Chapter 4. Labour market outcomes of higher education graduates

This chapter presents the skills and labour market outcomes of Mexico's higher education graduates based on OECD data, the Mexican Labour Force Survey, other national data sources and stakeholder views reported to the OECD review team. There has been major progress in increasing higher education attainment among Mexican youth, and currently over half a million higher education graduates enter the labour market every year. Their labour market outcomes are better than those with only upper secondary education, but their working conditions are not favourable; for example, large and increasing shares of higher education graduates have informal jobs and are overqualified for their jobs. Large differences exist by gender, age, field of study, level of study and geographic location.

Note: The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Higher education graduates in the labour market

Skills outcomes

Low levels of skills in the workforce and inefficiencies in putting skills to use are hindering Mexico's effort to increase productivity and competitiveness (OECD, 2017[1]). Mexico has the lowest share of working age population (25-64 year-olds) with a higher education degree across OECD countries at 17.4%, well below the OECD average of 36.9% (OECD, 2018[2]). Major progress has been made in increasing higher education attainment over the last 10 years. As a result, the share of young adults (25-34 year-olds) who have completed higher education increased from 16.3% in 2010 to 22.6% in 2017 (OECD, 2018[2]). Currently, over half a million higher education graduates enter the labour market each year (SEP, 2017[3]).

At present, 92% of higher education students graduate from bachelor's programmes (ISCED 6 level), 3% from short-cycle programmes (ISCED 5), and 5% from postgraduate programmes (ISCED 7-8). On average, students complete a bachelor's degree before the age of 25 years; this is lower than in most OECD countries where first-time graduates tend to be older. Only in Belgium, the United Kingdom, New Zealand, the Slovak Republic, Lithuania and Italy are graduates from bachelor's programmes younger (OECD, 2018[2]).

No comprehensive data is available for assessing the skills of adults in Mexico, although the country recently joined the OECD's Programme for the International Assessment of Adult Competencies (PIAAC). In 2019, the first results will be available for Mexico's comparative performance in adult proficiency in information-processing skills, literacy, numeracy and problem solving in technology-rich environments.

Representative data on the skills of higher education graduates is not available either. The EGEL tests (*Exámenes Generales para el Egreso de Licenciatura*), which are 39 study programme-specific tests developed by national experts to assess the application of discipline-specific skills to a work setting at the end of bachelor's programmes, suggest the existence of skills gaps. Over half of the 1.38 million students who took these tests between 2005 and 2016 did not obtain the minimum grade to pass the tests, and only 8% achieved an outstanding result.[1] Differences exist between programmes: for the period 2013-2016/7, the best-performing bachelor programmes were those in industrial engineering, international commerce, communication science and informatics. Meanwhile, the programmes with the highest failure rates were architecture, chemical engineering, computer engineering and international relations. EGEL data should be interpreted with caution for various reasons. For instance, the sample composition varies annually by type of programmes, there is no public information on the institutions and the programmes that require this test, and whether or not a test is a graduation requirement.

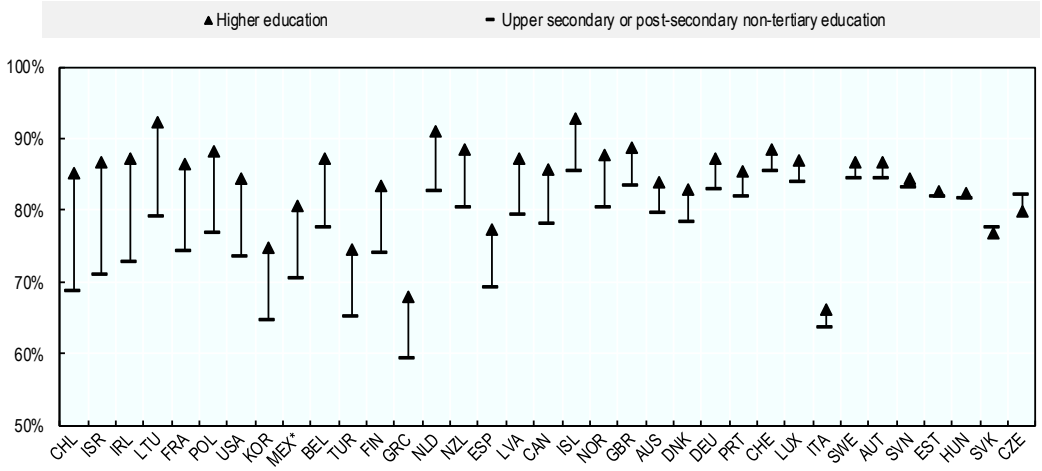
Employers claim that higher education graduates lack the skills they need, both in terms of discipline-specific knowledge and transversal skills (OECD, 2017[1]). A 2014 survey by the Research Centre for Development (*Centro de Investigación para el Desarrollo*, CIDAC) found that higher education graduates lacked skills related to written communication in Spanish and oral communication in Spanish and English. Furthermore, employers reported that graduates had limited ability in synthesising information and logical thinking, and did not show a sense of responsibility or proactivity (CIDAC, 2014[4]).

Labour market outcomes of higher education graduates

Comparison between higher education and upper secondary graduates

As in most OECD countries, a higher education degree in Mexico results in better labour market outcomes than lower levels of education. The employment rate of young workers with higher education was 10 percentage points higher than for those with upper secondary education (80.7% vs. 70.5%) (Figure 4.1). Compared internationally, employment rates for upper secondary and higher education attainment in Mexico were below the OECD averages of 77.1% and 84.1% respectively, but the employment rate of workers with below upper secondary educational attainment was 65.6%, above the OECD average of 59.3% (OECD, 2018[2]).

Figure 4.1. Employment rates of young graduates (25-34 year-olds) from higher education and upper secondary or post-secondary non-tertiary education, 2017



Note: Countries are ranked in descending order according to the difference between the employment rates of young graduates from higher education and upper secondary or post-secondary non-tertiary education.
Source: OECD (2018), Education at a Glance.

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In 2017, the inactivity rate of young workers with a higher education degree in Mexico was 14.5%, almost 12 percentage points lower than inactivity among young workers with upper secondary education (26.1%). Nevertheless, unemployment is higher for those with a higher education degree (5.7%) than for workers with only upper secondary education (4.4%) in the same age group (OECD, 2018[2]).

Young workers with a higher education degree generally enjoy better working conditions than those with only upper secondary education. In 2017, it was far more common for young workers with a higher education degree than those with only upper secondary education to have a written contract (81.1% vs. 62.9%) and to benefit from annual mandatory wage supplements (82.6% vs. 71%), paid holidays (78.2% vs. 62.7%) and access to healthcare (66% vs. 51.1%); it was less common for them to work outside normal working hours (7.9% vs. 15.1%) or in shifts (2.9% vs. 7.2%) (INEGI-ENOE, 2017[5]). Young higher education graduates use different channels to look for jobs than young workers with upper secondary education (Box 4.1).

Young workers with a higher education degree seem more exposed to the risk of losing their job due to a lack of experience than young workers with upper secondary education. In 2017, 12% of unemployed young higher education graduates had lost their previous job because they lacked experience, compared to only 5.4% of young workers with upper secondary education. For both groups, lack of experience as a reason for unemployment has increased since 2010 (INEGI-ENOE, 2017[5]).

Box 4.1. Job search practices of young higher education graduates

In 2017, 56.8% of young graduates contacted employers directly, and 10.4% contacted someone in their personal networks. Although the share of graduates searching through personal contacts has decreased since 2010, they remain the most effective ways young graduates obtain a job: 46.6% and 18.9% of all graduates, respectively, find their jobs through personal contacts. These channels are even more common for upper secondary education graduates, as around 55% search and find their jobs this way.

In 2017, 43.2% of young higher education graduates searched online, an increasing trend since 2010 (33.4%). However, only 11% of young higher education graduates reported to have found their current job advertised online. This channel is even less common for young upper secondary education graduates; only 3.5% find their jobs online.

