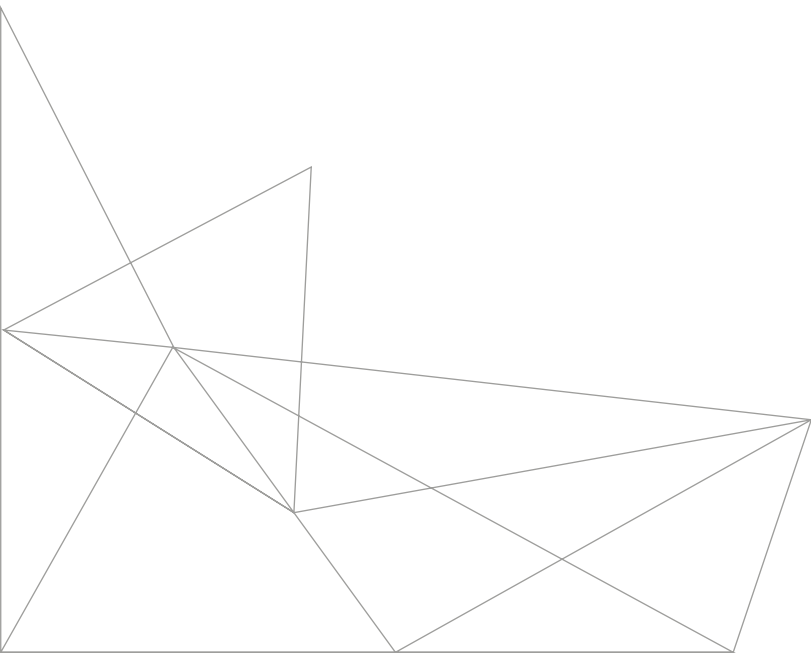


1

INTRODUCTION

This chapter introduces the significance of this report by raising three key labour market issues observed in Malaysia and Penang in particular, which allude to the fundamental questions of availability of skills supply and demand of skilled workers in Penang. The perspectives and objectives of this study are also briefly elaborated in this chapter, followed by industry focus and deliverables.



1.1 The study

This study analyses the evolving demand-supply relationship of higher-qualified labour job-skills in firms from selected industries in Penang, Malaysia. As such, it juxtaposes labour market and labour-processes, as well as skill patterns, with the operational and structural dynamics in firms, industries, and the economy at large. The study has transpired from continuing concerns about misalignment of skills availability in firms/industries and in the external market, and what is demanded from highly qualified workers, as well as the shifts therein. While it is necessary to qualify such concerns, as the picture varies between firms and industries (for various reasons), misalignment pressure (quantitative and qualitative, expressed in terms of skill gaps, shortages, mismatches, or deficiencies), is widely felt.

As a preamble, three observations are in order. First, the concerns are not unique to the case examined in this report. Skill issues in the form of misalignments are a ubiquitous phenomenon as economies and the world of work change constantly. Manpower Group reports testify this in regard to advanced countries; while the World Bank reports substantiate this in regard to the Asia-Pacific region as a whole and individual countries in specific¹. Each has their own specific challenges. In Malaysia, concerns have been expressed for some time at national level. Having the right human capital skills have been recognised as an important factor to accomplish the goals in the Economic Transformation Programme, which has sought to address the 'middle-income trap'². Over the past five years or so, a plethora of studies have been conducted; some by academics, others by the Kuala Lumpur office of the World Bank, and others by independent consultants³. A number of these have been conducted under the auspices of the Institute for Labour Market Information and Analysis (ILMIA), a division of the Ministry of Human Resources established in 2012.

Second, ensuing these studies requires a substantial effort from federal, regional corridor and state agencies in Malaysia to devise policy intervention directed to the findings of the studies. This intervention takes in

a number of the recommendations being offered. Five years ago (in 2012), the Ministry of Higher Education of Malaysia launched the National Graduate Employability Blueprint 2012–2017. The evaluation of results is yet to complete. In 2015, TalentCorp added the National Talent Roadmap⁴. These policy initiatives are not evident from the current 11th Malaysia Plan. While it addresses human capital issues, the focus in the Five-Year Plan is on vocational training (TVET) and upskilling middle-skilled labour rather than high-qualified labour. However, this void is currently filled by new policies and initiatives undertaken by *inter alia* TalentCorp, including the regional offices.

