NTI



NATIONAL TRAINING INDEX REPORT

2024

Building a brighter future through human capital development insights

MINISTRY OF HUMAN RESOURCES

HRD CORP
HUMAN RESOURCE DEVELOPMENT CORPORATION

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Minister of Human Resources's Foreword

As Malaysia advances towards becoming a high-income, developed nation, investing in our human capital remains a top priority. In 2024, we continue to strengthen our workforce by equipping Malaysians with the right skills and opportunities to thrive in an evolving job market. A resilient and future-ready workforce is essential not only for economic growth but also for ensuring long-term prosperity for all.



YANG BERHORMAT STEVEN SIM CHEE KEONG

Minister of Human Resources

To future-proof our workforce, we must place greater emphasis on skills development, talent mobility and strategic workforce planning. The evolving economic landscape demands a workforce that is not only highly skilled but also adaptable to industry shifts and technological advancements. Therefore, the Ministry of Human Resources (KESUMA) remains committed to upskilling, reskilling and multi-skilling initiatives to empower Malaysians across all sectors.

This commitment extends beyond individual growth - it is about strengthening our entire ecosystem. By fostering close collaboration between the government, industry leaders and training providers, we can bridge skills gaps, create high-quality training programmes and ensure that Malaysian talents remain competitive on both regional and global stages.

A key part of this effort is ensuring that our training and development initiatives are measurable, effective and aligned with national goals. The National Training Index (NTI) plays a crucial role in this by providing valuable insights into workforce capabilities and training needs. With NTI, employers can make data-driven decisions to enhance talent development, while employees can better navigate their career progression pathways.

I commend HRD Corp for its unwavering dedication to strengthening Malaysia's human capital. The NTI is a testament to Malaysia's commitment to excellence in workforce development and I am confident it will serve as a catalyst for greater economic and social advancement.

Congratulations to HRD Corp for your leadership in this initiative. Together, we will continue to shape a skilled, dynamic and globally competitive workforce for Malaysia's future.

From the Chief Executive's Desk

It gives me great pride to introduce the third edition of the National Training Index Report (NTI) by the Human Resource Development Corporation (HRD Corp).

This publication continues to highlight Malaysia's dynamic training and development landscape and this year, I am excited to share the 2024 NTI, which offers an in-depth analysis of the nation's learning and development performance.



DATUK WIRA SHAHUL DAWOOD

Chief Executive of HRD Corp

Designed as a comprehensive resource, the NTI serves as a trusted reference point for policymakers, industry leaders, educators, investors and professionals alike. It provides critical insights into workforce training activities and their impact, helping stakeholders identify key trends, recognise strengths and address areas for improvement. Whether you are shaping national policies, refining corporate training strategies, designing educational programmes, or simply enhancing your own skills, the NTI offers actionable recommendations to drive meaningful change.

More than just a report, the 2024 NTI is a catalyst for progress—a tool to guide strategic decisions that will shape the future of Malaysia's workforce and talent ecosystem. It evaluates organisations' readiness to upskill and reskill their employees, assesses skills and competencies and measures the overall quality and availability of training providers supporting our nation's learning ecosystem.

This report is a testament to the dedication and collaborative spirit of many. I would like to extend my heartfelt gratitude to Dr. Rony Ambrose Gobilee, Chief Strategy Officer (CSO) of HRD Corp and the entire Research & Assessment (R&A) team for leading this initiative with excellence and for their commitment to completing this independent research—one that is not commissioned or sponsored by any business, government, or other institution.

As we progress, let us reaffirm our commitment to lifelong learning and workforce development. Together, we can foster a skilled, adaptable and innovative workforce that will drive sustainable growth and bring prosperity to all Malaysians.

Thank you.

Message from the Chief Strategy Officer

In an era of rapid technological advancements and shifting economic landscapes, staying ahead requires more than just ambition - it demands strategic, data-driven action. The National Training Index (NTI) Report serves as a key instrument in this effort, providing critical insights into Malaysia's workforce development trends. By measuring training readiness, skills competencies and the quality of training providers, the NTI empowers stakeholders with the knowledge needed to drive meaningful and lasting change.



DR. RONY AMBROSE GOBILEE

Chief Strategy Officer HRD Corp

Now in its third edition, the NTI has evolved beyond a benchmarking tool - it is a key enabler in the development of the strategic planning. By providing granular data on training participation, skill gaps and industry readiness, the NTI empowers policymakers, industry leaders and training providers to design targeted workforce development strategies. This allows the alignment of training efforts with industry demands, enhance local talent pools and strengthen economic resilience.

This achievement would not have been possible without the hard work and dedication of the Research & Assessment (R&A) team. Their unwavering commitment to advancing Malaysia's learning and development agenda through this report is truly commendable.

As we move forward, let us remain committed to fostering a skilled, adaptable and innovative workforce. Through continuous learning and development, we can build a resilient talent ecosystem that supports Malaysia's long-term economic growth.

Thank you.

Acronyms and Abbreviations

AR	Augmented Reality
ASEAN	Association of Southeast Asian Nations
BNM	Bank Negara Malaysia
CIDB	Construction Industry Development Board
DOSM	Department of Statistics Malaysia
E&E	Electrical and Electronics
GDP	Gross Domestic Product
HRD CORP	Human Resource Development Corporation
ILO	International Labour Organization
MIDA	Malaysian Investment Development Authority
MOHR	Ministry of Human Resources
NAP	National Agrofood Policy 2021-2030
NCP	National Construction Policy 2030
NIMP	New Industrial Master Plan 2030
NIP	National Investment Policy
NMITP	National Mineral Industry Transformation Plan 2021–2030
NMP2	National Mineral Policy 2
NOSS	National Occupational Skills Standard
NTI	National Training Index
OECD	Organisation for Economic Co-operation and Development
PSMB	Pembangunan Sumber Manusia Berhad
R&D	Research and Development
ROT	Remote Online Training
RPEL	Recognition of Prior Learning
SME	Small and Medium-sized Enterprises
TVET	Technical and Vocational Education and Training
VR	Virtual Reality
KESUMA	Ministry of Human Resources

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National Training Index Taskforce

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About HRD Corp

Established in 1993, the Human Resource Development Corporation (HRD Corp) was created to support Malaysia's talent development goals by managing the collection of levies and allocating funding for workforce training initiatives. Operating under the Pembangunan Sumber Manusia Berhad Act 2001 (PSMB Act 2001) and the Ministry of Human Resources (MOHR), HRD Corp's primary aim is to safeguard Malaysia's economic future through the development of its greatest asset—its people.

As of 2024, HRD Corp had registered close to 100,000 employers across a wide range of industries, representing over 4.79 million workers. Through its initiatives, HRD Corp strives to foster professional and personal growth for both businesses and individuals, promoting a culture of lifelong learning throughout the workforce.

Registered Employers

2024 | **98,084**

Covered Employees

2024 | **4,794,263**

238
Sub-sectors

Figure 1: **Registered Employers by Economic Sector in 2024**

Services	Manufacturing	Construction	Agriculture, Forestry and Fishing	Mining and Quarrying
69,252	16,879	8,747	2,688	518

Figure 2: **Covered Employees by Economic Sector in 2024**

Services	Manufacturing	Construction	Agriculture, Forestry and Fishing	Mining and Quarrying
3,154,280	1,224,418	241,921	140,170	33,474



HRD Corp has been pivotal in shaping the training and development sector in Malaysia, particularly with the creation of the National Training Index (NTI) Framework in 2022. This framework, developed through collaboration with industry experts, academic institutions and research bodies, serves as a comprehensive tool for assessing learning and development trends across various industries.

It provides valuable insights that allow stakeholders to evaluate the impact of training programmes, facilitating data-driven decision-making and strategic planning to enhance workforce capabilities and promote long-term growth.

To learn more about HRD Corp and download the NTI reports, visit

https://hrdcorp.gov.my/reports

Executive Summary



In 2024, the analysis of the index performance indicated that Malaysia has a well-established training system and a strong commitment to lifelong learning and skills development, with a score of 0.79, placing the country at the 'Leader' level. This score reflects Malaysia's culture of learning, with many organisations actively seeking opportunities to upskill and enhance employee competencies.

As technology and business practices evolve, it is essential for industries to continuously update their employees' skills to remain competitive. While these sectors have embraced digital training, industries such as Mining & Quarrying, Agriculture and Construction predominantly rely on traditional training methods. The results indicate that a lack of investment in technology and training resources are key barriers to adopting digital training in these sectors. The report also highlights the challenges faced by Small and Medium-sized Enterprises (SMEs) and newly registered employers with HRD Corp, including limited financial resources, restricted access to training programmes and low awareness of available resources.

A well-trained and skilled workforce is essential for a competitive and productive economy.

Therefore, Government support is vital in addressing these challenges and providing SMEs and newly registered employers with the resources and opportunities necessary to invest in workforce training and development. A well-trained and skilled workforce is essential for a competitive and productive economy. Regular tracking of workforce performance is critical to identify areas for improvement and support Malaysia's economic growth and development.

Collaboration between the Government, industries and organisations is key to fostering a more supportive environment for employee training and development. This partnership can help ensure that has the skills and knowledge needed to thrive in an increasingly dynamic global economy.



Methodology

The analysis was performed by measuring the sector and sub-sector performances and progress made in 2024 to assess the lifelong learning performance in all economies through the training index. In particular, it assists in the identification of industry training trends, challenges and areas of improvement for policy intervention.