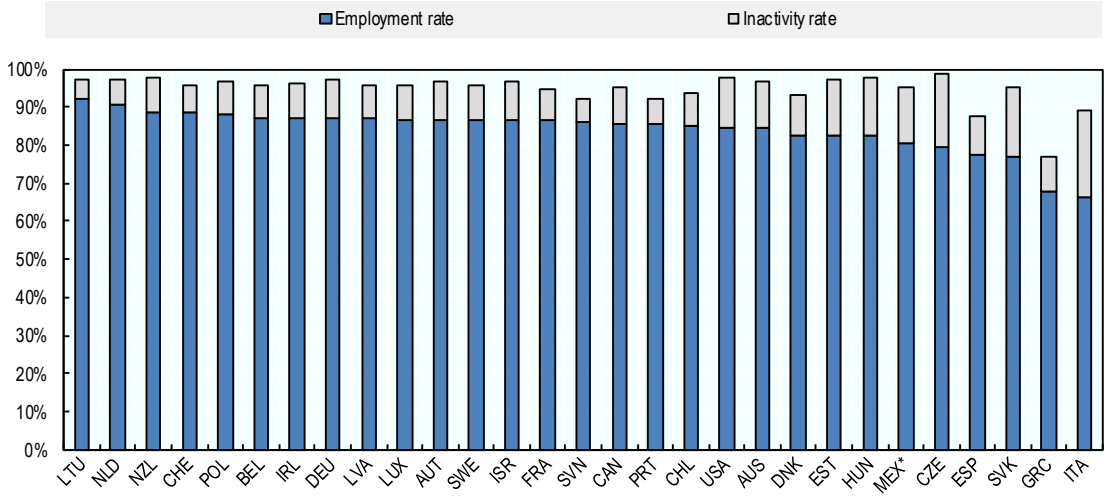
Source: Mexican Labour Force Survey, 1st semester 2017 (INEGI-ENOE, 2017[5]).

Average labour market outcomes of young higher education graduates

Labour market outcomes for young higher education graduates (25-34 year-olds) in Mexico are poorer than the OECD average (Figure 4.2). In 2017, the employment rate of young higher education graduates was 80.7%, below the OECD average of 84.1%. The inactivity rate of young higher education graduates was 14.5%, above the OECD average of 10.7%, suggesting that there are higher entry barriers to the labour market for young graduates than in other OECD countries (OECD, 2018[2]). Unemployment was 5.7%, which is similar to the OECD average of 5.8%, but as there are no unemployment benefits and very few active labour market policies in Mexico, registered unemployment is not common.

Employment outcomes for young higher education graduates have improved since 2010. The employment rate increased slightly from 79.9% to 80.7% in 2017, and inactivity decreased from 17.2% to 14.5% (OECD, 2018[2]). However, working conditions for young higher education graduates have worsened. The share of young higher education graduates who are employed informally (i.e. without social security or pension coverage) rose from 25.8% in 2010 to 26.2% in 2017. During the same period, overqualification, that is, employment in occupations that do not require a higher education degree increased from 44.3% to 45.7% (INEGI-ENOE, 2017[5]).[2] In 2017, one in three (33.2%) of the formally employed young graduates did not have access to healthcare, 21.8% had no paid annual leave, and 17.2% worked without a written contract (INEGI-ENOE, 2017[5]).

Figure 4.2. Employment and inactivity rates for young higher education graduates (25-34 year-olds), 2017



Note: Countries are ranked in descending order for the employment rates of young higher education graduates.
Source: OECD (2018) Education at a Glance.

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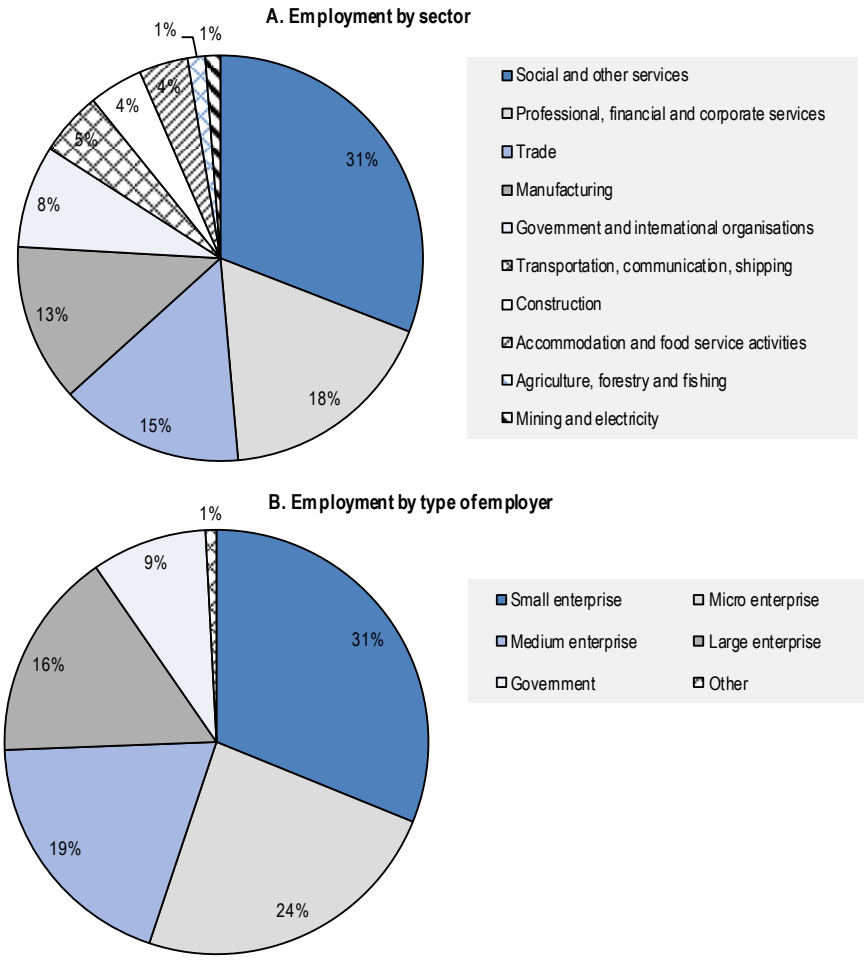
In 2017, the following four sectors employed more than 75% of young higher education graduates: social and other services (30.9%); professional, financial and corporate services (17.7%); trade (14.7%); and manufacturing (12.6%). The vast majority worked as paid employees (84.0%), 10.2% were self-employed, 3.6% were employers and 2.2% were working without pay (INEGI-ENOE, 2017[5]) (Figure 4.3, Panel A).

In 2017, more than half of young graduates worked for either small firms with fewer than 50 employees (31%) or micro firms with fewer than 10 employees (24%); about one in five worked in medium-sized enterprises (19%), and roughly one in six in large firms with more than 250 employees (16 %). The government employed the lowest share of young graduates (9%) (INEGI-ENOE, 2017[5]) (Figure 4.3, Panel B). Between 2013 and 2017, employment in government decreased by two percentage points, and employment in large firms by one percentage points; whilst employment increased in medium-sized companies (by three percentage points) and micro enterprises (by two percentage points) (INEGI-ENOE, 2017[5]). Close to 95% of all companies in Mexico have less than 50 employees.

The geographic mobility for jobs of young higher education graduates is low. In 2017, only 5.0% of young higher education graduates moved to another area for their job. The large share of informality and overqualification, along with the high reliance on personal contacts to find jobs, are likely obstacles to higher geographic mobility. Variations exist across the 32 states: Baja California Sur (north of the country) sees the highest share of young graduates who have moved to or within the state for their job (19.0%), while Tlaxcala (centre of Mexico) has the lowest share of mobility (0.2%) (INEGI-ENOE, 2017[5]).

Figure 4.3. Employment of young higher education graduates (25-34 year-olds) in Mexico by sector and type of employer, 2017



Source: Mexican Labour Force Survey, 1st semester 2017 (INEGI-ENOE, 2017[5]).

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Relative earnings for workers with a higher education degree in Mexico are the second highest among OECD countries, after Chile, and similar to other Latin American countries, such as Brazil, Colombia and Costa Rica. Young workers with a higher education degree can expect to earn 78% more than young workers with only upper secondary education (Table 4.1). For this age group, the wage premium has gradually increased from 64% in 2014 (OECD, 2018[2]). Earnings vary greatly by field of study. Engineers are among the highest earners, with monthly salaries ranging from around MXN 17 000 (Mexican peso) (approx. USD 900) in mining and extraction, to around MXN 14 000 (approx. USD 740) in construction and civil engineering. For a degree in education, salary options are among the lowest, ranging from MXN 10 000 (approx. USD 530) to MXN 8 100 (approx. USD 430) per month (STPS, 2018[6]).

