1 Key insights and recommendations for Tlaxcala, Mexico

This chapter summarises the key insights and policy recommendations of the OECD Skills Strategy project in the Mexican state of Tlaxcala. It applies the OECD Skills Strategy framework to assess the characteristics and performance of the Tlaxcalan skills system, and summarises the key findings and recommendations for each of the four priority areas for action: 1) strengthening the skills of youth; 2) fostering greater participation in adult learning; 3) using people's skills more effectively to raise productivity; and 4) strengthening the governance of skills policies. The subsequent chapters examine each of the four priority areas in greater detail.

Skills matter for Tlaxcala

Skills are vital to help countries and individuals adapt to and thrive in an increasingly complex, interconnected and rapidly changing world. Countries become more productive and innovative and enjoy higher levels of trust, health and a higher quality of life when people develop relevant skills, and use their skills effectively at work and in society. As megatrends and the COVID-19 pandemic reshape societies and economies, getting skills policies right becomes even more crucial for increasing productivity and promoting inclusive and sustainable growth.

In recent years, Mexico has made sustained progress in strengthening its economic performance. Moderate growth over the past two decades has been supported by oil wealth, growth of the working-age population, and open trade and investment policies. Integration into global value chains has driven robust export growth while a recovery in real wages, stable flows of remittances and credit growth have supported consumption. Nevertheless, moderate economic growth has not yet translated into improved relative living standards, and pervasive inequality remains a challenge.

Tlaxcala's economy has experienced robust growth since 2011, driven largely by growing economic output in the manufacturing, construction, mining and automotive industries, as well as foreign direct investment. (SEDECO, 2021[1]). In 2019, for example, Tlaxcala's economy grew 6.5%, the highest growth rate among Mexican states. Tlaxcala has been an attractive destination for foreign direct investment, particularly in the automotive and manufacturing industries, owing to its strategic and geographical location, safety, and young population. However, this sustained growth has been radically interrupted by the COVID-19 pandemic and uncertainties related to the impact of the United States-Mexico-Canada Agreement (USMCA) on trade.

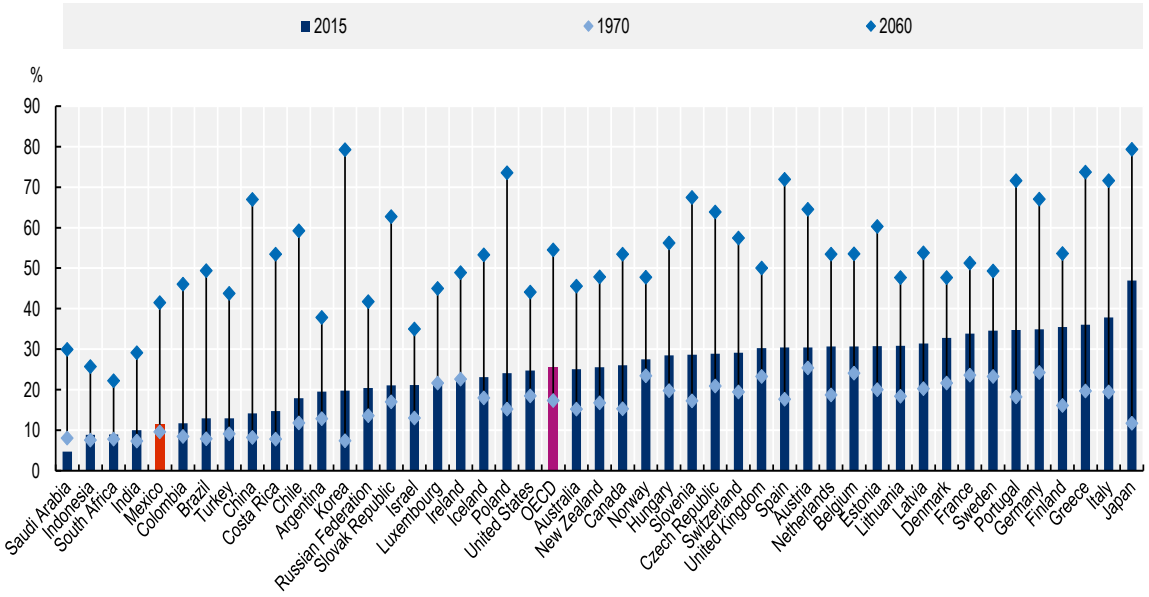
Therefore, developing relevant skills and using them effectively will be crucial to help Tlaxcala improve its productivity and competitiveness in key sectors, as well as to create an enabling environment for more inclusive and sustainable economic growth in the long term.

Demographic changes and digitalisation pose challenges to Mexico's prosperity

In Mexico, the population aged 65 years and older is projected to grow by almost 300% from 8.2 million in 2015 to over 30 million by 2050 (AARP & FP Analytics, 2017[2]). Population ageing implies a shrinking share of the working-age population and an increasing old-age dependency ratio – the number of people of retirement age (65+) per 100 people of working-age (20-64). Although Mexico had the lowest old-age dependency ratio among OECD countries in 2015, the ratio is projected to almost quadruple by 2060, showing the sharpest increase across OECD countries, alongside Turkey and Korea (Figure 1.1). The shrinking working-age population will likely decrease the labour force participation rate, compromising the contribution of labour utilisation to economic growth and making productivity an even more crucial determinant of Mexico's economic development.

Figure 1.1. The old-age dependency ratio will increase fourfold by 2060 in Mexico

Number of people of retirement age (65+) per 100 people of working-age (20-64), in 1970, 2015 and 2060 predictions



Source: OECD (2016[3]), *Society at a Glance: OECD Social Indicators*, https://doi.org/10.1787/9789264261488-en.

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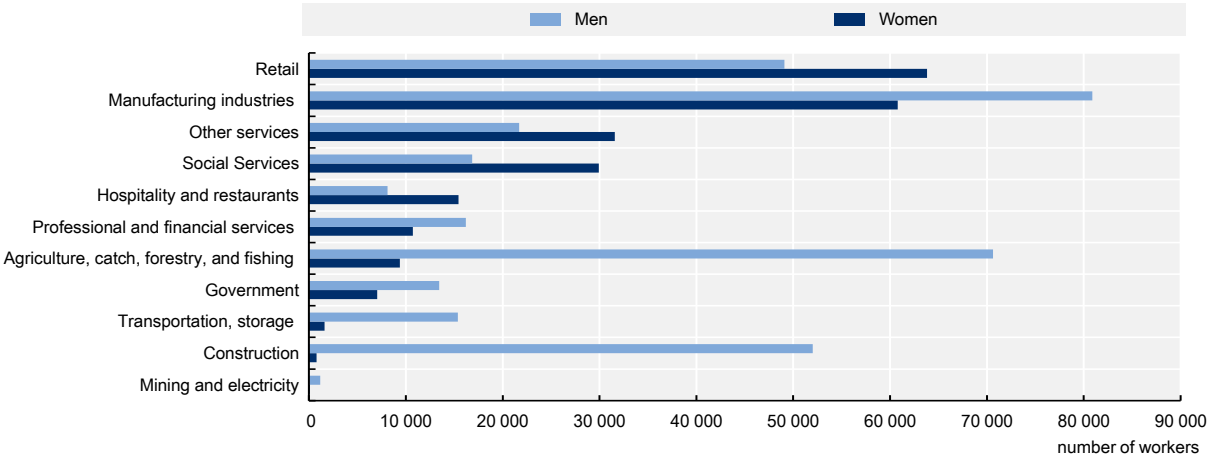
Another challenge facing Tlaxcala's skills system is job automation. The digital transformation, driven by advances in technology including machine learning, big data and artificial intelligence (AI), is changing the nature of certain jobs, and reshaping how certain tasks are performed. Tlaxcala is particularly exposed to these changes as employment is highly concentrated in the manufacturing sector (Figure 1.2). The OECD Programme for the International Assessment of Adult Competencies (PIAAC) suggests that in Mexico, about 25% of workers face a high risk of seeing their job automated, and another 36% face significant changes in their job tasks due to automation (Figure 1.3) (Nedelkoska and Quintini, 2018[4]).

Figure 1.2. Tlaxcala's economy is concentrated in a handful of sectors

Total female and male employment in Tlaxcala, by economic sector



Note: "Others" includes: scientific, technical and professional services; real estate services; cultural and recreational services; construction; financial services; generation, transmission and distribution of energy; agriculture, catch, forestry and fishing; mass media; and mining and corporate services.
Source: INEGI (2021[5]), *Data*, https://en.www.inegi.org.mx/datos/.

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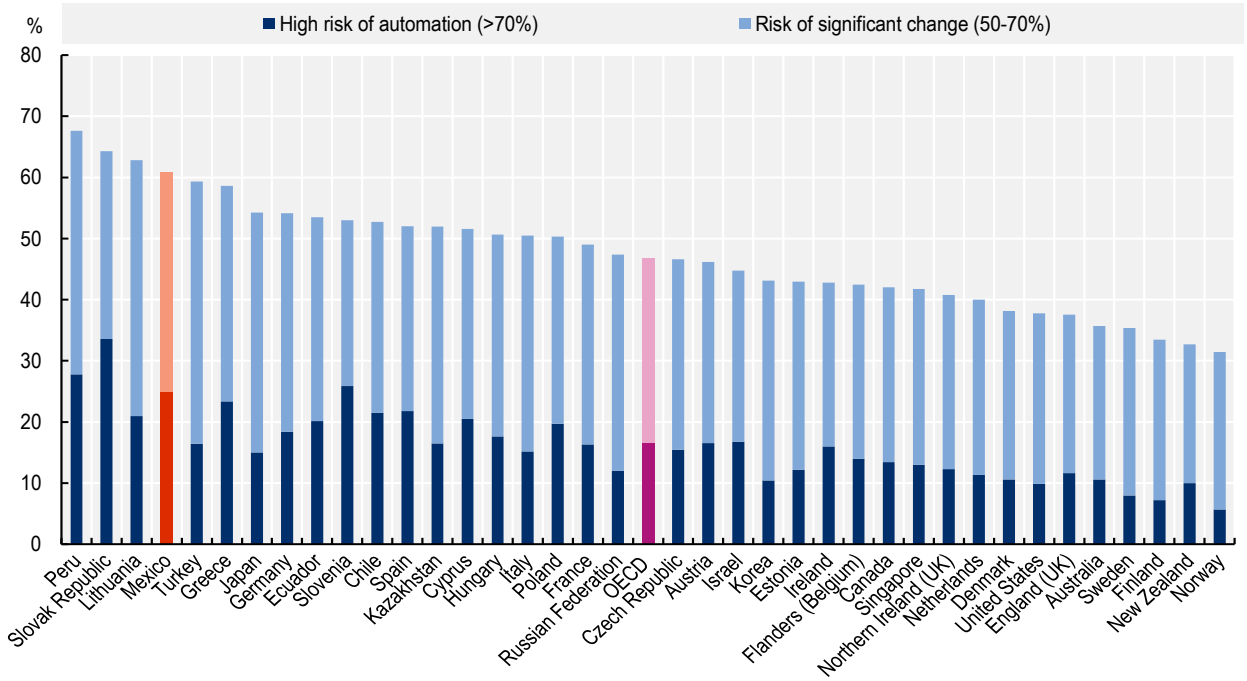
Figure 1.3. Job automation and percentage of jobs at risk of significant change

Percentage of jobs at high and significant likelihood of automation



Source: Nedelkoska and Quintini (2018[4]), *Automation, skills use and training*, http://dx.doi.org/10.1787/2e2f4eea-en.
Notes: Jobs are at high risk of automation if their likelihood to be automated is at least 70%. Jobs at risk of significant change are those with the likelihood of being automated estimated at between 50 and 70%. The values for "OECD" are simple averages. The sample for the Russian Federation does not include the population of the Moscow municipal area. The data for the United States are from 2017.