The NTI is constructed upon conceptual and analytical principles established through a framework collaboratively developed with the industry in 2022. The framework comprises of three (3) primary dimensions aimed at gauging the extent of training activities, encompassing a total of 19 indicators.

Each organisation's training activities are mapped and assessed across 19 indicators sourced from the HRD Corp database, ensuring consistency across all 238 sub-sectors.

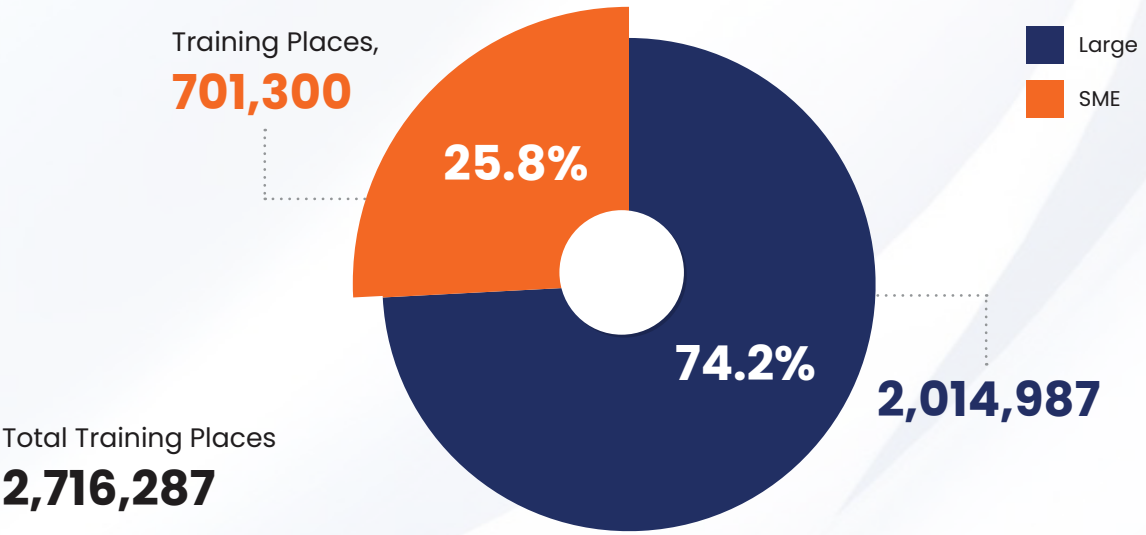
HRD Corp serves as the primary data source to ensure the use of standard concepts, classifications and target populations to promote coherence. Additionally, a uniform methodology utilising the aggregation method is employed to maintain consistency across the analysis. Above all, the NTI scores are ultimately a reflection of the learning and development performance of the workforce in Malaysia. The results are dependent on the methodology used and the assumptions made. NTI's value lies in its aptness, methodological rigour and robustness as a score that enables government decision-makers and industries to understand the current state of lifelong learning activities in Malaysia.

*Categorisation of the NTI scores:

0.76 – 1.00	: Leader
0.51 – 0.75	: Experienced
0.26 – 0.50	: Adopter
0.00 – 0.25	: Beginner

National Training Index 2024 at a Glance

Figure 3: **Training Participation According to Industry Size**



Training participation in 2024 highlights a strong focus on workforce development, with large enterprises leading the way, accounting for 2,014,987 training places. This reflects their ability to invest in structured skill-building programmes for employees. In contrast, SMEs recorded 701,300 training places, revealing a significant gap in training accessibility for smaller businesses. Given the critical role of SMEs in economic growth, expanding training opportunities, improving funding access and introducing tailored programmes will be key to boosting their resilience and competitiveness in an evolving market.

Over the past year, Malaysia's Training Index score rose from 0.75 in 2023 to 0.79 in 2024, reflecting a 0.04 increase. This improvement indicates that Malaysia's training ecosystem is categorised as 'Leader', with expectations for further progress. A higher NTI score signifies growing investment in workforce development across key sectors, fostering skill enhancement and boosting productivity. The NTI also highlights sectors that are particularly focused on employee training, offering valuable insights into areas that drive economic growth.

Figure 4: **National Training Index According to Sectors in 2022, 2023 and 2024**

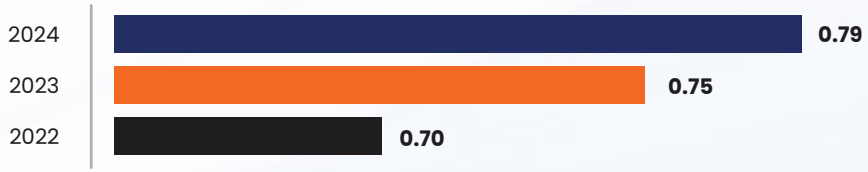
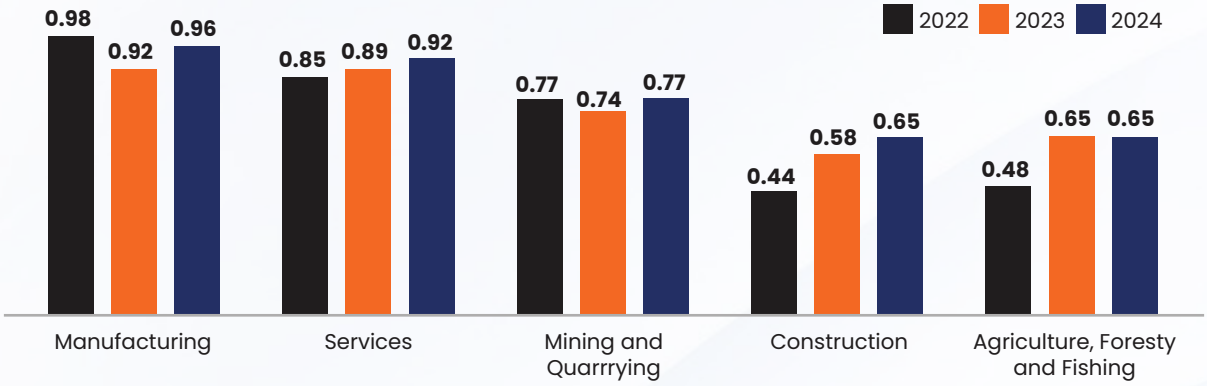


Figure 5: **National Training Index according to Sectors for the Year 2022, 2023 and 2024**



According to the Department of Statistics Malaysia (DOSM), from an economic standpoint, Malaysia's economy grew by 5.0% in 2024, following a notable 3.7% growth in GDP in 2023. The Services sector led this growth, expanding by 5.5%, Manufacturing climbed 4.4% and Construction saw the most robust increase by 20.7%. Meanwhile, the Mining sector and the Agriculture, Forestry and Fishing sector experienced a decline of 0.9% and 0.5%, respectively (GDP Q4, 2024).

The data presented can inform the alignment of economic policies and strategic investments. By identifying the strengths and gaps within the training ecosystem, stakeholders can more effectively allocate resources and design programmes that contribute to economic development and support GDP growth. The NTI serves as a key tool in developing a skilled workforce, driving innovation, improving efficiency and increasing productivity, all of which contribute to the nation's economic expansion.

Although the NTI is not directly integrated into GDP measurements, it provides critical insights into the quality and impact of training programmes, which significantly influence human capital development and sectoral performance. This aligns with Malaysia's ongoing commitment to lifelong learning, as evidenced by high enrolment rates in both certification and non-certification courses, as well as the growing adoption of digital learning across various sectors.

By investing in the continuous development of a highly skilled workforce, Malaysia can maximise productivity and innovation, positioning itself to leverage the full potential of employees who consistently enhance their skills and competencies.

Among the various skill sets, Management and Leadership emerged as the most in-demand, accounting for nearly a quarter (23%) of total training participation. Additionally, HRD Corp registered over 217,138 courses with recognised training providers, yielding a robust enrolment rate of 31% of the total enrolled training programmes, 96% were non-certification courses, while 4% were certification courses. Certification courses were predominantly focused on areas such as Aerospace industry, Industry 4.0 and Micro-Credential.

Training providers play a crucial role in HRD Corp's mission to deliver impactful and comprehensive training activities that meet the changing needs of the workforce. As of December 2024, 5,609 training providers were actively delivering training across diverse formats, including in-house, online, public and hybrid. Public training and in-house training accounted for the largest share of enrolments, with 130,280 (42.6%) and 101,243 (33.0%) respectively. Online learning also gained traction, with Remote Online Training (Public), Remote Online Training (In-House) and e-Learning comprising 72,037 (23.6%) enrolments.



NTI 2024 DIMENSION ANALYSIS:

DIMENSION 1

Firm Preparedness/Readiness/Commitment

DIMENSION 1

Firm Preparedness/Readiness/Commitment

FROM INVESTMENT TO IMPACT:

The Role of Firm Preparedness in Shaping the Future Workforce

The future belongs to firms that recognise training as not just an expense but as the most powerful investment in human capital and long-term prosperity. A recent joint study by the World Bank, ILO and OECD in 2023, entitled '*Building Better Formal TVET Systems: Principles and Practice in Low and Middle-Income Countries*', highlights that effective training systems are essential for adapting to globalisation, technological progress and demographic changes.

This is especially pertinent as the findings show that, on average, a third to more than half of employers report a lack of skilled workers as a significant bottleneck to their operations, particularly as firms scale up. The OECD's 2023 Skills Outlook report further underscores employees' need to regularly update their skills to remain competitive in a rapidly evolving digital landscape. These insights underscore the importance of firm preparedness in providing training and development opportunities for employees, ensuring that the workforce remains skilled, adaptable and competitive.

