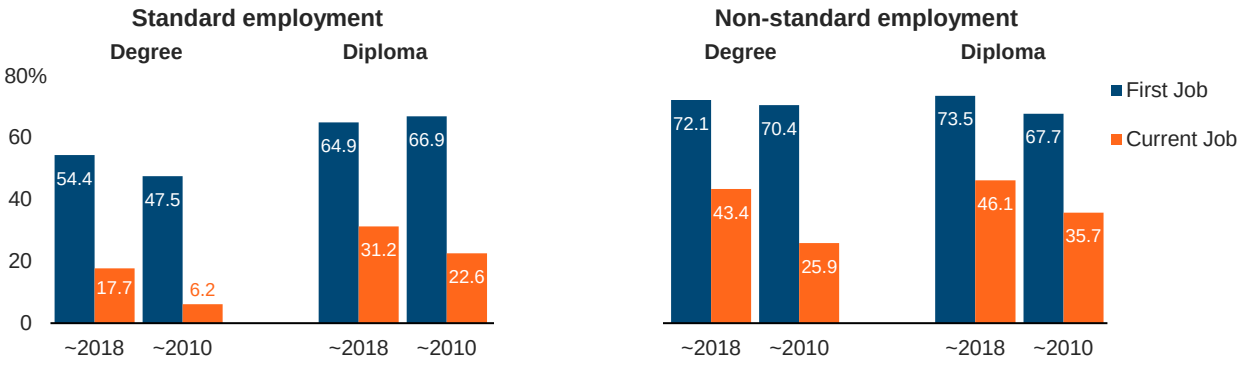
Table 3.2: Time taken (in years) to achieve current salary range between RM3,000–RM4,000, by cohort, starting pay and qualification level, 2023

Starting pay	Current pay RM3k-RM4k					
	~2018			~2010		
	Total	Degree	Diploma	Total	Degree	Diploma
< RM1k	3.2 years	3.7	2.3	4.6	4.9	3.8
RM1k-RM2k	3.6	3.0	4.6	4.7	4.9	4.6
RM2k-RM3k	3.2	3.6	2.8	5.2	6.1	3.6

Source: KRI (2023)

As experienced graduates gain additional years of work experience, the proportion of those earning below RM2,000 falls substantially, particularly evident among degree holders in standard employment (Figure 3.25). Generally, the issue of low pay persists for experienced graduates, irrespective of their employment type or qualification level. The only exception is among ~2010 degree holders working in standard employment, in which the share of those earning below RM2,000 significantly drops from 47.5% to 6.2%. For others—namely, diploma holders in standard employment and degree or diploma holders in non-standard employment—a large share of graduates in both cohorts remain stuck with low pay despite having worked for several years. More than a quarter of graduates in non-standard employment are still earning below RM2,000 in their current jobs, which highlights predominantly unequal and adverse outcomes from this type of work.

Figure 3.25: Prevalence of graduates earning less than RM2,000 (first vs current job), by employment type, qualification level and cohort, 2023



Source: KRI (2023)

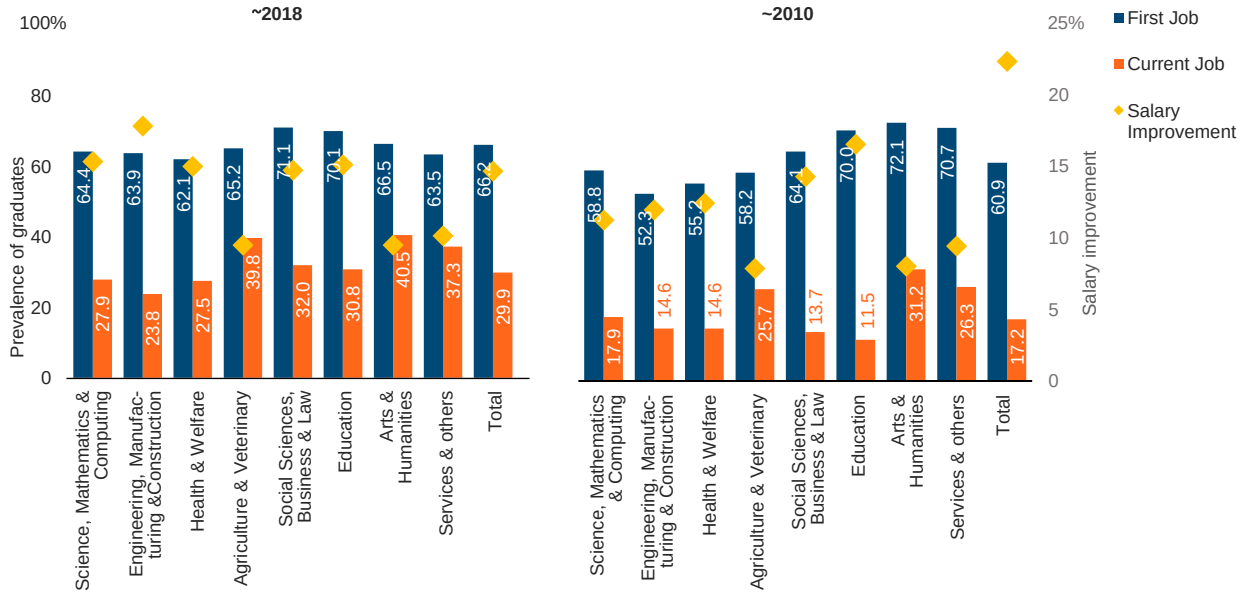
Next, Figure 3.26 examines graduates' salary progression by study field, based on an annualised growth rate formula[169]. Overall, the ~2010 cohort enjoys greater salary growth, at 22.3% compared to 14.7% for ~2018. However, the extent of this progress varies across different study fields. In general, graduates from the *Education* field benefitted from the fastest salary progression, with a 16.5% and 15.2% annual growth rate in the ~2010 and ~2018 cohorts, respectively.

[169] The annualised growth rate formula, otherwise known as compound annualised growth rate (CAGR), is used here to calculate the change in low salary prevalence for each study field. In our case, the ~2018 cohort has an average five-year work experience and the ~2010 cohort has an average ten-year work experience. Further information can be found in the glossary.

Other graduates in the ~2010 cohort with relatively higher salary growth rate are from the *Social Science, Business & Law* and *Science, Mathematics & Computing* fields. In contrast, *Social Science, Business & Law* and *Health & Welfare* fields demonstrated relatively faster salary progression among the ~2018 cohort. On the other hand, graduates from the *Agriculture & Veterinary, Arts & Humanities,* as well as *Services & Others* fields experienced the slowest salary progression throughout their career, holds for both cohorts. As a result, more than a quarter of ~2010 graduates and about 40.0% of ~2018 graduates across these fields are still earning below RM2,000 in their current jobs.

These observations somewhat align with existing literature, which suggests that wage differentials are influenced by the relationship between study fields and specific employment characteristics[170]. Fields such as *Social Sciences, Business & Law* usually have direct connections to a wide range of employment sectors, hence may offer more career opportunities with pronounced salary growth over time. Furthermore, the *Engineering, Manufacturing & Construction* and *Science, Mathematics & Computers* fields also show relatively promising salary outcomes across both cohorts, with faster growth among ~2018 graduates.

Figure 3.26: Prevalence of graduates earning below RM2,000 in their first jobs versus their current jobs and the improvement in between via annualised growth rate, by cohort and study field, 2023



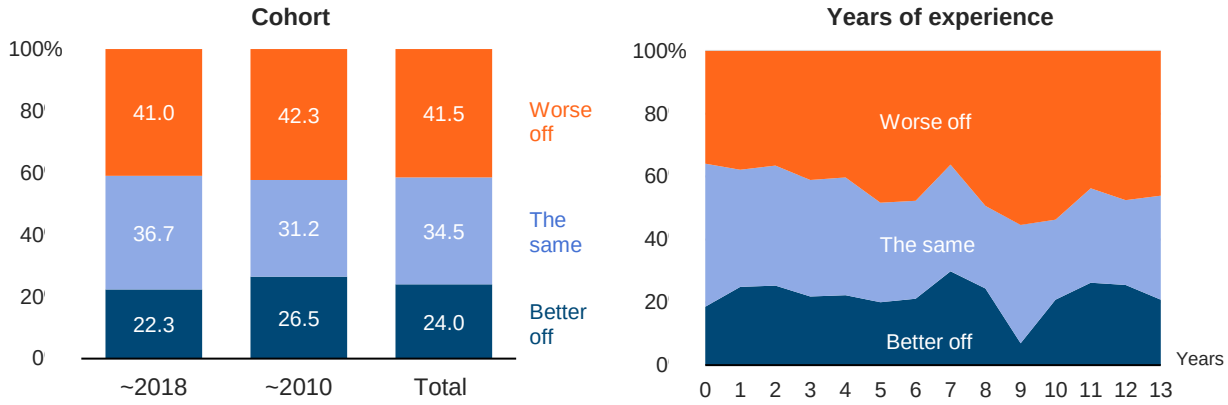
Source: KRI (2023)

[170] Capsada-Munsech (2015)

Perception of labour market conditions

To understand graduate's expectations and perspectives which can inform active labour market strategies, we examine their perception of the current labour market condition compared to the year they first graduated (Figure 3.27). Overall, 41.5% of graduates in both cohorts perceive the present conditions as *worse off* compared to when they first graduated, whereas approximately a quarter of experienced graduates perceive the current labour market conditions to be *better off*. This implies that experienced graduates view the labour market conditions as stagnating, with their opinions alike regardless of years of work experience.

Figure 3.27: Breakdown of graduates' perception of labour market conditions, by cohort and years of experience, 2023



Source: KRI (2023)

Figure 3.27 also illustrates how graduates' perception towards the labour market changes as they progress by years of experience. It is important to highlight that the nature of cohort categorisation means that individuals with ~5 years' experience fall into the ~2018 cohort, while those with ~10 years' experience are in the ~2010 cohort. Consequently, the question posed to each cohort differs slightly: the ~2018 cohort is asked about their current perception compared to ~5 years ago, while the ~2010 cohort reflects on the same issue but ~10 years ago.

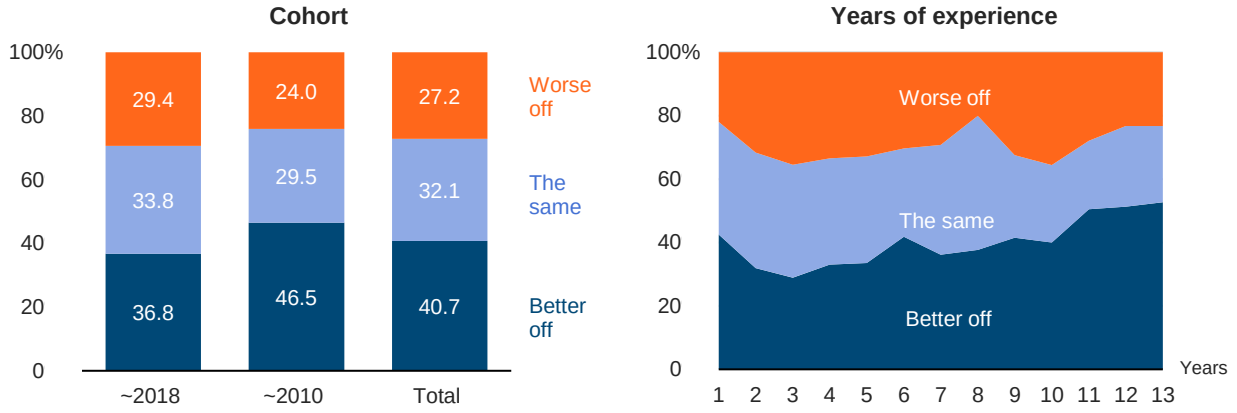
Examining the trend over the years reveals that positive perceptions tend to decline as graduates progress in the labour market. This trend may be attributed to different frames of reference for each cohort. In general, graduates with more years of experience are likely to have encountered various aspects of the labour market, including career challenges, salary progression and job satisfaction (or the lack thereof). As they accumulate experience, their perceptions may be influenced by the realities they have faced, potentially leading to a more critical assessment. This shift may also be emphasised by changes in expectations, where graduates might have optimistic expectations about job opportunities, only for these expectations to wane when the reality falls short of their initial expectations. It is not entirely clear why the sudden bumps appeared in the 7 to 9 years of experience. One potential explanation could be that these phases represent critical points for job transitions, such as changes in career paths, life expectations and arrangements or moves to higher job positions.

These transitions introduce temporary uncertainties that may influence graduates' perceived assessment[171].

Perception of intergenerational social mobility

Finally, GCTS asked how graduates perceive their current economic position as compared to their parents as a proxy for intergenerational social mobility[172]. Figure 3.28 reveals lower levels of optimism among the ~2018 cohort compared to the ~2010 cohort. Higher shares of ~2018 graduates believe that they are doing *worse off* than their parents in terms of economic outcomes, at 29.4% against 24.0% of ~2010 graduates. In contrast, 46.5% of ~2010 graduates feel that they have achieved upward social mobility while 36.8% of ~2018 graduates perceive that they are doing *better off* than their parents. This disparity could be explained by earlier findings in our study. For instance, the ~2018 cohort continue to exhibit high prevalence of overqualification and low pay despite accumulating several years of working experience. As such, these factors may contribute to the younger cohort's perception of tapering social mobility when compared to their parents, leading to an intensified sense of dissatisfaction and distress on future conditions.

Figure 3.28: Breakdown of graduates' perception of their current economic position compared to their parents, by cohort and years of experience, 2023



Source: KRI (2023)

Source: KRI (2023)

Moreover, Figure 3.28 also offers some important insights on graduates' perception of intergenerational social mobility at different number of years of working experience. In the first two years, graduates are less likely to feel that they are *better off* than their parents, possibly due to most facing challenges when newly entering the labour market. However, a gradual shift towards a more positive perception occurs starting in the fourth year, whereby an increasing share of graduates perceive themselves as achieving upward social mobility. This positive trend continues into the later stages but remains below 60.0% (*better off*) at its peak in the 11th–13th year. Hence, our analysis suggests improved prospects for experienced graduates as they gain expertise over time, albeit limited, with some stuck with overqualification and low pay.

[171] Greenhaus, Callanan, and Godshalk (2018)
[172] The question asked in GCTS is, "How would you consider yourself economically compared to your parents, when they were around your current age?" and the response options included better off, the same or worse off. Despite the apparent simplicity of this question, it serves as an important tool to interpret graduates' personal experiences and assess their economic progression against their parents'.

3.6 Key Findings and Discussion

This chapter explores experienced graduates' career progression and challenges faced by two experienced graduate cohorts. The analyses offer important insights into the changes in Malaysia's graduate employment landscape and identify factors that possibly shaped their career trajectories. Building upon the findings on fresh graduates in Chapter 2, the results from our newly conducted GCTS survey uncover several employment trends, besides career development and perception of experienced graduates, towards the labour market conditions and social mobility over time. The key findings are as follows:

3.6.1. Older cohort enjoys better outcomes while the younger plays catch-up

In general, the ~2010 cohort benefits from being in the labour market for a longer period of time; the so-called time advantage is apparent on all fronts. Our findings show that instances of overqualification, low pay, and underemployment tend to improve over the years, which is not surprising considering work experience is one of the major factors that promote career growth. However, our findings also show that upward career mobility is feasible for the younger cohort, as ~2018 graduates take less time to attain qualification-job match, standard employment or achieve higher salaries. This is partly attributable to them switching jobs much faster compared to their older counterparts.

Prior to entering the labour market, our demographics analysis shows that some variables relating to graduates' tertiary qualifications also matter. Diploma holders, TVET graduates, and IPTA students are less likely to experience positive employment outcomes compared to their peers, regardless of cohorts. These observations imply that the gap in career progression is somewhat unaffected by the time advantage across cohorts. As such, these demographic characteristics play an important role as well: degree holders, non-TVET graduates, and IPTS students tend to do better in the labour market with full-time permanent jobs, high-skilled roles, and higher salaries.

3.6.2. Persistent issues of skills mismatch and wage stagnation among experienced graduates

Overqualification remains a worrying issue even among experienced graduates, especially among diploma holders and TVET graduates. Despite having more than five years of work experience, roughly 60% of diploma holders are overqualified across both cohorts. TVET graduates face similar odds, with more than half experiencing skills mismatch, regardless of work experience. Therefore, the time advantage is not apparent for these groups, pointing towards a structural imbalance within the labour market to provide decent work for skilled talents.

Furthermore, wage stagnation is a tale as old as time for Malaysian graduates, with a solution not quite appearing on the horizon. Total work experience plays a part without question, as salary outcomes improve with more years of working. While positive salary outcomes appear to be common among graduates across cohorts, with the majority experiencing either upward salary growth or retaining high salaries, this may present a potential concern. If retaining a high initial salary is just as probable as achieving upward salary progression, the initial salary could have lasting consequences for a significant percentage of graduates. In other words, the starting point where salary is determined would play a significant role in shaping the trajectory of graduates' future income. In addition, less than half of TVET graduates and diploma holders earn above RM3,000, even among the ~2010 cohort.

3.6.3. Compounding effect of first job quality points towards deeper structural problems

Our findings also prove the initial hypotheses: Graduates' starting point in the labour market matters. Although younger cohort may be attaining positive employment outcomes at a faster rate than their older peers, the first job makes a huge difference. Ideally, there should be a stepping-stone effect for graduates to progress from less favourable employment to decent work. However, one-third of ~2018 cohort remain working in jobs that require lower qualifications, whereas a quarter retain low salaries after more than five years of work experience.

Consequently, experienced graduates' perceptions of the labour market condition and intergenerational mobility are less optimistic, especially among the younger cohort. While graduate perception seems to improve with work experience or age, persistent skills mismatch and low pay among experienced graduates could exacerbate the current state of distress and despair towards their career prospects.

3.7 Chapter Conclusion

In summary, the analyses from GCTS further affirm our primary concern: The challenging labour market environment in Malaysia impacts not only fresh graduates, but also those who graduated and have been working for several years. This chapter demonstrates that the starting point from which graduates begin their employment can significantly influence their long-term career progression.

While the older cohort generally benefits from additional years of working experience, they still face problems with skills mismatch and wage stagnation over time. In fact, some are lagging behind the younger graduates who opted for frequent job changes and successfully transitioned into high-skilled and well-paying occupations. Similar observations are made across subgroups, with particular demographics outperforming others, namely males, degree holders, and those from IPTS institutions or non-TVET backgrounds.

With shrinking opportunities and continuous challenges to achieve upward mobility, it is not surprising that the younger cohort are less optimistic about the current labour market conditions and their own socioeconomic standing compared to their parents. Overall, the insights gathered from the GCTS survey highlight substantial difficulties faced by experienced graduates as they strive towards stable, well-paying jobs. Therefore, a more comprehensive strategy is required, including continuous assistance for graduates to adapt and progress further in the labour market, beyond the initial transition from education to work. There is also pressing needs for data-driven and evidence-based policymaking to enhance graduates' overall labour market access. Further elaboration of proposed policies and initiatives will be discussed in Chapter 7.

CHAPTER 04

SELF-EMPLOYMENT: A PROMISING ALTERNATIVE? 76

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CHAPTER 4

SELF-EMPLOYMENT: A PROMISING ALTERNATIVE?

Entrepreneurship and decent work are the bedrocks of economic empowerment. It is recognized that just entrepreneurship alone fuels the creation of decent jobs and builds wealth when businesses thrive and grow.

Lakshmi Puri (2017)[173]
Former UN Women Deputy Executive Director

4.1 Introduction

Besides traditional forms of standard and salaried work, graduates also look towards non-standard forms of employment, which comprise of self-employment, part-time, and contract jobs. Although there are unique benefits such as increased flexibility and opportunities, non-standard employment can be more precarious due to the lack of stability, benefits, and protection associated with standard employment[174]. Consequently, it can be more challenging for these graduates to achieve financial security and career advancement in the long run.

Globally, there has been a shift towards self-employment as an alternative career path among young graduates[175]. This change is driven by several factors such as entrepreneurial spirit, digital connectivity, job market uncertainty as well as other lifestyle choices[176]. The analysis for this chapter utilises both GTS and GCTS results to examine the trends, experiences, and challenges in self-employment across graduate cohorts. We focus on two types of self-employed graduates, namely entrepreneurs and freelancers. Additionally, this chapter also leverages secondary data published by the Department of Statistics Malaysia (DOSM) and the International Labour Organisation (ILO) to provide contextual information regarding the landscape of micro, small, and medium enterprises (MSMEs).

The chapter begins with Section 4.2 describing the overarching policy frameworks introduced to promote better labour market outcomes and a conducive ecosystem for the self-employed. Section 4.3 dives into the demographics of self-employed graduates, besides discussing their labour market experiences and outcomes, including self-employment motivation, income level, and challenges faced in each distinct type of self-employment. The chapter concludes with Section 4.4 providing a summary of key findings and a brief discussion on policy needs for addressing the issues surrounding self-employed graduates in Malaysia.

[173] Lakshmi (2017)
[174] Hawati Abdul Hamid and Nur Thuraya Sazali (2020)
[175] Carr and Chen (2001)
[176] MEDC (2019), EPU (2021), Dawson et al. (2009)

4.2 Policies on Self-Employment in Malaysia

Globally, there has been rising interest among youths towards self-employment[177], and Malaysia is no exception to this. Over recent years, the government has identified important structural changes for the economy to propel towards high-income status, including fostering job creators rather than job seekers among tertiary-educated talents. With new, high-growth businesses having higher spillover effects[178] on the economy, this will spur the creation of well-paying, decent jobs in the market.

4.2.1. Existing policies

Various policy frameworks have been established to equip young graduates with the necessary knowledge and tools to start their own businesses or work independently in non-standard employment. Table 4.1 outlines the existing government policies and initiatives that promote entrepreneurship and freelancing among Malaysian youths and graduates.

For example, the 'Entrepreneurship Action Plan Higher Education Institutions' is an important initiative that seeks to streamline existing initiatives with regards to the promotion of entrepreneurship within HEIs. It aims to do this primarily by strengthening entrepreneurial education and establishing a strong network for collaboration between industry, HEIs and the government. This is because the government has been actively pushing forward policies to create a new entrepreneurial class among tertiary-educated youth. The focus on creating a new generation of job creators could prove fruitful as existing literature suggests that MSMEs are vital for a vibrant economy and job creation[179], as they create the highest share of total jobs compared to other employers.

[177] OECD (2019)
[178] GOM (2021)
[179] ILO (2019)

Table 4.1: Summary of policy frameworks related to self-employment and entrepreneurship

Policy	Objective	Initiative
12th Malaysia Plan 2021-2025	Structural transformation of the economy	Opportunities presented post-pandemic to create a stronger and more resilient, economy that is characterised by innovative industries based on entrepreneurship.
	Strengthening financial capabilities of entrepreneurs	Increase incentives and new financing mechanisms for technology adoption among new businesses.
	Recovery programme for unsuccessful entrepreneurs	Implementation of a second chance intervention programme for entrepreneurs to rebuild after unsuccessful business attempts and mitigate risk of bankruptcy.
Malaysian Education Blueprint 2013-2025	Nurturing entrepreneurial skills at a young age	Aims to nurture leadership and entrepreneurial skills among primary-post secondary students.
Malaysian Education Blueprint 2015-2025 (Higher Education)	Instilling an entrepreneurial mindset among tertiary-educated students	Creating a new generation of job-creators instead of jobseekers; This is done through teaching relevant disciplinary knowledge and skills, ethics and morality, as well as cultural and civilisational literacy.
National Entrepreneurship Policy 2030 (NEP2030)	Improving access to finance and financial literacy	Raising awareness on how to access certain funds and what type of funds are most suitable for what type of business. Highlighting the role of development financial institutes and improving access to alternative sources of funding, for example crowdfunding and angel investors.
	Making entrepreneurship a preferred career choice	Reduce the social stigma of alternative avenues of employment such as starting a business. Ensure a holistic and conducive environment for individuals to start, run and expand their business.
	Improving planning, implementation and performance monitoring for new businesses	A total of 60 agencies exist to support entrepreneurs but they make work in silos due to policy overlaps. The government is looking to streamline this process by identifying redundancies and reducing the bureaucracy that businesses face. The ministry responsible is also looking into implementing KPIs to assess performance at the individual, group, agency and organisational levels to increase business efficiency.
Entrepreneurship Action Plan Higher Education Institutions (EAP-HEIs 2021-2025)	Creating a synergistic entrepreneurial ecosystem	Strengthening entrepreneurial curriculum within HEIs with the aim of increasing the number of relevant educators and entrepreneurial students.
	Impactful collaboration between stakeholders (HEIs, government, industry and community)	Establishing an entrepreneur network within HEIs and collaboration with external parties for seed funding for students.
	Encouraging innovation and technology in entrepreneurship	Encouraging students to leverage on innovation and technology in their new businesses through accelerator programmes and collaboration with industry.
Social Entrepreneurship Malaysia 2030 (SEMy2030)	Enhancing awareness and outreach of social entrepreneurship	Extension of public assistance to social enterprises at local and grassroots levels nationwide. Develop existing entrepreneurship programmes to include social entrepreneurship.
	Boosting capabilities of social enterprises	Encourage collaborative research between social entrepreneurs, academia, and industries. Provide training and certification for social entrepreneurship educators, mentors and coaches.
Malaysia Digital Economy Blueprint	Enhancing employability through skills training for gig workers	Giving the opportunity for gig workers to upskill through subsidised training conducted by HRD Corp.
	Improving regulatory framework for gig workers	The support is given via. long-term social protection in order to give welfare for full-time gig workers or those who work at least a minimum number of hours across all platforms.

Source: EPU (2021), GOM (2021), MOE (2013), MOHE (2015), MOHE (2020), MEDC (2019), MEDC (2022)

4.2.2. Relevant initiatives

While there is an extensive list of initiatives offered by the government through the outlined policy frameworks, this subsection highlights several relevant programmes and their roles in furthering the development of self-employed graduates, including entrepreneurs and freelancers.

Entrepreneurs and MSMEs

According to the ILO, self-employed and MSMEs account for 70.0% of total employment in selected countries (see Box 4.1). However, in Malaysia, they collectively account for 97.2% of business establishments, employing 48.2% of the total workforce and contributing 38.4% to the GDP in 2022[180]. This demonstrates that MSMEs are the backbone of Malaysia's economy, with entrepreneurs being the driver to innovate new ventures and improve productivity of processes.

The SMECorp highlighted that in 2022, there are over 213 MSMEs programmes implemented by 15 ministries, six sole agencies, and 53 other agencies with an allocation of RM14.7 billion[181]. Most programmes revolve around access to financing (29.5%) with the highest financial commitment of RM14.4 billion. This could indicate that the existing programmes for MSMEs are increasingly complex with the involvement of multiple ministries and agencies. Subsequently, it may result in varying quality of support and smaller allocation for each recipient due to constraints in resources. For example, SMECorp's Soft Financing Scheme as well as TEKUN Nasional's TEKUN Niaga scheme may have overlapping applicants as SMEs operating within the services and manufacturing sectors can use the acquired funding for expansion through investments in machinery and equipment.

Table 4.2 outlines some programmes that are established to transform local MSMEs and entrepreneurs into moving up the global value chain. Generally, these initiatives are offered to SMEs in order for them to address structural challenges that are preventing the company's expansion and growth. These would include investments in capital with regards to machinery, lack of digitalisation as well as lack of personal knowledge and expertise on certain aspects within business operations.

Table 4.2: Existing programmes targeting MSMEs and entrepreneurs

Agency	Programme	Objective
Malaysian Investment Development Authority, MIDA	Lighthouse project	Increased collaboration between MNCs and local SMEs to embrace digitalisation and 4IR technology adoption and innovation.
SMECorp	Business Accelerator Programme (BAP 3.0)	Gives assistance for SMEs to grow and expand its businesses through initiatives such as business advisory services and financial support.
	Soft Financing Scheme for Small & Medium Enterprises (SFSME)	Financing scheme for SMEs operating in the Services and Manufacturing sector with the purpose of investing in machinery & equipment, property, and IT.
TEKUN Nasional	TEKUN Niaga	Provides funds for SME expansion, providing advisory services and support for its participants. Also provides microfinancing option to support small *Bumiputera* entrepreneurs in their new start-up.
Ministry of Entrepreneur Development and Cooperatives, MEDAC	PROTÉGÉ	Provides professional training targeting unemployed graduates with the aim of improving graduate employability and entrepreneurship skills. This is done through courses such as financial management, digital marketing, business pitching, etc.

[180] DOSM (2023)
[181] SMECorp (2022)

MRANTI	Global Accelerator Programme (GAP)	Focusing on three tracts (Medical and Healthcare, Agriculture, and Drone technology), the programme seeks to accelerate existing start-ups to test their product, commercialise, etc.

Source: SMECorp (2022), MIDA (2020), MEDAC (n.d.), MRANTI (n.d.)

Box 4.1: Global evidence on the contribution of the self-employed and MSMEs

The ILO (2019) study examines contributions made by self-employed and MSMEs from 99 countries around the world, covering enterprises of all sizes: micro enterprises (with two to nine employees), small enterprises (with ten to 49 employees), as well as medium and large enterprises (with 50 or more employees). The survey also extends to the formal and informal sectors, encompassing the agricultural, industrial, and services sectors and including public services.

The report highlights the importance of MSMEs in the economy, especially in low- and lower-middle-income countries as they account for 70.0% of total employment altogether[182]. As the average income of countries increase, the employment share transitions away from self-employed and micro enterprises, towards small, medium, and large-sized enterprises. In parallel, informality remains a challenge for developing economies. The employment share in the informal sector is negatively correlated with per capita income of the country, exceeding 90.0% in a few low-income countries. The high degree of informality is especially apparent within the agricultural industry as almost all of its workers work under informal arrangements.

Therefore, it is imperative that continued support is given to the self-employed and MSMEs as they have become the most important drivers of employment in the economy. Furthermore, government programmes should be designed to promote job creation, encourage the formalisation of enterprises, and protect the welfare of workers. With that, there will be more decent, well-paying jobs for workers alongside higher productivity among enterprises.

Source: ILO (2019)

[182] ILO (2019)

Freelancers

The gig economy provides highly accessible platforms and offers greater flexibility for freelancers to choose the type of work arrangements that fit them. However, not all gig work can be classified the same. Technical or digital tasks offered by international companies cannot be compared to local work on-demand via apps[183] such as local e-hailing or p-hailing platforms. Due to the growing share of freelancers in the labour market, the government has recently introduced several initiatives[184] specifically targeting digital platform gig workers, with aims to expand the pool of digital talents in Malaysia.

Table 4.3 outlines a few initiatives offered by the government that is targeted towards freelancers. An initiative worth highlighting would be through MDEC's Global Online Workforce (GLOW) programme which provides a structured programme on how individuals can get started to work and thrive as digital freelancers. The training provided range from foundational knowledge such as building a profile, identifying the market, managing their finance as well as how to continuously develop one's skill as a digital freelancer[185].

Table 4.3: Existing programmes targeting freelancers

Name of programme	Objectives
eRezeki	Allows individuals to generate additional income through a local, online Sharing Economy platform
GLOW	Training to nurture and develop digital freelancers that are able to perform work on global platforms at international rates
Digital Train & Place (DTP)	Training incentive targeted towards unemployed to encourage them to become gig workers through up-skilling and re-skilling programmes
Bina Kerjaya	Improve the employability of informal workers (inc. gig workers) for upskilling through micro-credentialing

Source: MDEC (n.d.), SOCSO (2023)

Furthermore, there is a strong push to design legal frameworks that protect the rights and welfare of gig workers. This is especially important for gig workers such as e-hailing and p-hailing riders, given the absence of legal protection covering them (refer to Box 4.2). According to the Ministry of Communications and Digital (*Kementerian Komunikasi dan Digital, KKD*), there are over 200,000 individuals who work in the e-hailing and p-hailing industries in 2023[186]. These individuals have higher degrees of occupational risks as their incomes are directedly intertwined with the number of hours that they spend at work. They also currently lack social protection[187] as gig workers are not classified as "employees" but rather "independent contractors", hence not entitled to the same benefits and protection such as paid leave, maximum working hours, and minimum wage under the Employment Act.

[183] Work on-demand via apps is mainly conducted through the execution of traditional services such as transport and cleaning. Source: De Stefano (2016)
[184] Most of these initiatives are under the purview of Malaysia Digital Economy Corporation (MDEC), designed to foster talent within the digital economy space.
[185] MDEC, n.d.
[186] Nilam Nur Atikah Oshman (2023)
[187] Jason Loh and Hazriq Iqmal Abdul Aziz (2022)

Box 4.2: Labour laws and the lack of social protection among gig workers

According to the ILO, *gig work* is defined as task-based employment predominantly facilitated by online labour platforms, with part-time workers or freelancers offering work and services, albeit without the benefits and privileges of permanent positions[188]. It can be categorised into two forms, namely "crowdwork" and "work on-demand via apps". Crowdwork refers to the completion of microtasks through online platforms, whereas work on-demand via apps typically refers to traditional services such as transport and cleaning[189].

Although gig work offers flexibility to the self-employed, there are several concerns regarding their overall welfare and safety nets. With Malaysia's employment-based social protection model, only those with formal jobs receive employer contributions to social safety schemes such as EPF retirement savings scheme as well as SOCSO workplace injury and unemployment insurance. Due to this, gig workers often fall into the "missing middle" group. They are not seen as impoverished to qualify for social safety net benefits, at the same time, they do not have access to employer provision of social insurance.

Under the Employment Act 1955[190], gig workers are defined as independent contractors. Thus, they are excluded from the protections[191] provided to other employees under the Act as well as relating provisions such as, the Labour Ordinance (Sabah Chapter 67)[192], and Labour Ordinance (Sarawak 76)[193]. Consequently, they also remain ineligible for the benefits that encompass minimum wage entitlements, besides not being entitled to the same protections and amenities as regular employees do[194].

Although the Self-Employment Social Security Act 2017 (Act 789)[195] stipulates the mandatory enrolment and contribution of self-employed individuals within its ambit, a conspicuous gap still remains in terms of well-defined regulations, legislative provisions, or comprehensive guidelines geared towards safeguarding the interests of gig workers. The discrete classification of gig workers beyond the purview of formal employee status accentuates the absence of tailored labour laws explicitly designed to secure their rights. Hence, this clear gap highlights the absence of proper social safety nets for gig workers, making it urgent to establish a thorough and effective system for their protection[196].

[188] ILO (2022)
[189] De Stefano (2016)
[190] GOM (1955), GOM (2022)
[191] The main provisions under the Employment Act 1955 include minimum employment standards, rights and obligations of both employer and employees in a contract of service, guidelines for termination of employment, protection of wages, etc. Source: Ibid.
[192] GOM (1950)
[193] GOM (2006)
[194] Uchiyama et al. (2022)
[195] GOM (2020)
[196] De Stefano (2016)

4.3 Skilled Talents in Self-Employment

This section looks at the scenario of fresh and experienced graduates who chose self-employment as an alternative path in the labour market. Due to limitations of the GTS data—with no questions posed on the type of self-employment or their motivation—we are unable to dive deeper into the nature of self-employment among fresh graduates. For experienced graduates, we utilise the GCTS data to explore new dimensions and gain further insights on the outcomes and challenges among those self-employed.

Although self-employment broadly covers several forms of independent work, there are some clear differences across various groups. Based on GCTS, we focus on comparing experienced graduates in three types of self-employment:

1. **Employer** – an individual who owns a business and employs workers under a contract of service[197];
2. **Sole proprietor** – an individual whose business is wholly owned by him or her and may have a registered business entity, but do not employ workers[198];
3. **Freelancer** – an individual who typically procures contractual work independently in the form of assignments or contracts for service from various clients through traditional or digital platforms[199].

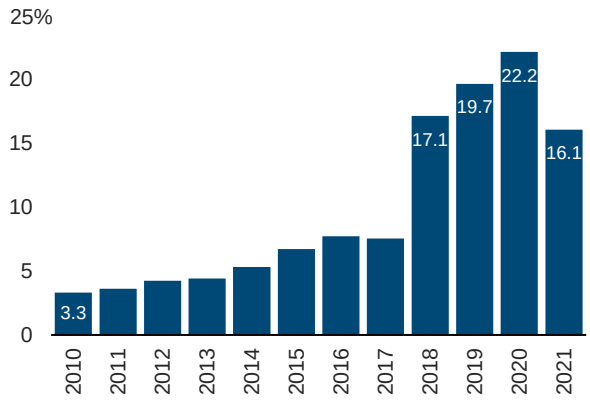
4.3.1. Fresh Graduates

Using GTSS microdata between 2010-2021, Figure 4.1 shows that the share of self-employed graduates rose from 3.3% in 2010 to its peak at 22.2% in 2020, before slightly declining to 16.1% in 2021. The notable rise since 2018 may be attributed to an increasingly competitive job market for fresh graduates; at the same time, it may suggest a shift in graduate interest or perception towards self-employment as a viable career option.

An earlier KRI study found higher earning potential among self-employed graduates, though it varies by study stream. Self-employed TVET graduates are more likely to earn above RM5,000 than those from non-TVET background or even working graduates in standard employment[200]. This success may be associated with specific sectors that self-employed TVET graduates venture into, predominantly in manufacturing and construction, as compared to non-TVET graduates who operate their businesses in the services sector[201]. Nevertheless, the growing prevalence of self-employment may not necessarily translate into favourable outcomes for many fresh graduates as two-thirds still earn below RM2,000 in 2021 (Figure 4.2). This is compounded by the fact that almost 90.0% of them are from low-income households (with monthly household income below RM5,000)[202]. Thus, it indicates great difficulties to escape the poverty cycle[203], considering that a majority of self-employed graduates have insufficiently meagre earnings to improve their overall financial conditions.

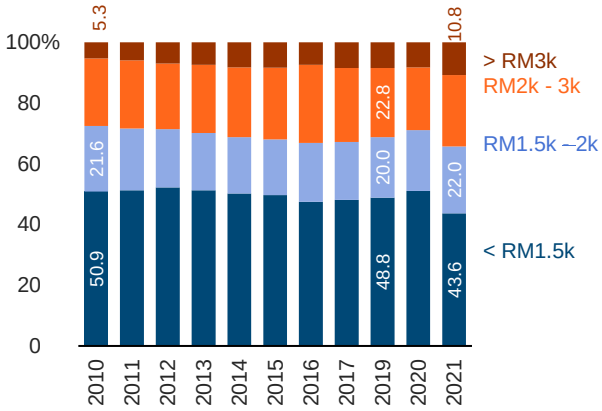
[197] SOCSO (n.d.)
[198] SSM (2017)
[199] ILO (2018)
[200] Hawati Abdul Hamid and Tan Mei Yi (2023)
[201] Ibid.
[202] Mohd Amirul Rafiq Abu Rahim and Shazrul Ariff Suhaimi (2022)
[203] Goulden (2010)

Figure 4.1: Prevalence of self-employed graduates out of the total number of graduates, 2010–2021



Source: MOHE, n.d.

Figure 4.2: Breakdown of self-employed graduates, by monthly income, 2010–2021



Source: MOHE, n.d.

Given the high degree of overqualification, a large share of fresh graduates in self-employment are dissatisfied with their current work conditions and would prefer a standard, full-time employment if given the opportunity. Two crucial factors for this include the lack of job security and income stability that self-employment entails[204]. Essentially, many of them perceive self-employment as temporary work while they search for more stable forms of employment[205].

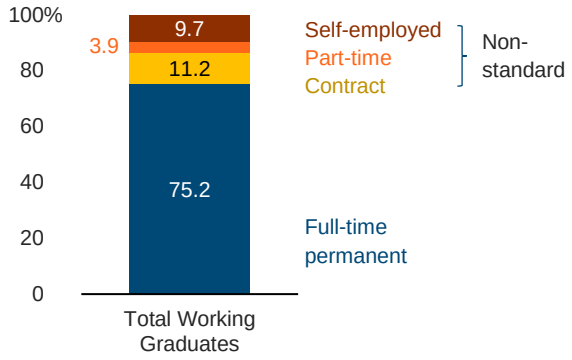
4.3.2. Experienced Graduates

Based on GCTS, relatively smaller share of experienced graduates is self-employed than fresh graduates, involving 9.7% of working graduates from both ~2018 and ~2010 cohorts (Figure 4.3). This reflects self-employment as a temporary option among graduates after study completion, which tapers off as they achieve more years of working experience and finds suitable forms of standard employment in the labour market. The following discussion will place less emphasis on analysing cohort variations, but instead focus more on the nature of self-employment according to the different types—employer, sole proprietor, and freelancer—as described earlier. This is because it is difficult to determine when these individuals began their entrepreneurial journey as an employer or sole proprietor. Furthermore, for freelancers, it is a challenge to determine how much they work in terms of number of hours, projects undertaken, scope of project, etc.

Figure 4.4 shows that the highest share of self-employment comprises of sole proprietors, accounting for 43.6%, followed by freelancers at 33.8% and employers at 22.6%. This implies that one-third of self-employed graduates take up freelance jobs, which can be concerning due to the overqualification, irregular income, and lack of social protection commonly linked to this type of work. We discuss further on their demographics, outcomes, and experiences in each type of self-employment.

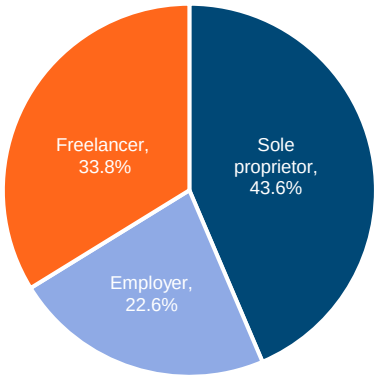
[204] Blackburn, Machin, and Ventura (2023)
[205] Mohd Amirul Rafiq Abu Rahim and Shazrul Ariff Suhaimi (2022)

Figure 4.3: Breakdown of working graduates, by employment type, 2023



Source: KRI (2023)

Figure 4.4: Breakdown of self-employed, by self-employment type, 2023



Source: KRI (2023)

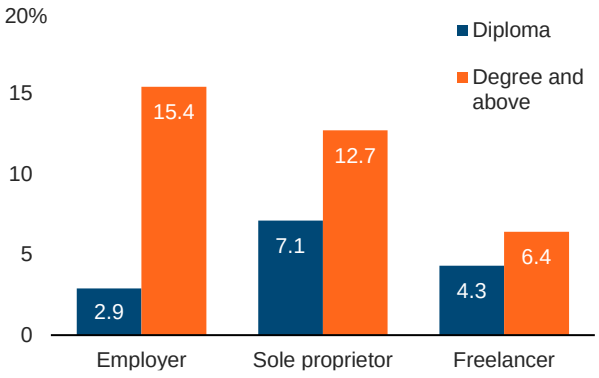
Demographics of self-employed graduates

The level of qualification—whether diploma or degree and above—generally influences the type of self-employment that graduates venture into. Individuals with a degree or above are more likely to be self-employed compared to diploma holders, across all types of self-employment (Figure 4.5). This can be seen with the notably higher shares of self-employed with degree and above qualifications that are employers (15.4%), sole proprietors (12.7%) and freelancers (6.4%). On the other hand, among diploma holders, those in self-employment tend to be sole proprietors (7.1%) and freelancers (4.3%). The reason for this discrepancy may be due to access to capital and funding as individuals with higher academic qualifications would have a better opportunity of securing the necessary funding to start a business as an employer, sole proprietor or a freelancer.