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Low productivity and low female labour force participation dampens potential well-being improvements

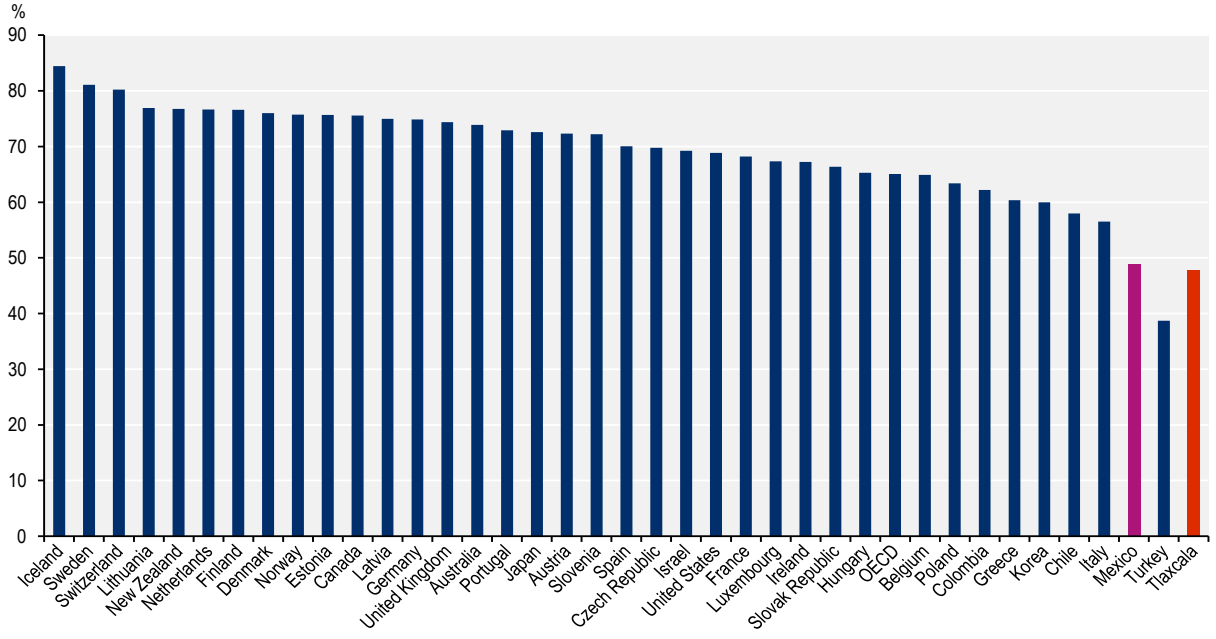
Despite sustained moderate economic growth, Mexico's productivity growth is weak (OECD, 2019[6]). Among all states, Tlaxcala recorded the lowest productivity growth between 2010 and 2016, at -1% per year (OECD, 2018[7]). Tlaxcala's gross domestic product (GDP) per capita is among the lowest in Mexico, implying low firm productivity. The low productivity of Tlaxcalan workers, demonstrated by Tlaxcala's low gross value added per worker, is another challenge as it can lead to the reduced marginal return on labour for firms, creating a vicious cycle of lost productivity gains.

The weak productivity of Mexican labour is brought about largely by poor educational attainment and low skills achievement, weak rule of law, obstacles to competition, and widespread job informality (OECD, 2019[6]). Only 48% of Mexican adults aged 25-34 complete secondary education, considerably lower than the OECD average of 84%, and only 23% possess tertiary education degrees, significantly below the OECD average of 43%. Mexico is falling behind the OECD average in developing people's skills and using them effectively (Figure 1.9).

Tlaxcala, like most states in Mexico, faces challenges in fostering a dynamic and inclusive domestic economy, despite geographical and infrastructural advantages. These challenges are reflected in both low female labour force participation and high rates of informality. Despite a continual rise throughout the last decade, female labour force participation in Mexico remains below the OECD average of 64% (Figure 1.4). Among women aged 20-64, 46.7% are active in the labour force, compared to 81.8% of their male counterparts.

Figure 1.4. Women's skills could contribute more to Tlaxcala's local economy and productivity

Female labour force participation rate, 2019



Source: OECD (2021[8]), *Labour force participation rate (indicator)*, https://data.oecd.org/emp/labour-force-participation-rate.htm; INEGI (2020[9]), *Methodological scope of the national occupation and employment survey: ENOEN*, https://www.inegi.org.mx/contenidos/programas/enoe/15ymas/doc/enoe_n_nota_tecnica_0820.pdf.

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The new trade agreement poses uncertainties for skills needs and development

Globalisation has led to the emergence of global value chains (GVCs) that allow different parts of production processes to be performed in different geographical locations, which has important skills implications. GVC participation has facilitated the flow of investment into Tlaxcala, in particular to the manufacturing and automotive sectors. Nonetheless, participation in GVCs can also increase uncertainties due to the changing dynamics of international trade. In particular the USMCA, which replaced the North American Free Trade Agreement (NAFTA) in July 2020, will likely bring about significant changes in labour market demand and supply. The USMCA maintains most of NAFTA's 22 chapters, making notable revisions in the areas of automotive and agricultural products, investment, intellectual property rights, labour rights and the environment. The USMCA makes three significant changes pertaining to the automotive sector. First, under new regulations for the regional value content, vehicles must have 75% North American content, as opposed to 62.5% under NAFTA. Second, the new laws for the labour value content call for 40-45% of auto content to be made by workers who earn at least USD 16 per hour. Third, at least 70% of the annual steel and aluminium purchases of a producer must originate in North America (Garsten, 2020[10]; Congressional Research Service, 2021[11]).

The changes adopted in the new trade deal will potentially reshape the competitiveness and success of different economic sectors, affecting the supply of jobs and demand for skills in the labour market (OECD, 2019[6]). Lower bilateral tariffs under the USMCA are projected to increase production in labour-intensive sectors in Mexico, increasing demand for both low-skilled and skilled workers. Increased labour demand in Mexico is likely to put upward pressure on Mexican wages, incentivise low-skilled Mexican workers to remain in Mexico instead of migrating to the United States, and potentially attract emigrant workers back to Mexico. These potential skills implications increase the need for Mexican states to build strong skills systems that can adapt and respond swiftly to the impact of the new agreement in order to benefit fully from its incentives.

The COVID-19 pandemic poses unprecedented economic and social challenges to Mexico

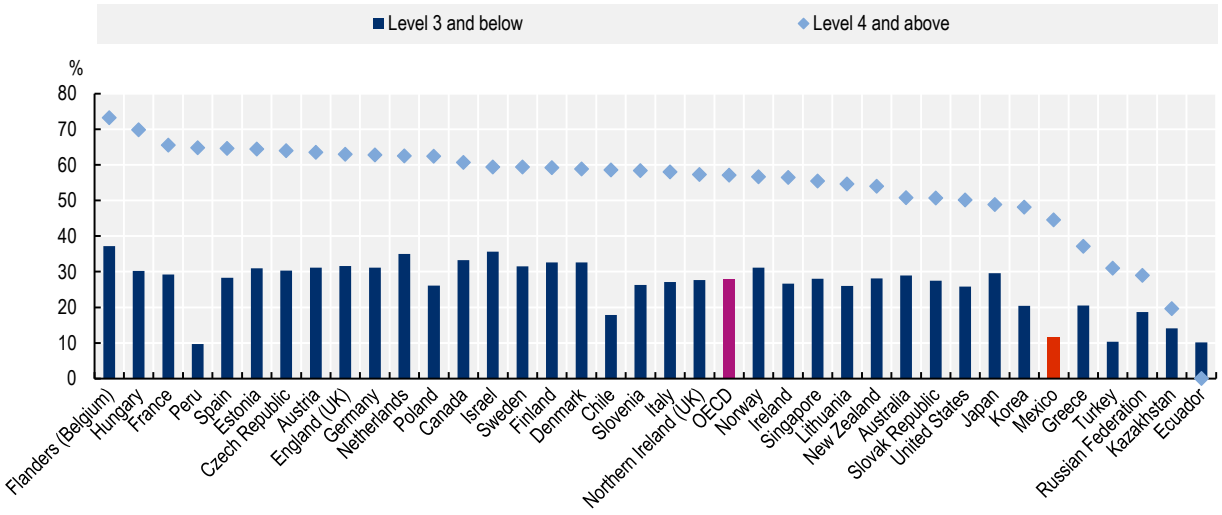
The COVID-19 pandemic and subsequent national lockdowns and restrictive measures are upsetting existing supply chains and halting production, as well as reducing demand by causing a steep drop in consumption. While Tlaxcala has put in place measures to contain the pandemic (including closures of schools, public offices and most public spaces) and limit the impact on public health, COVID-19 has had an enormous impact on society and the economy that will be felt for years to come.

Due to COVID-19, the modality of teaching has experienced a tremendous transition to distance learning due to prolonged restrictive measures. The mass adoption of distance learning has challenged teachers' preparedness to adequately use technology and has increased the role of stakeholders, including parents, teachers and school principals, in supporting the quality of learning.

COVID-19 has also led to the increased incidence of teleworking; however, there is a wide variation in the share of jobs compatible with teleworking across OECD countries. The feasibility of teleworking, and by extension the capacity to sustain countries' economic activity even during a pandemic, is correlated with the levels of skills that people possess. In Mexico, only 12% of workers with relatively low literacy skills have jobs compatible with teleworking (compared to an OECD average of 28%), while 45% of workers with relatively high literacy skills can telework (OECD average 57%) (Figure 1.5). This implies that efforts to equip the population with relevant skills through continued upskilling and reskilling will help Mexico improve resilience in the face of large-scale disruptions such as COVID-19.

Figure 1.5. Feasibility of teleworking by level of literacy skills

Percentage of workers whose jobs are compatible with teleworking, by level of PIAAC literacy proficiency



Source: Espinoza and Reznikova (2020[12]), *Who can log in? The importance of skills for the feasibility of teleworking arrangements across OECD countries*, https://dx.doi.org/10.1787/3f115a10-en.

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Adults will need to upskill and reskill more regularly in the context of rapidly changing labour market demands

In the context of changing labour market demands due to COVID-19 and increasing uncertainties posed by the USMCA, Tlaxcalan adults need to upskill and reskill more often now than in the past. Training opportunities should become more accessible and affordable in Tlaxcala to help adults perform new tasks in their existing jobs, or acquire new skills for newly created jobs. More tailored support should be provided to low-educated, low-income and low-skilled adults who show particularly low participation in training.

Skills should be at the core of the policy responses to build a resilient economy and society

Skills are key to the capacity of countries and individuals to thrive in an interconnected and rapidly changing world. Building effective skills entails the mobilisation of knowledge, competencies, attitudes and values to meet complex demands. A wide variety of skills are important for enabling individuals and countries to be adaptable and resilient to changing skills demands (Box 1.1).

Box 1.1. Definitions of the types of skills needed to succeed in work and society

The OECD Skills Strategy 2019 identifies a wide range of skills that can foster the economic and social performance of countries and individuals, including:

- **Foundational skills** include literacy, numeracy and digital literacy skills that need to be mastered at a high level for people to adapt to changes in their jobs and in society. If equipped with strong foundational skills people will be better positioned to acquire new knowledge and develop other skills such as analytical, social and emotional skills, and will be prepared to continue learning throughout life.
- **Transversal cognitive and meta-cognitive skills** such as critical thinking, complex problem solving, creative thinking, learning to learn and self-regulation are needed not only to respond to the challenges of the future, but also to reshape the future for the better.
- **Social and emotional skills** such as conscientiousness, responsibility, empathy, self-efficacy and collaboration help make kinder, gentler and more tolerant societies.
- **Professional, technical and specialised knowledge and skills** are needed to meet the demands of specific occupations, but must have sufficient transfer potential to be applicable in new and yet unknown fields.