Henceforth, Dimension 1 evaluates the employer's readiness and ability to support the employees' upskilling and reskilling efforts. The dimension reflects the foundational support that firms provide for training and development activities. It includes several indicators that measure various aspects of a firm's commitment to training, such as budget allocation, training participation rates, Recognition of Prior Learning (RPEL), training facilities and overall support for learning.

Table 1: **Summary of Training Index for Dimension 1, Firm Preparedness/Readiness/Commitment Across the Key Economic Sectors in 2024**

	ECONOMIC SECTORS	MANUFACTURING	SERVICES	MINING AND QUARRYING	CONSTRUCTION	AGRICULTURE, FORESTRY AND FISHING	NATIONAL
D1	**Firm Preparedness/ Readiness/ Commitment**	**1.00**	**0.84**	**0.99**	**0.66**	**0.66**	**0.83**
D1I1	Amount of Financial Assistance Allocated for Training per Worker	**0.66**	**0.51**	**1.00**	**0.45**	**0.55**	**0.64**
D1I2	Utilisation Rate of HRD Corp Levy	**0.78**	**0.45**	**0.64**	**0.35**	**0.41**	**0.53**
D1I3	Number of Employees Trained	**1.00**	**0.69**	**0.81**	**0.65**	**0.45**	**0.72**
D1I4	Number of Skilled Workers Trained	**0.95**	**0.78**	**1.00**	**0.80**	**0.71**	**0.85**
D1I5	Enrolment in RPEL	**0.41**	**1.00**	**0.00**	**0.00**	**0.00**	**0.28**
D1I6	Availability of Training Facilities at Own Premise	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**
D1I7	Availability of Designated Training Unit	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**

National

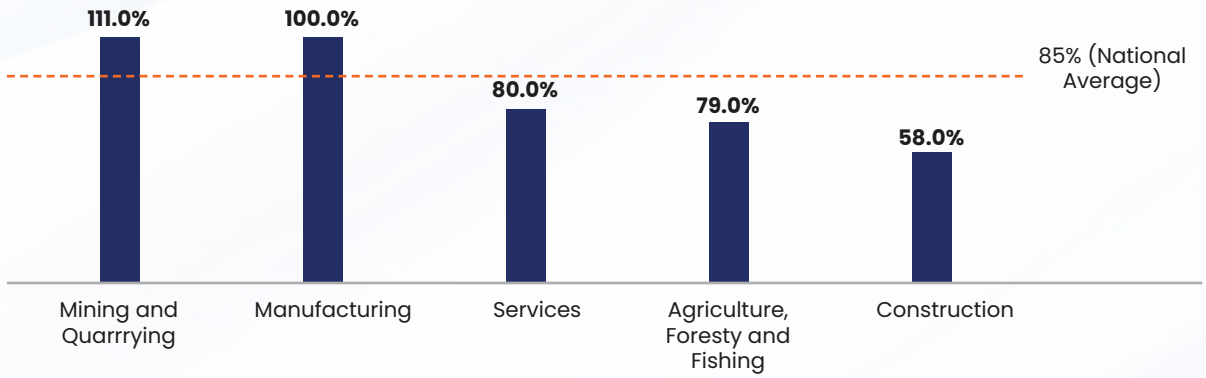
A key metric within this dimension measures how firms utilise the funds collected through the HRD levy for training purposes. A higher utilisation rate reflects a stronger commitment to employee development, ensuring that allocated financial resources are effectively channelled into skills enhancement. A detailed examination of this indicator provides valuable insights into the effectiveness of firms in optimising their training investments and highlights strategies to enhance overall workforce competency.

At the national level, the levy utilisation rate, with an index score of 0.53, positions it within the 'Experienced' tier. In 2024, the utilisation rate of 85% demonstrates a firm commitment to providing continuous training and upskilling opportunities for the workforce. This classification reflects a robust engagement in training activities and an effective allocation of resources towards talent development.

The Mining and Quarrying sector stands out with the highest levy utilisation rate at 111%, driven by the levy balance carried over from the previous year, which enabled levy claims to surpass the current year's contributions. Close behind, the Manufacturing sector achieves a utilisation rate of 100%, reflecting its effective use of the full allocation of HRD levy funds for training purposes.

The Services sector, with a utilisation rate of 80%, indicates that while a substantial portion of the available funds is being allocated to training, there remains untapped potential for further optimisation. Similarly, the Agriculture, Forestry and Fishing sector follows closely at 79%, suggesting a trend where most of the levy funds are utilised, yet there is still room for greater efficiency. Meanwhile, the Construction sector reports a utilisation rate of 58%, presenting an opportunity to strengthen training investments and optimise the use of HRD levy funds to enhance workforce development in the industry further.

Figure 6: **Levy Utilisation Rate Among Five (5) Economic Sectors**



To fully understand the disparities in levy utilisation rates across sectors, it is essential to conduct a comprehensive analysis that considers the various underlying factors influencing these trends. Each sector presents its own set of dynamics that shape the way HRD levy funds are utilised. For instance, firm size often plays a pivotal role in determining the allocation of training resources. Larger firms typically have more substantial budgets and greater capacity to invest in employee development, which can lead to higher utilisation rates. In contrast, smaller firms may face budget constraints, which can limit their ability to fully utilise available training funds.

Figure 7: **Levy Utilisation Rate Between Firm Size (National Level)**



Henceforth, through deeper analysis, the employers and policymakers can identify the underlying factors affecting levy utilisation and develop targeted strategies to further optimise the distribution and use of HRD levy funds across all sectors. This will ensure that industries, regardless of size or cost barriers, are better positioned to invest in workforce development, ultimately fostering a more skilled and competitive labour market.

Manufacturing Sector

The Manufacturing sector, with NTI score of 0.78 for levy utilisation rate, is categorised within the 'Leader' tier. This high level of training enrolment is further evidenced by the sector's impressive levy utilisation rate of 100%, where RM535.0 million was collected in levies and RM534.1 million was utilised. This efficiency can be attributed to the sector's integral role in Malaysia's economy, contributing significantly to the GDP and driving rapid economic growth. As of the fourth quarter of 2024, the GDP for the Manufacturing sector grew by 4.3%. The sector's focus on high-value, technology-based manufacturing and the adoption of Industry 4.0 technologies, such as automation and IoT, have likely enhanced the effective use of levies. Government policies promoting sustainable economic growth and high-quality investments have also supported the sector's efficient levy utilisation.

Figure 8: **Top Five (5) Manufacturing Sub-sectors with the Highest Levy Utilisation Rate (%)**



Among the Manufacturing sub-sectors, the highest levy utilisation rate was recorded at 105% in the Manufacture of Electric Motors, Generators, Transformers and Electricity Distribution and Control Apparatus, amounting to RM146.5 million. Impressively, this sub-sector not only leads within the manufacturing domain but also across all sectors, reflecting its robust commitment to workforce development and training excellence. The Malaysian Investment Development Authority (MIDA) highlights that the electrical products sub-sector is crucial to the country's economy, fostering synergy across various sectors and empowering diverse businesses. Since 2022, RM2 billion investment in this sub-sector has led to increased human capital development (MIDA, 2024).

Furthermore, the Electrical and Electronics (E&E) segment recorded the highest realised investment performance of RM4.8 billion during the period from January to June 2024, equivalent to 69.5% of the investment value realised for the Manufacturing sector. The proactive introduction of policy reforms by MIDA continues to increase investor confidence and strengthen Malaysia's position as a preferred investment destination. This investment has driven the human capital development in this sub-sector to be empowered in supporting these initiatives.

Moreover, with a levy utilisation rate of 103%, the Manufacture of Basic Chemicals, Fertilisers, Nitrogen Compounds, Plastics and Synthetic Rubber in the Primary Forms sector utilised RM42.4 million. Similarly, the Manufacture of Structural Metal Products, Tanks, Reservoirs and Steam Generators sector recorded a levy utilisation rate of 104%, amounting to RM38.8 million. These sub-sectors are highly active in training and utilising their levies due to several factors highlighted in national documents. The New Industrial Master Plan 2030 (NIMP 2030) emphasises the importance of innovation, research and development (R&D) and human capital development to drive high-value-added industries and transform Malaysia into a knowledge-based economy.

The focus on Industry 4.0 technologies, such as automation and digitalisation, necessitates continuous skill development and training to keep up with technological advancements. Additionally, stringent safety and environmental regulations in sectors like chemicals and motor vehicles drive the need for regular training to ensure compliance. The government's robust support through policies and incentives further encourages firms to invest in training and development.

Figure 9: **Levy Utilisation Rate Between Manufacturing Firm Size (%)**



Both large firms and SME in the Manufacturing sector have an impressive levy utilisation rate of 106% and 91% respectively. Large firms benefit from dedicated training departments and advanced technologies, which facilitate continuous skill development and compliance with industry standards. Simultaneously, SMEs are equally effective in utilising their levies, driven by the need to remain competitive and adapt to technological advancements in the Manufacturing sector. This high utilisation rate among SMEs demonstrates their strong commitment to workforce development, even without the extensive resources and infrastructure that large firms possess.

The Government's support through policies and incentives plays a crucial role in encouraging both large firms and SMEs to invest in training and development. For instance, SME Corp Malaysia's SME Competitiveness Rating for Enhancement programmes assess and rate SMEs on various parameters, including their training and development efforts, helping them identify areas for improvement and providing necessary support (SME Corp, 2025). Additionally, SME Bank Malaysia offers financial products and services designed to support the growth and development of SMEs, including funding for training and development programmes through its SME Development Programmes (SME Bank, 2025).

