Katalis Market Insight

IA-CEPA ECP
KATALIS
Indonesia-Australia Growing Together

Growing Manufacturing

May 2023

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Acknowledgment

This report has been prepared by Katalis in partnership with:

PROSPERA
Australia Indonesia Partnership for Economic Development

EQUITY ECONOMICS

IA-CEPA ECP Katalis (Katalis) is a unique, five-year (2020-25) government-backed business development program unlocking the vast potential of economic partnership between Australia and Indonesia.

Methodology

This Market Insight was developed drawing on several sources of proprietary data including real-time job advertisement data from Indonesia developed by the Data Analytics Unit of the Australia Indonesia Partnership for Economic Development (Prospera) and an original survey of Australian Technical and Vocational Education and Training providers developed and conducted by Katalis in partnership with Equity Economics and Development Partners Pty Ltd.

Summary

Manufacturing is a key employer in Indonesia, employing over 19 million people across the country. It is the second largest employer of vocational high school graduates, the third largest employer of graduates with a diploma, and the fourth largest employer of university graduates.

Manufacturing is rebounding after COVID-19. Advertised jobs in manufacturing grew by 45 per cent between July 2021 and December 2022. COVID-19 slowdowns disproportionately impacted the female manufacturing workforce, including micro and small businesses. As manufacturing recovers, opportunities exist to support women and small and medium-sized enterprises (SMEs) back into the workforce and value-chain, to utilise all available skills and rebuild a diverse, inclusive manufacturing industry.

Major opportunities exist for Australian Technical Vocational Education Training (TVET) providers to train the Indonesian manufacturing workforce. This includes taking advantage of new trade and investment opportunities opened by the Indonesia-Australia Comprehensive Economic Partnership Agreement Economic Cooperation Program (IA-CEPA) to support Indonesia's manufacturing growth. IA-CEPA provides new opportunities for trade in manufacturing, with over 99 per cent of Australian goods exports by value to Indonesia to enter duty free or under significantly improved preferential arrangements. In addition, there will be no tariffs on any Indonesian goods exported to Australia, supporting the development of Indonesian manufacturing and processing sectors such as automotive (especially electric and hybrid cars), timber (including furniture), textiles, machinery, agriculture, fisheries, forestry and electronics.

Australia's training offering should be aligned to the most in-demand skills in Indonesian manufacturing and processing. The most in-demand skills include:[1]

- engineering
- production management
- project management
- process control and quality management
- business management and sales.

Australian TVET providers are well placed to provide industry relevant skills and training. In a recent survey, 77 per cent of Australian TVET providers report that they are ready to deliver training to Indonesian students and employers. Australian TVET providers have deep training experience in a broad range of relevant areas such as engineering, project management, quality assurance and production supervision.

Foreign language skills, especially workplace English, are key to career opportunities, commanding salaries 50 per cent higher than other roles in Indonesian manufacturing and 36 per cent of manufacturing positions advertised in English. The most in-demand cross-functional skills advertised in English across Indonesia are workplace English, analytical thinking, leadership, teamwork, MS Office and Excel, and customer service. Australian TVET providers are well-suited to meet this need.

New avenues to connect Indonesian employers with Australian TVET providers are emerging, especially to meet the skills and training needs of Indonesian manufacturers. Supported by the Indonesian and Australian governments, Katalis has established a bilateral Indonesia—Australia Skills Exchange to connect Indonesian employers with high-quality Australian TVET providers that can meet training needs. The Skills Exchange provides an avenue for Australian TVET and Indonesian manufacturing businesses to connect and train the workforce of the future.

[1] Based on real-time analysis of the Indonesian labour market completed by Prospera.

Indonesian manufacturing: Industry overview

In 2022, manufacturing contributed to 18 per cent, or AUD358 billion, of Indonesia's Gross Domestic Product (GDP).[2] This accounts for 1.5 per cent of global manufacturing output, making Indonesia the 10th largest manufacturing economy in the world, ahead of Mexico, Russian Federation, Türkiye, Brazil, Australia.[3] In addition, mining contributed a further AUD238 billion or 12 per cent to Indonesia's GDP and provides important synergies with Indonesia's advanced manufacturing ambitions.

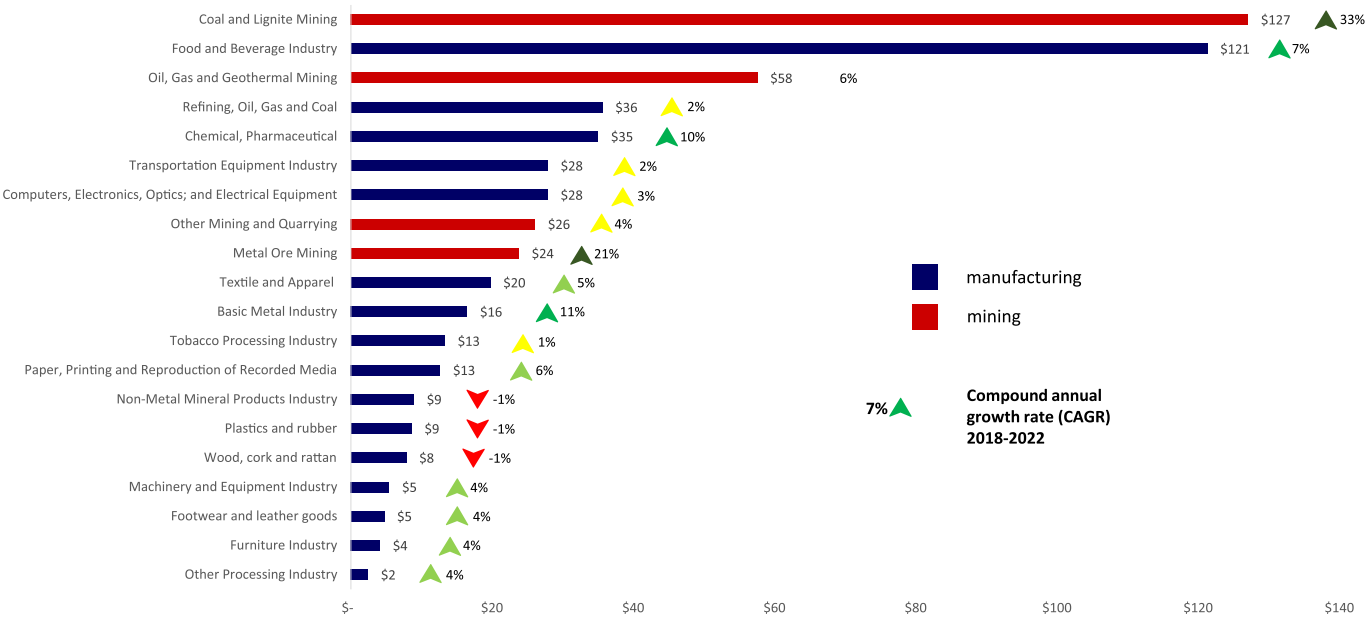
[2] Statistics Indonesia (Badan Pusat Statistik/BPS), https://www.bps.go.id/indicator/11/106/1/-2010-version-quarterly-distribution-of-gdp-2010-version-at-current-market-prices.html

[3] United Nations Statistics Division, https://unstats.un.org/unsd/snaama/Basic

Major sectors by GDP

Post-pandemic, Indonesia has seen strong inward investment in the manufacturing and mining industries, especially in basic metals, chemical and pharmaceuticals, and transport (automotive). This investment totalled AUD45 billion in 2022, which is 70 per cent of all Indonesian foreign direct investment (FDI).[4] Within the manufacturing industry, the largest contribution to GDP is made by the food and beverage, mining, chemicals and pharmaceuticals, and transportation equipment sectors.

Indonesia's Manufacturing and Mining by GDP output 2022, current market prices (AUD billion)



Source: BPS

Future trends: advanced manufacturing, minerals, and the green economy

The Government of Indonesia is making consistent progress towards its advanced manufacturing ambitions with key themes including clean energy transition and green economy, connectivity, advanced infrastructure, and process automation. For example, global interest in the energy transition has led to a surge in demand for battery storage. Indonesia, with over 20 per cent of global nickel reserves (a key mineral for battery manufacture for electric vehicles), is in a strong position to leverage its mineral wealth. Over the last five years, metal ore mining grew by 22 per cent per annum and basic metal processing grew by 11 per cent per annum. By implementing regulatory change, including banning the export of raw minerals (such as nickel ore and bauxite), the Indonesian Government is seeking to encourage 'downstreaming' that is to say, increased investment in mineral processing capability as well as battery manufacture using the mined minerals to be carried out in Indonesia.

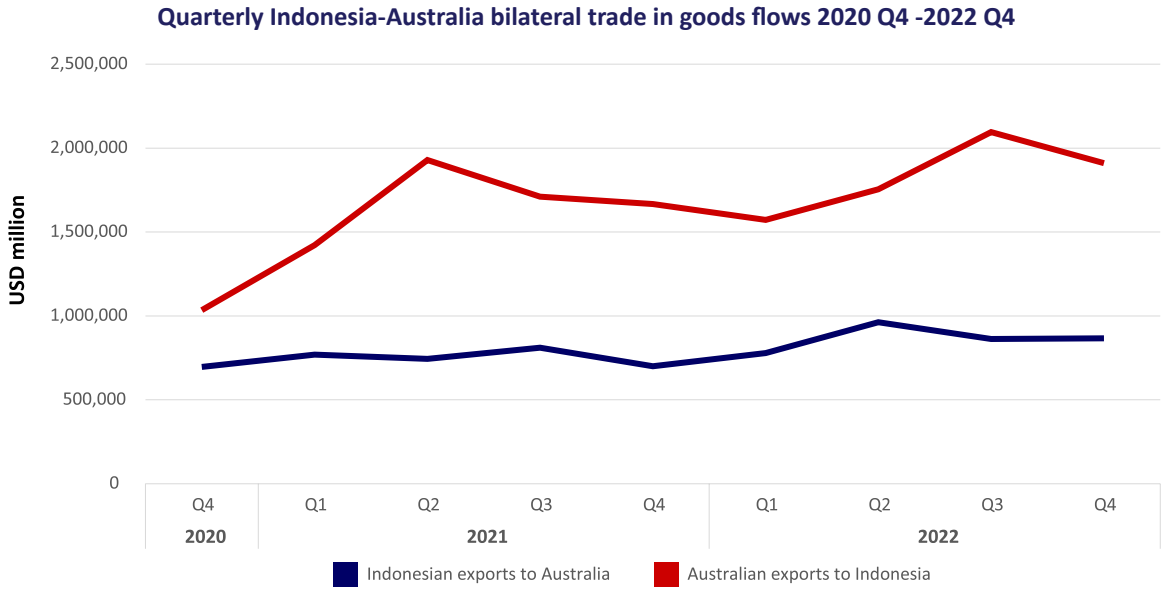
The Indonesian Government has a manufacturing cluster strategy and has created a collection of industrial parks with preferential regulatory incentives, such as the Batam Industrial Estate, located close to Singapore. Indonesia's electronics industry is mainly concentrated in West Java and Riau Islands. Java is also home to manufacturing clusters of automobiles, machinery, and electric equipment. The policy and regulatory landscape in Indonesia is increasingly conducive to manufacturing, particularly advanced manufacturing and the green economy, presenting major opportunities for trade and investment, including in skilling the workforce to meet planned growth.

