

JOB AND SKILLS MISMATCH IN THE INFORMAL ECONOMY

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1. Introduction

‘The mismatch between the demand for skilled labour and its supply will lead to growing inequalities.’ (Education Commission, 2016: 31)

Over the next decade an estimated one billion young people will enter the global labour market (S4YE, 2015). For the majority of young (and older) people in low- and middle-income countries the informal economy represents the main source of work and livelihood; as many as nine in ten young workers in many low-income countries, and two in three youth in middle-income countries work in the informal economy (ILO, 2015a; S4YE, 2015). Job quality remains a major concern with vulnerable employment pervasive around the world (ILO, 2016; 2017). As more and more investment is made in education and skills around the world, it is important to note that most young people in low- and middle-income countries will not be putting to use the skills they learn in formal sector jobs; they will be making use of these skills in the informal economy. At the same time, governments around the world are seeking ways to formalize informal economic activities.

In June 2015, the International Labour Conference adopted a new Recommendation (R.204) on the “Transition from the informal to the formal economy” (ILO, 2015b). Adopted in the same year as the 2030 Agenda for Sustainable Development, R.204 is a core tool to realizing Sustainable Development Goal (SDG) 8, which aims to ‘promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all’ (UN, 2015: Goal 8).¹

R.204 calls for coherence and coordination across a broad range of policy areas and for a balanced approach combining incentives with compliance. One of these policy areas facilitating the transition of workers from the informal to the formal economy concerns skills. Upgrading skills in the informal economy and reducing jobs and skills mismatch in the economy are crucial to include new entrants in the labour market directly in formal employment, for facilitating the transition of workers and economic units from the informal to the formal economy or for preventing the informalisation of formal jobs.

SDG4² is also directly concerned with the issue of skills mismatch, with its reference to *relevant* skills for work:

By 2030, substantially increase the number of youth and adults who have **relevant skills**, including technical and vocational skills, **for employment, decent jobs and entrepreneurship**. (UN, 2015: SDG4, target 4, emphasis added)

These two key policy priorities are likely to reinforce the interest of international organisations and national governments in addressing skills issues (including mismatch) in the informal economy through the 2030 Sustainable Development Agenda.

Skills mismatch in developed countries has received significant attention, and the incidence, determinants, impacts and policy responses have been well researched. This is not the case for low- and middle-income countries (LMICs), where there is a dearth of data on the issue (McGuinness et al.,

¹ Goal 8 includes target 8.3 concerned with encouraging ‘the formalization and growth of micro-, small- and medium-sized enterprises’ (UN, 2015: Goal 8).

² ‘Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all’ (UN, 2015: SDG4).

2017a). This paper is concerned with jobs and skills mismatch in the informal economy, and since the informal economy is most prevalent in LMICs this paper will focus on LMICs rather than on developed countries. Several studies that do cover skills mismatch in LMICs have tended to focus analysis on the small formal economy (e.g. Florez and Jayaram, 2016; Lyon et al., 2012). This paper aims to address skills mismatch in the informal economy in LMICs and is organised as follows:

- The remainder of this section reviews the analytical and conceptual framework through which jobs and skills mismatch in the informal economy can be analysed, summarises how skills development works in the informal economy and the causes of skills mismatch in the informal economy.
- Section two examines the types of skills mismatches in contexts of informality.
- Section three reviews the consequences of skills mismatches in the informal economy.
- Section four reviews policy and programmatic approaches to mitigate the effects of skills mismatch in the informal economy.
- Section five provides a summary of recommendations.

1.1. Jobs and skills mismatch in the informal economy: Analytical and conceptual framework

It is important to acknowledge that this paper is dealing with multiple terms and concepts that are often misused. Both 'skills' and 'mismatch' are vague terms, while 'informal' has many meanings, and the meaning of 'jobs' in countries with high levels of informality is different from its meaning in countries with low levels of informality. Clarifications are important, especially as we are concerned with policy and programmatic approaches to mitigate the effects of skills mismatch in informal economies.

Skills

A mismatch of which 'skills'? While there may be a lot of agreement that skills mismatches need to be addressed, there is certainly a challenge when it comes to defining what 'skills' are being referred to; among social scientists there is no consensus about the definition of the word 'skill' (Green 2011 in HEART, 2016) and different organisations and agencies tend to use 'skills' to often mean very different things. However, most international organizations tend to break down 'skills' into three broad areas: i) foundational skills;³ ii) transferable skills;⁴ and iii) technical and vocational skills (Box 1). These are the terms that will be referred to in this paper. Being specific about the type of skills that are mismatched is important.

³ Also referred to by agencies as basic, academic or cognitive skills.

⁴ Also referred to by agencies as non-cognitive, transversal, core or social and emotional skills.

**Box 1: How various organizations conceive of
'skills' and the categories used to break down the term**

European Commission

- Basic skills - including literacy, numeracy, foreign languages, science and digital skills.
- Transversal skills – e.g. the ability to learn, think critically, take initiative, problem solve and work collaboratively. Entrepreneurial skills are also regarded as being transversal.
- Vocational skills.

ILO

- Foundation skills / Basic skills – literacy, numeracy.
- Professional / personal skills – e.g. honesty, integrity, work ethic etc.
- Transferable skills / core work skills – including learning to learn, communication (including oral, IT communication and written skills), problem-solving, and teamwork skills.
- Technical and vocational skills.

OECD

- Basic foundational / cognitive skills - includes literacy, numeracy, problem solving skills, and increasingly digital literacy skills.
- Social and emotional skills – eg perseverance, self-esteem and sociability.
- Vocational skills.

Solutions for Youth Employment⁵

- Cognitive skills.
- Non-cognitive skills.
- Technical skills.

UNESCO

- Foundation skills - with literacy and numeracy.
- Transferable skills - problem-solving, communication, creativity, leadership, entrepreneurial capabilities and the ability to transform and adapt knowledge and skills in varying work contexts.
- Technical and vocational skills - associated with specific occupations.

USAID

- Soft skills.
- Academic skills.
- Technical skills.

World Bank

- Cognitive skills - eg. analysis, problem solving, and communication skills
- Behavioral skills – eg. discipline and work effort.
- Technical skills

Sources: Brewer (2013: 6-7); EC (2012: 3); Lippman et al. (2015); OECD (2012); OECD (2014); OECD (2015); S4YE (2015); UNESCO (2012: 171-173).

⁵ S4YE is a partnership initiated by the World Bank, Plan International, the International Youth Foundation (IYF), Youth Business International (YBI), RAND, Accenture, and the International Labour Organization (ILO).

Informal economy

For the ILO, the term “informal economy” ‘refers to all economic activities by workers and economic units that are – in law or in practice – not covered or insufficiently covered by formal arrangements’ (ILO, 2015b: 4). It does not cover illicit activities. Informal employment refers to all ‘workers and economic units – including enterprises, entrepreneurs and households – in the informal economy, in particular:

- a) *those in the informal economy who own and operate economic units, including: (i) own-account workers; (ii) employers; and (iii) members of cooperatives and of social and solidarity economy units;*
- b) *contributing family workers, irrespective of whether they work in economic units in the formal or informal economy;*
- c) *employees holding informal jobs in or for formal enterprises, or in or for economic units in the informal economy, or as paid domestic workers employed by households; and*
- d) *workers in unrecognized or unregulated employment relationships’ (ibid: 6).*

Jobs

The concept of a job in LMICs with high levels of informality is different from in developed countries with low levels of informality. In contexts of high levels of informality, the term ‘jobs’ should be taken as referring to any kind of part- or full-time employment outcome including in formal and informal wage- and self-employment, farm or non-farm, recognizing that (especially) in LMICs individuals often have multiple work activities (concurrently or seasonally). In the context of discussions on jobs, skills mismatch and informality, unpaid family workers are also considered to have a ‘job’.

Skills mismatch

In general, ‘skills mismatch’ refers to a lack of matching between the skills that are available in (or supplied to) the labour market and the skills that are in demand in the labour market. However, skills mismatches take many forms, and the term can be used to refer to a variety of situations (Table 1): where individuals are over- or under-qualified or skilled for a job (vertical mismatch); where firms are not able to attract the right skills or where there is a genuine lack of adequately skilled people (skill gaps, skill shortages, horizontal mismatch); or to individuals with skills that have become obsolete (skill obsolescence) (McGuinness et al., 2017a).

Table 1. Types of Skills Mismatch

Skill shortage	Demand for a particular type of skill exceeds the supply of people with that skill
Skills surplus	Supply for a particular type of skill exceeds the demand of people with that skill
Skill gap	Type or level of skills is different from that required to adequately perform the job
Horizontal mismatch (field of study)	The type/field of education or skills is inappropriate for the job
Over-skilling (under-skilling)	Workers have more (less) skills than the job requires
Over-education (under-education)	Workers have more (less) years of education than the job requires
Over-qualification (under-qualification)	Workers hold a higher (lower) qualification than the job requires

Source: based on ILO, 2013a: 24.⁶

1.2. How skills development works in the informal economy

Many of those finding themselves working in the informal economy will have experienced periods of formal education and training, in school, in technical-vocational institutions (or in some cases in tertiary education) and will bring these formally acquired technical-vocational, foundational and transferable skills to their informal workplace. Others will have had much less exposure to formal education and training, with some never attending school, others leaving early or starting late, and others having completed school but not actually learned much while there, either due to low attendance or poor quality schooling or both. Even those that have completed a cycle of formal education/training and, for example, acquired certain technical-vocational skills may find that these skills they have acquired are rather irrelevant to the actual skill demands of the informal economy.