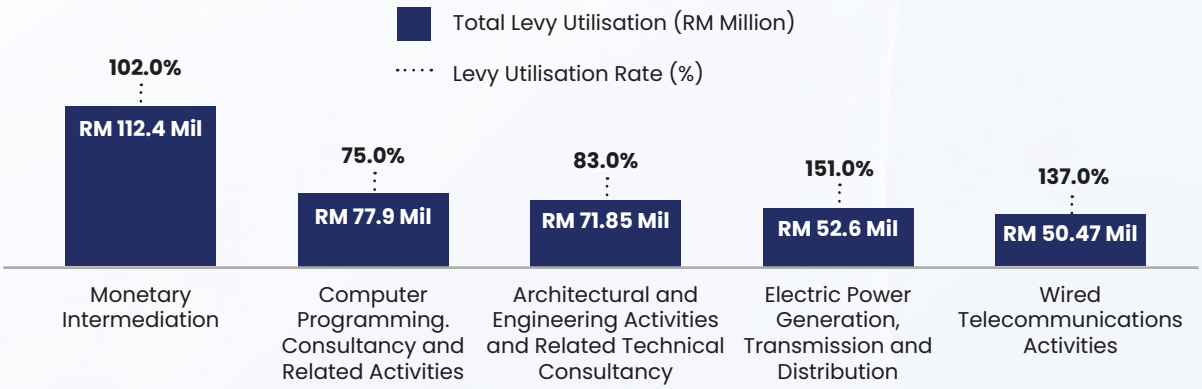
In summary, the Manufacturing sector demonstrates a commendable levy utilisation rate, with both large firms and SMEs effectively leveraging their resources to invest in workforce development and maintain competitiveness in the industry. The collaborative efforts between the government, industry stakeholders and financial institutions have played a pivotal role in supporting these initiatives. By fostering an environment that encourages investment in training, the Manufacturing sector can further enhance its productivity and innovation, ensuring sustained growth and success.

Services Sector

With an index score of 0.45 for levy utilisation rate, the Services sector falls into the 'Adopter' category. The sector achieved a levy utilisation rate of 80%, utilising RM1.3 billion out of the RM1.6 billion collected in levies. This rate reflects the sector's significant role in Malaysia's economy, accounting for a substantial portion of GDP and attracting both domestic and foreign investments.

The Services sector grew by 5.3% in the fourth quarter of 2024. The sector's focus on digitalisation and innovation, driven by government policies and the National Investment Policy (NIP), has likely contributed to the effective use of levies. The diverse range of sub-sectors within services, including banking, IT services and healthcare further supports the sector's efficient levy utilisation.

Figure 10: **Top Five (5) Services Sub-sectors with the Highest Levy Utilisation**



In the Monetary Intermediation sub-sector, the levy utilisation rate stood at 102%, with RM112.4 million utilised, exceeding the total levy collection of RM110.2 million. This indicates that training expenditures exceeded the levies collected during the year, due to the balance carried over from the previous year, allowing levy claims to surpass current year contributions. This trend aligns with the economic performance in the Services sector. The Services sector is the largest contributor to the economy, accounting for 59.3% of GDP growth annually (DOSM, 2024). This robust growth supports increased training and development activities. Additionally, the stability of the Malaysian finance sub-sector, as outlined in BNM's Financial Sector Blueprint 2022-2026, fosters market dynamism and

supports sustainable development objectives, further reinforcing the trend of high levy utilisation for training (MIDA, 2025).

Conversely, the Computer Programming, Consultancy and Related Activities sub-sector recorded a utilisation rate of 75%, with RM77.9 million utilised out of RM103.2 million collected.

Similarly, the Architectural and Engineering Activities and Related Technical Consultancy sub-sector exhibited a utilisation rate of 83%, indicating strong engagement in skills development initiatives. The Electric Power Generation, Transmission and Distribution sub-sector exhibited a pronounced trend, with a levy utilisation rate of 151%, as total utilisation reached RM52.6 million, significantly surpassing the levy collection of RM34.9 million. This overutilisation suggests that training expenditures were supported by the balance carried over from the previous year, allowing levy utilisations to exceed the current year's contributions. A similar pattern is seen in the Wired Telecommunications Activities sub-sector, where the utilisation rate reached 137%.

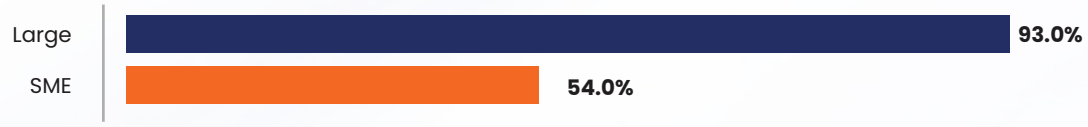
The high utilisation rates in these sub-sectors indicate a strong demand for training, potentially driven by industry transformation and technological advancements.

In short, the findings highlight that all sub-sectors analysed fall under the broader Services sector, yet their levy utilisation patterns vary significantly. While some sub-sectors underutilise their collected levies, others rely on previous balances to meet training demands.

The disparities suggest a need for targeted interventions to improve training uptake in underutilising sub-sectors, such as IT and Engineering. Additionally, a review of funding mechanisms is recommended to ensure long-term sustainability, particularly in sub-sectors where levy expenditure consistently exceeds contributions.

Notably, while the overall levy utilisation rate for the Services sector stands at 80%, SMEs utilised only 54% of their levy, highlighting a significant gap in utilisation compared to large companies in the sector.

Figure 11: **Levy Utilisation Rate between Services Firm Size (%)**

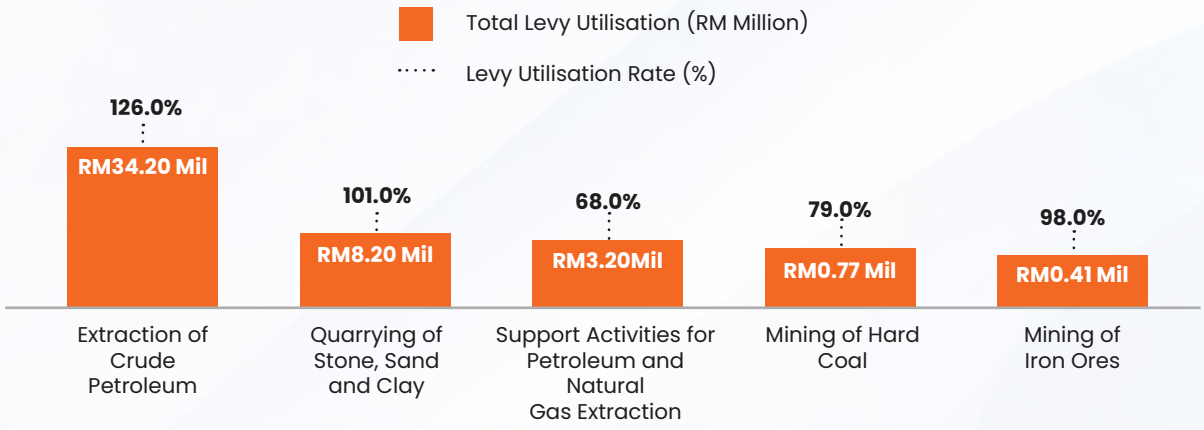


The lower utilisation rate among SMEs may stem from various factors, such as limited awareness of available training programmes, resource constraints, or a lack of tailored solutions that meet their specific needs. By offering personalised guidance, simplifying access to relevant training opportunities and providing financial or logistical support, SMEs will be able to leverage the full potential of the levy. Additionally, fostering partnerships between SMEs and training providers could help facilitate the development of workforce skills, ultimately enhancing their productivity and competitiveness in the market. Addressing these barriers will ensure that SMEs can fully benefit from the levy, contributing to a more skilled and dynamic workforce across all sectors.

Mining and Quarrying Sector

Classified within the 'Experienced' category with an index score of 0.64, the Mining and Quarrying sector demonstrated a remarkable levy utilisation rate of 111%. The sector collected RM42.6 million in levies and utilised RM47.4 million. This rate exceeds 100% due to the balance carried over from the previous year, indicating that the sector is effectively utilising available resources.

Figure 12: **Top Five (5) Mining and Quarrying Sub-sectors with the Highest Levy Utilisation**



Malaysia's Mining and Quarrying industry continues to evolve as a strategic sector, particularly in the Extraction of Crude Petroleum and Rare Earth Elements. The Extraction of Crude Petroleum sub-sector demonstrates an exceptional levy utilisation rate of 126%, reflecting the effective allocation of surplus funds from the previous year. This high utilisation rate, amounting to RM 34.20 million, underscores the sector's ability to optimise available resources, surpassing other sub-sectors in efficiency.