Third, at state and industry levels in Malaysia, the issue of higher-qualified skill supply proves to be rather enduring or pervasive as national initiatives take time to land at lower levels. This has produced a range of regional and industry-specific studies and policy suggestions. With respect to the regional level, Penang is no exception. Thus, this is not the first study done on skills in Penang and the northern region at large⁵. From these studies, policy recommendations have resulted in a number of policies that have been implemented by state agencies and northern corridor institutions (see footnotes: 3, 4 and 5).

The current study complements and augments existing research and policy efforts in the field of human capital skills. Its rationale derives from several factors. Over the past years, Penang has recorded a satisfactory GDP growth rate (above 5%), higher than the national growth rate. Quantitatively, Penang's labour market has been performing well, with labour force participation rate hovering at about 70%. According to the most recent Labour Force Survey published by the Department of Statistics, over 60% of Penang's total employed persons work in the services sector, and close to 30% are employed in manufacturing sector. The unemployment rate has maintained at a low level, which is below 2.2%. Such a low unemployment rate does not indicate the absence of quantitative and

Human capital development is key to the success of new economic initiatives without negatively affecting the rest of the economy. As Penang has been at the crossroads for some time in terms of economic strategy, a reconsideration of the current skills stock and constraints, as well as an effective human capital development policy framework is prompted.

¹ See e.g. World Bank (2014a)

² See Economic Planning Unit (2010, 2015); I LMIA & TalentCorp (2016).

³ See Fleming & Søborg (2012); Jimenez et al. (2012); Junaimah and Yusliza (2011); ILMIA & UPM (2016), IPSOS Business Consulting (2012, 2014a); KPMG (2012), MCMC & ILMIA (2015); PwC (2013a, 2013b); World Bank (2011a); and World Bank & ILMIA (2014)

⁴ See MOHE (2012); TalentCorp (2015, 2016a-f)

⁵ See Kharas et al. (2010); Penang Institute (2015); PSDC (2012); and PwC (2013b)

low unemployment rate does not indicate the absence of quantitative and qualitative manpower issues.

On the contrary, it indicates an increasingly constrained labour situation, high-qualified labour in particular; while at the same time, it tends to conceal significant skill issues. Both aspects are problematic. First, according to the 11th Malaysia Plan, Penang's manufacturing and services sectors are projected to continue to grow steadily at an average annual rate of above 6% during the period 2016–2020. This leads to additional labour demand, while supply is facing constraints. Second, Penang is no exception to the phenomenon of middle-income trap. The state government has responded with concrete initiatives to further diversify the economy and develop new industrial pathways, such as global shared services.

Human capital development is key to the success of these initiatives, without affecting the rest of the economy. As Penang has been at the crossroads for some time in terms of economic strategy, a reconsideration of the current skill stock and constraints, as well as an effective human capital development policy framework are prompted. Next, in regard to the current economy and labour market, skill gaps and shortages of skilled workers in most economic sectors have been and will continue as a key issue that is frequently raised by industry players in Penang. Finally, work processes continue to evolve in many industries. There is a need to anticipate on trends that will become prevalent in the near future.

The fundamental question on the availability and demand of skilled workforce in Penang remains unclear, just as market structure and processes. This also applies to high-qualified labour. Understanding employee skill issues is important. In light of Penang's progressive economy into the next level of growth, skill shortages and gaps of high-qualified workforce are clearly undesirable. Identification of skill shortages against new economic directions is imperative to ensure human capital matches the skill sets required by potential investors.

This study responds to the urgency of coming to grips with the demand and supply of skills of high-qualified workforce in selected manufacturing and services industries in Penang. It frames human

capital development not only by the existing or developing economic mix, but also through the vision of Penang's 'Next Economy'. The latter is defined by the agenda of economic diversification and deepening of the role in global value chains by attracting corporate non-manufacturing operations and new lines of business, (technological) upgrading of mandates of multinational corporations (MNCs) and minimisation of the impact of MNC assembly closures, and at the same time safeguarding growth and technological development opportunities of local firms, SMEs and large entities.

