FRAMEWORK FOR THE STUDY AND KEY OBSERVATIONS



This chapter first offers a conceptual framework of relevant aspects in the study of skill gaps and shortages. It discusses skills taxonomy, the meaning of gaps and shortages, causes, and costs/ consequences. To frame the empirical analysis in later chapters, three perspectives are introduced. Part of the frame concerns the relationship between economic structures, labour market functioning, and – related to these – differential sources of labour with required skills. The second part of the chapter offers key observations on Penang, related to the concepts discussed. This sets the scene for the detailed analysis in the later chapters.

Skills and related concepts

2.1

A skill is an ability to perform a task effectively (with a desired or needed result/outcome) from desired or necessary level of knowledge and expediency/ competence. To perform a particular task, a person with the right skill is likely to carry out the task better than someone who does not possess this skill. This person is most likely equipped with (a) a suitable qualification acquired through formal education and training, (b) attributes acquired in other ways, including informal learning and on-the-job experience. For this reason, there is no watertight relationship between gualification, occupation and skills. It has been argued that - as economic organisation and technology evolve - skills beyond 'learnt knowledge' are becoming more important. Nonetheless, skill-sets are frequently 'expressed' in terms of occupations. The skill typology can be classified into five categories. These include:-

- 1. Job-specific skills and generic skills;
- 2. Hard, soft and transportable skills;
- Job- and task-related skills, cognitive skills and socio-emotional skills;
- 4. Employer-specific and non-employer specific or transferable skills; and
- 5. Low-wage generating and high-wage generating skills.

This study focuses on the second category, where Figure 2.1 further illustrates the skill typologies, and the details of skill taxonomies are included in Technical Report: Annex 2.

Figure 2.2: Concepts related to skills

Market	Industry/firm	Worker
 Demand/Needs Supply Shortage (Mis)match 	 Industry/firm/ job-specificity Transferability Shortages Deficiencies Gaps Skill-relatedness Recruitment difficulties 	 Skill-set Employability Work-readiness Competence Transferability

This report adopts concepts related to skills that are summarised in Figure 2.2 at three levels: the market, the industry/firm and the individual employee. The details of these concepts can be found in the technical report: Annex 1. The concepts are particularly important at the level of skill specificity and transferability, impinging on employability.

Skills are acquired throughout the life course from a variety of sources. The level of command and how to apply it, ranging from basic to advanced level are of great importance, whether performing tasks becomes more routine, or knowledge/expertise applied is more complex. Pertaining to this, competence refers to the level of proficiency in the application of skills.

Issues related to skills are commonly couched in terms of skill shortage or mismatch leading to hiring difficulties. Skill gap is another common term of skill issues (which is different from shortages), as it does not refer to the market external to organisations but to employees who are currently employed in the firm. Figure 2.3 elucidates this distinction.

Hard skills Technical job-specific skills are usually easily observe measured, trained, and clo connected with knowledg		Soft skills Non-job specific skills, which are usually intangible, hard to measure, and closely connected with attitudes.
General skills Skills applicable in most companies, occupations, and sectors.	Generic Hard skills	Generic Soft skills
Specific skills Skills applicable in a small number of companies, occupations, and sectors.	Specific Hard skills	Specific Soft skills

Figure 2.1: A typology of skills

Source: RPIC-ViP (2011)

Figure 2.3: Skill shortages as distinct from skill gaps



Source: MAC (2008b)

Skill shortages and gaps can be designated in quantitative terms; shortages very often are expressed in terms of occupations: the availability of individuals with specific occupations in the market. This should not be confused with 'critical occupations', which are defined as those that are sought-after and strategic in key industries in the economy. Equally important, skill shortages and gaps have a qualitative dimension, referring to the competence level of workers in the market and/or in the existing workforce in industries and companies.

Misalignment refers to competences at a lower level and/or lower level of skill application than what is demanded or desired by the employer (in current jobs and/or position(s) to be filled). It can be stated otherwise, a discrepancy between expected skill standard(s), based on e.g. qualifications and/or experience, and actual level/standard. The concepts of employability and recruitment difficulties directly link to qualitative shortage.

2.2 Framing skill issues of higher qualified labour. Perspectives

To obtain a well-rounded picture – with a view to formulating policy – skill issues have to be analysed from three perspectives. These are the market (macrolevel), industries (meso-level) and firms, the individual employee/worker, and/or groups of employees (microlevel), as depicted in Figure 2.4. Skill issues are not just about 'measuring' deficiencies or mismatches and forecasting needs and discrepancies between demand and supply, but also about understanding the underlying functioning of the economy and labour market, as well as labour processes.

Figure 2.4: Three perspectives of skill issues



The macro-level is perhaps most straightforward as it pertains to demand and supply at the highest level of aggregation. The demand side is governed by the dynamics of the economy in terms of growth/decline, composition and structural changes in regard to industries and firms. Another factor is the dynamics of work/jobs, reflecting – changes in – operations, technology, organisations at industry and firm levels. Economic upgrading implies significant shifts in demand patterns of labour skills.

Box 2.1 categorises sources of supply of labour and of skills in any labour market. The secondary supply does not add to or subtract from the total market; as such it does not have significance at the macro-level. Labour mobility or circulation, however, can be of great significance (positive and negative, beneficial and nonbeneficial) at the level of industries and firms. Thus, the picture at meso- and micro-levels may be at variance with the one at macro-level.

2

A tertiary and quaternary supply can be of significance in regard to overall quantitative labour/skill supply issues. Qualitative issues are applicable to all sources of supply. A 'third party' training infrastructure, as

Box 2.1: Sources of supply in a labour market

- Primary supply: Educational institutions locally, nationally; entrants minus voluntary unemployed, brain drain, and retirement.
 Secondary supply: Existing workforce; worker movement and upskilled workers available for recruitment elsewhere; workers made redundant by e.g. closures (with/without reskilling).
 Tertiary (or unconventional) supply: Lure back workforce into the labour force
- after career interruption (re-entrants). 4. Quaternary supply:
 - Attracting talents from abroad.

much as reflecting shortages, can assist in overcoming deficiencies in the market and in the existing labour

force. Therefore, it enhances supply; on the other hand, it reflects the presence of deficiencies in primary and other sources of supply due to market failure and/or other factors.

2.2.1 Causes of skill issues

The causes of skill issues include drivers of new skill demand. A distinction can be made between those at the firm level (micro) and those at the overall economy level (macro). Furthermore, factors impinging on the quantitative side of skill gaps and shortages are to be distinguished from those impinging on the qualitative side. Overall, demand side factors can be differentiated from supply side factors. Figure 2.5 provides an overview of causes of skill shortages and gaps from these aspects.

