

CHAPTER FIVE

Human capital and skills for SMEs

Despite recent progress in the field of education and skills in Latin America, there are still challenges that should be confronted through careful analysis and new public policies. A relatively untrained workforce and management, a high dropout rate from school, and low-quality education stand in the way of increasing SMEs' productivity. Another obstacle is the mismatch between the skills that the production sector demands and the training that the educational system provides. The technical education and vocational training systems are key factors to deal with this. These challenges have been responded to in this region through programmes that try to address the needs of the production sector and SMEs. However, many areas need government action to strengthen institutions and need policies to better align the education system with the needs of the job market, foster training paths that combine the classroom with the workplace, add new skills and abilities to training curricula, develop certification schemes for acquired skills and abilities, and establish institutional frameworks to encourage co-operation among SMEs.

Introduction

The barriers to productivity growth faced by small and medium-sized enterprises (SMEs) are very diverse, as described in the previous chapters. One aspect that the literature deems essential to understanding an economy's productivity is the production sector's access to human capital and skills. In this sense, the low productivity of this business segment is partially explained by some of the major educational and training challenges faced by the region.

On the one hand, Latin America continues to trail other regions in access, reach and number of years of schooling completed, even with great educational advances in recent years. This lag is reflected in the educational levels of the workforce, much lower than those seen in more developed countries, and in the high dropout rate, as reflected in the number of people who enter the job market at a very young age with little training.

SMEs face problems involving the quantity and quality of human capital and skills in the region. This is a major barrier to the expansion of their productivity and to their development.

On the other hand, the region is far behind other parts of the world in the quality of education, understood as the education system's ability to give new generations the knowledge and skills needed to enter the job market and succeed there. This gap can be seen in the comparisons outlined in the report by the Programme for International Student Assessment (PISA).

Studies of human capital and the job market agree on an additional factor that needs to be analysed in order to understand SMEs' low productivity. That factor is the mismatch between the training that the education system provides and the skills that the production sector demands. Many SMEs in the region say they have difficulties finding workers with the skills they need, which shows there is a skills gap that acts as a barrier to increasing productivity.

This manifests itself in highly varied ways and reflects the vast spectrum of SMEs in Latin America. Depending on factors such as business size, sector and geographic location, these enterprises demand different skill sets and have greater or lesser difficulty in finding them.

This imbalance between the training that the education system supplies and the skills that the production sector demands appears to be worsening and it can be expected to continue growing. The globalised economy is characterised by fast technological change and a production dynamic that is evolving towards a knowledge-centred model. This leads to an ever greater demand for human capital trained in skills related to technical aspects and to non-cognitive dimensions of learning, yet the region's education system does not seem to be able to adapt in order to respond satisfactorily.

In short, SMEs face problems involving the quantity and quality of human capital and skills in the region, which are a major barrier to increasing productivity. This is a key challenge for Latin America. The expansion of potential growth in the region, a greater ability to compete and innovate in the global economy, and the creation of jobs

and opportunities for Latin American society require strengthening and promoting the SME sector. For these reasons it is necessary to consider the role that public policy can play in confronting this challenge.

This chapter addresses these issues using the following structure. The first section analyses the training challenge faced by the region's SMEs by examining how this problem affects different types of SMEs, and explores the role that public policy can play in helping to overcome this challenge. The second section reviews the technical education and vocational training systems in Latin America as a main linkage mechanism between the education system and the production sector, seeking to identify lessons learned and pending challenges. Lastly, the third section proposes a set of public policy recommendations.

SMEs' training challenge

How lagging behind in training impacts the region's workforce

In recent years, Latin American governments have made considerable efforts in education, which have translated into advances in access and reach, especially the gradual increase in the number of years of schooling among the economically active population in the region.

From 2000 to 2010, the working-age population whose education terminated with secondary school rose 8.2 percentage points, while the rate of tertiary education rose by 2.4 percentage points (Table 5.1).

Despite progress in recent years, the region's workforce has relatively little training. In Latin America, 46.6% of the people entering the workforce have no education beyond secondary school and 12.2% have tertiary education, while the percentages in the OECD are 54.9% and 23.8%.

Compared to figures from other, more developed regions, these data show that the gap is still very wide. The portion of the Latin American workforce that reaches secondary education and tertiary education are 46.6% and 12% respectively, a far cry from the figures from OECD countries, in which 54.9% of workers have secondary education and 23.8% tertiary education.

Table 5.1. Global regions and the OECD: working-age population by highest level of education
(as percentages and percentage-point change, 2000-10)

Population over 15 years	Latin America		OECD		East Asia and Pacific		Central Asia	
	2010	Change, 2000-10	2010	Change, 2000-10	2010	Change, 2000-10	2010	Change, 2000-10
Primary education	33.1	-7.1	18.4	-6.7	32.7	-4.2	13.5	-4.6
Secondary education	46.6	8.2	54.9	3.6	42.9	2.9	67.1	1.9
Tertiary education	12.0	2.4	23.8	4.3	14.1	4.2	18.2	3.7

Source: Produced by the author based on data from Barro & Lee (2010).

The workforce's limited education seems to have a greater impact on smaller businesses. According to the International Labour Organization, 75.9% of the people employed in microenterprises and SMEs in the region have a maximum educational level of uncompleted secondary. The situation varies by country. People employed in microenterprises and SMEs (MSMEs) who have not completed secondary school total 57% in Argentina, 51% in Chile (the figure excludes medium-sized enterprises), 38% in Mexico and 40% in Peru (Tueros et al., 2009). In addition, the less educated workers are concentrated among independent non-professionals, women and people working in rural microenterprises.

Another notable phenomenon in the region is the school dropout rate, which has a major effect on the educational level of the workforce entering the production sector. Although some progress has been made, the overall dropout rate among 15- to 19-year-olds in the region averaged about 29% in 2009, and nearly half of these dropped out before secondary school.¹ As a result, on the one hand, a large number of young people leave the education system without gaining the knowledge and skills needed to be even minimally employable and increase their chances of attaining a satisfactory career path. On the other hand, since one of the main reasons for dropping out of school is the need to find work for subsistence, this leads young people to enter the job market with little education. Therefore, they generally find unstable employment in the informal sector where micro and small enterprises have a greater presence.