This study responds to the urgency of coming to grips with the demand and supply of skills of high-qualified workforce in selected manufacturing and services industries in Penang. It frames human capital development through the vision of Penang's next economy.

1.2 Perspectives and objectives of the study

Human capital and skill issues are not merely a demand side occurrence, but also a supply side that has many facets and drivers. The objectives of this study relate to the following: stock-taking of skills availability, skill shortages, and gaps observed in selected key industries prioritised for growth, including the causes of skill issues, with a view to provide ideas for a roadmap of human capital development and skills in the near future. In all this, the scope of this study is *on higher-qualified labour*.

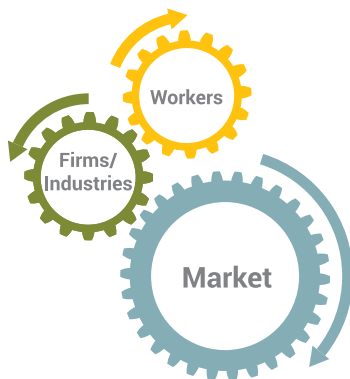
It is not the aim of this study to offer a detailed *prospective* analysis of worker skill requirements or *forecast* of the demand and/or demand-supply relationship (shortage or redundancy respectively) of specific skills and/or higher-qualified workers in a range of expertise, occupations, or industries, for a specified period. The feasibility of these is severely limited by data availability, in quantitative and qualitative respects. It is now generally recognised that quantitative forecasting is an outmoded approach for ascertaining trends in skill shortages, gaps, and so on, whether at the macro-level or the micro-level. The reason for this is the highly dynamic and volatile nature of factors that go into the equation. High level of uncertainty substantially diminishes the value of such an exercise.

⁶ See Yusuf and Nabeshima (2009a)

The aim is rather to map and obtain insight into skills availability, shortages and gaps, and to analyse labour market dynamics to gain a better understanding. Such an understanding offers great help on what directions to take. Thus, our concern is with characteristics of the economy, firms, processes in the labour market at different levels, as well as characteristics and behaviour of actors (firms, workers and institutions), their opportunities and constraints, which influence – even determine – skills pattern development on the demand and supply side.

In this study, we adopt three perspectives from the aims listed above. These perspectives are: *macro, firm(s) and their constituent industries and worker(s)*. Macro refers to the 'market' at large, which is at a different – higher – level compared with industries and firms. Distinguishing these perspectives is important in view of the possibility of differentiation: what applies in the market does not necessarily apply in individual industries and firms (sets of, and/or individual), and vice versa. The micro – perspective of workers is important as these are – often overlooked yet important – actors in labour market processes, in part determining prevailing market structures. Their behaviour is an important determinant at the supply (as well as demand) side of the labour market. Behaviour is multifaceted, but includes the aspect of mobility, within and beyond the regional labour market. Skill transferability is one of the factors to gauge in the role of labour mobility in – differential – skill gaps and shortages. Figure 1.1 depicts the three perspectives and how they complement each other.

Figure 1.1: Three perspectives in the study of Penang skill gaps and shortages



We can now define the objectives of this study more specifically, as follows:

1. Identify demand and supply patterns and trends of high-qualified labour in the evolving Penang economy and labour market;
2. Identify types of skill shortages with respect to labour force relevant to the key industries and their constituent firms;
3. Identify skill gaps in key industries/segments of the economy and their constituent (groups of) firms;
4. Understand internal and external determinants and consequences of skill shortages and gaps in key industries;
5. Identify and analyse the infrastructure already in place in regard to education and upskilling of high-qualified labour;
6. Understand labour mobility patterns in terms of directions and drivers, the role of skill relatedness (industry branches and jobs) in mobility; and the role of mobility in skill shortages and gaps; and
7. To address skill shortages and gaps with respect to high-qualified labour.