[4] Indonesian Investment Coordinating Board (Kementerian Investasi/Badan Koordinasi Penanaman Modal/BKPM), Investment Realization Quarter IV and January – December 2022

Indonesia-Australia manufacturing trade and IA-CEPA

Indonesia-Australia manufacturing trade and IA-CEPA

Although starting from a relatively small base, trade in goods between Indonesia and Australia has increased over the past two years. Between the fourth quarter of 2020 and fourth quarter of 2022 Indonesian goods exports to Australia grew by 11.6 per cent annually, representing an additional USD446 million in 2022 compared with 2021. At the same time, Australian exports to Indonesia grew by 35.9 per cent annually, representing an additional USD600 million in 2022 compared with 2021.



Source: ITC Trade Map 2023

In 2022, major sources of investment in Indonesia's manufacturing industry were Singapore, China, Hong Kong, Japan and Malaysia.[5] Australia was the eleventh largest foreign direct investor in Indonesia, but Australia's investment was generally driven by mining rather than manufacturing.

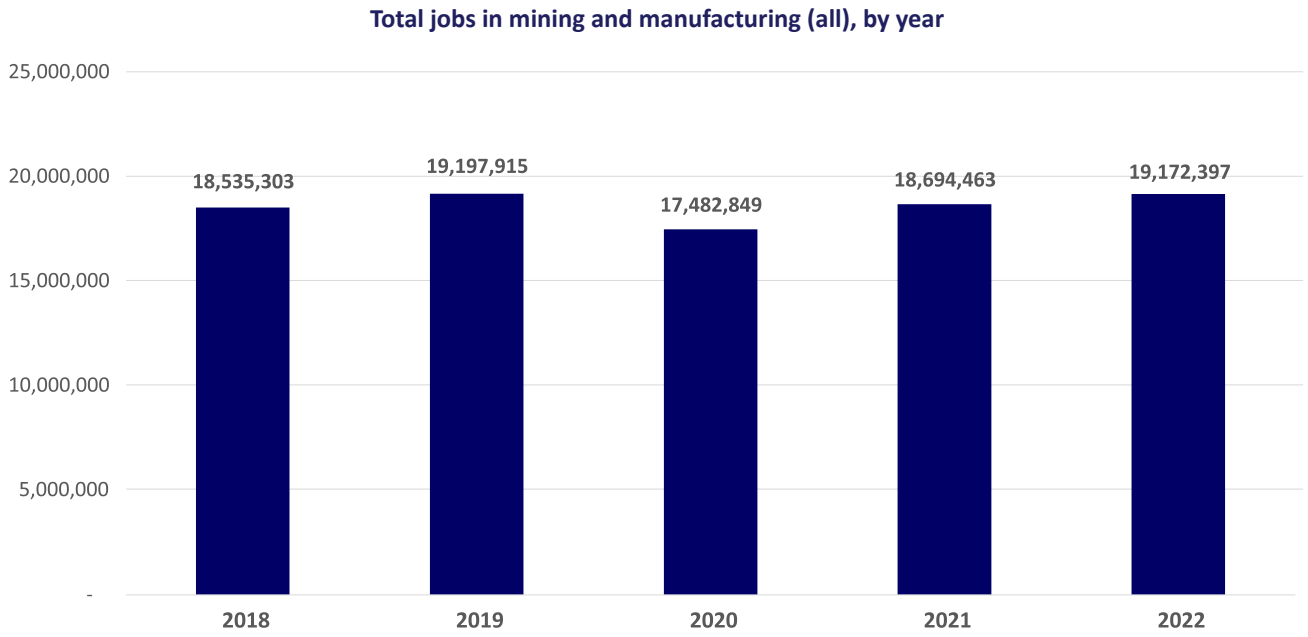
IA-CEPA provides opportunities for continued growth in trade in goods and opens new opportunities for manufacturing trade between Indonesia and Australia. Key elements are:

- Elimination of all Australian tariffs on Indonesian goods exports to support Indonesian manufacturing sectors such as automotive, timber and furniture, textiles, machinery, and electronics.
- Liberal 'Rules of origin' requirements for Indonesian electric motor vehicles
- Over 99 per cent of Australian goods exports by value to Indonesia will enter duty free or under significantly improved preferential arrangements.

[5] BKPM, Investment Realization Quarter IV and January – December 2022

Overview of the Indonesian manufacturing workforce

Manufacturing in Indonesia employs over 19 million workers, with medium (20-99 employees) to large (100+ employees) businesses employing about 6 million workers, or about 5 per cent of Indonesia's labour force. Micro (1-4 employees) and small (5-19 employees) businesses account for a further 13 million workers, or 10 per cent of Indonesia's labour force.[6]



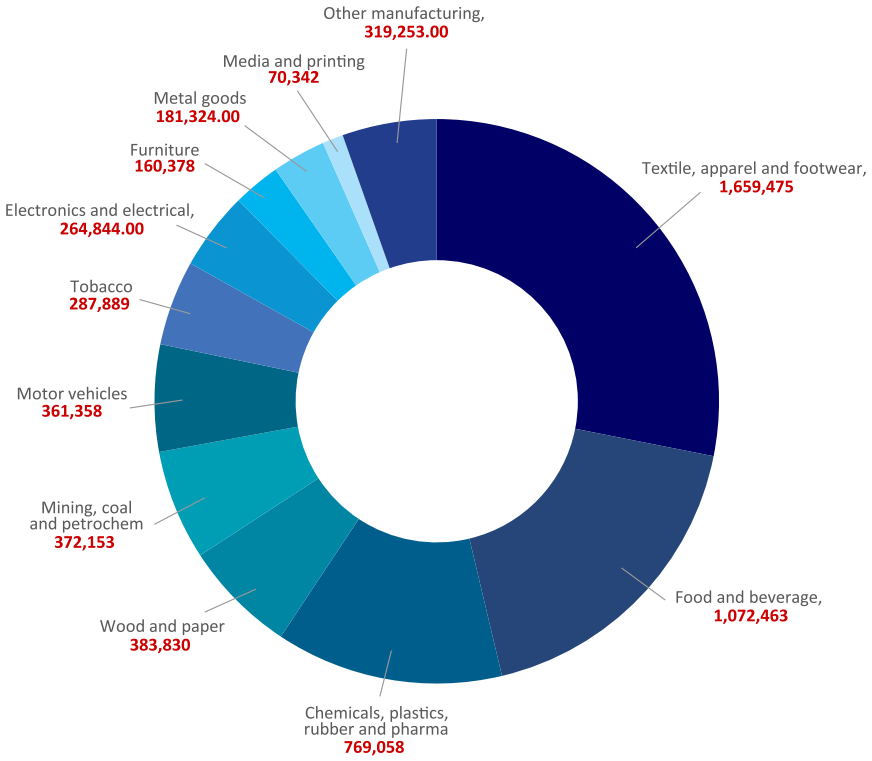
Source: BPS

In 2020, at the start of the pandemic, the manufacturing labour force shrank by about 1.7 million workers. Across medium and large enterprises this represented 340,000 jobs, or 5 per cent of the workforce of medium and large enterprises. Micro and small enterprises lost 1.38 million jobs or 10 per cent of their workforce, highlighting the increased vulnerability of micro and small businesses. However, the manufacturing industry has recovered through 2021 and 2022.

The key sectors for employment in manufacturing are textiles and clothing, electronics, footwear, plastics, rubber and transportation.

[6] BPS, https://www.bps.go.id/indicator/6/1971/2/population-15-years-of-age-and-over-who-worked-during-the-previous-week-by-main-industry-17-sectors-and-educational-attainment.html

Workers in medium to large manufacturing, 2020



Source: BPS

Manufacturing is the second largest employer of vocational high school graduates; the third largest employer of graduates with a diploma; and the fourth largest employer of university graduates

Workers with Senior High School (SMA/SMK) August 2022		
Employer	**No of workers**	**%SMA/SMK workforce**
Wholesale and Retail Trade, Repair of Motor Vehicles and Motorcycles	1,0487,169	25%
Manufacturing	7,825,416	18%
Agriculture, Forestry, and Fishing	5,879,922	14%
Accommodation and Services Activities	3,764,671	9%
Transportation and Storage	2,830,364	7%

Workers with Degree August 2022		
Employer	**No of workers**	**% degree workforce**
Education Activities	4,537,105	34%
Public Administration and Defence; Compulsory Social Security	1,868,510	14%
Wholesale and Retail Trade, Repair of Motor Vehicles and Motorcycles	1,647,498	12%
Manufacturing	851,629	6%
Financial and Insurance Activities	742,314	6%

Workers with Diploma I/II/III/Academy August 2022		
Employer	**No of workers**	**% diploma workforce**
Human Health Services and Social Work Activities	809,330	23%
Wholesale and Retail Trade, Repair of Motor Vehicles and Motorcycles	646,294	19%
Manufacturing	327,195	9%
Public Administration and Defence; Compulsory Social Security	295,511	9%
Education Activities	293,683	8%

Source: BPS

For medium and large enterprises, the highest value added per worker is in sectors such as refining, pharmaceuticals, food and beverage, and base metals. This likely reflects that these sectors are more likely to be able to afford and value workforce skills training.

Medium and large manufacturing enterprises	
Approx. value added per worker (2022)	Industry sector
Very High AUD 100,000+	Coal industry Oil and gas refining
High AUD 70,000 - 100,000	Food and beverage Chemical and pharmaceutical Basic metals
Medium AUD 30,000 - 70,000	Transportation equipment Computers and electronics Pulp and paper Machinery and equipment Tobacco processing Non-metal minerals
Moderate AUD 15,000 - 30,000	Wood Furniture Plastics and rubber
Low AUD 5,000 - 15,000	Textile and apparel Footwear Other

Source: BPS

Micro and small enterprises:
Less than AUD $5000 per worker per year

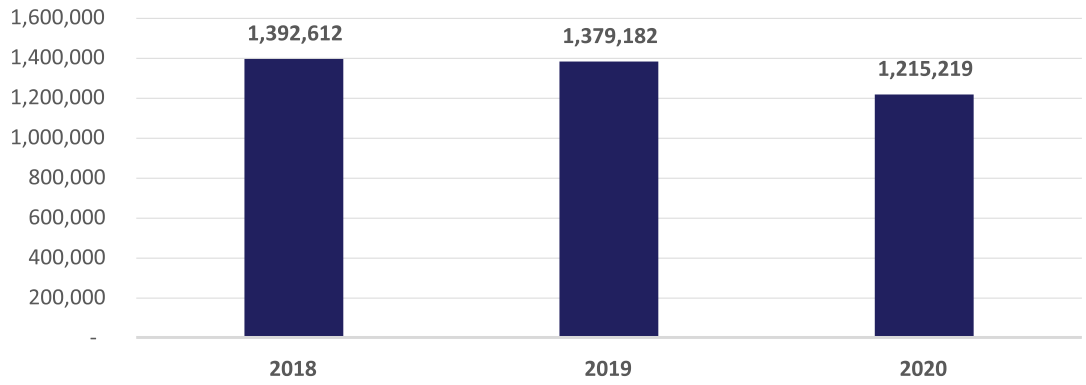
[7] Total Workers of Large and Medium Manufacturing by Subsector [KBLI 2020] (People), https://www.bps.go.id/indicator/9/730/1/total-workers-of-large-and-medium-manufacturing-by-subsector-kbli-2020-.html

Participation of women in Indonesian manufacturing

In 2022, women accounted for 45 per cent of the manufacturing labour force in Indonesia. However, over half of women formally employed in medium to large manufacturing enterprises worked in just two lower-margin industries: textiles, clothing and footwear (1.1 million women workers) and tobacco (about 240,000 women workers).