Workers in MSMEs who started but did not finish secondary school total 57% in Argentina, 51% in Chile (the figure excludes medium-sized enterprises), 38% in Mexico and 40% in Peru.

Another relevant topic for understanding the training landscape of Latin American SMEs is the level of skills found among their management. In general, there is a significant shortage of management skills and business leadership in the region. Many small and medium-sized enterprises are limited by their management's inability to lead processes of development, technology adoption, innovation, and expansion into new sectors and markets, which is definitely a barrier to increasing productivity.

All of these issues show that there are still broad educational gaps to close, but that considerable advances have been made in terms of access and years of schooling. Nonetheless, more people spending additional time in the education system does not necessarily mean that skills are being taught and learned effectively, or that students are being trained in skills and abilities needed to find a job in the real economy. These considerations are part of the qualitative side of education, a field in which Latin America is facing its toughest challenges.

On the one hand, international comparisons reflect a particularly worrying gap in the quality of education. According to data from the PISA report (OECD, 2010), 15-year-old students in the region scored far below those in OECD countries in the three subject areas analysed by the study (Table 5.2). Nearly 49% of 15-year-old Latin American students scored at the lowest possible level in reading tests, whereas about 19% of students in OECD countries are at that level. Similarly, 84% and 80% of the students tested achieved the lowest possible level in mathematics and science respectively, twice the rates seen in OECD countries. This shows that young people in the region have trouble performing skills that are basic for participating in the workforce and society.

Table 5.2. Latin America and OECD: students aged 15 and over with the lowest score in the PISA tests
(as percentages)

Country	Reading	Mathematics	Science
Argentina	51.6	84.3	79.1
Brazil	49.6	88.1	83.0
Chile	30.6	78.3	67.4
Colombia	47.1	90.8	84.3
Mexico	40.1	79.1	80.9
Panama	65.3	92.6	88.3
Peru	64.8	90.4	90.0
Uruguay	41.9	72.7	71.9
Latin American average	48.9	84.5	80.6
OECD Average	18.8	44.0	42.3

Source: PISA 2009 results (OECD, 2010).

Then again, the problem of quality is aggravated by the major gap in this region between the skills the education system teaches and the abilities the production sector wants.

Mismatch between the education system and the production sector

Economic globalisation has fostered a profound transformation of the production model, largely defined by an intense process of technological change. Knowledge is now at the core of the economy and is vital to understanding the production dynamic and the ability to compete and innovate. Part of the business world is moving towards new sectors and new working arrangements, making increasingly intensive use of new technologies in their production processes.

The nature of the skills demanded by the production sector has also changed over time. This has created a gradual move away from the training traditionally offered by education systems, a phenomenon known as “skills gap”. To the extent that it limits businesses’ ability to find the skills they need, this skills gap impedes productivity growth. This is why it is important to understand its impact on Latin America and how it affects SMEs.

In Latin America there is a “skills gap” due to a mismatch between the training given by the education system and the abilities SMEs demand, which acts as a barrier to expanding these businesses’ productivity.

In Brazil, 71% of managers say they have difficulties filling vacancies, while in Panama the figure is 47%, 45% in Argentina and 43% in Mexico.

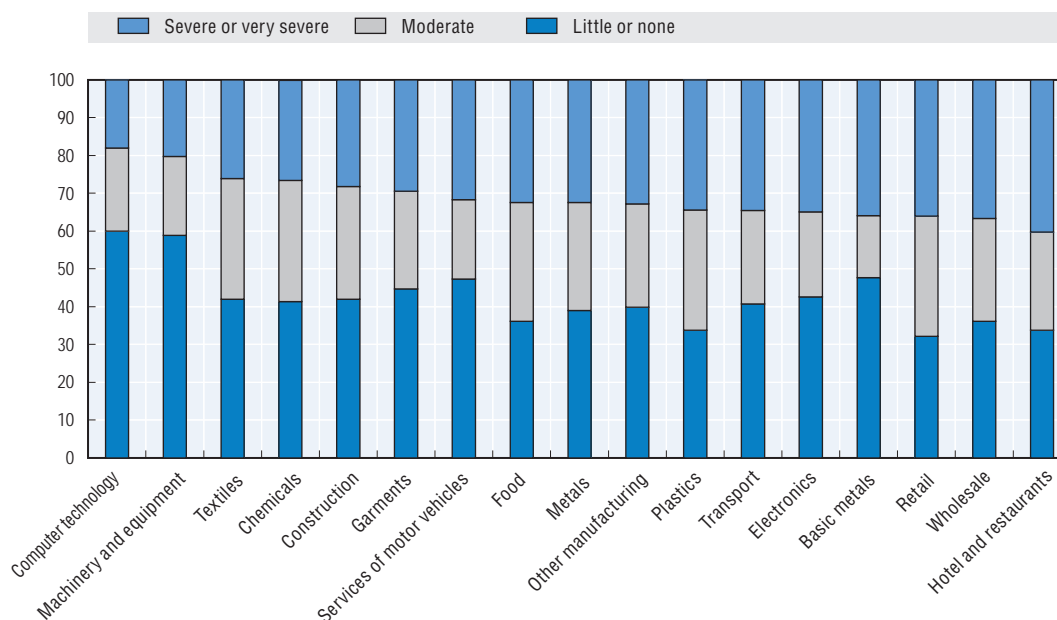
In several Latin American countries, managers say it is hard to fill job vacancies in their establishments. Notable examples include Brazil, where 71% of managers have difficulty filling positions, Panama (47%), Argentina (45%) and Mexico (43%) (ManpowerGroup, 2012).