Once in the informal economy, the opportunities for learning and upgrading skills are usually significantly reduced (compared to employees' opportunities in formal firms, or self-employed working formally). Most informal firms (including household ventures) are micro- or small in size and tend not to provide structured training opportunities for their employees for various reasons: the opportunity cost to train may be too high; the firm might not be able afford to train employees; formal training that does exist may not be so relevant or may be too specialised; there may be a lack of capacity to identify training needs and design training programmes; there could be a lack of knowledge about the benefits of training (Adams et al., 2013). In many cases, informal enterprises are one-person ventures which further raises opportunity costs. In other cases, employees holding informal jobs in or for formal enterprises, or workers in unrecognized or unregulated employment relationships are usually not given the same opportunities as formally employed colleagues or comparators. Furthermore, there may be suppressed demand for (further) skills acquisition if, for example, an individual is operating in an income-constrained environment where market demand is for low cost items that can be produced quite adequately by low skilled employees.

⁶ For various types of skills mismatch definitions, see also Cedefop, 2010a; DTI et al, 2010; McGuinness et al., 2017a. There are many publications that talk about the nature and incidence of skills mismatch more broadly rather than just for the purpose of clarifying definitions (see, for example, Handel, 2017a; Handel, Valerio and Sanchez Puerta, 2016; Florez and Jayaram, 2016; Lyon, Ranzani, and Rosati, 2012).

Nonetheless, there are several sources of skill acquisition open to those in the informal economy (Table 2).

Table 2. Sources of skill acquisition in the informal economy

Source of skill acquisition	Description
Informal Enterprise based training and skills acquisition	<ul style="list-style-type: none"> • Informal apprenticeships. • Skills acquisition during employment, including informal learning by doing.
Non-formal skills training	<ul style="list-style-type: none"> • Youth/adult non-formal skills training (including second chance literacy and numeracy programmes)
Non-traditional means of acquiring skills	<ul style="list-style-type: none"> • Foundation and transferable skills can be acquired via a range of unstructured informal experiences.

Source: Author

Enterprise based training and skills acquisition

On the job skills acquisition in informal firms can take two forms:

- Informal, or traditional, apprenticeship training
- On-the-job learning by doing

Informal apprenticeships are the primary source of technical and vocational skills development in Sub-Saharan Africa, South Asia and even Latin America, and is emerging in importance in countries in Central Asia.⁷ This is because the informal or unregistered economy is responsible for between 80% and 90% of employment in much of Sub-Saharan Africa and South Asia, and for over 50% of employment in Latin America. These private informal training modalities are hugely varied but typically last from a few months to three or four years, with a written or verbal agreement between master and apprentice, and a payment of a fee or payment of reduced earnings to the apprentice while he or she learning (Adams et al., 2013). There is considerable self-regulation within the informal apprenticeship systems in West Africa, but in many other countries, apprenticeship training in the informal economy it is typically very much less regulated or organised except through social and cultural norms. This sort of training is very relevant to enterprises that take on a learner and usually more accessible than formal technical and vocational training programmes, but it does suffer from quality concerns. For example, there is usually a low quality training environment, the trainer/master-craftsperson is usually not trained how to teach, and the technology used is often outdated. This can result in a perpetuation of traditional technologies and approaches and reinforce the replication of low skills.⁸ Further, skill acquired from informal training (such as informal apprenticeships) are not usually recognised in the formal education system or in the formal economy, limiting the mobility of learners and workers (Glick et al, 2015).

On-the-job learning by doing refers to unstructured experiential learning where there is no planned intent to be trained by a more experienced person (as in an apprenticeship), but where technical-vocational, or transferable skills are acquired in the process of an individual carrying out day to day work related tasks while either being employed by another, or working for themselves. These skills are not recognised and the quality of skills development varies considerably.

⁷ This paragraph draws on King and Palmer (2010).

⁸ For a discussion on informal apprenticeship training, see ILO (2012).

Non-formal skills training

Non-formal skills training aimed at youth and/or adults is often short duration (typically 1-6 months), and may be skills training only or be a combined intervention that blends skills training with other interventions (e.g. entrepreneurship and business development services). Non-formal skills training programmes often combine delivery of one or a combination of foundational, transferable and technical-vocational skills, and typically delivered by NGOs, faith-based organisations, formal vocational training providers and informal sector associations. Such programmes are typically aimed at unemployed youth, vulnerable and disadvantaged people and at those in the informal economy. In many cases, non-formal skills training in LMICs is funded by international donors and development partners.

Non-traditional means of acquiring skills

People acquire skills throughout their lives via non-traditional means, including for example from TV, the internet, radio, smart phones, reading, computer gaming, playing sports, participation in community clubs, associations and societies. Skills can also be acquired from friends or family members (for example being taught new techniques for irrigating crops, or how to use a new type of machine by a neighbour).

1.3. Causes of skills mismatch in the informal economy

At the sectoral and regional level, skills mismatches ‘will keep arising due to the increasing global interconnection of jobs, as well as labour-saving technological change, urbanization, and the transition to more energy efficient production and consumption (UNDG, 2013)’ (Pieters, 2013: 18). Furthermore, the established and ongoing lag between demand arising from the market and the response from skill systems is a further cause of skills mismatch.

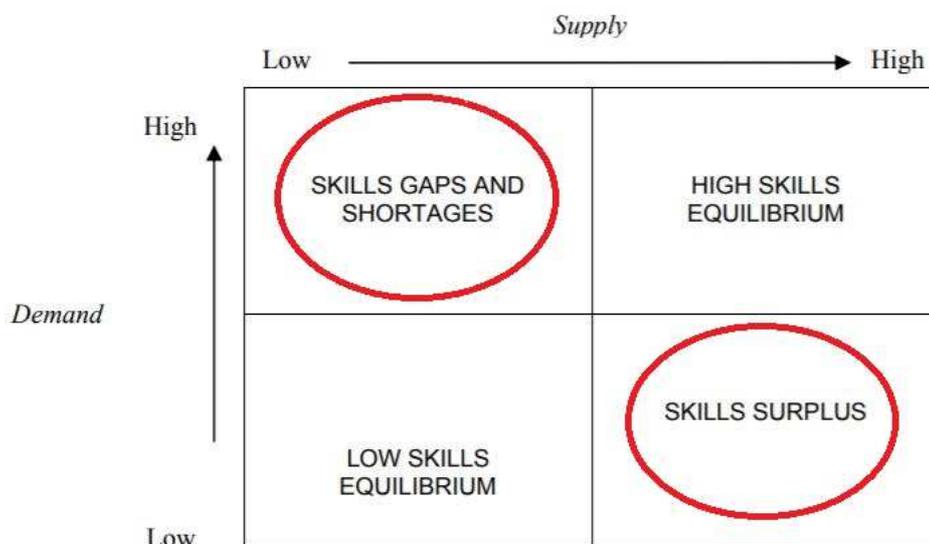
Other reasons for skills mismatch including, the development of low-skills equilibria, information asymmetries and inadequacies and regional causes are noted below.

Low-skills equilibrium

In some cases, an apparent skills match is not necessarily a desirable developmental outcome for a country, region or sector. Low- and middle-income countries (LMICs) – which usually have high levels of informality – are more likely to get stuck in a low-skills equilibrium than developed countries with low levels of informality. LMICs with low skill levels can get stuck in a low-skills equilibrium, where the whole economy - or local economy, region or sector - becomes adjusted to a low-skill level (Lall, 2000: 22) (Fig. 1).⁹ In contexts where there is a low-skills equilibrium people are matched with their jobs but at a very low level of skills (OECD, 2012). Few policy makers would want to perpetuate the existence and low-skills equilibria in their economies, and hence not all skill matches are necessarily desirable. Policy options that increase the skills levels of those in low-skills equilibria will initially result in a skills surplus, as demand lags supply.

⁹ The causes of low-skills equilibria are multi-faceted, but in its most basic form the supply of low levels of skills forces firms to adopt low tech and simple approaches thereby resulting in fewer higher skill employment opportunities – which further suppresses incentives for people to train in higher skills. This perpetuates the supply of low levels of skills and the cycle continues. Countries, sectors or regions can get trapped in a low skills, low productivity vicious cycle (Palmer, 2008).

Figure 1. Low- and high-skilled equilibrium and skills mismatch



The circled areas show skills mismatches.

Source: Froy et al., 2009 (adapted from Green et al, 2003)

Information asymmetries and inadequacies

The skills market in the informal economy typically ‘lacks institutions providing the information needed for decision making’ by individuals, education and training providers, and employers; ‘information asymmetries arising from this information gap lead to inefficiencies in the labour market’ (Adams et al., 2013: 108):

- Individuals, as well as formal education and training providers, lack information on the type of skills needed in the informal economy. Therefore individuals don’t have reliable information to guide their investment in skills formation, and education and training providers don’t have information to tailor courses to needed areas (and on the needed complementary support in addition to providing skills – see 4.2.7 below).
- Individuals and employers (formal and informal) lack information on what options they have to develop their skills; for example on the training providers, the programmes they offer (and the quality of these programmes), including informal apprenticeships as well as formal and non-formal training that ostensibly targets those in the informal economy.

Indeed, in most LMICs, there remains a serious lack of reliable information on skills in the informal economy (Box 2), which hinders policy makers full understanding of the status quo and therefore how to design reforms and interventions to strengthen skills access, acquisition and utilisation in the informal economy.