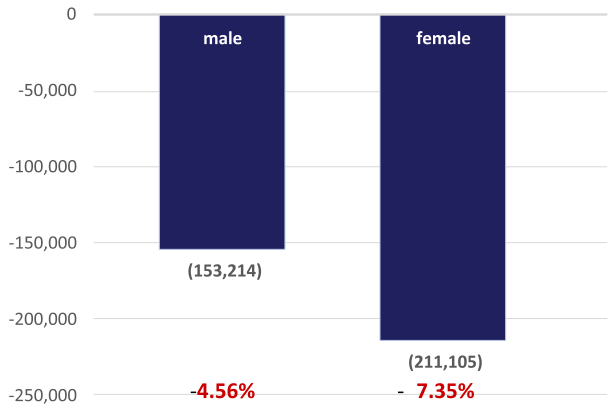
In 2020, when many medium to large Indonesian manufacturers experienced a contraction, women experienced more job losses than men; the male workforce contracted at 4.6 per cent while the female workforce contracted 7.4 per cent. One reason for this is that industries with high employment by women, especially the Indonesian garment industry, were very exposed to international trade and were particularly hard hit by COVID-19. During the pandemic, medium to large manufacturers in textiles and clothing lost over 130,000 jobs.

Workers employed in medium and large textile and apparel manufacturing



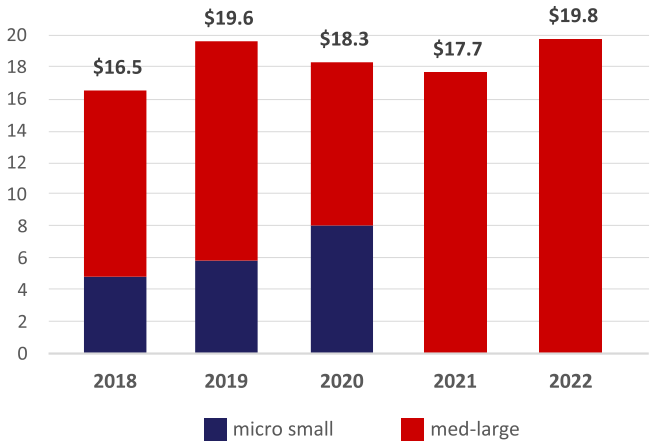
Source: BPS

Job reduction, medium and large manufacturing 2019 - 2020 by sex



Source: BPS

GDP, Textile and Apparel, (AUD billion)



Source: BPS

Manufacturing workforce by gender and sector, 2019 - 2020

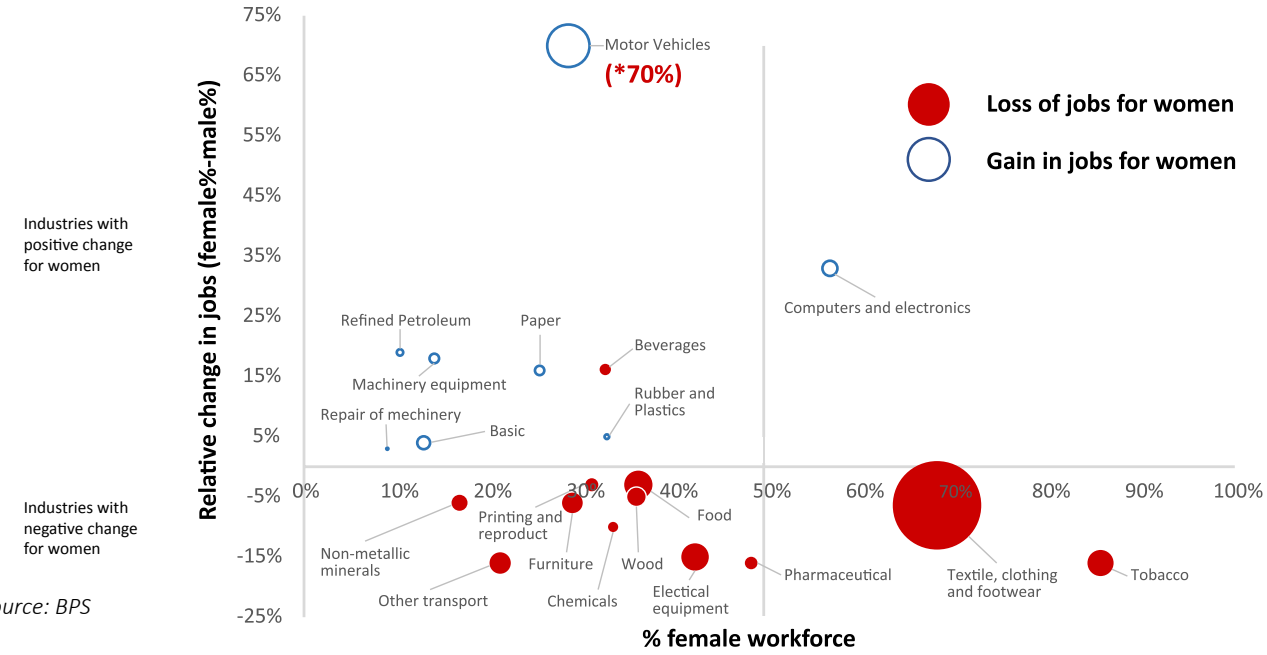
	Manufacturing sub - Industry	Employees 2019	Employees 2020	% Change (2019-2020)	% Change (2019-2020) Male	% Change (2019-2020) Female	% Female Employees (2019)	% of Female Employees (2020)	Average change %
Top 5 manufacturing sectors employing women (%)	Tobacco products	297,208	287,323	-3%	10%	-6%	86%	84%	**-11%**
	Wearing apparel	796,027	693,659	-13%	-11%	-14%	76%	76%	
	Leather and related products	483,158	443,658	-8%	-6%	-9%	74%	74%	
	Computer, electronic and optical products	142,076	130,316	-8%	-27%	6%	57%	65%	
	Textiles	579,564	516,906	-11%	-4%	-17%	51%	48%	
Mid range	Basic pharmaceutical products	85,779	86,019	0%	8%	-8%	48%	44%	**-4%**
	Electrical equipment	158,321	133,988	-15%	-9%	-24%	42%	38%	
	Food products	1,009,769	982,160	-3%	-2%	-5%	36%	35%	
	Wood and wood and cork products,	257,661	242,952	-6%	-4%	-9%	36%	35%	
	Chemicals and chemical products	232,926	241,192	4%	7%	-3%	33%	31%	
	Rubber and plastics products	453,804	439,058	-3%	-5%	0%	33%	34%	
	Beverages	94,259	75,760	-20%	-25%	-9%	32%	37%	
	Printing and reproduction of recorded media	79,684	69,733	-12%	-12%	-15%	31%	30%	
	Fabricated metal products	179,952	180,515	0%	15%	-34%	30%	20%	
	Furniture	182,237	159,655	-12%	-11%	-17%	29%	27%	
	Motor vehicles, trailers and semi-trailers	247,349	256,227	4%	-16%	54%	28%	42%	
	Paper and paper products	150,443	139,622	-7%	-11%	5%	25%	29%	
	Other transport equipment	133,013	104,100	-22%	-18%	-34%	21%	18%	
Top 5 manufacturing sectors employing men (%)	Other non-metallic mineral products	210,811	190,002	-10%	-9%	-15%	17%	16%	**1%**
	Machinery and equipment n.e.c	86,093	86,550	1%	-2%	16%	14%	16%	
	Basic metals	133,770	156,165	17%	16%	20%	13%	13%	
	Coke and refined petroleum products	18,585	23,743	28%	26%	45%	10%	12%	
	Repair of machinery and equipment	28,141	26,291	-7%	-7%	-4%	9%	9%	

Source: BPS

In several manufacturing sectors, the female workforce was reduced by a greater proportion than males. For example, the ratio of women in footwear shrunk from 51 per cent to 48 per cent. This highlights the importance of considering and managing the risk to women, including in relation to skills and training, when considering bilateral trade and investment.

Women are also under-represented in faster growing, more value-added sectors, including less traditionally female-dominated industries such as motor vehicle manufacture (including electric vehicles), refining, and base metal processing. However, the chart below shows that these industries provided new job opportunities for women over the same period.

Change in women's employment in manufacturing, medium and large companies, 2019 - 2020

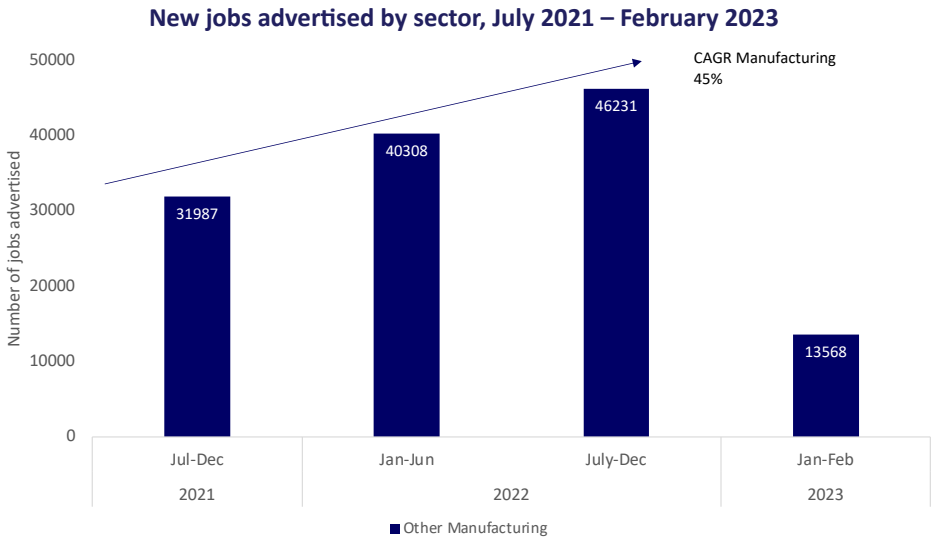


Source: BPS

Australian TVET providers have the expertise to provide training to allow women to access non traditional pathways, as well as to upskill in traditional industries as these develop. This will support women back into manufacturing, especially advanced manufacturing, rather than more volatile and insecure traditional industries like tobacco.