This has a major impact on SMEs, which also have trouble finding the workforce they need. Factors such as the production sector they belong to, how extensively they have adopted technology, their participation in global value chains, and how much export-focused they are will determine, to a large degree, what type of skills SMEs need and therefore how the skills gap affects them. About 37% of SMEs in the region consider this gap to be one of the main obstacles faced in their everyday operations (World Bank, 2012).

SMEs in different sectors face differing problems in finding a suitably trained workforce (Figure 5.1). On the one hand, there are sectors such as computer technology services in which 80% of SMEs say they have from moderate to severe or very severe problems finding the workers they need, and other sectors, such as machinery and equipment, textiles and chemicals, in which the percentage of businesses with severe or very severe problems is also very high, at 40% to 60%. On the other hand, there are areas such as the hotel and restaurants sector and the wholesale and retail sectors, where some 40% of businesses report no problem in finding the workforce they seek, and only around a third of the businesses say they face severe or very severe problems (World Bank, 2012).²

The type of skills SMEs demand depends on factors such as the sector they belong to, how extensively they have adopted technology, their participation in global value chains, and how export-focused they are.

Figure 5.1. Difficulty encountered by Latin American SMEs in finding skilled labour, by sector and level of difficulty, 2010
(as percentages)



Source: Based on data from the World Bank's Enterprise Surveys.

StatLink  <http://dx.doi.org/10.1787/888932732937>

The difficulties faced by SMEs are based on the sector in which they operate and largely depend on the relative shortage of the type of skills they demand. As a result, it is important to know what type of skills these businesses are looking for, to better understand the fields in which they do business and the limitations they may face in specific economic sectors, and to get an overview of the skills the education system is not providing and whose scarcity blocks productivity.

Recently, important progress has been made in understanding these issues, which confirms the transformation seen in recent years in the demand for skills in the regional economy. The effect of technology change mentioned above and the parallel transformation of the production model have created new types of jobs that demand new skills, while repetitive activities traditionally performed by workers with secondary education are being replaced gradually by technology (Aedo and Walker, 2012).

This broad trend in the region is at odds with an education system still very focused on training in traditional disciplines which, though relevant, need to be complemented with the new type of professional skills demanded by job markets in the new economy (Aedo and Walker, 2012). In this sense some studies (Bassi *et al.*, 2012; EIU, 2009; ManpowerGroup, 2012; Schwalje, 2011) identify various fields in which there is a mismatch between demand in the economy and the supply provided by the education system, which could be grouped into two categories.

There is evidence that some investment decisions in Latin America are made based on the limited availability of human capital and are generating a barrier to growth and limiting the expansion of productivity.

First, the production sector in the region has trouble satisfying its demand for technical competencies, both company-specific ones and more general skills, especially those related to technology, occupations in the new economy, and the knowledge of foreign languages or the use of computer systems (EIU, 2009).

Furthermore, recent studies indicate that besides cognitive skills, companies increasingly are asking in the job market for non-cognitive socio-emotional skills, known as “soft skills”. These include elements such as critical thinking, responsibility, teamwork, the ability to solve problems and handle change, oral and written communication, and the ability to understand and relate to one’s environment. Managers in the region appreciate such skills sometimes even over technical skills, whether general or specific, but say it is very hard to find workers who have them (Bassi *et al.*, 2012).

In short, there are major mismatches in the region between skills demanded and those available in the job market. This increases the training challenge that SMEs face, as it poses a barrier to access to the skills that should allow productivity gains, especially among the more dynamic businesses with growth potential.

However, many SMEs are in sectors that contribute little added value and whose production processes make little use of technology or of skills most closely related to technical matters and knowledge. This suggests that Latin America has an insufficient supply of well-trained workers, but also a limited demand for higher competencies among SMEs, which generates a stagnant production dynamic.

The production sector in Latin America has difficulties meeting its demand for technical skills related to technology, occupations in the new economy, knowledge of foreign languages, using computer systems and the so-called “soft skills”, such as critical thinking, responsibility, teamwork, the ability to solve problems and handle change, oral and written communication, and the ability to understand and relate to one’s environment.

In this sense the shortage of skills and competencies in the job market also affects productivity and the production structure due to demand-side considerations. Some evidence indicates that businesses’ demand for skills sometimes adapts to the skills’ limited supply, meaning investment decisions are adopted based on the limited availability of human capital (Aedo and Walker, 2012). This would constitute a barrier to growth and limit expansion of productivity in the region, especially since the sectors that would be adapting to the shortage are precisely those most connected to the global economy and with greater growth potential, and, due to the scarcity of human capital, must do without the skills they would need. At the same time, the low demand for skills can also discourage a broader, higher-level supply of competencies. This could stimulate a sort of vicious cycle that hinders productivity growth and does not foster development of the production sector.

Facing the training challenge: the role of public policy

The limited training of the workforce and of business managers, together with the problems associated with the school dropout rate and the poor quality of education, translate into a major mismatch between the education system and the needs of the job market. All these factors, which are a barrier to economic development and to productivity gains, suggest the need for public policy that helps meet these challenges and transform the education system in general and vocational education in particular. This is the nature of the training challenge faced by the region’s production sector.

However, the design of public policy should arise from a greater ability to diagnose training challenges and from the availability of further empirical evidence. Decision making must be backed up by a better understanding of the knowledge and competencies available in the population, of the ability of the education and technical/vocational training systems to foster the inclusion of adults in society and in the workforce, and of the gaps between the education system and the production sector. A key challenge for Latin America is to expand the ability to make better diagnoses and establish comparisons between countries and across time. In this regard, the experiences of OECD countries can be very relevant (Box 5.1).

Public policies for the training of the workforce and of business managers should make SMEs a priority, both because of their growth potential and ability to generate jobs and because it is a sector that generates inefficient dynamics.

In particular, in competing for a limited number of suitably trained workers, SMEs are in a weaker position than large businesses. Big enterprises are able to offer workers better salaries and incentives, along with potential for promotion and internal mobility, the reputation associated with the company, and even greater in-house training opportunities, among other advantages.