Table 4.1. Employment outcomes of young higher education graduates (25-34 year-olds) in Mexico by levels of study and gender, 2017 or latest data

	Gender	Share of population (25-34 year-olds) (%)	Share of first time graduates (2016) (%)	Employment rate (%)	Unemployment rate (%)	Inactivity rate (%)	Informal employment (%)	Overqualification rate (%)	Relative earnings (upper secondary=100)
All higher education (ISCED 5-8)	Total	22.6	100	80.7	5.7	14.5	26.6	45.7	182
	Female	22.5	53.1	74.2	5.7	21.3	27.1	42.1	173
	Male	22.6	46.9	87.9	5.6	6.9	26.2	48.9	194
Short-cycle programme (ISCED 5)	Total	0.6	8.1	73.9	4.3	22.7	38.1	70.4	119
	Female	0.6	6.4	59.2	3.7	38.6	39.0	73.8	108
	Male	0.6	10.1	92.5	4.8	2.9	37.3	67.4	128
Bachelor's programme (ISCED 6)	Total	20.7	91.9	80.6	5.8	14.5	27.2	46.8	180
	Female	20.6	93.6	74.3	5.8	21.2	27.6	42.5	173
	Male	20.8	89.9	87.6	5.8	7.0	26.8	50.7	196
Master's, doctoral or equivalent (ISCED 7-8)	Total	1.2	(z)	85.2	4.4	10.9	14.3	19.4	310
	Female	1.3	(z)	81.4	5.2	14.2	14.6	24.4	(c)
	Male	1.2	(z)	89.9	3.4	7.0	14.0	23.6	343

Notes: (1) Informal employment is defined as employment without social security and pension coverage. Data on informal employment is collected by the Mexican Labour Force Survey.
(2) Data on overqualification is also reported from the Mexican Labour Force Survey, which uses job analysis to classify employment in occupations that do not require higher education qualifications as overqualification. According to this classification, occupations that do not require higher education qualifications are office workers, industrial workers, artisans and assistants, merchants, transport operators, workers in personal services, workers in protection and surveillance and agricultural workers.
(3) (c) Data below publication limit; (z) not applicable.
(4) Relative earnings are shown for full-time, full-year earners.
Source: OECD (2018), Education at a Glance, and Mexican Labour Force Survey, 1st semester 2017 for the data on inactivity rate, informal employment and overqualification.

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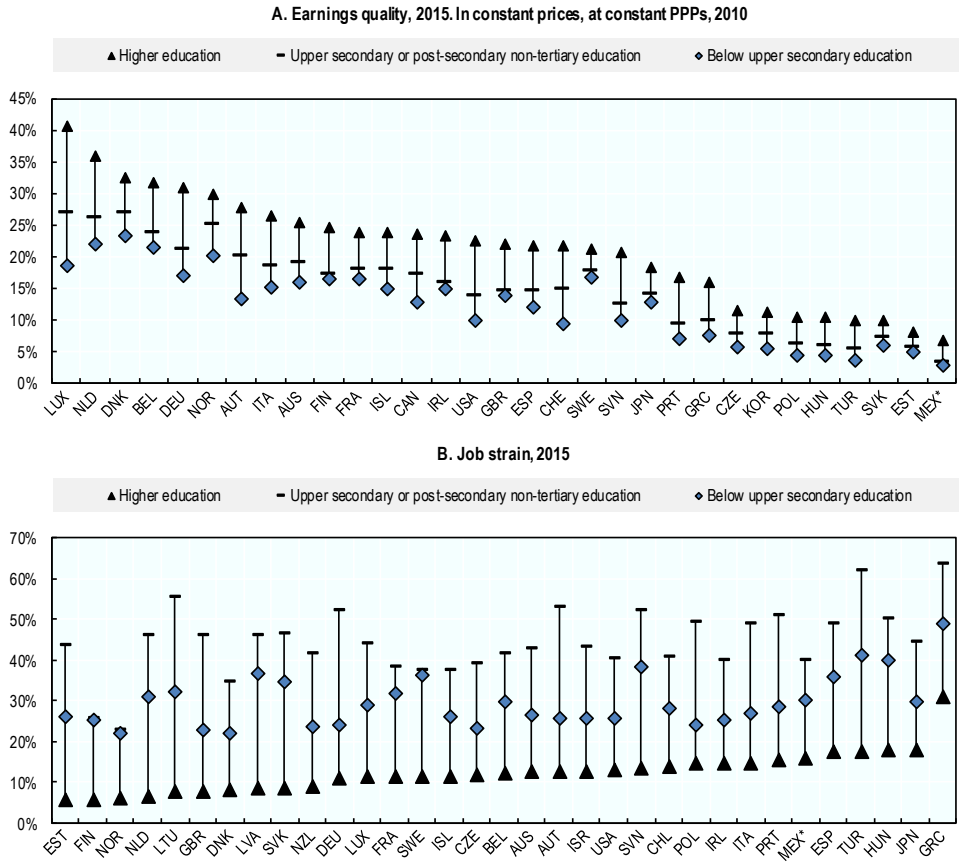
Earning quality in Mexico is the lowest among OECD countries (Figure 4.4, Panel A). Earning quality is measured as the extent to which earnings contribute to workers' well-being in terms of average earnings and their distribution across the workforce. Differences in earnings quality are primarily driven by gaps in average earnings, which are a key benchmark for assessing whether having a job ensures good living conditions. Mexico ranks last as earnings have the lowest contribution to worker's well-being. Average earnings are higher for adult workers (25-64 year-olds) with a higher education degree, but their share of the workforce is low (17.4%). Workers with below upper secondary education account for 62.3% and workers with upper secondary education for 20.2% of the workforce.

The quality of the working environment for highly skilled workers is low in Mexico (Figure 4.4, Panel B), and it ranks towards the bottom end of OECD countries in terms of job strain. Job strain occurs when high demands on workers, such as time pressure or unhealthy working conditions, are combined with low resources available to address them, such as a lack of work autonomy or training. In Mexico, similar to all other OECD countries, job strain is higher for medium skilled workers than for lower skilled workers, and higher education graduates have the lowest incidence of job strain. However, job

strain for highly skilled workers in Mexico is 16%, which is above the OECD average (12.4%), and lower only than Spain, Turkey, Hungary, Japan and Greece (OECD, 2018[2]).

Figure 4.4. Earnings quality and job strain for higher education graduates (25-64 year-olds), 2015



Note: In Panel A, the earnings quality indicator captures the extent to which earnings contribute to workers' well-being in terms of average earnings and their distribution across the workforce. In Panel B, the quality of the working environment indicator captures non-economic aspects of jobs, including the nature and content of the work performed, work-time arrangements and workplace relationships; these are measured as the incidence of job strain, which is characterised as high job demands with low job resources. In both panels, countries are ranked for adult workers with higher education degrees.
Source: OECD Job Quality Database (OECD, 2018[7]).

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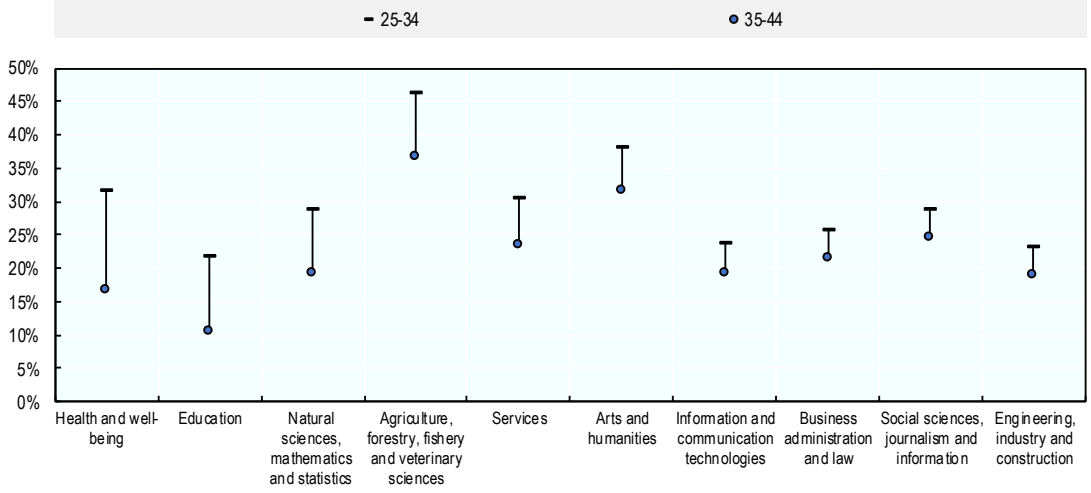
Labour market outcomes of younger versus older higher education graduates

Similar to the OECD average, young graduates (25-34 year-olds) in Mexico do not immediately obtain the same labour market outcomes from a higher education degree as older graduates (35-44 year-olds). Young graduates in Mexico have, at 14.5%, a higher inactivity rate than older graduates (12.0%), a higher unemployment rate (5.7% vs. 3.0%), and a lower employment rate (80.7% vs. 85.4%) than older graduates (OECD, 2018[2]).

When beginning their professional careers, young graduates are more likely to work informally. This is particularly the case for graduates from health and well-being programmes, for whom informal employment among young graduates over the period 2013-2017 was 15 percentage points higher than for the older cohort followed by education (21.8% for young graduates vs 10.4% for the older cohort) and natural sciences, mathematics and statistics (28.8% vs 19.2%) (INEGI-ENOE, 2017[5]) (Figure 4.5).