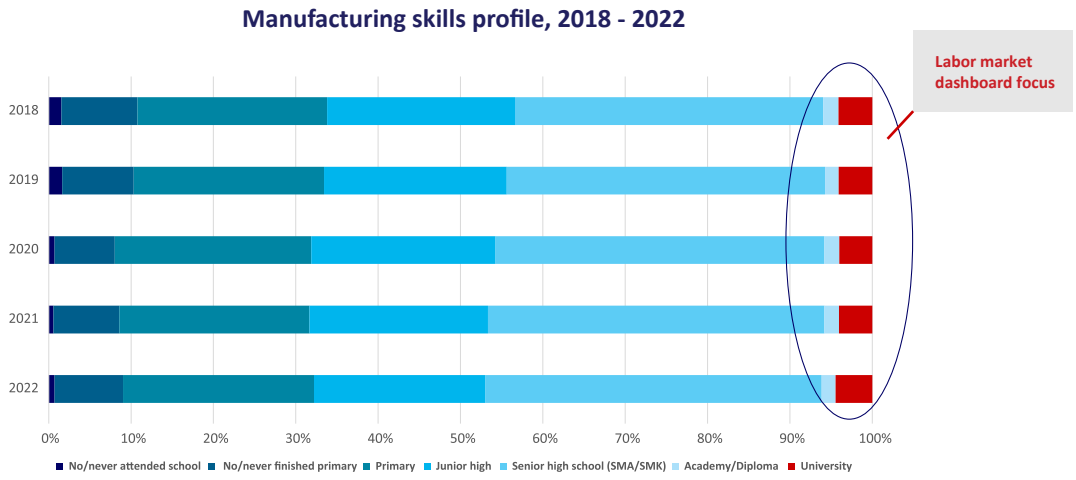
Recent trends in manufacturing employment

Between July 2021 and February 2023 124,000 new manufacturing jobs[8] were advertised in Indonesia. The number of manufacturing jobs advertised grew at 45 per cent on an annualised basis.



Source: Prospera Labour Market Dashboard

The Prospera Labour Market Dashboard shows roles advertised on jobs boards, capturing in-demand skills and roles.



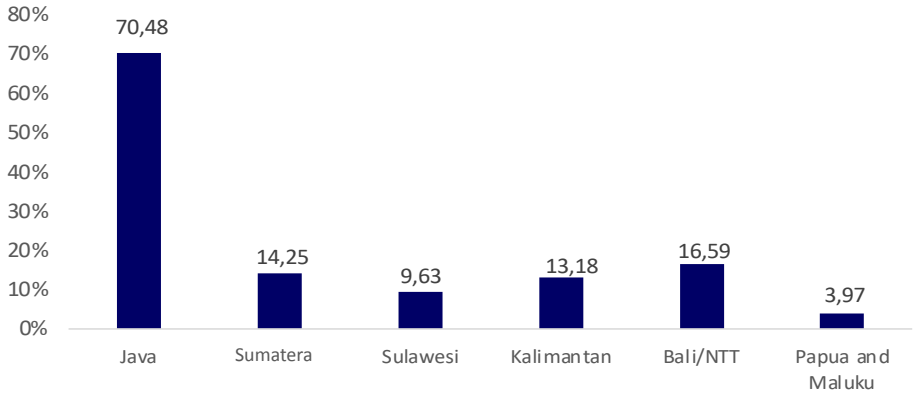
Source: Prospera Labour Market Dashboard

[8] Food and beverage and mining operations excluded.

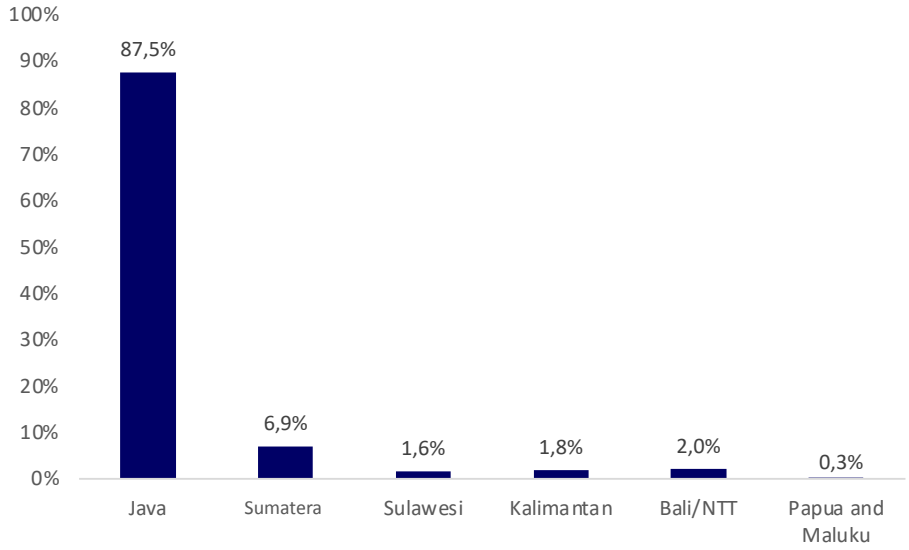
The geographical distribution of advertised manufacturing jobs provides insights into where skills and training needs are highest across Indonesia:

- The highest density of advertised jobs was in Java, with 70 new jobs per 10,000 people.
- Bali/NTT had 15-20 new jobs per 10,000.
- Sumatera, Kalimantan, and Sulawesi all had 10-15 new jobs per 10,000.
- Papua has the lowest density of manufacturing jobs, with under five new jobs per 10,000 residents.

Manufacturing jobs on a population basis (jobs per 10,000 people), June 2021 - Dec 2022

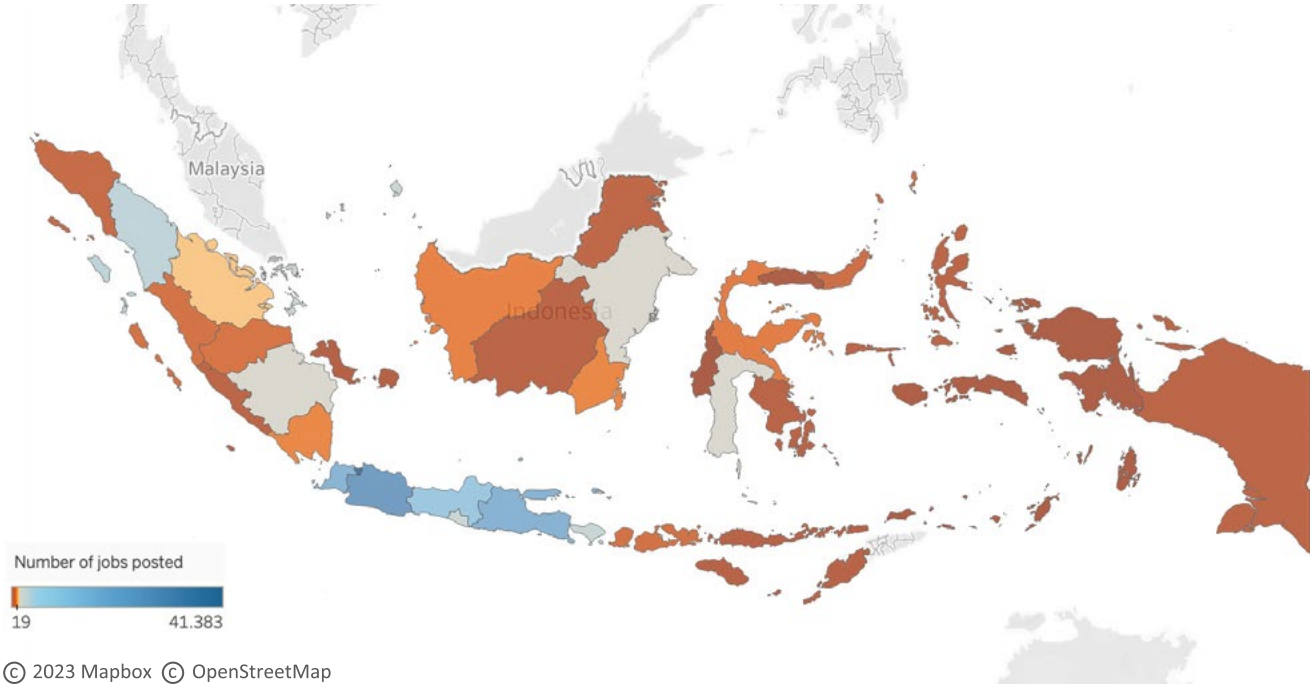


Share of advertised manufacturing roles (%), June 2021 - Dec 2022



Source: Prospera Labour Market Dashboard

Number of jobs posted, by province (June 2021 - March 2023)

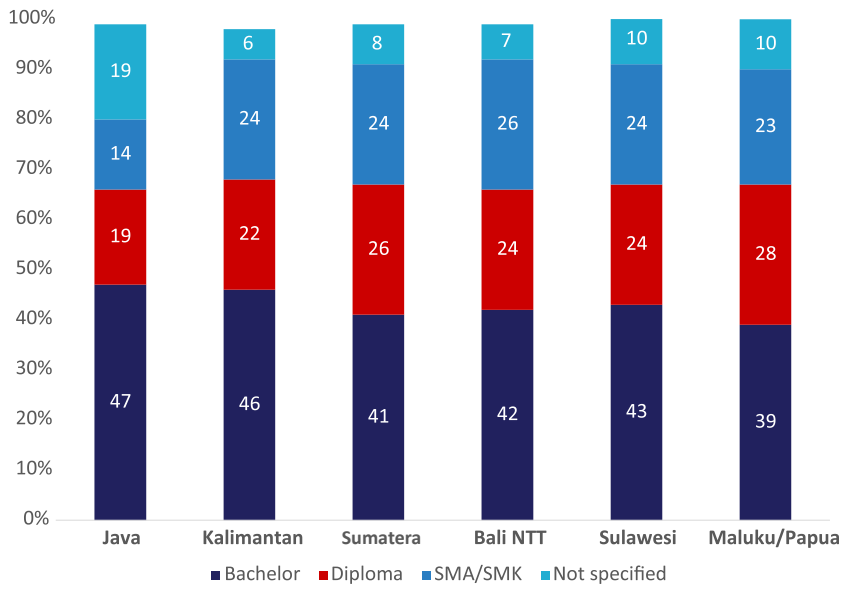


Gray indicate region with around 1,000 job posting. Red-colored region indicate number of job posting lower than this figure, while blue-colored is region with higher posting

Source: Prospera Labour Market Dashboard

Roles within Java are more likely to require a bachelor level qualification than other provinces. However, the higher starting salaries in parts of Sumatera, Sulawesi, and Kalimantan suggest that manufacturers in some industries may have more difficulty in attracting the right talent outside of Java.