Box 5.1. Assessing adults' competencies: the OECD PIAAC study

With the aim of assessing the knowledge and skills of the adult population aged 16 to 65 in 26 countries (25 OECD member countries plus Russia), the OECD launched the Programme for the International Assessment of Adult Competencies (PIAAC). This initiative is meant to broaden and improve the way adult knowledge and skills are evaluated, to get a more detailed, accurate picture of the training a country's population has for facing the challenges of the knowledge society. The results from the first edition of this study will be ready in late 2013. Chile is the only Latin American country participating in the project.

PIAAC is contributing two main innovations. First, it examines adults' competencies through direct assessment. This system has advantages over more traditional ways of analysing a country's human capital, based on the population's educational levels. PIAAC's form of direct assessment acknowledges that a diploma does not guarantee specific skills when it is obtained, and especially not after time has passed. By contrast, direct assessment of adult knowledge and skills through tests and surveys helps build a more accurate picture of a country's human capital.

Second, the PIAAC evaluation incorporates new elements that help achieve a broader vision of adult knowledge and skills and their usefulness in the job market. The programme measures skills in the fields of reading, mathematics and writing, and analyses the ability to solve problems in an environment that includes technologies and the abilities used in the workplace, as well as the socio-economic context of the adults surveyed.

The goal of PIAAC is for all of the collected information to provide governments with elements for the design of public policy affecting adult competencies. Its analysis is useful because: i) it provides a more accurate view of competencies among a country's adult population, broken down by age or demographic and socio-economic characteristics; ii) it helps give a deeper understanding of the education and technical/vocational training systems' ability to impart knowledge and competencies that let adults function satisfactorily in society and the work world; iii) it fosters analysis of the type of competencies and abilities that improve job performance and that the production sector is demanding, while also examining the evolution of skills over the course of people's working life and the role that training plays in careers; and iv) it allows comparisons among countries and over time within a given country, since the programme is intended to be ongoing.

Source: www.oecd.org/piaac.

The focus of the Programme for the International Assessment of Adult Competencies (PIAAC) acknowledges that a diploma does not guarantee specific skills and abilities, neither when it is obtained nor after time has passed, which is why they are assessed directly through tests and surveys of adults to determine a country's human capital.

While many large firms opt for in-house training as a strategy to overcome the scarcity of qualified workers, SMEs have little incentive to adopt a similar solution, given the risk that large companies will hire the personnel away once they are trained. As a result, it is only in their interest to offer a specific type of training applicable to the company's particular activities, without emphasising broader competencies, though these ought to be part of what is taught by the education system.

Since a portion of the undertrained workforce takes jobs in SMEs, the lack of incentives for in-house training leads these businesses to not substantially increase their capabilities, and the learning that does occur tends strongly towards imitation and repetition of business activities with little need for technical skills. Together with the sector's minimal ability to embrace technology, this leads to SMEs not broadening their production knowledge base in any meaningful way and not innovating significantly, which prolongs the stagnation of production.

In light of this, and given the wide range of SMEs in Latin America, it is particularly important to bolster institutional capabilities and the design of policies that respond to the sector's training demands. The efforts to compensate for gaps in basic education, increase the educational level of management and develop job skills in those SMEs with low levels of organisation and formalisation should be accompanied by a concern for promoting those enterprises that have a certain technical and/or managerial capability, to focus education on the most knowledge-intensive fields, which bring with them greater dynamism and added value. This translates into more focused approaches that differentiate methodologies and action tools based on businesses' characteristics and capabilities.

Besides, training SMEs' human resources requires deploying a wide range of services related to management, technology and access to knowledge. Information and communication technologies (ICTs) play an essential role in this. Training programmes that use ICTs have advantages in terms of their flexibility, ease of access, freedom from specific schedules and locations, and lower costs. They therefore have great potential to expand the scope and depth of the response to the training needs of SMEs, the type of businesses with the greatest barriers to training access.³

Because of their advantages in terms of flexibility, ease of access, freedom from specific schedules and locations, and lower costs, training programmes that use information and communication technologies are especially suitable for SMEs.

The training that is in demand among SMEs can be transmitted through three channels: i) within the formal education system, meaning primary, secondary and tertiary education; ii) technical education and vocational training, which is more focused on greater practical applicability and whose offerings are associated with public and private institutions, which make up the technical education and vocational training institutions (TEVTIs); and iii) informal education, referred to as on-the-job training, in which sharing and interaction in the workplace are the channel for knowledge transfer.

Informal education and traditional formal education will be the subject of some of the recommendations put forward in the third part of this chapter. Technical education and vocational training are the fields most closely linked to providing job skills and the type of abilities the region's job market demands. The next section analyses the general state of technical education and vocational training in Latin America.

Regional overview of technical education and vocational training for SMEs

Policies to strengthen SMEs' human resources have advanced considerably in the region. Nearly all the countries have institutions and programmes to develop these businesses' human capital. This section analyses the progression of trends in the supply of technical/vocational training, and delves into the situation in various countries in the region to understand the strengths and pending challenges of this process.

Regional trends in the supply of technical/vocational training for SMEs

Since the 1940s, vocational training institutions started to be founded and expanded in Latin America, mainly to meet the production sector's needs arising from the period of import substitution. Since then, governments have been heavily involved in funding and regulating their policies and in providing training services.

The institutional model that has been spread and replicated almost throughout the region is that of Brazil's National Industrial Learning Service (SENAI), founded in 1942.⁴ One notable feature of this model is that most of its management is trilateral, with participation by representatives of workers (with varying degrees of involvement and influence), managers and government. The funding formula specified in the laws that created most of the TEVTIs includes corporate payroll tax. Thus this formula grants enough financial autonomy and allows ongoing adjustment to demand variations.

The training policy institutions came into being with a bias towards the needs of large enterprises, with SMEs having little influence on their focus. In the first decades the dominant approach was defined based on supply, with the government determining which courses would be launched and continued and what their priorities were. Companies acted mainly as consumers of the training services, playing a lesser role in defining courses and identifying the competencies to be developed (Gallart, 2001). SMEs had little influence in plotting the path for these policies, despite being subjects of a set of specific programmes to increase their productivity.