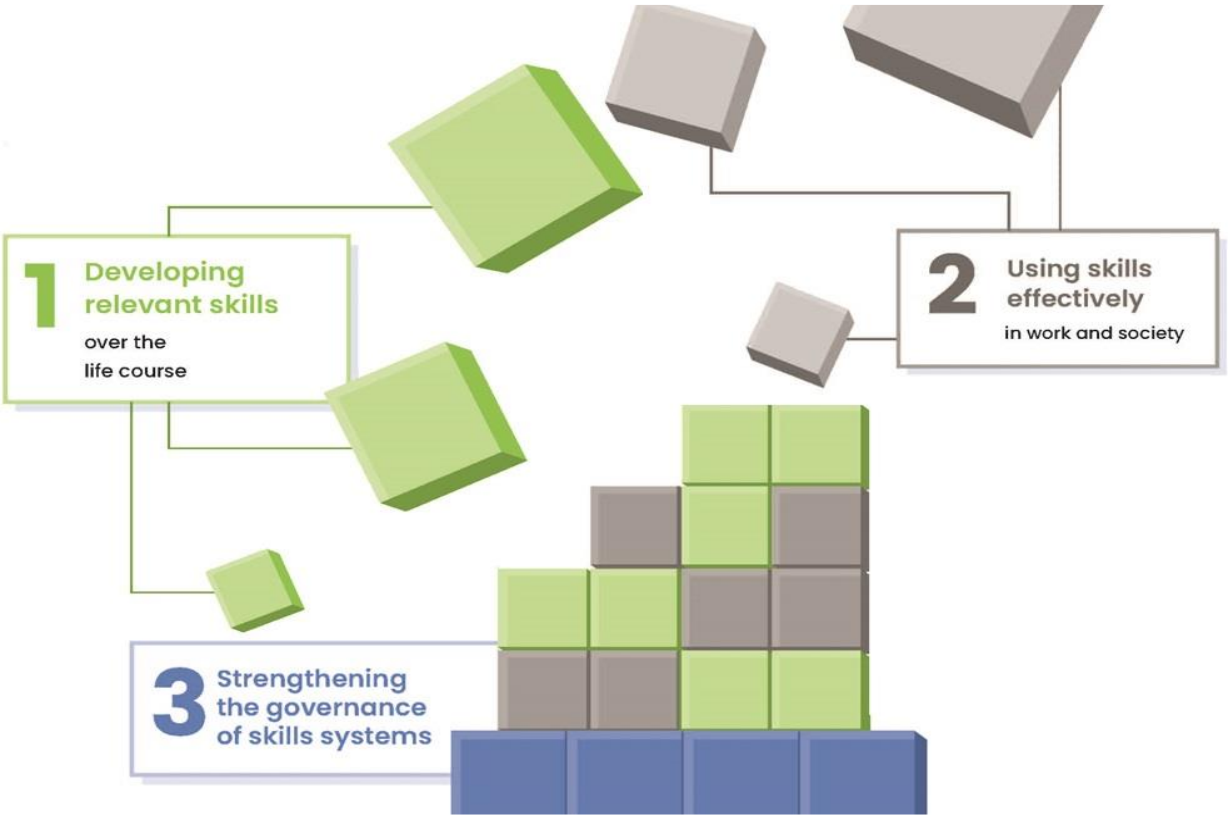
Source: OECD (2019[13]), *OECD Skills Strategy 2019: Skills to Shape a Better Future*, https://dx.doi.org/10.1787/9789264313835-en.

The OECD Skills Strategy project in Tlaxcala

OECD Skills Strategy projects provide a strategic and comprehensive approach to assess countries' skills challenges and opportunities, and to build more effective skills systems. The OECD works collaboratively with countries and regions to develop policy responses tailored to their specific skills challenges and needs. The foundation of this approach is the OECD Skills Strategy Framework (Figure 1.6), the components of which are:

- **Developing relevant skills over the life course**: To ensure that countries and regions are able to adapt and thrive in a rapidly changing world, all people need access to opportunities to develop and maintain strong proficiency in a broad set of skills. This process is lifelong, starting in childhood and youth and continuing throughout adulthood. It is also "life-wide", occurring formally in schools and higher education, as well as non-formally and informally in the home, community and workplaces.
- **Using skills effectively in work and society**: To ensure that countries and people gain the full economic and social value from investments in developing skills, people need opportunities, encouragement and incentives to use their skills fully and effectively at work and in society.
- **Strengthening the governance of skills systems**: Success in developing and using relevant skills requires strong governance arrangements to promote co-ordination, co-operation and collaboration across the whole of government; engage stakeholders throughout the policy cycle; build integrated information systems; and align and co-ordinate financing arrangements.

Figure 1.6. The OECD Skills Strategy Framework



Source: OECD (2019[13]), *OECD Skills Strategy 2019: Skills to Shape a Better Future*, https://dx.doi.org/10.1787/9789264313835-en.

The OECD Skills Strategy project in Tlaxcala supports this method by forming an inter-ministerial project team to support a whole-of-government approach to skills policies, and by engaging a large number of stakeholders in workshops and small group and bilateral meetings. All workshops and meetings were held virtually given the restrictive measures and travel restrictions due to COVID-19.

The project officially started with a seminar held on 7 July 2020 with the presence of the Governor of the State of Tlaxcala, high-level representatives from five secretaries of the Government of Tlaxcala, and the Ambassador and First Secretary of the Permanent Delegation of Mexico to the OECD.

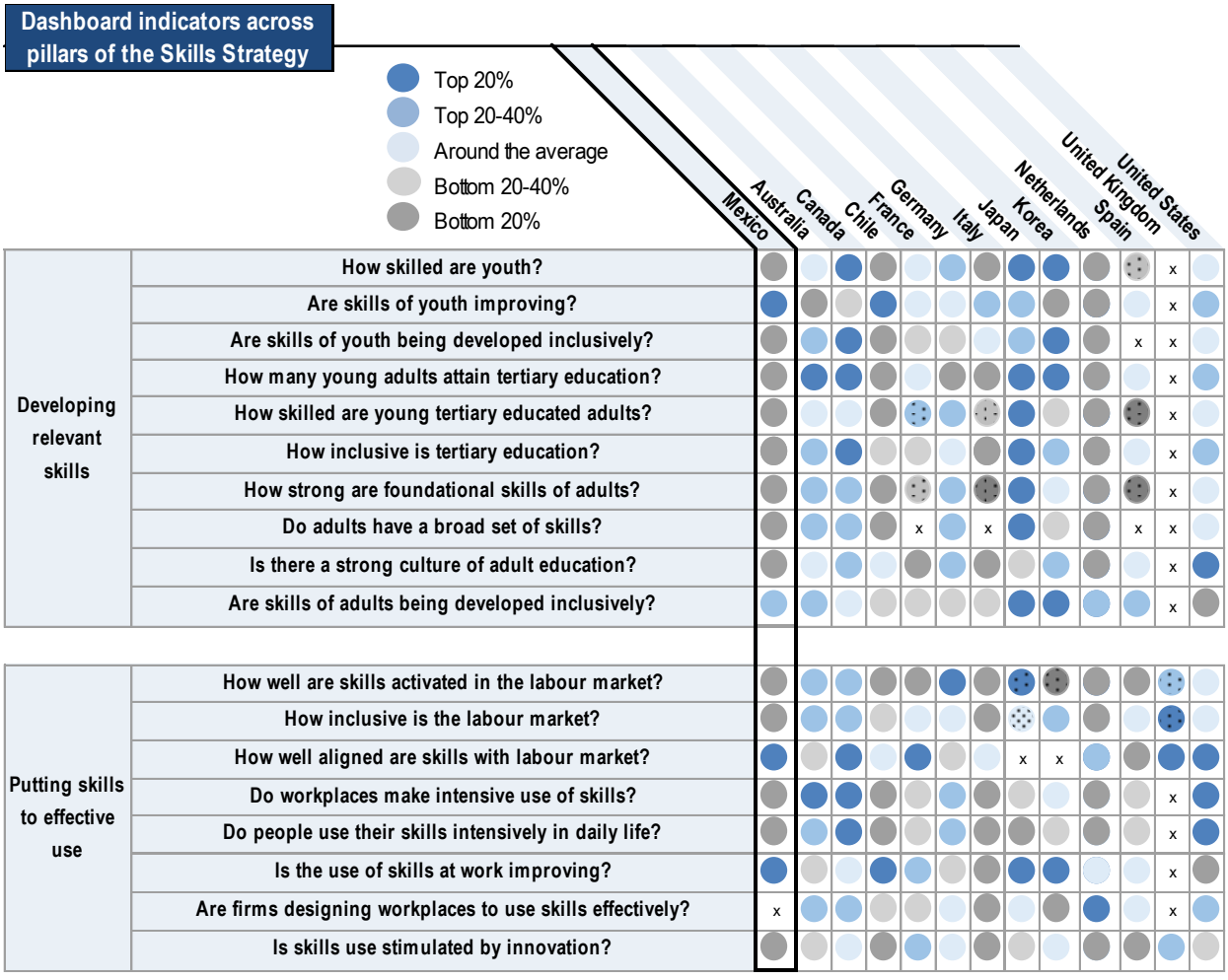
Following this seminar, two workshops (assessment and recommendations workshops) were held. The assessment workshop was held on 19-20 October 2020 to collect insights on Tlaxcala's performance and initiatives in the four identified priority areas, refine the topics to be developed within each area, generate stakeholder support for the project, and raise awareness of the project's objectives. The plenary session (19 October 2020) gathered approximately 130 participants, including the Governor of the State of Tlaxcala, and the Ambassador and the First Secretary of the Permanent Delegation of Mexico to the OECD.

The recommendations workshop was held 14-15 December 2020 (with more than 130 participants) to discuss and refine a draft set of identified recommendations, identify key considerations for implementation, and discuss good practices in the state and elsewhere. During the course of the two workshops, a series of bilateral and multilateral meetings and focus group meetings were held with key stakeholders to collect information to better understand the skills priorities in Tlaxcala.

The performance of Tlaxcala's skills system

The OECD Skills Strategy Dashboard (Figure 1.7) provides an overview of the relative performance of countries across the dimensions of the OECD Skills Strategy (as presented in Figure 1.6). For each dimension of the strategy there are a number of indicators, many of which are composite indicators made up of a number of other indicators. These provide a snapshot of each country's performance (see Annex 1.A for indicators and method).

Figure 1.7. The OECD Skills Strategy Dashboard: Mexico and selected OECD countries



Note: These summary indicators are calculated as a simple average of a range of underlying indicators (see Annex 1.A for indicators). All underlying indicators have been normalised in a way that implies that a higher value and being among the "top 20%" reflects better performance. The "x" indicates insufficient or no available data, and dotted circles indicate missing data for at least one underlying indicator.