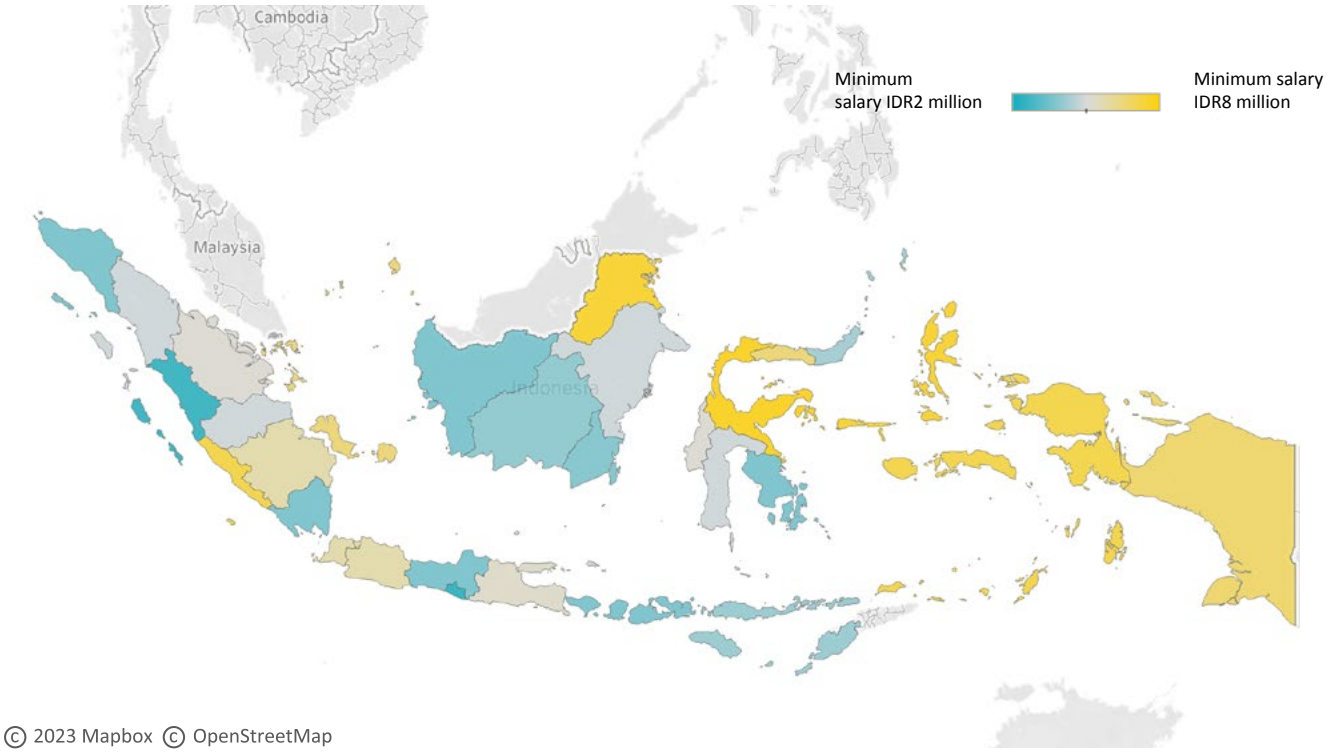
Qualifications by location, food and beverage industry
June 2021 - February 2023



Source: Prospera Labour Market Dashboard

The minimum starting salary for jobs in the manufacturing industry have remained fairly constant over the last 18 months at 4.5 million rupiah per month.

Minimum starting salary, by province (June 2021 - March 2023)



Source: Prospera Labour Market Dashboard

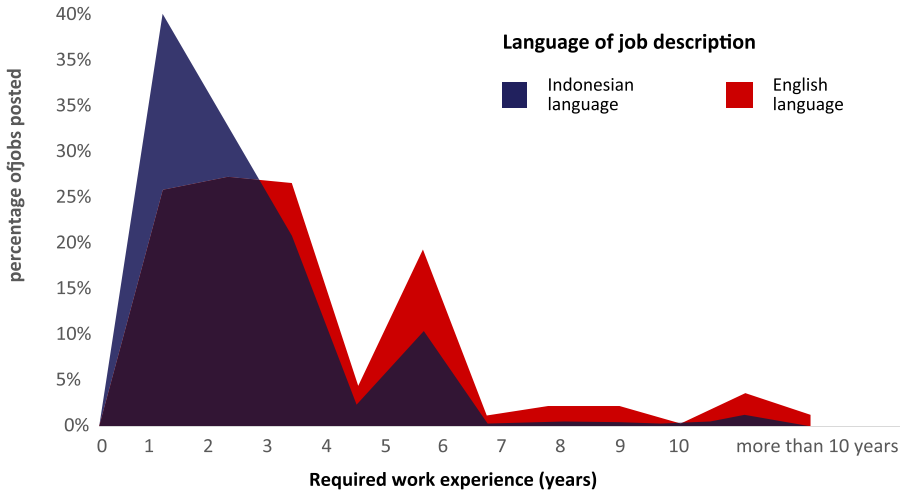
Employment in the manufacturing industry is fragmented across recruiters. Of the 17,000 recruiters who advertised over the period, the top ten accounted for five per cent of all roles.

The majority of advertised jobs in manufacturing are seeking one to five years' of experience. Thus, training targeted to early career and entry level positions will be well aligned to industry needs, as indicated by job advertisements.

Largest recruiters in manufacturing (June 2021 - March 2023)

Largest recruiters	Jobs
Asia Pulp and Paper	1,308
Porto Indonesia Sejatehra	832
Dexo Group	812
Moladin Digital Indonesia	678
FKS Group	549
Gree Electric Appliances	511
Triputra Investindo	474
Star Cosmos	417
Daikin Air Conditioning	397
Modena Indonesia	396
Total 5%	**6,374**

Composition of minimum experience required, by language of job posting (June 2021 - March 2023)



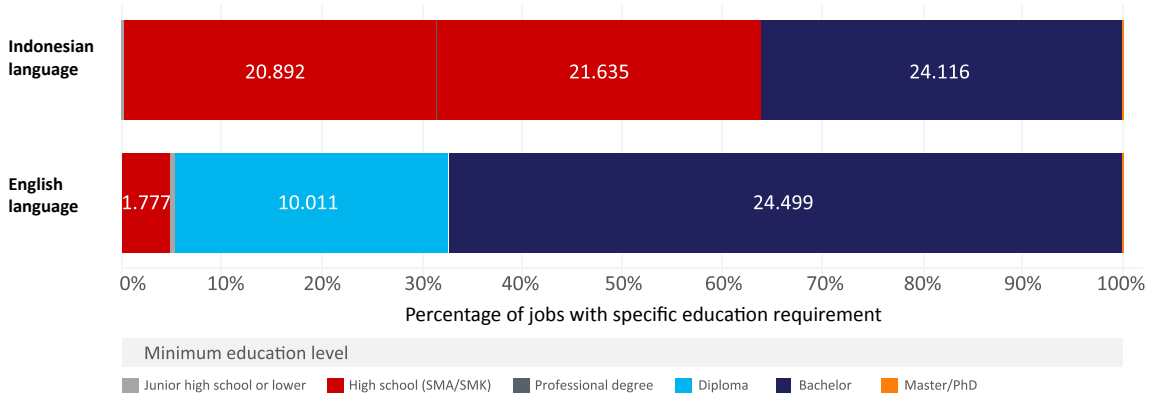
Source: Prospera Labour Market Dashboard

There is also a large difference between roles advertised in English language and roles advertised in Indonesian. Jobs posted in English generally require a higher education level compared to those advertised in Indonesian. In addition, jobs advertised in English have a broader range of minimum experience, while jobs in Indonesian are more likely to have a minimum experience requirement of one to two years.

Jobs advertised in English also have higher starting salaries than jobs advertised in Indonesian, meaning there is a large English language dividend. Jobs advertised in English have an average minimum starting salary of 6.8 million rupiah per month, which is 2.4 million rupiah per month higher than the average salary for jobs advertised in Indonesian (4.4 million rupiah).

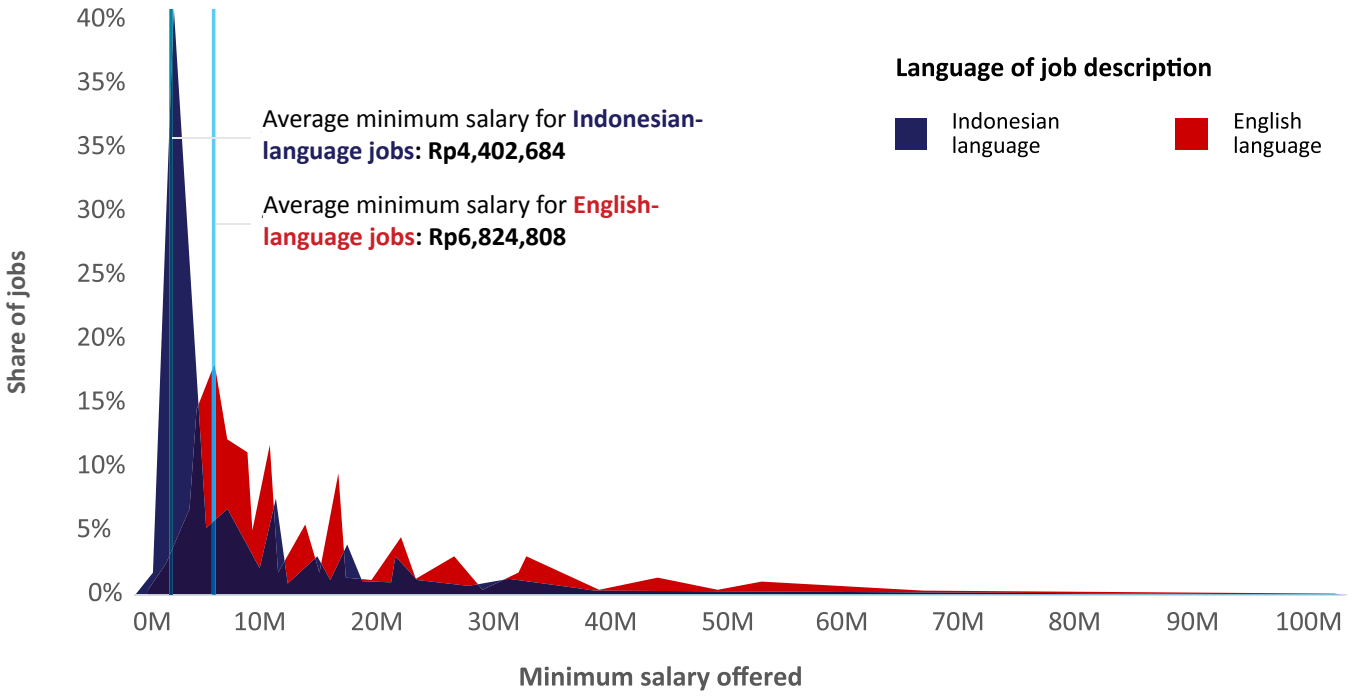
Across all advertised jobs, 36 per cent are posted in English, 63 per cent are in Indonesian, and around 1 per cent is in other languages. At the province level, 26 per cent of jobs are posted in English. Jobs in English were most likely to be in West Java, although some other provinces had high numbers of jobs advertised in English as well.