Box 2: A dearth of information on skills in the informal economy

Understanding skills in the informal economy is constrained by two major factors:

Lack of Data – inadequate labour market information systems in many LMICs (ILO, 2013b; McGuinness and Redmond, 2017) results in insufficient and often unreliable data being collected. Typically a range of data sources are referred to inform skills strategies, including ‘household surveys, social surveys, national accounts, education statistics, demographic indicators, tracer studies, enterprise surveys and other administrative data sources (e.g. tax and social insurance databases)’ (ILO, 2015c: 5). Many of these data sources give incomplete (or sometimes no) information about informal economic activities however. Enterprise surveys, which can be useful approaches to get demand side data on skills needs and utilisation (ILO, 2015c: 7), tend to focus on formal firms and/or on urban areas. Where informal firms are to be included in such surveys many are missed (as by definition many or most are not registered and therefore are hard to include in any sampling frame), and if not missed, the lack of record keeping in many informal firms results in unreliable data collection. Household surveys are better approaches to include those in the informal economy, but these too will ‘omit some parts of the labour force such as migrant workers, those commuting or not living in households, or population in remote areas’ (ILO, 2015c: 5). Tracer studies can provide useful information on the utilisation of skills, and therefore inform about skills imbalances (ILO, 2015c) but conducting them is far from the norm and when done is usually associated with formal training providers who typically do not offer programmes to the informal sector.

Limited Analysis – Even where data are collected, there is often insufficient capacity to fully analyse the information in a way meaningful for policy formulation.

Causes of skills mismatch in contexts of high informality and under-education/skilling

In regions like Sub-Saharan Africa and South Asia, the main factors behind the shortfall in skills or / under-education of people in the informal economy are (after Adams et al., 2013: 91):

- The low education base of people – this reduces labour mobility, the chances of finding a formal job, and (as skills beget skills) opportunities for further education and skill acquisition.
- Unequal access to training - residence, gender, and household consumption or income are factors correlated with access to skills. Access is also affected by previous educational attainment as well as simply the lack of options that exist.
- Underdeveloped markets for skills – these rely on informal sources of information, often from friends and family, rather than reliable and comparable information about the quality of skills development opportunities offered in the informal economy (e.g. informal apprenticeships).
- Lack of attention from public training providers to the needs of the informal economy – providers are slow to respond and don’t usually deliver training in ways that are accessible to those in the informal economy.
- Constraints to training among small and household enterprises of the informal economy (e.g. opportunity cost of one person going on training in a 2-person enterprise, or a lack of suitable training options for those working full time).

Causes of skills mismatch in contexts of moderate informality and over-education/skilling

In regions like Northern Africa, the Arab States, Central and Western Asia, some of the factors behind the surplus of skills for / over-education of people in the informal economy are:

- The creation of quality, stable formal employment opportunities with higher level skill needs has not kept pace with an increase in school enrolment, especially at secondary level. In other words, the skills mismatch (over-education) 'is being driven by a lack of sufficient employer led labour demand' (McGuinness et al., 2017b: 24). Whereas in countries with small informal economies 'over-education tends to be concentrated amongst graduates and individuals with post-secondary education... The majority of over-education in low- and middle-income countries [which have moderate to high rates of informality] relates to workers with below tertiary levels of education in relatively poor quality jobs' (McGuinness et al., 2017b: 23). In other words, over-education can mean different things in different country contexts, and therefore not all policy prescriptions are the same.
- Information asymmetry – lack of information to match jobs with job seekers.
- Lack of attention from public training providers to the needs of the informal economy.

Informality itself is a cause of skills mismatch

Understanding the various causes of skills mismatch, in different contexts, is important if strategies are to be developed to mitigate or address these causes. In all contexts, information asymmetries and inadequacies appear to be a common cause. Informality, itself, is a cause of skills mismatch as it impacts on individuals' decisions to accept mismatched employment. The STEP study reports that approximately 40 percent of respondents indicated that they would be willing to take informal jobs with the main reason being that they had no other employment choices (Handel, 2017a) (see also 2.1 below).

2. Types of skills mismatch in contexts of informality

This section summarises the findings of three recent studies that have examined the types of skills mismatch in low- and middle-income countries (LMICs).¹⁰

A large proportion of those in employment in LMICs are in informal employment; according to the available data, countries with higher incomes tend to have a lower incidence of informal employment: low income countries have the highest rate of informal employment (80% average), followed by lower middle income countries (60%) and upper middle income countries (37%), though within each of these country groupings there is a wide range (Table 3). Since LMICs have a large share of informal employment (Table 3), examining skills mismatch in LMICs can be treated as a proxy for examining skills mismatch in contexts of moderate to high informality. Similarly, the three studies examine the differences between skills mismatch among the self-employed (which can be treated as another group proxy for informality) and wage-employed. The three studies are:

- Handel (2017a) who analyses key issues surrounding skills mismatch in 12 low- and middle-income countries¹¹ that had participated in the Skills Toward Employment and Productivity (STEP) survey.¹²
- Kupets (2017a) who examines evidence from 34 School to Work Transitions Surveys (SWTS), 2012-2015.¹³
- McGuinness et al. (2017b) who examine Labour Force Surveys (LFS) from 20 low- and middle-income countries.

¹⁰ These three studies cover variously only over/under education and over/under skilling and not other types of mismatch.

¹¹ Sub-Saharan Africa (Ghana, Kenya); East, Southeast, and South Asia (China—Yunnan Province, Lao PDR, Sri Lanka, Vietnam); Europe and Central Asia (Armenia, Georgia, Macedonia FYR, Ukraine); Latin America and the Caribbean (Bolivia, Colombia).

¹² The STEP survey is a household survey of working age adults (ages 15–64) residing in urban areas, conducted by the World Bank and local counterparts. In some countries there is also a separate employer-based survey.

<http://microdata.worldbank.org/index.php/catalog/step/about>

¹³ The school-to-work transition surveys collected information on the school to work transitions of 15-29 year olds in 34 countries between 2012 and 2015.

Table 3. Informal employment as a percent of employment in selected low and middle income countries (latest year data)

Low income countries		
	year	%
Gambia	2012	50.9
Madagascar	2012	97.3
Mali	2015	76.0
Nepal	2008	91.4
Tanzania, United Republic of	2014	72.5
Uganda	2012	78.9
Zimbabwe	2014	94.5
LICs Average		80.2
LICs Range		51-97
Lower middle income countries		
	year	%
Angola	2011	73.8
Armenia	2015	46.3
Bangladesh	2013	50.3
Bolivia	2015	67.5
Cambodia	2012	77.3
Ghana	2013	86.3
Guatemala	2015	68.8
India	2012	91.8
Moldova, Republic of	2015	28.9
Mongolia	2016	42.7
Myanmar	2015	67.4
Occupied Palestinian Territory	2015	31.7
Pakistan	2015	75.8
Timor-Leste	2013	57.0
Ukraine	2015	26.2
Yemen	2014	68.6
LMICs Average		60.0
LMICs Range		26-91

Upper middle income countries		
	year	%
Albania	2013	63.0
Argentina	2014	27.3
Colombia	2016	55.3
Costa Rica	2015	45.2
Dominican Republic	2015	54.4
Ecuador	2015	40.4
Kazakhstan	2013	29.6
Macedonia, the former Yugoslav Republic of	2015	19.9
Namibia	2016	46.8
Paraguay	2016	47.6
Peru	2016	55.4
Russian Federation	2015	19.4
Samoa	2012	21.7
Serbia	2015	20.4
South Africa	2015	22.2
Thailand	2014	18.6
Turkey	2015	33.6
UMICs Average		36.5
UMICs Range		19-63

Source: ILO www.ilo.org/ilostat

2.1. Over/under education in low- and middle-income STEP countries

Handel (2017a) finds that over-education¹⁴ is prevalent in low- and middle-income STEP countries – it's not just a phenomena in high-income countries - and that informality¹⁵ is a significant predictor of skills mismatch (specifically, over-education) (Handel, 2017a) (Box 3).

Box 3: Strong and moderate predictors of over-education according to analysis of STEP data

Education

- level of education, years of tertiary - **Strong effects**
- literacy test score (available countries) - Moderate effects

Job market

- public vs. private sector - Strong effects
- formal vs. informal employee, informal self-employed - Strong effects

Sources: Handel, 2017b

Further, Handel et al (2016) find a negative association between employment in the informal sector and under-education (in other words, the higher the levels of informality, the lower the levels of under-education), which they assert is 'logical since informality is typically a response to a shortage of other job opportunities' (Handel et al, 2016: xxiv).

Meanwhile, employment in the public (formal) sector 'is strongly associated with jobs that are better matched to worker education, whereas employment in the informal and formal private sectors and self-employment are associated with over-education' (ibid.).

In low-and middle-income STEP countries, over-education is, on average, more prevalent than under-education. Handel et al. (2017a), using the STEP data, report an average over-education rate of 36 percent across 12 countries (Table 4).

¹⁴ Over-education is defined in the STEP survey 'as a situation in which a person's own education exceeds the education they report is required for their current job, and under-education is defined as a situation in which personal education is below the level they report is necessary for the current job' (Handel, 2017a: 2).

¹⁵ For the STEP analysis, workers were classified as being in the informal economy if they were 'not covered by social benefits, are self-employed in a single-person establishment, or are unpaid family workers. The analyses further distinguished informal workers according to whether they were wage and salary workers or self-employed' (Handel 2017a: 20).

Table 4. Rates of Match, Over-education, and Under-education, STEP survey

	Well-matched	Over-educated	Under-educated
Laos PDR	45	41	14
Ghana	48	40	13
Kenya	35	25	40
Bolivia	40	35	25
Vietnam	26	70	4
Sri Lanka	44	46	10
Yunnan Province	57	33	11
Macedonia	73	22	5
Armenia	66	28	6
Georgia	66	29	4
Ukraine	72	24	4
Average	52	36	12

Source: Handel (2017a)

2.2. Over/under education in low- and middle all-income SWTS countries

In contrast to the study by Handel et al. (2017a) using STEP data, analysis of the ILO’s School to Work Transition Survey (SWTS) data shows a relatively high incidence of under-education in these low- and middle-income countries (Kupets, 2017a). ‘Thus the evidence regarding the incidence of over-education in low- and middle-income countries is somewhat unclear’ (McGuinness et al., 2017a: 21). It should be recalled, however, that the higher incidence of under-education might partly be explained by the target group of the SWTS’s surveys (15-29 year old youth) which is a narrower cohort than the STEP survey (15 to 64 year olds) (McGuinness et al., 2017c).