In terms of study stream, TVET graduates are more likely to be entrepreneurs—employers and sole proprietors—than non-TVET graduates. Figure 4.6 illustrates that 14.4% of TVET graduates are sole proprietors whereas 6.5% are employers. This is consistent with research findings highlighting the entrepreneurial mindset among Malaysian TVET graduates, even though they face challenges such as a limited curriculum and ecosystem encouraging entrepreneurship[206]. In comparison, non-TVET graduates are more likely to be freelancers (5.0%) than entrepreneurs. A reasoning for this may be that non-TVET graduates may lack the interest or the exposure on starting a business and thus being a freelancer is the preferred alternative as it has less barrier of entry.

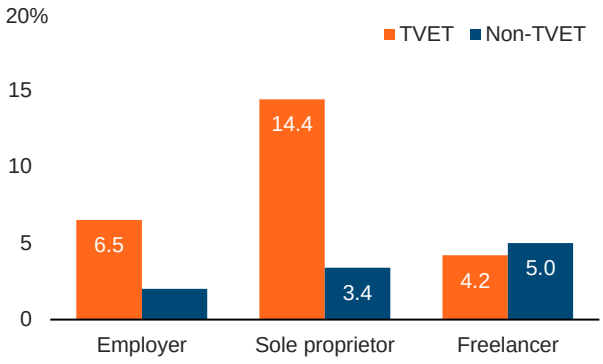
[206] The Asia Foundation (2022)

Figure 4.5: Prevalence of self-employed graduates, by self-employment type and highest qualification, 2023



Source: KRI (2023)

Figure 4.6: Prevalence of self-employed graduates, by self-employment type and study stream, 2023



Source: KRI (2023)

Some notable trends also emerge as we examine the prevalence of self-employment by study field. Table 4.4 demonstrates that sole proprietors and freelancers are most prevalent among graduates from the *Health & Welfare* field, at 7.6% and 5.8% respectively. This mainly involves younger graduates, of whom possibly ventured into self-employment due to the lack of opportunities in the healthcare industry as evident with ongoing issues surrounding contract doctors[207]. Meanwhile, the lowest share of sole proprietors is from the *Social Sciences, Business & Law* field at 3.0%; and only 1.6% of freelancers from *Education*.

The *Arts & Humanities* field has the highest share of employers among self-employed graduates, at 5.2%, compared to other fields of study. In parallel, this field has relatively high shares of sole proprietors and freelancers. These may be attributable to their low initial capital to start a business, for example, in copywriting or language tutoring services[208]. Digital freelancing opportunities are also increasingly available for *Arts & Humanities* graduates through programmes such as the MDEC's GLOW. In contrast, *Education* and *Health & Welfare* graduates are least likely to produce employers, potentially due to strict regulations and high startup costs within these sectors in Malaysia.

Table 4.4: Prevalence of self-employed, by self-employment type and study field, 2023

Study Field	Employer	Sole proprietor	Freelancer	Total
Science, Mathematics & Computing	2.0	3.2	1.8	7.1
Engineering, Manufacturing & Construction	2.6	4.4	2.5	9.5
Health & Welfare	0.9	7.6	5.8	14.3
Agriculture & Veterinary	3.3	3.2	2.3	8.7
Social sciences, Business & Law	1.4	3.0	4.3	8.7
Education	0.9	3.2	1.6	5.8
Arts & Humanities	5.2	6.9	4.1	16.2
Services & Others	3.4	5.4	5.3	14.1

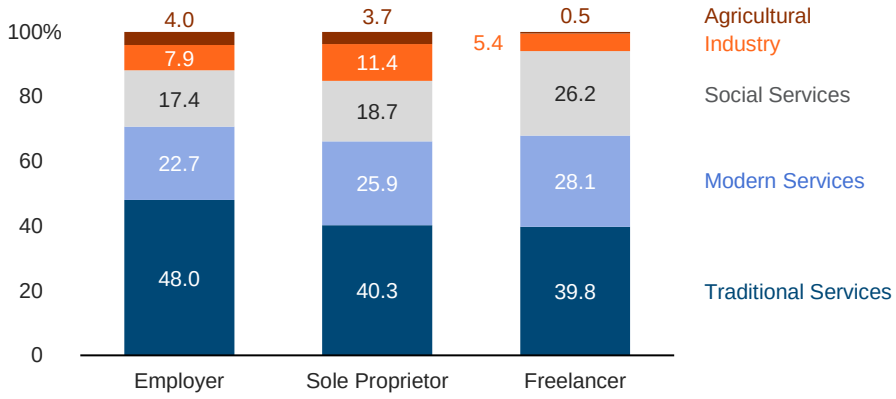
Source: KRI (2023)

[207] MP Durgahyeni (2019)
[208] Kraft et al. (2022)

Irrespective of their self-employment type, the services sector—particularly traditional services—is the most popular among self-employed graduates in Malaysia (Figure 4.7). More than one-third of graduates across different types of self-employment venture into traditional services, which could be a limiting factor for potential growth as traditional services is less susceptible to change, more labour-intensive, and has lower productivity rate compared to modern and social services[209]. On the other hand, both modern[210] and social services have relatively higher shares of freelancers. Social services may be higher amongst freelancers as it would include activities such as sports therapy or physiotherapy which would be an accessible option for some. Nonetheless, social services could also be seen as a potential area for growth in the near future as Malaysia enters an ageing society by 2035[211], and thus requires a growing health and social care industry.

For the other two economic sectors—industry as well as agriculture, forestry, and fisheries—self-employed graduates tend to be employers and sole proprietors (Figure 4.7). This may be associated with limited full time, permanent career opportunities in these sectors, alongside government initiatives to develop 'agropreneurs' in the agriculture, forestry, and fisheries sector through the provision of funding and specialised training[212].

Figure 4.7: Breakdown of self-employed, by self-employment type and economic activities, 2023

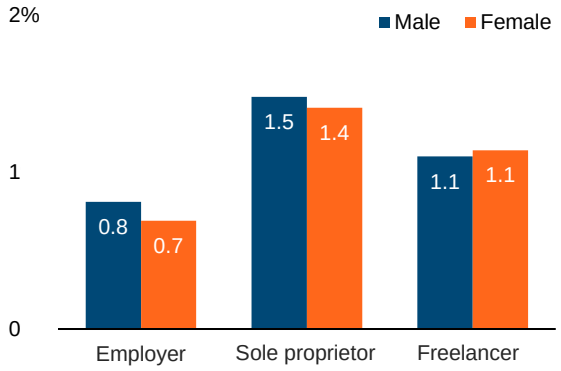


Source: KRI (2023)

Looking at gender differences, the prevalence of self-employment is largely similar across all categories (Figure 4.8:). However, there are some distinctions when examining the type of self-employment by gender and this contrast is primarily due to benefits that each type of self-employment bring. Figure 4.9: shows that 51.9% of employers are males as compared to 48.1% that are females. This is somewhat in line with past literature stating higher likelihood of entrepreneurship among males[213]. On the contrary, higher share of females that are freelancers, at 58.1%, than males. This is mainly due to greater flexibility from freelancing, given that female participation in self-employment is significantly influenced by family structure and marital status, serving as a means to supplement the overall household income[214].

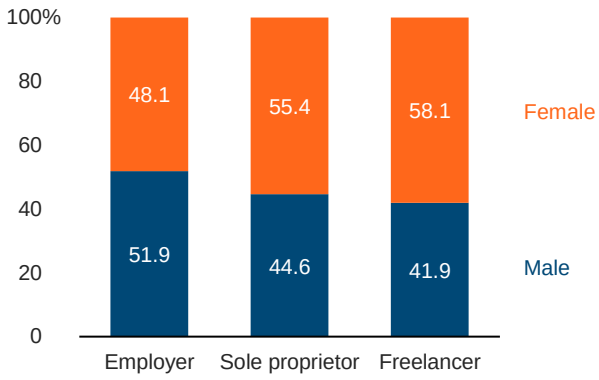
[209] KRI (2020)
[210] Modern services is a sub-industry within the services sector that has high-growth potential such as the halal industry, aerospace, tourism, and advanced E&E. Source: GOM (2021)
[211] Nazihah Muhamad Noor (2015)
[212] KPKM (n.d.)
[213] Christnacht, Smith, and Chenevert (2018), Peters, Maag, and Braga (2019)
[214] Peters, Maag, and Braga (2019)

Figure 4.8: Prevalence of self-employed, by self-employment type and gender, 2023



Source: KRI (2023)

Figure 4.9: Breakdown of self-employed, by self-employment type and gender, 2023



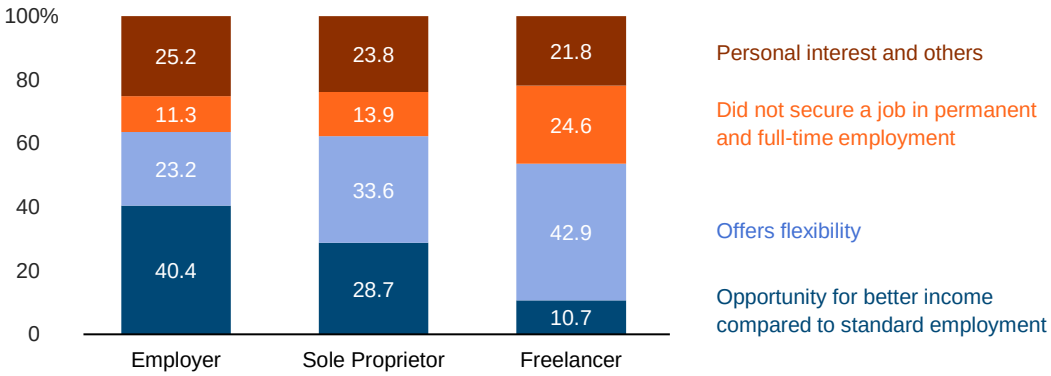
Source: KRI (2023)

Self-employment motivation and outcomes

Graduates who go into self-employment have varying reasons for choosing this unique path. Some with entrepreneurial minds do so out of a yearn to start their own business ventures, whilst others may be forced into self-employment because they could not find standard employment opportunities in the job market. Our analysis finds that 40.4% of employers seek better income opportunities, whereas 25.2% ventured into self-employment due to their personal interests and 23.2% wanting flexibility (Figure 4.10).

The pattern is similar for sole proprietors, although a greater share prefers flexibility (33.6%) over better income opportunity (28.7%) from self-employment. On the other hand, 42.9% of freelancers cited flexibility such as flexible working hours and remote working arrangement as the main reason for self-employment whereas 24.6% are not able to secure a full-time job. A 2023 survey on 182 professionals[215] highlighted that flexibility was one of the main motivators for these individuals as they were empowered by the control that they had on their own schedule and what projects to take on.

Figure 4.10: Breakdown of self-employed, by self-employment type and main reason for being self-employed, 2023

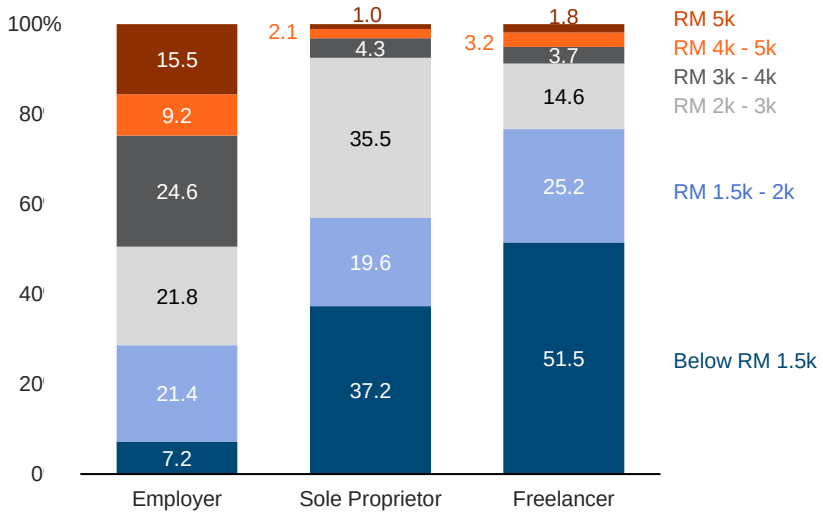


Note: Other reasons cited include job loss due to pandemic, transition period before furthering their studies, and continuing the family business.
Source: KRI (2023)

[215] Sarawagi (2023)

There is a diverse range of earnings between entrepreneurs and freelancers. Less than half of employers earn below RM3,000, as compared to over 90.0% of sole proprietors and freelancers (Figure 4.11). Furthermore, 15.5% of employers are able to garner incomes above RM5,000, against only 1.0% of sole proprietors and 1.8% of freelancers. This is unsurprising given employers' capabilities to hire workers for their businesses. Nonetheless, the notable shares of self-employed graduates earning below the national minimum wage of RM1,500—with 51.5% of freelancers, 37.2% of sole proprietors, and 7.2% of employers—reflects highly concerning patterns requiring intervention to improve earning outcomes.

Figure 4.11: Breakdown of self-employed, by self-employment type and monthly income, 2023

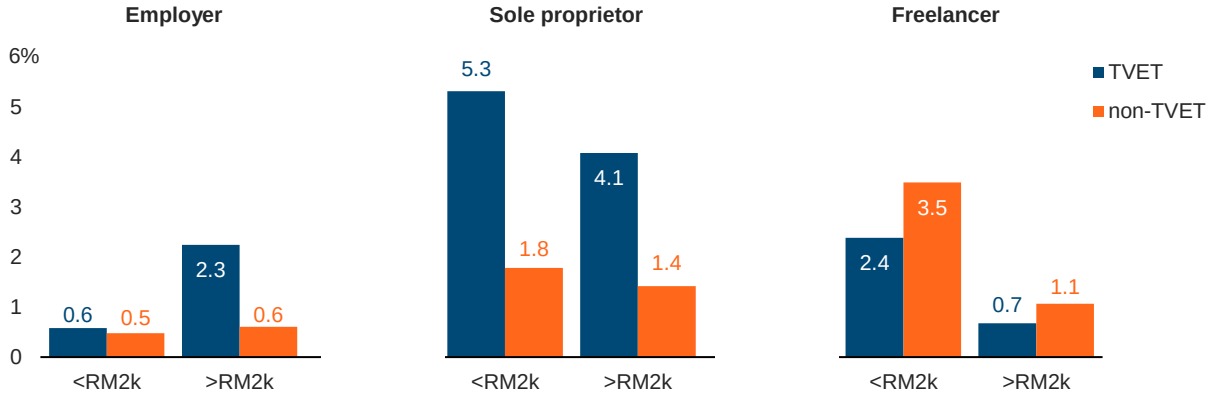


Source: KRI (2023)

Albeit involving a small sample, our analysis shows that TVET has a more positive returns on self-employment earnings. Figure 4.12 highlights higher prevalence of TVET graduates earning above RM2,000, especially among employers and sole proprietors, compared to their non-TVET peers with slightly better earnings as freelancers. This finding supports a previous KRI study[216] that shows TVET graduates—who are predominantly diploma holders—leveraging their skills-based education to pursue entrepreneurial endeavours. Similar to our analysis, the study found greater shares of entrepreneurs and high-income earners among TVET graduates compared to non-TVET graduates. Therefore, it underscores the potential of TVET in driving entrepreneurship to nurture job creators and generate new employment opportunities across all economic sectors.

[216] Hawati Abdul Hamid and Tan Mei Yi (2023)

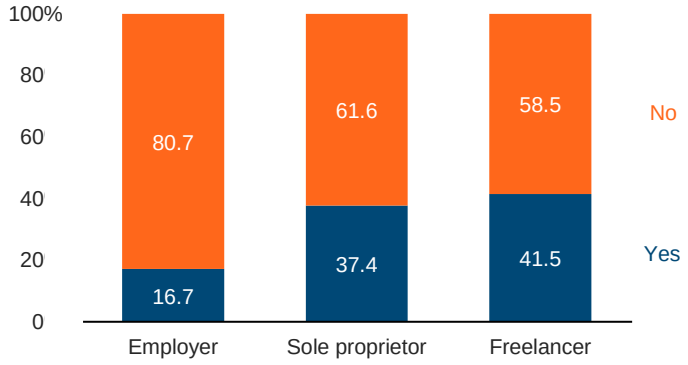
Figure 4.12: Prevalence of self-employed, by self-employment type, monthly income and study stream, 2023



Source: KRI (2023)

Next, we measure self-employed graduates' intention to change jobs as a proxy for job satisfaction level. As expected, most employers are satisfied with their careers considering only 16.7% want to switch to another job (Figure 4.13). For sole proprietors and freelancers, the proportion who intends to change jobs is more than doubled, at 37.4% and 41.5% respectively. It is understandable that freelancers have the highest dissatisfaction level, given that a quarter of them has been forced into self-employment due to inability to secure standard employment as discussed earlier. Therefore, these graduates need additional support to attain the necessary tools in achieving career progression and greater job satisfaction, should they want to continue on this path.

Figure 4.13: Intention to change jobs, by self-employment type, 2023

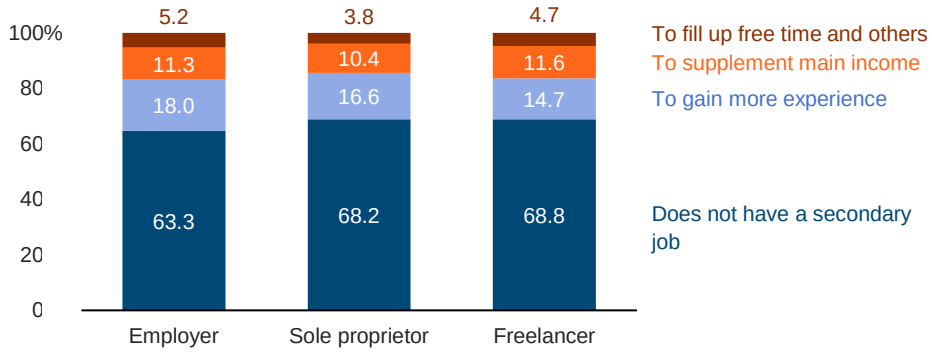


Source: KRI (2023)

There is also a subset of self-employed graduates who are working in secondary jobs, whether it is to fill up their free time, supplement income or gain more experience. While around two-thirds of self-employed graduates do not have a secondary job, Figure 4.14 demonstrates similar reasons for multiple job-holding across all types of self-employment. In general, the top reason is to gain more experience, followed by income supplement and for leisure. Not surprisingly, slightly higher share of freelancers works in multiple jobs to gain additional income, as cited by 11.6% compared to 11.3% of employers, 10.4% of sole proprietors, and only 1.3% of graduates in standard employment[217].

[217] KRI (2023)

Figure 4.14: Reasons for doing a secondary job, by self-employment type, 2023



Source: KRI (2023)

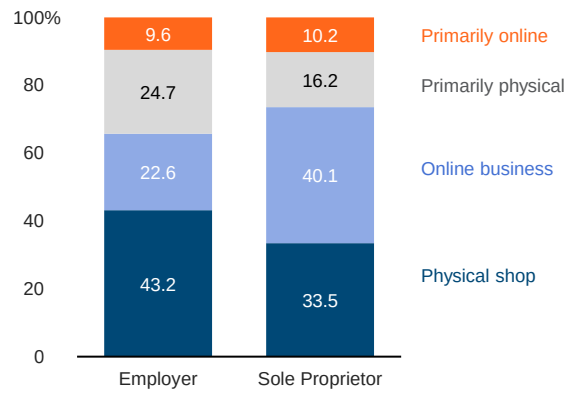
Experiences across self-employed groups

A. Entrepreneurs

The mode of business is an important indicator to identify how entrepreneurs are operating their businesses on a day-to-day basis. According to Figure 4.15, there is a contrast observed in the mode of business utilised by employers versus sole proprietors. Employers tend to operate their businesses from purely brick-and-mortar (43.2%) and some with primarily physical shops alongside active e-commerce activities (24.7%). On the other hand, sole proprietors are more reliant on digital platforms for their businesses, as 40.1% adopts fully online business and 10.2% primarily online with occasional physical booth.

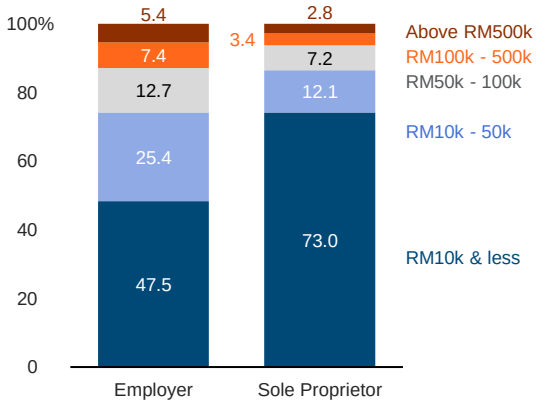
These differences may be explained by the variance in initial capital amount among each group of entrepreneurs (Figure 4.16). For instance, 73.0% of sole proprietors have RM10,000 or less for their initial capital as compared to 52.5% of employers with over RM10,000 initial capital. In fact, the share of employers with more than RM100,000 initial capital is twice higher than that of sole proprietors, indicating greater financial capabilities to hire workers and expand their businesses. Hence, employers are also more inclined to have physical stores despite higher costs, whereas online platforms are typically more accessible for sole proprietors who have much smaller capital.

Figure 4.15: Mode of business, by entrepreneur type, 2023



Source: KRI (2023)

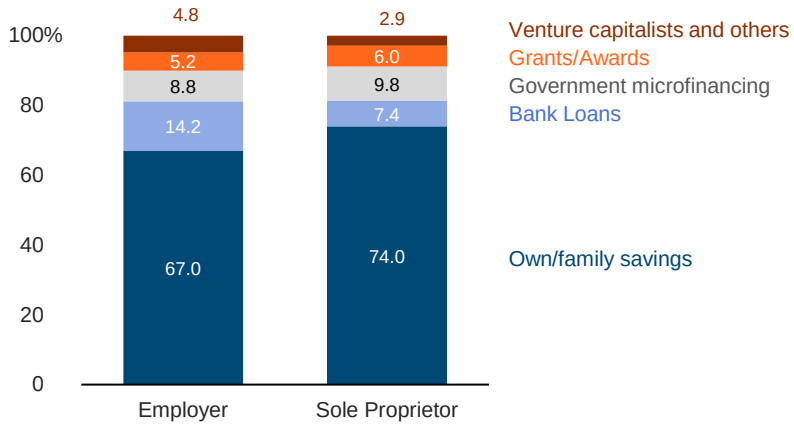
Figure 4.16: Initial capital amount, by entrepreneur type, 2023



Source: KRI (2023)

Looking at entrepreneurs' sources of financing, the major source for both employers and sole proprietors consists of their own or family savings, with 67.0% and 74.0% relying on savings respectively (Figure 4.17). They also have similar proportion of financing through government microfinancing facilities and grants or awards. However, employers are twice as likely as sole proprietors to source their finance through bank loans, which may be due to better access to collateral enabling them to successfully acquire these loans. Moreover, employers are more likely to depend on venture capitalists for financing, with 4.8% utilising this source compared to 2.9% of sole proprietors.

Figure 4.17: Source of financing, by entrepreneur type, 2023



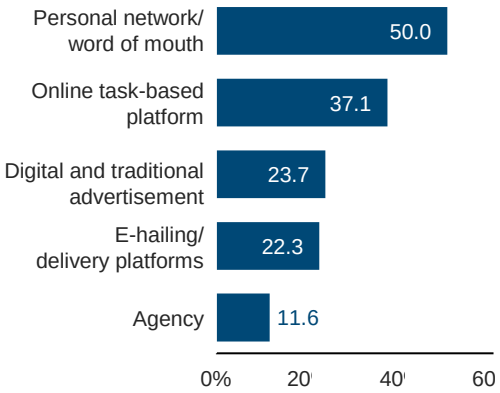
Source: KRI (2023)

B. Freelancers

There are varying avenues for freelancers to market their professional services and find work. Due to the nature of their work, most freelancers are dependent on their personal contacts to consistently seek clients and market themselves through word-of-mouth (Figure 4.18). Additionally, over one-third of freelancers utilise online, task-based platforms whereas about one-fifth use digital and traditional advertisement to find new clients. This may be increasingly common with globalisation and digitalisation connecting freelancers with international demand for skills. Similarly, e-hailing and delivery platforms have gained popularity particularly among gig workers, with 22.3% finding work through these platforms compared to 11.6% through an agency. We explore the characteristics and outcomes of gig workers in Box 4.3.

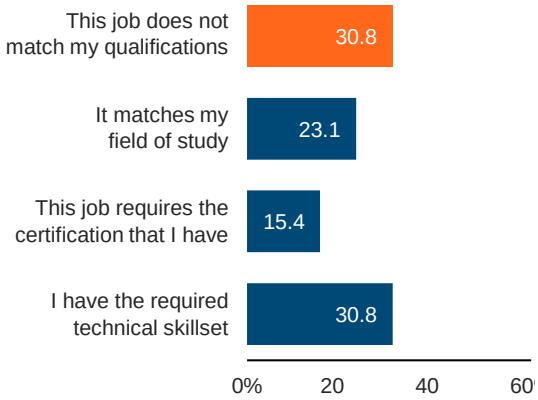
Despite more than half of freelancers who wish to stay in their current work (Figure 4.13), we find that 30.8% of freelancers perceive vertical skills mismatch whereas 76.9% perceive horizontal skills mismatch (Figure 4.19). Moreover, 84.6% are working in jobs that do not require their relevant certification. These are very concerning observations, especially compared to the skills mismatch rate among graduates in standard employment (see Chapter 3). Interestingly, a large proportion of freelancers also does not possess the required technical skillset in their freelancing jobs. It may reflect low barriers to entry in the industries that they venture into and high degree of adaptability among freelancers to complete their work, regardless of whether they have the technical expertise.

Figure 4.18: Method of finding clients, 2023



Source: KRI (2023)

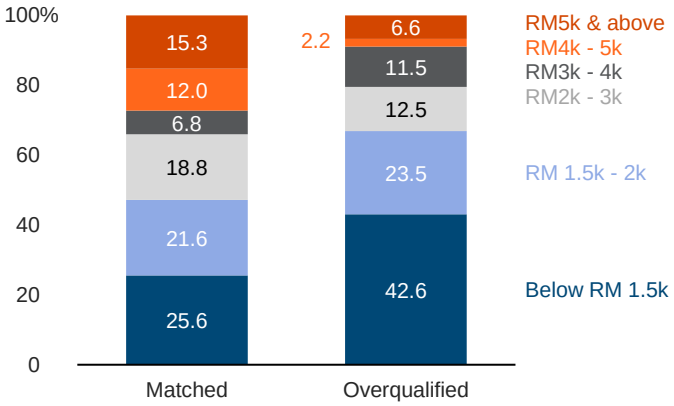
Figure 4.19: Perception towards job match, 2023



Source: KRI (2023)

Closely related to this, Figure 4.20 illustrates the impact of skills mismatch on income, with two-thirds of overqualified freelancers earning below RM2,000 per month. More worryingly, 42.6% are earning below the minimum wage of RM1,500. On the contrary, 47.2% of freelancers in matched employment earn below RM2,000, with 15.3% earning above RM5,000. This signals the enormous influence of qualification-job match on freelancers' income levels, enabling those with matched employment to earn incomes closer to that of entrepreneurs and graduates in standard employment. Although freelancers may have the required technical skillset, a contributing factor for higher incomes is obtaining the relevant certification for their work. Our analysis suggests that those with relevant certification are significantly less likely to earn below RM2,000, at 37.6% against 58.8% of freelancers with the required technical skillset.

Figure 4.20: Monthly income of freelancers, by education-job match, 2023



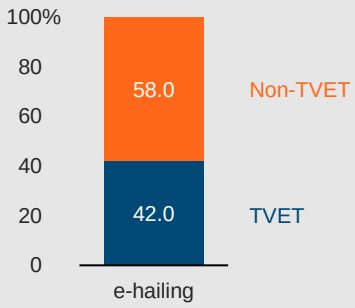
Note: "Matched" encompasses those who have either the required technical skillset, certification, or jobs that match their study field. "Overqualified" refers to those whose job does not match their qualifications.
Source: KRI (2023)

Box 4.3: Profile and outcomes of gig workers

With the landscape of over 150 digital platforms and approximately a million active gig workers in 2021[218], it is crucial to examine the involvement of graduates in this path given the precarious nature of their work. We aim to highlight a particular subset within gig work—e-hailing/p-hailing workers—to better understand their demographics, motivation, and outcomes. *E-hailing* relates to passenger transport services whereas *p-hailing* refers to parcel and food delivery services, both through an electronic application or platform.

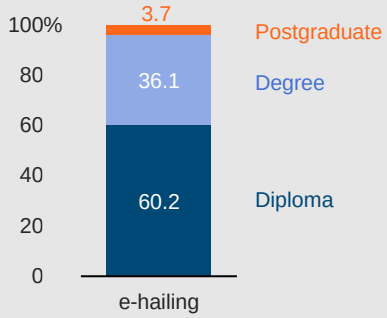
Based on the GTCS data, 58.0% of e-hailing/p-hailing gig workers are from non-TVET background and 60.2% are diploma holders (Figure 4.21 and Figure 4.22). At the same time, a large share comprises of degree holders (36.1%) and TVET skilled talents (42.0%). Thus, these reflect a highly competitive job market, resulting in graduates venturing into gig work irrespective of their study stream or qualification level.

Figure 4.21: Breakdown of e-hailing/p-hailing gig workers, by TVET status, 2023



Source: KRI (2023)

Figure 4.22: Breakdown of e-hailing/p-hailing gig workers, by highest qualification, 2023



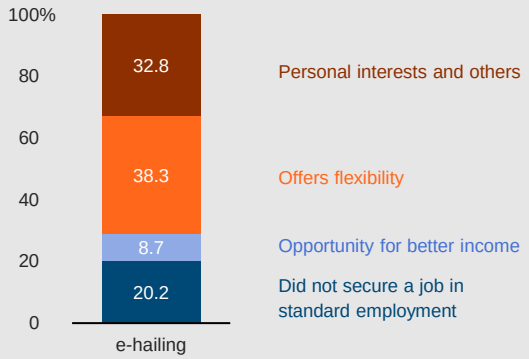
Source: KRI (2023)

Among these gig workers, 38.3% cited flexibility and 32.8% personal interests as their main reason for engaging in e-hailing or p-hailing (Figure 4.23). It could mean changing preferences for work over time, as more graduates want to determine their own work hours and scheduling. Nonetheless, one-fifth works in this type of gig work due to the inability to secure standard employment.

While e-hailing/p-hailing might be lucrative for some—with 25.4% earning above RM3,000 monthly—more than one-third are still earning below the minimum wage of RM1,500 (Figure 4.24). More worryingly, most of them do not have adequate social protection, hence increasing their vulnerability in the event of economic shocks. Therefore, the government ought to pay extra attention on this group of graduates, as issues of income sustainability and social security may arise in the long run.

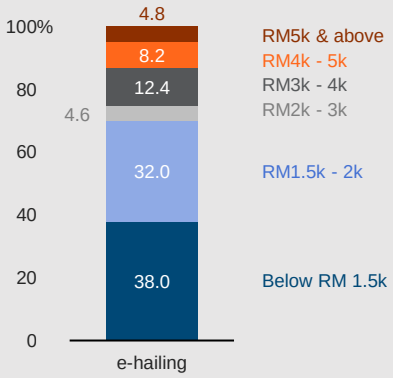
[218] MDEC (2022)

Figure 4.23: Main motivation of e-hailing/p-hailing gig workers, 2023



Note: Other reasons cited include job loss due to pandemic.
Source: KRI (2023)

Figure 4.24: Monthly income of e-hailing/p-hailing gig workers, 2023



Source: KRI (2023)

Challenges faced by self-employed graduates

The experiences of entrepreneurs and freelancers differ greatly, as do their challenges. Thus, the GCTS examines the general obstacles faced by self-employed graduates as well as specific difficulties that entrepreneurs versus freelancers encounter. This will provide contextual information pertaining the challenges faced across self-employed groups, and thus, helps identify distinct areas of intervention needed to improve employment outcomes for these groups.

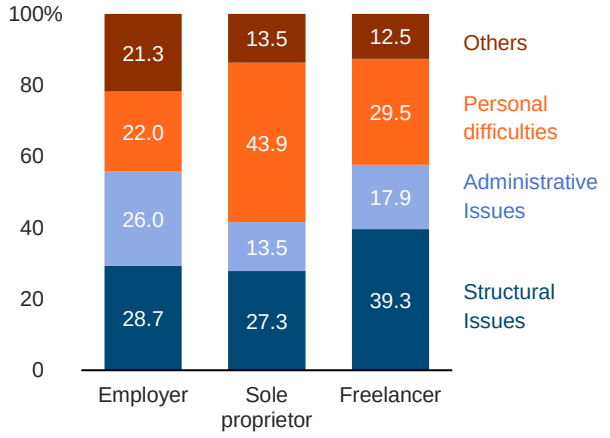
Our analysis finds that self-employed graduates face three main challenges involving structural[219], administrative[220], and personal difficulties[221] (Figure 4.25). For employers, the challenges are distributed relatively evenly across categories, with 28.7% citing structural issues, 26.0% administrative issues, and 22.0% personal difficulties (Figure 4.25). As an example, employers could have limited knowledge to scale their businesses and grow sustainably, or face issues with hiring and managing workers, or personally hindered in terms of social capital and network as they navigate through the world of business. In this case, structured mentorship and coaching programmes can play a significant role in the development of employers as they can gain guidance on how to successfully start, maintain, and grow a business from industry experts. Additionally, 21.3% of employers experience "Other" challenges, which could include bureaucracy issues or sales reduction due to lower purchasing power among customers.

In contrast, sole proprietors mainly face personal difficulties (43.9%) such as the lack of communication and soft skills, followed by structural issues (27.3%) related to scalability or supply-related issues in their businesses. As sole proprietors are entirely self-reliant, it is understandable that many cited personal difficulties as the main challenge. Hence, addressing this challenge would require upskilling and training programmes to hone their interpersonal and problem-solving skills.

[219] Structural issues are defined as issues that prevent the growth of the company, such as scalability or supply-related issues.
[220] Administrative issues are defined as issues surrounding human resource, including difficulties in preparing invoice or concerns with staff behaviour.
[221] Personal difficulties are defined as challenges that stem from the individuals themselves, such as low confidence levels or lack of personal networks.

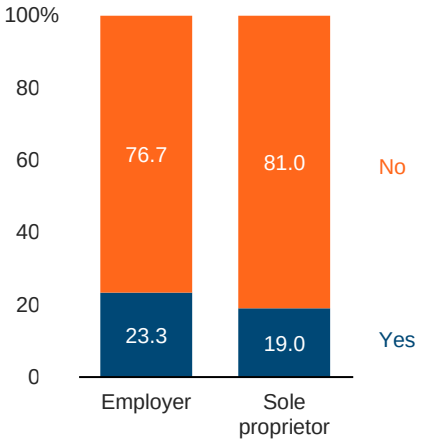
On the other hand, 39.3% of freelancers experience structural issues, followed by 29.5% with personal difficulties. For freelancers, structural issues can be somewhat different as compared to entrepreneurs, more towards attainment of income stability and access to decent work conditions. Moreover, nearly one-third of freelancers face challenges in terms of personal marketability as they have to compete within an increasingly saturated environment where many others have similar qualifications and skills.

Figure 4.25: Main challenges faced, by self-employment type, 2023



Note: Other reasons cited include bureaucracy when dealing with clients, reduced purchasing power of customers, etc.
Source: KRI (2023)

Figure 4.26: Application for government assistance, by entrepreneur type, 2023



Source: KRI (2023)

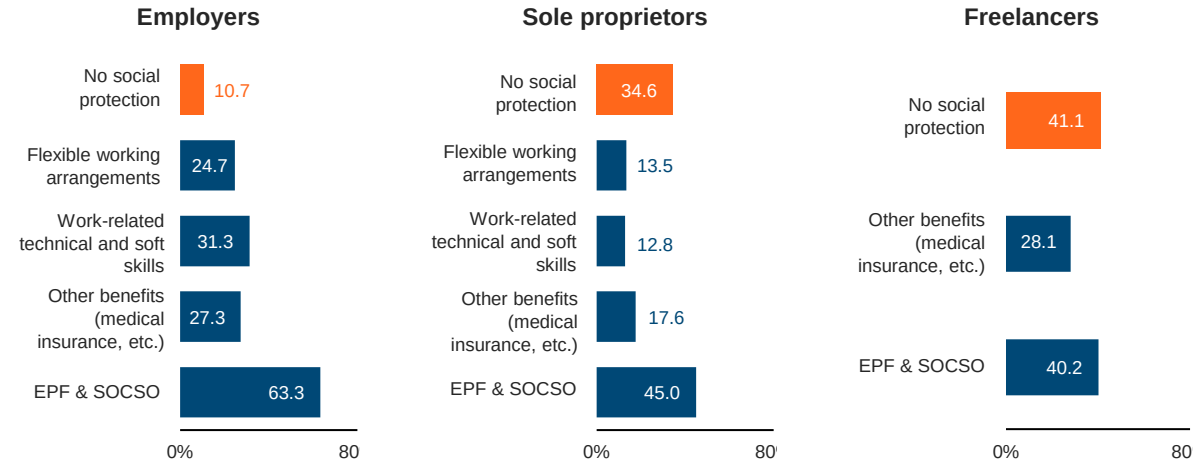
Access to finance can be a limiting factor for up-and-coming entrepreneurs as banks may be hesitant to take risks and provide loans to those with no track record. As an alternative, entrepreneurs can seek the necessary funding through government programmes, such as SMECorp's SFSME programme or TEKUN's Niaga initiative. Alas, Figure 4.26 indicates that less than a quarter of entrepreneurs have applied for some form of government assistance. This percentage is slightly higher among employers at 23.3% as compared to sole proprietors at 19.0%. It could be attributed to a lack of awareness among young entrepreneurs despite numerous initiatives—including financial aid and training—offered by the government via traditional and digital platforms[222].

Based on GCTS findings, Figure 4.27 demonstrates a serious lack of social protection[223] among self-employed graduates, especially among sole proprietors and freelancers. Nearly two-thirds of employers are covered by EPF and SOCSO, apart from additional forms of social protection such as work-related training (31.3%), medical insurance (27.3%), and flexible working arrangements (24.7%). As such, employers have the lowest prevalence of those without social protection at 10.7%.

[222] MEDC (2019)
[223] Social protection is defined by ILO as a set of government policies or programmes designed to protect the public in the event of economic and social distress that stem from sudden income loss or reduction. These distresses may be attributed to factors such as illness, maternity, unemployment, old age or death. Source: ILO (2016)
In Malaysia, social protection is enforced in standard employment as the employer has a legal obligation to contribute towards the employee's EPF and SOCSO.

This is contrary to sole proprietors, with more than one-third not having any form of social protection. The most basic form of social protection, EPF and SOCSO, only covers 45.0% of sole proprietors while 17.6% has other benefits such as medical and insurance. Although freelancers have comparable shares of EPF and SOCSO coverage to sole proprietors, a significant share (41.1%) is excluded from all types of social protection. Therefore, they are the most vulnerable group among self-employed graduates, especially e-hailing/p-hailing riders considering 29.8% of them have no social protection at all.

Figure 4.27: Prevalence of social protection coverage, by self-employment type, 2023



Source: KRI (2023)

Currently, there are several measures deployed by the government to promote self-contribution among the self-employed. These include programmes such as the *PenjanaGig* and Self-Employed Social Security Scheme (SKSPS) under SOCSO[224]. During the COVID-19 pandemic, the government introduced *PenjanaGig* to increase self-contribution amongst e-hailing/p-hailing workers by matching 70% of their contribution and the remaining undertaken by the gig platform. Additionally, SKSPS promotes greater social protection with the government matching 80% of contribution by the self-employed, albeit on a voluntary basis and covers only 20 sectors. Further expansion of such initiatives is needed urgently to provide wider coverage and adequate social protection to self-employed Malaysians.

[224] SOCSO (n.d.)

4.4 Key Findings and Discussion

This chapter examines the circumstances and challenges faced by graduates who have ventured into self-employment as entrepreneurs and freelancers. The government has established a number of policy frameworks and initiatives in order to nurture successful entrepreneurs and promote self-employment as an alternative path. Nonetheless, self-employed graduates have different motivations for pursuing this path; and they face varying challenges, ranging from entrepreneurs' difficulties to scale their business to personal marketability issues faced by freelancers. The key findings from this chapter are as follows:

4.4.1. Increasing self-employment among fresh graduates, but tapered as they progress

There has been an overall reduction of self-employment among experienced graduates compared to among fresh graduates. The reason for this change is primarily driven by the individuals' motivation of becoming self-employed as a large share of fresh graduates have stated that self-employment is a temporary measure for them to earn a living after graduating. They have cited that self-employment does not offer the same job security and income stability that standard employment has in addressing the challenges that arise from rising costs of living.

Among experienced graduates that have chosen self-employment as an alternative career pathway, the findings show that over two-thirds have become entrepreneurs in their own right, whether it is in the form of an employer or a sole proprietor. In terms of study stream, self-employed TVET graduates are typically engaged in entrepreneurial activities as either employers or sole proprietors, as they have the unique skillsets to thrive in sectors such as industrial and modern services.

In terms of motivation, these individuals have cited an increased opportunity for better income as entrepreneurs as compared to standard employment. On the other hand, a third of self-employed have chosen freelancing due to the increased flexibility that it has in terms of flexible working hours, projects as well as remote working.

4.4.2. Self-employed graduates face a diverse set of challenges that require tailored support

We discussed several general issues as well as specific obstacles faced by self-employed graduates. Although the government has introduced various initiatives to provide support to those in self-employment, the data shows differing needs and gaps existing within the ecosystem.

For entrepreneurs, the types of support needed varies based on the firm size and business nature. As employers tend to be larger in size, with physical stores and own workers, they require high-level financing and support with administrative processes. In comparison, sole proprietors rely heavily on their social capital, tapping into limited personal networks to expand their businesses. Hence, they are in need of firm financing support, apart from other resources such as mentorship and marketing.

Our study demonstrates that freelancers typically face problems with personal marketability and credibility, as such impacting their income. Thus, they require support in positioning themselves better locally as well as globally. They also find it difficult to command higher prices as they lack the necessary certification to prove their technical skills and capabilities. Currently, Human Resource Development Corporation (HRD Corp) offers 10,000 courses over 24 skill areas[225] for skills enhancement, but micro-accreditation remains a barrier for some freelancers due to financial and time constraints.

Furthermore, social protection among self-employed graduates remains a concern as self-contribution towards the main schemes under EPF and SOCSO has been sparse. We found that over one-third of sole proprietors and freelancers have no basic social protection at all, primarily due to low- and irregular-income levels. On the contrary, nearly two-thirds of employers are covered under EPF and SOCSO, with some having other important forms of social protection such as work-related training, medical insurance, and flexible working arrangements. The large discrepancy highlights the urgent need to review and strengthen the social protection system for all workers.

4.4.3. Low uptake of government assistance programmes

More than three-quarters of entrepreneurs have never applied for any government assistance despite the abundance of programmes available. Although the government and their agencies have continued to promote these programmes via traditional and increasingly digital platforms, the respondents largely have not applied. A reason for this may be due to issues surrounding accessibility as the current, fragmented system requires streamlining with the existence of similar initiatives governed under competing agencies.

Therefore, there needs to be a targeted approach to encourage application and uptake of these programmes among self-employed graduates. It is important to note that these programmes are not limited to financing support, but also encompass public investments in human capital development, innovation, and technology adoption as well as enhanced infrastructure and access to the market. With greater participation of government assistance programmes, smaller firms can expand and establish better linkages with the global value chain thus providing its participants higher returns in terms of income.