In regard to macro demand and supply, economic and industries growth, and employment growth faster than supply can expand at short term. They are important

Quantitative			Qualitative		
	Demand	Supply	Demand	Supply	
Macro- level	 Growth economy/ industries/employment vs. labour force growth Industrial restructuring & upgrading Economic diversification Competition 	 Demography Slow adjustment Institutional barriers/hindrances Lack of training Leakages (Drain) 	 Industrial restructuring & upgrading Economic diversification Incongruent supply graduates field of study Competition 	 Slow adjustment Institutional barriers/hindrances Lack of training 	
Meso- and micro- level	 Demands/preferences employers unrealistic (recruitment standards) Recruitment methods Search costs/ information Training disincentives Labour poaching 	 Search/information deficiencies Competitiveness Remuneration too low Fringe and other benefits insufficient 	 Recruitment standards Technology & work organization Disincentives for labour training/upskilling Under hiring Field of study preferences students Talent attitudes Disincentives for upskilling 	 Values/attitudes/ preferences Commitment Access to and use of information Returns for training/ upskilling insufficient Remuneration, benefits, and working conditions 	

Figure 2.5: Causes of skill shortages and gaps

Source: Compiled from various references

factors underlying quantitative shortage. This also defines the overall condition of the labour market. Irrespective of whether the labour market is constrained, remuneration levels, working conditions and reputation of industry/firms are factored in at meso- and micro levels, not to mention working hours, location and skill specificity. There is much debate about the standards requirement of firms adhere to in regard to the recruitment and skills.

The question of skill training by firms (individually or via collective institutional constructs) and upskilling by individual 'seller' of labour has provoked even more debate. While mostly there is no alternative, especially in constrained market conditions, firms are reluctant to invest heavily in skill training as they may quickly lose upskilled employees to other firms (that reap the returns without any investment). Likewise, sellers may consider investing in skill upgrade to earn a wagepremium in the prevailing market. On the other hand, they may also consider that as firms engage in under hiring, jobs will be offered at an attractive wage-level, regardless of investment in skills upgrading and/or career development. Opportunistic behaviours may prevail in the market.

An intangible cause of skill issues is related to the longer term systemic evolution of technological system and paradigm that significantly impact the nature of work (and skill requirements). Several systemic transitions have occurred in manufacturing in the past; it is generally held that we are at the verge of a new manufacturing transition - Industry 4.0. This transition revolves around the widespread application of automation and robotics, as well as a deepening of network organised production processes enabled by internet-/cloud-based communication technology. Some of the advanced economies are currently at the forefront of this transition, stemming from high innovation capability. While these are pioneers and frontrunners, others are followers or laggards. When the digitised factory of the future enters emerging economies (at national or regional level); it will soon impact the nature of jobs locally. Equipping labour with the requisite skills is one of the key challenges in the near future.

2.2.2 The secondary supply through labour mobility

In relation to the above, some observations are useful to make. First, the meso- and/or micro-levels may

show a different picture compared with the macrolevel. In other words, what applies in the labour market as a whole does not necessarily apply in individual industries and firms. Quantitative and qualitative issues pertaining to the primary, tertiary, and quaternary labour supplies, leading to a constrained market and mismatches, can be overcome by individual industries and firms by turning to (tapping into) the secondary supply, self-induced (e.g. labour poaching). However, not all industries and firms have equal capacity to do so.

The playing field may be uneven with some industries/ firms having a better competitive edge than others, derived from various factors: size and origin, reputation, operational and technological characteristics, employment conditions, entrepreneurial attitudes, flexibility in accommodating worker preferences and demands and so on. In general, however, attraction is contingent on skill-relatedness, or level of skillspecificity. It is also determined by information availability and recruitment practices. Retention is an equally important concept in regard to secondary supply and labour mobility. It is increasingly opined that 'engagement' is becoming a novel and increasingly necessary requirement.

This brings us to the other side of the equation: secondary supply hinges on the willingness of employees to move with incentives being an important factor. A labour market displaying sizeable surpluses at all levels tends to have low labour circulation as employees perceive the high risks involved with leaving the current position. On the other hand, substantial gains can be achieved in a constrained market, remuneration and otherwise, without many risks. In a highly segmented labour market, significant barriers exist for labour circulation. Figure 2.6 illustrates the implications of economic structure and labour market functions under alternative conditions.

Recently, substantial debate has surfaced on labour mobility inclination and employer commitment in relation to the new employee cohort, the Millennials or Generation-Y. Millennials have a drastically different outlook on what they expect from their employment experience, and employers will need to develop new engagement models and policies. Retaining employees in a competitive marketplace remains the biggest priority and concern. Compensation, flexibility and career mobility opportunities are treasured when it comes to recruiting and retention.



Figure 2.6: Economic structure and labour market function under different conditions

Source: Own work

2.2.3 Linkage perspectives

Figure 2.7 depicts how the three perspectives discussed are interlinked. The costs of skill gaps and shortages can be substantial.

Consequences can be assessed again from the macro and micro perspectives. A differentiation is needed between gaps and shortages. As for the micro-level, the focus is on firm's objectives, labour recruitment practices, wage clearing level, and development potential and strategy (see Figure 2.8). Some consequences at the micro level are manifested in the firm responses to gaps and shortages. As noted above, the question on whether firms do or do not have sufficient incentives to engage in worker training/skilling programmes has been widely discussed. A paradox is manifested here, the more prevalent or widespread – and persistent – skill gaps and shortages are, less inclined firms are to engage in worker training. With respect to skills that are not firmspecific, there are indeed many arguments in favour of significant disincentives. Prime among these is the fear of losing trained workers through poaching. Labour poaching is among the causes/consequences of skill shortages (at the same time as constituting a firm level response).