Figure 4.5. Informal employment rates for young (25-34 year-olds) and older (35-44 year-olds) higher education graduates in Mexico by field of study, averages 2013 - 2017



Note: Simple averages computed over the period 2013-2017. Ranked in descending order by the difference between the informal employment rates of young and older higher education graduates.
Source: Mexican Labour Force Survey, 1st semester 2013 – 1st semester 2017 (INEGI-ENOE, 2017[5]).

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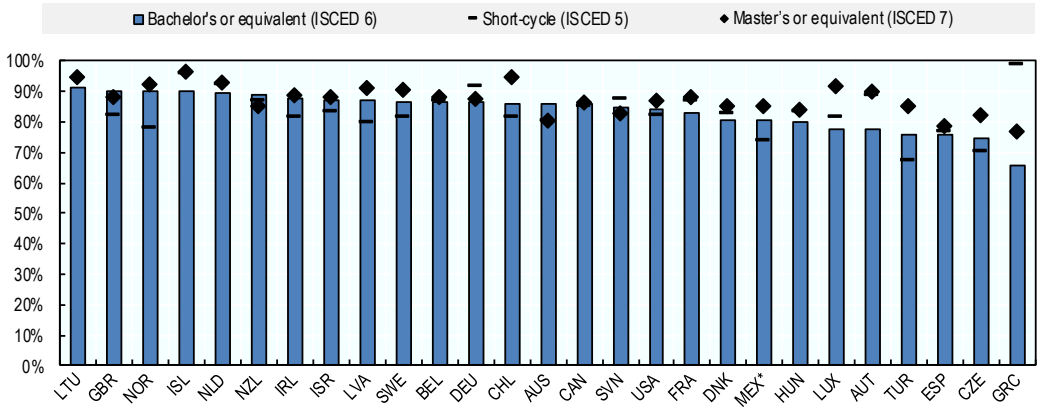
Across all levels of higher education, the prevalence of informal employment in 2017 was higher for the younger (26.5%) than for the older (19.4%) cohort of workers with a higher education degree (INEGI-ENOE, 2017[5]). The largest difference is for short-cycle degree holders: 38.1% of the younger cohort was employed informally compared to 27.9% of the older cohort. For workers with a bachelor's degree, informal employment was 27.2% for the younger cohort and 21.6% for the older cohort. The smallest gap exists for workers with a postgraduate degree (14.3% vs 8.8%) (INEGI-ENOE, 2017[5]).

Employers more often assign jobs that require higher education qualifications to older higher education graduates than to the younger cohort. This was most evident for medium-sized enterprises and small enterprises. In medium-sized firms, 47.4% of young higher education graduates worked in 2017 in jobs for which they were overqualified, compared to 39.4% of older higher education graduates. In small enterprises, which overall appear to offer a better skills match for higher education graduates, the shares of overqualified employees were 32.1% for younger and 24.3% for older cohorts. The smallest difference is for employment in government (INEGI-ENOE, 2017[5]).

Labour market outcomes for levels of study

Similar to many OECD countries, the labour market outcomes of higher education graduates in Mexico improve with increasing levels of higher education attainment (Figure 4.6) (Table 4.1, above). In Mexico, graduates from short-cycle programmes (ISCED 5) have, at 73.9%, the lowest employment rate among all higher education graduates, below the OECD average (83.3%). Employment rates for bachelor's graduates (ISCED 6) (80.6%) and for master's graduates (ISCED 7) (85.2%) were similar to the OECD average of 82.3% and 86.7%, respectively (OECD, 2018[2]).

Figure 4.6. Employment rates of young higher education graduates (25-34 year-olds) from short-cycle, bachelor's and master's programmes, 2017



Note: Countries are ranked in descending order for the employment rate of bachelor's or equivalent programmes (ISCED 6).
Source: OECD (2018), Education at a Glance.

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Among young workers with a higher education degree in Mexico, those with a short-cycle programme degree have the highest inactivity rate. In 2017, the inactivity rate for short-cycle degree holders was 24.4%, higher than the inactivity rate for bachelor's degree holders (16.7%) and for postgraduate degree holders (ISCED 7-8) (14.7%). For all three levels of higher education attainment, inactivity has increased over time, with short-cycle programmes experiencing the highest increase from 20.8% in 2013 to 24.4% in 2017 (INEGI-ENOE, 2017[5]).

Overqualification is a key issue for young higher education graduates in Mexico. In 2017, 46% worked in occupations that, according to the Mexican statistics agency, do not require a higher education degree, such as office workers, industrial workers, craftsmen and assistants, merchants, transport operators, workers in personal services, workers in protection and surveillance, and agricultural workers. Employment decreased by 3% over the period 2010-2017 in occupations that require a higher education qualification (e.g. professionals, technicians, art workers, public officials, managers and education workers). Short-cycle degree holders had the highest incidence of overqualification at 70.4%, in contrast to 46.8% of bachelor's and 19.4% of postgraduate degree holders (INEGI-ENOE, 2017[5]).

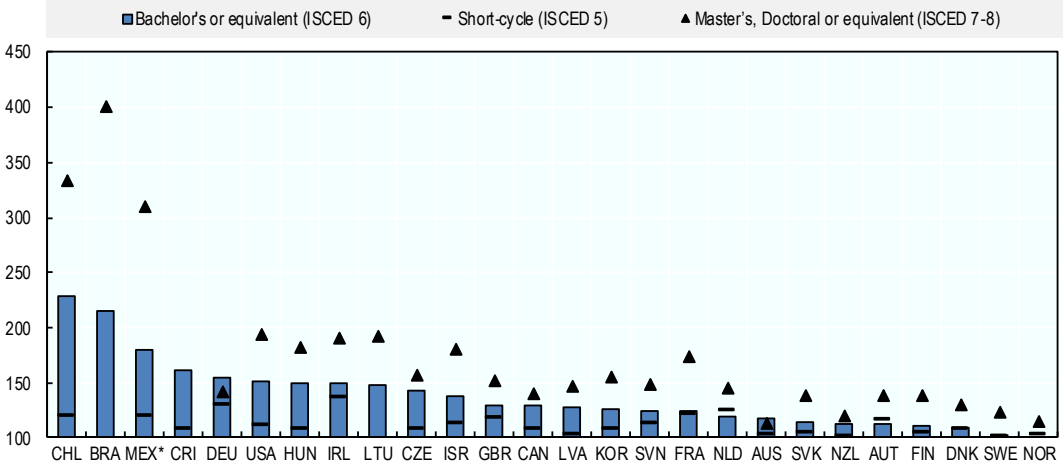
Young workers with a short-cycle degree also have also a higher prevalence of informal employment. In 2017, 38.1% of short-cycle degree holders were employed without social

security or pension coverage, compared to 27.2% of young workers with a bachelor's degree and 14.3% of postgraduate level graduates (INEGI-ENOE, 2017[5]).

In Mexico, the wage premium for young higher education graduates (Figure 4.7) also increases with advanced levels of higher education. Young workers with a short-cycle degree can expect 19% more pay than upper secondary education graduates. Bachelor's degree holders can expect a salary increase of 80% and postgraduate degree holders can expect to earn over three times more than a young worker with upper secondary education (210% increase) (OECD, 2018[2]).

Figure 4.7. Relative earnings of young higher education graduates (25-34 year-olds) by educational attainment, 2016

Upper secondary level education (ISCED 3) or (ISCED 3+4) = 100. Full-time, full-year earners.



Note: Countries are ranked in descending order for the employment rate of bachelor's or equivalent programmes (ISCED 6).
Source: OECD (2018), Education at a Glance.

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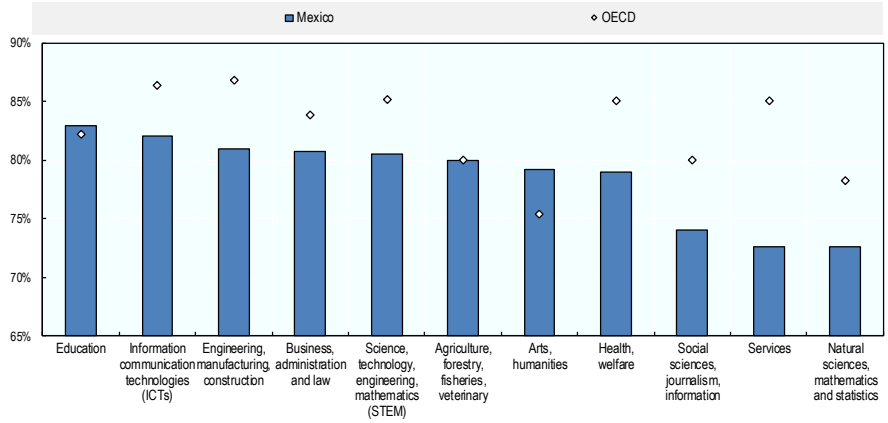
Labour market outcomes by field of study

The two largest fields of study in Mexico are law and business administration, which has a share of 35.1% of young graduates, well above the OECD average (22.8%), and engineering, manufacturing and construction (16.6%), which is slightly above the OECD average (15.8%) (Table 4.2). Programmes in education are also relatively common in Mexico, as are health and welfare, and information and communication technologies (ICT). Less popular fields of study are arts and humanities, and natural sciences, mathematics and statistics. The field of study with the lowest share of graduates is services, with only 0.7% of graduates (OECD, 2018[2]).