[225] HRD Corp (2022b)

4.5 Chapter Conclusion

Our findings indicate that of all types of self-employed, employers generally have better outcomes compared to sole proprietors and freelancers. As the government aspires to produce a generation of job-creators, ensuring a conducive environment for local MSMEs to thrive is critical. Any support and assistance should help transform sole proprietorships into larger businesses (employers) that can employ workers and are sustainable. Meanwhile, freelance is becoming increasingly popular among self-employed graduates, thus there needs to be more comprehensive and inclusive active and passive labour market policies to ensure long-term career growth and social security for this group.

To summarise, alternative career paths such as entrepreneurship and freelancing are increasingly preferred and viable among Malaysian graduates. However, challenges with regards to the overall financial sustainability of self-employment still remain. The goal of strengthening the private sector through a new generation of self-employed can be further achieved when there are greater financial and non-financial supports to do so.

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CHAPTER 5

ENHANCING GRADUATE EMPLOYABILITY

Labour market policies (LMPs) are important policy tools that support the working age population to find decent work and transition to the formal economy.

Miguel Niño-Zarazúa and Nina Torm (2022)[226]
UNESCAP

5.1 Introduction

While attaining a tertiary qualification can mark the beginning of a new chapter, the transition from higher education to the labour market can be a rocky endeavour for some. Limited high-skilled occupations have led to graduates working in jobs that do not align with their skills and career aspirations, as well as accepting low pay to obtain or retain employment. Additionally, continued economic progress and increased digitisation have changed the skills demand and expectations for the skilled workforce[227], resulting in underemployment or skills mismatch among graduates.

In response and to adapt to the changing labour market landscape, the job search process among graduates have evolved over the years. Despite this, challenges in attaining a meaningful employment still persist among graduates pointing to structural issues that may not be solved by rectifying the talent pool alone. This has also led to an increasing recognition of policy in supporting graduate employability rather than solely leaving it to market forces.

To support Malaysian graduate outcomes, the government has established numerous policies and initiatives to smoothen the school-to-work transition among Malaysian talents. As we explore the role of labour market policies in promoting graduate employability in this chapter, two datasets are utilised—MOHE's GTS and KRI's GCTS—to examine and compare these trends between fresh and experienced graduates.

Based on earlier analyses on the quality of employment and career progression among graduates, this chapter will discuss various policy initiatives by the government that address some of the challenges faced by skilled talents in Section 5.2. Moreover, we explore graduates' job search preferences and experiences in Section 5.3. Next, Section 5.4 evaluates the types of job training that graduates engage in—whether before or after completing their studies—and its impact on their overall labour market outcomes. Finally, Section 5.5 dives into the role of lifelong learning and skills enhancement on graduates' employment outcomes before presenting the key findings and discussions in Section 5.6.

[226] MOHE (2012)
[227] WEF (2023b)

5.2 Labour Market Policies to Boost Graduate Employability

In general, labour market policies are a set of instruments used by the government to assist individuals who face difficulties within the labour market. Labour market policies can be divided into two forms, namely passive labour market policies (PLMPs) and active labour market policies (ALMPs). While PLMPs offer income support such as unemployment insurance or benefits, ALMPs are geared towards addressing market failures by inducing changes in the labour demand or supply as well as through the job matching process[228]. ALMPs can be categorised into five types of instruments, each to address a specific labour market failure (Table 5.1). This section focuses on active policies commonly utilised within Malaysia's policies and plans, encompassing employment services & support, skills and labour market training, as well as public works or employment.

Table 5.1: Summary of active labour market policy (ALMP) types

Types of ALMP	Definition	Target area
Employment services and support	Delivers job search assistance, counselling, job matching services, as well as intermediation support	Matching process
Skill and labour market training	Training for targeted groups to acquire new or improve their technical or soft skills.	Labour supply
Public works / employment	Employment opportunities in public work projects to compensate for the shortcomings of the private sector's job creation. They could also be public-private collaborations.	Labour demand
Employment subsidies	Financial incentives are paid to firms to either preserve existing jobs or increase the hiring of targeted groups by reducing their wage bill	Labour demand
Entrepreneurship / start-up promotion	Provide support to start an economic activity, either via self-employment or new business opportunities. Often combined with business training or micro-credit.	Labour supply

Source: Rosas (2015), OECD (2021)

5.2.1. Existing policies

Elements of ALMPs have been a prominent factor in Malaysia's approach to promote graduate employability, though they are not explicitly designated as such. Themes surrounding skills and labour market training have been long present in various policy documents—as far back as the first Malaysia Plan (RMK 1). Table 5.2 summarises the ALMPs strategies relevant in boosting graduate employability in recent years.

Most of the initiatives brought forward by the various policies centred around graduate skill development, particularly through the encouragement for industrial training. Aside from that, there is a notable emphasis on enhancing the relationship between higher education and the industry which points to the importance of multi-sectoral collaborations in improving graduate employability.

[228] OECD (2021)

Table 5.2: Summary of recent documents targeting graduate employability

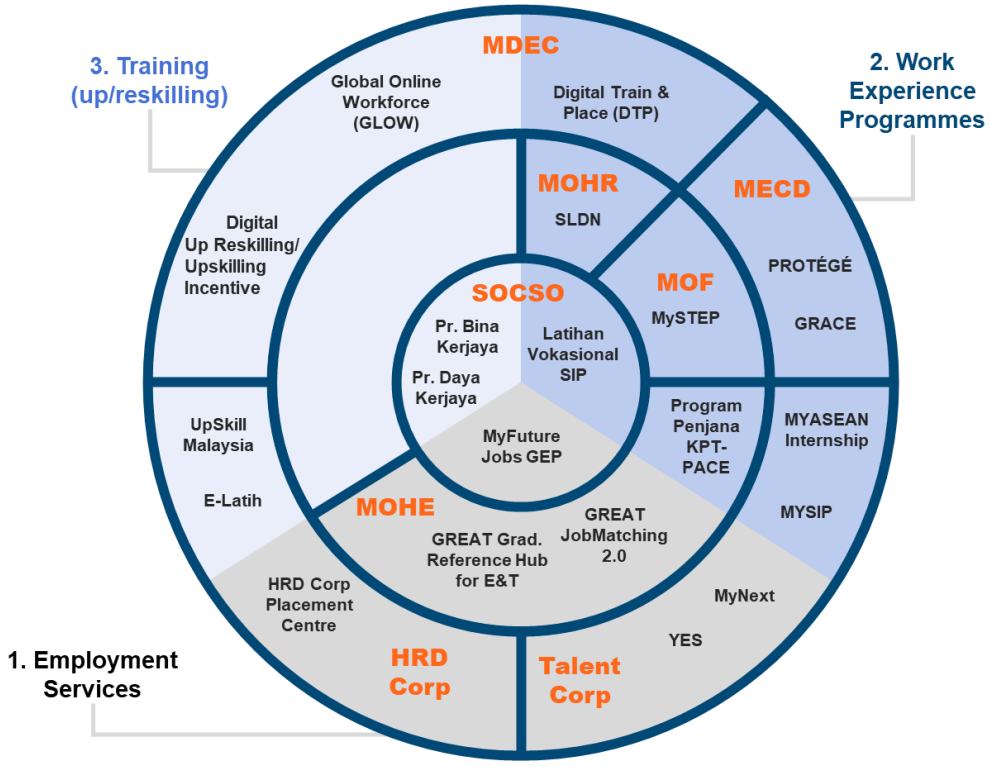
Policy/Plan	Objective	Initiatives
12th Malaysia Plan 2021-2025	Industry Training	TVET institutions are encouraged to work closely with industry in extending industrial training/industry attachment period.
	Employability	A digital platform will be developed through collaboration between IPTs & industry.
Malaysian Education Blueprint 2013-2025	Work experience	Enhancing practicum in vocational programmes through greater private sector collaboration, which aims to provide students with relevant work experience.
	Employability	Focused on developing students who are proficient in both their native language & and English to maximise their employability in the global workforce.
	Employability	Making vocational training more industry-relevant to meet workforce needs and increase vocational graduates' employability
Pelan Strategik Kebolehpasaran Graduan (PSKG) 2021-2025	Internship	Many study programmes have been improved to ensure that final-year students receive industrial training, to help the industry in hiring potential students.
	Employability	The Graduate Employability Intervention Program is open for final-year students, with guaranteed job placement after successfully completing the activity/course.
	Employability	Strategy 1 - English Language Education Reform, 21st-century job skill programmes, and encouraging the exploration of high-quality job opportunities. Strategy 2 – Greater collaboration between government and private: GREaT portal & Market Dynamic International Conference; talent profiling for comprehensive data-driven active intervention programme, career charting and planning via NEXT or mynext platform, provide career counselling & promote MYFutureJobs platform. Strategy 3 - Rationalise the existing programme that meets the needs of IR4.0
	Industry Relation	Strategy 4 - Encourage Industry-Talent Recruitment and increase alumni involvement
University Transformation Programme	Internship	Award standardised credit hours for programmes with compulsory internship components
	Work Experience	Nurturing potential leaders through experiential leadership programmes, e.g., on-the-job training that aims to acquire new knowledge and abilities through experiences
Entrepreneurship Action Plan Higher Education Institutions 2021-2025	Industry Training	Initiatives 5 - Student entrepreneurship industrial training (Unlike regular internships, students will receive hands-on business training through equal partnerships between HEIs and employers)
Talent Roadmap 2020	Employability Intervention Initiatives	Enhance school-to-work transition via active graduate employability intervention, bridging and fostering collaboration between industry and institutions, develop proactive intervention e.g. structured internship, employability bootcamp and industry-academia collaboration workshop
National Policy on Industry 4.0	Industry Training	Strategy 2 - Increased collaboration between industry & and academia in TVET and STEM education through structured industrial training programmes

Source: Various sources, KRI compilation

With regards to above policies and plans, numerous programmes have been conducted by various government ministries and agencies (Figure 5.1). From 2010 onwards, we observe notable overlaps in the types of programmes offered by different organisations. While there are some differences in the target beneficiaries, most of the resources and services involved are similar. For instance, there are several online job and internship search platforms, including MyFutureJobs by SOCSO, GREaT and the recently launched Graduate Employability Management (GEM) portal[229] by MOHE, mynext by TalentCorp, as well as various online training programmes offered through HRD Corp, SOCSO and MDEC.

These overlaps, as it stands now, potentially lead to multiple stumbling blocks due to inefficient allocation of public resources, fragmentation of efforts, and lack of awareness among graduates towards the available programmes. In the case of online job search platforms, the relative size of each platform is a crucial factor that determines the breadth and depth of services offered. A larger platform can improve job matching by providing a wider range of opportunities and expanding outreach to a broader spectrum of potential candidates, thus deemed as a more valuable and efficient tool for job search. Similarly, the consolidation of online training programmes offered by various organisations onto a singular platform can ease graduates' process in upskilling or reskilling.

Figure 5.1: Map of current programmes targeting graduate employability, by type of programme and organisation



Source: KRI illustration

[229] The Star (2023c)

5.3 Graduate Job Search Process

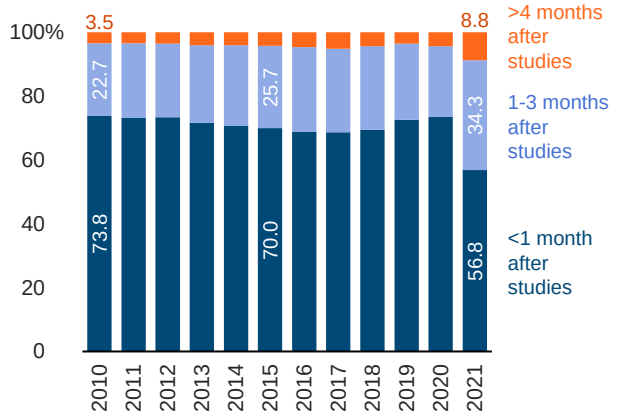
To gain deeper insights into graduates' interactions with the labour market, it is important to understand their first step—the job search process. We explore their most preferred job search methods in subsection 5.3.1, while comparing similarities and differences in preferences between fresh and experienced graduates. Beyond that, we evaluate their awareness and perception towards existing job search support provided by the government in subsection 5.3.2.

5.3.1. Graduates job search method

Fresh graduates

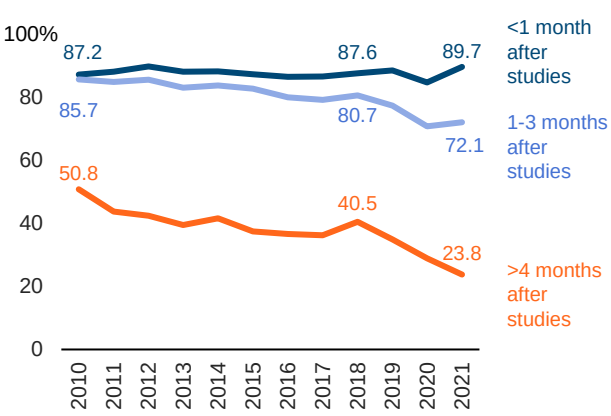
A majority of fresh graduates are proactive in their job search process, as shown by the high shares of those starting job search within a month of study completion[230] (Figure 5.2). This is a strategic move as Figure 5.3 shows that 89.7% of graduates who started job search early (within a month post-graduation) are able to secure employment as compared to 23.8% of those who started much later (four months or more post-graduation).

Figure 5.2: Breakdown of fresh graduates, by job search start date, 2010–2021



Source: MOHE, n.d., KRI calculations

Figure 5.3: Prevalence of working graduates, by job search start date, 2010–2021



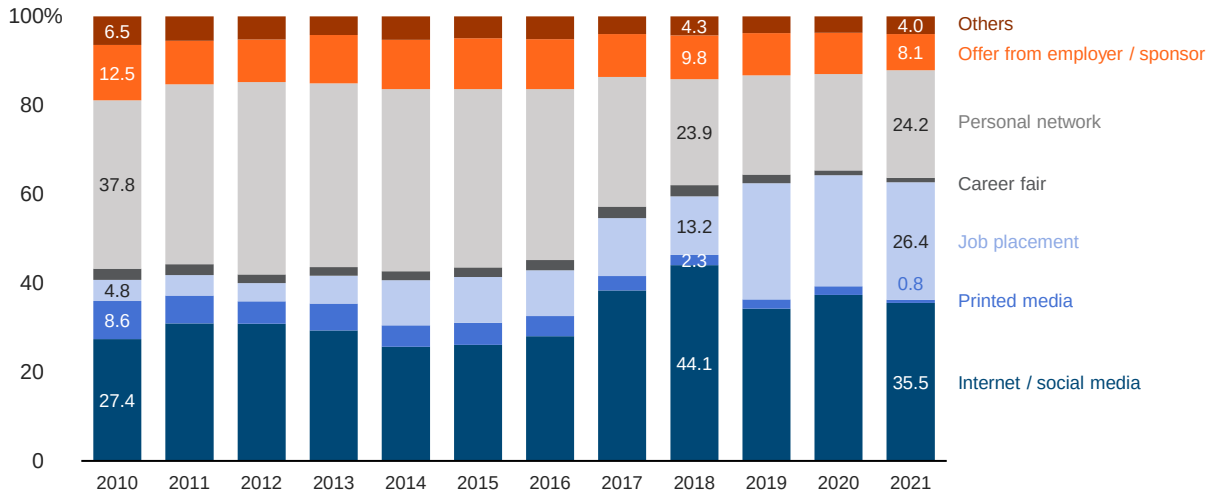
Source: MOHE, n.d., KRI calculations

Over the past decade, there has also been changing patterns in fresh graduates' job search method (Figure 5.4). In 2010, 37.8% of fresh graduates utilised personal networks such as family, friends, and lecturers to obtain their first job. This has since flipped as higher shares of graduates cited internet/social media during 2017–2018 and job placement[231] during 2019–2021 as the main method for attaining a job. The advent of technology has enabled greater availability of and accessibility to online employment services as well as social media platforms, which may explain the transformation of graduates' job search methods towards digital channels[232].

[230] With exception for 2021, where only slightly more than half of the graduates started searching less than one month after study studies, possibly due to pandemic fatigue.
[231] Job placement refers to employment gained through career counselling services such as MOHR's JobsMalaysia and other employment agencies. Source: MOHE, n.d.
[232] Maharjan (2019)

Meanwhile, the share of fresh graduates relying on job placement during their job search has significantly increased from 4.8% in 2010 to 26.4% in 2021 (Figure 5.4). While the slight increase in 2014 was mainly driven by the Ministry of Human Resources (MOHR)'s JobsMalaysia initiative, the sharp rise in job placement usage from 2019 onwards could be attributed to the newly established Protégé programme under MEDAC[233] or through other private job placement agencies.

Figure 5.4: Breakdown of main platforms graduates use in their job search process, 2010–2021



Source: MOHE, n.d., KRI calculations

In parallel, while career fair often provides greater exposure and convenience to graduates by gathering numerous organisations within the same location, it has consistently been the least popular method for job search among fresh graduates. Over the past decade, less than 3.0% of graduates choose career fair as their main platform for job search. Thus, this method may not necessarily be seen as effective to secure employment, but rather acts as a platform for graduates to explore career opportunities that they are otherwise unaware of[234].

Experienced graduates

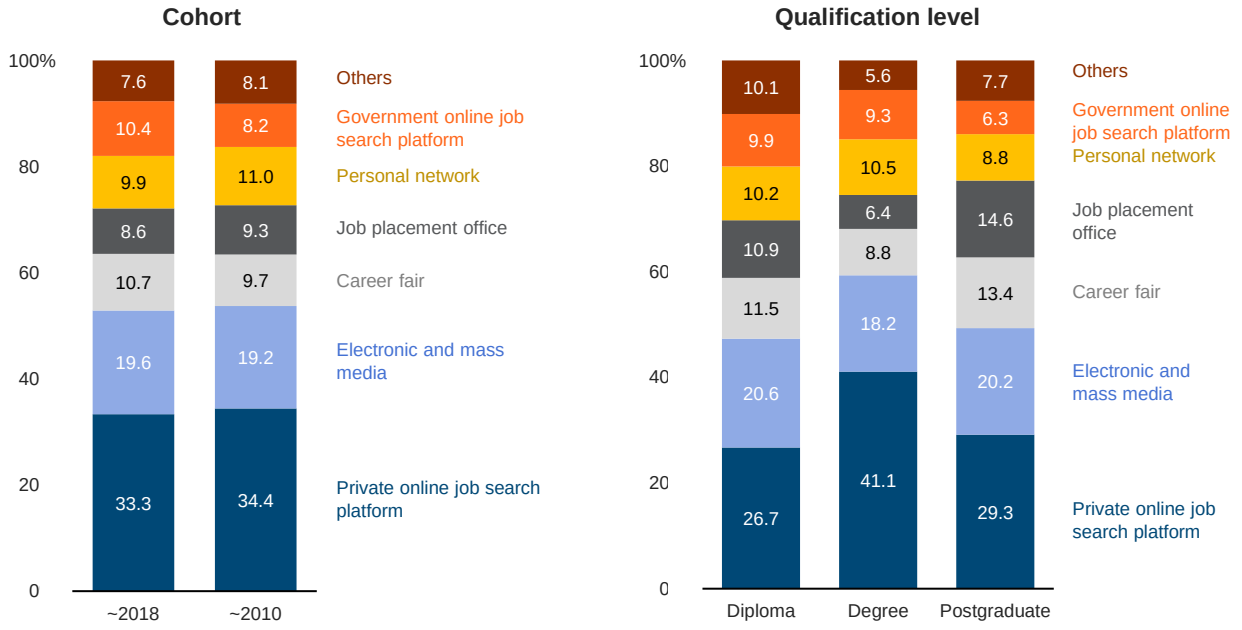
Experienced graduates from both the older cohort (~2010) and the younger cohort (~2018) exhibit similar preferences and behaviours in using digitalised platforms for job search. About one-third finds private online job search platform to be the most effective method, while approximately one-fifth in both cohorts prefer to look for jobs through electronic and mass media channels (Figure 5.5). In addition, similar shares of graduates utilise other job search methods, with the ~2010 cohort relying more on personal network whereas the slightly higher shares of ~2018 cohort using government online job search platform or career fair during their job search process.

Regardless of qualification level, private online job search platform ranks as the top method too. However, a notably higher share of degree holders prefers this method, with 41.1% considering it the most effective, as opposed to 29.3% of postgraduate and 26.7% of diploma holders (Figure 5.5). The latter groups are more likely to utilise electronic and mass media, besides private online job search platform.

[233] MEDAC (n.d.)
[234] Payne and Sumter (2005)

Surprisingly, a higher share of postgraduates utilise career fair (13.4%) compared to degree holders (8.8%) and diploma holders (11.5%). In contrast, diploma and degree holders rely on personal network more than their peers with postgraduate qualifications. Based on earlier observations across cohorts, one might expect the opposite to occur: Postgraduates who are more likely to be among the older cohort would rely on personal network, while diploma and degree holders—who are younger—would opt for career fair during their job search process. Therefore, this disparity signals changing preferences in job search method across the experienced cohorts as well.

Figure 5.5: Breakdown of the most effective job search method, by cohort and qualification level, 2023



Source: KRI (2023)

Despite various efforts to develop government job search platforms, not many experienced graduates find this method effective. By qualification level, it is the lowest among postgraduates, with only 6.3% using government job search platforms. This brings to question the role of these public platforms in graduates' job search process as well as their interaction with private job search platforms. Some of these public platforms provide more specialised support, such as having an assigned case worker[235] and integrated online training courses within the platform. Nevertheless, its low usage could indicate greater reliance on private job search platforms among graduates. Therefore, for future research, it may will be worth examining the differences in the number and quality of job postings across these platforms. We discuss the policy implication from these government initiatives in Chapter 7.

[235] In the case of MyFutureJobs, job seekers that register on the MyFutureJobs portal will have an employment service officer assigned to provide a one-to-one support during the job search process. Source: MOHR (2023)

5.3.2. Government job search support

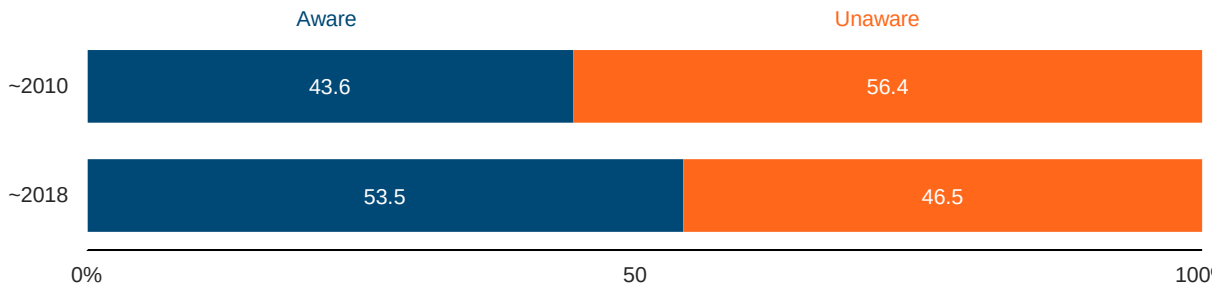
To further explore the graduate's job search process, this subsection analyses in greater detail on their awareness of government initiatives designed to offer employment services as well as the forms of job search support they had found most useful based on their past and presence experience. This is important as it provides context to which type of services have been most impactful to graduates. Furthermore, by breaking down the responses by their cohort, education background and their current employment status, the subsection can illustrate the diverse and evolving needs of graduates during their search for meaningful employment.

Awareness of support programmes

HRD Corp and MyFutureJobs are among the main government agencies actively providing public employment services such as job matching, resume support, as well as career guidance and counselling to Malaysian talents. In addition, newer programmes such as mynext and GREaT also offer similar services, though geared towards young graduates or students currently pursuing tertiary education.

Despite a plethora of programmes available, only half of experienced graduates are aware of any form of government job search support (Figure 5.6). The level of awareness is lower among the older ~2010 cohort, whereby only 43.6% know of these initiatives as compared to 53.5% of the younger ~2018 graduates. This disparity between cohorts could be due to the fact that recent support programmes are mostly promoted via higher education institutions, hence signals a communication barrier for older graduates no longer in the education world.

Figure 5.6: Awareness of government job search support programmes, by cohort, 2023

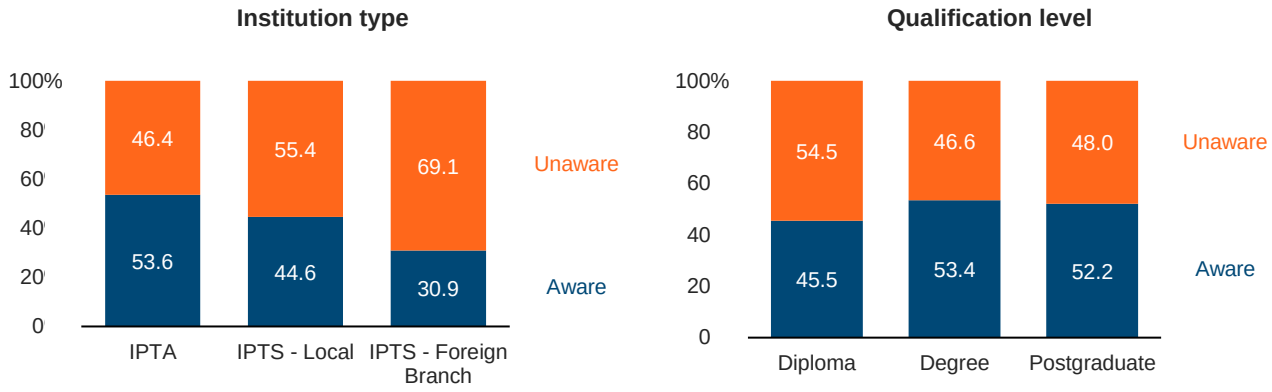


Source: KRI (2023)

Delving deeper, Figure 5.7 shows that a higher percentage of IPTA graduates (53.6%) know of various government job search support programmes. On the other hand, less than half of those who attended private higher education institutions, including both local and foreign IPTS in Malaysia, are aware of job search support services provided by the government. Similar to earlier observation, this may indicate greater promotion efforts of these programmes at public HEIs than private ones.

Across qualification levels, a lower percentage of diploma holders are aware of such programmes, at 45.5%, against 53.4% of degree holders and 52.2% of postgraduates (Figure 5.7). This could be a cause for concern as diploma holders are more likely to face challenges such as skills mismatch and low pay (see Chapter 3). As such, they are expected to gain the most from these government job search support to attain better career opportunities and improve overall labour market outcomes.

Figure 5.7: Awareness of government job search programmes, by institution type and qualification level, 2023



Source: KRI (2023)

With that, our analyses suggest that a significant share of graduates cannot reap the benefits from current offerings of Malaysia's public employment services due to their low awareness. Therefore, targeted efforts to communicate and promote awareness of these job search support programmes could help graduates who need them the most.

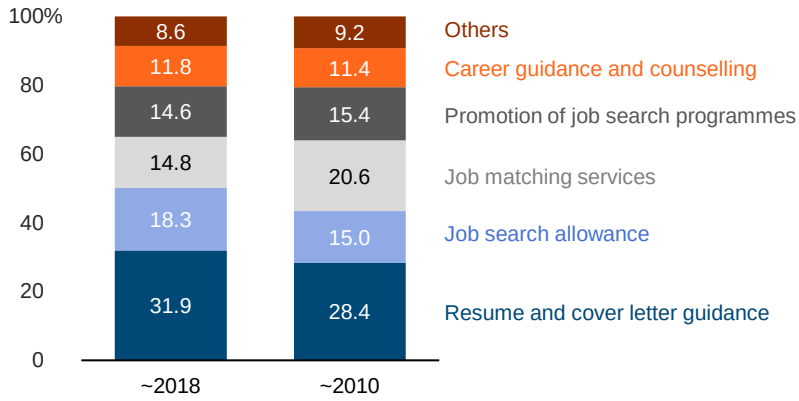
Perceived effectiveness of job search support

Among experienced graduates, most stated that support involving resume and cover letter guidance has been the most useful during their job search process. This is consistent for both cohorts (Figure 5.8), qualification levels as well as study streams (Figure 5.9). Meanwhile, around 11.0% of experienced graduates preferred support through career guidance and counselling while less than 10.0% chose other forms of support.

Between cohorts, a higher percentage of ~2010 graduates prefer job matching services[236]. The higher inclination for job matching services among the cohort may be due to higher wage employment opportunities are often advertised through job posting, and thus such services can link job seekers to these opportunities more efficiently. Meanwhile, ~2018 graduates are more likely to find job search allowance[237] most useful when seeking employment. The older cohort also has a slightly greater preference for promotion of job search programmes compared to their younger counterparts. This is attributable to ~2010 graduates' relatively low awareness of government initiatives, which explains the call for a wider outreach of job search support.

[236] Job matching services match candidates to vacancies that are relevant with their qualifications, previous experiences, and preferences. Source: Koh (2015)
[237] Job search allowance is a form of passive labour market support.

Figure 5.8: Breakdown of the most useful job search support, by cohort, 2023



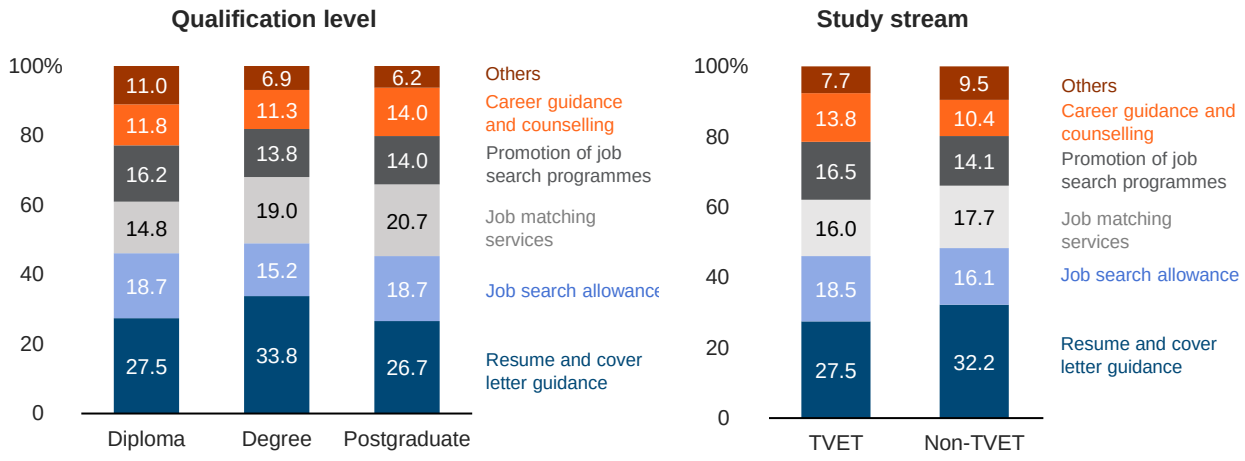
Source: KRI (2023)

Moreover, degree holders also find resume and cover letter guidance as the most effective support, followed by job matching services and job search allowance (Figure 5.9). Although diploma holders perceive similar initiatives to be useful, higher shares prefer promotion of job search programmes than degree holders and postgraduate. This is consistent with earlier findings on diploma holders having lower awareness of government job search support.

Interestingly, postgraduates have a well-distributed preference, with less (26.7%) finding resume and cover letter guidance to be useful and more (20.7%) finding job matching services effective, compared to diploma or degree holders. This may indicate a more diverse set of support needed by graduates as they progress towards higher levels of qualification or have more years of working experience.

Additionally, a higher percentage of TVET graduates perceive that job search allowance, promotion of job search programmes, and career guidance and counselling are the most useful during their job search process. As for non-TVET graduates, one-third prefers resume and cover letter guidance over other types of job search support, followed by 17.7% for job matching services and 16.1% for job search allowance.

Figure 5.9: Breakdown of the most useful job search support, by qualification level and study stream, 2023



Source: KRI (2023)

There are also some variations in support preferences across different fields of study. Table 5.3 presents career guidance and counselling as the most popular type of job search support across most study fields, except for *Science, Mathematics & Computing* and *Agriculture & Veterinary* fields. Graduates from these two fields perceive resume and cover letter guidance as the most effective support during their job search process.

Meanwhile, *Agriculture & Veterinary* graduates had the highest proportion who found job matching services to be the most useful form of support. Furthermore, graduates from this field also had the highest prevalence of overqualification across all cohorts (see Chapter 3), which may indicate that job matching services is especially pertinent for those from the fields that suffer higher qualification-job mismatch issue.

Table 5.3: Breakdown of the most useful job search support, by study field, 2023

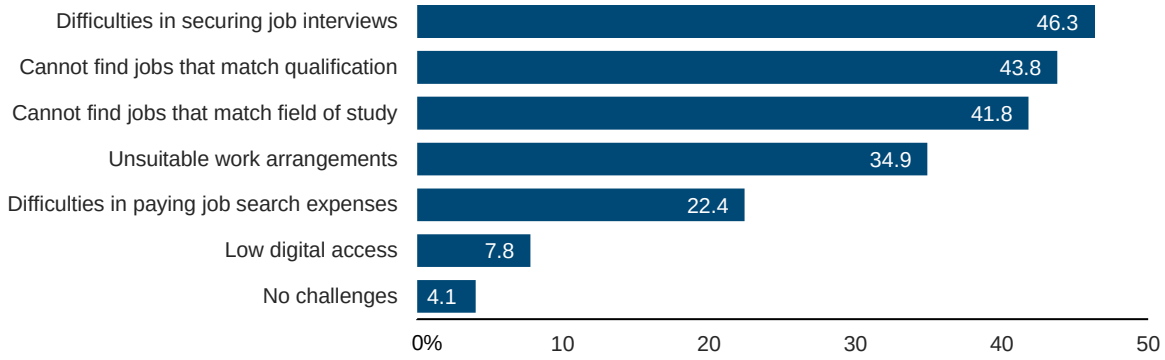
Field of study	Job search support					
	Resume and cover letter guidance	Career guidance/ counselling	Job matching services	Promotion of job search programmes	Job search allowance	Others
Science, Mathematics, & Computing	31.9%	11.0	17.8	15.7	15.7	7.9
Engineering, Manufacturing, & Construction	17.2	31.6	10.6	18.1	15.7	6.7
Health & Welfare	15.2	31.5	13.3	15.3	15.3	9.6
Agriculture & Veterinary	22.2	20.1	19.0	13.0	15.8	9.9
Social Sciences, Business, & Law	16.4	34.5	10.7	19.1	12.3	7.1
Education	19.3	26.5	10.9	15.4	15.6	12.1
Arts & Humanities	18.3	26.2	14.6	13.4	16.5	11.0
Services and others	18.4	21.9	11.2	15.8	15.5	17.2

Source: KRI (2023)
Note: The highest value for each study field is shaded in orange.

Unemployed: Challenges and relevant support

Among experienced graduates who are currently unemployed, the majority (95.9%) expressed facing at least one challenge during their job search process, reflecting a very small percentage did not encounter any difficulties. The most common challenge cited is difficulties in securing job interviews, involving 46.3% of unemployed graduates from both cohorts (Figure 5.10). Moreover, 43.8% and 41.8% of unemployed graduates encounter challenges in securing a job that matches their qualification and field of study, respectively. One-third also struggle to attain employment with suitable work arrangements, whereas over one-fifth of unemployed graduates face difficulties in funding their expenses during the job search process.

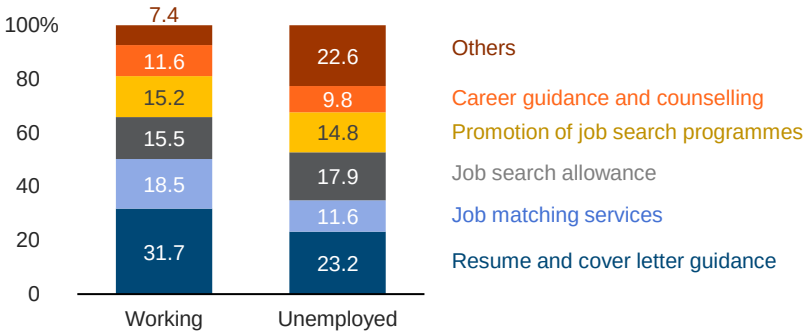
Figure 5.10: Main challenge faced by unemployed graduates, 2023



Source: KRI (2023)

Considering a variety of job search challenges presented above, graduates who are currently unemployed have more diverse support preferences than those who are working (Figure 5.11). While 31.7% of working graduates find resume and cover letter guidance as the most useful job search support, only 23.2% of unemployed graduates share the same perception. In line with their financial constraints to cover job search expenses, a slightly higher share of unemployed graduates perceives job search allowance to be the most valuable support, at 17.9% compared to 15.5% of working graduates. Additionally, more than one-fifth (22.6%) of unemployed graduates find *Other* types of support to be effective, suggesting the need for specialised forms of assistance beyond the existing programmes.

Figure 5.11: Breakdown of the most useful job search support, by employment status, 2023



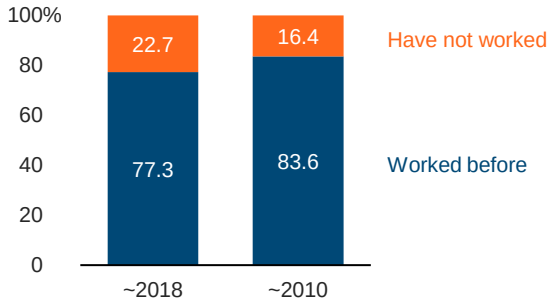
Source: KRI (2023)

Though perception of job matching services being more useful is notably lower among the unemployed graduates, the high proportion reporting that their main three challenges are regarding not being able to find jobs that are matched to their qualifications and interests. Given the challenges of securing job interviews and unemployed graduates' relatively stronger need for job search allowance, the existing Employment Insurance Scheme (EIS) offered by SOCSO could help alleviate some of these struggles. Even so, the high proportion of unemployed graduates who face difficulties in attaining qualification-job match may indicate deeper structural issues within the labour market surrounding high-skilled jobs availability across economic sectors. All in all, differences between unemployed and working graduates' perception of most effective job search support exemplify the need for multifaceted programmes that can adapt and cater to various needs over time.

Homemakers: Support for career comeback

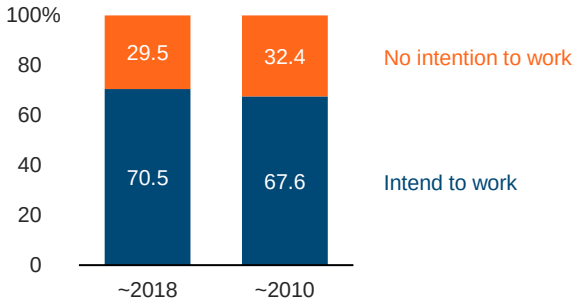
Around 15.0% of experienced graduates are currently full-time homemakers and a majority of them have previously worked before. This proportion is higher among the older cohort, whereby 83.6% have prior work experience compared to 77.3% of the younger cohort (Figure 5.12). In fact, Figure 5.13 shows that more than two-thirds of homemakers have intentions to return to work.

Figure 5.12: Previous employment status of full-time homemakers, by cohort, 2023



Source: KRI (2023)

Figure 5.13: Intention to work among full-time homemakers, by cohort, 2023



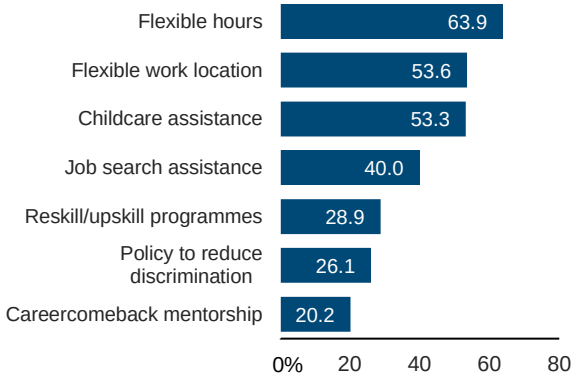
Source: KRI (2023)

Nonetheless, this group of skilled talents requires specific types of support to re-enter the labour market (Figure 5.14). Over half of homemakers intending to return to work prioritise flexible work arrangements such as flexible hours and work locations, other than the need for childcare assistance. This is not surprising as 68.0% of homemakers cited care work as the main reason for previously stopping work[238]. Therefore, policies that allow for more flexible work arrangements can enable them to contribute more actively and meaningfully to the labour market.

Furthermore, 40.0% of homemakers cited the need for job search assistance, particularly in resume and cover letter guidance, job search allowance, and job matching services (Table 5.4). Meanwhile, one-fifth of homemakers require support through a career comeback mentorship. Though career comeback mentorship programmes are a subcategory of job search assistance, they are often more structured and personalised compared to traditional forms of job search support. In addition, this group consists predominantly of women, with over 90% of female homemakers. Thus, women-centric career comeback programmes offered by TalentCorp[239] and Lean In Malaysia[240] are important initiatives that provide comprehensive job search support to women intending to return to work.

[238] KRI (2023)
[239] TalentCorp (n.d.)
[240] Lean In Malaysia (2021)

Figure 5.14: Types of support needed by full-time homemakers to return to work, 2023



Source: KRI (2023)

Table 5.4: Breakdown of most useful job search support among full-time homemakers, 2023

Support most useful	Proportion
Job search assistance	**57.3%**
Resume and cover letter guidance	28.4
Career guidance and counselling	12.7
Job matching services	16.2
Promotion of job search programmes	**14.0**
Job search allowance	**22.1**
Others	**6.5**

Source: KRI (2023)

5.4 Building Work Experience Through On-the-Job Training

In Malaysia, there is a popular sentiment among young graduates that practical training—through internships, apprenticeships, or other types of on-the-job training—is important to attain positive employment outcomes[241]. For most graduates, their first interaction with the world of work happens during the internship period. Additionally, previous graduates who struggled to find employment opportunities post-graduation may participate in apprenticeship programmes which provide work experience in government-linked companies (GLCs) and the private sector. Examples of such programmes were *Skim Latihan 1Malaysia* (SL1M) and MyApprenticeship, both of which has been replaced by the recent Protégé-RTW, MySTEP, as well as GRACE onwards of 2020. We assess the benefits that graduates attain from these on-the-job training experiences, including internships in subsection 5.4.1 and government apprenticeships in subsection 5.4.2.

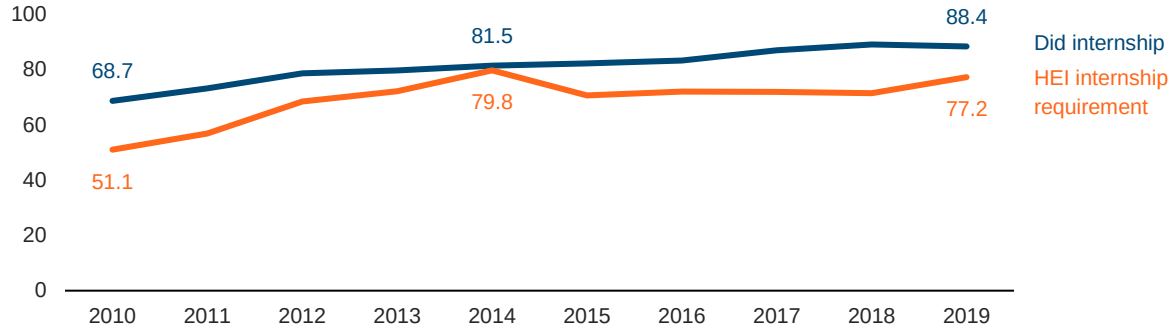
5.4.1. Before graduation: Internships

In 2010, MOHE released the National Policy on Internships (NPI) that outlines internships or industrial training requirements for those who are still pursuing their tertiary education under certain study programmes[242]. Considering the growing popularity of internships among Malaysian graduates, this subsection highlights key findings from our earlier study titled "The Internship Experience and its Returns: Effects on Young Bachelors' Employability"[243] to illustrate the varying influences of internship experience on graduate employability. Due to high internship requirements within diploma programmes[244] and movement restrictions in 2020–2021[245], subsequent analyses only cover degree holders who are fresh graduates between 2010 and 2019.