Composition of required education level, by language of job posting (June 2021 - March 2023)



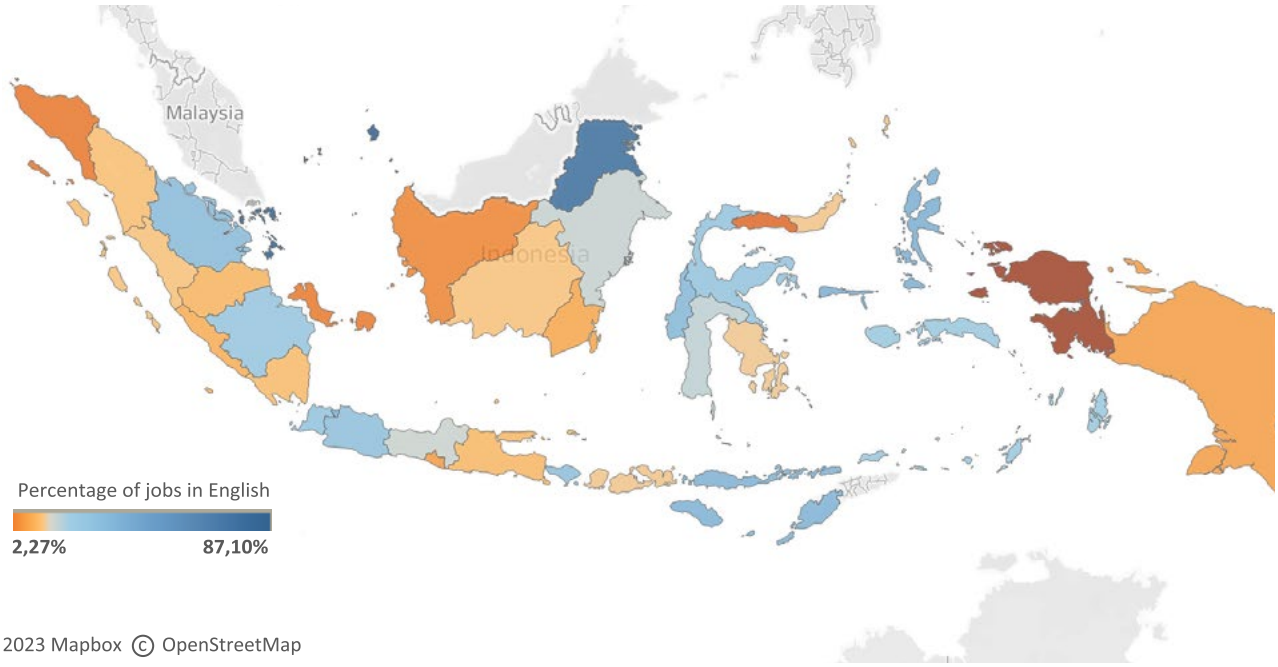
Source: Prospera Labour Market Dashboard

Distribution of minimum salary for Indonesian and English language jobs



Source: Prospera Labour Market Dashboard

Percentage of jobs posted in English, by province (June 2021 - March 2023)



Gray indicate region with 26.06% of the job posted in English (median shares). Red-colored region indicate number of shares lower than this figure, while blue-colored is region with higher sharers

Source: Prospera Labour Market Dashboard

Keterampilan khusus pekerjaan berdasarka

Industry in-demand skills analysis

The range of job titles within general manufacturing and processing sectors is diverse. The top ten most in-demand job titles accounted for fewer than five per cent of all roles. Further, many similar skillsets may have different job titles across the manufacturing industry. To better understand the most important skill requirements for manufacturing, Prospera uses textual analysis of job descriptions to identify core occupational skills and cross occupational skills.

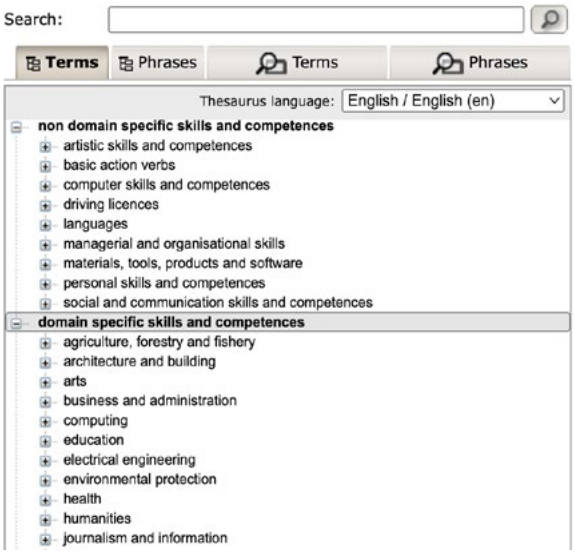
Textual analysis methodology

Prospera analysed the position descriptions of all of manufacturing job advertisements from July 2021 to February 2023, separated into English and Indonesian language advertisements. Prospera then used the European Dictionary of Skills and Classifications (DISCO) to identify the most frequently sought skills (based on DISCO) from the job descriptions. The analysis then considered both the most frequent keywords and most frequent skill phrases.

In general, there are two broad skillsets (as classified by DISCO):

- Non-occupation-specific (cross-functional skills), and
- Occupation-specific skills.

DISCO Classification



Most in-demand cross-functional skills

There is a significant difference in the most requested cross-functional skills in Indonesia's manufacturing industry. A closer look at the top five demanded cross-occupation skills in Java and Bali shows there are two skills that differentiate English-language advertised jobs from Indonesian language advertised jobs. For English-language advertised jobs, **"analytical thinking"** was a top-requested skill while Indonesian-language jobs tended to seek **"leadership skills"**. This could be related to the difference in job characteristics; leadership skills might be required for lower-level managerial positions while analytical thinking may be needed for more technical, highly demanding roles.

Cross Functional Skills			Bali	Banten	Yogyakarta	Jakarta	West Java	Central Java	East Java
	Jobs in English	1	MS Office	MS Office	MS Office	MS Office	MS Office	Communication in English	MS Office
		2	MS Excel	MS Excel	MS Excel	MS Excel	MS Excel	MS Office	MS Excel
		3	Communication in English	Communication in English	Analytical thinking	Communication in English	Communication in English	MS Excel	Mandarin
		4	Leadership skills	Analytical thinking	Adobe Photoshop	Analytical thinking	SAP	Leadership Skills	Analytical thinking
		5	MS Word	SAP	Communication in English	Mandarin	Analytical thinking	Analytical thinking	Communication in English
	Jobs in Indonesian	1	MS Office	MS Office	MS Office	MS Office	MS Office	MS Office	MS Office
		2	English	MS Excel	MS Excel	MS Excel	English	English	English
		3	MS Excel	English	English	English	MS Excel	MS Excel	MS Excel
		4	Leadership skills	MS Word	Leadership skills	MS Word	MS Word	Leadership skills	Leadership skills
		5	MS Word	Leadership skills	MS Word	Mandarin	Leadership skills	MS Word	MS Word