Labour market outcomes vary by field of study in Mexico and are, excluding education, arts and humanities, less favourable than the OECD average (Figure 4.8) (Table 4.2). In 2017, fields of study with employment rates above the national average were education (82.9%), ICT (82.0%), and engineering, manufacturing and construction (80.9%). Employment rates were lowest for services (72.6%) and natural sciences, mathematics and statistics (72.6%) (OECD, 2018[2]).

Figure 4.8. Employment rates of young higher education graduates (25-34 year-olds) by field of study in Mexico compared with the OECD average, 2016



Note: Ranked in descending order by the employment rate for young higher education graduates (25-34 year-olds) in Mexico per field of study. The employment rate for agriculture, forestry, fisheries and veterinary is from 2015.
Source: OECD (2018) Education at a Glance.

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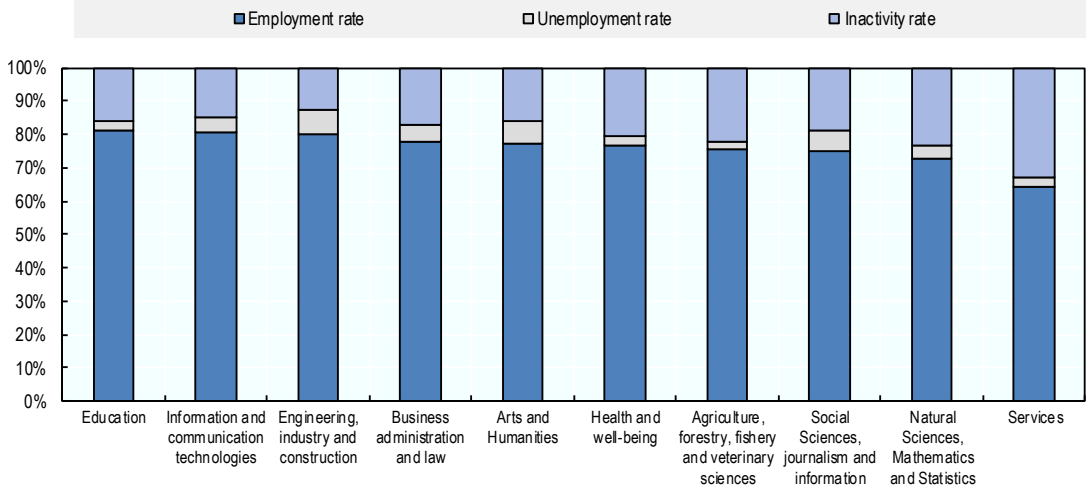
Between 2013 and 2017, employment increased from 66.4% to 73.0% for graduates from programmes in natural sciences, mathematics and statistics; from 73.4% to 77.6% for arts and humanities; and from 72.3% to 74.8% for social sciences and journalism. ICT showed stable employment, but employment for all other fields of study decreased over the same period (INEGI-ENOE, 2017[5]).

Figure 4.9. Labour market outcomes of young higher education graduates (25-34 year-olds) in Mexico by field of study, 2017



Note: Ranked in descending order by the employment rate per field of study.
Source: Mexican Labour Force Survey, 1st semester 2017, (INEGI-ENOE, 2017[5]).

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In 2017, inactivity rates were particularly high in services (32.8%) and natural sciences, mathematics and statistics (23.2%), while graduates from engineering programmes had the lowest incidence of inactivity (12.4%). Unemployment rates also varied by field of study: graduates from programmes in engineering, industry and construction had the highest incidence of unemployment (7.6%), and graduates from agriculture, forestry, fishery and veterinary sciences the lowest (2.1%) (INEGI-ENOE, 2017[5]) (Table 4.2) (Figure 4.9).

In 2017, informal employment was highest among graduates from programmes in agriculture, forestry, fisheries and veterinary (45.0%), and arts and humanities (41.9%); and lowest for graduates from programmes in engineering, manufacturing and construction (22.0%), education (23.4%) and ICT (23.5%) (INEGI-ENOE, 2017[5]).

Table 4.2. Employment outcomes of young higher education graduates (25-34 year-olds) in Mexico by field of study, 2017 or latest data

Field of study	Share of tertiary educated population (24-65 year-olds) (%)	Share of young graduates ISCED 5-8 (%), 2016	Employment rate (%)	Inactivity rate (%)	Informal employment (%)	Overqualification rate (%)
Education	12	14	82.9	16.0	23.4	23.6
Arts and humanities	5	4	79.2	16.1	41.9	35.4
Social sciences, journalism and information	10	9	74.0	18.7	28.9	48.7
Business, administration and law	35	35	80.7	16.8	25.0	56.1
Natural sciences, mathematics and statistics	2	3	72.6	23.0	35.1	39.8
Information communication technologies	8	2	82.0	15.1	23.5	44.6
Engineering, manufacturing & construction	17	21	80.9	12.4	22.0	53.5
Agriculture, forestry, fisheries and veterinary	2	2	80.0	22.3	45.0	50.1
Health and welfare	9	10	79.0	20.4	33.6	19.5
Services	1	1	72.6	32.8	26.0	66.4

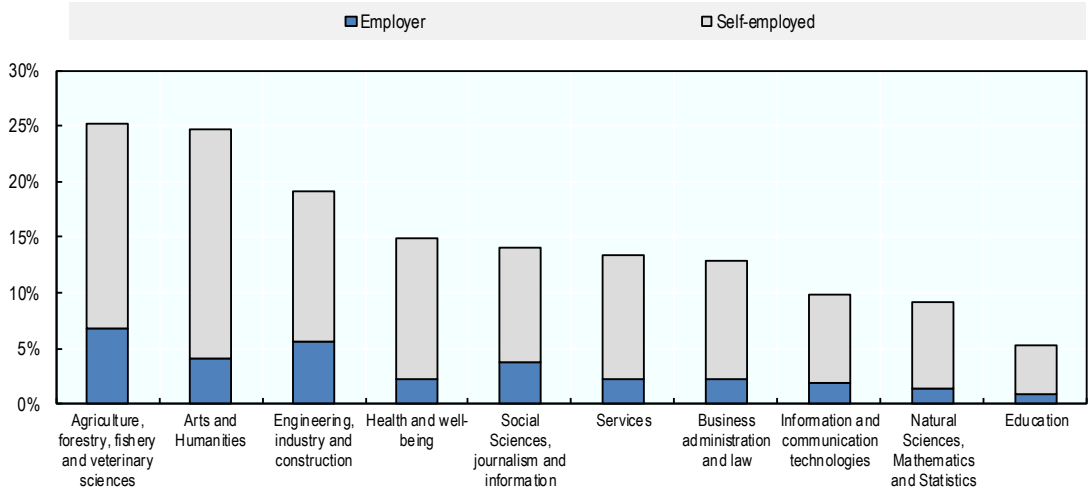
Note: Informal employment is defined as employment without social security and pension coverage. Data on informal employment is collected by the Mexican Labour Force Survey. Data on overqualification is also reported from the Mexican Labour Force Survey which uses job analysis to classifies classify employment in occupations that do not require higher education qualifications as overqualification. According to this classification, occupations that do not require higher education qualifications are office workers, industrial workers, artisans and assistants, merchants, transport operators, workers in personal services, workers in protection and surveillance and agricultural workers.
Source: OECD (2018) Education at a Glance, and for the data on inactivity rate, informal employment and overqualification Mexican Labour Force Survey, 1st semester 2017 (INEGI-ENOE, 2017[5]).

StatLink http://dx.doi.org/10.1787/888933880850

Overqualification varies across fields of study (Table 4.2). The lowest incidence of overqualification occurs for graduates from health and well-being (19.5%), who account for less than 10% of young higher education graduates. In the two largest fields of study, overqualification is an issue for one out of two graduates. The highest share of overqualification occurs for graduates from programmes in business, administration and law, where 56.1% worked in occupations that did not require a higher education qualification. The outcome is similar for graduates from engineering, manufacturing and construction, 53.5% of whom are over qualified (INEGI-ENOE, 2017[5]).