1.3 Focus of the study

Penang has been experiencing skill issues in regard to different categories of labour. So far, substantial attention has been given to lower and medium skilled workers. As stated above, this study focuses on skill sets of high-qualified workers (at least tertiary education).

The scope of this study is circumscribed in terms of not only groups of workers in the labour market, but also industries and/or operations carried out by (multinational) firms in Penang. This study focuses on those that are envisaged to be part of Penang's 'Next Economy' and are targeted as such by policy makers and agencies for growth and investment. Below is a list of the industry focus. Further elaboration will follow in Chapter 3.

Table 1.1: Industry focus in brief

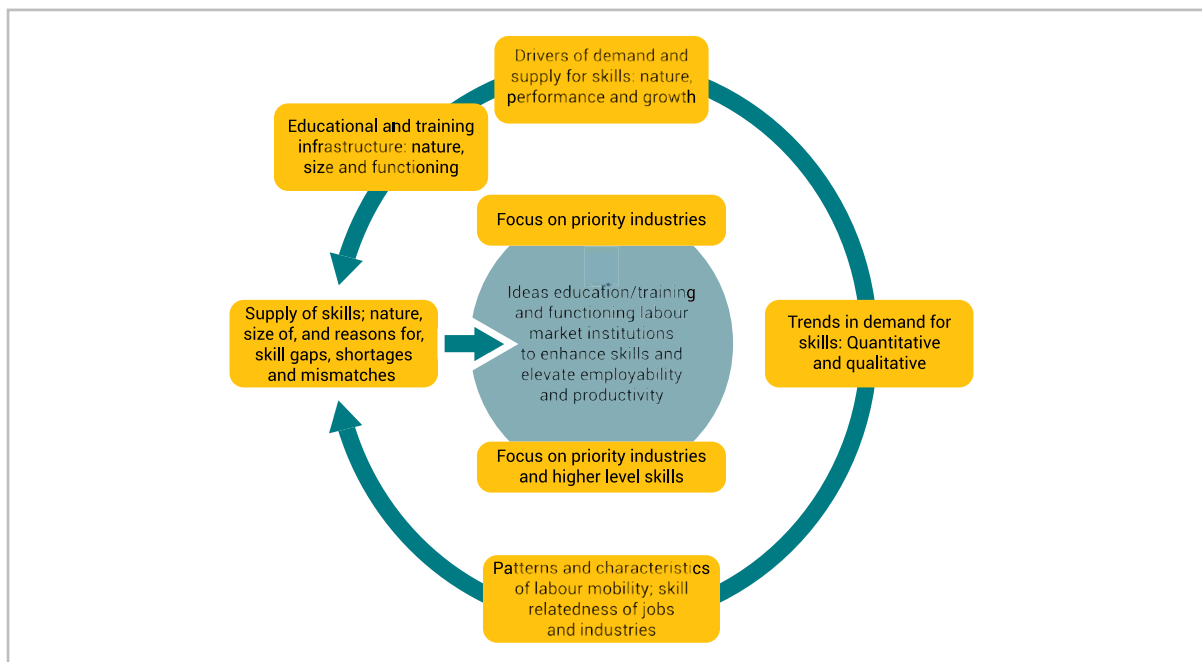
1. High-tech manufacturing: Industrial electronics, semiconductors and optoelectronics
2. High-tech manufacturing: Other industries
3. Precision engineering and automation
4. Medical devices and life sciences
5. Global Business Services
6. Advanced producer and financial services
7. Hospitality services

8. Medical tourism
9. Information technology
10. Logistics and Transport
11. Education and training

1.4 Knowledge deliverables

The study assesses skill gaps and shortages as well as programmes to address and alleviate skill deficiencies and mismatches, (to be) implemented by a range of agencies (Figure 1.2). Next, the study provides insight into drivers of the demand and supply of skills and competences comparing selected key industries. Along with its current and prospective growth, without engaging in formal forecasting, an attempt is made to assess the developments and factors driving skill needs of higher-qualified labour in the Penang economy at large and within our industry scope, at present and in the next 5–10 years. Some leads have led to the choice of industries of specific interest for this study. Insight into drivers helps to grasp the trends of skill demand over a period of time, be it qualitative skill deficiencies or quantitative skill shortages.