In the 1980s and especially the 1990s there was an important shift in the focus of vocational training policies, with a notable general trend towards strengthening policies defined based on demand in the production sector ("demand subsidies") (Gallart, 2001; Labarca, 2001). While concern about SMEs grew, support institutions targeting this sector began to be established, and the goal of having qualified human resources was incorporated into the framework of policies for SMEs in various countries, such as Argentina, Brazil, Chile, Ecuador, El Salvador and Mexico (Goldstein and Kulfas, 2011). These include the activities of the Brazilian Micro and Small Enterprise Support Service (SEBRAE) in Brazil, the Secretariat of SMEs and Regional Development (SEPYME) in Argentina and the Undersecretariat for SMEs (SPYME) in Mexico.

This demand-focused trend in human-resource policies occurred in response to changes in the modes of production, which required human resources who were more qualified, with increasingly flexible knowledge and skills, able to adapt to new forms of production, as well as the budget constraints arising from the structural shift of the 1980s and 1990s. Amid a rethinking of the state's role and the spread of the perception that market forces would be the most efficient mechanisms for the allocation of resources, an attempt was made to encourage the creation of a training market that would serve to meet the demands expressed by the production sector.

Latin America has vocational training systems defined and applied by national government institutions, as well as a model in which the government provides resources and regulation but does not provide the service.

Two main trends in opposite directions arose in this process (Gallart, 2001). On the one hand, where there were still vocational-training policies defined and implemented by government institutions, the transformations tended towards a decentralisation by economic sectors and branches for greater alignment with the production sector's demands, as well as a regionalisation of institutions to meet the more specific local requirements. Examples include the National Learning Service (SENA) in Colombia and the National Institute of Technical and Vocational training (INFOTEP) in the Dominican Republic, both of which are government agencies that retained their responsibilities for planning and execution of vocational-training services to develop human resources and boost companies' productivity.⁵

On the other hand, systems appeared with a stronger trend towards creating a training market, in which the state remains in charge of providing resources and regulating services, but withdraws from providing the services directly. In this approach, resource allocation is done by the market, through interaction between the supply offered by (public and private) training institutions and the demand (among companies and individuals). The National Training and Employment Service (SENCE) in Chile is an example of this model. It subsidises demand through tax exemptions (for companies) or scholarships (for individuals), without providing direct training services, leaving the training institutions in charge of allocating the public funds in keeping with the demand observed.

The situation in Chile illustrates the limitations of this type of mechanism in which the state handles the design, funding and oversight of the training system, leaving the more important responsibilities to the companies. Several studies and assessments indicate that demand subsidies for training, if not accompanied by other mechanisms to co-ordinate and focus the training supply, cause segmentation of the training supply which particularly benefits larger firms (Geo Consultores, 1999; Dini and Stumpo, 2002; Jara, 2002; Belmar and Maggi, 2010).

The diversity of the training programmes targeting Latin American SMEs reflects the coexistence of these two trends. This variation, which is also seen in the nature and scope of these government programmes, is closely related to funding, not only in terms of where the resources come from but also in the means of financing the training activities.

If demand subsidies for training are not accompanied by additional mechanisms to co-ordinate and focus the training supply, they cause segmentation of the training supply which particularly benefits larger companies, according to several studies and assessments.

Many countries allocate specific funds from payroll taxes, as occurs in Brazil, Colombia, Costa Rica, the Dominican Republic, El Salvador and Guatemala, among others. In some countries (Brazil, Chile, Costa Rica and Mexico) training is a line item in the national budget (Lengfelder and Schkolnik, 2011). Another funding model for training is subsidies to companies in the form of tax exemptions, such as the tax reduction administered by SENCE in Chile. This subsidy can consist of a monthly credit in the case of SMEs (or annual credit for larger firms) or scholarships in the case of microenterprises. Subsidies can also be given to training centres, by branches or regions, managed by chambers of commerce, as in the case of SEBRAE in Brazil. Lastly there are subsidies to workers, often used as a way to target training (for instance, at the unemployed, youth and women).

Even if some common traits are identified in the Latin American governments' responses to meeting the human-resource training needs of SMEs, in each country these institutions have evolved based on the country's specific circumstances and on the approaches of its policies. Besides TEVTIs, the universe of support to SMEs consists of technical education agencies, such as the National Institute of Technological Education (INET) in Argentina and the Uruguayan University of Work (UTU), and the chambers of commerce in most of the countries and even private institutions such as the ICAM GROUP in Mexico and Interfases in Chile, which also develop training programmes to improve productivity (Table 5.3).

Table 5.3. Institutions and programmes supporting human capital development in SMEs

Types of institutions	Characteristics
Institutions dedicated to vocational training	Primarily public and national, some private and more specialised (ICAM/México; Interfases/Chile)
Institutions providing technical education	Support and training programmes (INET / Argentina; UTU / Uruguay; DUOC / Chile)
Ministries of Labour, Industry, Economy and Culture	Specific programmes for supporting SMEs: such as the Support Fund for Micro and Small and Medium Enterprise (FONDO PYME) in Mexico
Other private organisations	NGOs

Source: ILO/CINTERFOR (2012).

In short, there is a wide variety of public and private institutions active in supplying training, funding sources (public, private, and international organisations, among others) and government programmes with different approaches to strengthening the human resources of companies in general and SMEs in particular (ILO and CINTERFOR, 2012).

There are still very important challenges, especially in two areas. SMEs generally are somewhat wary of devoting resources to buying these services, which translates into insufficient investment in training. Development agencies, meanwhile, lack a clear sense of the priorities to be addressed, with the result that the support instruments are not focused enough (Goldstein and Kulfas, 2011). In the first case, the SMEs' reluctance to invest in training is often reinforced by the proliferation of the demand subsidy mode, resulting in later underutilisation of support programmes. In the second case, the lack of a clear strategy for SMEs in the region and the inability to prioritise a core of knowledge-intensive activities, in which these activities would strengthen their chances of development, ends up being reflected in the lack of training strategies for these businesses.