Developing relevant skills

Access to quality pre-primary education is low in Tlaxcala

Although pre-primary education for children aged 3-5 became compulsory in 2012, the gross enrolment rate in preschools in Tlaxcala is 57.2% for three-year-olds, 99.6% for four-year-olds and 70.3% for five-year-olds, (see Chapter 2). Ensuring increased access to early childhood development (ECD) is important, as basic foundation skills, including motor skills, cognitive and socio-emotional abilities, are

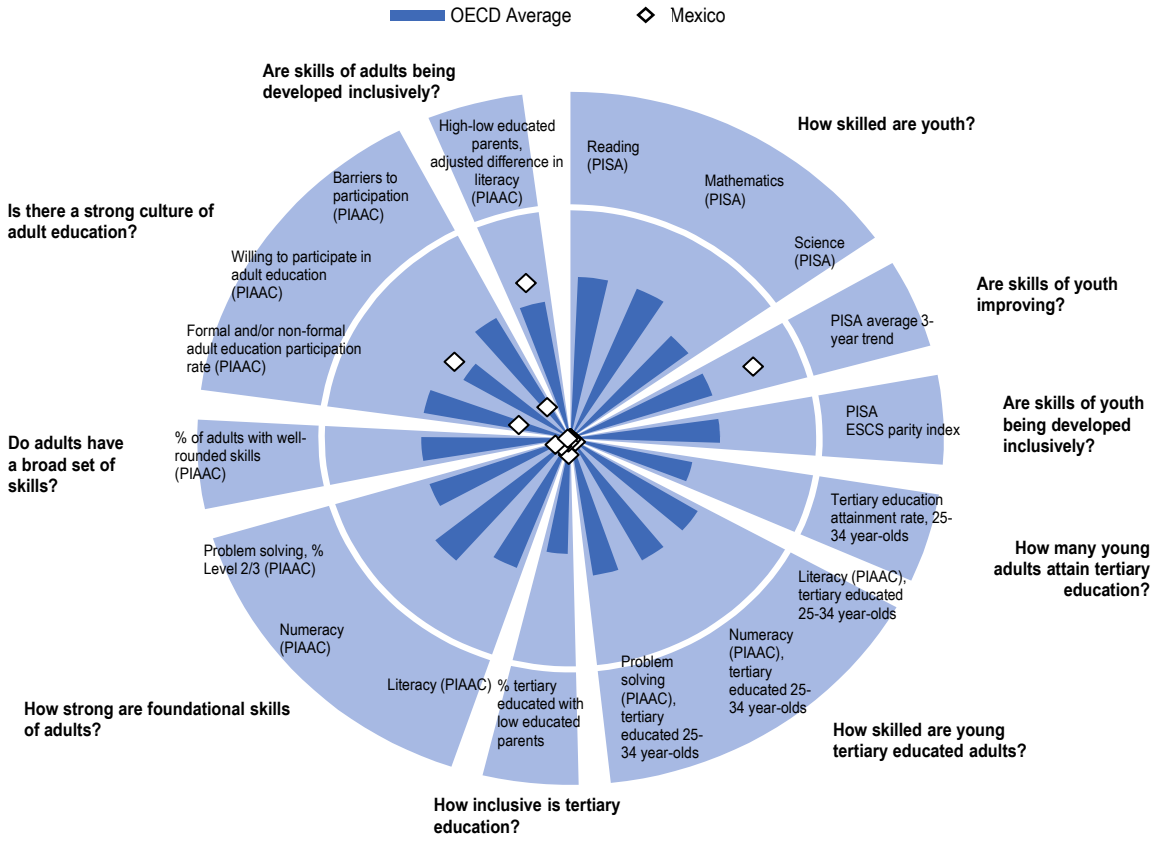
developed during early years. In Tlaxcala, immediate challenges include increasing access and securing more investment, while ensuring the quality of initial education during the planned phase of expansion of early childhood education.

The level of skills among youth is relatively low in Mexico

There are significant opportunities to improve the skills of youth in Mexico, as demonstrated by performance in the OECD's Programme for International Student Assessment (PISA) (Figure 1.8). Although Mexican students show moderate improvement in reading and science scores (see Chapter 2), their overall performance in PISA was in the bottom 20% among OECD countries in both 2015 and 2018. Skills of youth in Mexico are also not being developed inclusively (Figure 1.8), with large disparities in science performance due to students' economic, social and cultural status (ESCS). Furthermore, compared to the OECD average, Mexico has a much smaller share of top performers (Level 5 or 6) in at least one subject. More specifically, only 1% of Mexican students score at Level 5 or higher in mathematics, significantly lower than the OECD average of 11% (OECD, 2020[14]).

Figure 1.8. Key indicators for developing relevant skills, Mexico and OECD average

Relative position in country ranking (based on normalised scores), where higher value reflects better performance



Note: The scores indicate relative performance across OECD countries: being further away from the core of the chart indicates better performance. For example, "PISA ESCS parity index" has a low score, which indicates large inequalities in PISA performance compared to other OECD countries. The OECD average (when using PIAAC data) is based on the sample of OECD countries/regions assessed in the Survey of Adult Skills (PIAAC).
Source: See Annex 1.A for an explanation of sources and methodology.

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Tertiary education enrolment rate in Tlaxcala is relatively low compared to the Mexico average

The percentage of adults holding a tertiary education degree in Mexico (23%) is notably lower than the OECD average (33%). In Tlaxcala, the enrolment rate in higher education, excluding graduate programmes (28%), is 7 percentage points below the national average (35%). Lower attainment in tertiary education has significant repercussions for the performance of individuals in the labour market. Across OECD countries, adults with higher levels of education show better employment outcomes (see Chapter 2). On average across OECD countries, those with higher levels of education have better employment outcomes: 84% of tertiary educated younger adults are employed, compared with only 78% of those with upper secondary or post-secondary non-tertiary education, and 60% of those without upper secondary education. Individuals with lower income and from rural areas in Tlaxcala are less likely to reach tertiary level education, making them even more vulnerable to poor employment outcomes (OECD, 2019[15]).

Adults need to participate more in education and training

Digitalisation, globalisation and population ageing, as well as the recent outbreak of COVID-19, are having a profound impact on the type and quality of jobs available, and the types of skills required to perform these jobs (OECD, 2016[16]). In order to take advantage of these changes, adult learning and training in specific skills have a key role. The need for upskilling and reskilling is imperative to meet new labour market needs, especially for low-educated workers. Supporting participation in training programmes for work is even more significant in the case of Tlaxcala, where a high proportion of adults are experiencing deteriorating labour market prospects, with over 80% working in a job at high risk of automation. Most of these workers have low levels of education (72%) (see Chapter 3). This proportion is 6 percentage points higher than the national average (66%).

Using skills effectively

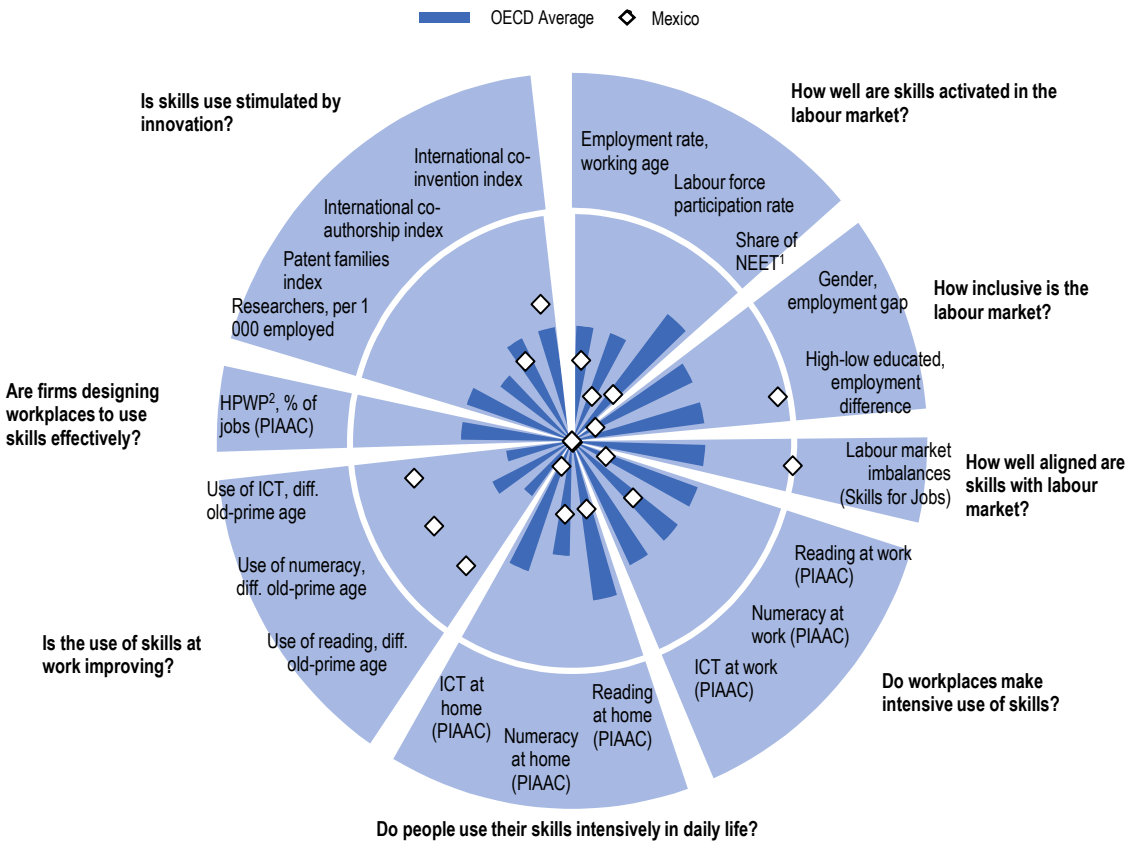
Women participate less in the labour market

Overall, there is ample room to improve the effective use of skills in Mexico and Tlaxcala in terms labour participation, use of skills both at home and work, and stimulation of skills through innovation (Figure 1.9). In particular, the labour force participation of Mexican women aged 20-64 (47%) remains well below the OECD average (64%) (see Chapter 4). This stands in stark contrast to their male counterparts, 82% of whom participate in the labour market. When in the workforce, women in Tlaxcala are most likely to work in retail or manufacturing industries, which account for 27% and 26% of total female employment, respectively. “Other services” employ 13% and social services 12% of women in Tlaxcala. Some sectors do not necessarily employ a large percentage of the total female workforce in Tlaxcala, but are highly reliant on female labour: health and social assistance services (83%), education (70%), food and beverage (55%), and financial services (52%) all have a greater share of female employees than male. Mexican women also show a tendency to be employed by small firms, with most (54%) currently employed in firms with fewer than 10 employees.

Possible factors behind low female labour market participation include the gender wage gap (16%), lower marginal returns on education, high crime rates and stagnation in female entrepreneurship (see paragraph below), all of which calls for tailored and targeted support to empower more women to enter the labour market.

Figure 1.9. Key indicators for using skills effectively, Mexico and OECD average

Relative position in country ranking (based on normalised scores), where higher value reflects better performance



Note: [1]NEET refers to youth not in employment education or training. [2]HPWP refers to high-performance workplace practices. The normalised scores indicate the relative performance across OECD countries: being further away from the core of the chart indicates better performance. For example, indicator "Use of reading, difference young-old (PIAAC)" indicates performance above OECD average, i.e. a comparatively large difference in the use of reading skills between younger and older generations, which demonstrates relatively strong improvements in the use of these skills. The OECD average (when using PIAAC data) is based on the sample of OECD countries/regions assessed in the Survey of Adult Skills (PIAAC).
Source: See Annex 1.A for an explanation of sources and methodology.