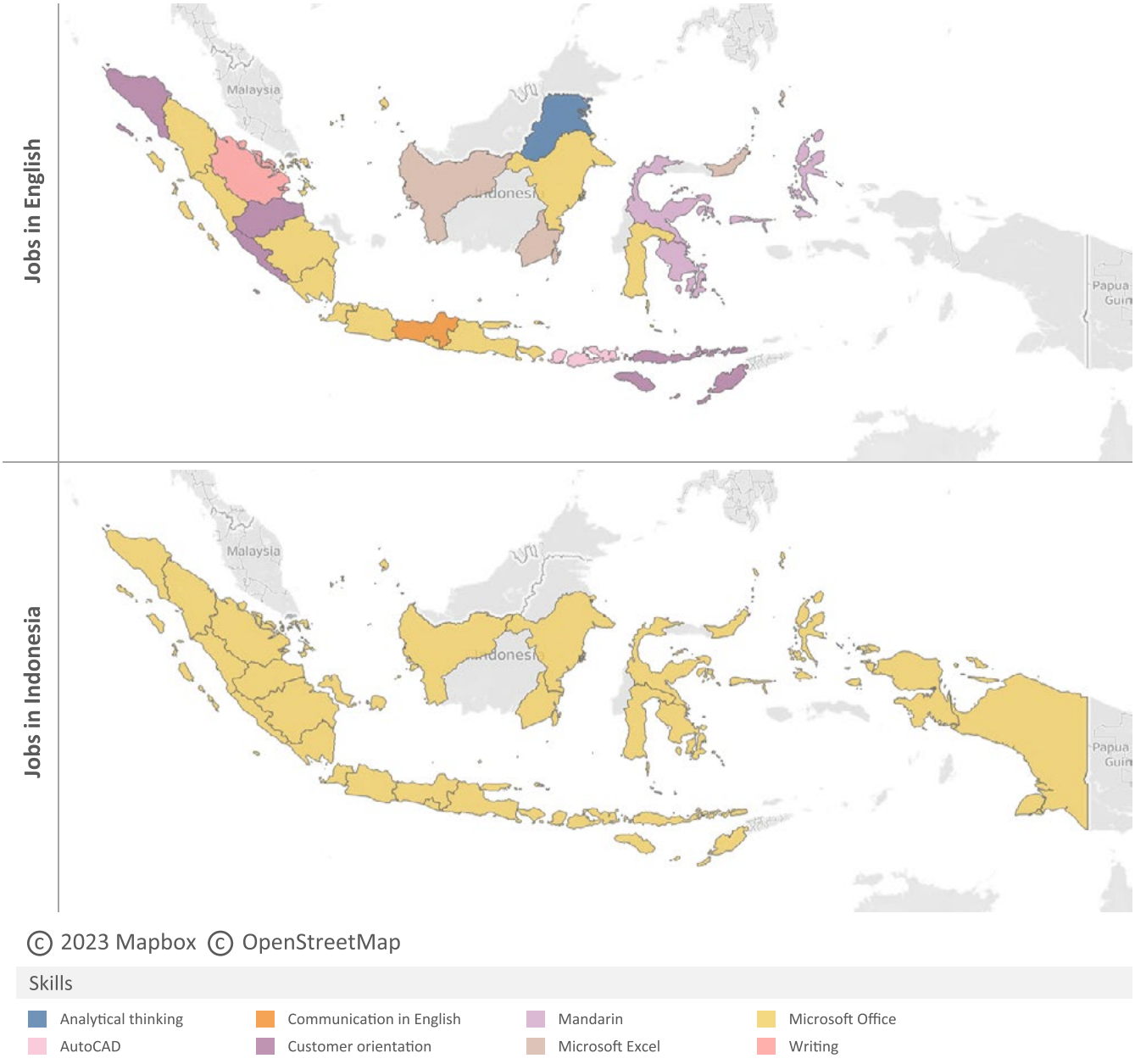
n frasa

Source: Prospera Labour Market Dashboard

Cross-functional skills by keyword

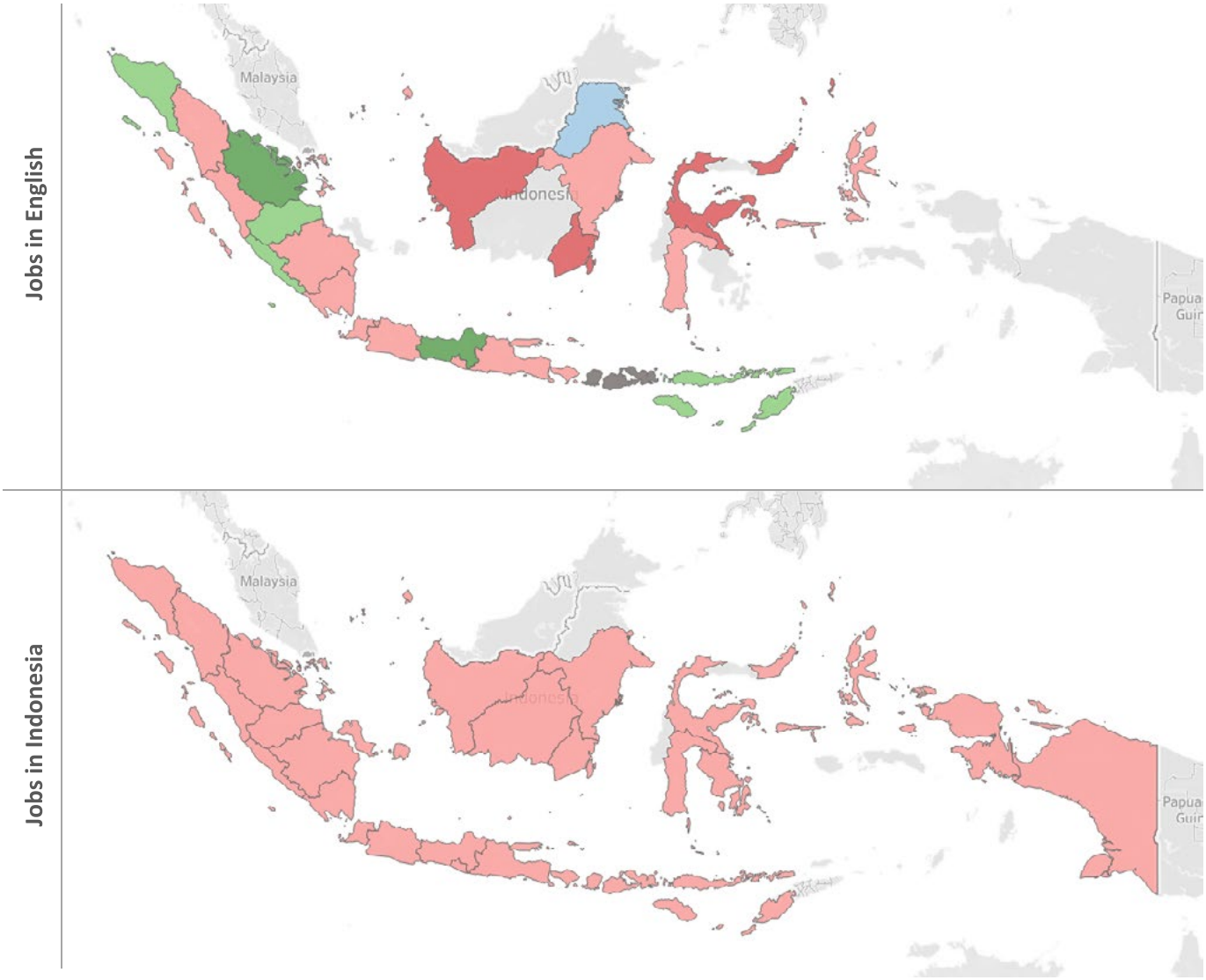
The most in-demand cross-functional skills advertised in English were: **analytical thinking, communication in English, MS Excel, MS project, AutoCAD, customer orientation, and writing**. In Indonesian, the most frequently requested cross-functional skill across Indonesia was consistently **MS Office.**

Most demanded skills: Cross-domain (keyword-based)



Cross-functional skills by phrase

Most demanded skills: Cross-domain (phrase-based)

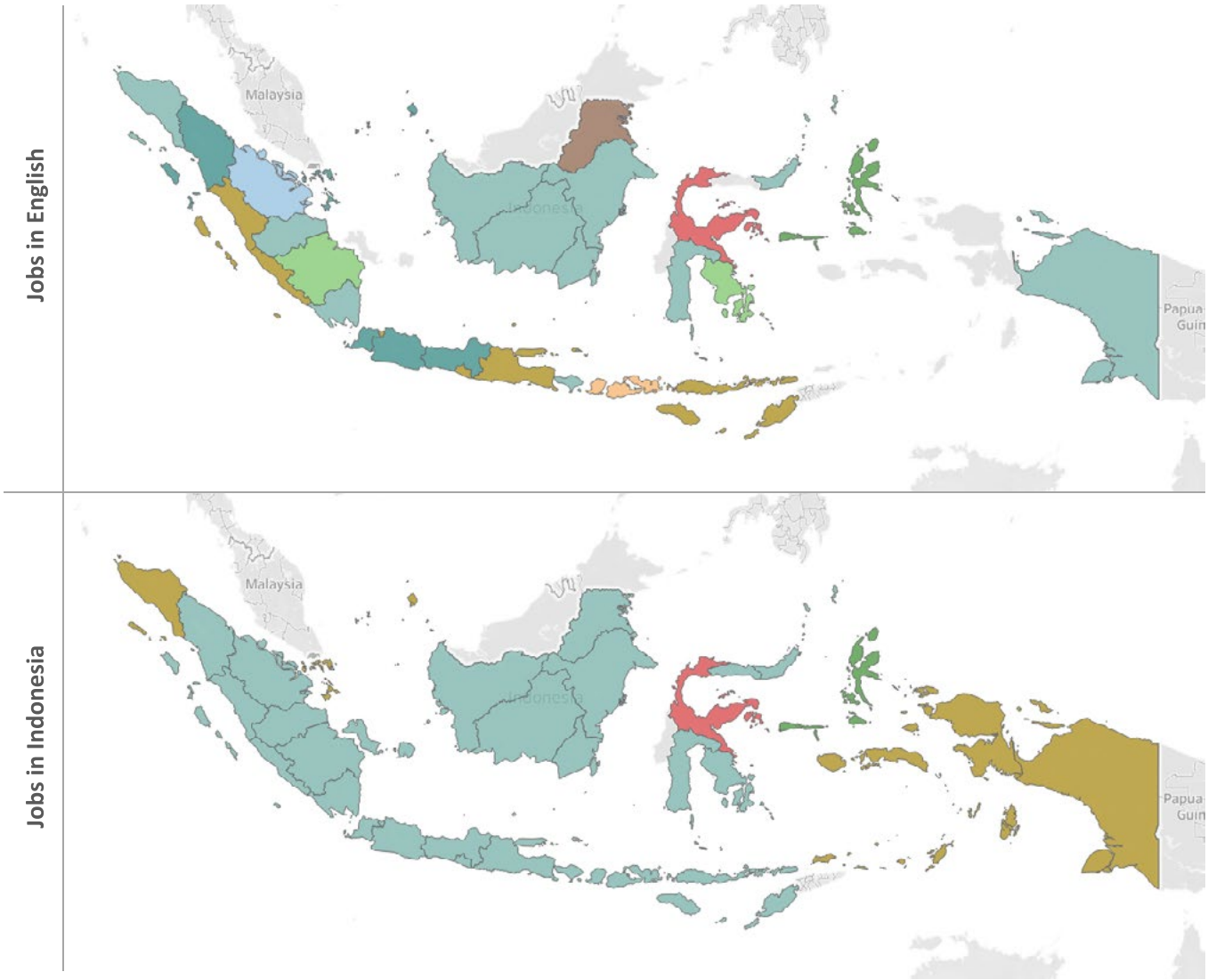


Most in-demand occupation-specific skills

Occupation-specific skills by keyword

For occupation-specific skills, the most requested skill, as indicated by keywords in job advertisements, were business management, marketing and sales, health, performance management and training, and engineering.

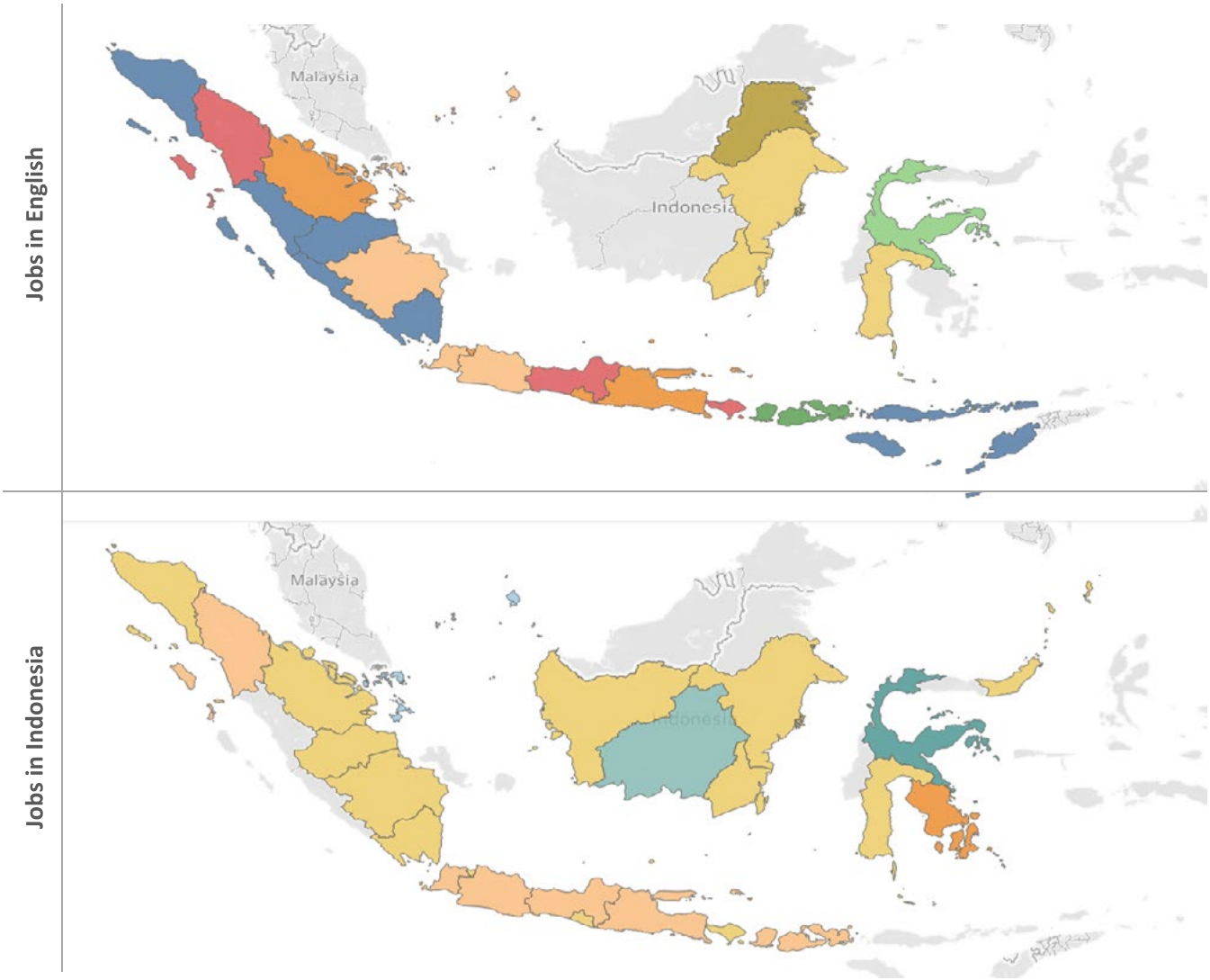
Most demanded skills: Domain-specific (keyword-based)



Occupation-specific skills by phrase

Skill phrases in job advertisements provide a more nuanced view of skills required. These show that engineering, especially **electrical, electromechanical, automotive and mining engineering, business management, production management,** and knowledge management are key occupation-specific skills needed within Indonesian manufacturing.