Young higher education graduates are becoming more entrepreneurial. Between 2010 and 2017, the proportion of young graduates who were either self-employed or running a business that employed others increased from 12.7% to 13.8%. Most of this increase was due to a rise in self-employment from 9% in 2010 to 10.2% in 2017, whereas the share of people who operated a business that employed others fluctuated around 3% (INEGI-ENOE, 2017[5]). The fields of study with the highest rates of self-employment were arts and humanities (20.6%), agriculture (18.6%) and engineering (13.5%). Similarly, running a business that employed others was more common for graduates from programmes in agriculture (6.7%), arts and humanities (4.1%), and engineering (5.6%) (INEGI-ENOE, 2017[5]) (Figure 4.10).

Figure 4.10. Entrepreneurship rates of young higher education graduates (25-34 year-olds) in Mexico by field of study, averages 2013-2017



Note: Simple averages computed over the period 2013-2017. Ranked in descending order by the employer and self-employment rates per field of study.
Source: Mexican Labour Force Survey, 1st semester 2013-1st semester 2017, (INEGI-ENOE, 2017[5]).

StatLink http://dx.doi.org/10.1787/888933880869

Labour market outcomes by gender

Women represent 53.1% of first-time graduates from bachelor's programmes in Mexico, a share that has been stable since 2005 (OECD, 2018[2]). Although still below the OECD average (57.3%), the fact that women represent over half of Mexico's first-time graduates confirms the important progress made towards ensuring gender equality in access to education. Women outnumber men at all levels of higher education, except for short-

cycle programmes (58.4% male vs. 41.6% female), which are mainly offered in technical fields (OECD, 2018[2]).

Women obtain major benefits from completing higher education. In 2017, the employment rate for young women (25-34 year-olds) with a higher education degree was 72.2%, well above those who had completed only upper secondary education (54.3%). In comparison, the average employment rate across OECD countries of young women with a higher education degree was 80.6%, and 68.3% for young women with upper secondary education. Mexican young women who have completed higher education can expect a wage premium of 73% compared to those who have completed only upper secondary education, well above the OECD average wage premium of 41% (OECD, 2018[2]).

However, large gender gaps in workforce participation still exist (OECD, 2017[8]). Following the completion of a higher education degree, young men (25-34 year-olds) obtain higher employment rates, higher relative earnings and lower inactivity rates than women in the same age group (Figure 4.11) (Table 4.1, above). However, for young women, inactivity decreases with increasing levels of higher educational attainment, whereas it increases for young men. In 2017, inactivity for young women who had completed a short-cycle degree (40.6%) was far higher than for those with a bachelor's (23.9%) or postgraduate (20.2%) degree. By contrast, young men with a short-cycle degree had a lower inactivity rate (1.7%) than those with a bachelor's (8.9%) or postgraduate degree (9.6%) (INEGI-ENOE, 2017[5]).

Figure 4.11. Labour market outcomes of young higher education graduates (25-34 year-olds) in Mexico by gender, 2017

Source: OECD calculations with data from the Mexican labour force survey, first trimester 2017 (INEGI-ENOE, 2017[5]).

StatLink http://dx.doi.org/10.1787/888933880888

Overqualification is more common for young men (48.9%) than for young women (42.1%) (INEGI-ENOE, 2017[5]). However, for advanced levels of higher education attainment, the share of overqualification decreases to varying extents for men and women. Overqualification for short-cycle degree holders is seen more with women (73.8%) than men (67.94%). Among bachelor's programme graduates, overqualification was more common for men (50.7%) than for women (42.5%), but at master's and

doctoral level, more women are overqualified for their job than men (24.4% vs 15.2%) (INEGI-ENOE, 2017[5]).

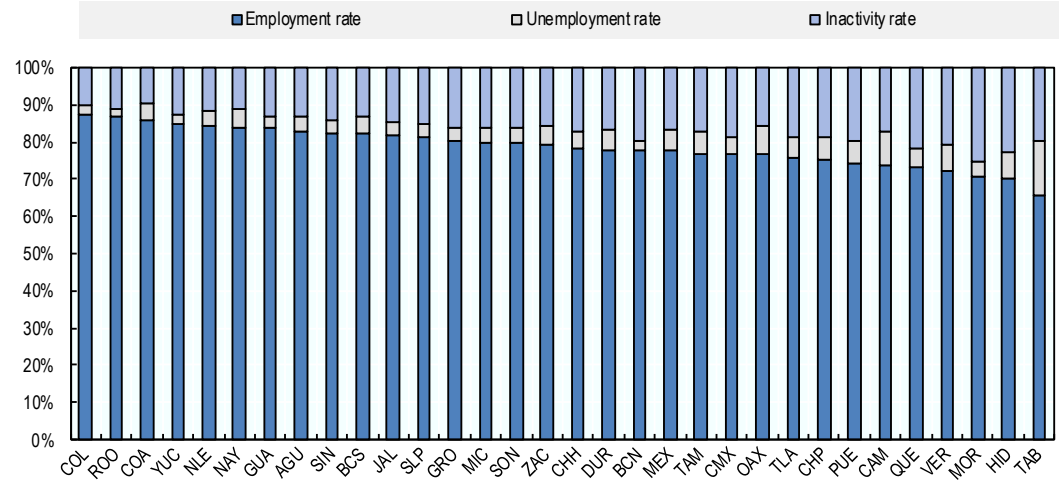
Gender differences also occur regarding the type of employer, particularly for small enterprises and large firms. In 2017, small enterprises employed more young female higher education graduates than their male peers (36.0% versus 26.7%), whereas large firms employed more young men than women with a higher education degree (17.8% vs 14.0%) (INEGI-ENOE, 2017[5]).

In 2017, paid employment was more common for young female graduates (86.8%) than for young male graduates (81.6%). However, work without payment was slightly more common for women (2.5%) than it was for men (2.0%). More men than women were self-employed (11.3% vs. 8.9%) or employed others (5.1% vs. 1.8%) (INEGI-ENOE, 2017[5]).

Labour market outcomes by state

Labour market outcomes for young higher education graduates vary greatly across the 32 states in Mexico, with particular discrepancies in inactivity rates (Figure 4.12). In 2017, graduates with the highest labour market inactivity were in three central states: Morelos (25.4%), Hidalgo (22.7%) and Queretaro (21.7%). Graduates with the lowest labour market inactivity were in Quintana Roo (10.9%), Colima (9.6%) and Coahuila (9.6%) (INEGI-ENOE, 2017[5]).

Figure 4.12. Labour market outcomes of young higher education graduates (25-34 year-olds) in Mexico by state, 2017



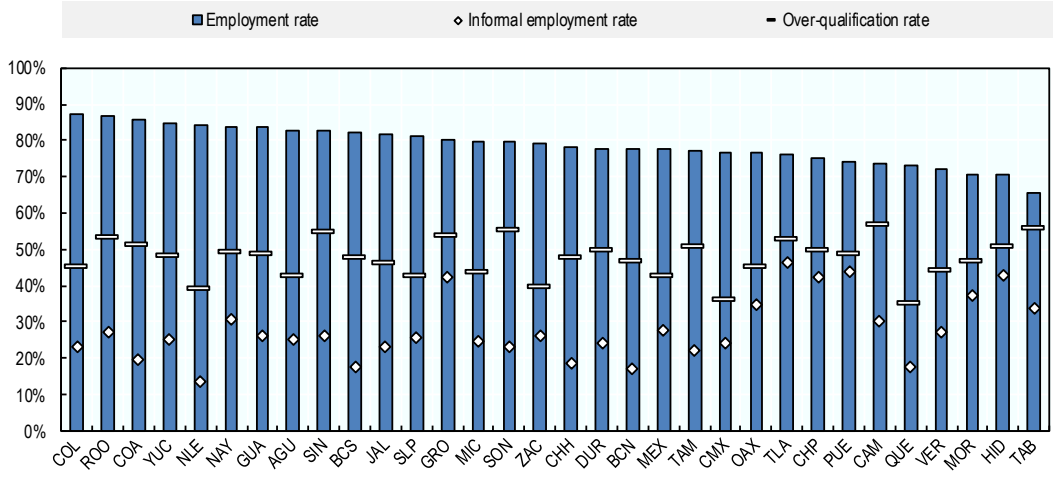
Note: States are ranked in descending order by the employment rate of young higher education graduates (25-34 year-olds).
Source: Mexican Labour Force Survey, 1st semester 2017, (INEGI-ENOE, 2017[5]).

StatLink http://dx.doi.org/10.1787/888933880907

In 2017, the employment rates of young graduates were above the national average of 80.7% in 13 out of the 32 states. Colima, in the west of the country, had the highest employment rate at 87.2%. Employment rates were lowest in the southern state of Tabasco (65.7%) and the central states of Hidalgo (70.4%), Morelos (70.7%) and Veracruz (72.2%).