SMEs are somewhat wary of devoting resources to training, which leads to insufficient investment in it, and the development agencies lack a clear sense of the priorities to address, so the focus of the support instruments is insufficient.

Country-specific cases: programmes to strengthen human resources in SMEs

Argentina: tax credit programmes and activities run by the training centres of the sectoral chambers of commerce

In Argentina the demand-side approach to policy is dominant, primarily through tax credit programmes. For example, the Worker and Management Training Tax Credit Programme run by SEPYME is aimed at SMEs. This tool lets these businesses get partial refunds of their investment in training their human resources, in open-enrolment activities (administered in public or private institutions) or closed-enrolment activities (courses custom-designed for the business) (SEPYME, 2012). The programme operates in two modes depending on the size of the business. The first enables large companies and SMEs that fund training for other SMEs to be reimbursed. The second is for “beneficiary SMEs”, which can claim reimbursement for training activities carried out by company owners and in-house employees.

The Ministry of Labour, Employment and Social Security also has a tax-credit programme consisting of incentives for SMEs and large enterprises to generate projects along one of the following fundable lines: i) vocational training; ii) design and certification of primary, secondary, tertiary or higher education; iii) occupational training for the unemployed; and iv) strengthening and/or certifying management quality in vocational-training institutions based on the benchmark defined by the ministry. The programme supports bolstering the job skills of employed and unemployed workers, while letting vocational-training institutions obtain new equipment and become stronger institutions (MTEySS, 2012).

For training of SME workers in Argentina the demand-side policy approach is dominant, especially through tax-credit programmes.

Another relevant experience is related to increasing co-ordination between the training supply and the training needs of the production sector. In Argentina this has been implemented through the Sectoral Chambers' Training Centres. As previously mentioned, INET plays an important role through the vocational training programme.

This has promoted the establishment of sectoral networks for vocational training for the following industries: i) car repair; ii) electricity; iii) metallurgy; iv) wood and furniture; v) tourism, hotels and catering; vi) leather and footwear; vii) construction; and viii) agriculture. A new network is also being set up for the textile and clothing industry. Two types of institutions make up these networks: those that provide vocational training; and agencies, associations or bodies that sponsor, promote or use vocational training services.

Notable examples are the initiatives conducted by the footwear and graphics sectoral chambers. The former has the Footwear Industry Human Resources and Technology Centre (CEFOTECA), active in supplying training to operators and technicians specialised in footwear, and consulting and technical assistance. This centre has support from the Avellaneda Regional Faculty of the National Technological University (UTN FRA) and the Leather Technology Research Centre (CITEC), affiliated with the National Industrial Technology Institute (INTI). Since 1907, the graphics industry has had the support of the Gutenberg Foundation as a provider of technical vocational training at the higher-education and continuing-education level. This private foundation's activities also include applied research, technology assistance and services, and management for development of the graphics sector, and it works closely with the production sector and the education system, especially with regard to vocational and specialised training.

Another notable feature of the Argentine approach is the role of technical education (in secondary and tertiary education) and INET's efforts to strengthen it and integrate it into the national education system. This includes initiatives to promote the institutionalisation of technical education providers and recognition and validation of the material taught. INET is responsible for co-ordinating industry-specific forums, which bring together representatives of workers, management, science and technology institutions, and industry experts. The forums aim to identify the training needs in each sector and outline the professional profiles required, as a preliminary step to designing the course offerings.

Brazil: the spread of distance learning through SEBRAE and the SENAI model for promoting dialogue among workers, management and trainers

Two helpful models for meeting SMEs' training needs stand out in Brazil: the one run by the Brazilian Micro and Small Enterprise Support Service (SEBRAE) and the one from the National Industrial Learning Service (SENAI), one of the region's largest education systems for vocational and technology-based training.

SEBRAE is a private non-profit organisation which has been fostering the competitiveness and sustainable development of SMEs since 1972 through programmes that promote training, co-operation, regional development and access to markets. It develops these programmes in collaboration with the public and private sectors. The institution has a network of nearly 700 in-person service centres throughout the country and increasingly invests in developing new channels and formats for communication, transmission and dissemination of knowledge through ICTs, which are accessible to smaller businesses and facilitate training via distance learning (SEBRAE, 2012).

Founded in 1942 on the initiative of the production sector, SENAI embodies the so-called "Industry System" and has 797 operating units, supporting 28 industrial areas. Training human resources and providing technical and technological services are their main activities, which aim to serve more than 2.3 million workers a year. SENAI has

federal directorates and regional offices spread over 26 states, to meet the professional and local development needs of these territories (SENAI, 2012).

Brazil has two large systems for training in SMEs: SEBRAE, which offers in-person training as well as distance learning, and SENAI, one of the region's largest institutions for vocational and technology training.

Besides its impressive scope, SENAI's operations stand out in the region thanks to various experiences, but particularly two: creating and implementing sectoral technical committees for dialogue among workers, managers and trainers; and creating a long-term planning model for training (Box 5.2), through which it works with the sectoral committees to identify future training needs and meet this demand. Given its success, this system is spreading to other countries in the region.

Box 5.2. SENAI's long-term planning model for training

SENAI's long-term planning model was developed in co-operation with Brazil's main universities to answer this question: "How many workers should be trained in the future and what qualifications should they have?" in order to reduce potential imbalances between the supply and demand of training.

This model makes it possible to estimate how quickly various emerging technologies will spread and likely organisational structures in the short term, and to generate estimates of the demand for workers every five years. Based on these estimates regarding technology, organisation, jobs and education, subsidies are issued to develop proactive measures in the areas of vocational education, technical services and technology services (Martins, 2008).

The analysis that this method produces takes into account:

Emerging technologies most likely to catch on in the next five and ten years in a given sector or segment of Brazilian industry.

Organisational trends most likely to occur in the next five and ten years in a given sector or segment of industry.

Educational trends regarding changes in skills among SENAI's target public and identifying education gaps in that same public.