[241] KRI (2018)
[242] MOHE (2010)
[243] Wan Amirah Wan Usamah (2023)
[244] Diploma holders are excluded from our analysis because the high participation rate in internships is mainly driven by institutional or programme requirement. This makes it difficult to find meaningful labour market comparisons for this group.
[245] The COVID-19 pandemic resulted in multiple mobility restrictions during 2020 and 2021, thus causing a substantial drop in the proportion of graduates completing internships. We exclude these years to provide a more accurate trend analysis.

The past decade has seen a substantial rise in the share of degree holders completing internships, partly spurred by rising institutional or programme requirements (Figure 5.15). Particularly, from 2010 to 2014, the sharp rise of graduates who had to complete an internship requirement has driven the share of graduates who had done an internship. However, aside from internship requirements, there is also a rising proportion of graduates who are voluntary opting to do an internship. This group of graduates are notably higher among those who have higher CGPA and are in more STEM-based fields of studies[246].

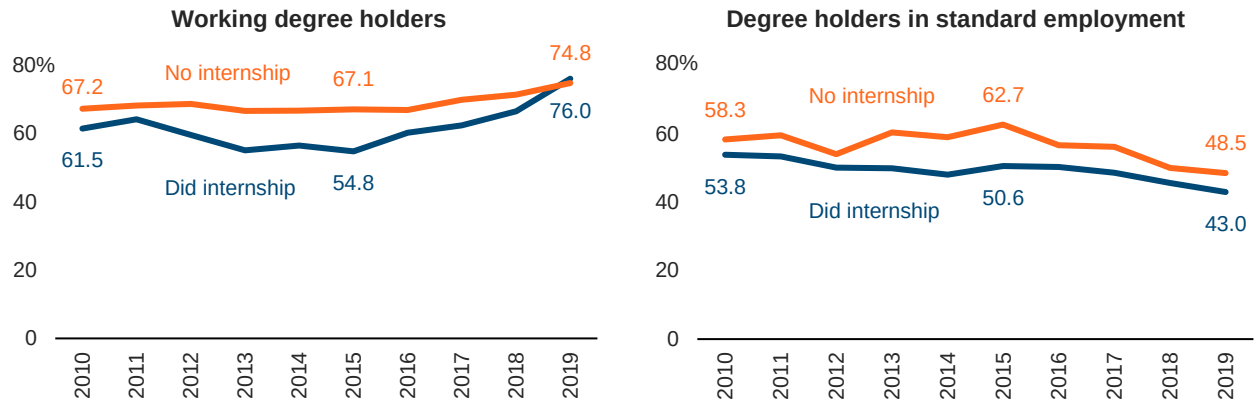
Figure 5.15: Prevalence of HEI internship requirement and degree holders completing internships, 2010–2019



Source: MOHE, n.d., KRI calculations

Despite its perceived importance in job attainment, internship experience has little impact on graduate employability. Figure 5.16 shows that employment[247] likelihood has been consistently lower among degree holders with internship experience than those without, albeit with a converging trend in recent years[248]. Similarly, degree holders with no internship experience are more likely to be working in standard jobs than those who completed internships, with overall declining shares throughout the past decade[249].

Figure 5.16: Prevalence of working degree holders and those in standard employment, by internship status, 2010–2019

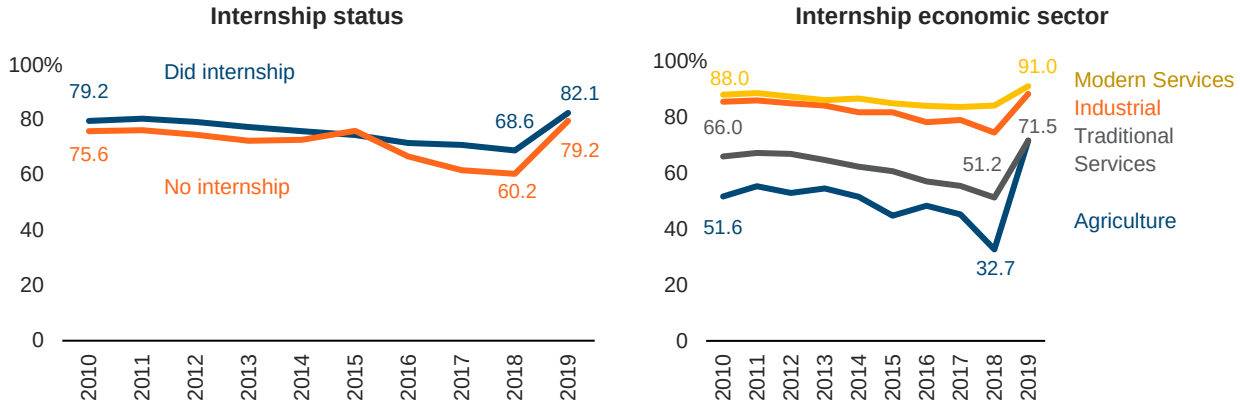


Source: MOHE, n.d., KRI calculations.

[246] Wan Amirah Wan Usamah (2023)
[247] Includes those who are currently working or awaiting job placement.
[248] This trend was also tested with a binomial linear regression, considering the different demographic and education factors. The regression shows the result was significant at the 0.01 p-value that graduates with no internship experience were more likely to work compared to graduates with internship experience. Source: Ibid.
[249] Similar to previous, this trend was tested with a binary logistic regression and was found to be significant at the 0.01 level. Source: Ibid.

Nevertheless, Figure 5.17 illustrates that degree holders with internship experience are more likely to be employed in high-skilled jobs. This potentially indicates that certain internship programmes can indeed improve graduates' skills development beyond academic training, and thus, boost their marketability within a competitive market with severe shortages of high-skilled jobs. Additionally, those who have completed internships in the *Industrial* or *Modern Services* sectors are more likely to attain high-skilled occupations, compared to those without any internship experience[250].

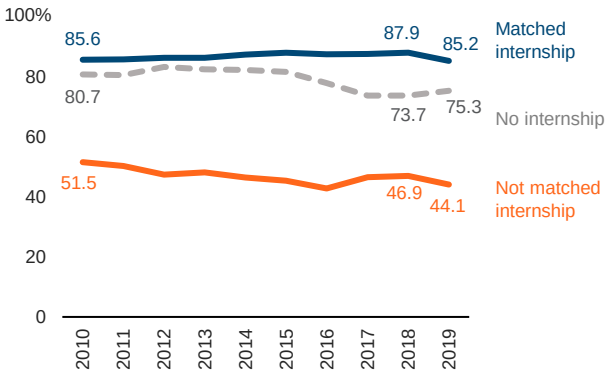
Figure 5.17: Prevalence of degree holders in high-skilled jobs, by internship status and economic sector, 2010–2019



Source: MOHE, n.d., KRI calculations

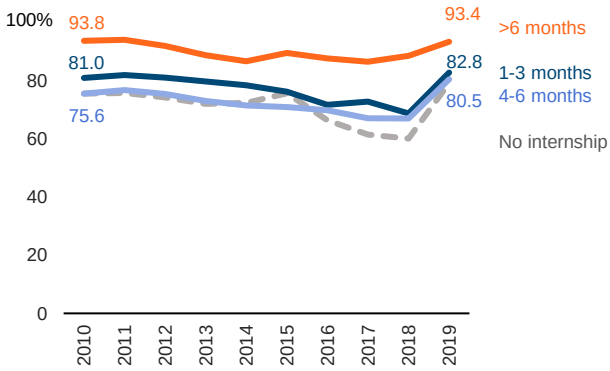
Undoubtedly, not all internship experiences are equal. Degree holders who have done an internship in an industry that is directly related to their study fields are more likely to be in a matched employment (Figure 5.18). In contrast, those in internship programmes unrelated to their study fields are half as likely to attain qualification-job match in their current jobs. Furthermore, internship duration also influences the likelihood of being employed in high-skilled, standard jobs. Figure 5.19 shows that degree holders with internship experiences longer than six months have significantly higher chances of being employed in high-skilled, full-time permanent jobs, at 93.4% in 2019, as compared to those with shorter internship durations and those without any internship experience. Meanwhile, those who did an internship in MNC/GLC sectors or were paid showed better outcomes.

Figure 5.18: Prevalence of degree holders in matched employment, by internship match, 2010–2019



Source: MOHE, n.d., KRI calculations

Figure 5.19: Prevalence of degree holders in high-skilled standard employment, by internship duration, 2010–2019

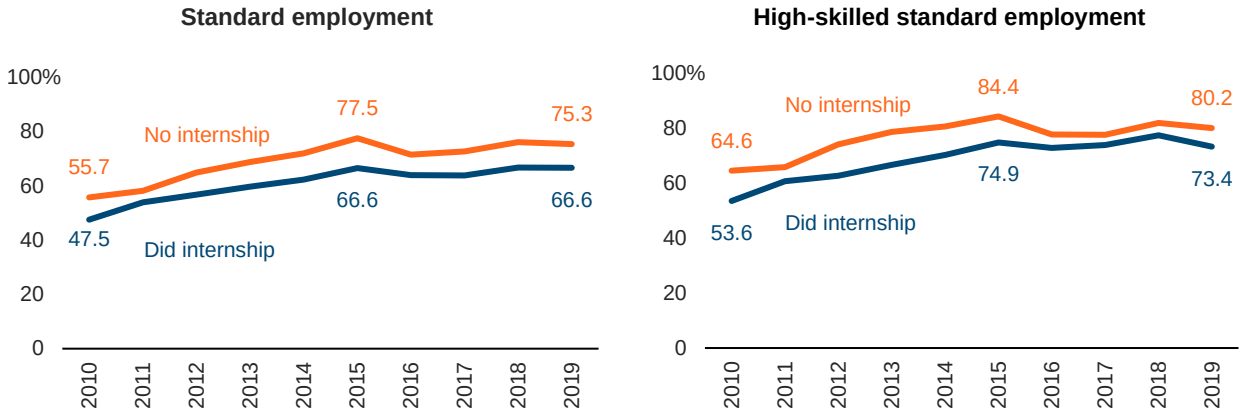


Source: MOHE, n.d., KRI calculations

[250] Both these observations have been tested by a binary logistic regression, taking into account demographic and education backgrounds and was found to be significant. Source: Ibid.

While internship may bring positive impacts on graduates' qualification-job match, it does not necessarily translate into higher pay. When comparing the earnings between degree holders in standard jobs and those in high-skilled, standard jobs, the proportion of graduates earning a starting pay above RM2,000 is consistently lower among those who completed internships (Figure 5.20). This suggests that internship experience has little effect on full-timers' starting pay, irrespective of their qualification-job match. Thus, issues on low starting pay among graduates may be reflective of larger structural economic issues surrounding low wage.

Figure 5.20: Prevalence of degree holders in standard employment and high-skilled standard employment earning above RM2,000, by internship status, 2010–2019



Source: MOHE, n.d., KRI calculations

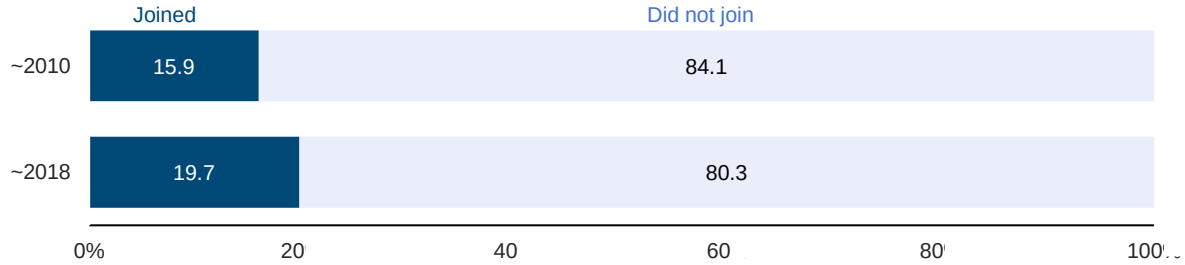
5.4.2. After graduation: Apprenticeships

Apprenticeships are often arranged as systematic on-the-job training[251], which can be done independently or structurally. Unlike internships, apprenticeships occur after the completion of studies and are conducted over longer durations. Apprentices are also generally recognised as employees and protected under the Employment Act 1955. While there is no global consensus on what entails an apprenticeship programme, this subsection limits "apprenticeships" to government apprenticeship programmes and other related short-term employment initiatives, including Protégé and MySTEP, that are open to graduates who have completed their studies and have specific objectives to train and upskill. Though apprenticeships also exist in the private sector, our analysis focuses on government apprenticeship programmes to examine the benefits of these initiatives and highlight any areas of improvement.

[251] WEF (2023b)

Only a small proportion of experienced graduates have participated in government apprenticeship programmes[252] (Figure 5.21). This proportion is slightly higher among the ~2018 cohort, whereby 19.7% have completed government apprenticeships compared to 15.9% among the ~2010 cohort. The difference between cohorts could be due to the increased availability of government apprenticeship programmes in recent years. Regardless, over 80.0% of experienced graduates did not join any apprenticeships offered by the government, potentially suggesting a lack of awareness among graduates or less favourable perception towards the experience.

Figure 5.21: Breakdown of experienced graduates who attended a government apprenticeship programme, by cohort, 2023



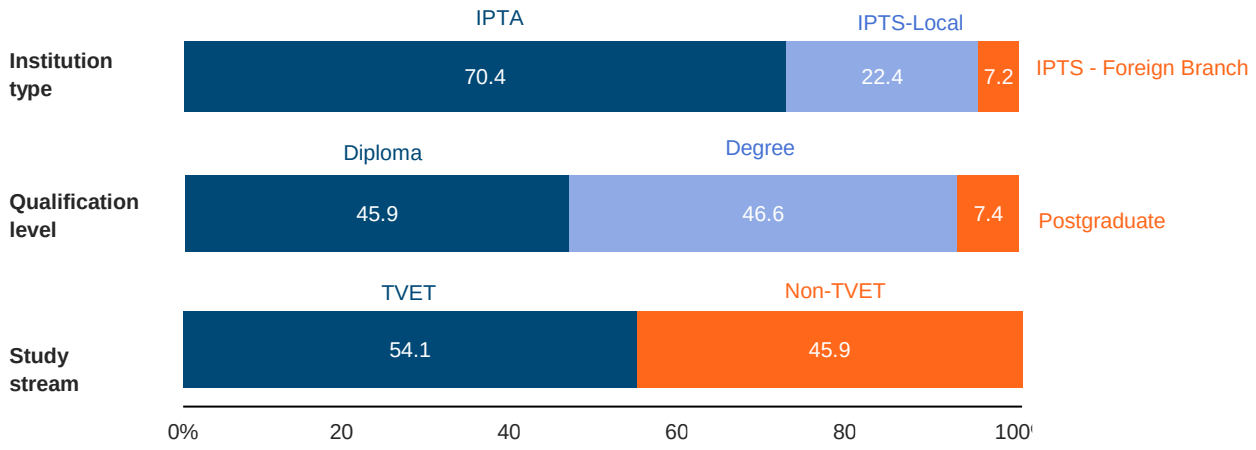
Source: KRI (2023)

Dissecting by graduates' education background, a majority of those who participated in apprenticeships are from IPTAs (Figure 5.22). This is unsurprising given that public HEIs are well connected to various government organisations and initiatives, which is also indicated by higher levels of awareness among IPTA graduates about government support programmes (as discussed in subsection 5.3.2). Meanwhile, only 22.4% of IPTS graduates and 7.2% of those from foreign HEIs (in local or overseas branches) completed apprenticeships post-graduation. The low participation observed may be driven by lower outreach of these government programmes in private HEIs, or greater preferences and opportunities for apprenticeship in the private sector within and outside of Malaysia.

In addition, most of those who joined apprenticeships are diploma and degree holders, at 45.9% and 46.6% respectively (Figure 5.22). Only 7.4% of postgraduates participated in government apprenticeship programmes. Furthermore, slightly higher shares of TVET graduates completed apprenticeships than non-TVET graduates. These differences across qualification levels and across study streams could be explained by the eligibility requirements of certain apprenticeship programmes, which may specifically target those from TVET background or exclude those with postgraduate qualifications such as the Graduate Capacity and Employability programme (GRACE) which is only open to TVET graduates[253].

[252] While the GCTS does not ask for the government apprenticeship programme name, the proportion of graduates that participated in these programmes are expected to be reflective of the number of MySTEP participants. Source: GOM (2021)
[253] MEDAC (n.d.)

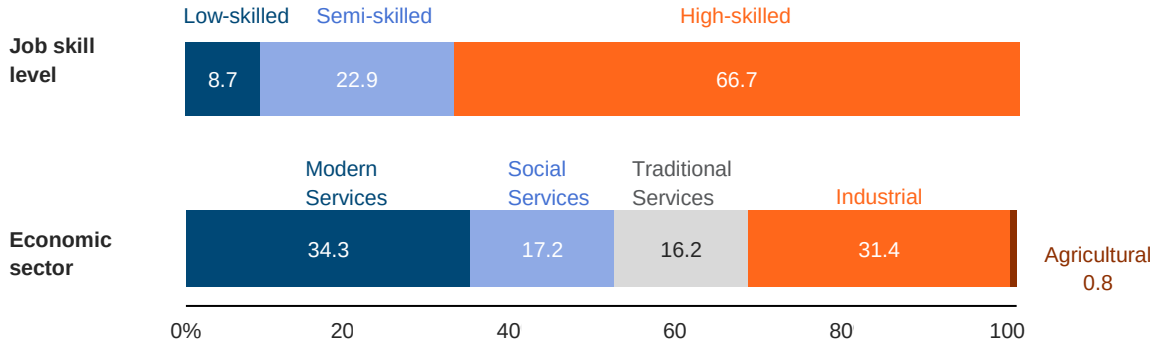
Figure 5.22: Breakdown of experienced graduates who attended a government apprenticeship, by institution type, qualification level and study stream, 2023



Source: KRI (2023)

It is also important to look at those who participated in government apprenticeships and are currently working. Based on GCTS, two-thirds are working in 2023, of which 66.7% are in high-skilled, 22.9% in semi-skilled, and 8.7% in low-skilled occupations (Figure 5.23). Across economic sectors, the majority are in the services sector, including 34.3% in *Modern Services*, 17.2% in *Social Services*, and 16.2% in *Traditional Services*. In contrast, 31.4% are employed in the *Industrial* and 0.8% in *Agricultura*l sectors. The concentration of graduates working in the services sector may be influenced by the programme design. For example, under the MySTEP programme, work placement takes place in various government agencies and GLCs, which are mostly within the services sector[254].

Figure 5.23: Breakdown of experienced working graduates who attended a government apprenticeship programme, by current job skill level and economic sector, 2023

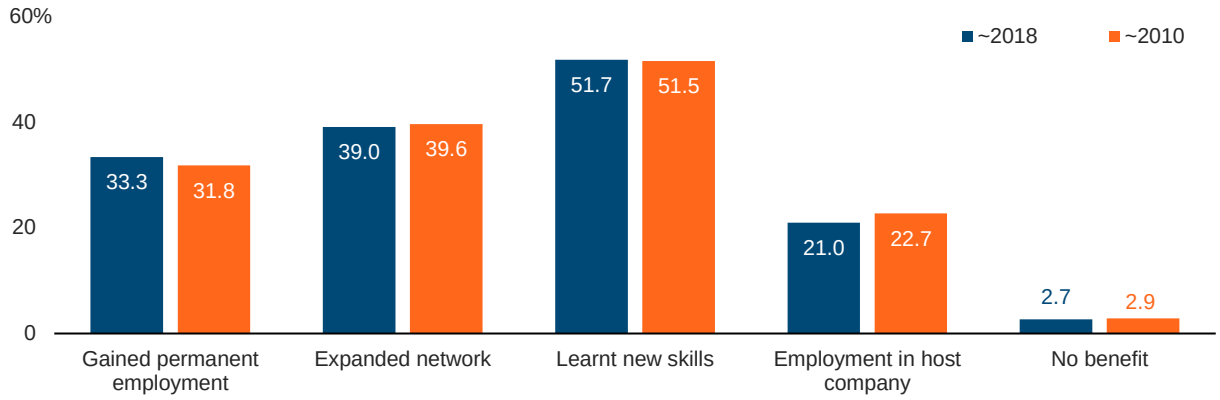


Source: KRI (2023)

[254] MOF (2023)

Among experienced graduates who completed government apprenticeships, the majority perceive at least one benefit from joining these programmes (Figure 5.24). More than half in both cohorts cited learning new skills, followed by over one-third expanding their network or gaining permanent employment at other organisations. However, only around one-fifth of graduates experienced direct benefit from apprenticeships—receiving offers for employment in the host company. This signals relatively low absorption rates among government ministries, agencies, and GLCs as compared to other private organisations.

Figure 5.24: Perception of benefit attained from government apprenticeship programmes, by cohort, 2023



Source: KRI (2023)

Across different qualification levels, relatively higher shares of postgraduates and diploma holders gained permanent employment at other organisations, at 37.1% and 36.5% respectively (Table 5.5). On the contrary, degree holders are more likely to gain employment in the host company after completing their apprenticeships. They are also more likely to cite learning new skills and expanded network as benefits gained from apprenticeship programmes, compared to diploma holders and postgraduates.

As diploma holders comprise mostly of TVET graduates whereas degree holders are more likely to have non-TVET background, similar trends are observed across study streams. TVET graduates are more likely to gain permanent employment at other organisations, while higher shares of non-TVET graduates perceive learning new skills and expanding network as main benefits attained from government apprenticeships.

Table 5.5: Perception of benefit attained from government apprenticeship, by education background, 2023

	Benefit gained				
	Gained permanent employment	Expanded network	Learnt new skills	Employment in host company	No benefit
Qualification level					
Diploma	36.5%	34.5	43.9	18.2	2.6
Degree	28.4	45.0	60.8	25.9	2.8
Postgraduate	37.1	32.2	41.6	14.9	3.3
TVET status					
TVET	34.2	33.3	43.5	16.2	2.3
Non-TVET	31.2	46.2	61.2	27.8	3.2

Source: KRI (2023)

Moreover, Table 5.6 presents the perceived benefits gained by experienced graduates who are currently working. Those in high-skilled occupations are more likely to cite expanding network, learning new skills, and gaining employment in host company compared to others. Not surprisingly, lower shares of graduates in low-skilled occupations perceive benefits gained from apprenticeships, irrespective of the types of benefit.

Across various economic sectors, a significant share of graduates employed in the services sector—including *Modern*, *Social*, and *Traditional Services*—believe that apprenticeship helped them learn new skills, expand network, and even gain permanent employment. Similarly, those working in the industrial sector experienced these benefits, albeit at lower shares. On the other hand, nearly 70.0% of graduates in the agricultural sector cited expanding network as the main benefit from apprenticeship programmes.

Table 5.6: Perception of benefit attained from government apprenticeship, by current employment background, 2023

	Benefit gained				
	Gained permanent employment	Expanded network	Learnt new skills	Employment in host company	No benefit
Occupation skill level					
High-skilled	34.1%	45.9	55.7	25.3	2.9
Mid-skilled	35.0	42.7	51.7	20.7	1.4
Low-skilled	30.2	25.4	43.0	6.9	2.5
Economic sector					
Modern Services	32.4	44.5	51.3	20.0	2.2
Social Services	36.7	51.0	69.9	34.2	0.7
Traditional Services	29.7	39.3	52.8	21.5	2.0
Industrial	35.4	38.6	48.1	18.8	3.7
Agricultural	32.5	68.7	57.8	30.1	0.0

Source: KRI (2023)

5.5 Lifelong Learning and Skills Enhancement

This section will explore several types of self-development education and training relevant to graduates. Subsection 5.5.1 begins by illustrating graduates' perception of the returns to higher education. We then examine formal forms of learning among graduates, typically via higher education institutions, to attain additional qualifications in subsection 5.5.2. Lastly, subsection 5.5.3 highlights upskilling and reskilling training programmes that graduates engage in, which often have shorter durations and more flexible arrangements.

5.5.1. Graduate perception of the returns to higher education

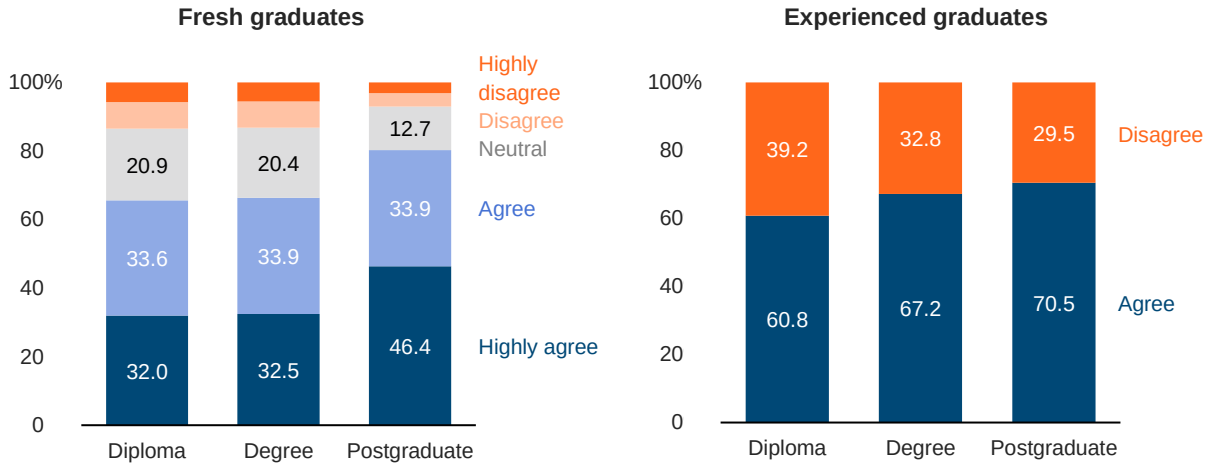
While tertiary education is commonly perceived as a stepping-stone towards career progression, not all graduates perceive their qualifications as relevant to their careers. The proportion of graduates who perceive positive returns to higher education generally increases with qualification level (Figure 5.25). Among fresh postgraduates, 80.3% believe that their education is relevant to their current jobs, compared to 66.4% of degree and 65.6% of diploma holders.

A similar trend is apparent among experienced graduates, with 70.5% of postgraduates agreeing that their qualifications are relevant to their careers, followed by 67.2% of degree and 60.8% of diploma holders.

Between fresh and experienced graduates, the share of those with positive perceptions towards tertiary education is generally lower among the latter group[255]. This sentiment may be driven by various factors such as pursuing a career in a sector outside of their study field, a higher emphasis placed on work experience rather than qualification as graduates gain more seniority in the labour market, or changes in the skillset needed as they hold different occupations.

Graduates who agree or highly agree that their tertiary education is relevant to their current employment could potentially be classified as those who are matched horizontally in their current employment based on their personal perception. This link is notably stronger among the experienced graduates whereby the incidence of vertical overqualification (based on qualification and occupation level) mirrors their perception on the relevancy of their tertiary education. Furthermore, the relationship between overqualification and qualification level trends similarly to the graduate's perception of the relevancy of their education, whereby overqualification decreases as the graduates attain higher education levels.

Figure 5.25: Perception on relevancy of tertiary education to current employment, by cohort and qualification level, 2010-2021, 2023



Source: MOHE, n.d., KRI calculation

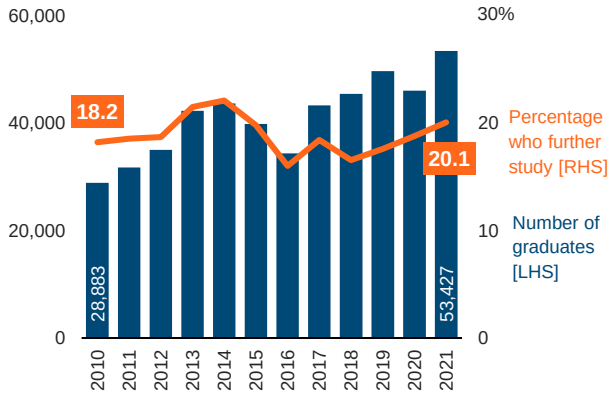
Source: KRI (2023)

5.5.2. Further studies

In the past decade, nearly double the number of fresh graduates has chosen to further their studies upon graduation, though the shares have been relatively steady at around 20.0% (Figure 5.26). Of these, 73.0% pursued degree qualifications in 2021 whereas 12.0% continued to study at postgraduate levels (Figure 5.27). This composition is consistent with the GTS findings, with approximately 80.0% of fresh graduates who are diploma and certificate holders.

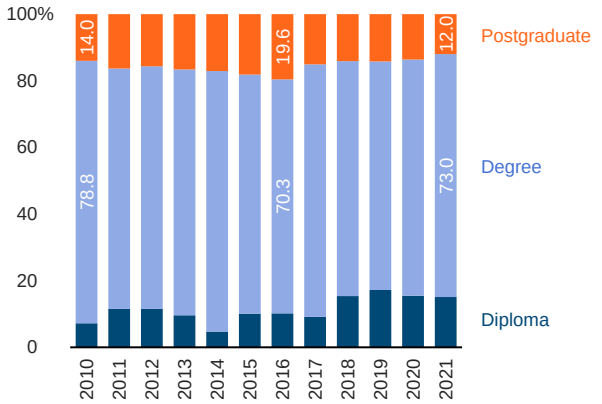
[255] While GCTS has no "Neutral" answer option as available in GTS, note that GCTS respondents who are not currently working or have never worked before can choose "Not applicable" as their answer option.

Figure 5.26: Number and prevalence of fresh graduates who further study, 2010–2021



Source: MOHE, n.d., KRI calculations

Figure 5.27: Breakdown of fresh graduates who further study, by qualification level, 2010–2021

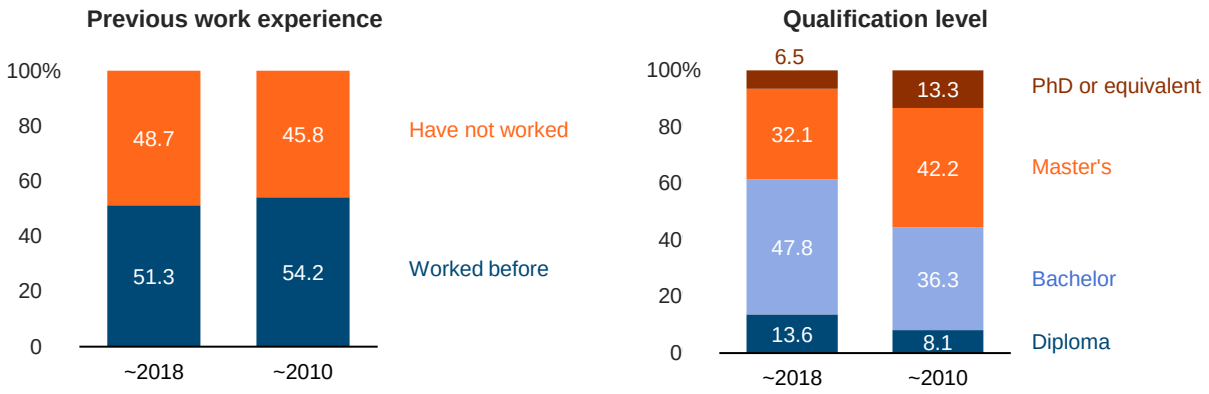


Source: MOHE, n.d., KRI calculations

According to the GCTS dataset, less than 10.0% of experienced graduates are currently furthering their studies. For those that are currently studying, most have worked previously. However, the share of ~2018 graduates have not worked post-graduation and are in full-time studies is higher at 48.7% compared to 45.8% of ~2010 graduates (Figure 5.28). This indicates a slight preference to gain work experience before pursuing a second tertiary qualification. Despite this, over 90% of the experienced graduates only have one tertiary education certification (either at pre-bachelor or bachelor level) which point to low interest in pursuing higher certification levels or challenges in furthering their studies after their first tertiary certification.

Like fresh graduates, a majority of the ~2018 cohort are pursuing degree qualifications. Meanwhile, over one-third of ~2018 graduates and more than half of ~2010 graduates who are furthering studies are pursuing postgraduate qualifications (Figure 5.28), with a notably higher proportion of those pursuing a PhD qualification among the older cohort. These disparities in further study qualifications are likely due to differences in the two cohorts' age and work experience, thus influencing their decisions to pursue higher levels of tertiary education.

Figure 5.28: Breakdown of experienced graduates in full-time studies, by previous work experience, qualification level and cohort, 2023



Source: KRI (2023)

Motivations to further study

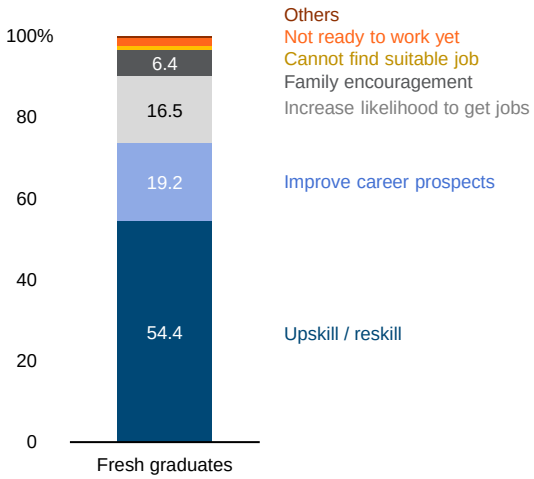
Delving into their motivations to further study, more than half of fresh graduates and the ~2018 cohort cited upskilling or reskilling as the main factor for pursuing further studies (Figure 5.29 and Figure 5.30). In addition, 19.2% of fresh graduates who further study wants to improve their career prospects, whereas 16.5% wish to increase the likelihood of job attainment.

In contrast, motivations to further study among the ~2010 cohort are more diverse. Only one-third of ~2010 graduates wish to upskill or reskill through furthering studies, with three times higher shares choosing to reskill than that of ~2018. This may point to a higher incidence of changing career paths or economic sectors among the older cohort, in line with earlier findings suggesting that higher shares of ~2010 graduates have not fully transitioned despite being in the labour market for about ten years (see Chapter 3).

More worryingly, 20.8% of the ~2010 cohort choose to further study to take a break (from the labour market) while 30.1% cannot find suitable jobs based on their preferences and qualifications. Although the number of ~2010 graduates currently in full-time studies is lower than that of ~2018, the share of the older cohort turning to tertiary education after being unable to secure ideal employment is double than that of the ~2018 cohort.

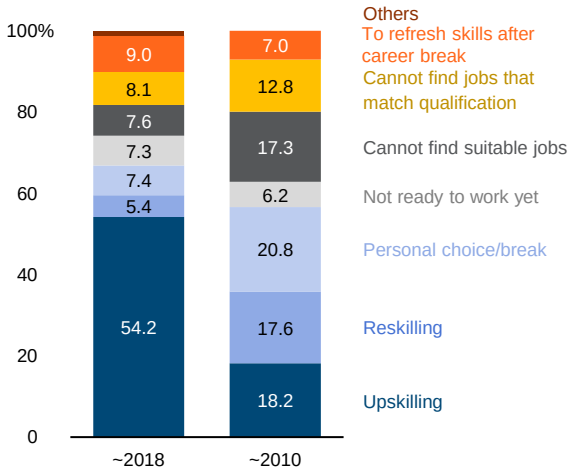
Furthermore, significantly higher shares of experienced graduates are not ready to work yet (~2018: 7.3%; ~2010: 6.2%) compared to only 0.3% of fresh graduates. This highlights that even after a decade, some experienced graduates still struggle to transition smoothly into the labour market or into an ideal career opportunity. The struggle in finding suitable employment despite being experienced graduates suggest that there may be larger issues within the demand of the labour market that needs to be explored in greater detail. This is discussed further in Chapter 6.

Figure 5.29: Reason for further study among fresh graduates, 2010-2021



Source: MOHE, n.d.

Figure 5.30: Reason for further study among experienced graduates, by cohort, 2023



Source: KRI (2023)

5.5.3. Training programmes

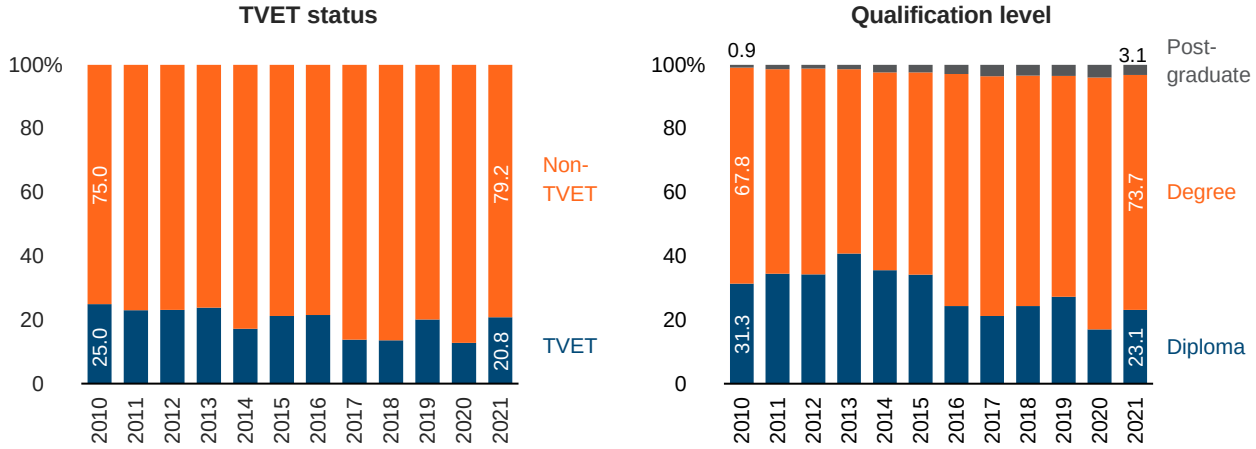
Fresh graduates

There is a small share of fresh graduates—around 1-2% annually[256]—who pursue upskilling or reskilling training courses within six to 12 months of their study completion. These courses allow them to learn new skills or build upon existing ones obtained from their tertiary education experience. Moreover, upskilling and reskilling training have been seen as a response to technological change, particularly to meet the needs and demands of the Fourth Industrial Revolution[257].

Based on GTS findings, most fresh graduates who choose to upskill or reskill themselves are from non-TVET background (Figure 5.31). The low share of TVET (and diploma) graduates who participate in these training programmes may be attributed to the relatively high employment rate post-graduation (see Chapter 2) and the structure of TVET programmes which prioritise technical skill development[258].

Additionally, degree holders make up the highest share of fresh graduates who join training programmes, at around 80.0% over the past decade. In parallel, a growing share of postgraduates have chosen to upskill or reskill within six to 12 months of completing their studies, even after spending several years to attain specialised skills. This is a cause for concern as many postgraduates face issues in finding stable employment relevant to their field of study and qualification upon graduation[259]. Hence, it will be important for policymakers to identify the driving factors—especially leading to reskilling—among graduates with higher qualifications.

Figure 5.31: Breakdown of fresh graduates who attended training, by TVET status and qualification level, 2010–2021



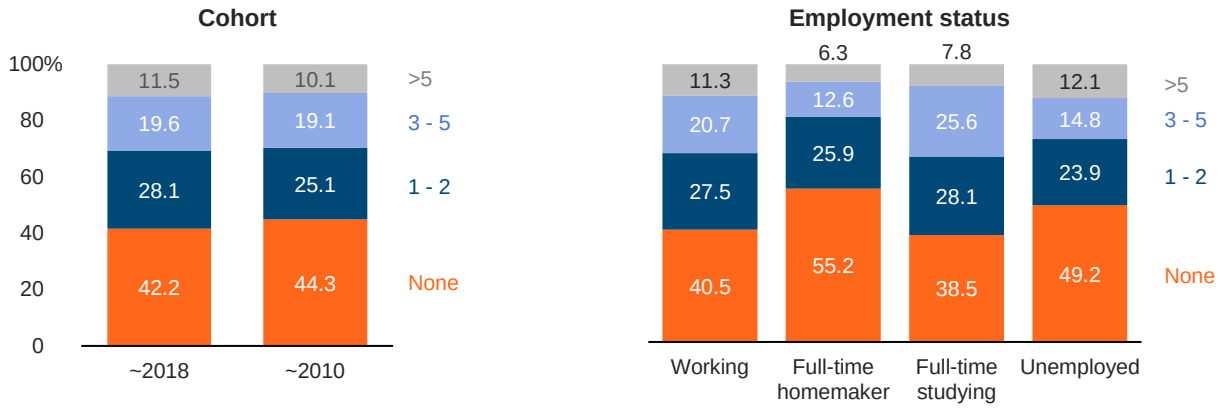
Source: MOHE, n.d., KRI calculations

[256] However, given the timing of the GTS survey taking place in 6–12 months after the completion of the graduate's studies, the low share of graduates choosing to up/reskill may be due to them not having enough time to decide if their skill is fit to meet labour market demands.
[257] WEF (2023b)
[258] Hawati Abdul Hamid and Tan Mei Yi (2023)
[259] Mohd Amirul Rafiq Abu Rahim (2023)

Experienced graduates

Among experienced graduates, over half have attended at least one training programme in the past three years (Figure 5.32). Of these, most participated in one to two upskilling or reskilling programmes, with slightly higher shares among the younger cohort. Across different employment status, participation in training programmes is noticeably higher among working graduates and those in full-time studies, at 59.5% and 61.5% respectively. Meanwhile, full-time homemakers and unemployed graduates are less likely to have attended any upskilling or reskilling training in the past three years.

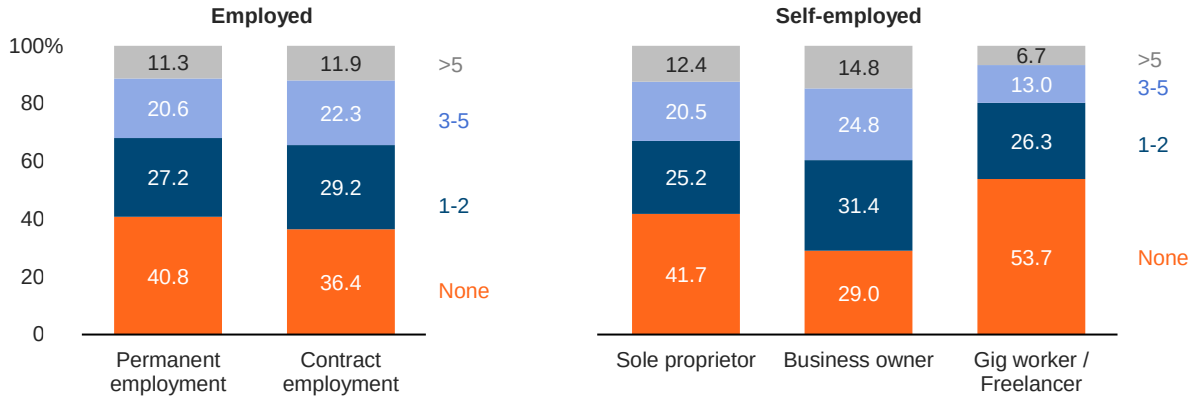
Figure 5.32: Breakdown of graduates who attended training, by number of trainings attended, cohort and employment status, 2023



Source: KRI (2023)

Moreover, the number of trainings attended can vary based on graduates' employment type. Among working graduates, those who are self-employed as gig workers or freelancers are the least likely to have attended any training in the past three years, with 53.7% not participating in any upskilling or reskilling programmes (Figure 5.33). On the contrary, graduates who are business owners are the most likely to have attended these programmes, given one-third attended one to two training, a quarter attended three to five training, and 14.8% attended more than five training in the past three years. The higher participation from business owners may be driven by initiatives that encourages SMEs to participate in training such as those run by HRD Corp. For sole proprietors and other graduates in permanent or contract employment, less than 30.0% participated in one to two programmes, approximately 20.0% participated in three to five programmes.