Variations exist across the states in informal employment and overqualification rates (Figure 4.13) (INEGI-ENOE, 2017[5]). In 2017, graduates in northern states such as Baja California Norte, Baja California Sur, Coahuila and Nuevo León, have higher employment rates and a lower incidence of informal employment than their peers in other parts of the country. Graduates in the central states of Tlaxcala, Puebla Hidalgo and Morelos, and the southern states of Chiapas, Guerrero, Tabasco and Oaxaca, have the lowest levels of formal and the highest levels of informal employment. In most states, more than half of employed young higher education graduates were working in occupations for which no higher education qualification was needed. Overqualification was highest in the southern states of Campeche (57.0%) and Tabasco (56.1%), and lowest in the states of Queretaro (35.4%), Mexico City (36.2%), Nuevo León (39.5%) and Zacatecas (39.6%).

Figure 4.13. Informal employment and overqualification rates of young higher education graduates (25-34 year-olds) in Mexico by state, 2017



Note States are ranked in descending order by the employment rate of young higher education graduates (25-34 year-olds). *Informal employment* is defined as employment without social security and pension coverage. The Mexican Labour Force Survey uses job analysis to classify *overqualification* as employment in occupations that do not require higher education qualifications. According to this classification, occupations that do not require higher education qualifications are office workers, industrial workers, artisans and assistants, merchants, transport operators, workers in personal services, workers in protection and surveillance and agricultural workers. Informal and formal employment are presented as percentages of the total employment by state.
Source: Mexican Labour Force Survey, 1st trimester 2017 (INEGI-ENOE, 2017[5]).

StatLink http://dx.doi.org/10.1787/888933880926

Despite the large differences in labour market outcomes by state, the geographic mobility of higher education graduates is low. In 2017, 5% of young higher education graduates had to move either within their state or into another state for their job. This mobility was higher to or within states with high industrial dynamism, such as Baja California Sur (19.0%). Some fields of study showed higher mobility than others, particularly education (6.3%), health (5.4%), and arts and humanities (4.7%) (INEGI-ENOE, 2017[5]).

Alignment between skills and labour market needs

While a large young labour force is a great strength of Mexico's labour market, the country still lacks specialised talent, despite recent improvements. Less than a quarter of the young population (25-34 year-olds) have obtained higher education credentials, of which 17% graduated from engineering and 8% from ICT programmes. The OECD Skills for Jobs database identifies shortages in science and engineering professionals and ICT associate professionals, that is, the demand for these workers exceeds the supply. The low interest in enrolling in these study programmes is an obstacle to the country's specialisation in high-tech industries (OECD, 2017[9]). On the other hand, there are surpluses of managers, business and administrative professionals, and most associate professionals (OECD, 2017[9]), but, as noted above, just over 35% of young graduates are from programmes in law and business administration.

Inefficient use of skills and low capacity of the labour market to absorb graduates

Finding a good job can be more difficult for Mexican higher education graduates than for their peers in other OECD countries. Young workers with higher education degrees in Mexico face two major problems that indicate an inefficient use of skills in the labour market: informality and over-qualification. Although the prevalence of informal employment is lower for young higher education graduates (26.7%) than for workers in the same age group who completed only upper secondary education (45.8%), more than one quarter of the most qualified workers in the country have no social security or pension coverage. Informal employment is particularly high in micro enterprises (59.1%) and in social and other services (34.1%), which is the sector that employs the highest share of young graduates (INEGI-ENOE, 2017[5]).

The large size of the informal economy also has negative effects on progression rates within higher education, as the ease of finding a job with a salary that covers living costs provides an instant alternative for students who face difficulties in academic achievement (OECD, 2017[1]), and also attracts students who struggle financially. The current higher education system lacks the flexibility needed to allow students to exit and return to higher education at a later stage in life to either complete or continue studies at an advanced level. This limits the development of a skilled labour force.

At the same time, almost half (45.7%) of young higher education graduates are overqualified for their jobs (INEGI-ENOE, 2017[5]). The increasing number of graduates who have taken jobs below their qualifications has likely displaced workers with lower academic qualifications (i.e. workers with bachelor's degrees took jobs for which only short-cycle degrees were required, displacing short-cycle graduates to jobs for which no level of higher education was required).

On average, 14.5% of young higher education graduates do not participate in the labour market. This is above the OECD average (10.7%) and places Mexico in a disadvantaged position, as the skills of these graduates are not used. Although women represent 53.1% of first-time graduates, many women with a higher education degree do not participate in the labour market; their inactivity rate is three times higher than that of male graduates (21.3% vs 6.9%) (OECD, 2018[2]). Women are also less likely than their male peers to find employment. The high inactivity and low employment of women can be partially attributed to cultural reasons, but also to business practices that discriminate against women, especially those with young children. In 2016, only 5.2% of Mexican women had a seat on the boards of the largest publicly listed companies (20% OECD average) (OECD, 2017[10]). This shows a great deal of room for improvement. Highly skilled

women who are not participating to their full capacity in the labour market present a particularly large untapped potential to boost Mexico's economy.

Despite recent reforms, key structural barriers of the economy remain, hindering a more efficient use of skills. The focus on traditional sectors and small and medium-sized enterprises (SMEs), along with low productivity, research and development (R&D) and value-added, might cause more young graduates to be unemployed, employed in the informal economy or overqualified for their jobs. Signs indicate that the Mexican labour market demonstrates an inability to absorb enough graduates into qualified positions. Unemployed graduates have reported that labour market saturation, a lack of vacancies in their field, fierce competition and their own lack of experience are the main reasons why they thought they were unemployed (UVM, 2018[11]). The share of graduates who are self-employed has increased (INEGI-ENOE, 2017[5]), and more claim to have become entrepreneurs because of their inability to find a job (UVM, 2018[11]).

Misalignment of skills supply and demand

Over half (51.7%) of graduates in Mexico come from the two most common fields of study: business administration and law, and engineering and construction (OECD, 2018[2]). Their employment rates are above average and employers state that these graduates are hired for a wide range of occupations. However, high rates of over-qualification suggest that there are not enough graduate-level jobs for graduates in these fields. Graduates in the fields of social sciences and natural sciences face some of the worst labour market outcomes, including the lowest employment rates, suggesting a lack of jobs for these graduates. Graduates from agricultural study programmes have a slightly below average employment rate, but their high informality and over-qualification rates suggest that they face a lack of adequate jobs with favourable working conditions. The main challenge for graduates from programmes in arts and humanities appears to be finding formal jobs. On the other hand, graduates from ICT and education have the most positive labour market outcomes with the highest employment, one of the lowest informality rates and below average over-qualification.

Most higher education graduates in Mexico have bachelor's degrees (91.9%) (OECD, 2018[2]), but employers advised the OECD review team that they need more graduates at the postgraduate level (specifically specialists in certain sectors, e.g. engineers in strategic sectors), as well as more graduates from short-cycle tertiary education programmes. Seven of the top ten positions most difficult to fill by employers in Mexico are offered as short-cycle tertiary education programmes (Manpower Group, 2017[12]). However, these programmes are not attractive for students or for higher education institutions to offer, as they are considered less prestigious and result in poorer labour market outcomes than higher level qualifications. Graduates from short-cycle tertiary education programmes are likely to be displaced to medium- and low-skilled jobs by graduates from bachelor's programmes, who themselves take jobs below their qualification levels. In 2017, 70.4% of short-cycle tertiary education graduates worked in occupations for which no higher education qualification is needed (INEGI-ENOE, 2017[5]).

Throughout the 32 Mexican states, there are large differences in inactivity, employment, informality and overqualification rates, as well as working conditions (including salaries) of higher education graduates. This presents a fragmented scenario of 32 diverse regional labour markets within the national labour market. Overall, graduates in northern states (e.g. Nuevo León, Baja California and Coahuila) present the best labour market outcomes (INEGI-ENOE, 2017[5]). These are generally the states with stronger and more dynamic

economies and those more specialised in high-tech sectors and offering more occupations for the highly skilled. The higher education offer at the state level, including all institutions and programmes, is not necessarily well aligned with the regional labour market needs. This results in an under or over-supply of graduates from certain fields of study. For example, in the state of Veracruz, 2 500 engineers graduate annually, but there is no developed manufacturing industry in the state. This, along with the low geographic mobility of graduates in this state, results in graduates who remain in their state working in unrelated fields or in lower level occupations.

Graduate mobility to obtain a job, or move to a better job, is generally low (5%), only around half of which is interstate mobility (INEGI-ENOE, 2017[5]). Employers mentioned during the OECD review the reluctance of graduates to move to other cities as an obstacle to finding suitable candidates. This presents a barrier to aligning skills and labour market needs nationally and between urban and rural areas, as most higher education graduates are located in cities (Hays and Oxford Economics, 2018[13]). However, mobility within or to those states with dynamic economies can be twice or three times the average (e.g. Baja California Sur 19%).