Most demanded skills: Domain-specific (phrase-based)



Top 10 occupation-specific skills advertised in English language, by province in Java & Bali

Banten
Electrical engineering (7.24%)
Business management (6.38%)
Project management (5.69%)
Quality management (5.37%)
Knowledge management (5.29%)
Process management (4.55%)
Team management (4.55%)
Data analysis (3.73%)
Process control (3.62%)
Financial accounting (3.22%)

Jakarta
Business management (10.7%)
Product sales (6.85%)
Project management (5.97%)
Team management (5.82%)
Sales support (5.54%)
Knowledge management (5.38%)
Data analysis (4.55%)
Market research (3.94%)
Financial accounting (3.75%)
Process management (3.64%)

West Java
Electrical engineering (9.75%)
Business management (6.92%)
Knowledge management (6.18%)
Process management (6.14%)
Quality management (5.60%)
Process control (5.55%)
Project management (4.99%)
Team management (4.96%)
Production management (4.55%)
Industrial management (4.27%)

Central Java
Team management (8.37%)
Business management (7.61%)
Quality management (6.01%)
Production management (4.85%)
Project management (4.81%)
Process management (4.50%)
Product dales (3.78%)
Electrical engineering (3.74%)
Process control (3.74%)
Knowledge management (3.65%)

Yogyakarta
Business management (6.74%)
Software design (4.92%)
Knowledge management (4.40%)
Office management (4.40%)
Product sales (4.15%)
Project management (4.15%)
Graphic design (3.89%)
Inventory management (3.37%)
Data analysis (3.11%)
Market research (3.11%)

East Java
Business management (7.74%)
Electrical engineering (7.45%)
Knowledge management (7.11%)
Team management (5.70%)
Product sales (5.50%)
Process management (4.87%)
Quality management (4.61%)
Sales support (4.53%)
Production management (4.10%)
Project management (4.07%)

Bali
Team management (10.86%)
Product sales (8.69%)
Business management (7.77%)
Knowledge management (4.69%)
Market research (4.46%)
Project management (4.46%)
Sales support (4.46%)
Account management (4.34%)
Graphic design (4.34%)
Product management (4.34%)

Source: Prospera Labour Market Dashboard

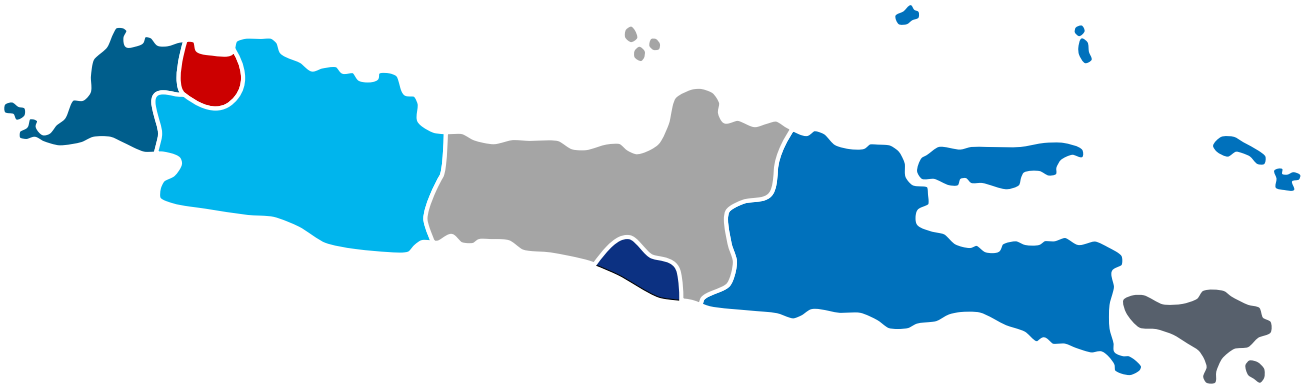
Top 10 occupation-specific skills advertised in Indonesian language, by province in Java & Bali

Banten
Electrical engineering (6.13%)
Quality management (3.03%)
Financial accounting (2.95%)
Process control (2.86%)
Product sales (2.67%)
Team management (1.90%)
Data analysis (1.86%)
Warehouse work (1.79%)
Production management (1.77%)
Graphic design (1.69%)

Jakarta
Product sales (4.58%)
Financial accounting (3.26%)
Electrical engineering (3.25%)
Business management (2.38%)
Data analysis (2.32%)
Graphic design (2.19%)
Sales support (1.99%)
Sales analysis (1.61%)
Market research (1.57%)
Financial statements (1.49%)

West Java
Electrical engineering (5.67%)
Product sales (3.36%)
Quality management (2.83%)
Process control (2.64%)
Financial accounting (2.40%)
Data analysis (2.23%)
Industrial management (1.90%)
Business management (1.74%)
Process management (1.52%)
Team management (1.44%)

Central Java
Electrical engineering (4.48%)
Product sales (3.29%)
Financial accounting (2.12%)
Process control (2.10%)
Product information (1.54%)
Graphic design (1.47%)
Data analysis (1.45%)
Production management (1.45%)
Quality management (1.24%)
Sales promotion (1.22%)



Yogyakarta
Product sales (4.13%)
Graphic design (2.63%)
Financial accounting (1.75%)
Business management (1.50%)
Production management (1.50%)
Communication design (1.44%)
Telephone sales (1.44%)
Data analysis (1.38%)
Software design (1.31%)
Video editing (1.31%)

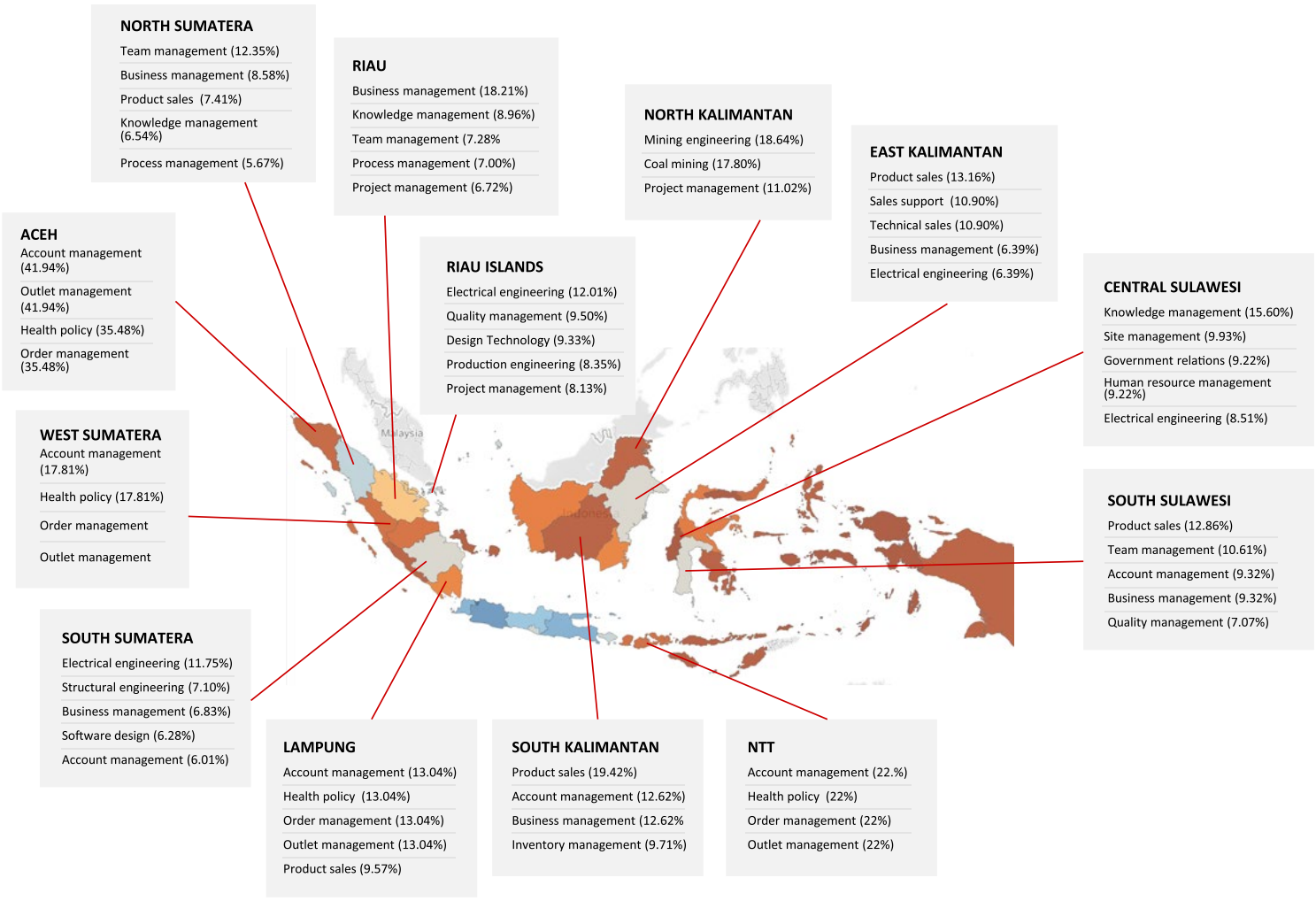
East Java
Electrical engineering (4.69%)
Product sales (3.15%)
Financial accounting (2.55%)
Quality management (2.38%)
Data analysis (2.06%)
Graphic design (1.73%)
Business management (1.44%)
Team management (1.40%)
Sales analysis (1.40%)
Production management (1.39%)

Bali
Product sales (5.56%)
Sales and distribution (3.17%)
Electrical engineering (2.63%)
Sales administration (2.32%)
Sales support (2.08%)
Product information (1.78%)
Business management (1.70%)
Process control (1.54%)
Sales promotion (1.47%)
Performance review (1.39%)

Source: Prospera Labour Market Dashboard

Different provinces across Indonesia have different occupation-specific skills needs. For example, the industrial clusters in Riau Islands need electrical engineers and quality management, while mining dominated regions seek site management, and mining engineering skills.

Top 5 occupation-specific skills advertised in English language, rest of Indonesia



Source: Prospera Labour Market Dashboard

Key Findings

Increased inward foreign direct investment and high growth in several manufacturing sectors, with significant implications for workforce skills and training needs.

The Government of Indonesia is seeking to leverage its strong reserves in key minerals to encourage more advanced manufacturing and has opened a range of trade and investment opportunities for Australian and Indonesian businesses through IA-CEPA.

This report's analysis of the skills needed by Indonesian manufacturing, as indicated by job advertisements, reveals key insights for Australian TVET providers, including:

- Although most manufacturing is located in Java, where employers have access to a more skilled workforce, significant growth opportunities have emerged in other provinces, resulting in a range of new training needs.
- Outside of Java, relatively higher average wages for a given qualification indicate that employers are focussing on finding talent with the right industry skills.
- Command of English is a key differentiator in the manufacturing job market and provides job seekers with access to a different career pathway and higher incomes. This means that workplace English is in demand, offering an opportunity for Australian TVET providers. Future TVET courses targeted at front-line operations may need to be in Bahasa Indonesia, but courses targeted at mid-senior management and technical staff could blend in greater English content.
- With relatively high economic value added per employee, medium to large enterprises in many sectors have both the financial and operational incentives to value and afford employee training.

Australian TVET is well placed to develop and deliver industry specific training courses for in-demand occupational areas in Indonesia's manufacturing industry such as:

- Engineering (e.g., electrical, mining and related skills such as AutoCAD)
- Business and team management
- Project management
- Process, production, and operations management
- Product sales marketing and distribution

Likewise Australian TVET training has the capability to develop and deliver industry specific training for in-demand cross-occupational skills such as:

- Workplace English
- Analytical thinking
- Leadership
- Teamwork and Customer orientation
- MS Office and Excel

Australian TVET also provides an opportunity to support women to access non-traditional career pathways, improving women's economic opportunities.

Katalis can help you connect. If you are an Indonesian business needing training for your employees, contractors, or clients, or an Australian TVET provider looking to deliver training for the Indonesian market, contact clarice.campbell@iacepa-katalis.org to discuss opportunities or visit https://www.iaskills.org/