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Female entrepreneurship could be further supported

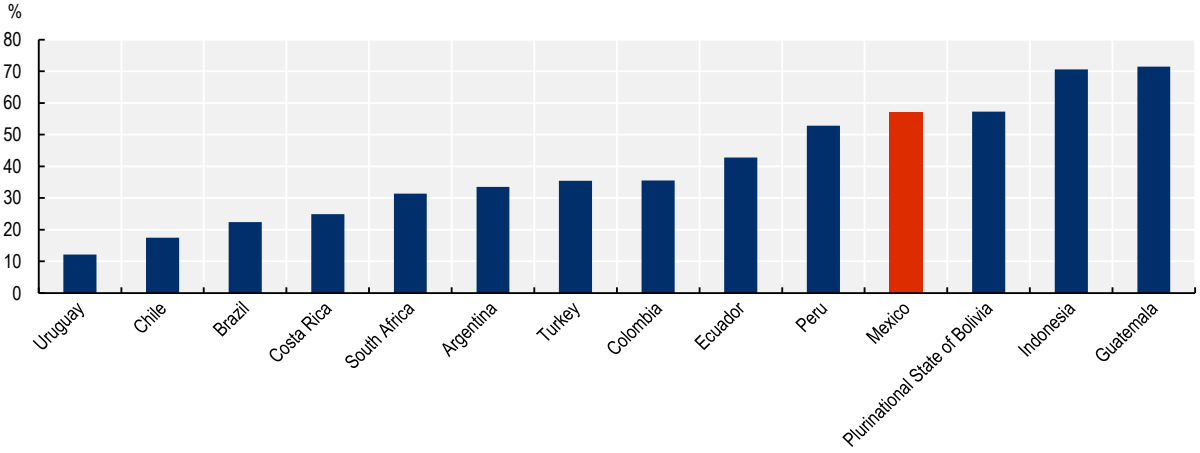
Fostering entrepreneurship can be an effective way of Tlaxcala advancing female economic empowerment, as the flexible time schedules of entrepreneurship can be a viable work option for many women otherwise unable to work due to domestic responsibilities. Having more female entrepreneurs will also generate greater social benefits, as female entrepreneurs are known to often allocate 70% of their earnings towards community and family development (Outhand Consulting, 2019[17]) (see Chapter 4). However, female entrepreneurship has stagnated due to several challenges including a lack of experience, confidence, opportunities, collateral and credit history, as well as cultural norms. Consequently, only 11.2% of women in Mexico start their own business, which is lower than in Latin American peer countries such as Peru, where 29% of women are involved in entrepreneurship.

Informality is hampering productivity gains

Across Mexican states, about 60% of workers are employed in the informal economy, which represents almost one quarter of Mexico's GDP (Figure 1.10). Informality is particularly high among low-skilled, part-time and older workers. Inter-state disparities are also pronounced, varying from 30% in northern states to almost 90% in the south. This high level of informality hampers worker mobility, resource allocation to enhance productivity, and workers' access to quality jobs.

Figure 1.10. Informality is high in Mexico by international standards

Percentage of informal workers, 2017 or latest available year



Source: OECD (2019[6]), OECD Economic Surveys: Mexico 2019, https://doi.org/10.1787/a536d00e-en.

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Strengthening the governance of skills systems

Robust governance arrangements are key to allow policy makers to effectively and flexibly design and implement policies for developing and using skills. Improving governance arrangements across policy areas and levels of government, as well as with stakeholders, is therefore essential to improving sustainable skills outcomes.

Tlaxcala could do more to improve co-ordination across the whole of government in adult learning

Co-ordinating the planning and implementation of adult learning policies has become more complex in Mexico in recent years. With the increasing decentralisation of Mexico's adult learning policies, states and municipalities have been given more control over programme design and implementation. In Tlaxcala, the co-ordination of adult learning policies is made even more complex by the state's relatively large number of municipalities. Despite being the smallest state in Mexico, Tlaxcala is administratively divided into 60 municipalities. There is evidence that Tlaxcala's vertical co-ordination mechanisms fall short of adequately supporting decentralised adult learning provision across the state's many municipalities.

More could be done to foster a co-ordinated long-term vision for Tlaxcala's adult learning system. Tlaxcala currently lacks robust *ex post* impact evaluation mechanisms of adult learning programmes. However, such evaluation is key for assessing the cost-effectiveness of adult learning programmes and sustaining momentum for supporting strongly performing programmes across electoral cycles.

The potential of skills data should be maximised to strengthen skills assessment and anticipation exercises

Tlaxcala is not fully using the skills data at its disposal to generate information on its current and future skills needs, and certain skills data are not being gathered at all. On the one hand, as in all countries with a federal system of government, Tlaxcala's (state) skills assessment and anticipation (SAA) exercises are partially reliant on Mexico's (federal) data, which poses co-ordination challenges. On the other hand, the assessment of current skills needs based on Tlaxcala's own state-level data is hampered by the lack of technical expertise and commitment to systematic data collection and analysis on the part of public officials from relevant state entities. Moreover, Tlaxcala does not systematically assess employers' needs, and no projections of future skills needs are undertaken in the state. The effective dissemination of key SAA findings to Tlaxcala's public is similarly underdeveloped.

There is no long-standing tradition of systematically involving stakeholders in SAA exercises in Tlaxcala, which is why the state is currently not benefitting from stakeholders' valuable contributions in the consolidation, validation and analysis of key SAA findings.

Policy context in Tlaxcala

Tlaxcala has already implemented a wide range of policies and reforms to address many of the challenges identified in this chapter. These efforts are steps in the right direction and have the potential to generate the policy outcomes that Tlaxcala needs to strengthen its skills system.

Tlaxcala has several programmes in place to improve access to pre-primary education. Supérate, Tlaxcala's social policy flagship programme launched in 2017, provides support to poor families to help them access early childhood development for their children aged 0 to 5. More specifically, Supérate provides training in basic nutrition, childcare and stimulation to "promotors", who pay periodical home visits to poor families to monitor the growth and health of children. In addition, childcare centres (*centros de atención infantil*, CAIs) and child development centres (*centros de desarrollo infantil,* CENDIs) offer non-formal initial education to children of working parents. To improve the quality of teachers in pre-primary education during the pandemic, Tlaxcala organised regular informal conversations with teachers to identify the challenges of distance learning. Teachers are also encouraged to generate their own teaching content using different modalities, in co-ordination with parents.

The Government of Tlaxcala has tried to increase participation in adult learning in various ways. First, diverse media channels are used to disseminate information on adult learning opportunities. The Institute for Adult Learning (Instituto Tlaxcalteca para Educación de los Adultos, ITEA) also leads campaigns through media outlets to publicise remedial education programmes. Further awareness-raising programmes exist in the form of online platforms where individuals can acquire information on adult learning opportunities. ITEA also operates a website and mobile application (TLX ITEA) through which adults can access training modules and materials.

Efforts to identify and remove barriers to participation in adult education require tailored approaches. ITEA currently has an alliance and partnerships with firms to encourage their employees to participate in remedial education. In collaboration with the National Institute for Adult Education (Instituto Nacional para la Educación de los Adultos, INEA), ITEA also provides a wide range of learning options including basic skills development, and training on diverse subjects such as business and environment, language and communication, mathematics, natural and social sciences, and citizenship. Open Schooling for Upper Secondary Education provides remedial distance education for upper secondary education. Schools under this modality provide education focused more on general knowledge to pursue higher education, rather than technical or vocational skills.

Some programmes in Tlaxcala aim to promote the effective use of skills in workplaces. Supérate provides a two-year aid programme to foster female entrepreneurship. In the first session of the training programme, a representative from ICATLAX offers a course on basic financing (e.g. keeping revenue streams separate, developing savings habits). To promote entrepreneurship in general, Supérate operates a census that collects a wide range of data, which could be used to match small and medium-sized enterprises (SMEs) with potential funding.

In recognition of the challenges Tlaxcala faces in terms of lagging business innovation, the State Development Plan 2017-2021 (Plan Estatal de Desarrollo 2017-2021, PED) aims to promote economic and social development. The PED includes a sub-chapter on "Competitiveness and promotion of entrepreneurship" (*Competitividad y fomento al emprendedurismo*), which identifies innovation as one of Tlaxcala's key weaknesses. In particular, Objective 1.5 of the PED aims to promote scientific and technological advances, innovation, and skills development within firms.

There are several efforts underway to improve the governance of adult learning in Tlaxcala. In particular, vertical co-ordination between the state of Tlaxcala and its municipalities is promoted through strengthening the alignment between the PED and municipal development plans (plan municipal de desarrollo, PDM), both of which have objectives related to adult education and training. Tlaxcala also executes the Annual Programme of Evaluation (Programma Annual de Evaluacion, PAE), which promotes vertical co-ordination by verifying whether federally funded adult learning programmes have produced intended results at lower levels of government. PAE includes an evaluation of three budget programmes that cover adult learning – Contribution Fund for Technological and Adult Education (Fondo de Aportaciones para la Educación Tecnológica y de Adultos, FAETA), Care Agreement for the Demand for Adult Education (Convenio de Atención a la Demanda de Educación para Adultos, CADEA) and Supérate.

Tlaxcala has taken concrete steps to strengthen its SAA exercises. To address the challenges involved in using federal data sources, e.g. the Integrated Information System of the National Employment Service (Sistema integral de información del Servicio Nacional del Empleo, SIISNE), Tlaxcala's National Employment Service (Servicio Nacional de Empleo Tlaxcala, SNET) constructed its own internal inventory of vacancy data. With this new initiative, SNET now has access to updated and disaggregated data on flows of jobseekers whenever such data are needed. ICATLAX also interacts with firms and business leaders during regular job fairs organised by SNET, monitoring the training needs of participating firms to inform its training offer.

The abovementioned strategies and programmes provide only a sample of the most recent initiatives directly related to improving the development and use of skills in Tlaxcala, and show that the Tlaxcalan Government has worked to address skills challenges. The following section provides more detailed information on how these strategies and programmes are related to the four priority areas.

Priority areas and recommendations

Based on the assessment of the overall performance of the state of Tlaxcala and the feedback from the state government, four priority areas were identified for the Skills Strategy project in the state of Tlaxcala, Mexico:

1. Strengthening the skills of youth (Chapter 2).
2. Fostering greater participation in adult learning (Chapter 3).
3. Using people's skills more effectively to raise productivity (Chapter 4).
4. Strengthening the governance of the skills system (Chapter 5).

Based on in-depth desk analysis, and several virtual stakeholder workshops and discussion groups, the OECD has selected opportunities and developed recommendations in each of the four priority areas. The

summaries below highlight the key findings and recommendations for each priority area, and the specific chapters that follow present the complete findings and describe the recommendations in more detail.

Priority 1: Strengthening the skills of youth

For countries to adapt and thrive in a rapidly changing world, all individuals need access to opportunities to develop and maintain proficiency in a broad set of skills across the life course. However, the foundations for success in skills development and learning are laid during childhood and youth. Providing youth with opportunities to develop relevant skills contributes to a strong basis for economic growth, social cohesion and well-being. Skills development during early childhood is linked to higher graduation and completion rates across all levels of compulsory education, supports smooth transition into the labour market, and fosters a culture of adult learning that can facilitate the adaptability of adults to changes in the economy. Therefore, equipping Tlaxcalan youth with the right skills is important to achieve the state's social and economic goals.

Opportunity 1: Boosting access and quality in pre-primary education

High-quality early childhood and pre-primary education and care (ECEC) is crucial for the development of strong cognitive and socio-emotional skills. In Mexico, the proportion of 15-year-old students who were low performers in PISA 2015 was almost double for those with 0-1 years of ECEC than for those with 2-3 years (OECD, 2018[18]). In Tlaxcala, cultural and informational barriers hamper access to early childhood education, while stakeholders indicate that some parents may not fully understand its benefits, leading to lower demand. Many Tlaxcalan childcare and child development centres lack sufficiently trained staff to operate at satisfactory quality standards. At the same time, the initial training of pre-primary education teachers in Tlaxcala faces several challenges, evidenced by the fact that many were not adequately prepared to maintain effective education services when the COVID-19 pandemic arrived, and struggled with issues around the use of online platforms and information resources and technologies.

Table 1.1. Opportunity 1: Boosting access and quality in pre-primary education

Policy directions	Recommendations	Responsible parties
Strengthening early childhood education programmes	2.1. Increase demand for early childhood education by targeting informational gaps on the educational benefits.	Tlaxcala
	2.2. Establish minimum quality standards to safeguard the quality of education throughout and after the expansion of early childhood education for children under the age of 3.	SEP Tlaxcala
Strengthening initial training of pre-primary teachers	2.3. Gather and centralise the recently acquired pedagogical knowledge and lessons learned from in-service teachers on how to effectively engage with students and parents during the pandemic.	SEP Tlaxcala
	2.4. Provide teachers with opportunities for specialised in-service teacher training on how to develop students' socio-emotional skills.	SEP Tlaxcala ICATLAX
	2.5. Improve communication and co-ordination between teachers and parents by establishing standard practices, such as initial meetings to set expectations and social-norm-oriented practices for parents.	SEP Tlaxcala

Note: SEP TLAXCALA is the Secretariat of Public Education of Tlaxcala (Secretaría de Educación Pública de Tlaxcala); ICATLAX is the Institute for Job Training of Tlaxcala.