Figure 1.2: Knowledge deliverables



The functioning of the labour market – in the light of these drivers – will also answer the important question on the role of mobility among high-qualified employees

in Penang in regard to labour market issues, skill gaps, and shortages in specific. Insight is provided into similarities and dissimilarities of skills required in different segments of the economy – or skill relatedness in industries – and worker inclinations. In turn, these produce insight into short- and long-term implications of mobility in regard to the structure and functioning of the labour market, access to labour, and the adequacy of labour in an economy. Next, an understanding is produced of the existing educational and training infrastructure. This provides additional knowledge of the skill mismatches related to occupations, qualifications, positions and industries. Finally, this study offers a skills strategy for education/training and functioning of labour market institutions to enhance skills and increase employability, skills availability, and productivity. The ideas aim to satisfy skills demand and provide supply in line with the demand of skilled workers in Penang.

1.5 The structure of the report

This report consists of two parts, a main report and a technical report. The former has the appendices

to individual chapters and the latter has annexes as addendum to the main report. In large part, they relate to the methodology and implementation of this study,

analytical techniques used, and data additional to those included in the main report. This main report consists of 10 chapters, and the objectives of each chapter are relayed below.

Chapter 1 Introduction

Describes objectives and perspectives of the study; and outlines deliverables of the study.

Chapter 2 Framework for the Study and Key Observations

Offers a conceptual overview of labour market dynamics, skills and skill shortages and gaps; and presents key observations on Penang labour market emanating from the study.

Chapter 3 Approach and Methodological Notes

Outlines the main approach of the study; explains the three perspectives or components of skill issues and details the methodology used in each component; and discusses limitations of the study.

Chapter 4 High-Qualified Labour and Skills: The Demand Side

Sketches and analyses the demand side of Penang labour market, in quantitative and qualitative aspects, focusing on high-qualified employees; current drivers of, development of, and shifts in, demand for/towards high-qualified labour in relation to investment trends, job vacancies and firm recruitment patterns; and discusses the specifications of job vacancies and recruitment; and considers debates on the future of work/jobs and what that may imply for Penang.

Chapter 5 High-Qualified Labour and Skills: The Supply Side

Sketches the supply side of high-qualified labour and skills in Penang; offers general observations on labour force growth and participation rate and elaboration on relevant supply side developments and constraints; discusses availability of high-qualified labour and analyses skills supply in terms of occupations and skill sets, recruitment patterns, and difficulties in particular; and identifies skill shortages in the market and presents some observations on labour competition and how firms deal with this.

Chapter 6 Skill Deficiencies and Gaps: Upskilling Infrastructure

Focuses on the education and upskilling infrastructure in Penang in relation to skill deficiencies and gaps; deals with primary skill learning institutions and questions surrounding their output and quality, issues concerning the secondary supply and skill gaps in particular, the nature of these gaps, the role of upskilling and how firms in different industries overcome these, as well as the different avenues of upskilling, the impact of upskilling, regional and local institutional initiatives to enhance high-qualified human capital, and institutional skill augmentation initiatives.

Chapter 7 High-Qualified Labour and Skills in Core Manufacturing Industries

Discusses aspects dealt with in Chapters 4 and 5 specifically for Penang's key and targeted industries and their constituent firms whereby individual industries are treated separately. In this chapter, the focus is on electrical & electronics (high-tech manufacturing) and other high-tech manufacturing, precision engineering & automation, and medical devices.

Chapter 8 High-Qualified Labour and Skills in Growing Services Industries

This chapter focuses on growing services industries, which are also related to chapter 4 and 5.

Chapter 9 Mobility of High-Qualified Labour

Explores mobility flows, characteristics and drivers of high-qualified labour in Penang; the approach is one of a case study of recently set up operations in Global Business Services in Penang; and discusses issues of labour turnover and retention of surveyed firms and deals with current engagement approach.

Chapter 10 Augmenting Skills for the Next Economy: Ideas for a Skills Strategy

Ideas for a human capital augmenting strategy emanating from the findings of the study.