Figure 5.33: Breakdown of working graduates who attended training, by number of trainings attended and employment type, 2023



Source: KRI (2023)

Furthermore, postgraduates have the highest share of participation in upskilling and reskilling training in the past three years (Table 5.7). They are more likely to attend three or more programmes, at 47.9% compared to 29.1% of degree and 29.5% of diploma holders. Although diploma holders mostly comprise of those from TVET background, we observe some variations between the two, with 55.4% of diploma holders participating in training against 63.3% of TVET graduates. This could be attributable to the nature of TVET occupations, such as technicians, that may require continuous upskilling certification and training as part of their career advancement[260].

Table 5.7: Prevalence of graduates attending training programmes, by number of trainings attended and education background, 2023

	Number of training programmes attended			
	0	1-2	3-5	>5
Qualification level				
Diploma	44.6	25.9	18.5	11.0
Degree	43.0	27.8	19.5	9.6
Postgraduate	24.6	27.6	28.1	19.8
TVET status				
TVET	36.7	28.2	23.0	12.1
Non-TVET	46.6	26.2	17.4	9.8

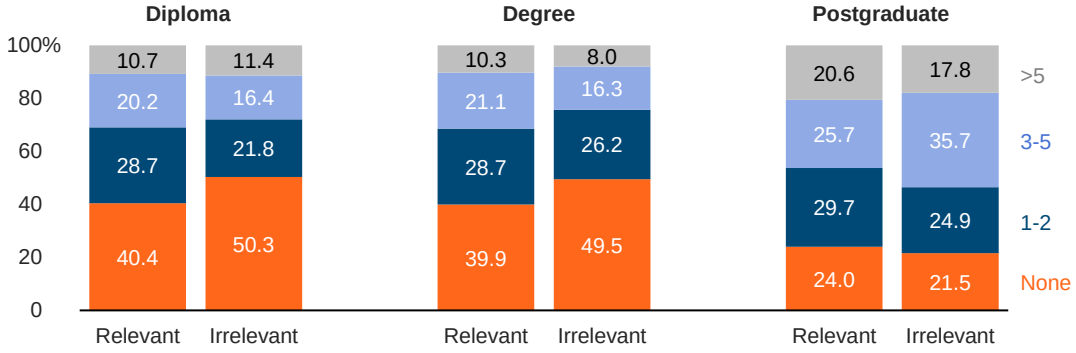
Source: KRI (2023)

Interestingly, graduates who perceive that tertiary education is irrelevant to their employment are less likely to participate in upskilling or reskilling training. The difference is especially significant among diploma and degree holders, with half not attending any programmes in the past three years (Figure 5.34). Conversely, experienced graduates with positive perceptions towards tertiary education are more likely to participate in more than one training courses over the same period. This reflects varying perspectives on the returns to tertiary education, with those who place higher value on their education experience more likely to engage in lifelong learning[261].

[260] Allais et al. (2021)
[261] Brooks and Everett (2008)

However, there is an exception for postgraduates, whereby 35.7% of those who perceive their tertiary education to be irrelevant to their career have attended three to five programmes, as compared to 25.7% who think it is relevant (Figure 5.34). This may point to two reasonings. Firstly, postgraduates who found their education to be irrelevant to their career progression may be working in a sector that is outside their field of study, and so rely on reskilling programmes to be eligible for their current occupation. Secondly, it may indicate that postgraduates hold more senior positions, hence they attend additional upskilling courses to navigate away from theoretical or technical capabilities and move towards soft skills development such as leadership and interpersonal skills.

Figure 5.34: Number of training programmes attended, by qualification level and perception of tertiary education being relevant to career, 2023

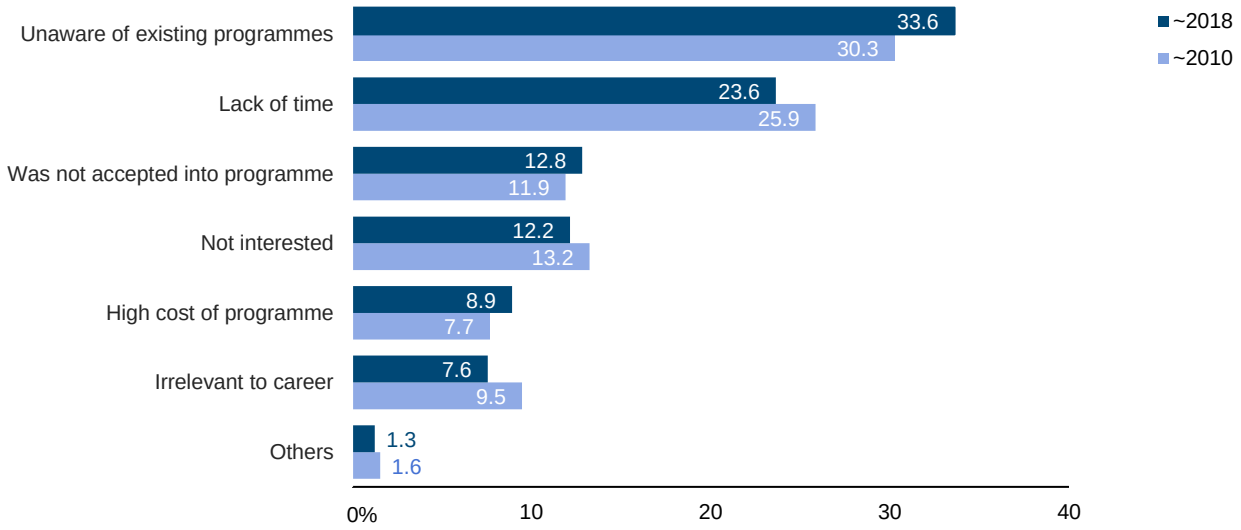


Source: KRI (2023)

Accessibility and availability of training programmes

Among experienced graduates, 42.2% of the ~2018 cohort and 44.3% of the ~2010 cohort have not attended any training programmes in the past three years (Figure 5.32). As such, Figure 5.35 illustrates the main reasons for not joining an upskilling or reskilling course. In both cohorts, about one-third cited being unaware of existing programmes, followed by a quarter who encountered the challenge of time constraints. Other reasons include rejection from the programmes, a lack of interest, high costs, and low relevance to their career.

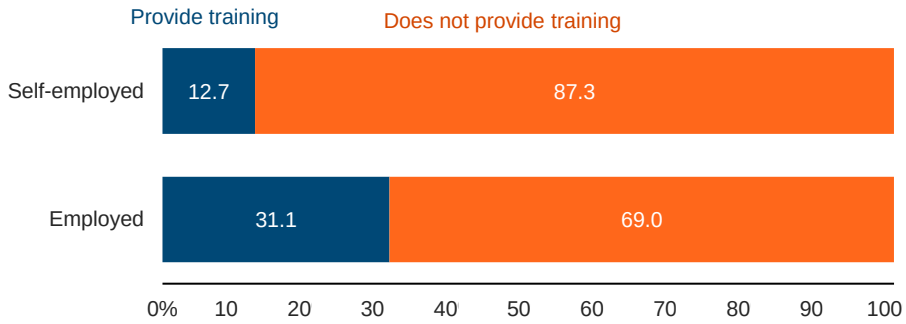
Figure 5.35: Reason for not attending training, by cohort, 2023



Source: KRI (2023)

While certain courses are available to graduates at no charge[262], other training programmes that provide certification or are done in-person can be very costly. Among working graduates, 31.1% of employees have access to training benefits whereas only 12.7% of those self-employed enjoy these benefits (Figure 5.36). Thus, accessibility to upskilling or reskilling courses, particularly those that are done in-person, is markedly limited among Malaysian skilled talents.

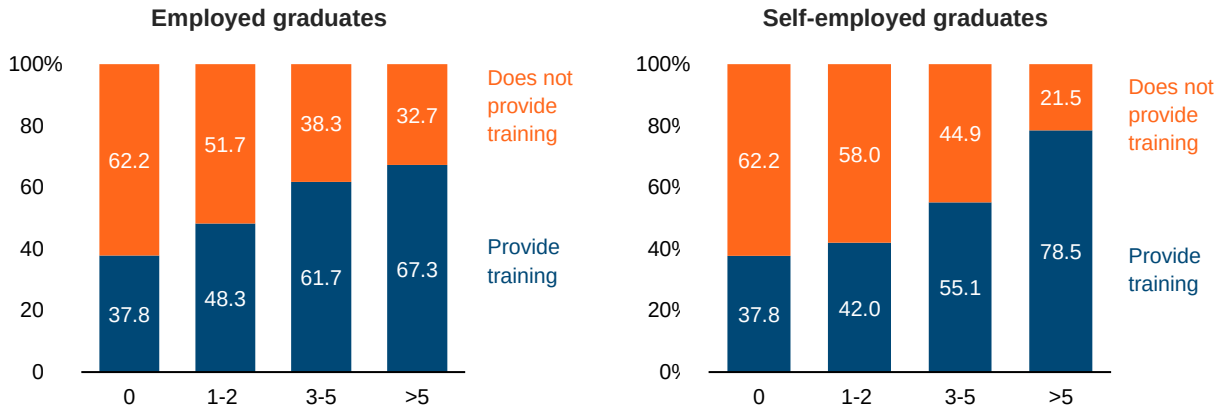
Figure 5.36: Proportion of working graduates with access to training, by employment type, 2023



Source: KRI (2023)

Figure 5.37 shows that over 60% of employed graduates who have never attended training are in companies that do not provide training benefits. On the flipside, around two-thirds of those who have participated in more than five programmes work in firms that provide such benefits. Similar patterns are also observed for the self-employed. As such, HRD Corp could be further enhanced to encourage more firms in providing training opportunities to their employees. In addition, recent initiatives such as the *Program Bina Kerjaya Sektor Tidak Formal* under SOCSO can help increase the accessibility of upskilling or reskilling programmes to those self-employed or in non-standard employment.

Figure 5.37: Breakdown of working graduates, by employment type, number of trainings attended and provision of training benefits, 2023



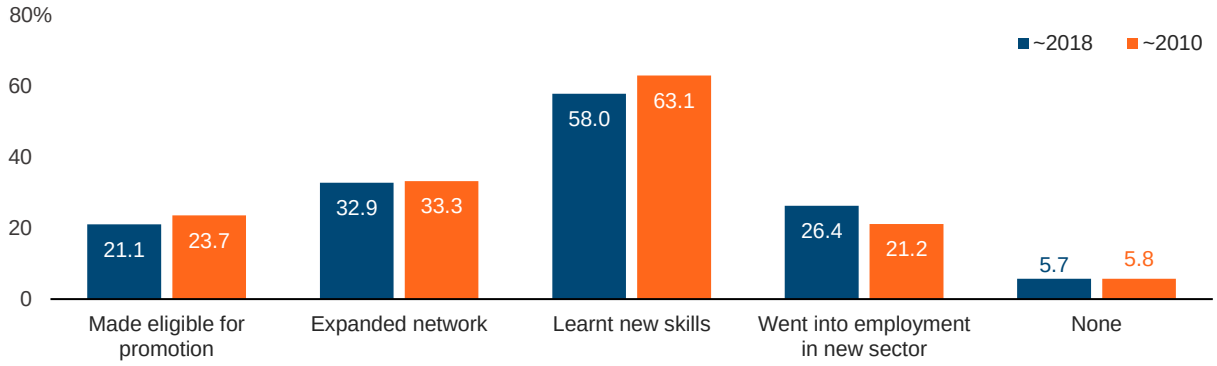
Source: KRI (2023)

[262] Examples include courses offered by HRD Corp under the *e-Latih* platform.

Perceived benefits of training

Almost all (95.0%) of experienced graduates who have attended a training programme reported gaining at least one benefit. Over half in both cohorts believe that they have learnt new skills after attending the programmes (Figure 5.38). Thus, it is a positive indicator of the overall effectiveness of training programmes for graduates. However, lower shares of graduates perceive secondary benefits[263] of training, such as improved eligibility for promotion, expansion of network, and employment gain in a new sector. Across cohorts, about one-third agree that training has helped expand their network, while only one-fifth associate it with better job promotion eligibility.

Figure 5.38: Overall benefits attained from trainings, by cohort, 2023



Source: KRI (2023)

Graduates' perceptions towards the benefits of training also varies across different economic sectors. As summarised in Table 5.8, the highest share of graduates who cited learning new skills is from the social services sector, at 77.7%. For those in *Modern Services*, relatively higher shares believe that training has enabled them to have better eligibility for promotion or employment in a new sector. Meanwhile, graduates in the *Traditional Services* sector are marginally more likely to perceive expanded network as the benefits of training, besides new skills and improved promotion eligibility. Lastly, 44.0% of those in the agricultural sector who attended training have gained more networking opportunities, compared to below 40% of graduates in other sectors.

Table 5.8: Overall benefits attained from trainings, by economic sector, 2023

	Made eligible for promotion	Expanded network	Learnt new skills	Employment in new sector	None
Modern Services	26.5%	33.8	64.7	26.1	4.6
Social Services	21.5	36.7	77.7	21.7	2.4
Traditional Services	25.8	36.2	63.5	25.0	5.0
Industrial	22.8	33.9	63.4	20.6	4.5
Agricultural	21.6	44.0	72.0	10.4	0.0

Source: KRI (2023)

[263] Secondary benefits here extend beyond the direct gains of attending the programme. It represents how the acquisition of these new or improved skills is valued within the labour market.

Currently, various upskilling and reskilling initiatives by the government largely focus on digital skills and labour market training. Government programmes such as Digital Up and Global Online Workforce by MDEC as well as UpSkill Malaysia by HRD Corp lean towards enhancing digital and technical skills among the local workforce. These are usually more relevant to those working in the services sector, while others in the industrial and agricultural sectors may face some barriers of entry with greater requirements on technical knowledge of heavy machinery and operational processes. Given the intricacies and safety considerations of such industries, these graduates may have less access to training programmes beyond the formal means—such as advanced certification via TVET higher education institutions—and thus, greatly constrained by higher costs in general.

5.6 Key Findings and Discussion

This chapter explores various ways that ALMPs interact with both fresh and experienced graduates as well as their influence on the overall labour market outcomes. Our findings highlight the similarities and differences during their job search process and relevant support deemed as most useful by graduates. The analysis also illustrates some benefits of on-the-job work experience via internships and government apprenticeships. Finally, the chapter investigates graduates' motivation to further study or to participate in training, as a proxy to their self-development initiatives. The key findings are as follows:

5.6.1. ALMPs have enhanced graduate employability, but there is room for improvement

The Malaysian government has been committed to address issues of graduate employability as evidenced by multiple policy documents and programme implementation over recent years. The utilisation of various ALMP instruments to enhance graduate employability marks a positive direction towards shaping a dynamic ecosystem that can cater to the diverse and changing needs of skilled talents and employers.

Despite this, awareness of various government initiatives among graduates remains relatively low—pointing towards issues surrounding effective promotion and outreach inclusivity. The significant share of graduates who cited "promotion of government programmes" as the most useful support during their job search process suggests that awareness campaigns could easily reduce existing gaps in programme outreach and delivery.

Moreover, a myriad of stakeholders and programmes that address challenges involving graduate employability have resulted in overlaps of similar initiatives and fragmentation of resources, which likely reduces the efficacy and capabilities of each programme to reach its intended target group. As such, integration and coordination efforts across ministries and agencies could strengthen the outreach of these initiatives.

5.6.2. Changing preferences of job search method and support

In recent years, methods that graduates use to search for jobs have changed compared to a decade ago. In the first half of the decade, more fresh graduates utilised personal networks to secure their first job. However, from 2017 onwards, the proliferation of digital technologies has fostered the use of internet platforms and social media for job search. Among experienced graduates, a majority also found online job search platforms to be the most effective method, regardless of cohort, qualification level, or economic sector.

Among all types of job search support, experienced graduates generally found resume and cover letter guidance to be the most useful, though postgraduate holders had more diverse preferences. Furthermore, most unemployed graduates stated great difficulties in securing job interviews, which may be alleviated by targeted and tailored provision of public employment services. In parallel, a majority of homemakers who have previously worked also expressed their intentions to return to the labour market, with most requiring childcare assistance and flexible work arrangements for their career comeback.

In short, graduates' preferred job search method and their perception towards the most effective support changes quite significantly as they attain higher qualifications and work experience. Hence, it is imperative to ensure policy and programme flexibility as well as intensify current efforts to raise awareness of and improve accessibility to these programmes.

5.6.3. Limited impact of internship and apprenticeship programmes

Over the past decade, there has been a notable surge in graduate participation in internships, often due to corresponding requirements set by higher education institutions. Despite the widespread belief in the importance of internships to secure employment, our analysis suggests little evidence to support this relationship. Moreover, it is crucial to emphasise that not all internship experiences are equal. Degree holders with internship experience are more likely to be employed in high-skilled occupations, while those who pursue internships in related study fields demonstrate higher likelihood of securing matched jobs. Additionally, extended internship durations can also enhance graduate employability and employment outcomes; but all these do not necessarily translate into well-paying positions among graduates.

In the case of government apprenticeship programmes, only one-fifth of experienced graduates have participated in these programmes, majority of whom are from IPTA and TVET backgrounds. While most claim to have acquired new skills, only one-third of graduates are able to secure permanent employment after the completion of their apprenticeship programmes. Even more concerning, merely one-fifth are offered employment by the host companies where they had their apprenticeships. These findings raise questions about the absorption rate of companies involved in these government programmes.

For both internships and apprenticeships, the potential benefits that graduates can derive from these respective programmes as well as their impact on graduates' overall labour market outcomes depend heavily on the programme structure and implementation. Therefore, a more rigorous evaluation of internships—within and outside of MySIP—and government apprenticeships conducted by firms is essential to ensure that these programmes successfully achieve their intended objectives, particularly in developing the country's skilled workforce.

5.6.4. The need for continuous self-development in an increasingly competitive market

Substantially more fresh graduates are furthering their studies post-graduation, whereas less than 10.0% of experienced graduates are currently in full-time studies. In fact, more than half of graduates who pursue further studies wish to upskill or reskill themselves, except for the ~2010 cohort who still struggle to find ideal employment opportunities after a decade of being in the labour market.

Overall, there has been relatively low participation among graduates in upskilling or reskilling programmes. For those who participated in training programmes, only 1-2% of fresh graduates did so immediately after graduation, while most experienced graduates only took one to two programmes in the past three years. The low participation in these programmes are likely attributed to the lack of awareness or limited accessibility among graduates.

Additionally, graduates' perception regarding the relevancy of tertiary education towards their career development influences their participation in training. Experienced graduates with positive views of the skills developed during their tertiary education are more likely to upskill after graduation. Thus, our findings may indicate that the cultivation of lifelong learning and continuous self-development has become imperative for graduates to compete and stand out in the contemporary job market.

5.7 Chapter Conclusion

Overall, this chapter has highlighted how different types of ALMPs have contributed to promoting graduate employability in Malaysia. While the utilisation of ALMPs is not new to the country's human resource development policies, the recent expansion of initiatives offered such as mandatory internship requirements, government apprenticeships targeting fresh graduates, as well as online digital training courses have somewhat benefitted students in tertiary education in terms of skills enhancement and accumulation of work experience.

As demands within the labour market evolve, ALMPs can also be important tools to help ease the school-to-work transition among graduates. However, proper evaluation and monitoring of these programmes will require more granular data from each respective programme. Furthermore, the consolidation of multiple programmes could be beneficial as the government can leverage on various organisations' strength, resources, and expertise to promote greater employability and outcomes.

Regardless, not all of the challenges surrounding graduate employability can be solved within the current policy framework. Deeper and persistent structural issues within the labour market, particularly surrounding the quality of jobs and wage stagnation among skilled talents, require broader interventions as discussed in the next chapter.

CHAPTER 06

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CHAPTER 6

JOB AVAILABILITY AND MATCHING EFFICIENCY

The success of economic structural reforms should be assessed in terms of how far it can create more jobs with meaningful wages for all Malaysians.

YAB Dato' Seri Anwar Ibrahim (2023)[264]
Prime Minister of Malaysia

6.1 Introduction

In order to completely understand the scenario of graduate employability, it is crucial to investigate not only the supply of talents, but also the demand for skills and availability of jobs in the market. This can be done by analysing the overall number of jobs, vacancies as well as initiatives for job creation over the past decade. Jobs represent the demand for workers in the labour market, measured by both filled positions and open vacancies[265]. Meanwhile, analysing matching efficiency is useful to understand the labour market conditions as it provides insights into how well the skills and talents of the workforce align with the demands of employers. These analysis help identify potential mismatches, shortages, or surpluses in specific skill sets, enabling policymakers, educators, and employers to make informed decisions to enhance graduate employability and address underemployment.

The analysis in this chapter leverages publicly available data from the Department of Statistics Malaysia (DOSM), such as the Labour Force Survey (LFS), Employment Survey (ES), Salaries and Wages Survey (SWS), and other relevant graduate statistics. We also utilise data and studies published by other organisations such as TalentCorp and the World Economic Forum. Durations covered are based on data availability, which may impose limitations with the time trends covered in other chapters. However, we believe that these datasets are sufficient to provide valuable insights on labour market demand trends.

This chapter begins with Section 6.2 providing an overview of past and current policies to promote investments and job creation, besides highlighting some emerging global trends that are shaping the international and domestic labour market. Next, Section 6.3 presents the labour demand landscape by analysing job-related trends such as the number of available versus created jobs as well as vacancies since 2015. To understand the health and functioning of the labour market, we examine "matching efficiency" by analysing job vacancy and unemployment, as well as studying the trend in critical occupations and skills in Section 6.4. The chapter concludes with a summary of key findings and discussions in Section 6.5 to address existing gaps between graduate supply and skills demand in Malaysia.

[264] Anwar Ibrahim (2023a)
[265] DOSM (2023a)

6.2 Job Creation Agenda in National Development Plans

6.2.1. Past policies

To ensure comparability between graduate supply and labour demand, only development plans from 2010 onwards are taken into consideration to derive actual jobs conditions within the period. There are three key national plans introduced between 2010 and 2020, namely the Economic Transformation Programme 2010-2020 (ETP 2020), 10th Malaysia Plan 2011-2015 (10MP), and 11th Malaysia Plan 2016-2020 (11MP).

Table 6.1 illustrates the job creation targets according to each plan, whereby ETP 2020 has the highest total target of 3.3 million jobs due to its longer duration of ten years. Meanwhile, the 10MP and 11MP targeted 1.4 million and 1.3 million jobs respectively, over a five-year period. The target for each plan also differs, with ETP 2020 focusing on workers' income level instead of job skill level as in 10MP and 11MP. The shares of high-income or high-skilled jobs from total job creation are 57% for ETP 2020, 33% for 10MP, and 35% in 11MP.

Table 6.1: Summary of key points for ETP, 10MP and 11MP

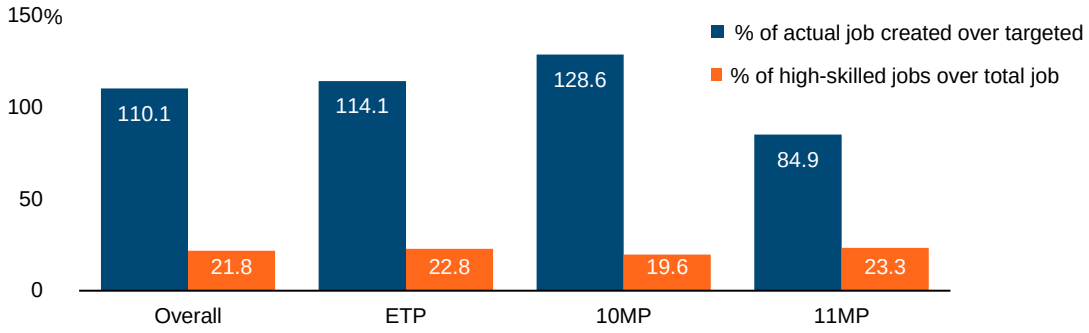
National Development Framework	ETP 2020	10MP	11MP
Duration	2010 – 2020	2011 – 2015	2016 – 2020
Job creation total target (annual average)	3.3 million jobs (330,000 annually)	1.4 million jobs (280,000 annually)	1.3 million jobs (260,000 annually)
Proportion of high-income / high-skilled	57% for middle- and high-income jobs	33% are high-skilled jobs	35% are high-skilled jobs
Actual total jobs creation (annual average)	2.26 million jobs (377,000 annually) (as at 2016)	1.8 million jobs (360,000 annually)	1.1 million jobs (220,000 annually)
Surplus / (shortfall) jobs created	**280,000 (as at 2016)**	**400,000**	**(200,000)**

Source: PEMANDU (2010), GOM (2010), GOM (2016), GOM (2021b), Office of the Advisor to the Prime Minister (2017), GOM (2023b) and KRI calculations

Based on our calculations, approximately 319,000 actual jobs have been created on average each year, thus exceeding the government's annual target of 290,000 jobs between 2010 and 2020. In fact, only the 11MP falls short of its overall target[266] (Figure 6.1). With that, the overall job creation under these three development plans is above the combined targets by ten percentage points. However, the proportion of high-income or high-skilled job creation is lower than 25% of total jobs across the development plans. Hence, none of the thresholds for high-income or high-skilled jobs have been met since 2010.

[266] Based on available data publicly, ETP 2020 has already achieved 68% of its target, which is about 2.3 million new jobs in 2016. According to this, we predict that the ETP 2020 has achieved its target of 3.3 million total job creation by 2020. Source: Prime Minister's Department (2016)

Figure 6.1: Job creation achievement under ETP 2020, 10MP and 11MP



Source: PEMANDU (2010), GOM (2010), GOM (2016), GOM (2021b), Office of the Advisor to the Prime Minister (2017), GOM (2023b) and KRI calculations

6.2.2. Existing policies

From 2021 onwards, there are four main documents relevant to the development of Malaysia's labour market, specifically jobs. These include the Twelfth Malaysia Plan (12MP), New Industrial Master Plan 2023-2030 (NIMP 2030), National Energy Transition Roadmap 2050 (NETR 2050), and Malaysia Decent Work Country Programme 2019-2025 (DWCP 2025).

Although the services and manufacturing sectors remain as key driver for growth in the past few decades, new catalyst projects are expected to boost Malaysia's economic development significantly. NIMP 2030 focuses on optimising manufacturing and industrial-related services for further advancement. Meanwhile, NETR 2050 positions energy, green technology, and sustainability as primary game-changers in the near future. Thus, directions set by these policies will provide better career prospects, especially in terms of high-skilled employment opportunities for local talents.

The key points, as summarised in Table 6.2, cover only the 12MP, NIMP 2030, and NETR 2050 as these policies share similar attributes with specific job creation targets and priority sectors. According to the 12MP, the goal of 1.1 million new jobs by 2025 encompasses selected sectors which include electric and electronics, global services, aerospace, creative, tourism, Halal, smart farming and biomass. Additionally, the NIMP 2030 specifically aims to create high-skilled jobs in the Manufacturing sector, particularly in advanced materials, electric vehicles, renewable energy and carbon capture, utilisation and storage (CCUS). Lastly, the NETR 2050 has focused more on new growth areas namely energy efficiency, renewable energy, hydrogen, bioenergy, green mobility and CUSS.

Table 6.2: Summary of key points for 12MP, NIMP 2030 and NETR

National Development Framework	12MP	NIMP 2030	NETR 2050
Duration	2021 – 2025	2023 – 2030	2022 – 2050
Jobs creation targets	1.1 million jobs	700,000 (high-skilled jobs in manufacturing sector)	310,000 jobs (by 2050)
Focus / priority sector	E&E, global services, aerospace, creative, tourism, Halal, smart farming & biomass	E&E, aerospace, chemical, pharmaceutical & medical services	-
New growth area / catalyst project	-	Advanced materials, electric vehicles, renewable energy & CCUS (carbon capture, utilisation & storage)	Energy efficiency, renewable energy, hydrogen, bioenergy, green mobility & CCUS

Source: GOM (2021b), MITI (2023) and Ministry of Economy (2023)

On the other hand, Malaysia DWCP 2025 is a framework that governs the cooperation between the International Labour Organization (ILO), the Government of Malaysia, the Malaysian Employers Federation (MEF), and the Malaysian Trades Union Congress (MTUC) to promote inclusive and sustainable economic growth, full and productive employment, as well as decent work for all. The ILO has outlined decent work based on four pillars in its Decent Work Agenda which include full and productive employment, rights at work, social protection and the promotion of social dialogue.

According to Nur Thuraya Sazali and Siti Aiysyah Tumin (2020), 76% of single, young, and full-time workers living in Kuala Lumpur earned below RM2,700 in 2018[267]. Moreover, 28% of full-time workers had low-paid jobs in 2015, approximately double that of Vietnam and Japan[268]. At the same time, Malaysia ranked as 50th among 122 countries with the longest work week, involving 21% of workers with excessive working hours (more than 48 hours weekly). Therefore, these findings indicate that the decent work agenda in Malaysia requires immediate interventions to realise its goals by 2025, particularly in fostering adequate earnings and productive work among skilled talents.

6.2.3. Global trends and job market outlook

Around the world, new jobs have been dominated by a transformative change due to several factors such as innovation, climate change, demographic shift, and globalization[269]. The impacts of these global trends are huge towards local jobs, whereby changes may affect some jobs to emerge or disappear. This naturally means that the skills demanded are also changing over time. Hence, continuous skills development programmes including those for upskilling, reskilling, and training will be crucial to ensure that Malaysian talents are able to adapt to the future of work.

Over the next five years, it is estimated that 23% of total global jobs[270] will face job movement—a scenario whereby new jobs will be created and existing ones will be destroyed. The green transition, application of environmental, social and governance (ESG) standards, climate change, and adoption

[267] Referring to the estimated living wage in 2016 for single adults in Klang Valley. Source: Chong and Khong (2018)
[268] Nur Thuraya Sazali and Siti Aiysyah Tumin (2020)
[269] ILO (2019a)
[270] WEF (2023a)

of technologies appear as critical factors in job creation as shown in Table 6.3. This emerging pattern aligns well with NETR 2050, which strives to increase investments in the renewable energy sector, and thus contributing to increased high-skilled job creation. Meanwhile, job displacement—a situation in which jobs are reduced or eliminated—is attributable to slower economic growth globally, rising costs, and remnants of the pandemic.

Table 6.3: Top global macrotrends that influence job movements

Job creator	Job displacer
Green transition	Slower global economic growth
Application of ESG standards	Rising cost of inputs
Localized supply chains	Rising cost of living
Climate change	Ongoing impact of the pandemic
Demographic dividend	
Adoption of technologies	

Source: WEF (2023a)

Apart from these global macrotrends, other potential drivers that could boost job creation by 2030 include rising incomes in emerging economies, the ageing population, and marketisation of unpaid work especially in social services[271]. However, in 2022, the global jobs gap rate stood at 12.3%, consisting of 473 million total unmet needs for employment. Meanwhile, the ILO estimates a slowdown in employment growth at just 1.0% in 2023, which implies greater difficulties in closing the jobs gap for unemployed persons and those outside the labour force, further supressing the creation of quality jobs as a whole.

To address these issues, there ought to be better linkages between domestic sectors and the global supply chain[272]. This can promote better quality employment with higher rate of standard jobs, lower proportion of informal workers, and lower incidence of dismal pay[273]. The global supply chain would attract quality investments, which in turn develops high value business activities and creates more high-skilled jobs within the labour market.

In the Malaysian context, there are some similarities between the country's national policies and global trends that have an impact on future jobs. These global trends are significant to be tracked and identified as to prepare graduates for the future of work. Furthermore, the rapid changes of jobs must be addressed efficiently to provide better matching efficiency between overall labour supply and job creation. The ILO has urged, among others, to establish a just transition to future jobs by: (1) harnessing the fullest potential of technological progress and productivity growth, (2) developing effective policies for full, productive and freely chosen employment and decent work, and (3) promoting the transition from informal to formal sectors. Otherwise, fulfilling the gap between skilled talents and future job needs will remain a massive challenge for the country.

[271] ILO (2023b)
[272] Ibid.
[273] Ibid.

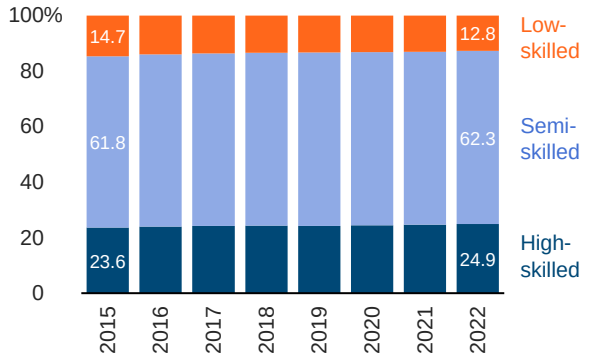
6.3 Trends in Labour Demand

To complement earlier discussions on graduate employment outcomes, we examine current scenarios for the overall labour force in Malaysia. In the first half of 2023, the total labour force consists of 16.7 million individuals, while labour force participation rate is around 70%. The unemployment rate currently stands at 3.5%, involving about 580,00 unemployed persons[274]. Focusing on labour demand trends in the market, this section will present total jobs, vacancies and jobs creation between 2015–2022, based on publicly available information.

6.3.1. Total jobs

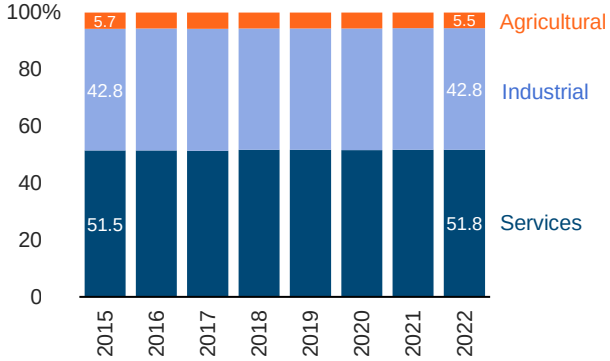
Total jobs[275] refer to the total labour needed for production during a specific period of time, which includes both filled jobs[276] and vacancy positions. In 2022, there are about 8.7 million total jobs in the formal private sector, a small increment from 8.4 million in 2015. Over the years, Figure 6.2 shows that the composition of job skill level remains largely unchanged, with approximately 25% high-skilled, 62% semi-skilled, and 13% low-skilled jobs. Despite the growing number of jobs in the labour market and various national development plans aimed to create more high-skilled jobs, the share remains somewhat flat between 2015 and 2022. Similar trend is also observed for total jobs breakdown across three key economic sectors (Figure 6.3). Most jobs are in the services sector, followed by industrial and agriculture sectors. The pattern remains the same over the years, with the percentage of jobs in services sector standing at 52%, industrial at 43% and agricultural at 5%.

Figure 6.2: Breakdown of total jobs, by skill level, 2015–2022



Source: DOSM (2023a), DOSM (2018)

Figure 6.3: Breakdown of total jobs, by economic sector, 2015–2022



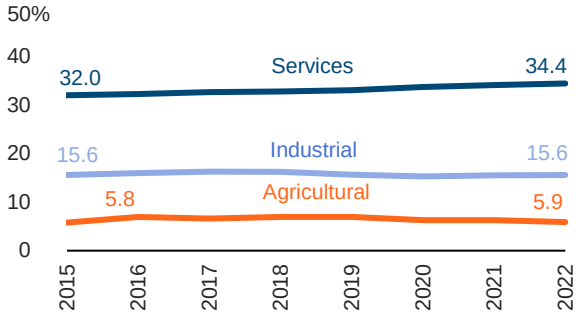
Source: DOSM (2023a), DOSM (2018)

We further examine job skill level to understand its prevalence within each economic sector. Figure 6.4 indicates that the services sector has the highest share of high-skilled jobs at 34.4%, whereas the industrial sector has 15.6% and the agricultural sector only 5.9% of high-skilled jobs. Meanwhile, Figure 6.5 shows that agricultural and industrial jobs are predominantly semi-skilled, accounting for 88.2% and 78.4% respectively in 2022. For the services sector, nearly half of jobs available are semi-skilled positions.

[274] DOSM (2023d)
[275] Jobs are based on the Quarterly Employment Survey which is conducted on formal private sector establishments using probability sampling. Source: DOSM (2023a)
[276] Filled jobs refer to paid employment (full-time and part-time) in the private and formal establishments only, and thus exclude proprietors and partners of unincorporated businesses, unpaid family workers, employees on strike and unpaid leave, and employees provided by other agencies as subcontractors and consultants. Source: Ibid.

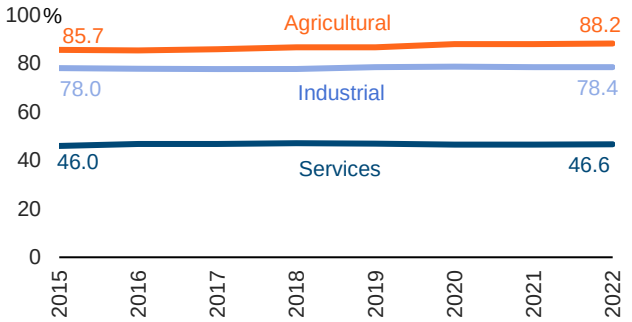
Subsequently, this suggests that the services sector has the highest share of low-skilled jobs at 19.0% compared to the remaining two sectors with approximately 6.0% of low-skilled jobs. Overall, the agricultural and industrial sectors typically offer semi-skilled positions. On the other hand, services sector shows a relatively even split between semi- and high-skilled jobs, while simultaneously comprised of relatively high share of low-skilled jobs.

Figure 6.4: Prevalence of total high-skilled jobs, by economic sector, 2015–2022



Source: DOSM (2023a), DOSM (2018) and KRI calculations

Figure 6.5: Prevalence of total semi-skilled jobs, by economic sector, 2015–2022



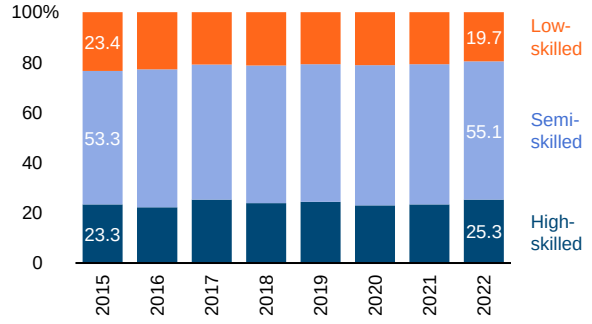
Source: DOSM (2023a), DOSM (2018) and KRI calculations

6.3.2. Job vacancies

Unfilled jobs, or vacancies, refer to specific jobs that exist and are ready to be filled as employers actively seek for candidates. It reflects hiring activities from an employer's perspective through multiple channels such as job advertisement, vacancy notice, public or private employment services, trade unions, and direct communication with candidates. As such, job vacancies can provide a closer look at the current labour demand at specific points of time.

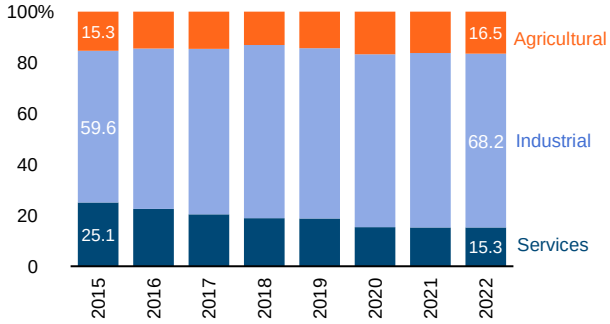
The number of vacancies in the labour market decreased from 235,000 in 2015 to 175,000 in 2020, but increased gradually to 190,000 in 2022[277]. Figure 6.6 shows that in 2022, more than half of vacancies comprise of semi-skilled jobs, while the remaining 25.3% are high-skilled and 19.7% are low-skilled job vacancies. This pattern remains largely unchanged between 2015 and 2022. About a quarter of job vacancies are high-skilled jobs, suggesting somewhat inefficient job matching given the high incidence of overqualified graduates and rising supply of tertiary-educated talents in the labour market.

Figure 6.6: Breakdown of vacancies, by skill level, 2015–2022



Source: DOSM (2023a), DOSM (2018) and KRI calculations

Figure 6.7: Breakdown of vacancies, by economic sector, 2015–2022



Source: DOSM (2023a), DOSM (2018) and KRI calculations

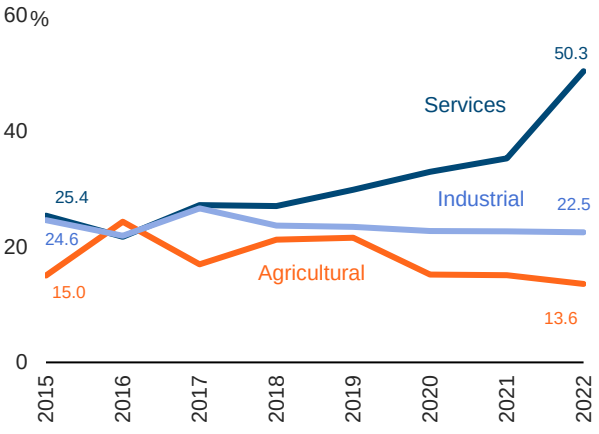
[277] DOSM (2023a), DOSM (2018)

Across different economic sectors, Figure 6.7 shows that the highest share of job vacancies is in the industrial sector, contributing over 60% of total vacancies since 2015. For the services sector, this share has notably shrank from 25.1% in 2015 to 15.3% in 2022. Considering about half of total jobs—filled and unfilled—is from the services sector (see Figure 6.3), a smaller share of job vacancies in recent years may suggest higher levels of matching efficiency in the services sector compared to others. We further discuss about job matching efficiency in Subsection 6.4.1.

A deeper analysis in Figure 6.8 demonstrates that the services sector has the highest share of high-skilled job vacancies at 50.3%, followed by 22.5% in the industrial sector and 13.6% in agriculture. In 2021, the sharp increase in high-skilled job vacancies within the services sector may indicate deepening mismatch of labour demand and supply during the pandemic. This could also be due to greater difficulties faced by employers to hire tertiary-educated talents that possess the required skillsets to fill up these vacancies.