Figure 2.7: Inter-linkage of the market, industry/firm and worker perspectives on skill issues in a local labour market



Figure 2.8: Consequences of skill gaps and shortages at economy and industry/firm levels

Market	Industry/firm
Upward pressure on wage levels in the economy	Labour productivity/efficiency/underperformance
Growth potential economy and industries/firms diminished; opportunities for diversification/new growth paths in the economy curtailed	Lowering retention rate and capacity; high recruitment costs
Labour circulation increases; diversification may lead to drainage of less attractive segments economy/labour market	Lower level of technology than desired; MNC subsidiary less eligible to win more sophisticated mandates from HQ; risk of relocation activities, downsizing, or closure
	Wage premiums for selected top skilled employees; costs of upskilling/training; training paradox

Figure 2.9: Selected strategies to address skill gaps and shortages

Market		l	ndustry/firm
Increase an education c	d improve primary supply through hannels	$\left \right $	Hire under-skilled workers and provide labour training
Stimulate no quaternary	ew supply sources: tertiary and		Provide more supervision/re-allocation of work/ change work practices
Enhance an	d improve upskilling infrastructure		Outsource services/substitute workers with technology
Ease demar policies	d through industrial and technology		Adjust wage to attract workers from other related firms
			Engage in retention oriented programme

When the labour market is buoyant, competition for workers is high and poaching is expected. As noted, the returns of skill investment made by an employer are accrued in part to other firms. Contingent on the firmspecificity of knowledge and skills involved, the costs incurred by firms experiencing labour transfer through poaching could also involve other firms accessing competitors' knowledge base. Firms can reduce poaching by raising wages of trained workers, thus further increasing labour costs.

At the macro-level, consequences of skill shortages have been considered with respect to three aspects: the wage clearing levels in the overall labour market, the growth potential of individual industry branches, and opportunities for new growth paths in the economy. All three aspects are dependent on the overall labour market condition, constrained or labour abundance, and degrees of compartmentalisation with differential prevalence of buyer and seller market features.

Figure 2.9 shows strategies that can adopt to mitigate skill gaps and shortages. These can be adopted by actors and stakeholders at several levels: the economy (macro) and at the level of industries and firms (meso-/ micro-).

2.3 Identifying and measuring skill gaps and shortages: Indicators

Identifying and measuring – quantitatively and qualitatively – of skill gaps and shortages hinge on indicators of labour market. A general distinction is made between macro-, meso- and micro-levels. Each level has its own set of indicators, which are depicted in Table 2.1

At the macro-level, unemployment rate (among specific categories of labour) is an indicator that measures skill shortages - skill deficiencies in persons contributing to the market - will be reflected in higher than 'normal' unemployment as deficiencies impact employability. However, this does not take into account the overall labour market situation. This seems to constitute an important contingency factor. In a constrained market, low employability and unemployment may well go hand in hand as employers see no other choice than to hire under-skilled workers to fill the resulting gap through training. Following up on the latter aspect, the extent and form of a 'third party' training/upskilling infrastructure may well be a suitable indicator. However, for economies that are in a transitional stage of development, its usefulness is more limited than others.

Table 2.1: Indicators of skill shortages and gaps from macro, meso and micro (firms and workers) perspectives

Macro (market)	Supply side	1.	Employed persons			
		2.	Unemployment rate			
		3.	Entrant into labour market (graduates): by field of study vs. needs			
		4.	Extensiveness of labour training/skilling infrastructure			
	Demand side	5.	Vacancies			
		6.	Vacancy fill rates and hard-to-fill vacancies			
		7.	Number of vacancies			
		8.	Wage structure			
	Skill shortages	1.	Hard-to-fill vacancies; vacancy/search duration			
		2.	Most frequently advertised job titles			
Meso (industries)		3.	Wage offered			
(industries)	Skill deficiencies	4.	Training			
	and gaps	5.	Skills that need the most improvement			
	Skill shortages	1.	Hard-to-fill vacancies; vacancy/search duration			
		2.	Positions not filled up			
		3.	Rate of filling up vacancies			
		4.	% of applicants fully meet requirements			
		5.	Labour poaching			
		6.	Firms' recruitment standards			
Miere		7.	Labour turnover			
(firms)		8.	Under hiring			
(9.	Wages offered			
	Skill gaps	1.	Skill proficiency level			
		2.	% of employees fully skilled			
		3.	Skills that need the most improvement			
		4.	Preparedness of employees' new tasks			
		5.	Labour turnover			
		6.	Training			
Micro (workers)	Skill suitability/ proficiency	1.	Employability/ease of hiring			
		2.	Job-readiness			
		3.	Job search duration			
		4.	Skill transferability			

Variables related to vacancies and wages are probably the most frequently used indicators. These have the advantage of being applicable to all levels. Skill shortages have a depressing effect on overall or average wage levels. On the other side, substantial remuneration premiums may prevail for specific skills in high demand in an industry, or a set of firms, but short in market supply. Such premiums result in inter-firm competition due to the limited supply. Hardto-fill vacancies is an indicator employed in many studies, as it directly pertains to 'hard to get' in relation to stipulated requirements. Such vacancies can be defined in terms of occupations, positions, or profiles. Therefore, it requires a yardstick to determine skills that are 'high in demand but short in supply' at gualitative level (including specific combinations of competences). Vacancy duration is one possible indicator.

In a number of countries, a critical occupation list (COL) is developed, which sets forth the jobs most in demand, and for which industries may be facing shortages or difficulties in hiring. The COL identifies occupations that are sought-after by key economic sectors by providing information on the type of specialisations and competencies that the industry demands from employees. Besides listing critical occupations demanded by the industry, the COL also provides insights into graduate employability programmes and facilitates the return of Malaysian professionals from abroad.

In practice, hard-to-fill vacancies or hiring difficulties can also be assessed through gathering information from recruitment agencies. These agencies provide useful input pertaining to employers' expectations and labour market dynamics, which provide a guide to identifying shortages and mismatches. However, in assessing information from recruitment agencies, one has to take into account the role of skill-specificity or specialisation that serves as channels for employers engaging recruitment agencies for such recruitment.

Considering workers at an individual level, job-readiness is an important indicator signifying employability or the ease with which a specific worker will be hired (and by whom) and the length of period needed to fill a suitable job. Skills that are highly transferable in relation to demand from different industries and firms in the market make an individual marketable for a range of vacancies in different industries and firms. While promoting mobility, there can be disadvantage of low level of skillspecificity or specialisation, hindering employment. A high level of skill-specificity in terms of specialised positions or occupations with specialised tasks, though limiting opportunities for mobility to similar firms in the same industries, can command a high remuneration.

2.4 Setting the scene: Key observations on Penang

This section provides general observations with regard to the findings that have emerged from our scrutiny of the Penang study, pursuing the perspectives framework as laid down in Figure 2.7. The observations 'set the scene' for the detailing and elaborate discussion in the remainder of this report. After a macro-view of labour market and skill issues in Penang, we will look at the industry and firm-levels. The worker perspective will be discussed in the final section. Peculiar features of labour market processes in Penang – pertaining to high-qualified labour – will be linked to the apparent structure of the Penang economy. These appear to contribute to skill shortages and gaps at meso- and micro- (firm) levels, and to a significant extent, underlie heterogeneity observed at these levels.