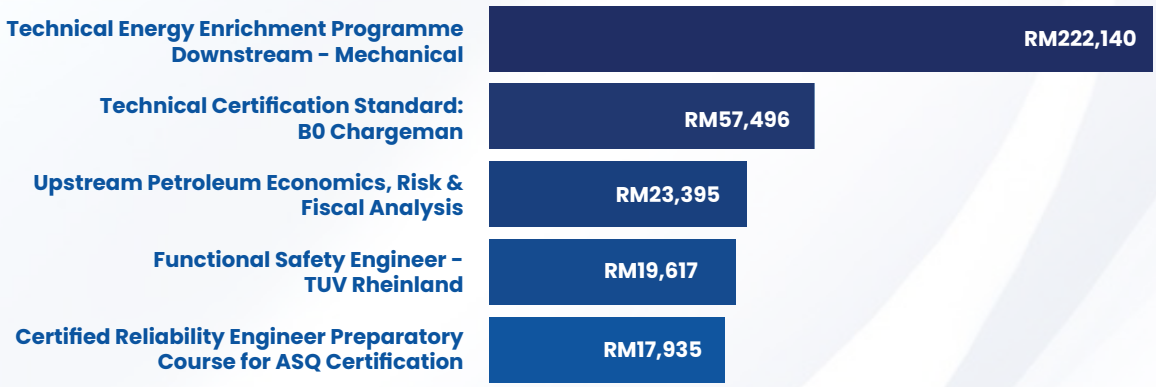
A key driver of this performance is Malaysia's policy framework, which prioritises competitiveness, sustainability and downstream value creation in the petroleum and mineral industries. The National Mineral Industry Transformation Plan (NMITP) 2021–2030 outlines a structured approach to developing the country's mineral wealth, emphasising midstream and downstream activities such as refining and manufacturing. This aligns with the NIMP 2030, which aims to enhance value-added processing in strategic sectors, including oil, gas and minerals.

The recent success of PETRONAS in adding over 1 billion barrels of oil equivalent through advanced exploration technologies further reflects the sector's adaptability and efficiency. The high levy utilisation in Petroleum Extraction Sub-sectors, combined with strategic national policies and strategic resource management, strengthens Malaysia's position as a key player in both traditional and emerging resource sectors, ensuring long-term economic resilience.

Moreover, there has been a strong emphasis on human capital development within this sub-sector. Active training enrolment and substantial investment in training programmes have been observed. For example, in 2024, the Petroleum & Gas Extraction industry had 13,999 employees under the HRD Corp coverage, with 9,325 trainees trained. This focus on training and development has ensured a skilled workforce, which is reflected in the high levy utilisation rates.

The high levy utilisation in the Mining and Quarrying sector is also influenced by its average training cost per participant, which stands at RM1,998, the highest among all sectors. In comparison, the Agriculture, Forestry and Fishing sector records RM1,036, followed by Construction (RM930), Services (RM880) and Manufacturing (RM720). This reflects the industry's significant investment in specialised technical training, stringent safety compliance and advanced skill development to meet operational and regulatory demands.

Figure 13: **Top Five (5) Highest Course Fees in Mining and Quarrying**



Courses in the Mining and Quarrying sector are designed to equip professionals with critical operational and safety competencies, ensuring they meet the technical and regulatory demands of the industry. These programmes focus on highly specialised areas, including reliability engineering, functional safety, petroleum economics and energy systems management, which are essential for maintaining operational efficiency, reducing risks and optimising resource extraction. Technical Energy Enrichment Programmes Downstream – Mechanical recorded the highest training cost.

Moreover, many of these courses involve international certifications and regulatory compliance training, such as Certified Reliability Engineer, Functional Safety Engineer and Technical Energy Management programmes, which require rigorous assessments and in-depth technical expertise. These certifications are recognised globally and are crucial for professionals working in hazardous environments, where strict adherence to safety and engineering standards is necessary to prevent accidents and operational failures.

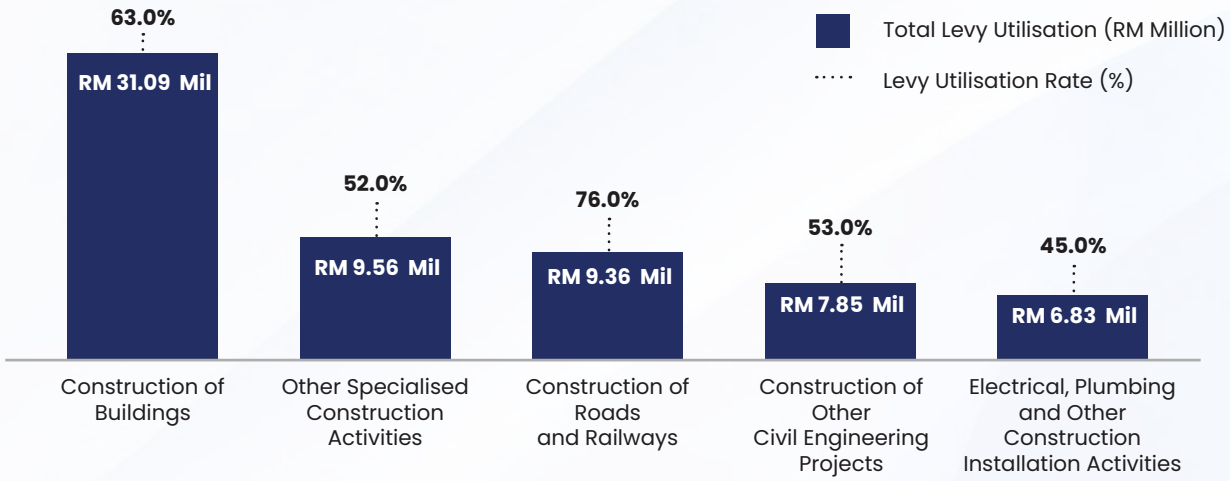
The inclusion of complex risk assessments, fiscal analysis and compliance with international petroleum and mining regulations further adds to the intensity and cost of such training.

Moreover, as the sector increasingly adopts automation, AI-driven exploration and advanced mechanical systems, training programmes have evolved to cover digitalisation, predictive maintenance and high-tech process optimisation. This shift towards technologically advanced and regulation-heavy training underscores the direct correlation between levy utilisation and training expenditure. Companies in the sector recognise that investing in continuous workforce development is not only crucial for meeting compliance requirements but also for enhancing productivity, minimising downtime and maintaining global competitiveness in an industry that is rapidly evolving.

Construction Sector

Positioned within the 'Adopter' category with an index score of 0.35, the Construction sector collected RM119.7 million in levies and utilised RM69.3 million, resulting in a 58% utilisation rate. Malaysia's Construction industry has been fuelled by substantial private sector investments and major government-led infrastructure projects, including the MRT extension and the 5G network roll-out. Reflecting this momentum, the sector recorded a strong growth rate of 19.6% in the fourth quarter of 2024.

Figure 14: **Top Five (5) Construction Sub-sectors with the Highest Levy Utilisation Rate (%)**



The Construction industry in Malaysia has shown remarkable growth, particularly in the sub-sectors with the highest levy utilisation rates. The Construction of Roads and Railways sub-sector, with a 76% utilisation rate, is primarily influenced by large-scale infrastructure projects such as the East Coast Rail Link and the Pan Borneo Highway. These mega projects require a highly skilled workforce, leading to increased investments in training and development to ensure workers are equipped with the necessary skills (CIDB, 2021).

This is in line with the National Construction Policy 2030 (NCP 2030), which highlights the significant investments and strategic initiatives aimed at enhancing the sector's performance and workforce capabilities.

In the Construction of Buildings sub-sector, which has a 63% utilisation rate, the surge in urban development projects, including high-rise residential and commercial buildings, has driven the need for advanced training programmes.

The NCP 2030 emphasises the importance of digitalisation and modern construction techniques, which necessitate continuous upskilling and reskilling of the workforce (CIDB, 2021).

The Construction of Other Civil Engineering Projects sub-sector, with a 53% utilisation rate, reflects ongoing efforts to improve public infrastructure, such as water supply systems and flood mitigation projects. These projects often require specialised skills, prompting higher investments in targeted training programmes (CIDB, 2021).

For the Other Specialised Construction Activity sub-sector, with a 52% utilisation rate, the focus on niche areas like renovation and restoration has led to the development of specialised training programmes. This ensures that workers possess the specific skills needed for these tasks, aligning with the NCP 2030's goal of fostering a highly skilled and adaptable workforce (CIDB, 2021).

Lastly, the Electrical, Plumbing and Other Construction Installation Activities sub-sector, with a 45% utilisation rate, highlights the importance of technical training in essential services. The integration of smart technologies and complex building systems has increased the demand for skilled technicians, supported by the NCP 2030's emphasis on digitalisation and innovation (CIDB, 2021).

Overall, the high levy utilisation rates across these sub-sectors underscore the critical role of human capital development in supporting Malaysia's construction industry's growth and economic performance. The NCP 2030 and initiatives by the CIDB consistently emphasise the need for continuous investment in training and development to ensure the workforce can meet the evolving demands of the sector (CIDB, 2021).

Figure 15: **Levy Utilisation Rate Between Construction Firm Size (%)**



In the context of Malaysia's Construction sector, the disparity in levy utilisation rates between large firms (77%) and SMEs (46%) can be attributed to several factors. Large construction firms often have more resources and infrastructure to implement comprehensive training programmes, allowing them to utilise levies more effectively. They tend to have dedicated training departments and access to advanced technologies, which facilitate continuous skill development and compliance with industry standards.

On the other hand, SMEs in the Construction sector, which account for approximately 9.3% of all SMEs in Malaysia, often face challenges such as limited financial resources and smaller training budgets. As a result, the low utilisation rate among SMEs highlights the constraints in workforce development, potentially hindering their ability to stay competitive and adapt to technological advancements (SME Corporation Malaysia, 2023).

To bridge the gap in levy utilisation rates between large firms and SMEs, it is recommended that the Government and industry stakeholders collaborate to provide targeted support for SMEs. This could include offering financial incentives, such as grants or tax breaks, specifically aimed at enhancing training programmes within SMEs. Additionally, creating partnerships between large firms and SMEs can facilitate knowledge transfer and resource sharing, allowing smaller companies to benefit from the expertise and infrastructure of their larger counterparts.