Kupets’ analysis of the SWTS data found that in most countries ‘working informally... is associated with higher chances of being overqualified or underqualified’ (Kupets, 2017a: 14).

2.3. Differences in skills mismatch by region and country income level - SWTS countries

Under-qualification tends to be much more widespread in regions which have the highest levels of informal employment. Further analysis of the SWTS data shows interesting geographical and income differences in over/under qualification. According to this data, under-qualification tends to be much more widespread in Sub-Saharan Africa, Southern Asia and in low-income countries (where levels of informal employment are highest).

Over-qualification tends to be more widespread in regions with lower levels of informal employment; this is true for Northern Africa, the Arab States, Europe and Central and Western Asia, as well as in middle-income countries (Table 2). Most countries facing an over-qualification mismatch ‘have experienced rapid growth in enrolment to tertiary education and overall educational attainment of population’ (Kupets, 2017a: 13).

In LMIC contexts, the over-qualified are more likely to get access to any available employment opportunities and so under-education levels will be lower. However, policies tend to emphasise raising education levels even in contexts where over-education is a policy concern (Handel, 2017b). As noted below, policy makers in LMICs should be careful not to conflate over-education or over-qualification with an over-supply of tertiary education graduates although the two are linked.

Self-employed workers (which can be taken as a proxy for informality) appear to suffer from skills mismatch to approximately the same magnitude as wage-employees in most regions (Table 5). The exceptions to this include: the Arab region where there appears to be a higher rate of over-qualification among the self-employed compared to the wage-employed; In Sub-Saharan Africa, where the rate of under-qualification appears to be higher among the self-employed than the wage-employed; In Southern Asia, where the rate of under-qualification among wage-employees is higher than among self-employed.

Table 5. Incidence of qualification mismatch among young employees and self-employed workers (%), by regional and income group

Group (number of countries in the SWTS sample)	Employees			Self-employed workers		
	Over-qualification	Under-qualification	Mis-match	Over-qualification	Under-qualification	Mis-match
ILO region						
Northern Africa (2)	30.1	1.9	31.9	38.4	1.1	39.5
Sub-Saharan Africa (9)	16.1	29.9	45.9	13.5	36.5	49.9
Latin America and the Caribbean (6)	15.0	10.4	25.4	16.4	10.7	27.1
Arab States (3)	17.1	5.1	22.2	26.4	4.2	30.6
South-Eastern Asia and the Pacific (2)	10.9	12.0	22.9	11.9	10.1	22.0
Southern Asia (1)	12.4	36.4	48.7	13.4	29.1	42.5
Northern, Southern and Western Europe (3)	24.4	4.0	28.4	36.7	2.1	38.7
Eastern Europe (3)	12.2	9.3	21.5	12.4	11.8	24.2
Central and Western Asia (2)	18.3	7.5	25.8	17.7	11.1	28.7
Income group						
Emerging, middle-income, countries (25)	16.3	9.3	25.6	16.5	11.0	27.5
Developing, low-income, countries (9)	14.8	31.5	46.4	13.2	37.0	50.2

Note: Simple average of country-level estimates of mismatch.

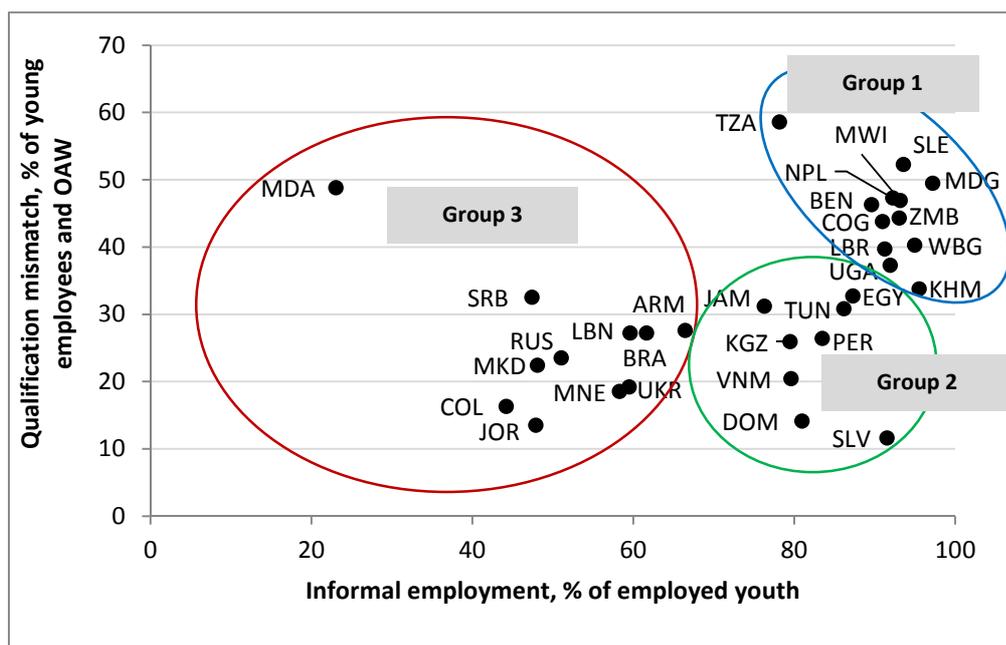
Source: SWTS, latest year available, with sample weights applied – Kupets (2017a)

2.4. Qualification mismatch, informality and unemployment of youth

In the low- and middle-income countries covered by the ILO's SWTS, the percentage of youth employed in informal employment is positively associated with the level of qualification mismatch, and Kupets (2017a) have defined country groupings within this association (Fig 2 and Box 4).

Figure 2. Qualification mismatch, informality and unemployment of youth

Qualification mismatch of young employees and own-account workers vs. youth informal employment



Key:

Group 1: Lower-income countries - high incidence of both informal employment and qualification mismatch but relatively low youth unemployment rate.

Group 2: Middle-income countries - high incidence of informal employment but lower incidence of qualification mismatch and higher youth unemployment rate than Group 1.

Group 3: Middle-income countries - much lower incidence of informal employment and higher unemployment rate compared to Groups 1 and 2 but fairly high levels of qualification mismatch.

Source: Kupets (2017a: Annex 2)

Box 4: Qualification mismatch, informality and unemployment of youth

Kupets (2017a) distinguishes between three groups of countries (p.17):

Group 1: Lower-income countries with on average high incidence of both informal employment and qualification mismatch but relatively low youth unemployment rate (e.g. Benin, Cambodia, Congo, Liberia, Madagascar, Malawi, Nepal, Occupied Palestinian Territory, Sierra Leone, Tanzania, Uganda, and Zambia). These countries face a particular challenge of the large number of low-educated youth engaged in informal sector jobs. At the same time, a lot of young workers are reported to be mismatched to their jobs in terms of education and training, mainly underqualified. A widespread informal employment together with under-qualification substitutes for unemployment and therefore youth unemployment is not a major problem in the majority of these countries;

Group 2: Middle-income countries with on average high incidence of informal employment but lower incidence of qualification mismatch and higher youth unemployment rate than in the first group (e.g. Dominican Republic, Egypt, El Salvador, Jamaica, Kyrgyzstan, Peru, Tunisia, and Vietnam). These countries suffer from a widespread informal employment among youth but less so from the qualification mismatch among young employees and own-account workers (compared to low-income countries);

Group 3: Middle-income countries with much lower incidence of informal employment and higher unemployment rate than in the above two groups but fairly high levels of qualification mismatch (e.g. Armenia, Brazil, Colombia, Jordan, Lebanon, FYR Macedonia, Moldova, Montenegro, Russian Federation, Serbia, and Ukraine). These are the countries where qualification mismatch, predominantly over-qualification of educated youth, is a complement to youth unemployment and where young mismatched workers are often found in formal sector jobs.

Sources : Kupets, 2017a: 17

2.5. Skills mismatch findings from labour force surveys

As noted above the LMICs group can be treated as a proxy for informality, and the self-employed treated as another group proxy for informality. In this context:

- McGuinness et al.'s (2017b) analysis of Labour Force Surveys (LFS) from 20 low- and middle-income countries (LMICs) found that, on average, over-education is a larger issue in LMICs than it is in high-income countries (McGuinness and Redmond, 2017; McGuinness et al., 2017b).
- The LFS analysis - consistent with Handel et al.'s (2016) analysis of STEP data – found that 'over-education tended to be higher in labour markets where self-employment, and therefore potentially informality, was more prevalent', and 'under-education... was lower in labour markets with higher shares of self-employment' (McGuinness et al., 2017b: 17).

2.6. The new data on skills mismatch in the informal economy

The three studies produced under the ILO's global initiative on skills mismatch, whilst focusing on a limited type of skills mismatch (under-/over-education), do relate to different countries, time periods and segments of the labour market (McGuinness et al., 2017c). The studies show that in LMICs, which tend to have medium to high levels of informality, that both over-education and under-education are common features of the labour markets. Further, and as mentioned previously, 'all of the studies point to the relatively high level of informality as a key driver of educational mismatch in low and middle income labour markets' (McGuinness et al., 2017c: 12).