2.4.1 Macro view of labour market and skill issues

High-qualified labour demand has expanded and changed as manifested through vacancies throughout the economy by any measure of time, on

Observation 1 Vacancies occur in a constrained market as far as high-qualified labour is concerned.

a monthly or annual basis. Tracking job portals such as JobsMalaysia and Jobstreet reveal a continuous high number of job advertisements and vacancies on a monthly basis (Chapters 4 and 5). Vacancy density only in part is determined by new jobs created as a result of approved and implemented manufacturing and services investments, be it domestic or foreign. For another part, vacancies concern existing jobs. Observation 2 In this constrained market, high-qualified labour shows substantial mobility. A constrained market for higher-qualified labour: evidence – Going by applications for specialised fields of work as defined by e.g. JobStreet, one tends to

conclude that there is ample supply of labour in most fields and at most skill levels/types of skill. A multiplier of 100 or more is quite common (Box 2.2). Each vacancy receives a large number of applications. As illustrated in Box 2.2, the number of unique applicants is much lower. Applicants cast their net wide across profiles (titles and functions). Ample supply is inconsistent with the labour force - employment trends depicted in the next chapters, as well as the fact that unemployment rate has been markedly low for some time (hovering around 2%, below average). Also, unemployment to job vacancy ratio overall has declined. The multiplier is much higher than one would expect in a situation of low mobility and job applicants, mainly involving new entrants/job seekers. Even the higher unemployment rate among youth (including educational institutions leavers) does not necessarily indicate oversupply of workers. Rather, undersupply of skills as we will conclude later from the data.

Observation 3 Mobility indicates the role of the secondary supply, adding to primary supply. High mobility is inconsistent with ample labour and skill supply – Communication with representatives from job portals confirm the patterns and indicate the cause for the high multiplier to be *high mobility* among those who are already employed. This is inconsistent with ample labour supply. As noted in Box 2.3, job shift is rather risky in such conditions while most employees



would be expected to be risk-averse. Furthermore, an ample labour supply would depress wages and/or fringe benefits, discouraging change of employment. Job change is far less risky in a situation of labour competition because of limited supply (and can produce substantial gains). This is especially so for those with some degree of skill-specificity. Mobility incentives are consistent with a constrained market.

Analysis reveals scarcity with respect to high-qualified labour. This category is equally marked by high mobility, which is probably one of the most significant market processes in Penang. Later an interpretation of mobility is offered, related to the structure of the Penang economy and labour market functioning.

A better measure would be the number of vacancies from new job creation. Unfortunately, figures on this are not available.

Box 2.2: Anomalies in the Penang labour market

According to JobStreet, for the top 20 specialisations, the number of applications is over a hundred times higher than the number of vacancies advertised (Figure 2.10). This multiplier shows little variation between different specialisations. It should, however, be noted that the unique number of applicants is substantially less since they often apply to more than one vacancy. Still, it cannot be concluded that an overall shortage of applicants exists.



Figure 2.10: Vacancies and applications received in the top 20 specialisations in the first half of 2015

Source: JobStreet (2015)

It seems that despite growing demand combined with low unemployment, which indicate a tightening labour market characterised by quantitative shortages of labour, the supply of labour remains abundant. This paradox can be explained by labour mobility. Due to a tightening labour market, demand for workers starts to exceed supply, which gives employees the (perception of the) opportunity to switch to 'better jobs' and move up within the labour market. This tendency towards high labour mobility is confirmed by recruitment firms, which justify that job-hopping is very common: "As there is high demand, workers change job frequently, employees work only 1–2 years for one company, especially the young people." Another participant stated, "Nowadays, if people work three years for the same company, it is considered as a stable candidate. This used to be 5–10 years."

The apparent high labour mobility within the market is less likely to occur in a labour market characterised by a surplus. In this case, as set out in the framework of this study, people rather hold their positions due to fierce competition for jobs available.

Skill supply – Characterisation of the Penang labour market as constrained implies that a mismatch exists between demand and supply (shortages). However, there still seems to be an abundance of workers available in the market, looking at the number of applications in JobStreet. It points towards a pattern of substantial dispersion with regard to skill profiles among those who suggest a skewed or distorted supply of skills with relative 'ample' availability of rather unspecific skill profiles. But skills that do not match demand will result in mismatch between supply and demand. Having generic skills can command better remuneration packages.

It is contended below that Penang's economy indeed is compartmentalised, contributing to labour circulation. Those with specific skill sets that are in demand are in

short supply and are able to earn significant premiums in the market. This leads to the next observation.

Observation 5 Apart from new jobs, vacancies result from high labour circulation. **Observation 6** Frequent iob shift as indicated by the application patterns of vacancies pointing towards the supply characterised by a prevalence of generic transferable skills. Converselv. demand may show a significant degree of skill relevance. allowing workers to 'exploit' transferability.

Observation 7 As against prevalence of generic transferable skills, within the constrained market there is genuine shortage in the fields of high skill-specificity/ skill shortage in the area of professional (iob-) specific skills.

Indicator evidence Skill mismatch or skill deficiencies of entrants and those in the secondary supply (versus demand) is revealed through several indicators. These concern: concern 1) Professional occupational groups that are in demand but are insufficiently available; 2) Vacancies that are hard to fill; and 3) Infrastructure for professional skill augmentation training or upskilling.

Interviews with recruitment companies and querying these – as well as other agencies and persons – over a listing of critical occupations, revealed shortages in terms of professional positions, fields, and occupations.

Critical occupations or positions are not necessarily in short supply. Firms seek recruiters for niche positions. Shortages are indicated in the fields of research and development/design in different industries (IC, electronics, life science, medical devices and pharmaceuticals), IT programming, due diligence/ compliance and financial control/accountancy. Engineers (software, mechanical, process, production, quality and test), are by far ranked as the most demanded and filled position/occupation, but also with the most acute shortage.

Closure of several multinational firms recently and currently does little to alleviate the supply constraints. Most of the retrenched workers have skills that are gradually obsolete with further upgrading of the economy. To the extent this concerns foreign labour; they are likely retracted from the market; for the other part they would need retraining. On the other hand, retrenched workers with suitable skills becoming available through the secondary market are insufficient in number.