Opportunity 2: Building a strong teaching workforce

Teacher preparedness is a key factor in school learning (Glewwe and Muralidharan, 2016[19]). Due to the COVID-19 pandemic, however, access to teacher training has been negatively impacted. In Mexico, approximately 2.1 million teachers were affected by schooling disruptions (Juntos por el Aprendizaje,

2020[20]), and in Tlaxcala, both initial and in-service teacher training were severely affected. Institutions offering initial teaching training, such as normal schools, as well as all in-person in-service teacher training courses were forced to close. This has created challenges for Tlaxcala, where the level of teacher preparedness varies significantly. According to SEP Tlaxcala's annual evaluation of teachers, fewer than 10% of teachers obtained an excellent level of performance in 2016. The gaps in the preparedness of Tlaxcala's teachers partially reflect an in-service teacher training system that has several limitations. Stakeholders indicate that there are insufficient resources for teachers to maintain and improve their skills. At the same time, school directors and zone supervisors in Tlaxcala could benefit from additional resources, as well as technological and socio-emotional support, to perform their duties more effectively.

Table 1.2. Opportunity 2: Building a strong teaching workforce

Policy directions	Recommendations	Responsible parties
Strengthening initial and in-service teacher education and training	2.6. Increase teacher participation in periodic needs-based training by creating positive incentives.	SEP Tlaxcala
	2.7. Promote the informal exchange of knowledge and know-how between teachers through organised mentoring and learning group initiatives.	SEP Tlaxcala
	2.8. Foster stronger links between in-service and initial teacher training in the first years of a teacher's career by providing individualised assessment-based guidance and support.	SEP Tlaxcala
	2.9. Identify the key aspects of high-quality initial teacher training, and standardise these aspects across all initial teacher training institutes.	SEP Tlaxcala National Pedagogical University Normal schools
Improving the management skills of school principals and leaders	2.10. Provide ongoing assessment and training to officials across all levels of educational leadership to increase effective support for teachers.	SEP Tlaxcala
	2.11. Provide regular training opportunities to new educational leaders to strengthen their preparedness.	SEP Tlaxcala

Note: SEP TLAXCALA is the Secretariat of Public Education of Tlaxcala (Secretaría de Educación Pública de Tlaxcala).

Opportunity 3: Strengthening the responsiveness of secondary vocational education and training (VET) and tertiary education institutions to labour market needs

Making education systems responsive to labour market needs allows students to develop a set of skills that supports employability (OECD, 2015[21]). A weak connection between the education system and the needs of the labour market leads to skill imbalances, which are costly for individuals, employers and society as they lower job satisfaction and earnings (OECD, 2016[16]). Data from the Survey of Adults Skills (PIAAC) show that Mexico has the highest proportion of workers with a qualification mismatch (51%) among participant countries, underlining the need for a responsive VET and tertiary education system. However, Tlaxcala struggles to effectively align the VET and tertiary education offer with labour market needs. The process of adjusting the supply of VET and tertiary education programmes in Tlaxcala is cumbersome, time consuming and without clear guidelines. At the same time, the employer-led provision of work-based learning (WBL) is underdeveloped, with many employers (especially SMEs) lacking the resources and support needed to provide WBL. There is also ample room to improve career guidance services in upper secondary education institutions, and increase students' exposure to employers. Tlaxcala could more effectively target financial incentives for tertiary education students to encourage enrolment in in-demand fields of study, while fostering the more proportionate distribution of financial aid across student income groups.

Table 1.3. Opportunity 3: Strengthening the responsiveness of secondary VET and tertiary education institutions to labour market needs

Policy directions	Recommendations	Responsible parties
Improving the alignment between education offer and labour market demand	2.12. Harmonise and simplify the process for opening, closing or adjusting VET and higher education programmes and specialisations.	SEP Tlaxcala CONEVAL CECyTE TecNM-DGEST COEPES
	2.13. Develop clear guidelines to support the process of opening, closing and adjusting VET and higher education programmes and specialisations.	SEP Tlaxcala COEPES
Encouraging greater employer provision of work-based learning	2.14. Strengthening awareness-raising campaigns about the benefits of, and requirements for, implementing dual education training among SMEs.	SEP Tlaxcala SEDECO
	2.15. Provide technical assistance to firms, especially SMEs, to increase the provision of work-based learning opportunities, as well as financial support to SMEs to foster participation in the MMFD (Mexican Model of Dual TVET) programme.	SEP Tlaxcala SEDECO
Improving students' career choices by strengthening career guidance	2.16. Provide high-quality career guidance services in upper secondary education.	SEP Tlaxcala
	2.17. Involve employers and SNET in the provision of career counselling services in upper secondary education.	SNET
Designing financial incentives to increase participation in higher education and to help align study choices with labour market demand	2.18. Provide targeted financial incentives to encourage young individuals to undertake studies in higher education programmes that are in high demand.	SEP Tlaxcala
	2.19. Expand financial aid to reach middle-income students.	SEP Tlaxcala

Note: SEP TLAXCALA is the Secretariat of Public Education of Tlaxcala (Secretaría de Educación Pública de Tlaxcala) ; CONEVAL is the National Council for the Evaluation of Social Development Policy (Consejo Nacional de Evaluación de la Politica de Desarrollo Social); CECyYTE is the School of Scientific and Technological Studies of the State of Tlaxcala (Colegio de Estudios Científicos y Tecnológicos del estado de Tlaxcala); TecNM-DGEST is the Directorate of Decentralised Technological Institutes (Dirección de Institutos Tecnológicos Descentralizados); COEPES is the State Commission for the Planning of Higher Education (Comisión Estatal para la Planeación de la Educación Superior); SEDECO is the Secretariat of Economic Development (Secretaría de Desarrollo Económico); SNET is the National Employment Service of Tlaxcala (Servicio Nacional de Empleo de Tlaxcala).

Priority 2: Fostering greater participation in adult learning

Participation in adult learning of all forms can help adults to upskill and reskill in response to changing labour market needs, and boost their employability. Digitalisation, globalisation and population ageing, compounded by the effects of the COVID-19 pandemic, are having a profound impact on the quantity and quality of jobs, as well as the type of skills required to perform these jobs (OECD, 2019[22]). Tlaxcala is not an exception to this trend: as a result of COVID-19, Tlaxcala is the fourth most vulnerable state in Mexico in terms of job loss (Bank of Mexico, 2020[23]). Adults' continuous engagement in learning activities that support their (re)insertion into the rapidly changing labour market will thus be of paramount importance for Tlaxcala in the years to come. However, adult participation in training programmes for employability is relatively low, particularly in non-formal education. Compared to the OECD average, adult participation in non-formal education is ten times lower in Tlaxcala (4%) than the average for OECD countries (42%). Common barriers to participation include a lack of employer-sponsored training (only 1 in 6 firms provide training to its employees), a lack of access to training opportunities, a lack of targeted financial incentives, insufficient time, irrelevant training content, and the absence of enabling legal mechanisms such as training leave to increase the take-up of learning of working adults.

Opportunity 1: Increasing adults' motivation to participate in remedial education

A large percentage of adults in Tlaxcala lack basic skills and education. Despite this, the participation rate of adults in remedial education is one the lowest among Mexican states. Many adults are not aware of the benefits offered by remedial education, and Tlaxcala's awareness-raising campaigns that aim to disseminate such information are not fully effective, and merely inform the public about the current offer of remedial education programmes and registration processes. These campaigns do not clearly spell out the programmes' benefits, which could encourage higher participation. The campaigns also mainly target adults aged 65+, which poses challenges given that almost half of Tlaxcala's low-qualified individuals are aged 45-64. At the same time, stakeholders in Tlaxcala note that remedial education provided in the state could be made more relevant for adults. The content of existing remedial education programmes is often not able to effectively boost adults' employability prospects, which may explain the low motivation to engage in such programmes. Efforts to involve social partners in the design of the remedial education offer, which could significantly improve its relevance for adults, are largely underdeveloped.

Table 1.4. Opportunity 1: Increasing adults' motivation to participate in remedial education

Policy directions	Recommendations	Responsible parties
Raising awareness of the importance of remedial education	3.1 Strengthen existing awareness-raising campaigns to promote the benefits of remedial education.	ITEA Municipal authorities Social partners (unions, chambers of commerce, etc.)
	3.2 Involve social partners in awareness-raising events to promote the benefits of remedial education.	ITEA Municipal authorities Social partners (unions, chambers of commerce, etc.)
Making remedial education more relevant for low-skilled adults	3.3 Establish partnerships to offer technical and practical training programmes to adults in remedial education.	ITEA ICATLAX CECATI
	3.4 Provide vocational and combined streams in upper secondary remedial education to help adults earn a formal VET qualification.	SEP Tlaxcala Open Schooling for Upper Secondary Education schools Upper secondary schools VET

Note: ITEA is the Institute for Adult Learning of Tlaxcala (Instituto Tlaxcalteca para Educación de los Adultos); ICATLAX is the Institute for Job Training of Tlaxcala (Instituto de Capacitación para el Trabajo del Estado); CECATI is the Training Centre for Industrial Work (Centro de Capacitación para el Trabajo Industrial); SEP TLAXCALA is the Secretariat of Public Education of Tlaxcala (Secretaría de Educación Pública de Tlaxcala).

Opportunity 2: Providing incentives for adults to participate in training that responds to labour market needs

A high proportion of adults in Tlaxcala are facing deteriorating labour market prospects, with a high share of jobs threatened by automation. This magnifies the need for adults to participate in relevant learning activities. However, Tlaxcala lacks effective channels for steering adults towards labour market relevant training. Tlaxcala's career guidance services for adults are limited. The National Employment Service of Tlaxcala (SNET) provides career guidance to jobseekers only, which prevents informal workers, who dominate Tlaxcala's economy, from accessing any form of counselling. Moreover, the services provided by SNET are limited in scope, and its employment advisors receive only little on-the-job-training. At the same time, informal workers receive little support to participate in training, despite facing significant financial barriers to participation. The existing offer of state-sponsored training for informal workers has narrowed in recent years, and it has not done enough to steer informal workers towards training that is relevant for the labour market.

Table 1.5. Opportunity 2: Providing incentives for adults to participate in training that responds to labour market needs

Policy directions	Recommendations	Responsible parties
Strengthening career guidance to increase adults' participation in training that responds to labour market needs	3.5 Expand the information and guidance provided by SNET career guidance services.	SNET ICATLAX CECATI
	3.6 Improve the training provided to employment advisors.	SNET ICATLAX
Strengthening support for informal workers to participate in training	3.7 Allow informal workers to benefit from the training provided by SNET's ACE (mixed training) programme.	SNET
	3.8 Support informal workers' participation in training sponsored by Supérate.	Supérate ICATLAX

Note: SNET is the National Employment Service of Tlaxcala (Servicio Nacional de Empleo de Tlaxcala); ICATLAX is the Institute for Job Training of Tlaxcala (Instituto de Capacitación para el Trabajo del Estado); CECATI is the Training Centre for Industrial Work (Centro de Capacitación para el Trabajo Industrical).