Occupational trends in the sector's job market over the next five years, in light of the spread of emerging technologies.

Occupational impacts that may be caused by the spread of emerging technologies and consolidation of organisational trends.

The earlier stages are correlated and contextualised to generate recommendations, in a moment known as a "thematic antenna". This planning method has been used to analyse and make recommendations to numerous industries, including textiles, petrochemical, machinery and equipment, telecommunications, construction (building), footwear, food (meats), foundries, shipbuilding and repairs, and industrial automation.

Source: Caruso (2011).

Sectoral technical committees hold sector-specific consultative forums for discussion of issues around education and work. The participants in these events are professionals and experts from within and outside SENAI whose practical and theoretical knowledge helps inform the decisions that are made about professional-education activities. The main functions of these committees are to: i) define skills-based professional profiles, including performance assessment parameters; ii) update these profiles on an ongoing basis; and iii) provide input for the development of professional certification standards (Martins, 2008).

Chile: SENCE's experience with the tax exemption programme

The Tax Exemption Programme implemented by SENCE consists of a tax deduction for businesses that plan, design and execute training programmes for their workers. This tax deduction is capped at 1% of taxable payroll for the year, or for the month in the case of SMEs. Through this tax exemption, businesses can use three mechanisms to train their staff: i) direct training, in which the business organises and develops its own training processes for its workers; ii) hiring specialised staff; and iii) education through technical training agencies (“OTECs” in Spanish), which are institutions authorised by SENCE to provide training services (professional institutes, private institutions, technical training centres and some universities).

The third approach is the most widely used. This involves technical-training intermediary agencies (“OTICs” in Spanish), which are recognised by SENCE and provide consulting services and technical support to businesses. Grouped by sector or region, these agencies do not provide courses directly but administer training resources that businesses give them in order to develop, organise and oversee training and technical-assistance programmes for the development of human resources. (Poblete, 2004).

Although technical agencies are the most common source of such training in Chile, they are little used by SMEs.

It has been clear for years that SMEs rarely use this instrument and that it is unable to generate training options in areas that would require major investment by PTIs (industrial technology and processes, for example).⁶ The attempts at correcting this situation in Chile have yielded no relevant results, basically because there was no change in the underlying logic that gives the market the role of connecting businesses' training demand to the available supply (Dini and Stumpo 2002; Belmar and Maggi, 2010).

Colombia: support for starting up SMEs and improving business management

The National Learning Service (SENA) fosters the strengthening of SMEs through its training, modernisation and technical-consulting programmes, which include both in-person and virtual vocational training. Its SME strengthening programme provides support to improve their business-management indicators related to ICTs, logistics and human-talent management. Another form of assistance to SMEs is through the national government's Entrepreneurship Fund, administered by SENA. This fund is intended to facilitate business start-up resulting from groupings of apprentices, interns and recently graduated professionals. It prioritises projects targeting the rural sector, especially those that are part of the Young Rural Entrepreneurs Programme.

Mexico: support for strengthening SMEs' capabilities based on the type of business and the certification of competencies (CONOCER)

The training and consulting programmes of the Undersecretariat for SMEs (SPYME) in Mexico were structured based on the type of business (entrepreneurs, micro-enterprises, SMEs, “gazelle companies” and “market-driving companies”).⁷ This is a distinctive feature of this policy towards SMEs, in which the beneficiaries are segmented based on their current phase of growth.

SPYME has the Support Fund for Micro, Small and Medium-sized Enterprises (SME Fund), an instrument that grants temporary aid to programmes and projects that encourage the creation, development, consolidation, viability, productivity, competitiveness and sustainability of micro, small and medium-sized enterprises. One of its areas of activity is training and/or consulting, through seminars, workshops, certificate programmes and specialised courses for SMEs, which help bolster management skills and foster an increase in productivity and competitiveness, and improving the businesses' organisation.

Also notable in Mexico is the structuring of a national skills certification system, co-ordinated by the Job Skills Standardisation and Certification Council (CONOCER), an agency affiliated with the Secretariat of Public Education and Secretariat of Labour and Welfare, with a three-part structure including representatives of the government (from the areas of agriculture, finance, education, the treasury, and labour, among others), business managers and workers. CONOCER organises the Skills-Based Management Committees, represented by business managers and workers, which, with support from technical groups, develop the competency standards applicable to their respective sectors. Once these standards are defined they are recorded in the National Register of Competency Standards.

The competency standards serve as inputs for developing training curricula (in greater alignment with the requirements of the production sector, society, government, and the education system) and are also used as criteria in assessing and certifying various organisations and institutions. Only agencies accredited by CONOCER to train, assess and/or certify these labour competencies can do so based on the standards documented in the National Registry (“Certification and Assessment Agencies”).

Peru: small-business service centres

The National Industrial Training Service (SENATI) was founded in 1961 on the initiative of the production sector to develop professional skills needed for successful performance in industrial manufacturing and jobs related to installation, repairs and maintenance. To fund it, they agreed to a monthly financial contribution or self-imposed tax. This is a privately managed public agency, devoted to vocational training and the development of technical services. Business managers take part in the decision making, planning and development of the vocational training, which focuses on specific job skills.

SENATI offers specialised training at different levels (technical and vocational) in the following areas: business administration, agribusiness, graphic arts, communications, electrical engineering, travel and tourism, food industry, information technology, jewellery, goldsmithing and silversmithing, car repair, metallurgy, textile/fashion, and woodworking.

To meet SMEs' needs, the agency has Small-Business Service Centres (CENTROPYMEs), which seek to boost productivity, the quality of products and innovation, and access to new technologies in smaller businesses. The centres offer business diagnostics, training, consulting, information and technical assistance, and have consultants to address different areas of production related to clothing and fashion, metallurgy, business management, processing of food, carpentry and environmental management.