Persistent vacancies – Our analysis reveals a moderate occurrence of persistent vacancies (the idea

of persistent is defined in Chapter 5 in relation to hardto-fill). These are found in fields and positions that are congruent with the ones indicated above. Persistent vacancies have different characteristics in different segments of the economy (see later discussion of compartmentalisation). While its prevalence appears relatively modest, vacancy advertisements appear to point towards employer branding and the perception of a preferred employer. This is known to attract qualified and best skill-equipped applicants. As the 'lesspreferred' employers appear under-represented, our finding probably underestimates persistency. The fact that even stronger companies experience recruitment difficulties (vacancies that are difficult to fill within a reasonable time frame) is quite telling.

Causes of shortages – One is brain drain, driven by remuneration differences and lucrative iob opportunities for highly demand skilled workers and a volatile market due to closures. Another cause is the commonly felt limited output from educational institutions of entrants, in occupations and functions that are in demand. This is in part related to study preferences of students, impacting employability of graduates. It is substantiated by the composition of graduates from public and private institutes of higher learning for each field of study. It is reflected in and has led to initiatives such as Penang Science Cluster, an endeavour of Mr. Yoon Chon Leong, an inspiring propagator of the relevance of science to the job market. This cluster has set up programmes to address this issue, such as exhibitions, workshops, café talks and support to local tech start-ups. A third cause – pertaining to skill level rather than gualification or occupation – concerns the discrepancies in terms of competency between the knowledge gained from gualifications and actual skill depth. Applying equally to those with the 'right' fields of study, this again affects employability. Other causes include overly high wage demands, level of experience required, length of working hours, location and transport constraints (mainland).

Upskilling infrastructure

- Further indicating professional skill deficiencies (shortages and gaps), we find the presence of a substantial infrastructure for knowledge enhancement and upskilling. While PSDC Observation 8 We find the presence of a substantial skill training infrastructure, in part geared towards higher-qualified labour and specific hard and soft skills (examples: Chapter 6). is diversifying into higher-level technical upskilling and is a collective effort of member companies, there is a range of private and semi-private set-ups that cater to a market emanating from the private sector for higherlevel skill enhancement. Geared in large part to specific hard skills for specific industries, they offer employability enhancing programmes in a range of fields, filling the gap where skills do not meet expectations on the basis of educational qualifications. This is a case of dual significance: on the one hand revealing and addressing a gap in skill formation of tech start-ups and, on the other hand, filling this gap through bottom-up action (see Figure 2.8 and Figure 2.9).

Observation 9 While skill demand is changing towards a greater importance of language proficiency (English and foreign) and soft skills, competency does not quite follow. Work-readiness – Many stakeholders (agencies, firms and experts) have a negative perception of work-readiness of entrants, related to hard skills and soft skills. As the latter gains more importance, the roles of education and

upskilling infrastructures are emphasised.

With respect to the change in demand many experts and stakeholders refer to a gradual reversal of the skill pyramid that can be observed in Penang, in line with Figure 2.11. While literacy skills such as English and foreign language proficiency are becoming more pressing hard skills, a range of soft skills are moving towards the forefront: communication skills, ability to exhibit teamwork, problem-solving skills and out-ofthe-box thinking (creativity).

Figure 2.11: Reversal of a skills pyramid



It is recognised that such skills are underdeveloped and thus insufficiently available in the market, not auguring well for Penang's upgrading pathway. As yet though, soft skills appear to be at a level that currently, is acceptable to many employers. As for causes, there is a tendency pointing towards underperformance of educational institutions. In turn, these reject claims of their direct responsibility and point towards institutional limitations in regard to their scope of activities, the possibility of giving quick responses to labour demand issues, incorporating '21st century' skills into their programming, including teaching and learning methods and partnership engagement.

The existence of а substantial privately organised training/ upskilling infrastructure part can be seen in testifying to these as constraints and issues. It should be noted that part of this infrastructure is directed to firms/ firm management rather than school leavers and workers. This suggests

Observation 10 Lack of soft skills is in part a consequence of constraints faced by educational institutions as far as primary supply is concerned; as for secondary supply, upskilling is insufficient; corporate practices should also be held responsible in part.

that corporate practices, appear to contribute to skill issues. The industry and firm levels will be considered next.

2.4.2 Industry and firm-level skill issues

Economic structure and functioning of labour market - It is postulated that the skill situation in industries and firms relate to structural features of the economy and how these influence the functioning of the labour market. In tandem, we suggest that these contribute to high labour circulation and a differential picture with regard to skill situation (associated with highgualified labour) in industries and firms. It is thus imperative to outline

Observatio	n 11	
Economic	structure	
has	significant	
implication	ns on	
the Pena	ang labour	
market structure and		
functioning.		

Observation 12 The economic structure implies that industries and companies are not on a level-playing field, with significant differences in the capacity to compete for labour skills in a competitive market.

these features here. First, referring to Figure 2.6, when it comes to high-qualified labour, we find the Penang labour market to be similar to the extreme right condition. From the structure of the economy from an industry and firm perspective, the labour market is compartmentalised, with many inducements to move resulting from inter alia differential job satisfaction levels and employment conditions. Penang's economy is characterised by a high level of diversity. The inflow of foreign investment (initially in manufacturing, more recently in other activities as well) has resulted in a sizeable base of MNC branch plants in a range of industries. Over time, the composition of these industries has changed due to changes in labour costs and state industrial policies. The role of higher tech manufacturing has increased significantly; in addition - although still classified as manufacturing - the activities carried out in a significant number of branch plants in several industries have shifted and/or diversified towards non-production parts of the value chain. Knowledge-driven manufacturing and services activities have gained importance. Complementing MNC branch plants is a sizeable local support industry, mainly consisting of SMEs. This industry has evolved to some extent with the development of MNCs requirements; engineering, automation and service branches, which have developed into a higher level of class over time

Similar to the manufacturing sector, services have diversified with foreign direct investment (FDI) increasingly directed to this sector and strong encouragement by local policy. Next to traditional services such as the finance and the hospitality industries, the sector has branched out in new directions, such as ICT (represented by substantial MSC-status companies), software, medical services, GBS and others.

The core of the Penang's economy can be deconstructed into a number of clusters, some homogeneous, and others more heterogeneous in regard to firm composition. These clusters may span the entire production chains. The economy is also 'downbreakable' into compartments according to dominant characteristics of groups of firms. It is apparent that the following characteristics produce demarcations: origin - foreign/local; company size - large/small; sector - manufacturing/services; technological level or sophistication of activity/operations - ranging from high to low. On the basis of this in Figure 2.12, four major quadrants are defined in which diverse groups of firms can be situated, e.g. high-tech large foreign transplants in e.g. opto-semiconductor or LED industry can be situated at the top of the left upper quadrant, while technology start-up firms can be situated at the top of the right lower quadrant. The industry groups

and clusters of varying technological sophistication are situated across the quadrants, with MNC relocations often dominating eco-systems.