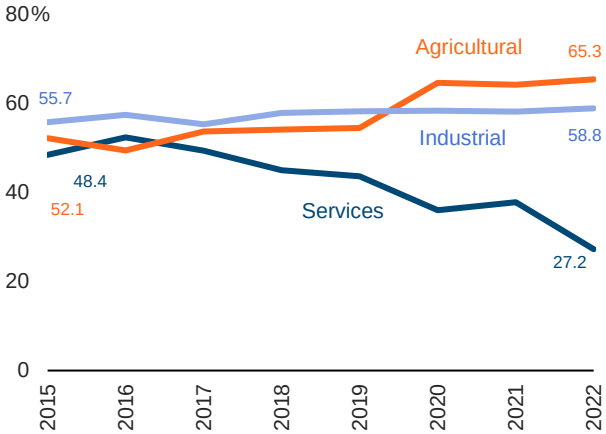
In contrast, semi-skilled job vacancies in the services sector have been on a downward trend, falling sharply from 48.4% in 2015 to 27.2% in 2022 (Figure 6.9). The trend shown is aligned with observations made that many graduates have employed in the labour market with only semi-skilled jobs. Meanwhile, the share of semi-skilled job vacancies in the remaining two sectors have been increasing since 2015, more so in the agricultural sector. Coupled with largely unchanged prevalence of high-skilled job vacancies, the agricultural sector seems to be progressing away from low-skilled occupations and roles in recent years.

Figure 6.8: Prevalence of high-skilled vacancies, by economic sector, 2015–2022



Source: DOSM (2023a), DOSM (2018) and KRI calculations

Figure 6.9: Prevalence of semi-skilled vacancies, by economic sector, 2015–2022



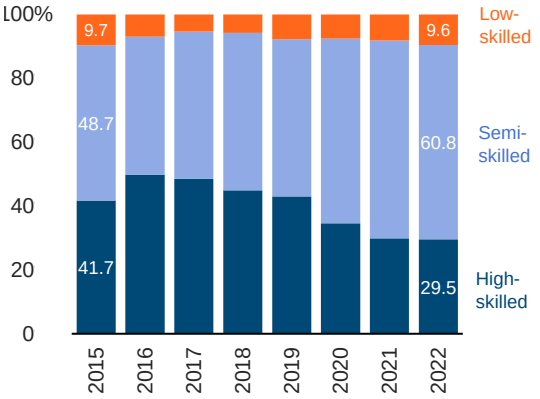
Source: DOSM (2023a), DOSM (2018) and KRI calculations

6.3.3. Job creation

Job creation refers to new jobs that are not previously available. These could be created from newly established schemes, internal promotion of existing employees, and additions to the existing job structure, which are significant to ensure that labour demand is sustainable or sufficient to meet the increasing supply of workers. This subsection reviews the trends in job creation to provide insights on actual conditions in the labour market.

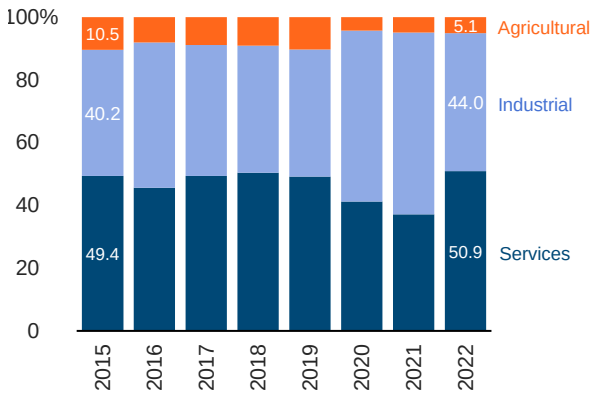
In 2022, there are 116,000 newly created jobs, which is about 31% lower than in 2015 (169,000 jobs). The lowest number of jobs created is observed during the COVID-19 pandemic in 2020–2021, with less than 80,000 job creation during this period. Figure 6.10 shows that the share of newly created high-skilled jobs has dropped significantly from 41.7% in 2015 to 29.5% in 2022. This reduction is offset with the rise in semi-skilled job creation over the same period.

Figure 6.10: Breakdown of job creation, by skill level, 2015–2022



Source: DOSM (2023a), DOSM (2018) and KRI calculations

Figure 6.11: Breakdown of job creation, by economic sector, 2015–2022

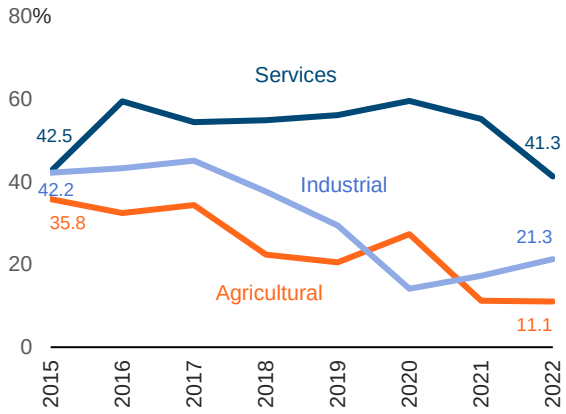


Source: DOSM (2023a), DOSM (2018) and KRI calculations

In terms of economic sectors, the services sector has consistently outpaced other sectors in overall job creation (Figure 6.11). For instance, the services sector accounts for 50.9% of total new jobs in 2022, while the industrial and agricultural sectors contribute 44.0% and 5.1% of new employment opportunities respectively. Nevertheless, high-skilled job creation has been declining across all economic sectors as shown in Figure 6.12. The trend is particularly pronounced in the industrial and agricultural sectors, whereas the services sector shows a marginal decline since 2015. In the agricultural sector, the share of newly created high-skilled jobs has significantly shrank from 35.8% in 2015 to 11.1% in 2022. Meanwhile, the share of high-skilled job creation in the industrial sector has decreased from 42.2% in 2015 to 14.1% in 2020, before rising to 21.3% in 2022.

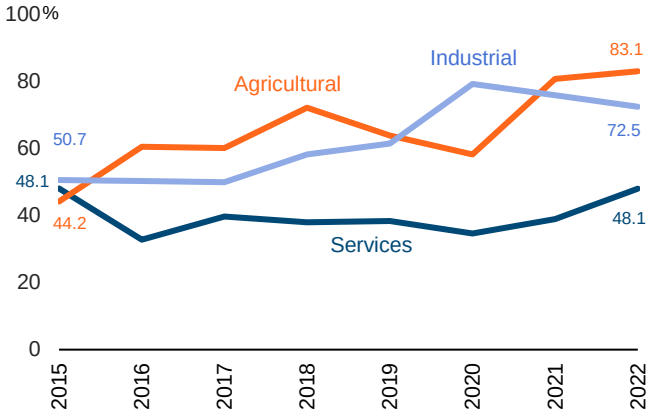
Despite the lack of applicants for semi-skilled job vacancies, there has been a notable upward trend in the creation of semi-skilled jobs across all economic sectors (Figure 6.13). In the agricultural sector, there are significantly more semi-skilled jobs created, with almost double the share from 44.2% in 2015 to 83.1% in 2022. For the industrial sector, semi-skilled job creation has increased by 21.8%; whereas the services sector experienced relatively small changes in the share of semi-skilled job creation, maintaining around 48.1% over the same period. Therefore, it seems that employers have increasingly opted for new semi-skilled rather than high-skilled positions, which is inconsistent with the rising supply of skilled talents—and thus, substantiate the persistent issues of overqualification and low pay among Malaysian graduates.

Figure 6.12: Prevalence of high-skilled jobs created, by economic sector, 2015–2022



Source: DOSM (2023a), DOSM (2018) and KRI calculations

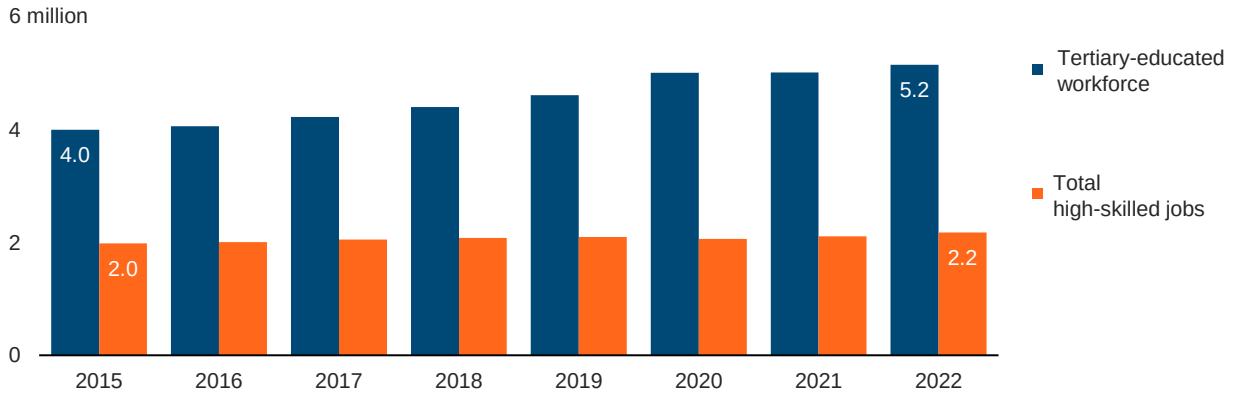
Figure 6.13: Prevalence of semi-skilled jobs created, by economic sector, 2015–2022



Source: DOSM (2023a), DOSM (2018) and KRI calculations

Comparing between labour supply and demand, the number of tertiary-educated workforce has been increasing from 4.0 million in 2015 to 5.2 million in 2022, against a marginal rise in total high-skilled jobs from 2.0 million to 2.2 million over the same period (Figure 6.14). This shows that the supply of tertiary-educated talents has exceeded double that of demand, despite various government initiatives to create more high-skilled jobs in the past decade. The increased number of skilled talents is not supported by suitable roles, which results in an elevated overqualification rate as discussed in earlier chapters. Consequently, this may also affect graduates' employment preferences and behaviours, especially among younger graduates who are shifting towards non-standard work arrangements in recent years or those settling with skills mismatches in their jobs.

Figure 6.14: Comparison between the number of tertiary-educated workforce and total high-skilled jobs, 2015–2022



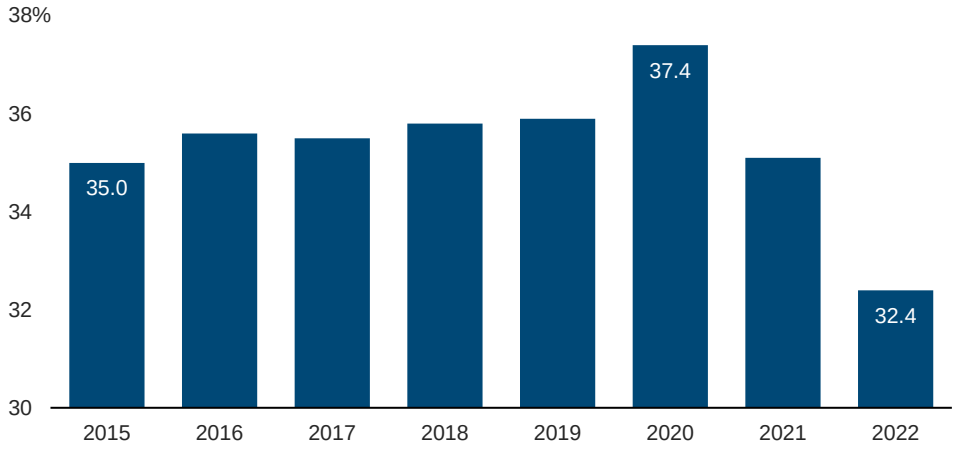
Source: DOSM (2023a), DOSM (2022a) and DOSM (2018)

6.3.4. Compensation of employees

On the demand side, compensation of employees is typically used to measure total remuneration, both in cash and in kind, payable by an employer in return for work done by the employee during a period of time. It includes salaries and wages as well as employers' social security contributions, among others. The total compensation of employees is measured as a percentage of the Gross Domestic Product (GDP), where it projects the share of output that is paid as compensation to employees against the share paid to capital in the production for a specific period of time[278].

Compensation of employees as a share of GDP in Malaysia has been gradually increasing from 35.0% in 2015 to 37.4% in 2020, before dropping to 32.4% in 2022 (Figure 6.15). In comparison, this is much lower than peer countries like Singapore (39.4%), Philippines (36.7%) and South Korea (47.9%) in 2020[279]. The recently announced Madani Economy framework aims to increase this share to 45.0% in 2030 by increasing minimum wages, expanding the proportion of skilled employees, and establishing a progressive wage model[280].

Figure 6.15: Compensation of employees as a share of GDP in Malaysia, 2015–2022



Source: DOSM (2023b)

[278] United Nations Economic Commission for Europe (2023)
[279] United Nations Economic Commission for Europe (2023)
[280] Ha (2023)

6.4 Labour Market Efficiency and Critical Needs

A healthy and well-functioning labour market can be characterised by conditions that reflect the dynamics between jobseekers and employers. While there is no single definition for a "healthy" labour market, it is typically depicted as factors such as low unemployment rate, declining underemployment, ample job creation, short vacancy duration, wage progression, and strong labour market institutions. Collectively, these factors contribute to a thriving labour market that offers diverse opportunities and adequate protection to workers while promoting overall economic growth. This section will discuss two important areas, namely job matching efficiency as well as critical occupations and skills, to help reflect both employers' capability in creating jobs and employees' adaptability to attain employment.

6.4.1. Job matching efficiency

One way of assessing the robustness of the labour market is to look at the rate at which the market is able to match supply and demand of labour. A common analytical tool used to evaluate the efficiency in matching jobs seekers and job vacancies is the Beveridge Curve. Founded by Lord William Beveridge in 1944[281], the curve represents the relationship between the unemployment rate and the job vacancy rate in an economy over time.

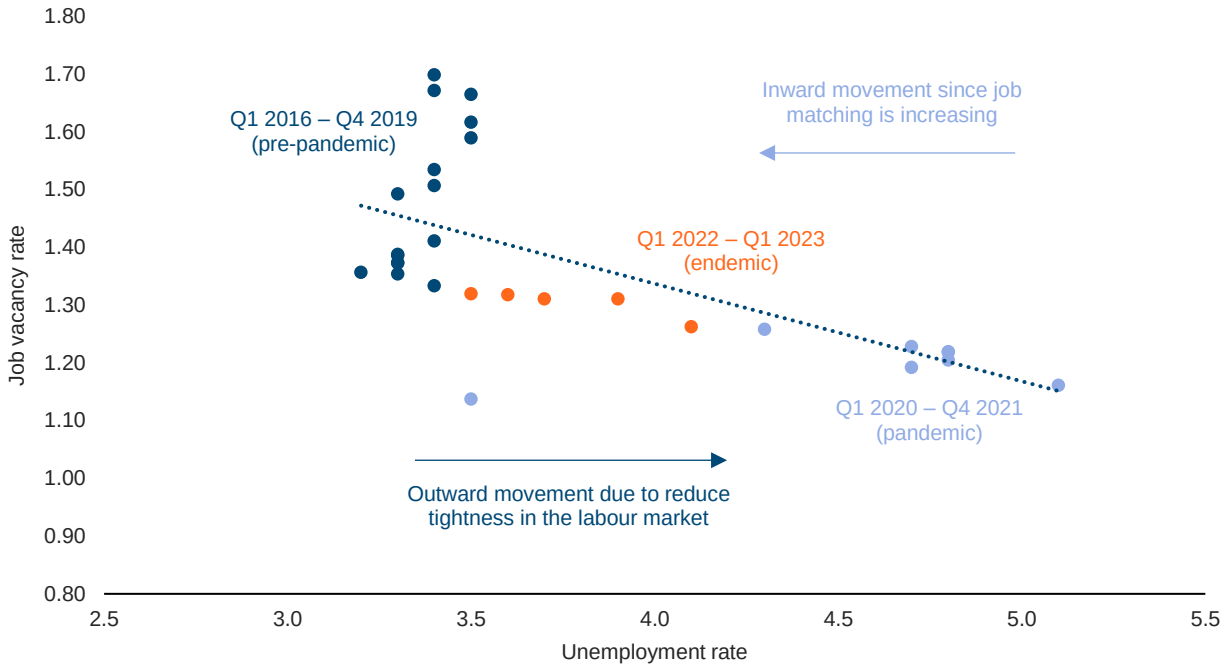
Beveridge Curve is a tool that is used to represent the relationship between the unemployment rate and the job vacancy rate in an economy, which evaluates the labour market efficiency in matching jobs seekers and job vacancies over time. The curve typically takes the form of a downward-slope, with the horizontal axis representing unemployment rate[282] and the vertical axis representing job vacancy rate[283]. The movement along the curve represents labour market conditions based on economic cycles, while the shift of the curve provides insight on labour market matching efficiency. When the economy weakens, job vacancies will be reduced and unemployment rate will rise. This will move the point along the curve towards the bottom right, indicating a tight labour market. When both the unemployment and job vacancy rates are low, the Beveridge curve shifts inward and closer to the origin[284], thus reflecting a more efficient labour market. This means that employers are able to fill in job vacancies easily, while simultaneously reducing the number of unemployed persons in the market.

Using publicly available data from DOSM, we evaluate Malaysia's labour market conditions and efficiency between Q1 2016 and Q1 2023, in which we divided into three distinct periods: (1) pre-pandemic from Q1 2016 to Q4 2019, (2) during pandemic from Q1 2020 to Q4 2021), and (3) endemic from Q1 2022 to Q1 2023.

Figure 6.16 indicates that the labour market has been relatively healthy prior to the pandemic. The dark blue circles show lower unemployment rates coupled with slightly higher job vacancy rates, indicating that ample jobs are available for unemployed individuals or workers intending to change jobs. This could be attributed to various initiatives by the government to increase job creation and improve the job matching process, including through SOCSO, TalentCorp, and MOHE.

[281] Australia National Skills Commission (2021)
[282] The percentage of workforce who are unemployed and actively seeking employment.
[283] The percentage of unfilled jobs as a proportion of total jobs in the labour market.
[284] Referring to the intersection point between the graph's vertical and horizontal axes.

Figure 6.16: Relationship between unemployment rate and job vacancy rate during pre-pandemic, pandemic and endemic phases (Beveridge curve), Q1 2016–Q1 2023



Source: DOSM (2023d), DOSM (2018) and KRI calculations

The pandemic has led to many employees being retrenched, which explains the increased unemployment rate in the labour market. At the same time, job vacancies shrank as firms had to reduce sales or even close down their businesses, partly driven by movement restrictions imposed to curb the spread of COVID-19. With that, the point along the Beveridge curve moves to the right (light blue circles) amid high unemployment and low job vacancies. The sudden movement restriction imposed at the beginning of the pandemic in 2020 has caused a sharp drop in job vacancy rate, as shown by the outlier light blue circle in Figure 6.17.

Moving towards the endemic phase, Malaysia's economic sectors have been catching up and showing positive recovery given the resumption of economic and social activities. Albeit at a gradual pace, more businesses have started to offer vacancies and hire new workers, therefore contributing to lower unemployment rate. Hence, the orange circles in Figure 6.17 represents a leftward and inward movement closer to pre-pandemic levels. This illustrates notable improvement in the labour market with lower unemployment rates and increased job vacancies. To further optimise market efficiency, the government could leverage on several potential areas, including fostering robust economic growth, scaling up skills development programmes, improving labour market mobility, and providing transition support to workers[285].

[285] McKinsey Global Institute (2017)

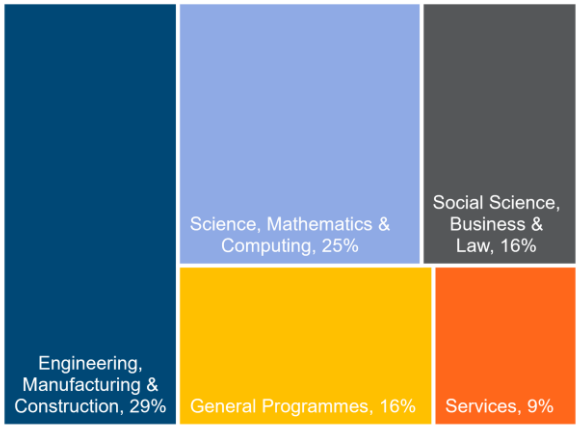
6.4.2. Critical occupations and skills

Besides job matching efficiency, the analysis on critical occupations and skills is pertinent to improve future matching process of workers, especially graduates in high-skilled jobs. As mentioned briefly, the Malaysia Critical Occupations List (MyCOL) is an initiative developed by the Talent Corp Malaysia and the Institute of Labour Market Information and Analysis (ILMIA) to identify and assess skills and occupations in high demands within various industries.

The MyCOL report is collated and published annual year-to-year, uses evaluation processes recommended by international practices to provide comparable insights for better coordination of human capital policies in Malaysia. Moving forward, MyCOL will be used to map the development of Malaysia National Skills Registry (MyNSR), hence becoming the national reference for skills standard. In the report, critical skills and occupations are evaluated based on a mixed approach comprising of both top-down (national strategies and framework) and bottom-up processes (employers' consultations). Subsequently, an occupation will be listed under MyCOL if it meets the criteria of being sought-after, high-skilled, and strategic[286].

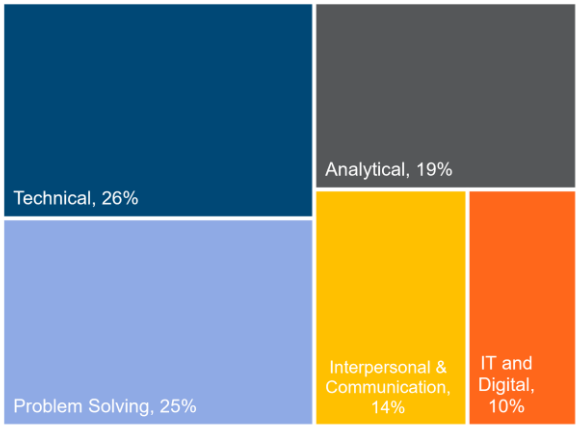
Based on the latest MyCOL report, Figure 6.17 illustrates the top five study fields, which are *Engineering, Manufacturing & construction* (29%), *Science, Mathematics and Computing* (25%), *Social Science, Business & Law* (16%), *General Programmes* (16%), and *Services* (9%). The remaining study fields make up only 5% as relevant study fields for critical jobs. Consistent with this, the top five skills that are highly demanded by employers are technical, problem-solving, analytical, interpersonal and communication, as well as IT and digital skills (Figure 6.18).

Figure 6.17: Top five study fields for critical high-skilled jobs, 2020–2021



Source: TalentCorp (2021)

Figure 6.18: Top five skills for critical high-skilled jobs, 2020–2021

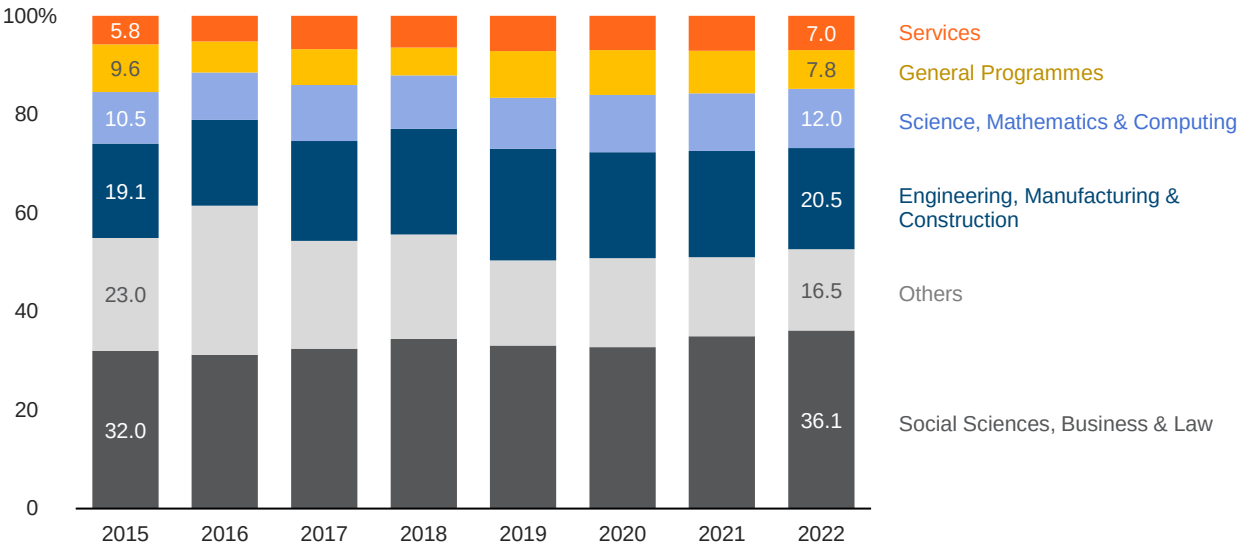


Source: TalentCorp (2021)

[286] TalentCorp (2017)

Contrary to the top study fields reported in MyCOL, data by MOHE demonstrates that graduates from the *Social Science, Business & Law* field have been dominating the total graduate output since 2015 (Figure 6.19). In 2021, 35.0% of graduates are produced from this field as compared to only 16.0% critical jobs demand discussed earlier. Despite the relatively high demand for *Engineering, Manufacturing & Construction* graduates, there is a marked undersupply of these graduates, with roughly 20.0% graduating from this field since 2015.

Figure 6.19: Breakdown of graduate output, by study field, 2015–2021



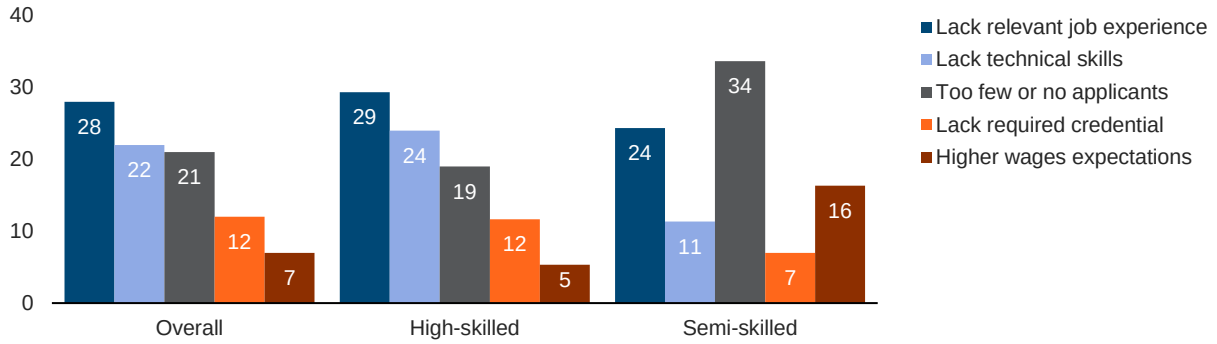
Note: Others include Art & Humanities, Education, Health & Welfare, Agriculture & Veterinary
Source: MOHE, n.d.

Interestingly, our findings in previous chapters indicate persistent overqualification rates among graduates from highly demanded study fields such as *Engineering, Manufacturing & Construction* and *Science, Mathematics & Computing*. These observations are possibly due to inadequate relevant job experience and skills possessed by graduates to work in high-skilled jobs. This could be linked to employers' general perception of a lack of relevant job experience or technical skills among fresh graduates, which hinders them from filling up high-skilled job vacancies (Figure 6.20).

Based on 2015–2021 MyCOL reports[287], most employers also found it challenging to get enough applicants for vacant semi-skilled positions, besides similar reasons pertaining candidates' lack of relevant job experience or higher wages expectations. As a result, some jobs remain critical or sought-after since there are too few eligible candidates. Understanding these factors from the labour demand side helps discern current gaps within the supply of tertiary-educated workforce, and thus, could help determine appropriate interventions such as having specific skills development programmes and encouraging internships or apprenticeships for graduates to gain relevant job experience and technical skills.

[287] MyCOL Report for 2022/2023 is excluded from the analysis since it only covers three economic sectors instead of all 18 sectors in the previous reports.

Figure 6.20: Top five hard-to-fill reasons for critical jobs, by skill level, 2015–2021

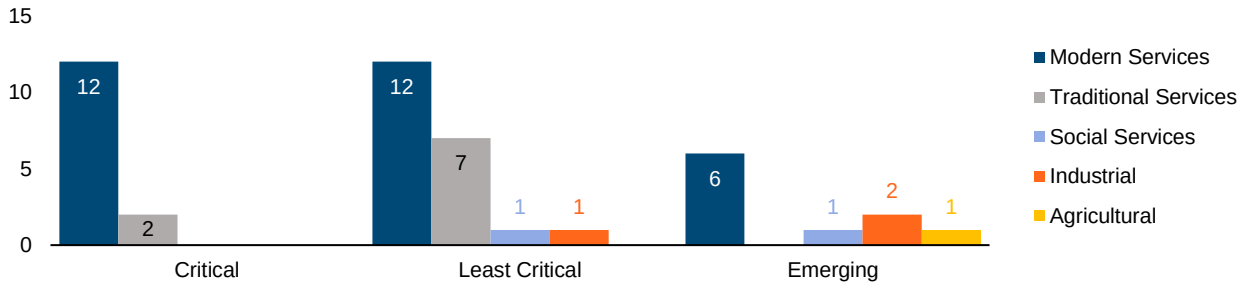


Source: TalentCorp, n.d. and KRI calculations

Furthermore, we categorise the critical occupations and skills based on their recurrence in the MyCOL 2015–2021 reports. These include (1) *critical* occupations that have consistently appeared in all reports, (2) *least critical* occupations that appeared once and are subsequently excluded, and (3) *emerging* occupations that have only appeared in recent years (see Appendix C Table C.1). Figure 6.21 classifies 12 occupations in modern services and two in the traditional services sector as *critical*. These occupations include finance manager, mechanical engineers, system analysts, and computer network professionals, which continue to most sought-after skills by employers.

Meanwhile, there are 12 *least critical* occupations in the modern services sector, seven in traditional services, and one each in the social services and industrial sectors (Figure 6.21). For example, *least critical* occupations include administrative managers, early childhood educators, research and development professionals, lawyers, and chefs. As for *emerging* occupations and skills, there are six from the modern services sector, two from industrial, and one each from social services and agricultural sectors. These are occupations like agricultural production manager, nursing professionals, animation and visual effects professionals, creative content designer professionals, and data professionals.

Figure 6.21: Number of critical, least critical, and emerging jobs, by economic sector, 2015–2021



Source: TalentCorp, n.d. and KRI calculations

The dynamics of these critical occupations and skills reflect the evolving demand and supply of skilled talents within each sector over time. The modern services sector appears in all categories, followed by traditional services. It clearly shows that the services sector has been driving the economy, and thus, should be emphasised and optimised by HEIs to produce enough graduates to effectively respond to labour market needs. This could be achieved through regular updates of skills development programmes and curriculum reform at higher education institutions.

6.5 Key Findings and Discussion

This chapter presents the trends from a labour demand perspective, with a focus on examining jobs in the market and its matching efficiency as well as most sought-after skills by employers. The review of past and existing policies provides a better understanding on how national development plans have influenced job dynamics over time. Global trends also offer important insights on future job market directions. Finally, our analyses on job matching efficiency and critical occupations and skills reflect current gaps between the supply of skilled workforce and market demand, thus providing a stronger basis for future policymaking in order to close these gaps. The key findings from this chapter are as follows:

6.5.1. Inadequate high-skilled jobs

Since 2010, Malaysia has developed three national development plans—namely ETP 2020, 10MP, and 11MP—that successfully created additional jobs beyond their respective targets. However, there is still an insufficient share of high-skilled and high-income jobs to cater to the growing tertiary-educated workforce. In fact, the number of tertiary-educated workforce has exceeded that of high-skilled jobs by a twofold difference. Therefore, the creation of high-skilled jobs in recent years has not kept up with the total supply of skilled talents in the country.

While more than 95% of the tertiary-educated workforce is working, only half are in high-skilled jobs. This means that a significant share are employed in low- or semi-skilled jobs and in other non-standard employment. Between 2015 and 2021, the share of tertiary-educated talents in semi-skilled jobs increased from 22.1% to 31.6%, whereas the share of those in non-standard employment doubled from 8.6% to 15.8%. High dependency on semi-skilled jobs provides misleading signal on the country's economic directions and growth, despite various national development framework and master plans to promote high-skilled and well-paying career opportunities.

In terms of job creation, there has been a notable upward trend in newly created semi-skilled jobs across all economic sectors, albeit with a lack of applicants to fill the vacancies. This possibly portrays deep-rooted structural issues within Malaysia's labour market, with businesses having low needs to upgrade their value chains, hence offering only semi-skilled roles in accordance to their needs. Therefore, the inadequate number of high-skilled jobs is attributable to the rather stagnant growth in high-skilled job creation over the years.

6.5.2. Improved job matching efficiency, but growth in (high-skilled) job vacancy remains stagnant

Prior to the pandemic, the labour market seems to match jobs efficiently between jobseekers and employers, as supported by several government initiatives to improve job search and hiring processes. However, the market became less tight during the pandemic with higher unemployment rates and lower job vacancy rate. This is not surprising given that many businesses are not able to offer new positions as some may be downsizing due to economic pressures and uncertainties.

Since the pandemic, job matching efficiency has improved quite substantially as the market reopens and economic recovery contributes to the growth of business activities. Many employers have started to demand new workers through new job creation, thus providing growing employment opportunities to graduates, among others. Subsequently, the labour market efficiency in job matching has inched towards the pre-pandemic level. Nevertheless, it remains somewhat inefficient with low unemployment rates coupled with stagnating growth in job vacancies.

Moving forward, policy interventions are needed to promote the entry of unemployed persons into meaningful employment via upgrading of skills, smoothening job mobility, and ensuring adequate transition support for all.

6.5.3. Weak linkages between labour demand and supply

As discussed in earlier chapters, the issue of overqualification or skill-related underemployment has been worsening among Malaysian graduates. Despite obtaining higher education and having the required skillsets, employers still perceive a lack of relevant job experience and technical skills as the main reasons for their inability to fill high-skilled job vacancies. Hence, immediate interventions are pertinent to close this gap between labour supply and demand of skilled talents, especially through skills development programmes and internships or apprenticeships among graduates.

In addition, horizontal skills mismatches persist as graduate outputs across different study fields are not benchmarked against current industry needs. Our analysis shows that the critical occupations and skills sought-after in the labour market do not match with graduates produced in each study field. The discrepancy partly explains Malaysia's existing labour demand and supply mismatch and indicate weak linkages between HEIs and the industry. Hence, curriculum reform and realignment of priorities are needed to ensure better job matching among graduates in critical high-skilled jobs.

6.6 Chapter Conclusion

Overall, the challenges faced by graduates are reflected in this chapter as well. The inadequacy of high-skilled jobs has caused an increasing share of graduates working in low- or semi-skilled jobs and non-standard employment. As a result, they remain stuck with low wages and a lack of job security and career progression. Despite the country's aspiration to create more high-skilled jobs, the reality is still well below its target. Our analysis also indicates that job matching efficiency has improved after the pandemic and labour market conditions has recovered to pre-pandemic levels. However, there remains a large gap between the supply of skilled talents and availability of jobs that commensurate their qualifications.

Moving forward, substantially more high-skilled jobs are expected to emerge in the next few decades, given the various development plans including 12MP, NIMP 2030, and NETR 2050. This may help tackle the issue of overqualification and low pay among the tertiary-educated workforce. Nevertheless, existing skills development programmes and support for graduate transition ought to be strengthened to further enhance skills enhancement and job mobility among these talents. It is also crucial for the higher education community to align closely to the industry's needs to improve job matching efficiency. In short, these interventions can contribute to enhanced graduate employability and thus provide greater returns on their higher education investment.

CHAPTER 07

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CHAPTER 7

BRIDGING RESEARCH TO POLICY

Vision without action is merely a dream. Action without vision just passes the time. Vision with action can change the world.

Joel A. Barker (1991)

7.1 Introduction

This report seeks to examine the relationship between labour supply and demand of tertiary-educated talents in Malaysia. It also explores the trends, challenges, and outcomes in graduate employment throughout the past decade. We present important similarities and differences in the outcomes and behaviour of local graduates, including those who are: (1) fresh versus experienced, (2) working in standard versus non-standard employment, (3) diploma versus degree holders, (4) from TVET versus non-TVET background, and (5) male versus female, among others.

The analytical framework for this study is anchored on two key datasets—MOHE's Graduate Tracer Study (GTS) and KRI's Graduate Career Tracking Survey (GCTS)—and further supplemented with publicly available data as well as existing body of literature on graduate employability. The GCTS design allows for a pseudo-panel analysis of older graduates versus fresh graduates provided by GTS, but our older cohorts are only limited to those who graduated during 2010–2012 (~2010 cohort) and 2017–2019 (~2018 cohort). Hence, future research can involve expanding the data collection of graduates in other years, or more ideally, undertaking a longitudinal study that tracks the same graduates over an extended time intervals data to obtain more detailed information on their progress. Due to the variability of curriculum across higher education institutions, we also did not scrutinise these curricula and their relevance to graduate employment. To overcome this limitation, the report investigates the link between graduates' fields of study and the economic sector that they are working in, as presented in earlier chapters.

This chapter will reiterate the key findings presented in the earlier six chapters and discuss how the results could contribute to inform policymaking. Section 7.2 outlines five policy thrusts as the focus areas to enhance employability and employment outcomes of Malaysian current and future talents. Section 7.3 concludes our report.

7.2 Policy Recommendations

Policy Thrust 1: Improve the measurement and monitoring of graduate employment outcomes

Key findings from Chapters 2 and 3

The GER—a key measure of graduate employability—does not reflect actual employment outcomes and changing behaviour among Malaysian graduates. The overall GER has been trending upward in the past decade, from 73.1% in 2010 to 84.8% in 2021. However, the GER primarily reflects graduate marketability and does not equate to employment. Considering that employability is defined as the potential to secure, maintain, and grow in a particular job[288], the measure also includes those who pursue further study, participate in up/reskilling training post-graduation, and await job placement. Graduates who have secured a job upon graduation are accounted for only around 60.0%. Furthermore, our analyses show changing trends in graduate employment behaviour, with more graduates opting to work in non-standard employment or even staying as NEET in recent years. As discussed in earlier chapters, this trend could have negative long-term consequences in terms of graduate career progression, wage growth, and social protection.

Based on the current GTS report, there is also limited information on the quality and nature of employment—including self-employment—besides a lack of record on graduates' job search process after study completion. Across different cohorts, this study demonstrates varying outcomes and preferences among graduates, which calls for a more detailed cohort comparison over time. Related to this, the existing GTS dataset could capture and analyse lingering issues such as skills mismatch and low pay among graduates. Moreover, our analysis of graduate employability based on study field demonstrates that graduates from *Education* and *STEM-related* fields tend to have better outcomes, while those from *Agriculture & Veterinary* and *Arts & Humanities* experience poorer outcomes marked by persistent overqualification and low pay.

Findings from GCTS show some graduates have experienced upward social mobility, yet others are right where they started in the labour market. A significant share of experienced graduates holds negative perceptions about current labour market conditions and upward intergenerational social mobility—particularly among the younger cohort—suggesting that the labour market landscape is generally dimming. More than one-third of graduates perceive that tertiary education is irrelevant to their current employment. Lastly, the subgroup analysis is also useful to identify disadvantaged graduates with poorer employment outcomes—typically diploma holders, those from IPTA, TVET, female, and low-income families.

[288] MOHE (2012)

The policy recommendations are as follows:

1. Improve the existing measurement and monitoring of graduate employment outcomes and career progression
2. Continue to review curriculum regularly to maintain programme and skills relevance in accordance with industry needs

In Malaysia, the GTS is primarily used by higher education institutions to assess their institutional performance, with the GER being one of the key indicators. However, it provides little insights whether graduates are meaningfully employed in their respective study fields[289]. Schomburg (2016) argued that most of the graduate tracer studies have measurement issues due to poor questionnaire structure. Globally, GTS typically includes a basic evaluation of graduate employment outcomes after study completion, but often excludes key aspects such as individual or context factors that potentially influence successful outcomes across subgroups[290]. In the Malaysian context, the high overall GER[291] reported annually can be misleading when used to indicate positive graduate employment outcomes as it includes those who are furthering their studies or in up/reskilling programmes. While arguably the inclusion can be appropriate to account for the role of HEIs in enhancing graduates' marketability and their potentials to gain employment, it also creates an avenue for manipulating outcomes by organising more upskilling programmes or increasing enrolment for further studies to increase GER. Moreover, the GER is also an inadequate performance indicator as it does not fully capture the quality of employment and ignores persistent issues such as vertical and horizontal skills mismatches and low pay among graduates.

The use of information collected in the GTS survey should be optimised by monitoring performance beyond the GER. This should involve moving towards monitoring the quality of fresh graduates' employment such as the incidence of skills (mis)match and starting pay. Quantitative aspects such as job search, job satisfaction, and graduates' assessment on their education institutions—which are already collected in the existing survey—can be incorporated as monitoring indicators as well. In-depth information such as the prevalence of working graduates, overqualification, and low pay by fields of study allows for government initiatives to target specific groups of graduates. For example, the heightened challenges to employability for *Agriculture & Veterinary* graduates underscore the need for immediate action to promote the sector's role in tackling food security issues, with significant potential for development and modernisation through increased adoption of technology and skilled workforce participation.

Given the wide range of analyses and target groups covered within the GTS report, the utilisation of the findings should be maximised to inform decision making among prospective graduates and the higher education community[292]. Based on the Malaysia Education Blueprint for Higher Education 2015-2025, Malaysia compares well with peer countries such as Singapore, South Korea, and Hong Kong in terms of graduate employability. Beyond higher education institutions, the survey can also serve as a useful tool for policymakers to evaluate graduates' outcomes and progress in the labour market. Therefore, the Ministry of Higher Education (MOHE), in collaboration with other ministries, agencies, and the private sector, can promote better use of the GTS by monitoring and underlining

[289] Razak (2022)
[290] Schomburg (2016)
[291] The Edge (2023c)
[292] Schomburg (2016)

several important aspects with the existing dataset. The National Graduate Employability Blueprint 2012-2017 also highlights the role of HEIs in nurturing employability attributes—through the Employability Attributes Framework and Graduate Employability Competencies in curriculum design—to respond effectively to the changing demands and landscapes. Hence, the continuous regular reviews of study programmes and curricula offered by HEIs will contribute in maintaining its relevance in accordance to the industry needs and provide accurate benchmarks for relevant stakeholders to observe returns to higher education, and thus, plan for appropriate interventions or provide support in time.

Although the GTS survey is conducted continuously and report of the findings is published annually, the survey essentially is an exit interview to understand graduates' status upon graduation and to get their feedback on various aspect of their institutions. While its cross-sectional data over time is rich and has allowed for long-term trend analysis, it could not provide crucial information about graduates' long-term labour market outcomes and career trajectories since the survey is conducted only on fresh graduates at the point of graduation. Understanding their career transitions and pathways are pertinent for the policymaking process, as evolving challenges faced by different cohorts at varying career stages require programme realignment and policy reform over time.

In this regard, conducting periodical as well as longitudinal graduate career tracking survey will be useful to monitor graduate employability between and within cohorts over time. For instance, large-scale longitudinal surveys such as the Indonesia Family Life Survey (IFLS)[293] and India Human Development Survey (IHDS)[294] not only cover nationally representative samples with multi-topics questionnaire, but also make these data available to the public in order to achieve a more comprehensive understanding of the evolving dynamics of its population.

In KRI GCTS questionnaire, we explore several supplemental modules, consisting of graduate respondents' total number of jobs held, their preferred job search method, as well as awareness and access to relevant government initiatives[295]. In addition, GCTS also gathers information on the nature of—both standard and non-standard—employment among graduates. With that, we are able to analyse the extent of qualification-job match and salary progression regardless of graduates' employment type since graduation.

Additionally, we explore these new areas in the GCTS through questions on graduates' current versus first job to measure overall quality of graduate employment outcomes over a longer time frame. Our analysis also calculates the annualised growth rate for salary progression and illustrates the "anchoring" effect of graduate first job on their skills and salary levels over time. Furthermore, this report emphasises the importance of subgroup analysis to capture those particularly vulnerable within the labour market, including graduates from certain fields of study, TVET background, and low-income families.