Priority 3: Using people's skills more effectively to raise productivity

Skills development policies will only achieve the desired productivity gains if they are accompanied by simultaneous actions to boost the effective use of skills (OECD, 2019[13]). When skills are effectively put to use, workers, employers and the broader economy all benefit. Making use of people's skills both in the labour market and in workplaces, therefore, has been identified as one of the pillars of the OECD Skills Strategy Framework (OECD, 2019[13]). Using people's skills more effectively will be key in helping close the productivity gap between Tlaxcala and OECD member countries, especially as the state's SME-dominated economy grapples with high rates of informality, low female labour force participation, and an underdeveloped culture of innovation among businesses and in workplaces.

Opportunity 1: Fostering entrepreneurship and supporting SMEs

Tlaxcala is currently foregoing significant productivity gains by not making full use of the skills of its population. With women overburdened by unpaid housework and low female labour force participation, there is significant untapped potential in Tlaxcala's female pool of skills. Many activities that females engage in within the household could be scaled into business opportunities; however, Tlaxcala's prospective female entrepreneurs face barriers related to lack of experience, confidence and little leveraging power when seeking financing. Supérate, Tlaxcala's key programme for supporting gender equality in the labour market and fostering female entrepreneurship, lacks effective oversight of the funding it provides and does not leverage the data it collects to systematically monitor the main obstacles encountered by Tlaxcala's female entrepreneurs. It also does not provide support for creating business networks, which would benefit female entrepreneurs.

Although SMEs dominate Tlaxcala's economy and employ the majority of Tlaxcala's workers, they are not adequately supported. Insufficient financing, high bureaucratic burdens, and weak support institutions and institutional frameworks constitute barriers to the development and modernisation of Tlaxcalan SMEs. Business support programmes provided by SEDECO, a state government organisation that serves as the conduit between Tlaxcala's government and local entrepreeurs, are restricted to SMEs working in innovation and technology. SEDECO has only one physical presence (in the state's capital), and its entrepreneur support network reaches only 4 of the state's 60 municipalities.

Table 1.6. Opportunity 1: Fostering entrepreneurship and supporting SMEs

Policy directions	Recommendations	Responsible parties
Supporting female entrepreneurship	4.1 Expand the oversight of Supérate and the frequency of its guidance through increased communication between programme officials and beneficiaries.	Supérate ICATLAX
	4.2 Utilise the existing census to collect better information on entrepreneurism in Tlaxcala, and identify where obstacles for female entrepreneurs tend to arise.	Supérate ICATLAX
	4.3 Create industry-specific channels for communication to help female entrepreneurs create business networks and integrate with existing supply chains.	Supérate ICATLAX
Enabling full utilisation of skills through strengthened support to SMEs	4.4 Broaden the scope of SEDECO's business support programmes to include SMEs from more sectors, and offer support for the development of managerial skills and high-performance workplace practices.	SEDECO Higher education institutions
	4.5 Expand the geographic coverage of SEDECO to alleviate connectivity issues and extend SME support to rural or marginalised municipalities.	SEDECO Municipalities

Note: ICATLAX is the Institute for Job Training of Tlaxcala (Instituto de Capacitación para el Trabajo del Estado); SEDECO is the Secretariat of Economic Development (Secretaria de Desarrollo Económico).

Opportunity 2: Promoting the adoption of high-performance workplace practices (HPWP)

Tlaxcalan businesses, especially SMEs, could better organise their workplaces to use the skills of their employees more effectively. The uptake of HPWP and innovative organisational and management practices that positively affect the performance of employees and businesses lags behind the OECD average in Tlaxcala and in Mexico as a whole. To a certain extent, the low uptake of HPWP can reflect a lack awareness about innovative workplace solutions that help to foster effective skills use. In Tlaxcala, there is limited awareness of HPWP and their benefits among employers and policy makers, which is connected to a lack of a more general "culture of innovation". While it is essential that employers and entrepreneurs in Tlaxcala become more aware of HPWP and their benefits, it is equally important that individuals responsible for workplace organisation are equipped with the right skills to implement HPWP effectively and efficiently. However, interviewed stakeholders in Tlaxcala suggest that low levels of managerial skills among Tlaxcalan managers and entrepreneurs were a significant barrier to the successful implementation of HPWP in Tlaxcalan workplaces. Moreover, Tlaxcala's offer of courses, provided by ICATLAX and CECATI, that could help managers develop stronger managerial skills, is limited, the geographical coverage of training is uneven, and the needs of managers in large firms and SMEs are not specifically accounted for in the training offer.

Table 1.7. Opportunity 2: Promoting the adoption of high-performance workplace practices (HPWP)

Policy directions	Recommendations	Responsible parties
Raising awareness of the benefits of high-performance workplace practices	4.6 Disseminate information on the benefits of HPWP through strategies, targeted campaigns and public recognition awards.	SNET ICATLAX Selected employer associations
	4.7 Centralise information on HPWP in Tlaxcala's new Skills Needs Portal.	SEP and STPS (Tlaxcala) departments with strong technical and ICT expertise
Fostering the effective implementation of high-performance workplace practices by managers	4.8 Strengthen the provision of managerial skills training to support the adoption of HPWP.	ICATLAX CECATI SEDECO
	4.9 Support managers of SMEs and large firms to participate in training that takes into account their specific needs.	ICATLAX CECATI SEDECO

Note: SNET is the National Employment Service of Tlaxcala (Servicio Nacional de Empleo de Tlaxcala); ICATLAX is the Institute for Job Training of Tlaxcala (Instituto de Capacitación para el Trabajo del Estado); SEP is the Secretariat of Public Education (Secretaría de Educación Pública); STPS is the Secretariat for Labour and Employment Promotion (Secretaría del Trabajo y Fomento al Empleo); CECATI is the Training Centre for Industrial Work (Centro de Capacitación para el Trabajo Industrical); SEDECO is the Secretariat of Economic Development (Secretaria de Desarrollo Económico).

Priority 4: Strengthening the governance of the skills system

The success of skills policies typically depends on the responses and actions of a wide range of actors that have to effectively work together in a constantly shifting context characterised by significant uncertainty. Strong governance arrangements are therefore essential to devise and implement effective policies for developing and using skills. In the context of the structural changes induced by the COVID-19 pandemic and the ratification of the USMCA, a whole-of-government approach, active stakeholder engagement and high-quality information on changing skills demands will be more important than ever to help Tlaxcala successfully navigate the rapidly changing skills environment.

Opportunity 1: Increasing co-ordination in adult learning across the whole of government

Tlaxcala faces challenges related to underdeveloped state-municipal co-ordination in adult learning. The lack of alignment between Tlaxcala's main adult learning co-ordination mechanisms, the PED and the PDM, weakens municipalities' understanding of adult learning priorities set out at the state level, and diminishes the state's understanding of municipalities' policy implementation challenges. While alignment between the State Development Plan (PED) and municipal development plans (PDMs) is supported by several co-ordinating bodies, which run a number of training units at the municipal level (e.g. ICATLAX, ITEA), they only exist in a limited number of Tlaxcala's municipalities.

The evaluation of adult learning programmes in Tlaxcala could be significantly improved, especially in terms of coverage, scope and follow-up actions. Currently, Tlaxcala's Annual Programme of Evaluation (PAE) does not conduct a comprehensive evaluation of all adult learning programmes provided in the state, resulting in the absence of evaluations of any adult learning programmes provided by ICATLAX. PAE evaluations assess programme design and process, specific performance, and programme consistency and results, but there is no impact evaluation conducted. Although PAE provides a set of recommendations based on the evaluations' results, it does not provide a clear set of procedures to facilitate the follow-up on the identified recommendations.

Table 1.8. Opportunity 1: Increasing co-ordination in adult learning across the whole of government

Policy directions	Recommendations	Responsible parties
Promoting vertical co-ordination in adult learning between the state and municipalities	5.1. Foster better alignment between the State Development Plan (PED) and municipal development plans (PMD).	State government entities (SEP Tlaxcala, Senior Government Office, Higher Inspection Body) Municipalities
	5.2. Establish designated focal points in each municipality to co-ordinate the activities of the state and municipalities in the area of adult learning.	State government entities (SEP Tlaxcala, Senior Government Office, Higher Inspection Body, and departments with municipal-level presence) ICATLAX ITEA Municipalities
Strengthening adult learning evaluation mechanisms	5.3. Expand the implementation of impact evaluation for adult learning programmes.	State government entities (SEP Tlaxcala, SPF) ICATLAX ITEA Supérate
	5.4. Utilise the results of the evaluations of adult learning programmes to inform evidence-based policy making process.	State government entities (SEP Tlaxcala, SPF) ICATLAX ITEA

Note: SEP is the Secretariat of Public Education (Secretaría de Educación Pública); ICATLAX is the Institute for Job Training of Tlaxcala (Instituto de Capacitación para el Trabajo del Estado); ITEA is the Institute for Adult Learning of Tlaxcala (Instituto Tlaxcalteca para Educación de los Adultos).

Opportunity 2: Maximising the potential of skills data to strengthen skills assessment and anticipation exercises

Tlaxcala currently lacks strong SAA mechanisms for generating relevant information about present and future skills needs. Such mechanisms are necessary to make the skills system more responsive to changing labour market demands.

Tlaxcala does not have any mechanisms for anticipating future skills needs, and to analyse current skills needs it partially relies on federal sources, which complicates SAA efforts. Certain federal sources of skills data lack state-level disaggregation or cannot be readily accessed from the state level. Tlaxcala started gathering its own skills data (e.g. the inventory of vacancy data), but challenges with data collection, processing, analysis and linking with other data sources remain. Systematic, state-wide employer surveys, which could significantly enrich Tlaxcala's skills data and strengthen the state's SAA efforts, are currently not in place. Furthermore, Tlaxcala's public does not have at their disposal a one-stop shop platform with information on the changing labour market trends and/or study and job opportunities in the state.

Although stakeholders are uniquely positioned to play a valuable role in SAA exercises given their "on-the-ground" sector-specific and/or region-specific expertise, Tlaxcala still has ample room for improvement with respect to engaging stakeholders. There is currently no formal, inter-institutional mechanism to convene key governmental and non-governmental stakeholders to consolidate, analyse and validate the findings from SAA exercises, and advise Tlaxcala's government on the basis of such work. Internal regulations delineating the mandates of Tlaxcala's individual public entities often do not foresee this type of inter-institutional co-operation, and do not provide a formal basis for it to take place.

Table 1.9. Opportunity 2: Maximising the potential of skills data to strengthen skills assessment and anticipation exercises

Policy directions	Recommendations	Responsible parties
Bolstering the analytical foundations and results dissemination of skills assessment and anticipation exercises	5.5. Support SNET's efforts to strengthen its internal vacancy inventory.	STPS Tlaxcala SNET
	5.6. Introduce Tlaxcala's own Skills Needs Survey to regularly survey employer's needs.	SNET ICATLAX
	5.7. Design an online one-stop shop skills needs portal, that provides information on Tlaxcala's skills needs, labour market trends and study opportunities.	SEP and STPS (Tlaxcala) departments with strong technical and ICT expertise
Strengthening stakeholder engagement in consolidating, analysing and validating the findings from skills assessment and anticipation exercises, and advising policy makers	5.8. Establish Tlaxcala's own Skills Needs Committee to consolidate, analyse and validate SAA findings, and advise Tlaxcala's government on skills needs.	Federal government entities (STPS, SEP) State government entities (STPS, SEP) Municipalities
	5.9. Disseminate key outputs from Tlaxcala's Skills Needs Committee to policy makers and the public.	Relevant SEP and STPS (Tlaxcala) departments SNET ICATLAX

Note: STPS is the Secretariat for Labour and Employment Promotion (Secretaría del Trabajo y Fomento al Empleo); SNET is the National Employment Service of Tlaxcala (Servicio Nacional de Empleo de Tlaxcala); ICATLAX is the Institute for Job Training of Tlaxcala (Instituto de Capacitación para el Trabajo del Estado); CECATI is the Training Centre for Industrial Work (Centro de Capacitación para el Trabajo Industrical); SEP is the Secretariat of Public Education (Secretaría de Educación Pública).