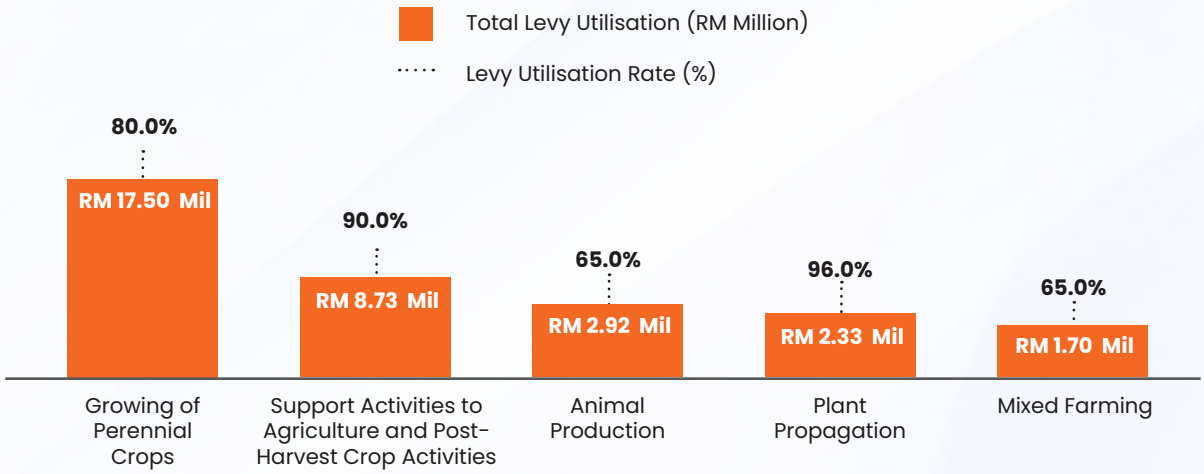
Implementing accessible and affordable training platforms, leveraging digital technologies, can also help SMEs overcome budget constraints and ensure their workforce remains competitive and skilled. The CIDB provides guidance and technical assistance to construction companies, including training programmes and workshops on digital technologies (CIDB, 2021). Addressing these challenges can enhance levy utilisation, promoting a more equitable and resilient Construction sector.

Agriculture, Forestry and Fishing Sector

With an index score of 0.41, the Agriculture, Forestry and Fishing sector is categorised as an 'Adopter.' This sector collected RM46.7 million in levies and claimed RM36.9 million, resulting in a 79% utilisation rate. This indicates substantial use of the funds, though there remains potential for further optimisation.

Among the top active sub-sectors, the utilisation rates are as follows: Growing of Perennial Crops at 80%, Support Activities to Agriculture and Post-Harvest Crop Activities at 90%, Animal Production at 65%, Plant Propagation at 96% and Mixed Farming at 65%.

Figure 16: **Top Five (5) Agriculture Sub-sectors with the Highest Levy Utilisation**

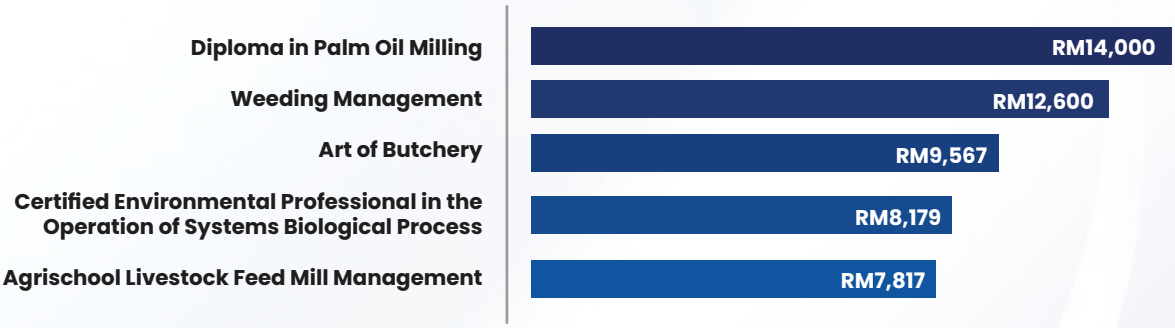


The high levy utilisation in the Growing of Perennial Crops (RM17.50 million) reflects a significant investment in training programmes for this sub-sector, aligning with the objectives of the National Agrofood Policy 2021-2030 (NAP 2.0). NAP 2.0 aims to develop a sustainable, resilient and high-technology agro-food industry by promoting sustainable agricultural practices, enhancing research and development and improving the agro-food value chain. The policy recognises the economic importance of perennial crops, including oil palm and emphasises human capital development as a key driver of sectoral growth.

Similarly, the substantial levy utilisation in Support Activities to Agriculture and Post-Harvest Crop Activities (RM8.73 million) underscores NAP 2.0's focus on strengthening the agricultural value chain. Training programmes in this area may include post-harvest handling, storage techniques and quality control measures, which are vital for reducing post-harvest losses and maintaining product quality. By fostering expertise in these areas, the policy ensures that agricultural products remain competitive in both local and international markets, contributing to economic growth and food security.

Overall, the strategic allocation of levy funds for training that aligns with the aspiration of NAP 2.0 demonstrates a comprehensive approach to human capital development in the agro-food industry. By investing in upskilling and reskilling initiatives, the policy drives higher levy utilisation and strengthens workforce capabilities. This not only supports immediate sectoral needs but also ensures long-term resilience, sustainability and competitiveness.

Figure 17: **Top Five (5) Highest Course Fees in Agriculture**



Courses in the Agriculture, Forestry and Fishing sectors are designed to equip professionals with essential operational and environmental competencies, ensuring they meet the technical and regulatory demands of the industry. Many of these courses involve rigorous training, such as the Diploma in Palm Oil Milling and Certified Environmental Professional in the Operation of Systems Biological Process.

These certifications are recognised globally and are vital for professionals working in diverse and often challenging environments, where strict adherence to environmental and safety standards is necessary to prevent ecological degradation and ensure sustainable practices. The inclusion of complex environmental impact assessments, resource management strategies and compliance with international agricultural and environmental regulations further adds to the intensity and cost of such training.

Moreover, as the sector increasingly adopts automation, precision agriculture and advanced biotechnology, training programmes have evolved to cover digitalisation, data-driven farming and high-tech process optimisation. This shift towards technologically advanced and regulation-heavy training underscores the direct correlation between levy utilisation and training expenditure. The high cost of these certifications can significantly impact levy utilisation, as companies may need to allocate substantial funds to ensure their workforce meets the required standards.

To mitigate the financial burden of these high-cost certifications, it is recommended that companies explore partnerships with educational institutions and government agencies to subsidise training costs.

Additionally, implementing in-house training programmes and leveraging online learning platforms can provide cost-effective alternatives while maintaining the quality and rigour of the training.

Workers Trained Ratio

Firms' preparedness to invest in the development of their workforce is a critical factor in driving economic growth and enhancing productivity. In Malaysia, the national average of 30% of employees being trained as of 2024 is an important benchmark for workforce development. This ratio reflects the level of commitment by companies towards upskilling and reskilling their employees to meet the evolving demands of the labour market.

The World Bank (2023) highlights that a higher rate of employee training is directly linked to greater firm competitiveness and resilience in the face of technological advancements and global market shifts.

Furthermore, the International Labour Organisation (ILO, 2023) stresses that firms that prioritise workforce training not only contribute to national economic goals but also improve employee retention, satisfaction and long-term business growth.

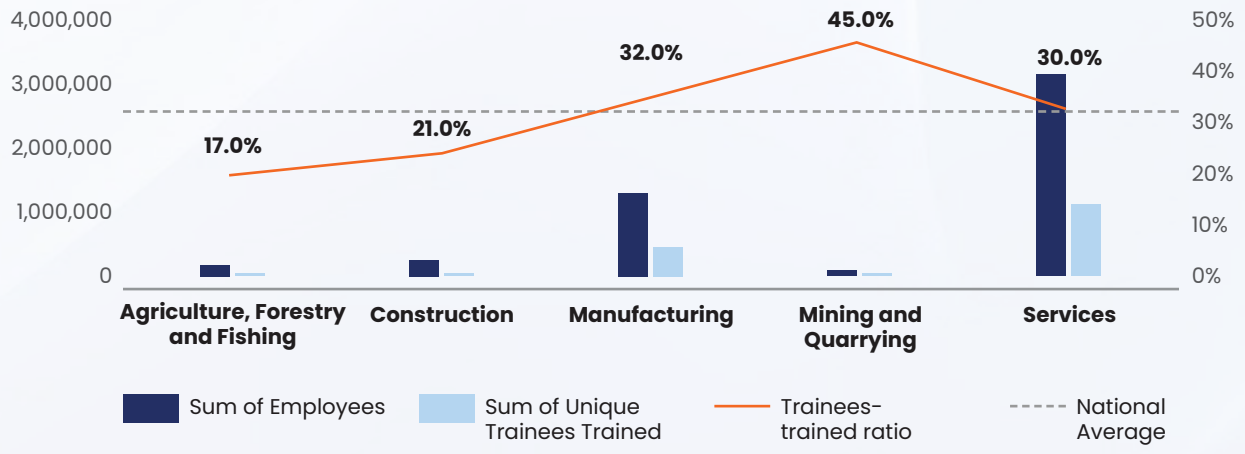
The Organisation for Economic Co-operation and Development (OECD, 2024) calls for a more robust approach to raising the workforce training ratio, particularly for industries undergoing rapid transformation, such as digital technology, green energy and healthcare. Expanding training opportunities and encouraging firms to invest in their human capital will be crucial for Malaysia's future competitiveness and to bridge the skills gap in critical sectors.