[293] RAND Social and Economic Well-Being (n.d.)
[294] IHDS (n.d.)
[295] This includes government policies and programmes for graduates who: (i) are self-employed or entrepreneurs, (ii) require funding support, and (iii) wish to obtain up/reskilling education and training.

The Malaysian government has established several policies and grant schemes to promote research and development (R&D) activities as well as strengthen university-industry collaboration since the 1990s[296]. More recently, efforts have been made to intensify this collaboration particularly for TVET graduates, with the involvement of large private firms in providing relevant training in public TVET institutions[297]. Similarly, national initiatives such as Singapore's SkillsFuture[298] or smaller partnerships between university–industry in Canada[299] and Japan[300]—whereby HEIs collaborate directly with industry stakeholders to identify evolving skills and knowledge areas—help ensure that education and training programmes remain current and relevant to the job market. Beyond enabling better skills matching through the regular review of curriculum, these university–industry partnerships are also vital in improving firm productivity, catalysing innovation, and generating positive impacts to the economy as a whole.

Policy Thrust 2: Strengthen the existing active labour market policies

Key findings from Chapter 5

More graduates are participating in internships, but their experiences do not necessarily translate into positive employment outcomes. Our findings show that internships have little impact on attaining employment, but tend to influence qualification-job match. Among graduates working in full-time permanent employment, their previous internship experience is found to have increased the chances of landing a high-skilled job. Surprisingly, those with no internship experience are more likely to be employed post-graduation and earning starting pay above RM2,000. We note that not all internship experiences are equal, such that the organisation type, duration of internship and whether it was a paid internship, can influence graduate employment outcomes. Generally, graduates who have gone through internships that are paid, longer duration, at MNCs or GLCs, and related industry are more likely to reap the benefits of attaining standard employment, qualification-job match, and good starting pay (above RM2,000).

Despite various benefits from government apprenticeship, many are unaware and miss out on these programmes. Among experienced graduates who completed government apprenticeships, about half gained new skills, over one-third expanded their networks, and one-third attained full-time permanent jobs. Even so, only one-fifth of experienced graduates have participated in the programmes, while the remaining 80%—mostly those from IPTS institutions—are unaware of these government initiatives.

Over the past decade, graduates' job search method has shifted from personal networking to digital platforms, with greater dependency on private job search sites. Notwithstanding the efforts made by the government to establish several online job search platforms, most graduates do not utilise this as their main platform during their job search process. In fact, roughly half are unaware of public job search support, potentially resulting in redundant efforts and inefficient use of resources to provide the relevant platforms and programmes.

[296] M. S. Salleh and M. Z. Omar (2013)
[297] The Star (2023b)
[298] SkillsFuture Singapore (n.d.)
[299] Hanel and St-Pierre (2006)
[300] Motohashi (2005)

The policy recommendations are as follows:

1. Enhance the quality of internship and apprenticeship programmes
2. Strengthen the centralised infrastructure for job search, profiling, and matching tools by consolidating existing digital platforms and forge a greater collaboration with private platforms

While the labour market may be self-adjusting in the long run, the government plays a crucial role in reducing structural gaps and prolonged inequalities that exist due to market failures. Active labour market policies (ALMPs) include all types of measures taken by the government to assist one's transition into the labour market and to ensure those who are working stay employed. As such, ALMPs consist of extensive programmes from job search assistance and internship, to others that support up/reskilling education and training. Indeed, our findings suggest that ALMPs have enhanced graduate employability in Malaysia, but there remains some room for improvement especially in terms of program coverage and delivery. Although MOHE may have a greater responsibility towards graduates' initial placement in the labour market, the Ministry of Human Resources (MOHR) play a larger role in supporting skills enhancement and lifelong learning among tertiary-educated talents.

Our study found that internships and apprenticeships have little to no influence in ensuring graduate employment and their starting pay. However, the skills obtained from such experience seem to benefit graduates in attaining a job that matches their qualification, especially those who completed internship that is directly related to their study field and those in longer internship (longer than six months). Hence, there is a need to boost the quality of these programmes with matching of study field and longer duration of internship or apprenticeship. An example can be taken from the Swiss Apprenticeship Model[301], which is considered the "gold standard" internationally and offers over 250 professions to 15-year-olds with on-the-job, paid training. Although work-based learning (WBL) is not a foreign concept to Malaysia's higher education community, its current implementation lacks a structured framework for coordination across existing public and private HEIs, extending beyond a broader range of study programmes besides TVET.

The balance between making internships accessible and ensuring programme quality is key. Not all organisations may have the capabilities to conduct structured internships, but only good internship structure has been found to lead to better graduate employment outcomes. Thus, collaboration between education institutions and the industry, facilitated by effective government policy, is highly imperative. Moreover, it is pertinent to strengthen the advocacy and awareness of the MySIP initiative among employers, through efforts such as the double tax deduction incentive to encourage active participation of SMEs in developing quality internships and fostering Malaysia's young talents.

As it stands, interns are not considered as employees and thus are not covered under the Employment Act 1955. Rather, throughout their internship period they are expected to abide under the Universities and University College Act 1971, Private Higher Education Institutions Act 1996, Education Act 1996. Malaysia's current regulations on internship is mainly governed by soft law, outlined by the National Policy on Internship (NPI). While this policy document serves as a guideline covering the role of HEIs and organisations as well as the monitoring of students, other countries

[301] Leybold-Johnson (2022)

have incorporated specific labour laws to safeguard the rights and working conditions of interns. These include Argentina, France, and Romania, with legislations requiring a tripartite agreement between the student, educational institution, and host organisation; or mandatory stipend with amounts up to the minimum wage; or specific limits to interns' working hours[302].

There is a variety of digital job search platforms established by government ministries and agencies which provide online resources for graduates to explore available job opportunities including internships in the market. Nonetheless, the fragmentation of job search assistance to specific target groups may result in greater inefficiency due to overlapping information and redundancy in job application process. Also, the list of participating firms and organisations on these platforms is not up to par with private search engines such as JobStreet and LinkedIn, reflecting jobseekers' preference over the latter. As compared to JobStreet with over 50,000 job postings, MyFutureJobs has about 30,000 job postings. Similarly, as at December 2023 mynext has 2,155 registered companies[303] participating on its platform that provide 1,142 internship opportunities, indicating low uptake of the MySIP initiative among employers as a whole.

The US Department of Labor's initiative—CareerOneStop—is a good model that provides extensive guidance to explore career options as well as find training and education, including specific resources for vulnerable groups such as young adult, entry-level worker, and career changer. Another platform is the Universal Jobmatch in the United Kingdom, which is available to local and global employers or recruitment agencies, as well as jobseekers through an online vacancy database. For jobseekers without device or internet access, they are able to use provided computers at the Jobcentre Plus offices or public libraries[304]. As discussed earlier, existing job search, matching, and placement services in Malaysia are widely provided by MOHR agencies (SOCSO, TalentCorp, and HRD Corp); as well as MOHE and MDEC. Looking ahead, the centralisation and digitalisation of labour market support could be a collaborative effort between government ministries and agencies as well as private and global organisations such as LinkedIn and Jobstreet. This helps expand the resources for Malaysian talents and employers to explore career options and improve job matching efficiency in the long-run.

A recurring theme pertaining government assistance—including job search support, public employment services, and apprenticeship programmes—is the lack of awareness and reach among graduates. Apart from improved accessibility through a central portal, there is a pressing need for the government to communicate and promote existing initiatives more effectively. This could involve using multiple channels to reach different segments of graduates, consisting of traditional methods through local media outlets (television, radio, newspaper), digital channels such as social media, email newsletters, and mobile applications, as well as wider community outreach through local schools and national universities.

[302] ILO (2018b)
[303] TalentCorp (n.d.)
[304] OECD (2014)

Policy Thrust 3: Promote greater inclusion through passive labour market policies

Key findings from Chapters 2, 3, 4, and 5

Graduates who struggle to secure a job post-graduation are either typically unable to secure job interview or unable to find a job that matches their qualification or study field. With that, those who are unemployed find it most effective to have support in terms of job matching services and other personalised support, besides resume and cover letter guidance. As the EIS was recently introduced in 2018, younger graduates are more likely to agree that job search allowance is the most useful support during their transition. However, the system only covers workers who are contributing to the scheme, hence excludes fresh graduates and those who are unemployed from non-contributing non-standard jobs from access to various benefits offered by SOCSO.

The returns to higher education appear low for some working graduates, especially freelancers, women, and those from low-income families. Graduates in non-standard employment, particularly freelancers, face greater difficulties in earning above RM2,000 due to a lack of accreditation or limited personal marketability. Similarly, female graduates and those from low-income families experience a significant pay gap even after obtaining several years of working experience or employment in high-skilled occupations. Worryingly, these demonstrate growing inequalities in the returns to higher education for certain groups.

Government assistance ought to be all-encompassing to boost overall employment outcomes among disadvantaged graduates. Those working as freelancers often compromise income stability and long-term social security in return for flexible work arrangements. On the other hand, female graduates tend to carry the burden of care, with more than two-thirds of homemakers intending to return to work but cannot do so due to childcare or family responsibilities. For graduates from low-income families, some do not enjoy a high return on education investment given low-skilled and low-paying jobs, mainly because of financial constraints forcing them to settle for any job regardless of skills mismatch or dismal pay.

The policy recommendations are as follows:

1. Increase coverage of job search allowance as well as unemployment benefits
2. Ensure adequate social protection and overall support for vulnerable groups, including freelancers, women, and graduates from low-income families

Passive labour market policies—usually in the form of job search allowance and unemployment insurance—can ensure that unemployed graduates stay motivated and receive adequate financial support while they continue to seek employment. The Employment Insurance System (EIS) was first introduced in 2018, offering financial incentives for unemployment, training or job search assistance; though it only covers private sector employees and those who lost their jobs within a pre-determined scope[305].

[305] Reasons for loss of employment covered under EIS includes normal retrenchment, voluntary separation scheme, bankruptcy or closure of company, resignation due to workplace harassment or threats, and resignation due to dangerous duties outside job scope. Source: SOCSO (2023a)

To increase coverage of these benefits among fresh graduates and those with previously non-standard work, the government could expand the current EIS eligibility criteria and provide some form of unemployment support, either benefits requiring compulsory training or purely unconditional assistance over a period of time[306]. For example, Canada's Employment Insurance (EI) programme[307] offers special benefits to the self-employed, which includes maternity and parental, sickness, as well as caregiving benefits to those eligible.

Over recent years, much emphasis has been put onto social protection for self-employed workers. The pandemic has pushed forward this agenda and catalysed progress towards achieving a more inclusive social protection system, particularly under the government's effort to match social security contributions under SOCSO for gig workers in the e-hailing industry. Nonetheless, a study by the Social Wellbeing Research Centre (SWRC) in 2020 found that only 2.3% of survey respondents in the informal sector have subscribed to the Employees Provident Fund (EPF) voluntary savings scheme, 2.1% to SOCSO, and higher shares (13.8% - 25.3%) in other forms of health insurance or unit trust investment. The recent proposal by EPF to create a new account accommodating flexible withdrawal among informal workers[308] points towards the right direction to ensure greater participation and social protection of graduates in non-standard employment. While the government matches housewives' EPF voluntary contribution via the *i-suri* scheme, it is only limited to those from hardcore poor households[309].

To raise female labour force participation rate, TalentCorp's initiatives such as Career Comeback programme provide a great start for homemakers to equip themselves with in-demand skills. Meanwhile, the Flexible Work Arrangements (FWA) tax deduction programme incentivises employers to offer greater flexibility in workplace and scheduling arrangements. The recent Budget 2024's increased tax exemption on childcare allowance from RM2,400 to RM3,000 is also seen as a positive step towards supporting more women to re-enter the labour market. Despite these efforts, some women may opt to leave their careers because of growing gender pay disparity, particularly when their spouses have higher incomes and they have to take on the role of primary caregiver for their children. As such, stricter legislations—like Australia's Workplace Gender Equality Act[310], the Icelandic Equal Pay Standard[311], and the Swedish Discrimination Act[312]—that aim to promote equal pay for equal work, irrespective of gender, could drive more women into the workforce in the long run.

[306] Ernst et al. (2022)
[307] Government of Canada (2023)
[308] The Edge (2023a)
[309] EPF (n.d.)
[310] Workplace Gender Equality Agency (2023)
[311] Icelandic Women's Rights Association (2023)
[312] Swedish Institute (2023)

Considering the rapidly evolving world of work, the government need to establish a more comprehensive up/reskilling training and education framework. McGowan and Andrews (2015) highlighted several policies that helped reduce the incidence of skills mismatch in OECD countries, including a six-percentage point reduction in mismatch through higher participation in lifelong learning. The existing platform, Upskill Malaysia, is a great start to provide latest resources on public skills development programmes. Regardless, it overlooks the wider range of skills development programmes offered.

As mentioned earlier, MOHR plays a significant role in supporting and promoting lifelong learning to all Malaysians. Under its purview, HRD Corp has offered numerous courses for micro-credentialing of specific technical skills prior to 2023 but has been recently discontinued. Nevertheless, accessibility to these certification programmes was restricted to workers employed in standard jobs within the private sector, thus excluding freelancers and other vulnerable groups. Given the unique nature of self-employment, freelancers ought to have a formal accreditation process to enhance recognition and marketability of their skillset as a credible product being offered. As such, the government should consider reinstating these micro-credential programmes through HRD Corp and widening the coverage for other types of training to include freelancers, women, graduates from low-income families, and even those who are unemployed. To make this initiative sustainable, a percentage of undisbursed levy collection during the year can be channelled into a collective fund as part of the "training fee" subsidy that can be tapped by those unemployed and self-employed in the informal sector. This can contribute to narrowing the gap between the levy collection and financial assistance disbursed—which doubled from 20.2% in 2018 to 46.1% in 2022[313].

Policy Thrust 4: Enhancing the supportive and integrated entrepreneurial ecosystem

Key findings from Chapter 4

Different types of entrepreneurs require different support from the government. In general, financing remains the biggest challenge among entrepreneurs, with most relying on their own or family savings and less than a quarter who relied on government aid. Graduates who are employers typically lack financial capital to scale up the businesses, as well as administrative and human resources issues. While sole proprietors also face of lack financial capital, many also cite personal difficulties such as the lack of communication and soft skills as their main challenges. Although there are many assistance programmes available, the uptake of these programmes is minimal among graduate entrepreneurs due to low levels of awareness and potentially limited access to current government initiatives.

Not only are TVET graduates more likely to venture into entrepreneurship, they also benefit from more favourable outcomes than non-TVET graduates. Our analysis shows that self-employed TVET graduates are thrice as likely to be sole proprietors and employers than their non-TVET peers. Additionally, the share of TVET graduates who become entrepreneurs and earn higher income is found to be greater than their non-TVET peers. Despite the concentration of entrepreneurial endeavours in sales and services activities, which mirrors the structure of Malaysian economy, TVET graduates are more likely to be engaged in industrial-related activities

[313] In 2022, the levy collection from employers was RM1.8 billion whereas the approved financial assistance amounted to RM974.9 million. These amounts for 2018 are RM805.7 million and RM642.7 million, respectively Source: HRD Corp (2022a)

such as manufacturing and construction when compared to non-TVET graduates. These underscore the advantage of skill-based education and reflect TVET graduates' unique earning potential, which can be further unleashed via entrepreneurial initiatives to produce higher returns in focus sectors.

The policy recommendations are as follows:

1. Provide tailored support for entrepreneurs based on firm size and business nature
2. Encourage high value creation among TVET entrepreneurs

As mentioned briefly, existing policies and plans on entrepreneurship have put a greater focus on creating successful entrepreneurs among young and tertiary-educated talents. With multiple policies and programmes to nurture entrepreneurial skills and provide support to young entrepreneurs, the future of entrepreneurship in Malaysia seems promising. However, our findings suggest the need for tailored support among different types of entrepreneurs, namely employers and sole proprietors, given their varying nature and needs. Both types require financing support, albeit at different levels. For employers, they also require support to overcome administrative issues such as recruitment and management of workers as well as knowledge to scale their businesses and grow sustainably. Structured coaching programmes with industry experts can significantly contribute to the development of employers, providing them with guidance on successfully grow a business. Contrary to this, sole proprietors face greater personal difficulties, including interpersonal and soft skills. Addressing this challenge would necessitate upskilling and training programs to refine individuals' interpersonal and problem-solving skills.

With a whopping RM14.7 billion fund allocation for MSMEs in 2022, financial capital should not be a barrier to graduates venturing into entrepreneurship. But this is not the case; in reality, a large share of entrepreneurs misses out on these financing opportunities. Other than the lack of awareness among self-employed graduates, challenges with accessing the currently fragmented system—with over 60 bodies implementing more than 200 programmes for MSMEs—may explain why over 80% of entrepreneurs did not apply for any government programmes. With regards to streamlining processes as well as financial and non-financial assistance, the Udyam Assist Platform (UAP) in India provides ease of registration to informal micro enterprises, while financing and development of MSMEs are primarily coordinated by the Small Industries Development Bank of India (SIDBI)[314]. The consolidation of existing programmes for MSMEs could prove to be beneficial in the long-term, providing clear and comprehensive resources for entrepreneurs irrespective of their business sector or size.

[314] IAS Study Center (2023)

Furthermore, the Malaysian government has substantially increased the budget allocation for TVET programmes from RM4.6 billion in 2017 to RM6.6 billion in 2022. Consistent with this large fiscal spending, self-employed TVET graduates seem to benefit from more favourable outcomes than their non-TVET peers. To encourage high-value creation among TVET entrepreneurs, past initiatives such as the Lighthouse Project by MIDA[315] can be replicated and extended across all economic sectors, thus providing a shared platform for MSMEs across value chains to learn and capitalise on potential areas of the market. The government could also establish cross-industry collaboration to foster creative innovation and resource optimisation among TVET entrepreneurs. Some valuable lessons can be obtained from Germany's Dual Vocational Training System with TVET tailored for entrepreneurship, producing the country's stable SMEs known as "Mittelstand" with great resilience and adaptability to weather economic challenges throughout time.

While the promotion of entrepreneurship has its merits, the majority of individuals still prioritise traditional, standard employment over self-employment. This is evident by the small share of graduates in entrepreneurship, albeit at an increasing rate. In this context, the government cannot overlook its crucial role in providing a conducive environment for job creation. The promotion of entrepreneurship, especially among graduates, should be more targeted on niche areas and on individuals with a strong interest or an entrepreneurial mindset. Some graduates may not possess the specific skills required for entrepreneurial success, such as marketing, finance management, and networking, hence encouraging self-employment without addressing these skill gaps can be detrimental. More importantly, the fundamental aim of such policy should foster innovation rather than promote businesses with mediocre sales and traditional services.

Policy Thrust 5: Accelerate the progress of demand-side initiatives and regulations

Key findings from Chapters 2, 3, and 6

The creation of high-skilled jobs has been below target. The compounding effects of overqualification and low pay among graduates indicate deep-rooted structural problems within the labour market. Within the past decade, the lack of high-skilled jobs creation and low wage structure continue to pester Malaysian graduates. The lasting overdependence on low- and semi-skilled positions may indicate an urgent push to upgrade business value chains following global trends—towards technological advancement and environmental sustainability—to promote high-skilled job creation and accommodate a growing pool of tertiary-educated talents.

The progress of job matching efficiency was interrupted by the pandemic; however, the labour market condition has improved due to market reopen. Yet, the efficiency has not gone beyond the pre-pandemic level. Before the COVID-19 crisis, the labour market was able to efficiently match jobs between jobseekers and employers, as shown by the low unemployment rate and job vacancy rate. The pandemic has affected job matching efficiency quite significantly, however, the market condition has recovered since 2022 with unemployment rate declining closer to pre-pandemic level. At the same time, job vacancies have also increased to pre-pandemic level, mainly contributed by the expansion of economic activities. However, it is also well-noted to observe that job matching efficiency has not gone beyond the pre-pandemic level.

[315] MIDA (2020)

Weak linkages between industry and higher education institutions further contributes to Malaysia's labour demand and supply mismatch. As qualification-job mismatch remains highly prevalent among graduates, the labour demand-side portrays slightly differing reasons for this issue, including employers' perception on graduates' lack of relevant job experience and technical skills as the main reason for inability to fill high-skilled positions. With that, it is pertinent for realignment between industry players and education institutions to ensure better matching in critical occupations and skills.

The policy recommendations are as follows:

1. Intensify efforts to create more high-skilled and well-paying jobs
2. Establish a fair and decent wage guideline to complement the existing wage regulations
3. Boost job matching efficiency in the labour market
4. Reinforce the link between labour demand and supply through MyCOL insights

Despite the surplus in total jobs created under the ETP 2020, past initiatives to promote high-skilled and high-income job creation remain unsuccessful with only 23% of total jobs created categorised as high-skilled. More importantly, high-skilled job creation has not kept up to pace with the rise in tertiary-educated workforce, leading to perpetual issues of overqualification and dismal pay among graduates as well as brain drain[316]. Malaysia's SMEs has also been utilising a low-cost and labour-intensive production model, which is heavily reliant on low- and semi-skilled workers, thus resulting in depressed salaries and wages in the overall labour market[317]. Hence, this calls for intensified efforts to promote high-skilled and well-paying job creation especially for local graduates in the near future.

Among others, the concept of "industry clusters" in many countries, whereby the government builds or encourage high-technology industries to be in close proximity, can positively contribute to high-skilled job creation through increased productivity and innovation[318]. In the Malaysian context, this includes Penang's electrical and electronics (E&E) industry[319], Cyberjaya's global technology hub[320], and Pahang's Pekan Automotive Park[321]. Given the severe shortage of high-skilled jobs as portrayed by high shares of overqualified graduates from agriculture, it is crucial for the government to extend these clusters for other industries as well. In this case, Malaysia can potentially learn from agricultural modernisation in Argentina[322] and Netherlands[323].

[316] World Bank (2011)
[317] BNM (2021)
[318] Tong et al. (2023)
[319] Invest Penang (n.d.)
[320] The Edge (2023b)
[321] ECER Development Council (n.d.)
[322] OECD (2019a)
[323] Invest in Holland (2021); Reiley (2021); Myles (2021)

In parallel, salary progression should align with productivity growth, as proposed under the recent Progressive Wage Policy (PWP)[324]. The PWP is a voluntary, productivity-linked system which provides incentives for employers, to complement Malaysia's current minimum wage policy and Productivity-Linked Wage System (PLWS)[325]. While the PWP is a commendable initiative to address wage stagnation and dismal pay among Malaysian talents, our findings suggest the urgent need to establish a guideline on fair and decent wage particularly for the tertiary-educated workforce. Since 2016, the MOHR has introduced a Starting Salary Guide[326,327] to ensure fair and competitive remuneration for skilled talents. However, this is limited to 200 selected skills-based occupations, primarily targeting TVET graduates. Therefore, the government could extend this effort to cover both fresh and experienced graduates, especially those who are disadvantaged in terms of salary outcomes—namely diploma holders, IPTA graduates, females, and those from TVET background or low-income families.

As discussed under the second policy thrust, the consolidation of existing digital platforms under MOHR and MOHE could improve the efficiency of overall job matching in the labour market. Besides adopting artificial intelligence (AI) systems for profiling and matching of candidates with available jobs, there is a need to balance automation with human touch for more accurate job matching. This will depend on regular inputs provided through close collaboration between industries and universities to align dynamic needs within the job market. The combination of AI and human touch will enable a more structured, swift, and cost-effective process for both employers and potential candidates.

While the Malaysia Critical Occupations List (MyCOL) primarily offers general insights to the changing landscape of labour skills demand and gaps in supply over time, it can also be used as a tool to guide prospective graduates. With the prevalence of horizontal skills mismatch between graduates' employment and field of study, it is crucial for HEIs to monitor labour demand trends closely through MyCOL and encourage enrolment in highly demanded fields to prospective students. Moreover, the Industrial Skills Framework (IndSF)[328] by HRD Corp guides individuals, employers, and training providers in the pursuit of promoting lifelong learning within the industry. The initiative helps alleviate existing gaps between the supply and demand of skills, particularly driven by information on the industry occupational requirements, skills mapping, career pathways, and training programmes for potential jobseekers to explore.

Nevertheless, these important instruments can be further enhanced with new dimensions, such as in Singapore's Skills Demand for the Future Economy report[329] which examines skills demand growth to indicate present and future shortages, as well as skills transferability to measure an individual's career versatility. The report also explores specific jobs-skills insights by profession and sector, for instance, engineers and technicians in the green economy to highlight in-demand skills by employers.

[324] As it stands now, the PWP targets full-time workers in the private sector with salaries and wages between RM1,500 and RM4,999, and aims to provide up to RM300 monthly incentive for 12 months to participating firms. Source: GOM (2023a)
[325] The PLWS comprises of a fixed component, such as basic salary, annual increment, and contractual bonus, as well as a variable component, which is based on productivity growth or a profit-sharing formula. This allows for a flexible system that promotes competitiveness and equity among employers and employees. Source: MOHR (2013)
[326] MOHR (2016)
[327] MOHR (2020b)
[328] HRD Corp (n.d.)
[329] SkillsFuture Singapore (2023)

7.3 Report Conclusion

This report centres around the objective of examining in greater detail the issues and challenges faced by Malaysia's tertiary-educated talents. Utilising MOHE's GTSS microdata for the past decade as well as embarking on our own survey (GCTS), the cultivation of this report has led to a comprehensive cohort study of Malaysian graduates' career progression; encompassing analysis on fresh graduates, graduates who have completed their studies five years ago, as well as graduates who have graduated a decade prior.

Tertiary education holds a great significance in Malaysia and has been a key component in the country's human capital development and economic growth. This is evident by the rapid expansion of higher education in Malaysia since the 1980s as well as the significant rise in the share of tertiary-educated workforce. The importance of tertiary education has also been recognised at the micro-level, whereby many perceive it as a means to improve socioeconomic standing and gain higher income. However, the notion is not without its challenges, as results have been mixed.

While the graduate employability rate has been rising, its numbers far from reflect the actual employment outcomes and changing trends over the past decade. Many fresh graduates now engage in non-standard employment, while others continue to accept jobs with skills mismatch and low starting pay. These challenges are compounded further across subgroups, with some fresh graduates particularly disadvantaged, namely diploma holders, those from IPTA institutions, TVET background, female, and from low-income families.

More years after graduation have shown somewhat advantageous improvements among graduates, with the older cohort generally enjoying better outcomes than those younger. Nonetheless, overqualification and low pay remains prevalent among experienced graduates, regardless of work experience. Therefore, the compounding effects of graduates' first job quality points toward deeper structural problems within Malaysia's labour market.

While graduates who venture into self-employment may reap greater benefits than their peers, they face different sets of obstacles within the ecosystem. Despite various initiatives introduced by the government, there is seriously low uptake of these assistance programmes among self-employed graduates. There is also a need for tailored support to accommodate the varying needs of each type of self-employment, including employer, sole proprietor, and freelancer. Given the precarious nature of non-standard work, self-employed graduates need to be protected with wider social security and safety nets.

Recent years have shown various forms of ALMPs being implemented, including the provision of employment services and job search support, development of internships and apprenticeships, as well as online training platforms. Across graduate cohorts, there has been changing preferences and behaviour towards most effective job search method and support. Those who have participated in internship or apprenticeship programmes also reported mixed benefits and employment outcomes. As such, government initiatives have enhanced graduate employability for some, but there is room for improvement to achieve more effective outreach and greater programme efficacy in general.

It is also important to iterate that the challenges these graduates face are not solely a supply-side issue. Rather, limited vacancies in high-skilled occupations due to stagnant high-skilled job creation in the past decade signal an oversupply of tertiary-educated talents and persistent labour market mismatches. Furthermore, even with increased government efforts and improved job matching efficiency in the labour market, weak linkages between the supply and demand of graduate-level jobs contribute to the high incidence of skill-related underemployment among Malaysian graduates.

Cognisant of these challenges, our five policy thrusts and its related recommendations are summarised as follows:

Five policy thrusts and recommendations

Policy Thrust 1	**Improve measurement and monitoring of graduate employment outcomes**	• Improve the existing measurement and monitoring of graduate employment outcomes and career progression over time • Continue to review curriculum regularly to maintain programme and skills relevance in accordance to industry needs
Policy Thrust 2	**Strengthen existing active labour market policies**	• Enhance the quality of internship and apprenticeship programmes • Strengthen the centralised infrastructure for job search, profiling, and matching tools by consolidating existing digital platforms and forge a greater collaboration with private platforms
Policy Thrust 3	**Promote greater inclusion through passive labour market policies**	• Increase coverage of job search allowance as well as unemployment benefits • Ensure adequate social protection and overall support for vulnerable groups, including freelancers, women, and graduates from low-income families
Policy Thrust 4	**Develop a supportive and integrated entrepreneurial ecosystem**	• Provide tailored support for entrepreneurs based on firm size and business nature • Encourage high value creation among TVET entrepreneurs
Policy Thrust 5	**Accelerate progress of demand-side initiatives and regulations**	• Intensify efforts to create more high-skilled and well-paying jobs • Establish a fair and decent wage guideline to complement the existing wage regulations • Boost job matching efficiency in the labour market • Reinforce the link between labour demand and supply through MyCOL insights

These recommendations build upon current initiatives by the government, including the GTS, NPI, and MyFutureJobs, among others. A review of the country's existing policies shows that plans and targets are well in place, their actual achievement lags behind. A common challenge is the fragmentation and duplication of programmes without a central coordination agency. In addition, there is an alarmingly low level of awareness in various government policies and initiatives among graduates.

In an era marked by rapid technological advancements and evolving industry landscapes, collaboration between academia, industry, and the government remain essential as they collectively bear the responsibility to facilitate positive employment outcomes among Malaysian talents. More importantly, policies aiming to address structural issues involving graduates should go beyond the ambit of higher education and cut across all sectors. As we prepare tertiary-educated talents to navigate the future of work, we must prioritise curriculum modernisation, encourage skills versatility, and provide a conducive environment for them to grow and thrive in. While skills of graduates we produce must keep up with the industry's needs, graduates must be the agents that innovate and drive change as well. The focus moving forward should also be given on the demand-side especially on finding strategies to support graduates to attain fulfilling careers with higher incomes, thus providing better returns on education investment.

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APPENDIX A

GRADUATE TRACER STUDY

Graduate Tracer Study (GTS) A survey conducted by the MOHE continuously during the year in conjunction with convocation ceremonies held by HEIs. It involves graduates from local public and private HEIs who have completed their studies.

Table A.1: Breakdown percentages of graduates by selected demographic characteristics, aged 15-30, 2010 – 2021

Convocation Year		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Characteristics (%)/n		158,469	171,133	187,255	196,550	197,583	201,214	214,420	234,728	274,437	281,968	245,240	266,352
Gender	Male	38.3%	39.5	39.1	39.1	38.8	39.7	40.0	38.6	42.2	42.8	43.2	42.6
	Female	61.8	60.5	60.9	60.9	61.2	60.3	60.0	61.5	57.8	57.2	56.8	57.4
Age	15-21 years	38.9	40.1	40.8	41.3	42.3	43	39.3	41.5	46.4	47.7	45.5	41.5
	22-25 years	54.5	53.6	52	50	50.1	49.1	53.1	51.1	47.6	46.1	47.3	50.4
	26-30 years	6.6	6.3	7.1	8.7	7.6	7.9	7.6	7.4	6	6.2	7.2	8.1
	Mean	22.3	22.3	22.4	22.4	22.3	22.3	22.4	22.3	22	22	22.2	22.4
	Median	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
Institution type	IPTA	81.4	75.4	71.6	68.0	67.6	61.6	59.4	61.2	66.5	66.2	68.0	67.5
	IPTS	18.6	24.6	28.4	32.0	32.4	38.4	40.6	38.9	33.5	33.8	32.0	32.5
Qualification	Diploma	47.2	49.0	49.8	49.9	49.3	50.9	44.7	47.2	52.3	53.1	54.4	52.8
	Degree	48.0	47.0	46.1	44.4	45.9	44.5	50.5	47.8	43.8	43.0	42.0	43.6
	Postgraduate	4.8	4.1	4.2	5.7	4.7	4.7	4.8	5.0	3.9	3.9	3.6	3.6
Study stream	Non-TVET	74.7	75.1	77.6	78.8	80.8	79.7	80.1	81.4	69.9	68.2	66.0	69.3
	TVET*	25.4	24.9	22.5	21.2	19.2	20.3	19.9	18.6	30.1	31.8	34.0	30.7
	TVET (MTUN)	3.1	3.3	4.1	4.3	4.6	5.0	4.9	5.0	4.3	4.7	4.6	4.8
	TVET (Others)*	22.2	21.6	18.4	16.9	14.6	15.3	15.0	13.6	25.9	27.2	29.4	25.9
Study field	Science, Mathematics & Computing	11.8	12.1	11.6	11	11.6	11.9	11.4	12.2	11.7	10.7	10.9	11.7
	Engineering, Manufacturing & Construction	30.6	30.7	28.1	27.9	24.3	24.4	24.5	24.6	29.7	30.8	32.5	28.6
	Health & Welfare	5.3	6.4	9.6	9.3	6.7	6.4	6.3	6.3	5.7	5.4	4.8	4.3
	Agriculture & Veterinary	1.3	1.4	1.4	1.3	1.7	1.9	1.9	1.9	2.2	2.2	1.9	1.9
	Social science, Business & Law	31.6	32.5	32.6	32.8	37.8	35.7	37.3	35.5	32.2	31.3	30.2	32.5
	Education	7.9	4.5	4.5	5.6	4.4	5.3	3.8	4.5	4	4.4	4.3	5.1
	Arts & Humanities	7	7.4	7.1	6.8	7.2	8.3	8	7.8	7.8	8	7.8	8.6
	Services & others	4.7	4.9	5	5.2	6.3	6	6.7	7.1	6.9	7.3	7.5	7.3
Family income	< RM1k	34.3	31.4	29.0	25.4	23.2	21.2	19.0	17.4	17.0	16.1	14.8	12.5
	RM1k - RM2k	32.1	32.1	31.4	31.0	29.7	29.9	28.9	28.3	28.6	27.9	26.3	23.4
	RM2k - RM3k	17.9	19.1	20.2	22.1	22.3	22.6	23.5	22.1	21.2	20.9	20.1	20.6
	RM3k - RM5k	9.5	10.5	11.6	12.8	14.7	15.1	16.2	18.5	18.8	19.0	20.0	20.2
	> RM5k	6.3	6.9	7.9	8.6	10.1	11.2	12.5	13.7	14.4	16.0	18.3	23.2

*TVET in the GTS context refers to TVET graduates from public TVET institutions only.

**Others refer to graduates from non-MTUN public TVET institutions, such as community colleges, polytechnics, Institut Kemahiran Belia Negara (IKBN), GIATMARA and other skills training institutes.

Source: MOHE, n.d., KRI calculations

Table A.2: Prevalence and breakdown of working graduates by selected demographic characteristics, aged 15-30, 2010–2021

Convocation Year		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Characteristics (%)/n		72,307	83,610	88,760	86,800	90,122	94,238	111,704	122,045	155,465	174,149	142,544	157,865
Gender	Male	49.3%	52.4	51.8	47.5	48.2	49.1	54.2	54.0	59.5	63.3	60.0	61.4
	Female	43.3	46.5	44.6	42.0	44.0	45.3	50.7	50.7	54.6	60.6	56.7	57.7
Age	15-20 years	35.2	35.6	36.8	36.0	35.2	40.4	45.0	46.3	53.7	54.9	53.6	52.0
	21-25 years	45.8	50.3	47.9	44.4	46.0	46.5	52.7	52.0	56.8	63.8	58.2	59.4
	26-30 years	73.8	72.9	69.8	60.0	68.1	67.8	67.2	68.5	69.0	74.2	71.7	75.3
	Mean	22.8	22.7	22.8	22.8	22.8	22.7	22.6	22.6	22.2	22.2	22.5	22.8
	Median	23.0	23.0	23.0	23.0	23.0	22.0	23.0	22.0	22.0	23.0	23.0	23.0
Institution type	IPTA	44.7	47.9	45.4	43.2	44.8	47.4	55.8	54.7	59.3	64.8	60.5	60.9
	IPTS	49.9	51.9	52.4	46.3	47.3	46.0	46.7	47.8	51.4	55.8	53.0	56.0
Qualification level	Diploma	37.4	39.9	40.8	39.4	39.4	43.2	48.2	47.1	54.0	55.8	51.6	50.0
	Degree	50.9	56.6	52.7	48.5	50.4	49.6	54.5	55.4	58.9	68.3	65.4	69.3
	Postgraduate	74.7	68.0	67.3	51.6	63.8	59.9	62.5	65.1	66.4	70.4	71.9	74.5
Study stream	Non-TVET	44.7	48.5	46.1	42.2	43.7	44.1	48.6	47.5	50.9	57.2	54.1	56.3
	TVET*	48.2	49.9	52.0	51.3	53.7	57.6	66.3	71.5	69.9	71.5	66.0	65.9
	TVET (MTUN)	41.1	50.8	47.4	39.0	40.9	40.4	51.9	56.9	58.1	67.6	66.2	69.0
	TVET (Others)**	49.2	49.8	53.1	54.4	57.7	63.2	70.9	76.9	71.9	72.2	66.0	65.4
Study field	Science, Mathematics & Computing	43.9	47.5	44.8	41.8	40.7	42.8	49.3	45.6	51.8	57.8	53.4	55.6
	Engineering, Manufacturing & Construction	49.1	50.8	50.7	47.5	47.9	49.8	57.3	57.6	61.5	65.4	60.7	64.3
	Health & Welfare	50.8	51.8	43.7	43.9	49.6	47.2	44.1	44.1	44.5	54.7	51.7	57.3
	Agriculture & Veterinary	37.7	38.1	37.2	35	36.9	34.6	42.7	47	51.4	56.7	50.9	50.9
	Social science, Business & Law	44.8	50.4	47.1	43.8	45.3	46.4	51.8	52.2	56.4	60.8	56.8	56.9
	Education	39.7	32.8	43.2	35.3	42.4	50.3	48	49.2	52.7	55.9	62.3	56
	Arts & Humanities	40.4	46.3	48.5	42	43.1	42.3	47	48	53.5	61.6	58.9	58.9
	Services & others	47	47.7	49.5	49	50.7	52.1	58.2	56.7	62.5	66.6	62.1	62
Family income	< RM1k	40.6	44.3	44.0	40.4	42.1	43.4	50.1	50.6	55.7	61.8	57.8	60.3
	RM1k - RM2k	47.4	51.1	48.8	46.3	47.9	49.3	54.9	55.7	60.9	66.8	64.0	64.9
	RM2k - RM3k	49.5	51.9	50.8	46.3	48.6	49.1	54.5	54.4	59.0	64.4	60.7	61.7
	RM3k - RM5k	48.3	49.8	47.3	44.3	45.3	46.7	51.1	50.3	55.2	59.4	56.3	58.9
	> RM5k	49.1	49.4	45.8	41.6	40.8	42.3	45.6	44.4	47.7	52.3	49.2	51.2
	Total (prevalence)	**28.8**	**30.2**	**29.7**	**27.3**	**28.6**	**29.3**	**32.3**	**32.7**	**34.9**	**38.0**	**36.0**	**36.9**

Convocation Year		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Characteristics (%)/n		**72,307**	**83,610**	**88,760**	**86,800**	**90,122**	**94,238**	**111,704**	**122,045**	**155,465**	**174,149**	**142,544**	**157,865**
Monthly income	< RM1.5k	50.9	51.2	52.2	51.3	50.2	49.7	47.4	48.1	12.0	48.8	51.1	43.6
	RM1.5k - RM2k	21.6	20.4	19.2	18.8	18.6	18.3	19.5	19.1	56.7	20.0	20.0	22.0
	RM2k - RM3k	22.3	22.4	21.6	22.4	23.0	23.6	25.7	24.4	23.3	22.8	20.6	23.5
	RM3k - RM5k	4.6	5.2	6.1	6.5	7.1	7.2	6.3	7.3	6.9	7.2	7.3	9.8
	> RM5k	0.6	0.7	0.9	1.0	1.1	1.2	1.1	1.3	1.1	1.2	1.0	1.1
Employment status	Standard	53.2	51.8	48.3	49.8	48.3	48.8	48.9	48.5	44.1	42.3	40.1	44.1
	Non-standard	46.8	48.2	51.7	50.2	51.7	51.2	51.1	51.5	55.9	57.7	59.9	55.9
	Contract/Temporary	22.8	21.8	22.3	21.7	22.1	21.4	21.7	22.4	21.3	21.5	22.6	25.2
	Part-time	20.7	22.9	25.2	24.2	24.3	23.1	21.6	21.6	17.5	16.5	15.1	14.6
	Self-employed	3.3	3.6	4.2	4.4	5.3	6.7	7.7	7.6	17.1	19.7	22.2	16.1
Occupation (*skill level*)	High-skilled	63.8	62.3	58	55.8	53.8	52.1	50.6	48.7	47	64.3	62.7	60
	Managers	4.1	4.5	5.4	5.9	6.2	5.1	5.6	6.1	5.9	7.5	7	3.1
	Professionals	43	42.3	39.6	39.4	38.4	36.9	35.5	33.8	29	36	34.6	37.9
	Technicians & associate professionals	16.7	15.5	13	10.6	9.2	10.1	9.5	8.8	12.1	20.8	21.1	19
	Semi-skilled	33	33.6	36.3	38	39.7	41.2	43.1	44.1	44.8	32.1	33	34.6
	Clerical support workers	12.8	15	18.1	17.4	19.2	19.2	18.7	17.7	15.2	12.2	11.8	13.3
	Service & sales workers	16.6	15.2	14	15.1	15.4	16.8	18.6	19.7	19.6	13.4	12.8	13.4
	Skilled agriculture	0.7	0.6	0.5	0.4	0.5	0.6	0.7	0.7	0.8	0.3	0.4	0.7
	Craft & related trade	1	1.5	2.9	4.1	3.7	3.7	4	4.3	7.3	3.2	3.8	3.4
	Plant & machine operators	1.8	1.2	0.9	0.9	0.9	1	1.2	1.7	1.9	3	4.1	3.8
	Low-skilled	3.2	4.2	5.7	6.2	6.5	6.7	6.3	7.2	8.3	3.7	4.3	5.4
Economic sector	Traditional services	29.9	31.3	32.7	35.9	37.7	38.1	40.6	41.6	40.4	41.3	41.6	41.3
	Modern services	27.4	27.5	25.5	24.3	24.4	23.2	23.3	21.5	21.4	19.6	18.1	19.3
	Social services	22.1	19.8	20.8	19.8	18.4	19.1	16.0	16.1	15.6	16.9	16.6	16.3
	Industrial	18.6	19.4	19.1	18.5	17.9	18.0	18.4	19.1	21.0	20.3	21.5	20.7
	Agricultural	2.1	2.0	1.9	1.4	1.7	1.6	1.7	1.8	1.7	1.9	2.2	2.3
	Others***	29.9	31.3	32.7	35.9	37.7	38.1	40.6	41.6	40.4	41.3	41.6	41.3
	Total (breakdown)	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

*TVET in the GTS context refers to TVET graduates from public TVET institutions only.

**Others refer to graduates from non-MTUN public TVET institutions, such as community colleges, polytechnics, *Institut Kemahiran Belia Negara (IKBN)*, GIATMARA and other skills training institutes.

***Include household activities as an employer; activities involved in producing goods and services; and activities of foreign bodies and organisations.