3. Consequences of skills mismatches in the informal economy

Skills mismatches typically result in a number of consequences for enterprises, individuals, and governments many of which may be similar in both formal and informal economies, but the magnitude, persistence and implications may have a particular significance to the informal economy. This section of the paper examines the consequences of skills mismatches in the informal economy, noting how consequences of skills mismatch differ compared to the formal economy.

3.1. Consequences of over-education and over-skilling in the informal economy

If people are under-utilised by employers in the workplace, and the skills they possess are not used effectively to support product and market innovation, typically their earning and productivity is lower, their job satisfaction is lower, they tend to change jobs more frequently; all this represents a cost for business and/or the individual (Comyn, 2017a; 2017b).

Analysis from LMICs, countries which have moderate to high rates of informality, shows that individuals who are employed in jobs that require less skills than they possess (over-educated workers) 'have lower wages and life satisfaction than well-matched workers¹⁶ after controlling for a range of background variables' (Handel, 2017a: 1).

- Handel's (2017a) analysis of STEP data found that 'over-education is associated with a large wage penalty in ten of twelve' STEP countries; the average pay penalty among self-employed workers in the STEP sample was 23 per cent.
- Kupets' (2017a, b) analysis of the ILO's school-to-work transition surveys found that over qualification is associated with lower wages, job dissatisfaction and in increased willingness to change jobs.

The magnitude of the loss of earnings for over-educated workers in low- and middle-income countries (with higher levels of informality) appears to be higher than it is in high-income contexts (with lower levels of informality):

In the majority of cases we found that overeducated workers suffer a pay penalty relative to their matched counterparts with similar levels of education, and these are typically much higher than what is observed in developed countries. (McGuinness et al., 2017b: 24)

This finding corresponds with other evidence that shows that 'if the demand for educated labour is low relative to supply, then the returns to education will be low or declining' (World Bank, 2017: 44). Adams et al. (2013: 9) add that 'because of the absence of sufficient employment opportunities in the formal sector, some highly educated people may fail to find a job there and are compelled to work in the informal sector, where their skills are not needed'.

¹⁶ Those with the same education (skill) level but with different type of job.

Enterprises may respond to over-education/skilling in a number of ways, for example:

- Firms may reduce the wages they offer due to the over-supply of skilled labour. Where wage workers are operating informally, outside of any minimum wage legislation, there would be no recourse available to such workers. As such informally employed wage workers would suffer disproportionately from wage fluctuations compared to formally employed wage workers.
- Formal firms that only have low skill vacancies, but that find them hard to fill if local people shun such low-skilled and low-income jobs available, may turn to recruiting low-skilled immigrants, with many such workers employed informally (especially in sectors like agriculture, construction and hospitality). Where such wage workers are informally employed, they typically have no employment contract, social security or other benefits, and operate outside of countries' labour laws designed to protect employees.

Individuals may respond to over-education/skilling in the following ways:

- Search for work in other markets (domestic or international migration). Individuals that have informally acquired skills or work experience would find such mobility harder as they are less likely to be able to prove prior learning and employment.
- Take up employment for which they are over-qualified, usually at a reduced level of earning; they might remain voluntarily unemployed, waiting for the 'right' job;
- Those that can't find formal employment may enter into informal self-employment, as a necessity to earn a living.

3.2. Consequences of under-education, under-skilling, skill gaps, skills shortages and skills obsolescence

If enterprises can't obtain the skills that they require, aren't able to use the skills effectively that they have in their workplaces, or if current employees don't have the skills needed for (new) tasks, then firm productivity, turnover and profitability as well as national economic growth are effected (Comyn, 2017a; 2017b; Strietska-Illina, 2008).

Analysis from LMICs, countries which have moderate to high rates of informality, finds that the consequences for under-educated workers - individuals who are employed in jobs that require more skills than they possess – are 'weaker and more mixed, as is true in much previous research from developed countries' (Handel, 2017a: 1). In the STEP countries under-educated wage and salary workers receive a wage premium (compared to self-employed workers) in five countries (Lao, Sri Lanka, Macedonia, China-Yunnan, Vietnam), and self-employed workers receive a premium (compared to wage workers) in two countries (Lao, Georgia). Wage penalties are found in two countries (Armenia, Bolivia), and effects are absent entirely in another four countries (Colombia, Ghana, Kenya, Ukraine). (Handel, 2017a: 8)

For enterprises, they may respond to under-education/skilling in a number of ways, for example by:

- Poaching talent from other firms, including by raising salaries to attract suitable educated/skills candidates. This then increases the cost of doing business and results in increased prices (of goods/services) or reduced profitability for the firms (Strietska-Illina, 2008). Formal (especially larger) firms may find it easier to poach talent by raising salaries than informal firms (or smaller formal firms). Where (a smaller number of) more skilled employees are paid higher wages (compared to the lower skilled majority), the wage differential by skill widens; this widens social inequality, reduces social cohesion and may push inflation up (Strietska-Illina, 2008). A wider wage differential by skill will also increase the rate of return to higher levels of education/skills, and therefore potentially increase the demand for education/higher skills.
- Making do with a low skill base and not invest in training; adopting simple, low-level technologies. This is more likely the case for informal firms and smaller formal firms.
- Investing in employee training. However, informal firms - even at the best of times - are known to be less likely to invest in training compared to their formal counterparts; thus informal firms are even less likely to invest their way out of a low skills trap.

Overall, micro- and small informal firms will find themselves unable to compete with larger or formal firms in any talent war, and will therefore end up with the least educated/skilled, thus perpetuating their low-skills base.

One of the consequences of under-education, under-skilling, skill gaps and skills shortages may be the creation of a low-skills equilibrium. Low investment in skills and low demand for skills can lead to the creation of a low-skills equilibrium which is hard to break free from. While the creation and perpetuation of a low skills equilibrium is more likely in the informal economy, a large number of low-cost low quality but formal jobs could find themselves in the same kind of trap. Where low-skills equilibria form, a further consequence is that individuals have fewer incentives to remain in education beyond that which is demanded by the market.

As noted above (section 2.6.2) in a low-skills equilibrium, as low skills are 'matched' with low demand 'employers might no longer be aware of experiencing skill shortages and the market finds itself in equilibrium and thus cannot solve the problem without intervention of external forces (state, region)' (Strietska-Illina, 2008: 49).

4. Mitigating the effects of skills mismatch in the informal economy

An integrated set of supply and demand policy and programme responses are needed to minimise the negative effects of current and potential future skills and jobs mismatch and this approach stands true for countries with high or low levels of informality.

A review by McGuinness et al. (2017a) found that most current policies that are related to addressing skills mismatch in developed countries tend to be vague as they don't usually refer to the specific type of mismatch they are seeking to address. Further, they found that policies usually focus on only a limited aspect of skills mismatch - skill gaps and skill shortages - often without adequate data, and that there needs to be more policy focus 'on the problem of surplus human capital, i.e., over-education and low skills utilisation' (ibid.: 27).

A targeted approach to tackling the issue of skills mismatch in the informal economy in LMICs is thus required. Policy and programmatic responses need to address specific forms of mismatch (McGuinness et al., 2017a), and also need to be more specific about the type of skills that are mismatched (foundational skills, transferable skills, technical and vocational skills, or a combination of them).

Below this paper outlines general responses to skills mismatch – systemic responses that can help mitigate all or most types of skills mismatch. These include: a) the need for policy coherence; b) deploying appropriate financing mechanisms; c) building strong foundational and transferable skills in families and schools; d) enabling formal training providers to reach the informal economy; e) recognising skills gained in the informal economy through formal RPL systems; f) enhancing horizontal and vertical mobility for further education and training; g) combining skills provision with complementary interventions related to business development or non-technical skills development; h) improving information and skills anticipation systems; i) recognising that addressing skill mismatches often need supply and demand responses.

It then looks at different types of policy responses to tackle different kinds of skills mismatches related to:

- **Over-educated/skilled people in the informal economy** – these include: a) stimulating the demand for higher skill levels through job creation and incentives; b) providing more, and more accessible, information about available jobs and skills demand; c) improving labour mobility and skilled migration.
- **Under-educated/skilled people in the informal economy** – these include: a) using financing incentives to drive investment in skills for the informal economy; b) providing alternative and non-formal skills programmes; c) strengthening informal skills systems.
- **Other types of skills mismatch in the informal economy** (including horizontal skills mismatches and skills shortages) as well as addressing low-skills equilibria in the informal economy.

4.1. Key responses to skills mismatch in the informal economy

Ensure policy coherence

A common policy at the macro level to orientate skills policies to better match market ‘demand’ is to call for greater private sector representation on TVET governance and coordination entities (e.g. TVET Councils, national training authorities). However, such private sector participation tends to be of representatives of the formal private sector. Greater representation of those working in the informal economy is needed; perhaps one way to do this is via intermediaries like informal trade associations.

At the macro level, to avoid policy gaps that ‘can create an unfriendly environment for skills formation to contribute towards the move out informality’ (ILO, 2013b: 3), there needs to be strong policy coherence when it comes to addressing skills issues in the informal economy. National skills policies needs to be horizontally aligned with other national policies related, for example, to regional or industry development, trade, agriculture, employment, children and youth, women, people with disabilities, and social welfare. This is so that skills policies can better align the supply of skills with the demand for skills across various sectors. It is also so that skills policies can complement other policies related to particular groups and, for example, mitigate access or equity challenges that could lead to skills mismatch among various groups.

National skills policies from early childhood to school, to higher education, to adult education and training, related to foundational skills, transferable skills and technical and vocational skills also need to be joined up (vertically and horizontally aligned) so that informal businesses and workers are able to participate in the education and training system as easily as formal enterprises.