Figure 2.12: Compartmentalisation of the Penang economy and skilled labour attraction/retention







Non-level playing field - Anecdotal evidence as well as previous research indicate that - rather than Penang's labour market being homogeneous - parallel to the compartmentalisation of the economy, divides occur with sub-markets evident in differential levels of skilled labour attraction and retention. Figure 2.12 also suggests a pattern of this skilled labour attraction and retention, ranging from high to low. This is assumedly influenced by preferences of labour for industries and groups of firms in the different guadrants (market preferences ranging from high to low, correlating with wage level, terms of employment, working conditions and fringe benefits). But there are also other factors at play such as firm's attractiveness - especially higher-skilled - as well as firm's labour preferences (e.g. gender or age), competitiveness in the labour market with respect to categories of labour (in terms of gualifications and skills), labour poaching practices and firm responses to exaggerated labour expectations.

A check on "Malaysia's 100 Leading Graduate Employers", covering some 14,000 graduates from Malaysian universities, was done to detect further evidence on whether there is a preference of graduates towards local companies or MNCs. The top four sectors most favoured by graduates are banking/ financial services, FMCG retail, energy/0&G and hightech industry. Of the top 100 companies preferred by graduates, a clear majority – 60% – are MNCs. In the banking/financial services industry, the majority of graduates prefer local firms. In the ICT sector, a clear majority prefer MNCs. Although the picture is mixed, these findings generally support the above observations.

Buyer-seller characteristics - The functioning of labour markets and the 'power' of employers versus labour (and vice versa) are often discussed in terms of buyer and seller market. In a buyer market, employers are supposedly able to obtain sufficient labour that meets the requirements from primary and secondary supply and/or are able to dictate the conditions of employment, the latter especially if labour supply does not fully meet the requirements. In a seller market, conditions are set by labour; hiring depends on the extent to which employers are able or willing to meet its conditions. Notwithstanding the supply situation as indicated by vacancy data, buyer/seller labeling of the Penang's labour (sub-)market(s) as well as actual 'distribution' of skills is far from straightforward. The combination of compartmentalisation of the economy, behaviour of labour and firms, as well as institutional

factors render it opportune to identify buyer and seller submarkets (Figure 2.12). The pattern should not be taken as purely 'black and white' though: there are many mixes of buyer or seller characteristics, more so in a constrained labour market, as depicted at the top left quadrant of Figure 2.12 in the case of severe shortage, an experienced worker with a full set of required skills can behave like a seller and bargain for a high wage and other premiums.

Skill distribution – The structure depicted in Figure 2.6 as an approximation of Penang's economic structure and labour market functioning was corroborated and validated by many recruitment agencies and experts. It is postulated that such structure and functioning of the labour market highly influence skill distribution (as noted above) and contribute to labour circulation, in view of the incentives. Also, in conjunction with mobility, the behaviour of labour and firms with respect to submarkets may be expected to impinge significantly on patterns and features of skill shortages. As noted in the framework of the study, patterns and features are contingent on overall skill availability and deficiencies; thus on employability characteristics. In addition, patterns are impacted by institutional regulations in hiring labour and - levels of - compliance with these.

In regard to high-qualified labour, the Penang's labour market appears to resemble the structure depicted in the extreme right column in Figure 2.6, a nonlevel playing field results where skill distribution is skewed. From Figure 2.12 and the mechanisms outlined, it is suggested that there is labour market

Observation 13 What goes for the market as a whole, may not necessarily be the case for individual industries (meso) and/or firms (micro): skill issues tend to occur more in some industries and firms than in others.

heterogeneity where some segments of the economy, industries, and firms have much easier and better access to occupational groups in demand, and require skills more than others. These are industries and firms in the upper left part of the diagram, as opposed to those in the lower right part being in a disadvantaged position. Skill shortages and gaps experienced by selected industries and firms (rather than across the board) can be seen as a 'some winners take all' phenomenon (in the primary and secondary supply). Although this appears exaggerated, however, it can be established that there are winners that take much. **Observation 14** Due better to remuneration packages and other conditions. reputable industries and firms are able to appropriate high-demand skills available in the market - from primary and secondary supply - as these are 'preferred' employers: less reputable local firms in general, experience to a larger extent not necessarily recruitment difficulties of skilled labour but rather competency shortages and gaps.

Observation 15 Even reputable preferred companies face skill deficiencies of local labour supply, necessitating underhiring, upskilling and/or importing skills from abroad.

Secondary market a major source – Another empirical finding is linked to this. Taking into account of a prevailing tight labour market, the secondary market is a major source of experienced workers with sufficient skill depth in relation to job requirements. This may go at the expense of less favoured segments where firms experience retention difficulties as they are unable to offer similar perks because of stiff competition; they may have to adjust their requirements downward to engage workers

Business practices Competitiveness should not be only seen in terms of remuneration and other elements of reward package. It is stated that local firms community still traditional are in their business practices (including expectations,

recruitment and HR management), putting them at a disadvantage. While the often-held view that local SMEs attract less skill-equipped labour and function as training houses for MNCs (so they are bound to lose labour once better-skilled) may be valid in a number of cases, again this should not be generalised. We find that some local firms progress through favourable HR strategies (but then change quadrant); also, some workers prefer to stay in SMEs.

Specific skills – This pertains especially to positions with high skill-specificity or specialised skills that are either scarce in the market (quantitative supply) or of insufficient level (qualitative supply). Industries and firms that are in the upper left corner of the schemes in Figure 2.12 are not completely immune to recruitment difficulties and do experience skill challenges as well. A case in point are semiconductor firms that have switched from an exclusive focus on manufacturing to a diverse portfolio of activities, including R&D,

design and global business services. These indicate the shortages and deficiencies of product development engineers, local IC designers, and the like, necessitating an international recruitment field. extension of recruitment time and substantial upskilling. One

Observation 16 Skill deficiences of employees in MNC companies may cause them to lose technology out in development projects the company, in hindering Penang establishment upgrading.

negative consequence for MNC establishments is the possibility of losing out on technology development projects within the company.

It is observed that in a tight market with specialised skills, commitment of those who avail of these skills suffers from competitor firm recruitment practices such as pinching. Several anomalies emerge here. While in principle, it is in the interest of firms to equip high-qualified workers

Observation 17 While there are retention difficulties across the board, these are also experienced by attractive industries and firms due to labour pinching by competing firms in the same industry.

with the requisite skills, it comes at a substantial cost (not only upskilling as such but also wage premium for retention). Pinching involves such premiums as well. On the other side, it is not always in the interest of an employee to upskill in a specialised field. High skill-specificity also limits opportunities in the labour market.