Source: MOHE, n.d., KRI calculations

Table A.3: Prevalence of overqualified graduates by selected demographic characteristics, aged 15-30, 2010–2021

	Convocation Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	Characteristics (%)/n	**30,578**	**36,132**	**41,395**	**41,626**	**45,091**	**47,056**	**57,423**	**64,645**	**78,927**	**65,503**	**55,274**	**75,751**
Gender	Male	36.1%	36.8	41.2	43.4	45.9	47.8	50.1	51.8	54.8	40.3	42.5	45.1
	Female	46.7	48.0	50.7	51.3	52.9	54.8	56.7	57.7	59.2	47.2	49.1	51.3
Age	15-20 years	56.6	58.3	63.8	67.4	66.4	67.7	70.6	71.9	71.6	54.2	60.7	59.9
	21-25 years	42.3	42.5	45.8	46.9	49.7	51.4	52.5	53.9	54.1	42.2	44.0	47.5
	26-30 years	22.5	27.2	29.0	29.0	30.8	29.1	34.1	34.1	34.5	28.2	30.8	37.3
Institution type	IPTA	42.6	43.4	47.2	49.4	51.3	50.3	51.7	54.0	53.5	40.4	42.0	51.8
	IPTS	41.1	42.7	45.3	45.2	47.6	49.3	50.8	51.1	44.4	31.2	30.9	39.4
Qualification level	Diploma	49.8	51.8	57.6	60.6	63.9	62.7	63.7	65.9	59.5	41.9	43.6	55.4
	Degree	41.9	40.3	41.5	41.4	43.2	41.9	45.5	46.4	44.5	35.4	36.0	44.0
	Postgraduate	7.5	11.0	12.2	11.5	12.9	13.5	16.6	17.7	18.0	15.1	15.8	19.8
Study stream	Non-TVET	40.1	41.2	43.7	43.8	46.5	48.2	50.0	51.5	51.4	40.2	41.4	45.0
	TVET*	49.4	50.4	58.1	63.8	65.7	66.5	70.1	71.6	69.5	53.2	56.1	57.3
	TVET (MTUN)	30.2	28.8	33.9	32.8	35.4	41.1	44.6	47.2	48.3	37.1	40.3	43.4
	TVET (Others)**	49.4	50.4	58.1	63.8	65.7	66.5	70.1	71.6	69.5	53.2	56.1	57.3
Study field	Science, Mathematics & Computing	47.4	47.1	50.2	49.1	50.5	51.7	53.4	55.5	57.3	38.7	36	37.3
	Engineering, Manufacturing & Construction	32.4	32	36	41.4	39.5	43.7	45.5	47.5	52.4	38.1	42.6	44.5
	Health & Welfare	15.7	19.5	31.6	31.3	26.1	27.5	37.2	36.4	33.8	24.7	29.9	30.2
	Agriculture & Veterinary	64.7	64.7	67.2	68.7	68.9	66.8	72.3	75.4	81.7	65.1	65.8	70.2
	Social science, Business & Law	55.8	54	56.6	57.6	60	61.8	60.9	61.8	61.6	50.9	51.6	54.9
	Education	17	29.4	33.4	25.5	32.4	29	30	34.4	37.9	28.8	30.6	34.5
	Arts & Humanities	45.5	45.5	49.4	46.8	47	51	51.6	53.8	58.8	41.7	45.9	47.6
	Services & others	70.5	67.7	67.2	67.1	68.9	73.9	73.4	76.1	77.5	70.3	71.8	70.5
Family income	< RM1k	49.0	51.7	56.2	57.9	60.8	63.3	64.4	65.7	67.6	52.7	55.3	57.6
	RM1k - RM2k	43.8	45.0	49.2	52.5	55.4	58.3	60.4	62.5	64.2	49.9	53.2	55.9
	RM2k - RM3k	38.7	38.6	42.3	44.0	46.0	48.7	51.6	53.5	55.5	42.1	44.4	48.4
	RM3k - RM5k	33.3	33.9	36.4	36.9	40.6	41.1	44.8	46.8	48.7	38.0	39.6	43.6
	> RM5k	28.6	27.8	30.0	30.2	32.0	33.6	37.7	39.0	41.9	34.2	36.0	38.6

Convocation Year		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Characteristics (%)/n		30,578	36,132	41,395	41,626	45,091	47,056	57,423	64,645	78,927	65,503	55,274	75,751
Monthly income	< RM1.5k	57.4	59.4	63.7	66.3	68.5	71.2	73.3	74.1	84.0	60.9	63.0	64.5
	RM1.5k - RM2k	35.9	34.2	36.7	38.3	44.2	45.9	49.7	52.8	65.5	41.2	43.0	48.0
	RM2k - RM3k	21.6	23.4	25.5	26.4	28.3	30.6	33.3	34.3	38.0	25.7	25.8	29.9
	RM3k - RM5k	10.0	9.7	11.5	10.6	11.8	13.6	18.9	19.9	24.5	16.0	13.8	16.6
	> RM5k	15.7	13.1	16.0	13.1	11.1	13.9	17.1	17.8	24.3	19.8	19.9	18.4
Employment status	Standard	32.9	33.7	36.6	38.7	40.1	41.5	44.6	46.7	49.8	37.2	39.4	40.8
	Non-standard	53.0	53.5	56.0	57.2	59.3	62.6	63.8	64.3	64.7	51.1	52.4	54.8
	Contract/Temporary	43.7	42.6	43.2	44.7	47.0	49.4	50.7	50.7	52.8	39.5	41.2	41.6
	Part-time	61.5	62.7	65.5	66.2	68.0	72.1	73.7	75.2	72.6	60.3	61.9	69.0
	Self-employed	63.1	61.4	67.2	69.3	70.9	80.2	82.7	82.6	84.6	67.3	69.0	62.7
Economic sector	Traditional services	68.1	67.0	69.3	69.7	70.7	69.9	68.1	70.4	64.9	49.7	50.0	64.3
	Modern services	34.3	32.9	35.6	35.4	35.2	36.5	37.7	37.5	35.1	26.3	25.4	30.5
	Social services	21.8	25.8	30.1	29.1	32.6	30.1	34.7	34.7	35.6	22.5	24.9	28.0
	Industrial	34.2	34.6	39.1	41.8	43.6	46.3	47.7	49.0	53.1	39.2	43.1	44.1
	Agricultural	64.9	66.1	67.7	68.0	73.4	75.3	77.1	79.8	83.5	64.9	66.3	71.9
	Others***	65.7	61.1	69.3	73.7	75.0	77.1	78.0	77.6	76.5	61.7	63.1	62.0
	Total	**42.3**	**43.2**	**46.7**	**48.0**	**50.0**	**51.9**	**54.0**	**55.4**	**57.3**	**44.3**	**46.2**	**48.6**

*TVET in the GTS context refers to TVET graduates from public TVET institutions only.

**Others refer to graduates from non-MTUN public TVET institutions, such as community colleges, polytechnics, Institut Kemahiran Belia Negara (IKBN), GIATMARA and other skills training institutes.

***Include household activities as an employer; activities involved in producing goods and services; and activities of foreign bodies and organisations.

Source: MOHE, n.d., KRI calculations

Table A.4: Prevalence of graduates earning less than RM2,000 by selected demographic characteristics, aged 15-30, 2010–2021

	Convocation Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	Characteristics (%)/n	**72,307**	**83,610**	**88,760**	**86,800**	**90,122**	**94,238**	**111,704**	**122,045**	**155,465**	**174,149**	**142,544**	**157,865**
Gender	Male	69.9%	67.9	67.1	65.5	64.0	63.9	62.0	61.6	65.6	65.6	67.8	62.2
	Female	74.2	74.4	74.7	73.4	72.0	71.0	70.3	70.9	71.1	71.3	73.7	68.4
Age	15-20 years	96.6	95.8	94.8	94.3	93.3	93.2	92.2	91.6	90.9	91.0	92.4	89.6
	21-25 years	72.7	71.1	71.5	70.3	69.0	67.4	65.0	65.5	63.5	63.1	68.3	64.0
	26-30 years	37.2	39.7	39.1	37.6	34.8	30.1	32.5	30.2	33.0	38.0	42.3	38.7
Institution type	IPTA	70.1	69.3	68.5	66.6	64.9	65.3	62.6	62.1	55.0	55.4	56.0	52.1
	IPTS	62.9	62.6	63.5	61.5	61.6	58.3	58.6	60.2	60.5	61.9	65.4	60.6
Qualification level	Diploma	94.9	94.1	93.0	92.8	92.0	91.6	90.4	90.1	88.8	88.6	89.6	86.9
	Degree	63.5	60.5	59.1	55.9	55.4	50.6	53.1	53.3	51.0	52.5	56.0	51.1
	Postgraduate	22.5	20.0	21.4	23.1	21.0	20.2	23.7	22.6	25.0	28.7	29.6	25.6
Study stream	Non-TVET	64.8	64.8	65.5	63.7	63.0	61.6	60.4	61.0	58.0	59.0	61.3	57.0
	TVET*	96.6	95.6	94.2	94.5	94.1	92.7	92.0	91.4	90.5	89.8	90.6	87.8
	TVET (MTUN)	55.8	46.5	52.3	47.5	48.6	48.9	48.8	48.6	46.5	49.8	56.4	49.4
	TVET (Others)**	96.6	95.6	94.2	94.5	94.1	92.7	92.0	91.4	90.5	89.8	90.6	87.8
Study field	Science, Mathematics & Computing	68.9	64.2	66.3	62.9	61.5	60.9	58.5	62.4	61.3	59	57.4	50.9
	Engineering, Manufacturing & Construction	73.2	69.4	67	67.8	63.9	65.6	63.2	62.1	69.1	68.8	72.4	66.8
	Health & Welfare	48.5	54.2	63.2	67.7	52.8	61.5	69.2	69.6	65.7	62.5	65.1	55.9
	Agriculture & Veterinary	76.2	80.3	80.9	76.3	77	75.7	79.1	81	86.8	85.9	87.7	85.3
	Social science, Business & Law	77.5	74.6	73.5	70.9	71.5	68.9	65.8	65	63.8	64.2	66.2	61.2
	Education	48.8	65.9	74.1	64	71.7	55.7	63.5	66.5	73.3	73.1	76.6	72
	Arts & Humanities	85.6	85.8	84.3	82.4	80.8	81.8	78.8	80.5	79.6	81.2	83.7	80.1
	Services & others	88.4	88.9	86.5	84.7	83.3	84.4	83.2	84.2	81.9	83.3	84.7	82.2
Family income	< RM1k	85.1	85.2	84.8	85.4	85.6	84.4	82.5	83.3	85.0	83.5	85.2	79.6
	RM1k - RM2k	78.5	77.9	78.7	79.9	79.8	80.7	78.8	80.0	81.8	82.2	84.6	80.8
	RM2k - RM3k	61.4	60.4	61.7	60.8	59.3	59.6	58.9	60.3	61.9	62.9	66.1	63.8
	RM3k - RM5k	53.4	54.6	54.1	51.2	51.3	50.6	52.2	52.5	53.8	55.4	59.1	55.8
	> RM5k	45.4	43.9	47.1	43.7	43.4	42.6	46.6	46.4	47.5	48.7	54.1	49.9

Convocation Year		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Characteristics (%)/n		72,307	83,610	88,760	86,800	90,122	94,238	111,704	122,045	155,465	174,149	142,544	157,865
Employment status	Standard	61.2	59.0	57.6	56.3	53.1	52.3	52.4	52.9	54.8	54.8	57.7	53.2
	Non-standard	85.2	85.2	84.2	83.5	82.9	82.6	79.6	79.4	77.8	76.6	77.2	75.1
	Contract/Temporary	77.6	76.9	74.4	73.3	72.1	71.3	67.0	65.6	66.6	65.5	68.0	64.8
	Part-time	93.6	93.0	92.9	92.7	92.7	93.1	92.3	93.8	91.5	91.0	90.9	92.9
	Self-employed	85.2	84.2	85.9	86.1	87.3	85.9	86.9	87.0	83.6	83.7	84.9	79.1
Occupation (*skill level*)	High-skilled	61.7	59.7	57.5	54.5	51.5	48.9	47.2	46.6	48	54.5	56.1	52.3
	Managers	70.3	69.5	66.7	65.1	63	60.7	59.4	58.7	57	59.6	57.3	52.9
	Professionals	52.8	51.9	50.8	48.4	45.9	42.9	42.1	41.5	40	42.8	44.1	42.9
	Technicians & associate professionals	82.5	78.1	73.9	71.6	67.4	64.6	58.7	57.8	62.8	73.1	75.4	71
	Semi-skilled	91.1	90.9	89.9	89.2	88	87	84.7	84.5	83.3	88.6	90.4	86.7
	Clerical support workers	93.9	92.1	90.6	89.9	88.5	87.1	83.4	82	81.4	85.4	86.7	81.6
	Service & sales workers	89.1	89.7	88.5	87.9	87	86.5	85.4	85.9	83.9	90.5	93.7	91.4
	Skilled agriculture,	89.9	86.7	86	82.1	85.5	81.7	82.1	86.7	86.4	92.4	91.7	90.7
	Craft & related trade	94.8	92	92.1	91.2	89.7	89.2	86.7	86.7	84.2	88.7	89.1	88.2
	Plant & machine operators	88.5	92.8	91	89.6	87	86.8	88.5	88.8	88.3	92.8	92.3	87.3
	Low-skilled	93	94.3	96.1	94.1	93.7	92.4	91.7	90.8	90.7	92.1	93	89.7
Economic sector	Traditional services	87.7	86.8	85.1	83.5	81.8	81.5	79.2	79.7	80.3	80.3	81.5	73.2
	Modern services	62.3	58.0	58.5	55.5	52.3	51.6	49.9	49.8	48.9	46.6	47.7	42.6
	Social services	64.1	68.9	69.1	68.1	69.0	65.8	67.7	68.5	71.6	71.2	73.5	68.3
	Industrial	73.2	69.2	67.3	65.8	63.4	63.2	60.8	58.5	64.3	64.7	68.5	62.8
	Agricultural	80.5	82.9	83.1	76.4	78.3	78.9	78.6	80.3	84.9	84.9	85.1	81.1
	Others***	86.4	85.3	83.3	87.5	87.3	84.4	84.6	84.9	85.1	86.0	85.5	78.3
	Total	**72.4**	**71.6**	**71.4**	**70.1**	**68.7**	**68.0**	**66.9**	**67.1**	**68.7**	**68.8**	**71.1**	**63.6**

*TVET in the GTS context refers to TVET graduates from public TVET institutions only.

**Others refer to graduates from non-MTUN public TVET institutions, such as community colleges, polytechnics, *Institut Kemahiran Belia Negara (IKBN)*, GIATMARA and other skills training institutes.

***Include household activities as an employer; activities involved in producing goods and services; and activities of foreign bodies and organisations.

Source: MOHE, n.d., KRI calculations

APPENDIX B

GRADUATE CAREER TRACKING SURVEY

Graduate Career Tracking Survey (GCTS) is a pseudo-panel survey conducted in 2023 by KRI in collaboration with MOHE by utilising the GTS sample frame to track graduate employment experiences over specific time intervals.

Table B.1: Breakdown percentages of GCTS sample by selected demographic characteristics

Cohort		~2018	~2010
Characteristics (%)/n (sample)		**4,329**	**3,697**
Characteristics (%)/n (weighted)		**757,756**	**494,539**
Gender	Male	41.90%	39.5
	Female	58.2	60.5
Age	below 30 years	78.8	6.7
	31-37 years	18.3	75.6
	> 37 years	2.9	18
	Mean	27.9	35.1
	Median	27	35
Marital status	Single (never married)	57.8	25.4
	Married	37.3	70
	Widowed/divorced/separated	4.9	4.6
Highest qualification	Diploma	47.5	46.5
	Degree	48.8	49.3
	Postgraduate	3.7	4.2
Initial qualification attained	Diploma	46.7	49.1
	Degree	53.3	50.9
Institution type	IPTA	68.9	67.1
	IPTS (incl. foreign local branch/overseas)	31.1	32.9
Study stream	Non-TVET	61.6	67.9
	TVET	27.5	24.4
	TVET (MTUN)	10.9	7.8
	STEM	51.7	50.8
	Non-STEM	48.3	49.2
Study field	Science, Mathematics & Computing	19.6	19.4
	Engineering, Manufacturing & Construction	23.5	22.1
	Health & Welfare	8.2	8.9
	Agriculture & Veterinary	2.7	3
	Social science, Business & Law	23.6	23.8
	Education	5.6	6.7
	Arts & Humanities	9.9	9.8
	Services & others	7.02	6.5
Total jobs held	In the first job	19.25	12.66
	2 to 4 jobs	68.84	70.3
	More than 4 jobs	11.91	17.04
Current employment status	Working	63.8	73.4
	Not working	36.2	26.6
	Homemaker	12.4	17.3
	Studying	11.1	2.4
	Retiree	1.4	0.7
	Unemployed but looking for job	11.2	6.2
Transit status	Transited	55.4	64.6
	Not yet transited	44.7	35.4
Total		**100**	**100**

Note: Weighted figures presented.
Source: KRI (2023)

Table B.2: Breakdown percentages of working graduates by selected demographic characteristics

Cohort		~2018	~2010
Characteristics (%)/n (sample)		**1,618**	**1,081**
Characteristics (%)/n (weighted)		**483,770**	**362,779**
Gender	Male	46.90%	50
	Female	53.1	53.1
Age	below 30 years	77.1	5.9
	31-37 years	19.6	76.8
	> 37 years	3.3	17.3
	Mean	28.4	35.2
	Median	28.0	35.0
Marital status	Single (never married)	60.6	28.1
	Married	37.2	69
	Widowed/divorced/separated	2.2	3
Highest qualification	Diploma	42.6	42.9
	Degree	52.8	53.4
	Postgraduate	4.65	3.69
Initial qualification attained	Diploma	49.6	47.1
	Degree	50.4	53
Institution type	IPTA	69.8	68.9
	IPTS (incl. foreign local branch/overseas)	30.2	31.1
Study stream	Non-TVET	65.3	70.4
	TVET	23.6	22.2
	TVET (MTUN)	11.1	7.4
	STEM	53.9	51
	Non-STEM	46.1	49

Cohort		~2018	~2010
Study field	Science, Mathematics & Computing	20.2	19.2
	Engineering, Manufacturing & Construction	25.5	23
	Health & Welfare	7.9	8.5
	Agriculture & Veterinary	2.6	2.7
	Social science, Business & Law	24	25
	Education	5.6	7.1
	Arts & Humanities	8.6	8.5
	Services & others	5.8	6.1
Total jobs held	In the first job	12.4	8.4
	2 to 4 jobs	75.3	72.4
	More than 4 jobs	12.2	19.2
Current employment status	Standard	72.0	79.6
	Non-standard	28.0	20.4
	Contract/Temporary	13.5	8.2
	Part-time	4.3	3.4
	Self-employed	10.3	8.9
Organisation type (current job)	Government	28.7	35.2
	GLCs & MNCs	22.9	21.2
	SMEs & NGOs	48.4	43.6
Economic sector (current job) *	Modern services	28.0	24.6
	Social services	18.0	23.9
	Traditional services	21.4	18.9
	Industrial	31.6	31.1
	Agricultural	1.1	1.5

	Cohort	~2018	~2010
Occupation and skill level (current job)	High-skilled	71.0	73.7
	Managers	17.3	19.9
	Professionals	31.5	33.0
	Technician & associate professionals	22.2	20.8
	Semi-skilled	23.8	21.9
	Clerical support workers	9.3	9.4
	Service & sales workers	7.5	5.7
	Skilled agriculture, forestry & livestock	1.4	1.6
	Craft & related trade workers	2.7	2.9
	Plant & machine operators	3.0	2.2
	Low-skilled	5.2	4.4
Salary (current job)	< RM1.5k	9.2	6.3
	RM1.5k-RM2k	20.7	11.0
	RM2k-RM3k	28.1	20.1
	RM3k-RM5k	30.2	31.4
	RM5k-RM8k	8.5	20.9
	> RM8k	3.2	10.4
Job-qualification match **	Overqualified	40.0	35.9
	Matched	47.9	54.1
	Underqualified	12.1	10.0
Length of stay in the first job	Less than 6 months	24.7	16.8
	6 months - 1 year	27.4	23.5
	1 year - 3 years	33.3	38.4
	3 years - 5 years	9.8	9.3
	more than 5 years	4.8	12.0
Employment status (first job)	Standard	52.6	62.2
	Non-standard	47.4	37.8
	Contract/Temporary	23.5	22.6
	Part-time	19.6	12.6
	Self-employed	4.3	2.6

	Cohort	~2018	~2010
Organisation type (first job)	Government	*18.5*	*16.0*
	GLCs & MNCs	20.0	21.1
	SMEs & NGOs	61.6	62.9
Economic sector (first job)	Modern services	29.7	30.3
	Social services	13.0	12.4
	Traditional services	25.9	23.4
	Industrial	30.7	33.1
	Agricultural	0.8	0.9
Occupation and skill level (first job)	High-skilled	52.5	55.5
	Managers	*17.4*	*15.9*
	Professionals	*17.5*	*21.8*
	Semi-skilled	35.3	35.5
	Clerical support workers	*10.7*	*14.5*
	Service & sales workers	*13.7*	*11.9*
	Skilled agriculture, forestry & livestock	*2.2*	*1.6*
	Craft & related trade workers	*4.1*	*3.9*
	Plant & machine operators	*4.6*	*3.7*
	Low-skilled	12.2	9.0
Salary (first job)	< RM1k	23.5	22.4
	RM1k-RM2k	42.7	38.5
	RM2k-RM3k	20.7	24.2
	RM3k-RM5k	10.4	12.0
	> RM5k	2.7	2.8
	Total	**100.0**	**100.0**

Note: Weighted figures presented.
* Grouping units with a common primary activity, according to specified similarity criteria as outlined in the Malaysia Standard Industrial Classification (MSIC) 2008 i.e. agricultural, industrial, social services, modern services, and traditional services.
** In the case of overqualified graduates in high-skilled jobs, their positions are categorised under Category 3 in the MASCO classification, such as associate professionals, which corresponds to a diploma qualification. This means that graduates possessing a degree are considered overqualified for jobs in this category. Similarly, individuals in semi-skilled and low-skilled jobs are clearly overqualified, as these occupations require qualifications below the level they possess (diploma and above).

Source: KRI (2023)

Table B.3: Prevalence of working graduates by selected demographic characteristics

Cohort		~2018	~2010
Characteristics (%)/n (sample)		**2,711**	**2,616**
Characteristics (%)/n (weighted)		**483,770**	**362,779**
Gender	Male	71.50%	87.3
	Female	58.3	64.3
Age	below 30 years	62.4	64.9
	31-37 years	68.3	74.5
	> 37 years	74.3	71.7
	Mean	28.4	35.2
	Median	28.0	35.0
Marital status	Single (never married)	67	81.1
	Married	63.7	72.2
	Widowed/divorced/separated	28.3	47.7
Highest qualification	Diploma	57.3	67.8
	Degree	69.1	79.4
	Postgraduate	79.5	64
Initial qualification attained (Cohort base)	Diploma	59.4	67.8
	Degree	69	79.2
Institution type	IPTA	64.8	75.4
	IPTS (incl. foreign local branch/overseas)	61.8	69.2
Study stream	Non-TVET	54.9	66.9
	TVET	64.8	69.7
	TVET (MTUN)	67.7	76.1
	STEM	66.6	73.6
	Non-STEM	61	73.2
Study field	Science, Mathematics & Computing	65.8	72.5
	Engineering, Manufacturing & Construction	69.2	76.6
	Health & Welfare	61.4	70.3
	Agriculture & Veterinary	59.3	67.5
	Social science, Business & Law	65.0	76.8
	Education	64.1	78.6
	Arts & Humanities	55.8	63.4
	Services & others	52.0	69.1

Cohort		~2018	~2010
Total jobs held	In the first job	100	100
	2 to 4 jobs	62.5	68.3
	More than 4 jobs	58.8	74.9
Current employment status	Standard	72.0	79.6
	Non-standard	28.0	20.4
	Contract/Temporary	57.8	60.1
	Part-time	41.3	57.6
	Self-employed	24.5	67.6
Organisation type (first job)	Government	55.0	62.9
	GLCs & MNCs	59.1	66.7
	SMEs & NGOs	58.1	66.1
Economic sector (first job)	Modern services	60.3	68.3
	Social services	58.4	63.7
	Traditional services	52.0	62.7
	Industrial	55.4	66.3
	Agricultural	61.9	71.4
Occupation and skill level (first job)	High-skilled	62.8	72.2
	Managers	58.5	65.2
	Professionals	64.9	74.9
	Technician & associate professionals	64.9	75.3
	Semi-skilled	51.8	57.8
	Clerical support workers	54.2	58.7
	Service & sales workers	48.9	53.7
	Skilled agriculture, forestry & livestock	39.0	77.2
	Craft & related trade workers	51.3	61.5
	Plant & machine operators	60.9	54.8
	Low-skilled	53.9	57.3
Salary (first job)	< RM1k	40.7	50.8
	RM1k-RM2k	56.3	67.1
	RM2k-RM3k	69.9	74.3
	RM3k-RM5k	71.4	74.9
	> RM5k	59.5	64.0

Table B.4: Prevalence of overqualified graduates by selected demographic characteristics

Cohort		~2018	~2010
Characteristics (%)/n (sample)		**1,252**	**1,124**
Characteristics (%)/n (weighted)		**223,159**	**149,461**
Gender	Male	54.8%	45.3%
	Female	49.8	46.4
Age	below 30 years	52.1	60.2
	31-37 years	51.9	45.8
	> 37 years	53.3	41.3
	Mean	28.2	34.8
	Median	28.0	35.0
Marital status	Single (never married)	53.6	49.3
	Married	49.3	44.4
	Widowed/divorced/separated	61.0	50.9
Highest qualification	Diploma	60.8	57.4
	Degree	46.4	36.8
	Postgraduate	42.8	47.3
Initial qualification attained (Cohort base)	Diploma	60.5	57.9
	Degree	44.5	35.5
Institution type	IPTA	52.5	45.2
	IPTS (incl. foreign local branch/overseas)	51.2	47.5
Study stream	Non-TVET	49.9	43.4
	TVET	57.8	53.8
	TVET (MTUN)	54.5	46.8
	STEM	51.9	43.8
	Non-STEM	52.0	47.9
Study field	Science, Mathematics & Computing	48.8	44.0
	Engineering, Manufacturing & Construction	54.2	41.6
	Health & Welfare	52.6	48.6
	Agriculture & Veterinary	62.0	61.9
	Social science, Business & Law	48.5	47.3
	Education	42.8	35.1
	Arts & Humanities	62.6	51.5
	Services & others	53.3	55.4

Cohort		~2018	~2010
Total jobs held	In the first job	46.2	43.6
	2 to 4 jobs	39.2	36.0
	More than 4 jobs	49.9	37.8
Current employment status	Standard	39.5	33.7
	Non-standard	42.0	51.3
	Contract/Temporary	51.1	58.6
	Part-time	65.6	67.6
Organisation type (current job)	Government	39.2	35.7
	GLCs & MNCs	36.7	30.2
	SMEs & NGOs	42.1	38.9
Economic sector (current job)*	Modern services	38.9	33.8
	Social services	25.7	27.0
	Traditional services	43.8	48.2
	Industrial	45.9	37.1
	Agricultural	61.4	34.9
Occupation and skill level (current job)**	High-skilled	32.6	26.6
	Semi-skilled	100.0	100.0
	Low-skilled	100.0	100.0
Salary (current job)	< RM1.5k	69.6	67.4
	RM1.5k-RM2k	60.6	65.7
	RM2k-RM3k	53.0	55.6
	RM3k-RM5k	48.5	46.8
	> RM5k	33.9	29.6
Length of stay in the first job	Less than 6 months	52.6	49.3
	6 months - 1 year	51.3	45.4
	1 year - 3 years	50.1	46.0
	3 years - 5 years	51.0	42.3
	more than 5 years	58.9	37.2
Employment status (first job)	Standard	52.3	50.8
	Non-standard	60.3	60.5
	Contract/Temporary	49.9	41.7
	Part-time	55.0	64.8

	Cohort	~2018	~2010
Organisation type (first job)	Government	53.4	52.1
	GLCs & MNCs	51.7	49.5
	SMEs & NGOs	58.1	56.4
Economic sector (first job)	Modern services	56.1	49.9
	Social services	33.3	42.7
	Traditional services	61.5	65.9
	Industrial	60.1	54.1
	Agricultural	63.4	76.2
Occupation and skill level (first job)	High-skilled	40.0	34.4
	Managers	31.5	31.7
	Professionals	37.7	29.0
	Technician & associate professionals	49.2	43.0
	Semi-skilled	63.2	59.7
	Clerical support workers	61.2	62.0
	Service & sales workers	67.3	57.4
	Skilled agriculture, forestry & livestock	76.0	53.9
	Craft & related trade workers	54.7	64.4
	Plant & machine operators	62.1	55.5
	Low-skilled (elementary occupations)	77.6	65.4
Salary (first job)	< RM1k	59.9	58.3
	RM1k-RM2k	53.9	46.2
	RM2k-RM3k	47.0	36.9
	RM3k-RM5k	43.3	42.0
	> RM5k	59.0	35.6

Note: Weighted figures presented.

* Grouping units with a common primary activity, according to specified similarity criteria as outlined in the Malaysia Standard Industrial Classification (MSIC) 2008 i.e. agricultural, industrial, social services, modern services, and traditional services.

** In the case of overqualified graduates in high-skilled jobs, their positions are categorised under Category 3 in the MASCO classification, such as associate professionals, which corresponds to a diploma qualification. This means that graduates possessing a degree are considered overqualified for jobs in this category. Similarly, individuals in semi-skilled and low-skilled jobs are clearly overqualified, as these occupations require qualifications below the level they possess (diploma and above).

Source: KRI (2023)

Table B.5: Prevalence of working graduates earning salary more than RM3,000 by selected demographic characteristics

Cohort		~2018	~2010
Characteristics (%)/n (sample)		**1,119**	**1,574**
Characteristics (%)/n (weighted)		**203,097**	**227,437**
Gender	Male	46.8	66.10%
	Female	37.7	59.7
Age	below 30 years	38.2	28.8
	31-37 years	53.3	62.8
	> 37 years	63.6	73.6
	Mean	29.2	35.7
	Median	29.0	36.0
Marital status	Single (never married)	39.3	57.8
	Married	46.7	65.7
	Widowed/divorced/separated	39.1	39.6
Highest qualification	Diploma	47.5	46.5
	Degree	48	75.3
	Postgraduate	31.3	46.8
Initial qualification attained (Cohort base)	Diploma	35.7	48.6
	Degree	48.2	75.2
Institution type	IPTA	38.4	62.2
	IPTS (incl. foreign local branch/overseas)	50.4	63.7
Study stream	Non-TVET	45.3	67.2
	TVET	28.7	45.8
	TVET (MTUN)	51.2	70.6
	STEM	45.6	66.1
	Non-STEM	38.1	59.5
Study field	Science, Mathematics & Computing	43.6	62
	Engineering, Manufacturing & Construction	47.9	69.2
	Health & Welfare	42.7	67.8
	Agriculture & Veterinary	34	51.9
	Social science, Business & Law	40	66.1
	Education	43.6	71.3
	Arts & Humanities	29.8	46.2
	Services & others	37.4	38.7

Cohort		~2018	~2010
Total jobs held	In the first job	33.0	57.3
	2 to 4 jobs	43.4	65.2
	More than 4 jobs	68.9	58.4
Current employment status	Standard	47.3	66.7
	Non-standard	28.8	47
	Contract/Temporary	28.8	53.8
	Part-time	25.2	38.3
	Self-employed	28.9	44
Organisation type (current job)	Government	39.9	61.8
	GLCs & MNCs	59.8	79.8
	SMEs & NGOs	37.9	59.3
Economic sector (current job) *	Modern services	52.3	66.4
	Social services	44.9	73.3
	Traditional services	34.3	47.6
	Industrial	41.8	66.7
	Agricultural	19.1	62.8
Occupation and skill level (current job)	High-skilled	51.9	74.2
	Managers	44.8	70.5
	Professionals	59.2	83.6
	Technician & associate professionals	47	62.9
	Semi-skilled	22.6	39.8
	Clerical support workers	19.6	36.2
	Service & sales workers	23	37.4
	Skilled agriculture, forestry & livestock	34.7	49.8
	Craft & related trade workers	34.3	52.5
	Plant & machine operators	14.8	37.3
	Low-skilled	24.3	31.8
Length of stay in the first job	Less than 6 months	32.3	58.2
	6 months - 1 year	37.3	63.7
	1 year - 3 years	47.6	61.1
	3 years - 5 years	46.3	65.7
	more than 5 years	41.6	71.2

	Cohort	~2018	~2010
Employment status (first job)	Standard	42.4	66.5
	Non-standard	44.5	68.6
	Contract/Temporary	37.3	59.8
	Part-time	31.4	47.9
	Self-employed	33.8	21
Organisation type (first job)	Government	17.1	19
	GLCs & MNCs	26.8	22.4
	SMEs & NGOs	9.3	13.5
Economic sector (first job)	Modern services	18.5	17.1
	Social services	17.6	17.1
	Traditional services	7.2	10.4
	Industrial	15.3	18.5
	Agricultural	19.2	9.7
Occupation and skill level (first job)	High-skilled	52.4	74.8
	Managers	42.4	63.2
	Professionals	63.2	82.7
	Technician & associate professionals	50.7	74.2
	Semi-skilled	30.3	52
	Clerical support workers	28.3	47.7
	Service & sales workers	22.5	52.3
	Skilled agriculture, forestry & livestock	35.9	61.7
	Craft & related trade workers	41	63.3
	Plant & machine operators	43.5	49.6
	Low-skilled	23.1	39.5
Salary (first job)	< RM1k	20.1	36.5
	RM1k-RM2k	27.7	56
	RM2k-RM3k	56.7	75.7
	RM3k-RM5k	81.6	89.7
	> RM5k	81.3	92.9

Note: Weighted figures presented.

* Grouping units with a common primary activity, according to specified similarity criteria as outlined in the Malaysia Standard Industrial Classification (MSIC) 2008 i.e. agricultural, industrial, social services, modern services, and traditional services.

Source: KRI (2023)

APPENDIX C

MALAYSIA CRITICAL OCCUPATIONS LIST

The Malaysia Critical Occupations List (MyCOL) is a set of occupations in demand that identifies the skills imbalance across economic sectors in Malaysia. It aims to be an instrument for better coordination of human capital policies in attracting, nurturing and retaining talent.

Table C.1: Classification of occupations based on appearance across MyCOL Report 2015–2021

CRITICAL (Appear in all)	LEAST CRITICAL (Appear only once)	EMERGING (Appear only recently)
• Finance Managers • Policy and Planning Managers • Business Services Managers • Industrial and Production Engineers • Mechanical Engineers • Manufacturing Professionals • Accountants • System Analysts • Software Developers • Applications Programmers • Software and Applications Developer and Analyst • System Administrators • Computer Network Professionals • Mechanical Engineering Technicians	• Administrative Managers • Mining Managers • ICT Services Managers • Mathematician, Actuaries and Statisticians • Building Architects • Cartographers and Surveyors • Early Childhood Educators • Personnel and Career Professionals • Research and Development Professionals • Public Relations Professional • Lawyers • Film, Stage and Related Directors and Producers • Securities and Finance Dealers and Brokers • Credit and Loans Officer • Accounting Associate Professionals • Valuers and Loss Assessors • ICT User Support Technicians • Computer Network and Systems Technician • Chefs • Receptionists • Bakers, Pastry, Pasta and Confectionery Makers • Tailors, Dressmakers, Furriers and Hatters	• Agricultural, Forestry and Livestock Production Manager • Nursing Professionals • Web and Multimedia Developers • Data Professionals • Cybersecurity Professionals • Animation and Visual Effects Professional • Digital Games and eSports Professionals • Creative Content Designer Professionals • Metal Moulder and Coremaker • Toolmaker and Related Worker

Source: TalentCorp (2023)

APPENDIX D

ASSESSMENT OF GCTS DATASET

This supplementary note provides detailed information about the data quality and result evaluation of the GCTS dataset. The reliability of statistics—both sampling and non-sampling errors—are presented to ensure the accuracy and credibility of our analysis throughout the report. This includes discussion on the model estimations involved to validate the significance of our findings that utilised the newly collected dataset.

Data Quality

The analysis from GCTS is derived from a survey that employs probability sampling, which can be susceptible to two types of errors: (i) sampling errors and (ii) non-sampling errors. Addressing these errors is essential to ensure that our results are accurate and bolster the survey's credibility in representing the population of interest.

Sampling Error

Sampling error is the difference between the characteristics of a sample and the characteristics of the entire population which the sample was drawn. The statistical expression of this error is known as the Relative Standard Error (RSE), stated in percentages. The RSE serves as an indicator of precision, representing the degree of variability in sample-based estimates relative to the population parameter.

As for GCTS, the sampling errors of key demographic estimates used in the analyses are calculated separately, as presented in Table D.1. Lower RSE percentage indicates higher precision of the estimate. As a rule of thumb, an RSE below 5% is often considered low, while between 5% and 10% is moderate, and above 10% is considered high. However, if RSE does not exceed 30%, the estimate may still be considered reliable[330]. For instance, the proportion of male graduates based on GCTS is 40.9% (female: 59.1%) with RSE of 3.5% (female: 2.5%) and Standard Error (SE) of 1.5%. At a 95% confidence interval (α=0.05), the estimated proportion of males could range from 34.8% to 47.2%, while females from 52.7% to 65.2%.

Table D.1: Relative Standard Error (RSE) estimates for key demographic estimates, GCTS, 2023

Demographic	Estimates (%)	Standard error of estimates		Estimation at 95% confidence interval
		RSE (%)	Standard error (%)	
Gender				
• Male	40.9	3.6	1.5	34.8 – 47.2
• Female	59.1	2.5	1.5	52.7 – 65.2
Qualification level				
• Diploma	47.6	2.8	1.3	42.0 – 53.3
• Degree	52.4	2.5	1.3	46.7 – 58.0
Institution type				
• Public	68.1	0.9	0.6	65.4 – 70.8
• Private	31.9	2.0	0.6	29.2 – 34.6
Study stream				
• TVET	36.0	6.3	2.1	27.2 – 45.7
• Non-TVET	64.0	3.4	2.1	54.3 – 72.8

Source: KRI (2023)

[330] Wisconsin Department of Health Services (2014); Australian Bureau of Statistics (2021)

Non-sampling Error

Non-sampling error refers to inaccuracies in survey results that arise from factors other than the sampling process. The potential for non-sampling errors arises from various factors, such as incomplete survey coverage, weaknesses in the sampling frame selection, response errors, and issues during data processing. To ensure high-quality data gathered, several administrative measures have been implemented to minimise non-sampling errors. This involved close monitoring of responses over time to ensure that the data entered in the survey platform aligns with the intended question branching. This step is particularly crucial to avoid technical glitches, and if any are identified, immediate corrective actions can be taken.

To mitigate non-response errors arising from issues like coverage errors, bounced emails, inactive email accounts, and invalid email addresses, the sample size estimation for GCTS has considered all possible scenarios. The survey's expected sample size was inflated, taking into account an average response rate of only 20%, based on previous experiences from MOHE's online GTS follow-up surveys. Additionally, email invitations sent to selected graduates explicitly outlined the study's criteria and objectives, aiming to minimise instances of refusal to cooperate. Furthermore, during the data processing stage, a systematic implementation of consistency checks and validation processes for each variable is in place to minimise further non-sampling errors.

Results Evaluation

While findings presented in this report relied on weighted information of descriptive analyses through tabulations, percentage breakdown and proportions, this section takes a significant step forward. It briefly discusses steps undertaken to verify the significance of each variable included in the analyses through several regression models.

As part of the validation assessment of our analyses, Table D.2 presents a binary logistic model assessing different employment outcomes based on graduates' initial job experiences. The categorical variables are grouped and assigned binary values for simplicity and to prevent overfitting of the model. Results in Table D.2 show several factors that are significant for each employment outcome and their associated probability of occurrence. Additionally, results of the Hosmer-Lemeshow test are provided for each regression model to assess its validity. The sample sizes match those of the descriptive statistics, following the same parameters and requirements applied using the GCTS datasets. The primary assessments derived from the analysis are as follows:

- Firstly, the employment status and salary level of a graduate's first job are highly significant, with a 73.4% probability of attaining standard employment if they started off in standard employment and a 40.9% probability for a high salary.

- Secondly, the qualification-job mismatch status in the current job significantly influences the likelihood of attaining a matched job later—the probability of attaining a matched job later, given you started off mismatched, is only 21.8%. While the probability of staying in a matched job later, given starting off matched, is 78.2%.

- Lastly, all characteristics related to a graduate's first job play a significant role in determining the salary level of their future job—the probability of attaining a high salary (above RM3,000) in future jobs is 60.1% if starting off in standard employment and 64.2% if starting off in matched employment. Staggeringly, the probability of earning RM3,000 in the future is as low as 12.8% if they started off with a low-paying job.

- The Hosmer-Lemeshow tests also indicate a relatively high goodness-of-fit for the models tested, suggesting there is insufficient evidence to imply their inaccuracy.

The findings presented in this section generally align with the conclusions drawn from the GCTS datasets throughout the report. However, limitations include a lack of complexity and power in validation testing. The data structure of the sample makes it challenging to assess interaction effects between variables, as some responses are just less likely than others in a survey. It is also important to highlight that even though the Hosmer-Lemeshow test indicating a high model accuracy, it is also limited in statistical power and may not be fully representative of the model's accuracy.

Table D.2: Model assessment

Variable		Odds Ratio	SE	Sig.	Probability % (Odds Ratio/(Odds Ratio+1))
Attaining standard employment in their current job					
The likelihood of attaining standard employment in their current position given their first job characteristics					
Employment status	First job standard employment	2.758	0.269	0***	73.4
	First job nonstandard employment	0.363	0.035	0***	26.6
Qualification-job mismatch	First job matched	1.036	0.102	0.716	50.9
	First job mismatched	0.965	0.095	0.716	49.1
Salary level	First job high salary	0.693	0.088	0.004**	40.9
	First job low salary	1.444	0.443	0.004**	59.1
Hosmer-Lemeshow goodness-of-fit test				0.216	
Attaining match status in their current job					
The likelihood of attaining match status in their current position given their first job characteristics					
Employment status	First job standard employment	1.011	0.098	0.914	50.3
	First job nonstandard employment	0.990	0.095	0.914	49.7
Qualification-job mismatch	First job matched	3.587	0.336	0***	78.2
	First job mismatched	0.279	0.026	0***	21.8
Salary level	First job high salary	1.199	0.155	0.161	54.5
	First job low salary	0.834	0.108	0.161	45.5
Hosmer-Lemeshow goodness-of-fit test				0.640	
Attaining high salary in their current job					
The likelihood of attaining high salary in their current position given their first job characteristics					
Employment status	First job standard employment	1.509	0.135	0***	60.1
	First job nonstandard employment	0.663	0.059	0***	39.9
Qualification-job mismatch	First job matched	1.795	0.158	0***	64.2
	First job mismatched	0.557	0.049	0***	35.8
Salary level	First job high salary	6.823	1.075	0***	87.2
	First job low salary	0.147	0.023	0***	12.8
Hosmer-Lemeshow goodness-of-fit test				0.047	
Note: *p<0.05; **p<0.01; ***p<0.0001.					

Source: KRI (2023)

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