Further, such national skills policies need to specifically address the needs of the informal economy while recognising its heterogeneity (ILO, 2013b). Skills policies in countries with large informal economies cannot be regarded as being ‘demand-driven’ if they are oriented mostly towards the demand of the small formal economy (Box 5).

Box 5: Skills interventions need to be demand-driven: But whose demand counts?

It should not be taken for granted that skills training that is supposedly ‘demand-driven’ is actually driven by the labour and economic demand relevant to the majority. In countries which have sizeable informal economies, most individuals will be working in informal economic activities in small- and micro-enterprises (including farming). More often than not, skills interventions that claim to be ‘demand-driven’ actually turn out to be training linked to the demand of the formal economy, for salaried formal sector jobs, and not at all linked to the demands of work in the informal economy. In contexts of low skill equilibria, being ‘demand-driven’ in response to low skills demand will mean that low skills should be supplied (to meet the demand for low skills); this is not necessarily positive thing as noted elsewhere in this paper.

Deploy appropriate financing mechanisms

The way skills are financed can have an impact on what skills are produced, where, among whom, and when. Using financing as a lever to address skill demands is therefore a useful tool to address skills mismatch. Skills financing is not just about ensuring that there are enough funds to run skills programmes – whether this funding comes from governments, the private sector or individuals. Used correctly skills financing mechanisms can strongly advance policy objectives related to creating a skills system that is equitable, demand-driven, responsive and relevant. In other words: matched.

First, to ensure that enough funds to address skills mismatch in the informal economy exist, policy makers should assess the extent to which ‘national resources for skills training are... oriented to the

formal economy, neglecting the large sections of the population working in situations of informality' (ILO, 2013b: 4). To address skills mismatch, public funds should be targeted at addressing the cause(s) and consequence(s) of the type(s) of skills mismatch(es) that the country faces overall, not just in the formal economy.

Second, the financial incentive system needs to be in line with the desired policy objectives related to skills and informality, and specific to the type of skills mismatch (see below on skills financing approaches in contexts of over- and under-education/skilling in the informal economy). For example, one such policy objective may be related to improving competition and innovation in the informal economy, and 'demand-side financing instruments such as vouchers, training funds, and results-based financing can encourage' this (Adams et al., 2013: 14) (e.g. see Box 6). Another policy objective may be to encourage greater coordination between public skills provision and the needs of the informal sector, and this can be encouraged by a 'move away from supply-driven financing (focused on inputs) to results-based financing that holds providers accountable for training outcomes, especially those of the informal sector' (Adams et al., 2013: 12).

Box 6: Voucher use in the Kenya Micro and Small Enterprise Training and Technology Project

The Kenya Micro and Small Enterprise Training and Technology Project, completed in 2002 and financed by the World Bank, offered vouchers to offset the cost of training and access to new technology. The vouchers covered 50–70 percent of training costs for master crafts-persons and apprentices, and other vouchers offered access to technology and specialized management and marketing services. The programme targeted women as beneficiaries and was implemented by a nongovernmental agency. More than 32,000 people were trained, of whom 60 percent were women. After use of the vouchers, employment, assets, and income showed significant increases: 80 percent were able to grow their business, compared with 13 percent for the control group; 61 percent added business assets, compared with 21 percent in the control group; and 59 percent of women seeking to enter the programme had started a business.

Source: Adams et al., 2013

Third, because informal enterprises are a difficult entry point for skills development, financing measures targeting intermediaries (e.g. individuals, informal trade associations, formal training providers) could be an easier access point.

A range of other financing mechanisms and tools exist (e.g. training levies, tax incentives, loans, payback clauses etc.), though these are far less relevant for the informal economy and are therefore not referred to here.

Build strong foundational and transferable skills in families, schools and work

Skills mismatch in contexts of informality does not only refer to a mismatch of technical and vocational skills, but (perhaps in more cases) also to a mismatch of foundational and transferable skills. Foundational and transferable skills are acquired from birth in a range of settings including: Families (especially parents), communities and friends, self-acquisition, on-the-job (through work) – from early childhood to adulthood; The formal education system, from pre-school through to tertiary education; Non-formal and second-chance education programmes; Non-traditional means (e.g. sports, creative arts, music education, volunteering, and computer gaming) (Palmer, 2017). Meanwhile, technical and vocational skills are generally acquired beyond lower secondary education once these foundational skills have been developed. Since skills beget skills and learning is cumulative, early disadvantage in acquiring foundation and transferable skills increases the likelihood of an individual not acquiring higher level

skills and therefore the likelihood that they will experience skills mismatch in future (ibid; World Bank, 2017).

Policies that are concerned with addressing skills mismatch (in both formal and informal economies) must therefore adopt a lifelong continuum perspective, supporting the development of skills in the early years (e.g. awareness, knowledge and practices of parents), while recognising that a key element will be improving access to quality formal early childhood, primary and secondary education, in addition to addressing equity issues at these levels. For those already working in the informal economy, remedial foundational and transferable skills programming is needed (e.g. Box 7).

Box 7. Second-Chance Education Programmes Open Opportunities for Further Education and Earnings Opportunities in Malawi

To give youth a chance to acquire foundational and transferable skills, the government, initially with donor backing, set up the Complementary Basic Education programme, which has now been mainstreamed into government operations. The program targets youth 9–17 years of age who either have never enrolled in school or had dropped out before completing Standard 5.

Local nongovernmental organizations (NGOs) implement the programme, recruiting and training local facilitators under 35 who have a secondary school qualification. Local recruitment provides jobs and role models for poor local youth. The programme has smaller class sizes than formal primary schools, and learner centres have the benefit of being located centrally within villages and are managed by communities.

The curriculum covers basic literacy and numeracy skills, designed around the primary curriculum, as well as more practical skills, including agriculture and the environment, livelihoods and entrepreneurial skills, healthy living, and citizenship. The course is designed so that graduates of the three-year programme can re-enter Standard 6 in a formal primary school if desired.

Source: Adams et al., 2013

Reform formal training providers to reach the informal economy

A common response to addressing technical and vocational skills mismatch in many low- and middle-income countries is to call for greater collaboration between formal technical and vocational education and training (TVET) providers and the private sector, for example through public-private partnerships. However, almost by definition, formal TVET providers are not generally very effective at outreaching to the informal economy (ILO, 2013b). They tend to be supply driven and even where they are more oriented to demand, they tend to be more oriented towards the demands of the formal, not informal, economy.

Nonetheless, there have been some examples where formal TVET providers have been able to better address the needs of the informal economy (Box 8). In such cases, the delivery (and content) of training needs to be tailored to the target group; for example content tends to go beyond technical and vocational skills to also include life skills, negotiation skills, employability and entrepreneurship skills, literacy and numeracy skills, amongst others (Adams et al., 2013; ILO, 2013b), and the delivery is ‘more flexible, offering shorter courses combining practical and theoretical knowledge and participatory approaches’ (ILO, 2013b: 10).

Box 8. Formal TVET providers and the informal economy

The Botswana Training authority has put in place strategies to expand access to vocational training for women in the informal economy, starting with regular data collection on gender in all vocational training institutions, particularly on occupational segregation and the training needs of men and women. It has also addressed stereotyping in curricula and given staff gender training. In China, vocational training institutions are increasingly using distance learning in order to reach informal economy workers in poorly serviced areas. Subjects include English, IT, business skills.

Source: ILO, 2013b

Recognise skills gained in the informal economy

In contexts of high levels of informality, and recognising that many people in such contexts acquire skills informally – via informal apprenticeships, on the job learning, or traditional knowledge systems (WEF, 2017) - recognition of prior learning of skills acquired in the informal economy is important and broadens options for formal employment (ILO, 2010; 2013; 2015b; Kupets, 2017a; WEF, 2014) and enables ‘skills reengagement with further education and training’ (World Bank, 2017: 156). If skilled individuals are able to make full use of the skills they possess, however acquired, then skills mismatch could be reduced, especially amongst higher skilled individuals working in areas that don’t require such a high level of skills. Furthermore, assessment and certification of informal apprenticeships, ‘can help the market sort among good and bad training for apprenticeships’ (Adams et al., 2013: 13) and be part of a strategy to strengthen and formalise informal apprenticeship systems. It is therefore important to invest in recognition and certification processes and skill assessment modalities so that skills acquired informally can be validated and more easily recognised (ILO, 2013b). In Malawi and Tanzania, for example, informal apprentices are able to acquire competency-based skills certification which helps them to achieve recognition for their skills (World Bank, 2017).

Enhance horizontal and vertical mobility

Improved ease of movement within the education and training system is needed, both horizontally (between types of education that are recognised as equivalent) and vertically (between levels of education). Reducing or eliminating ‘dead end’ vertical progression tracks (for example where there are no further education and training opportunities), and facilitation of movement from TVET courses to general education courses (and vice versa) could help to increase the attractiveness of TVET courses in particular (Pieters, 2013). When mobility is easier, individuals are – for example - able to move more easily into courses that are known to be more linked to labour market demand. This could help reduce skills mismatch.

Combine skills provision with complementary interventions

One of the common characteristics of rigorously evaluated¹⁷ skills interventions (cf Kluve et al., 2016) is that skills training which has work-related outcome goals should be combined with other supporting interventions (Palmer, 2017). This combined approach (skills provision with another intervention – see Box 9) is widely regarded as the most effective approach according to other sources (e.g. HEART, 2016; Honorati and McArdle, 2013; Sanchez Puerta et al, 2015; S4YE, 2015). In fact, programmes that focus only on providing skills (and not skills training combined with, for example, self-employment support) tend to have disappointing results (S4YE, 2015).

¹⁷ Referring to experimental or quasi-experimental impact evaluations.