Towards a human-capital training strategy for SMEs: conclusions and public-policy recommendations

SMEs in Latin America face major challenges related to the shortage of human capital and job skills, which affect the sector's productivity. The challenges the region has traditionally confronted in terms of availability and quality of education are exacerbated by the challenges of globalisation and technological change with new training demands that the education system and job training system must respond to. Further progress is needed in developing institutional capabilities and in designing and applying policies to satisfactorily meet SMEs' various demands for competencies.

Strengthening the institutional framework among managers, workers and trainers to advance a shared definition of qualifications that promote co-ordination with job skills, the development of mechanisms to anticipate demand for competencies, and promotion of classroom training and workplace training are some of the policies that can have a relevant impact.

A description of some of the fields where public policy in the region can have a relevant impact follows.

1) Developing the link between the education system and the job market, between supply of training and the demands of the production sector. Progress can be made in several directions:

- Strengthening the institutional framework to foster dialogue between managers, workers and trainers; and opening a steadier flow of communication, to help understand the nature of the supply and demand. Countries such as Finland, for instance, have developed an interesting system of dialogue between labour and management, which leads to jointly defined qualifications and fosters consistency between the available skills and employers' needs.
- Developing mechanisms to anticipate the market's demand for competencies. Brazil's SENAI long-term planning model is a good point of reference.

Other Latin American examples that aim to strengthen co-ordination between the education system and the production sector include Mexico's CONOCER, while on the sectoral level there are the Sectoral Certification Councils sponsored by Argentina's Ministry of Labour, Employment and Social Security, Brazil's SENAI Sectoral Technical Committees, and Colombia's SENA Sectoral Committees.

Besides more traditional training, it is important for the training curriculum to include so-called “soft skills” and give greater relevance to generic competencies applicable to different work environments.

2) Promoting training paths that combine classroom sessions with workplace training, and which continue throughout the worker’s adult life. The two-prong model of vocational training in Germany is perhaps the most representative example of this strategy, which combines training in companies and learning centres, and enjoys a high participation rate among the workforce, besides being well regarded in German society.

3) Reforming the technical- and vocational-training curriculum to include “soft skills” and give greater weight to generic competencies. This helps resolve some of the main training gaps identified in the region and which are demanded by the production sector. It also fosters the workforce’s ability to adapt to changing professional requirements and boosts the employability of the workforce throughout their adult lives.

4) Make progress in establishing credible benchmarks to suitably define assessment scores and their relationship with the various education levels, whether resulting from formal education, vocational training, practical experience or some combination of these. A certification system would make it possible to validate hands-on training and give it the greater recognition and the social prestige it deserves. This is especially relevant in Latin America, where young people often drop out of school to work for a living, and as a result the recognition of training obtained through informal channels or in the workplace is vital for one’s prospects for professional success. A useful approach that could be adapted to each country’s needs is the European Qualifications Framework for Lifelong Learning (EQF), a fairly advanced scheme for recognising, interpreting and converting qualifications among EU countries. To be effective, however, this framework requires institutional capabilities and a certain amount of social capital, both within the government and among the private and social agents involved.

An essential challenge facing SMEs in Latin America is to strengthen the professionalisation of these businesses’ managers and senior executives to identify training needs and implement the production advantages of worker training.

5) Strengthening and broadening the co-ordination of vocational training with the social and regional context, as well as the production and technology environments. This is a key way to achieve synergies, foster results and contribute to the specific development of comparative advantages. Also, it is an education policy not focused exclusively on demand, but also an instrument to help generate a supply of training that is high in quality and therefore aligned and co-ordinated with industrial policy.

6) Promoting professionalisation of small businesses’ managers and senior executives, a central challenge that is very important in order to properly grasp the existing qualification problems and boost productivity by making the most of the training available to workers. At the same time, managers’ ongoing acquisition of specialised knowledge about the specific area or sector they work in is important for their development. A notable case is SENA’s SME Strengthening Programme in Colombia,

which promotes training initiatives to improve business management with emphasis on ICTs, logistics and human-talent management.

7) Establishing and/or strengthening institutions and the incentive programmes to encourage SMEs to provide in-house training for workers and have greater participation in externally provided training programmes. More progress could be made in creating networks of SMEs to activate synergies and take advantage of economies of scale, instituting frameworks of tax incentives for training, and using ICTs in training.

8) Improving information and broadening the basis for empirical proof of job skills to get a more accurate diagnosis of the region's training challenges and how well aligned its education systems are with the needs of the production sector. This favours a more efficient, sustained and focused design for public policy in this field. Initiatives such as the OECD's PIAAC can represent a chance to improve this diagnosis and make international comparisons.

9) Putting in place assessment mechanisms and programmes to evaluate the impact of the policies applied and appropriate use of the invested resources. This will focus policies on quality assurance, guaranteeing compliance with the established goals and continual improvement of the policies' design and application.

It is important to move forward in establishing credible benchmarks that make it possible to suitably define qualifications and foster recognition of practical training. Additionally, strengthening the institutions and the programmes by providing incentives for SMEs to conduct in-house training and co-operation among themselves can be very useful.

Notes

1. Estimates based on data from ECLAC, ECLACSTAT, 2012.
2. Estimates obtained from data of the World Bank *Enterprise Surveys*, 2012.
3. An interesting example of working to promote the use of ICTs in SMEs' training is the *Guía metodológica para diseñar estrategias de capacitación basada en TIC para mipyme* (A Methodological Guide to Designing ICT-Based Training Strategies for MSMEs), prepared by ILO/CINTERFOR in co-operation with institutions in various countries in the region.
4. Such training agencies are found in Colombia, Costa Rica, the Dominican Republic, Panama and Uruguay.
5. SENA and INFOTEP are public institutions funded mainly through corporate payroll tax.
6. According to SENCE's annual statistical report (2010), of all the large enterprises and SMEs that took advantage of the tax exemption in 2010, the economic sector that provided the most training to its employees was retail and wholesale; followed by property, business administration and leasing activities; and then non-metal manufacturing. These three sectors account for about 43.5% of the participants trained in 2010 who were claimed under the tax-credit programme, and the most requested type of training was in business administration.
7. See Chapter 2.

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