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Annex 1.A. OECD Skills Strategy Dashboard: Mexico

This annex addresses the OECD Skills Strategy Dashboard for Mexico. The objective of this Dashboard is to present an overview of the performance of skills systems in OECD countries. It is the starting point for analysis in the diagnostic phase of national Skills Strategy projects and allows the OECD and the National Project Team to identify the priority skills policy themes to be covered in greater detail in the report. Presenting the relative position of countries on key skills outcomes, the Dashboard provides a general overview of the Mexican skills system's strengths and weaknesses. This annex describes the characteristics, presents the indicators and describes the underlying methods for calculating indicators.

Characteristics

The Dashboard is the result of internal consultation and analysis of core indicators used in OECD Skills Strategy projects. It presents a simple, intuitive overview of the outcomes of skills systems that is easy to interpret, and gives a quick impression of a country's skills performance across the pillars of the OECD Skills Strategy ("developing relevant skills" and "putting skills to effective use"). The Dashboard applies a broad definition of skills by presenting foundational skills, problem-solving skills and broadness of skill sets, and considers both economic and social outcomes. A total of 38 key outcome indicators were selected and grouped into 18 aggregated indicators.

Indicator selection

The selection of indicators followed a process whereby a longlist of the most commonly used indicators in OECD Skills Strategy reports was gradually reduced to a shortlist of core indicators. This process built on the principle that the indicators describe the core outcomes of the different pillars of the skills system. In addition, these indicators express outcomes in terms of level, trend, distribution and equity. The indicators need to be comparatively easy to interpret and based on OECD sources, with data as recent as possible.

Method for the calculation of aggregate indicators

To develop aggregate indicators that represent the relative position of countries on key outcomes of the skills system, a number of calculations were made on the collected data. To describe the relative position across countries, a score for each indicator was calculated ranging from 0 to 10, with 0 for the weakest performance and 10 for the strongest performance. This resulted in an indicator that allows comparisons between different types of indicators (e.g. average performance of literacy scores and educational attainment rates). The resulting scores were normalised in such a way that better performance results in a higher score. Subsequently, an unweighted average of the indicators was calculated for each of the aggregates, and these scores were then ranked. The final ranking was separated into five groups of equal size, ranging from top 20% performer to bottom 20% performer. Aggregate indicators are only presented in the Dashboard when more than half of the underlying indicators have data available.

Annex Table 1.A.1. The OECD Skills Strategy Dashboard: Dimensions, indicators and sources

Dimension and aggregates	Indicator	Source
Developing relevant skills		
How skilled are youth?	Reading (PISA[1]), mean score, 2018	OECD (2019[24]), *PISA 2018 Results (Volume I): What Students Know and Can Do*, https://doi.org/10.1787/5f07c754-en.
	Mathematics (PISA[1]), mean score, 2018	OECD (2019[24]), *PISA 2018 Results (Volume I): What Students Know and Can Do*, https://doi.org/10.1787/5f07c754-en.
	Science (PISA[1]), mean score, 2018	OECD (2019[24]), *PISA 2018 Results (Volume I): What Students Know and Can Do*, https://doi.org/10.1787/5f07c754-en.
Are skills of youth improving?	PISA[1] average three-year trend (reading, mathematics, science)[2]	OECD (2019[24]), *PISA 2018 Results (Volume I): What Students Know and Can Do*, https://doi.org/10.1787/5f07c754-en.
Are skills of youth being developed inclusively?	PISA[1] economic, social and cultural status (ESCS) parity index, science performance, 2018	OECD (2019[24]), *PISA 2018 Results (Volume I): What Students Know and Can Do*, https://doi.org/10.1787/5f07c754-en.
How many young adults attain tertiary education?	Tertiary education attainment rate, 25-34 year-olds, 2017	OECD (2018[25]), *"Population with tertiary education" (indicator)*, https://doi.org/10.1787/0b8f90e9-en.
How skilled are young tertiary educated adults?	Literacy (PIAAC[2] mean score, tertiary educated 25-34 year-olds, 2012/15	OECD (2021[26]), *Survey of Adult Skills (PIAAC) (2012, 2015, 2018) (database)*, www.oecd.org/skills/piaac/.
	Numeracy (PIAAC[3]), mean score, tertiary educated 25-34 year-olds, 2012/15	OECD (2021[26]), *Survey of Adult Skills (PIAAC) (2012, 2015, 2018) (database)*, www.oecd.org/skills/piaac/.
	Problem solving (PIAAC[3]), % level 2/3, tertiary educated 25-34 year-olds, 2012/15	OECD (2021[26]), *Survey of Adult Skills (PIAAC) (2012, 2015, 2018) (database)*, www.oecd.org/skills/piaac/.
How inclusive is tertiary education?	Share of tertiary educated with low-educated parents, 2012/15	OECD (2021[26]), *Survey of Adult Skills (PIAAC) (2012, 2015, 2018) (database)*, www.oecd.org/skills/piaac/.
How strong are the foundational skills of adults?	Literacy (PIAAC[3]), mean score, 2012/15	OECD (2021[26]), *Survey of Adult Skills (PIAAC) (2012, 2015, 2018) (database)*, www.oecd.org/skills/piaac/.
	Numeracy (PIAAC[3]), mean score, 2012/15	OECD (2021[26]), *Survey of Adult Skills (PIAAC) (2012, 2015, 2018) (database)*, www.oecd.org/skills/piaac/.
	Problem solving (PIAAC[3]), % level 2/3, 2012/15	OECD (2021[26]), *Survey of Adult Skills (PIAAC) (2012, 2015, 2018) (database)*, www.oecd.org/skills/piaac/.
Do adults have a broad set of skills?	Percentage of adults with a broad set of skills (PIAAC[3]) (level 3-5 in literacy and numeracy and level 2 or 3 in problem solving), 2012/15	OECD (2021[26]), *Survey of Adult Skills (PIAAC) (2012, 2015, 2018) (database)*, www.oecd.org/skills/piaac/.
Is there a strong culture of adult education?	Formal and/or non-formal adult education participation rate (PIAAC[3]), last 12 months, 2012/15	OECD (2021[26]), *Survey of Adult Skills (PIAAC) (2012, 2015, 2018) (database)*, www.oecd.org/skills/piaac/.
	Willing to participate in adult education (PIAAC[3]), percentage of population, 2012/15	OECD (2021[26]), *Survey of Adult Skills (PIAAC) (2012, 2015, 2018) (database)*, www.oecd.org/skills/piaac/.
	Low barriers to participation (PIAAC[3]), low % adults wanting to participate but who didn't, 2012/'15	OECD (2021[26]), *Survey of Adult Skills (PIAAC) (2012, 2015, 2018) (database)*, www.oecd.org/skills/piaac/.
Are skills of adults being developed inclusively?	High-low educated parents, adjusted literacy difference (PIAAC[3]), 2012/15	OECD (2021[26]), *Survey of Adult Skills (PIAAC) (2012, 2015, 2018) (database)*, www.oecd.org/skills/piaac/.
Putting skills to effective use		
How well are skills activated in the labour market?	Employment rate, working age, 2018	OECD (2018[27]), *"Employment rate" (indicator)*, https://doi.org/10.1787/1de68a9b-en.
	Labour force participation rate, 2018	OECD (2018[28]), *"Labouar force participation rate" (indicator)*, https://doi.org/10.1787/a452d2eb-en.
	Low share of youth not in employment education or training (NEET), 15-29 year-olds, 2017	OECD (2018[29]), *"Youth not in employment, education or training (NEET)"* (indicator), ahttps://doi.org/10.1787/72d1033a-en.
How inclusive is the labour market?	Gender (male-female), employment rate difference, 2018	OECD (2018[27]), *"Employment rate" (indicator)*, https://doi.org/10.1787/1de68a9b-en.
	High-low educated, employment rate difference, 2017	OECD (2018[30]) *"Employment by education level"* (indicator), https://doi.org/10.1787/26f676c7-en.

Dimension and aggregates	Indicator	Source
How well aligned are skills with the labour market?	Labour market imbalances indicator,[2] 2015/2017 (Skills for Jobs)	OECD (2018[31]), *Skills for Jobs Database*, www.oecdskillsforjobsdatabase.org/index.php#FR/.
Do workplaces make intensive use of skills?	Reading at work (PIAAC[3]), score, 2012/15	OECD (2021[26]), *Survey of Adult Skills (PIAAC) (2012, 2015, 2018) (database)*, www.oecd.org/skills/piaac/.
	Numeracy at work (PIAAC[3]), score, 2012/15	OECD (2021[26]), *Survey of Adult Skills (PIAAC) (2012, 2015, 2018) (database)*, www.oecd.org/skills/piaac/.
	Information and communication technology (ICT) at work (PIAAC[3]), score, 2012/15	OECD (2021[26]), *Survey of Adult Skills (PIAAC) (2012, 2015, 2018) (database)*, www.oecd.org/skills/piaac/.
Do people use their skills intensively in daily life?	Reading at home (PIAAC[3]), score, 2012/15	OECD (2021[26]), *Survey of Adult Skills (PIAAC) (2012, 2015, 2018) (database)*, www.oecd.org/skills/piaac/.
	Numeracy at home (PIAAC[3]), score, 2012/15	OECD (2021[26]), *Survey of Adult Skills (PIAAC) (2012, 2015, 2018) (database)*, www.oecd.org/skills/piaac/.
	ICT at home (PIAAC[3]), score, 2012/15	OECD (2021[26]), *Survey of Adult Skills (PIAAC) (2012, 2015, 2018) (database)*, www.oecd.org/skills/piaac/.
Is the use of skills at work improving?	Reading skills use at work difference prime-age adults (26-54) and older (55-65) (PIAAC[3]), 2012/15	OECD (2021[26]), *Survey of Adult Skills (PIAAC) (2012, 2015, 2018) (database)*, www.oecd.org/skills/piaac/.
	Numeracy skills use at work difference prime-age adults (26-54) and older (55-65) (PIAAC[3]), 2012/15	OECD (2021[26]), *Survey of Adult Skills (PIAAC) (2012, 2015, 2018) (database)*, www.oecd.org/skills/piaac/.
	ICT skills use at work difference prime-age adults (26-54) and older (55-65) (PIAAC[3]), 2012/15	OECD (2021[26]), *Survey of Adult Skills (PIAAC) (2012, 2015, 2018) (database)*, www.oecd.org/skills/piaac/.
Are firms designing workplaces to use skills effectively?	High-performance workplace practices, percentage of jobs, 2012/15 (PIAAC[3])	OECD (2021[26]), *Survey of Adult Skills (PIAAC) (2012, 2015, 2018) (database)*, www.oecd.org/skills/piaac/.
Is skills use stimulated by innovation?	Researchers, per 1 000 employed, 2016/2017	OECD (2018), Researchers (indicator), https://doi.org/10.1787/20ddfb0f-en.
	Triadic patent families, performance index (STI[2]Outlook), 2016	OECD (2018), Triadic patent families (indicator), https://doi.org/10.1787/6a8d10f4-en.
	International co-authorship, performance index (STI[5] Outlook), 2016	OECD (2018), *OECD Science, Technology and Innovation Outlook 2018*, https://doi.org/10.1787/sti_in_outlook-2018-en.
	International co-invention, performance index (STI[5] Outlook), 2016	OECD (2018), *OECD Science, Technology and Innovation Outlook 2018*, https://doi.org/10.1787/sti_in_outlook-2018-en.

1. Programme for International Student Assessment (PISA).
2. The average trend is reported for the longest available period since PISA 2006 for science, PISA 2009 for reading, and PISA 2003 for mathematics.
3. Survey of Adult Skills (PIAAC).
4. Labour market imbalances, average standard deviation across occupations in wages, employment, hours worked, unemployment and under-qualifications, 2015/2017.
5. Science, Technology and Innovation (STI).