Box 9. Examples of interventions that are combined with skills training

Counselling and mentorship services (e.g. psychosocial support, career counselling)

Job preparation advice

Employment or work placements (including subsidised employment)

Services supporting self-employment (access to credit, business advice etc.)

Source: Honorati and McArdle (2013); Sanchez Puerta et al. (2015); S4YE (2015)

The choice of what type of complementary intervention to provide, in combination with skills training, can be determined through conducting a beneficiary needs assessment (do they have particular needs that will affect their ability to access, acquire or utilise skills?), and through an assessment of context (does the surrounding labour market context, socio-cultural context, geographic context affect beneficiaries ability to access, acquire and utilise skills?). Where constraints related to accessing skills, acquiring skills and utilising skills are mitigated by targeted complementary interventions, skills mismatches (of the various types) can be reduced.

In low- and middle-income contexts, which typically have much larger informal economies (and thus fewer formal sector jobs, and where formal employment services have more limited outreach) combining skills with entrepreneurship promotion is particularly prevalent (Kluve et al., 2016) (e.g. see Box 10).

Box 10. Peru (regional) – Calificación de Jóvenes Creadores de Microempresas

Main intervention: Business training, business advisory and finance programme with business plan competition. Publicly financed and implemented. Two phases:

1. pre-phase of business advisory (two hours) and business training (24 hours) to develop a business plan;
2. post-phase of business advisory (12 hours), business training (36 hours), internship (170 hours) and access to finance.

Other features: Targeted at low-income young people owning an informal business for less than a year or interested in starting a business. Only winners of business plan competition eligible for participation in second phase.

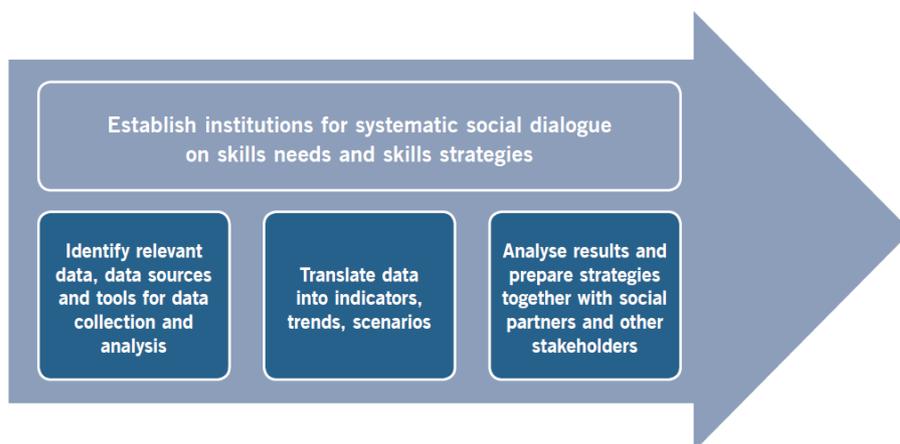
Source: Kluve et al., 2016

Improve the knowledge base on skills mismatches in the informal economy

In the formal economy improving the knowledge base on skills supply, mismatch and demand – for example through improved databases on job vacancies, skill needs forecasting, or employment outcomes of different types and levels of education and training programmes – is beneficial to individuals, employers and training providers. For individuals, this is especially the case when this information is linked to counselling and guidance (Strietska-Ilina, 2008). Assessing skills levels in populations, identifying the type(s) of skills mismatch faced, and anticipating skills needs requires good information and analysis (HEART, 2016). It is known that the anticipation of skills needs can inform strategic responses to meet skills challenges and avoid skill mismatch (ILO, 2008; 2015c: 2). In order to anticipate skills needs, four main components are needed:

- Identification of relevant data and tools;
- Translation of data into indicators, trends and scenarios;
- Data analysis and preparation of strategies in direct interaction with key stakeholders;
- Establishment of institutional arrangements that are conducive to matching demand for, and supply of, skills through *systematic* social dialogue. (ILO, 2015c: 4) (Fig 3).

Figure 3. The ILO approach to skills needs anticipation



Source: ILO, 2015c: 4

Such skills data and information is much easier to obtain from formal firms, formal wage-employment and formal education and training providers, than it is from informal firms, informal wage-employment and informal skill acquisition modalities. In other words, improving the knowledge base on skills supply, mismatch and demand in the informal economy is much harder than it is in relation to the formal economy.

Much more investment is required to strengthen information systems and analytical capacity related to skills in the informal economy. Useful approaches related to capturing data on skills supply and demand in the informal economy include household surveys, firm surveys where the sampling ‘does not rely on official registers only’ and various qualitative methods (Říhová and Strietska-Ilina, 2015: 47).¹⁸

Recognise that addressing skill mismatches often need supply and demand responses

Skill mismatch issues are by definition a mismatch between supply of skills and the demand for skills. Focussing policy efforts only (or mainly) on the supply-side of the equation misses this key point, and further emphasises the need to ensure vertically and horizontal policy alignment when it comes to skills (see 4.2.1). Whether in relation to over-education / over-skilling (see 4.3), under-education, under-skilling, skill gaps, skill obsolescence (see 4.4), or skill-shortages (see 4.5), interventions are also needed on the demand-side of the skills equation, and as in the formal economy, should focus on increasing awareness of employers on the benefits of investing in the skills of their workers and how related HR practices such as job redesign and work reorganisation can leverage investments in skills development.

¹⁸ For more information on measuring skills in the informal economy see Mane and Corbella, 2017.

4.2. Responses to over-education and over-skilling

Stimulate the demand for higher skill levels through job creation and incentives

In LMICs where informality is prevalent, the lack of quality, stable formal employment opportunities is a driver behind an over-education/qualification mismatch. Therefore, in such contexts policies that can improve the ability of economies to generate such jobs or that can facilitate the transition of existing informal sector jobs into formal jobs will help to lower the rate of over-education/qualification (Handel, 2017a; Handel et al., 2016; Kupets, 2017a; McGuinness et al., 2017b). In other words, improving the supply of skills needs to be complemented by concerted efforts to improve the demand for higher skills levels.

In contexts of over-skilling or over-education, formal and informal enterprises may respond by reducing any investment in employee training¹⁹ or by reducing wages due to an over-supply of skilled labour. Governments could act to stimulate demand for higher skills through the use of subsidies/incentives, by facilitating access to higher-end export markets, by developing economic-diversification strategies and supporting inward investment (OECD, 2012). Such policies may more directly impact skills demand in formal firms, but given the links between formal and informal firms in most value chains in LMIC countries there would likely be indirect benefit to informal firms. Governments could also act to incentivise the introduction of new growth occupations into the informal economy that require higher skill levels (e.g. mobile phone or automotive repairing that requires the use of computer diagnostic equipment).

¹⁹ As noted above, informal firms are often reluctant to train their employees even when there is not a surplus of more educated individuals in the labour market.

Provide more, and more accessible, information about available jobs and skills demand and strengthen job matching services

In contexts where new formal jobs are being created, more - and more accessible - information about these jobs (through career guidance, improved labour market information systems, innovating job-matching services) needs to be disseminated so that those with the right skills can be better matched to the available employment opportunities, and individuals looking to acquire skills can be informed about the level and types of skills demanded (e.g Box 11).

Box 11. MatchMe by Souktel

An example of an innovative job-matching service is MatchMe by Souktel which operates in several African and Arab States. It is a phone-based 'job search/match engine,' where job seekers register and create miniresumes through a series of text or WhatsApp messages. Employers similarly create 'mini job advertisements' and post them on the same database.

Source: www.souktel.org/our-approach/job-matching

Improve labour mobility and skilled migration

Improve labour mobility and skilled migration (McGuinness et al., 2017a), for example through introducing or strengthening regional skills recognition or qualification frameworks and agreements, and through international accreditation of providers and standardised approaches to mutual recognition of programmes and credentials. In order to work adequately in the informal economy context, however, such an approach would also need to be accompanied with recognition and certification of prior learning in the informal economy. Recognition of prior learning is also important in the context of recognising the skills of departing and returning migrant workers.

4.3. Responses to under-education, under-skilling, skill gaps, skill obsolescence

Use financing incentives to drive investment in skills for the informal economy

Where firms are confronted with under-education, under-skilling, skill gaps, and skill obsolescence, informal firms are likely to make do with a low skill base and not invest in training, adopt simple, low-level technologies or poach talent from other firms. International experience shows that the smallest enterprises, especially those operating in the informal economy, are the least likely or least able to be able to provide their own education and training, or to invest in it (Adams et al., 2013). A minority of informal firms may adopt a more growth focussed approach; for example (re)training employees in needed skills, putting more effort into recruitment, or increasing wages to attract skilled individuals. In such contexts, individuals might respond by investing in education and training (if information available to guide training decision, and if they could afford to do so). However, if the context is one of a low skill equilibrium, individuals will have few incentives to remain in education and training beyond the minimum needed to operate in a low skills climate. Governments can act to incentivise actions of informal firms, individuals and training providers for example by: introducing incentives (subsidies, training grants, vouchers and scholarships) to encourage investment in skills by micro-, small- and household-enterprises, and create the approach for them to access relevant training opportunities; supporting the improvement of informal skill acquisition systems (e.g. upgrading informal apprenticeships); targeting incentives at specific individuals or groups of people in the informal who are not investing sufficiently in their own skills development (e.g. women, socially and economically disadvantaged groups, people with disabilities) (Box 12); providing education and training providers

with equity-based financial incentives to train under-served groups in the informal economy (or results-based incentives based on the proportion of such groups showing positive outcomes in the labour market following the training); equity-oriented training funds - funds that target groups who are not usually able to access training such as those working in the informal economy – could also be considered. Government could also refocus public budget allocations to provide more financing to address particular skill deficits.