National

D1I3 assesses the proportion of employees who have received training, highlighting the reach and inclusivity of training programmes. A higher Workers Trained Ratio suggests a strong commitment to workforce development and a positive training culture within firms. The index score for Number of Employees Trained stands at an impressive 0.72, underscoring a robust commitment to workforce development and a thriving training culture within firms. This high score signifies that a substantial proportion of employees (at least 30% per employer) are actively engaged in training programmes showcasing the widespread effectiveness and reach of these initiatives across the country.

However, this score also highlights the opportunity to amplify training effectiveness further, ensuring that an even greater number of employees benefit from upskilling and reskilling opportunities.

Figure 18: **Number of Employees Trained across Five (5) Economic Sectors**



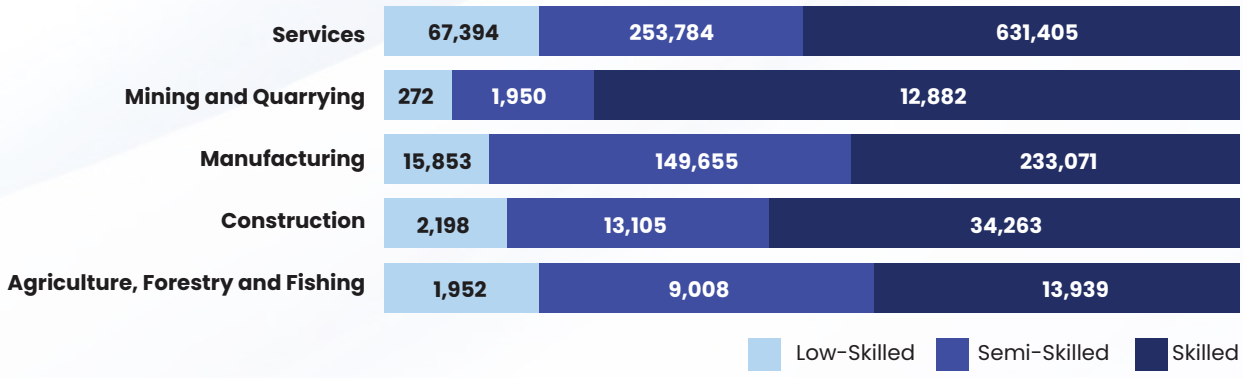
The analysis of the training trends across different economic sectors reveals significant insights into employee engagement in training programmes. The Mining and Quarrying sector has the highest Workers Trained Ratio at 45%. However, this high percentage is partly due to the relatively small total number of employees covered under HRD Corp, which is only 33,474. In contrast, the Services sector, which covers a substantial 3.2 million employees, trained 947,298 employees, resulting in a Workers Trained Ratio of 30%.

Following this, the Manufacturing sector, with a total of 1.2 million employees, trained 396,790 employees, achieving a Workers Trained Ratio of 32%. This indicates a strong engagement in training programmes, although slightly lower than the Mining and Quarrying sector. Lastly, the Construction and Agriculture, Forestry and Fishing sectors have the lowest Workers Trained Ratios, at 21% and 18% respectively, falling below the national average of 30%.

Overall, while the Mining and Quarrying sector shows the highest Workers Trained Ratio, the Services sector demonstrates the largest scale of training efforts. The Manufacturing sector also shows significant training engagement, whereas the Construction and Agriculture sectors indicate a need for enhanced training initiatives to meet the national average.

Despite the mixed trends in sector performance regarding employee training, all sectors report that skilled employees comprise the largest group of trainees. This reflects a growing recognition of the importance of skill development, particularly in light of contemporary industrial advancements. The significant number of skilled workers across various sectors demonstrates a strong commitment to enhancing workforce competencies and staying competitive.

Figure 19: **Workers Trained by Skills Category According to Economic Sectors in 2024**



The total number of skilled workers across various sectors is 925,560, representing approximately 64.2% of the total trainees. Leading the way is the Services sector, boasting the highest number of skilled workers at 631,406. This impressive figure is supported by the National Occupational Skills Standard (NOSS), which ensures that the workforce meets industry needs by outlining the competencies required for various employment levels. NOSS provides clear guidelines for training programmes and career advancement, driving many skilled trainees.

Following closely is the Manufacturing sector, with 233,071 skilled workers. The National Policy on Industry 4.0 (Industry4WRD) plays a crucial role here, aiming to enhance productivity and innovation by adopting Industry 4.0 technologies. This policy necessitates a highly skilled workforce and the focus on reskilling and upskilling efforts ensures that workers are equipped with the necessary skills to meet the demands of modern manufacturing processes. The Construction sector also shows commendable progress, with 34,263 skilled workers, representing 68% of the total workers trained in the sector.

This aligns with the National Construction Policy 2030 (NCP 2030), which emphasises the importance of reskilling and upskilling efforts to produce a highly skilled workforce capable of meeting industry demands. National policies support significant strides in training and development within this sector.

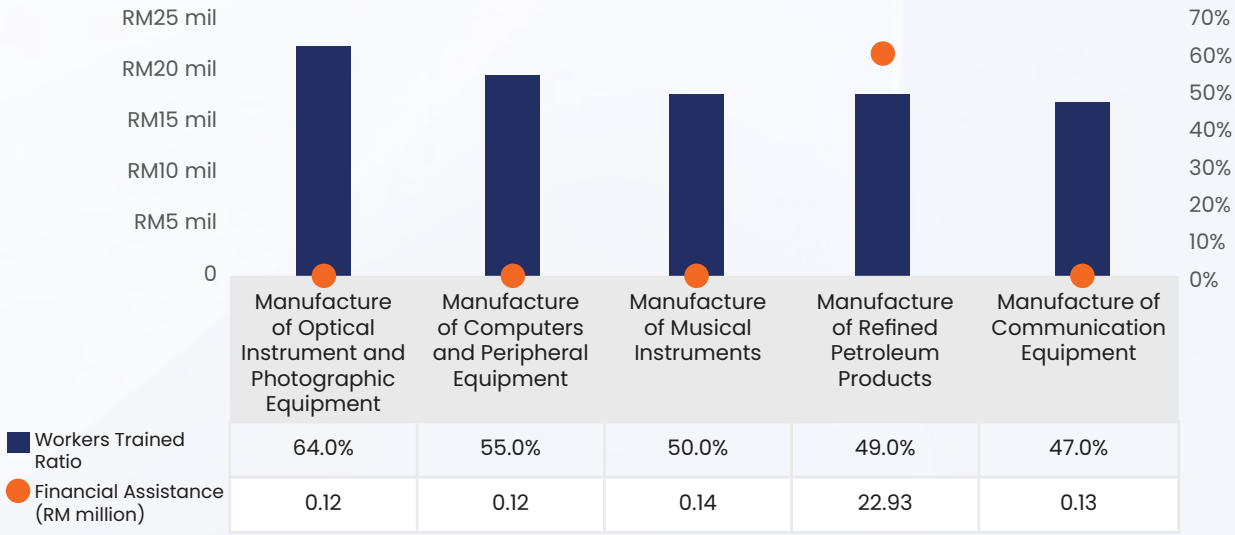
In the Agriculture, Forestry and Fishing sector, there are 13,939 skilled workers, making up 56% of the total trainees. This sector is supported by the National Agrofood Policy 2021-2030 (NAP 2.0), which prioritises sustainable development and the modernisation of the agro-food sector. National policies drive investment in training and technology, gradually transitioning the sector to a more skilled workforce. Lastly, the Mining and Quarrying sector has 12,822 skilled workers, representing 86% of the total trainees.

The National Mineral Policy 2 (NMP2) supports this sector, emphasising advanced exploration and resource utilisation driven by modern technology and research. Continuous training and development are promoted by national policies, enhancing the skills of the workforce in this sector.

Manufacturing Sector

With an impressive index score, Manufacturing stands out with their effort in ensuring their employees receive the necessary training. As this sector involves a lot of dangerous and high-risk tasks, regular and comprehensive training is needed here. Henceforth, the top sub-sectors in manufacturing that are actively in training enrolment are as follows:

Figure 20: **Top Five (5) Manufacturing Sub-sectors with Highest Workers Trained Ratio**



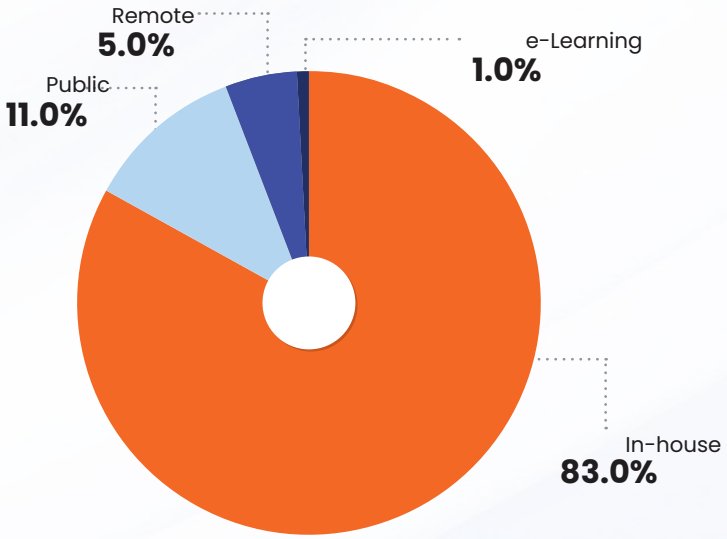
	Manufacture of Optical Instrument and Photographic Equipment	Manufacture of Computers and Peripheral Equipment	Manufacture of Musical Instruments	Manufacture of Refined Petroleum Products	Manufacture of Communication Equipment
Workers Trained Ratio	64.0%	55.0%	50.0%	49.0%	47.0%
Financial Assistance (RM million)	0.12	0.12	0.14	22.93	0.13

The Manufacture of Optical Instruments and Photographic Equipment sector stands out with the highest Workers Trained Ratio at 64%, despite receiving moderate financial assistance of RM0.12 million. In contrast, the Manufacture of Refined Petroleum Products has received the highest financial assistance in 2024 with RM22.93 million. The high financial assistance for this sector is primarily driven by the large number of enrolments (14,558) and the critical nature of the sector, which requires substantial investment in training and development. The Refined Petroleum Products sector is critical to the economy and involves complex processes that require specialised training. Ensuring a well-trained workforce in this sector is essential for maintaining safety, efficiency and productivity, which justifies higher financial assistance.