Employer preferences -

Employers' preferences (e.g. sufficient experience) lead to reliance on the secondary market, and at times get in the way of effective recruitment as they are incongruent with preferences of job seekers in Penang. Recruiters Observation 18 Some firms – not linked to any specific industry or other characteristics – are responsible for skill shortages as they tend to be picky in the recruitment process.

also signal several issues with regard to recruitment difficulties in terms of skills: firms are too demanding, or are not 'up-to-date' pertaining to recruitment channels and methods (e.g. use of social media). However, in some segments of the economy, preferences of workers may interfere with effective recruitment.

Observation 19

Different segments of the economy require varying skill sets; stated otherwise: not all segments require the same skills in terms of proficiency/ competency level and experience. In principle, available (level) skills mav fit some segments of the economy. But recruitment is constrained bv preferences and attitudes of workers.

Observation 20

For skill gaps, firms on average rate the current skill proficiency of employees as satisfactory to fair; however, for none of the skills measured the rating is clearly indicated as proficient or highly proficient. This indicates skill gaps.

Observation 21 For skill proficiency and gaps, there is little difference between generic hard skills, specific hard skills and soft skills on average.

Observation 22

Firms' view in regard to skills that need the most improvement lean towards specific hard and soft skills rather than generic hard skills; however, this differs by type of firm.

Skill gaps - Skill gaps do exist, the details will be discussed in Chapter 6 and subsequent chapters. However, it is unsound to generalise this across skills, industries and firms. In the general picture, a hard skill, namely foreign language competency scores the lowest. The non-deviating score of soft skills is due in part to upskilling within firms. On the other hand, soft skills are indicated most frequently as requiring the most improvement. This is indicated more often by large, local firms rather than MNC establishments or SMEs. This might be explained from MNC establishments cultivating these more while they are less relevant to locally operating SMEs. While even within the categories of preferred industries and firms the picture is not homogenous, as it is influenced by required skill sets.

2.4.3 Labour mobility of high-qualified employees

Escalator? – The Penang labour market is related to a high level of worker mobility. Mobility and jobhopping can be considered from two angles: First, workers and their behaviour; Second, firms

and their perception of workers' conduct. Employees themselves have the perception that in a constrained market, the 'escalator' effect (improvement by changing employer) is strong despite employability deficits. Labour mobility may come from multiple and diverse sources, including firms offering incentives in competition for labour. The often strong appeal of new 'variety' in the economy (e.g. global business services in the Penang case) is reinforced by skill requirements that are based on a significant degree of transferability and presence in the secondary market.

Mobility and transferable or specific skills – A few notes are in order here. It appears that a substantial

diversity of sources linked to a single destination (in terms of industries, occupations and functions) and vice versa, a substantial diversity of destinations from a single source indicates a relative importance of aeneric transferable skills. This makes for complex mobility Furthermore, patterns. mobility at the same time is heterogeneous: Against those with generic skills, there are also workers with high skill-specificity that have limited transferability. Workers with high skill specificity moves when there is a high demand in earning premiums.

From the perspective of firms mobility, this can be functional as it creates the possibility of shedding less suitable workers and recruiting those with the right skills through secondary supply. This is more important in a tight labour market situation. Observation 23 Skill gaps are associated in part with labour turnover, revealing a connection with labour mobility at individual level and firms' commitment to employees.

Mobility reflects the degree of skill relatedness in industries and firms; high-skill relatedness of segments of the economy is expected to contribute to high levels of mobility.

Observation 25 Skill-relatedness is an important determinant of mobility patterns in terms of links between sources and destinations; through skill-relatedness, chain effects (may) occur that lead to skill shortages and gaps at some 'distance' from the initial source of skills demand.

Of course the downside for firms may be the loss of high-skilled workers, resulting in skill gaps and/or more investment in retention.

Negative perception - Yet another side of the mobility

coin is the workers' perception of high mobility (or jobhopping) that engenders in employers. While mobility is a positive phenomenon, high mobility runs the risk of becoming a game where many participate in without serious intentions and/or turning the labour market into a carousel (another metaphor), where the intention is to obtain a better 'seat' by frequently jumping on and off. Negative perceptions of workers are instilled as such practice confronts employers with significant burdens, such as large numbers of unsuitable applicants that HR departments have to deal with. It is postulated that such situation is starting to arise in Penang.

Observation 26 Mobility dynamics in the secondary labour market presents significant burdens to employers and generates negative perceptions of mobile workers.

Observation 27 There is a concern among agencies, firms, experts, stakeholders of declining loyalty and commitment among younger workers.

Contradictions - Mobility is driven by opportunities and employability within the context of a constrained market, both real and perceived. Other factors go into the equation too: in discussions on labour, attitude Penang and commitment of workers were often mentioned. For firms. conditions employment and work environment are highlighted. This is also an area where contradictions are apparent.

While there are concerns about loyalty and commitment, there is much more reference to the younger generation than the 'older' one. Thus, there are generational differences.

Mobility drivers – A major concern expressed by firms are worker expectations and demands with reference to salary package, compensation for travel, fringe benefits and other employment conditions. Considered to be misplaced, firms see this as diminishing employability. Seen as closely associated, not surprisingly, issues regarding attitude are frequently raised in interviews and focus groups when it concerns recruitment difficulties (besides wrong fields of study and lack of skills). A number of firms are inclined to refrain from hiring workers they perceive as having a negative attitude. This adds to perceived skill shortages and actual gaps as they do with existing personnel.

The insights obtained about mobility patterns and

drivers indicate that high-qualified workers use mobility as an instrument to improve their employability. From an employee's perspective, this has logic given the fact

that the market is replete with generic skills. From this personal view, it can be seen as positive. On the other side, recruitment firms often highlight the complaints concerning the undesirable attitudes of (fresh) graduates. This may be linked to behavioural patterns of millennials or Gen-Y. According to different recruitment agencies, millennials or Gen-Y workers demand high wages and fringe

Observation 28 On one side, mobility appears in part driven by skills advancement improve to employability, on the other side, perceived 'bad' attitude of workers and unrealistic expectations (promoted by economic structure and differences) has negative impact а on employability of the labour force, and augment recruitment difficulties.

benefits, despite meeting requirements or knowing the job (descriptions). Many fresh graduates apply for jobs without knowing the requirements or job content. This is also suggested by the high average number of applicants for vacancy advertisements. When their skills match the requirements, they often have high demands and unrealistic expectations in terms of fringe benefits, flexibility, and working conditions. This behaviour can also be typical in a constrained labour market since there is an abundance of job opportunities. Thus, Gen-Y characteristics can be a cause for high unemployment rates among fresh graduates, but also a consequence of the tight labour market situation in Penang. The other side of this coin of course, is that employers are not obliging, contributing to the labour market tightness. As noted above, the problem is further compounded by employers being at times considered 'too choosy'.