Wage premium and unmet expectations

Overall, young employed higher education graduates benefit from better conditions, including better salaries, than those with only upper secondary education. The wage premium is one of the highest across the OECD and has remained stable over the last five years (OECD, 2018[2]). From a sectoral point of view, wages in some industries have been growing much faster than in others relative to the past, indicating sector-specific skills shortages (Hays and Oxford Economics, 2018[13]).

Despite this premium, around half of working graduates admit that they expected their salary to be higher (UVM, 2018[11]), and those who graduated from a private university considered their salary insufficient to pay back their student loan or to see a worthwhile return on their investment in higher education. Graduates who work in occupations for which no higher education qualification is required, or who are employed informally, are unlikely to benefit from the wage premium of a higher education degree. Over half of young graduates find jobs through personal contacts (INEGI-ENOE, 2017[5]); these graduates are more likely to have lower salaries and work in an unrelated field than graduates who obtained jobs through internships or career services (UVM, 2018[11]). Graduates explained to the OECD review team that sometimes they have rejected job offers that were not up to their expectations. However, in a system without any public unemployment benefits, graduates can only do this if they have the financial support of their family or are able to support themselves while waiting for a better job opportunity.

For employers, the high salary expectations of applicants are the second biggest problem in filling vacancies (Manpower Group, 2017[12]). Employers commented to the OECD review team that this was particularly the case when hiring higher education graduates, whose unrealistic salary expectations resulted in dissatisfaction for both parties. Unmet salary expectations also affect the rest of the Mexican workforce: in 2016, 90% of the Mexican workforce considered changing jobs, and over half (53%) were motivated by the chance of seeking a better salary elsewhere (Hays, 2016[14]).

The high wage premium of higher education graduates represents a considerable investment for employers, particularly SMEs. Further barriers to the employment of graduates include the focus on the short-term due to the uncertain economic environment,

and the inability of many employers to see the value that graduates could bring to their companies.

Lack of discipline-specific knowledge and transversal skills

Overall, 46% of Mexican employers stated that there is a lack of talent in their sector, and most (83%) consider the education and training of applicants unsuited to their sector (Hays, 2018[15]). This view was confirmed in meetings with the OECD review team, which also brought in the views of graduates and academic staff. Employers claimed that some graduates have insufficient discipline-specific knowledge, which is also indicated by the EGEL exams and recognised by graduates themselves. This problem is particularly important in certain professions, such as doctors, nurses, architects and engineers, raising serious questions about the quality of higher education programmes. Employers also identified the disconnection between the knowledge and skills developed in higher education programmes and their labour needs as an important issue, and suggested that they should be more involved in curriculum design and the delivery of study programmes. Academic staff recognised that curricula is not changed often enough to adapt to the needs of a rapidly changing labour market.

A recent report of the main Mexican association of universities, ANUIES, states that graduates particularly lack transversal skills (ANUIES, 2017[16]). The lack of a range of transversal skills, as identified in Box 1 of the Reader's Guide to this report, limits the capacity of graduates to perform in a job successfully, as well as their ability to adapt to other jobs. The OECD Skills for Jobs database identifies that, unlike many OECD countries, Mexico has a surplus in various cognitive skills, such as quantitative abilities, complex problem solving and system skills (OECD, 2017[9]). This atypical skills surplus suggest that there is the lack of demand for these skills in the Mexican labour market and that the importance of these skills is not recognised by employers. This is supported by the high level of over-qualification in Mexico, which is a signal that the labour market is not able to absorb all graduates in appropriate jobs.

Employers also highlighted to the OECD review team that graduates' language skills are unsatisfactory, particularly those from public higher education institutions. However, languages, specifically English, are not integrated into the curriculum of most study programmes. Employed graduates raised concerns about the quality of their studies, stating that they did not develop the skills they needed in their current jobs.

Graduates who lack discipline-specific knowledge and transversal skills require on the job training to enhance their performance. However, Mexican companies do not have a culture of training to up-skill or re-skill their employees, and incentives for companies to offer employee training are limited. This situation further hinders the potential for graduates to contribute to productivity growth.

Meeting future labour market needs

The number of higher education graduates in Mexico is expected to increase, and recruitment for strategic and specialist positions is expected to get even more difficult by 2020 (World Economic Forum, 2016[17]). Only the joint efforts from stakeholders in higher education, the labour market and the economy can enhance the current alignment of skills and knowledge, and thus the contribution of higher education graduates to productivity and economic growth.

If the current situation continues, the prospects for higher education graduates and the Mexican economy are not favourable. If the Mexican economy does not increase R&D investment, provide incentives and remove barriers for business growth, and focus on technologically advanced industries and more value-added activities, it will continue to be a prime supplier of intermediate goods and assembler for the manufacturing sector in the United States, exporting low value-added products (OECD, 2018[18]). Under this scenario, the Mexican labour market will be unable to absorb the increasing number of higher education graduates, who will potentially face more inactivity, unemployment, informality, over-qualification and lower salaries. Higher education will not sufficiently help graduates' socio-economic mobility, and higher education investment (public or private) will not be profitable for individuals or for society as a whole.

At the same time, if higher education cannot guarantee a minimum level of quality across all institutions, graduates will not be able to perform well in graduate-level occupations. Unless graduates exit higher education with adequate transversal skills, it will be difficult for them to excel in a changing labour market. The development of skills for entrepreneurship through higher education is important, as these skills will help students to successfully create companies and jobs and become self-employed, as well as employ others. This could also help address the potential lack of absorption capacity in the labour market for higher education graduates.

First steps have been made to improve Mexico's integration into global value chains, and there are plans to increase specialisation in high-tech industries (e.g. automotive and aerospace supply) and raise productivity in large traditional sectors (e.g. retail and tourism). The expected growth of the automobile, aerospace, chemical and electronics industries calls for more professionals at the postgraduate level, particularly engineers specialised in these industries, as well as more graduates of short-cycle tertiary education programmes. The energy sector will also require more higher education graduates of different fields specialised in this sector (SENER, 2015[19]). More efforts will be needed to promote and raise the offering and student demand of short-cycle tertiary education programmes, which currently only produce 8.1% of higher education graduates (OECD, 2018[2]). Although Mexico has enough engineers at the bachelor's level to cover the future demand in the short-term, graduates will need to acquire sector-specific and transversal skills to improve their transition to, and success in, the labour market (Indra Business Consulting, 2017[20]).

ICT graduates have, after engineers, the second highest salaries (STPS, 2018[6]), and the need for ICT graduates, as well as professionals from other fields with strong digital skills, is expected to increase (Hays, 2018[15]). With a share of only 7% of the tertiary educated workforce, and 2% of graduates in 2016 (OECD, 2018[2]) from ICT programmes, it is questionable whether Mexico is in a good position to successfully manage global automation and digitalisation challenges as this would require an increase in the number of graduates in ICT fields of study. However, the fact that over 40% of 15-year-old students expect to work in science-related professional and technical occupations when they are 30 (well above the OECD average) (OECD, 2017[21]) shows promise for future specialisation.

Moving forward successfully will require a better integration of higher education graduates in the economy, the success of which depends on the ability of the labour market to provide a greater number of formal graduate-level jobs with adequate salaries and good working conditions.

Notes

[1] The EGEL tests are intended to measure the application of discipline-specific knowledge to a work setting environment at the end of bachelor's programmes. The tests were developed by experts based on a common methodology of the National Centre for Higher Education Assessment (CENEVAL). Higher education institutions can decide on whether to administer an EGEL test in one or more of their programmes, and whether or not passing the test is a graduation requirement for students. Since 2018, higher education institutions have an additional incentive to administer EGEL tests, as programmes with students performing at an outstanding level are listed in the registry of "good quality programmes" of the Secretariat of Public Education (Secretaria de Educación Pública, SEP).

[2] The National Institute of Statistics and Geography (Instituto Nacional de Estadística y Geografía, INEGI) uses job analysis to classify occupations in nine groups, generating the National Classification System of Occupations (Sistema Nacional de Clasificación de Ocupaciones, SINCO). Occupations that require a higher education degree are listed in the following two occupational groups: officials, directors and managers (funcionarios directores y jefes); professionals and technicians (profesionistas y técnicos) (INEGI-SINCO, 2011[22]).

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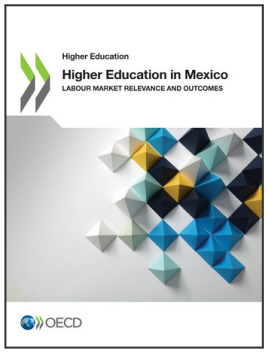

From:

Higher Education in Mexico

Labour Market Relevance and Outcomes

Access the complete publication at:

https://doi.org/10.1787/9789264309432-en

Please cite this chapter as:

OECD (2019), "Labour market outcomes of higher education graduates", in *Higher Education in Mexico: Labour Market Relevance and Outcomes*, OECD Publishing, Paris.

DOI: https://doi.org/10.1787/9789264309432-8-en

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