Box 12. Somali Educational Incentives for Girls and Young Men

An Africa Educational Trust project, the Somali Educational Incentives for Girls and Young Men used vouchers to encourage disadvantaged youth to gain reading and work skills in urban areas across Somaliland and Puntland.

Source: www.souktel.org/our-approach/job-matching

Expand alternative and non-formal skills programmes

There are many types of non-formal and alternative learning provision that are designed to offer foundation, transferable and/or technical-vocational skills to children, adolescents or adults who missed out on formal education first time around. Such ‘short-term training interventions do show some positive results when targeting disadvantaged groups’ (World Bank, 2017: 156), though the coverage of these programmes is not sufficiently widespread – meaning that most workers in the informal economy don’t the opportunity to access alternative and non-formal skills programmes, including second chance literacy programmes (Adams et al., 2013). The provision of such programmes should be part of integrated skills development policies and interventions targeting the informal economy.

Strengthen informal skills systems

In parallel to improving the quality of formal education and training provision, and their accessibility and relevance to those working in the informal economy, attention should be paid to strengthening informal skills development for youth and adults in agricultural and non-agricultural informal employment. Upgrading the skills of low educated/low skilled workers in the informal economy can contribute to increasing their productivity, upgrading their business and potentially exiting informality.

As noted above, one way to improve the functioning of informal skills systems is to improve the reliability and availability of information on what options exist to improve the skills of workers and enterprise managers (e.g. cost, quality, outcomes/benefits). ‘To meet [informal] small enterprises’ learning needs, providing them with information on the benefits of training along with information on providers who offer competitive services will be helpful’ (Adams et al., 2013: 13). With interventions to improve the skills of informal enterprises, informal trade and industry associations are often used as an intermediary to reach informal enterprises with information and training offerings. In order to do this (more) effectively, such informal trade and industry associations often need to have their own capacities developed (Adams et al., 2013).

In countries with large informal economies, especially in West Africa and South Asia, informal apprenticeship can represent the most widespread type of training provision for older adolescents. However, learning opportunities here are limited to the competency of the master-craftsperson and by the quality of the enterprise within which the apprenticeship is being undertaken. As a result, improving the overall learning experience in informal apprenticeships can be a critical and ‘can help young people

not only acquire skills but ease their way into the formal economy' (ILO, 2010: 31). Promising practices to do so include: upgrading the skills of master-craftspeople through pedagogical and technical training; providing apprentices with supplementary literary and numeracy training; regulating quality and ensuring certification of skills (see also Box 13).

Box 13. Upgrading informal apprenticeship

Informal, or traditional, apprenticeship training is often more accessible to marginalised groups than formal skills programmes. This is due to several factors, including often lower educational entry requirements and the opportunity to train and earn at the same time (informal apprenticeships often offer apprentices daily food money, or other opportunity to earn a daily stipend) – thus reducing opportunity costs of training. There have been very many attempts over the last 20 years to upgrade informal apprenticeship training in many countries – but especially in Africa and Asia. Some of the key lessons learned include (after ILO, 2012):

- Capitalize on the existing system - Any outside intervention needs to be based on a sound understanding of the local practices and the incentives that motivate master craftspersons and apprentices to participate.

Strengthen the apprenticeship contract – Contracts should contain provisions about, for example: working time, the apprenticeship period, conditions that determine its completion, mutual rights and duties (e.g. type of remuneration and/or fees to be paid).

Bring new skills into informal apprenticeship – Through provision of short training courses for master craftspersons in technical, business or teaching skills, and/or through supplementary skills training for apprentices in, for example, their rights, occupational safety and health, basic technical skills, entrepreneurship skills etc.

Enhance the quality and reputation of informal apprenticeship - promoting recognition of certification as a signal of achievement of specified standards

Improve equal access to informal apprenticeship – women tend to be disadvantaged by the preponderance of male-dominated trades among those offering informal apprenticeship. Other disadvantaged groups, such as migrants or those with disabilities also face difficulties to be accepted as apprentices.

Include informal apprenticeship in the national training system

Source: ILO, 2012

4.4. Responses to other types of skills mismatch and low-skill equilibria

Horizontal mismatch - Improving the accessibility and reliability of information to determine which fields of study are in demand is a key response to guide training decisions and reduce horizontal mismatch.

Skills shortages – Responses to skills shortages in the informal economy might also include demand-side interventions, such as the use of incentives (perhaps via intermediaries) to encourage individuals or enterprises to train in the in-demand skill areas.

Low-skills equilibrium - In instances of skills matching in a low-skills equilibrium, ‘the aim should be to upgrade poor skills rather than try to match these skills with a job that only requires low levels of skills’ (ibid.: 94). This response would likely result in a skills mismatch (over-education/skilling), which itself would require mitigating actions, but this could be the start of a pathway to a high-skills equilibrium. On the demand side, business development services could help to change enterprise product and market strategies, to work towards producing higher quality goods and participate in higher quality value chains; this could stimulate a demand for higher skills.

5. Summary recommendations

5.1. Introduction

This paper is concerned with jobs and skills mismatch in the informal economy. It has highlighted that both under-education and over-education are features of informal economies in different countries. It has also shown that informality is, itself, a cause of skills mismatch in LMICs.

5.2. Summary of recommendations to mitigate the effects of skills mismatch in the informal economy

Mitigating actions and policies should be related to the type of skills mismatch, and type of skill, and can be at an individual, enterprise, sectoral or national (or sub-national level). Such approaches are summarised below.

General response to skills mismatch in contexts of informality

- **Policy coherence** – ensure that skills policies are aligned horizontally and vertically across skills delivering ministries, and aligned horizontally with policies that influence the demand for skills (e.g. agriculture, trade, industry, employment).
- **Deploy appropriate financing mechanisms** – financing skills is not just about securing a large enough resource envelope to pay the bills. Different financing mechanisms can be deployed to incentive and influence the behaviour of individuals, enterprises, whole sectors, as well as education and training providers.
- **Build strong foundational and transferable skills in families and schools** - tackling skills mismatches starts in the early years; without adequate basic foundational and transferable skills, individuals will likely suffer exclusion and skills mismatch later in life.
- **Reform formal training providers to reach the informal economy** - providers need to reorientate their training offering (in terms of content, delivery, duration) so that they better meet the needs of those in the informal economy.
- **Recognise skills gained in the informal economy** – a lot of skills are acquired in the informal economy (via apprenticeships or experientially on the job) but are usually not recognised, making it hard for such individuals to take up formal employment even if they have the proficiency to do it.
- **Enhance horizontal and vertical mobility** – ease of movement within the skills system (and movement into and out of, and back into the system) would help individuals and enterprises navigate the changing demand for skills.
- **Combine skills provision with complementary interventions** – it is not enough that there is a match between skills supplied and skills demanded; individuals often need help to put their acquired skills to use and evidence shows that providing skills alongside complementary interventions (e.g. enterprise start-up support, access to credit etc) is the most effective approach.
- **Improve the knowledge base on skills mismatches in the informal economy** - Data is critical. Without reliable and quality information (and capacity to analyse it) on the composition of the informal economy in a country, the type of skills mismatch may be hard to define. Similarly, without an understanding of the full context within which the skills (mis)match exists, it may be hard to diagnose the mitigation measures (e.g. a low skills equilibrium is a skills match, but

not a desirable one). Significant investments are needed in domestic information systems and analytical capacity.

- **Recognise that skill mismatches can't always be solved by reforming the supply-side of skills only**

Responses to over-education and over-skilling in contexts of informality

- **Stimulate the demand for higher skill levels through job creation and incentives** - policies that can encourage an increase in demand for higher skills include, for example, financial incentives to firms to invest in new technologies or products.
- **Provide more, and more accessible, information about available jobs and skills demand** – ensure that the higher skilled jobs that are available are fully matched with the available supply by having reliable and accessible job matching information.
- **Improve labour mobility and skilled migration** – where countries can't generate enough higher skilled work opportunities, it may be logical to facilitate skilled migration to other regions or other countries (many such migrants will likely send remittances back to their home town/country).

Responses to under-education, under-skilling, skill gaps, skill obsolescence in contexts of informality

- **Use financing incentives to drive demand for investment in skills for the informal economy** – individuals and enterprises can be incentivised through the use of vouchers, transfers or grants to undertake further training.
- **Expand alternative and non-formal skills programmes** – for those that have missed out on an adequate formal education foundation, provide second chance foundational and transferable skills training. For those that need technical and vocational skills upgrading, short targeted courses can help in upskilling.
- **Strengthen informal skills systems** – most training for the informal economy still happens in the informal economy itself. Improving informal apprenticeship systems is a way to potentially reach large numbers; a key intervention in this regard is upskilling the master-craftsperson (both with pedagogical skills, but also with technical theory and new market developments).

5.3. Conclusion

There is a dearth of data on the issue of skills mismatch in informal economies; this is in spite of the fact that between two-thirds to ninety per cent of youth in low and middle-income countries work in the informal economy. More research is needed on this topic, on how the consequences of skills mismatch differ in the informal versus the formal economy, what is specific about it and what measures can be recommended to address it. The three studies produced under the ILO's global initiative on skills mismatch, and referred to in this paper, have provided a useful start, but further studies are needed which have a more specific focus skills mismatch in the informal economy. Further the three new studies focus only on one aspect of skills mismatch (under-/over-education); hence research on other types of skills mismatch (skill shortage/surplus, skill gap, horizontal mismatch and skill obsolescence) in the context of the informal economy would be useful. Research will of course be limited by the type and reliability of data available at country level; support to improving skill information systems (and analytical capacity) in LMICs is therefore critical.

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