Millennials, Gen-Y views –Millennials or Gen-Y raise the counter-argument that their generation is different, with behaviour stemming from different values and priorities. From the millennials' perspective, (un)employment can be

Observation 29 Many firms are 'dual' in their attitude: on the one hand they frown upon job-hopping (negative recruitment factor) but at the same time engage in labour pinching.

seen in a different light. While a higher unemployment rate among youth, including graduates, no doubt reflects deficiencies in the quality of supply, many fresh graduates tend to play a waiting game. This is for reasons of not only what has been mentioned above, leading millennials to over-rate their 'selling' capacity. It is also for reasons of their different values and priorities that lead them to cast the net wide in search while accepting only the job that offers the 'right' conditions with little regard to competition. All this adds to the market anomalies that are observed.

Observation 30 On the other side, younger workers also perceive unrealistic and outdated expectations from the part of firms impinging on their 'selling' capacity. New HRM approaches – A debate has emerged about resolution of resulting market anomalies and paradoxes. One view accepts the millennials' different values and priorities, thus higher-

qualified labour having fundamentally changed their outlook. It also argues that it is more productive for the market to adjust rather than the workers. It advocates that firms should accommodate the new reality. From consultancy circles, a range of new approaches in HR management have emanated, which gradually have been popularised. Worker engagement is a core concept in an approach that targets worker retention. In our experience, such new concepts have already entered HR management practices.

2.4.4 Responses and strategies of Penang's actors and stakeholders

Following Observation 31, we now briefly offer further observations on responses and strategies concerning professional skill shortages and gaps. We consider current practices and thinking at the macro-level as well as the level(s) of industries and firms. Responses and strategies with respect to skill shortages and gaps show an inter-relationship between causes and consequences. There is a broad awareness on a huge challenge that has to be taken up.

Observation 31 Firms in Penang are showing a range of responses to skill shortages and gaps. Besides underhiring, there is an increasing need for retention, concretised through programmes that are concerned with worker engagement. Web of actors – The web has become more crowded as more actors have entered the domain. From two core actors, the educational field and firms in the private sphere, their numbers have expanded in the public and private arenas. An overview will be given in Chapter 6 where we discuss human capital (re)formation. The ones in the public arena are linked to diverse levels: state, regional (corridor) and national (federal). Those in the private arena operate individually, or collectively (consortium), or in public-private partnerships. These include centres, recruiters/headhunters, consultancy firms, training/upskilling providers and industry associations. Interventions, programmes and schemes are macro, meso and micro level-oriented and by now have a wide coverage of the supply and the demand side.

Objectives - At macrolevel, the main target is improvement of quantitative supply, by not only enlarging primary supply, but also tapping on tertiary and quaternary supplies. Thus, the production of talent and skills-indemand are the objectives. Second, improvement of qualitative supply, directed

Observation 32 As for shortages, we observe that issues and challenges are already taken up through interventions by an expanding web of actors/stakeholders, each running and exercising control over their own programmes and schemes, addressing all levels from macro to micro.

to primary and secondary supply to entrants into the labour market and existing workers through training/ upskilling. Much is expected of the supply-effect of technology development awareness and familiarisation initiatives (such as Penang science cluster). Third, still on the supply side, actors are concerned with workers, targeting their job skills, attitudes and behaviour.

At micro-level on the supply and demand sides, the targets are – updating – labour recruitment practices and routines of firms, creating awareness of lock-in and lock-out, assisting in addressing skill gaps through (re)training/ upskilling, introducing

Observation 33 The impression is that many programmes, schemes, and interventions developed and implemented in/through the web require more time and evidence to see the effectiveness.

new human resources management philosophies and practices; a new focus on worker retention, and adopting new approaches in this aspect (such as the much propagated engagement).

Premature – We need more time and evidence to create effective programmes. Meanwhile, firms that

experience skill shortages and gaps continue to practise existing responses/strategies.

The latter by now have been adopted by most firms and are obviously relevant to skill gaps. Combined with retraining and upskilling they can target internal mobility as a means to fill critical vacancies.

Observation 34 Firms attempt to overcome skill gaps through multi-pronged response that includes changing work hours, re-allocation of tasks, more supervision bv experienced employees and labour training. Upskilling is practised by most firms, and is done internally and by external providers.

Observation 35 Firms attempt to overcome skill shortages through multi-pronged response that include underhiring, labour pinching and – increasingly – retaining schemes.

Fragmented In conclusion, a few general observations can be made concerning the web and its functioning in the Penang study. We have the impression that the web has grown in a fashion that has led to a fragmented structure with each fragment doing 'its own thing' without much account of the roles and activities of other actors in the web. Not only does this lead to the risk of unnecessary and unproductive duplication, but it also raises the issue of overall coordination and monitoring.

We see little communication between agencies or parts

of the web concerning their programmes, schemes and interventions. In practice, this contributes to little coordination, which in first instance is a function of the absence of a central agency - at the heart of the web that takes responsibility for overseeing what is happening 'on the ground'. As it is, the multi-pronged avenues are individual efforts that appear to be lacking a common basis in shared agency policy in relevant human capital fields. The absence of a common vision and principles shared of strategy raises questions about the effectiveness of interventions. The question of effectiveness is a difficult one as information on the results of interventions is not widely available. In addition, information that is available is fragmented.

Thus, in order to have an effective roadmap on human capital development, the following is crucial. First, a general Observation 36 Given an expanding and more crowded web with a multitude of actors, coordination and monitoring are becoming an issue.

Observation 37 An expanding and more crowded web with a multitude of actors add complexity to the task of information-gathering, processing, and use by relevant agencies on skill issues and responses/strategies.

Observation 38 Given the fragmented nature of information, little can be said about the effectiveness of interventions (programmes and schemes, activities of the range of actors) that are in place.

consensus between actors on approach; second, a body of relevant information gathered through appropriate channels; third, a central agency tasked with coordination, monitoring and information procurement, processing and dissemination. This point will be discussed further in the last chapter.