Additionally, training in this sector may be more resource-intensive, including the need for advanced equipment, safety measures and specialised training programmes. National policies and strategic priorities may also place a higher emphasis on this sector due to its economic significance, leading to increased financial support such as the Malaysian Investment Development Authority (MIDA) emphasises the importance of human capital development in the petroleum products sector through initiatives such as the Skills and Technical Enhancement Programme (STEP). These initiatives focus on bridging the skills gap and enhancing the employability of the workforce through targeted training programmes. The sector's significant contribution to Malaysia's GDP and its role in ensuring energy security and economic stability necessitates a highly skilled workforce to achieve the desired economic performance.

Beyond that, most trainees in Malaysia's Manufacturing sector have opted for in-house training in 2024, making it the most attended training method with 719,778 enrolments. This figure significantly surpasses other training modes, including public training (94,751 enrolments), remote training (39,993 enrolments) and e-Learning (12,382 enrolments), highlighting a strong preference for hands-on, workplace-based skill development.

Figure 21: **Type of Training Attended by Manufacturing Employees in 2024**



The high preference for in-house training suggests that manufacturing firms prioritise hands-on, job-specific skills that require physical presence, such as machine operation, quality control and workplace safety compliance. This form of training is typically conducted within company premises, allowing organisations to tailor content to their operational needs while minimising downtime. For instance, an automotive manufacturer may conduct in-house Lean Manufacturing training to enhance production efficiency and reduce waste in its assembly lines.

Public training, which recorded the second-highest enrolments, is usually organised by external training providers and attended by participants from multiple companies. This mode is particularly beneficial for employees requiring standardised certifications or specialised knowledge that is not easily delivered in-house. A relevant example includes Welding Certification programmes conducted by SIRIM, which equip manufacturing technicians with essential skills in metal fabrication.

Remote training, though less popular, remains an important option, particularly for theoretical or knowledge-based training that does not necessitate physical demonstration. A factory supervisor, for example, may participate in a virtual training session on Industry 4.0 technologies organised by Government agencies such as MIDA.

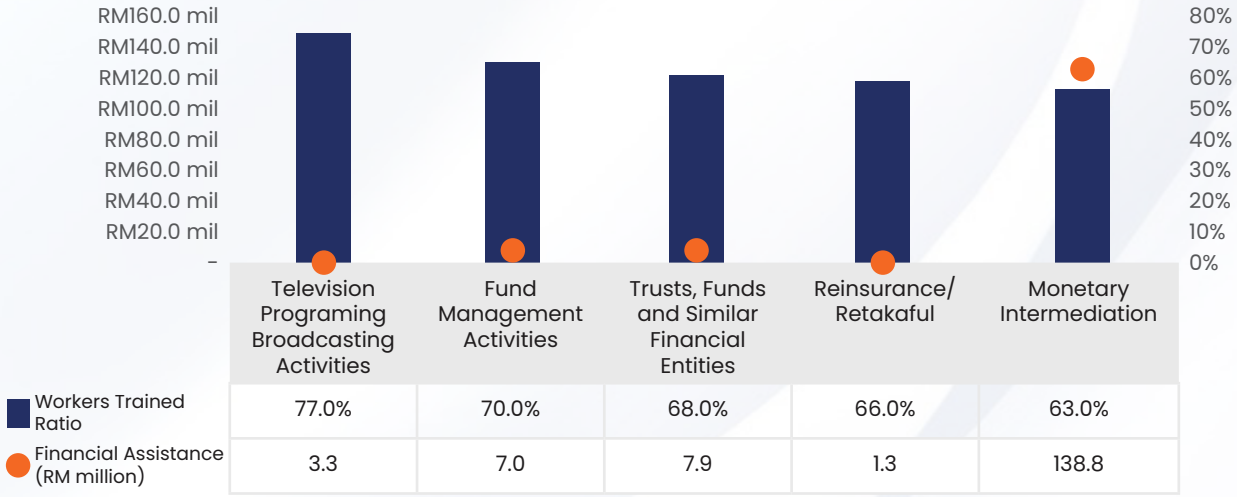
e-Learning, which recorded the lowest enrolment figures, is likely the least preferred mode due to its lack of direct hands-on application in manufacturing environments. While it provides flexibility and accessibility, the sector's nature often demands practical engagement rather than self-paced online modules. Nonetheless, e-Learning remains a viable option for knowledge-based courses such as Occupational Safety and Health (OSH) regulations, which employees may complete at their own pace.

In conclusion, the dominance of in-house training reflects the Manufacturing sector's emphasis on practical, industry-specific skills that require real-time application and on-site facilitation. Public and remote training remains valuable for broader skill development, while e-Learning is best suited for theoretical knowledge dissemination. This distribution underscores the sector's need for competency-based learning approaches that align with operational efficiency and workforce productivity.

Services Sector

The overall Workers Trained Ratio for the Services sector aligns with the national benchmark of 30%. This achievement is propelled by several sub-sectors surpassing this standard, notably Television Programming and Broadcasting Activities, which boasts an impressive Workers Trained Ratio of 77% and benefits from financial assistance amounting to RM3.3 million.

Figure 22: **Top Five (5) Services Sub-sectors with Highest Workers Trained Ratio**



	Television Programing Broadcasting Activities	Fund Management Activities	Trusts, Funds and Similar Financial Entities	Reinsurance/ Retakaful	Monetary Intermediation
Workers Trained Ratio	77.0%	70.0%	68.0%	66.0%	63.0%
Financial Assistance (RM million)	3.3	7.0	7.9	1.3	138.8

Notably, the Monetary Intermediation sub-sector received the highest financial assistance of RM138.8 million, with a 63% Workers Trained Ratio. This substantial financial support underscores the sub-sector's critical role in the economy, which involves complex financial transactions and sophisticated risk management requiring specialised training and expertise related to the high training costs. Additionally, this sub-sector boasts the highest training enrolment, with 150,173 participants as of 2024, compared to other sub-sectors.

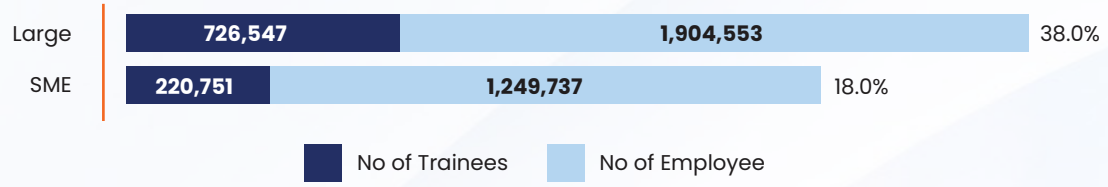
Monetary Intermediaries involve entities such as commercial banks, investment banks and other financial institutions that act as intermediaries between savers and borrowers. These intermediaries help create efficient markets, lower the cost of doing business and provide essential services such as credit, liquidity and risk management. The complexity and importance of these functions necessitate substantial investment in training to ensure that employees are well-equipped to handle the sector's demands.

According to the Bank Negara Malaysia (BNM) Annual Report 2024, the banking sector in Malaysia has shown robust performance with strong credit growth and low non-performing loan ratios. The report highlights that the sector's resilience is supported by proactive policies and a stable economic environment, which underscores the importance of having a well-trained workforce to maintain these standards. The Malaysian Investment Development Authority (MIDA) also emphasises the importance of human capital development in the financial services sector through initiatives aimed at enhancing workforce competencies and ensuring the sector's competitiveness.

Besides that, there is a notable disparity in workforce training between large enterprises and SMEs in Malaysia's Services sector. Large enterprises train a higher percentage of their workforce, showing that 38% of employees in large businesses receive training, compared to only 18% in SMEs.

This gap highlights the challenges SMEs face in accessing workforce development opportunities, while larger enterprises have greater capacity to invest in training. This is particularly significant as the Services sector grew by 5.3% in the fourth quarter of 2024, solidifying its position as the largest contributor to Malaysia's GDP.

Figure 23: **Workers Trained Ratio between Firm Size for Service Sector**



A collaborative effort between the government and industry stakeholders is essential to address the training gap between large enterprises and SMEs. This partnership could lead to the development of subsidised training programmes, particularly for SMEs, focusing on areas like customer service excellence, digital transformation and emerging trends such as the use of artificial intelligence in sectors like finance and healthcare.

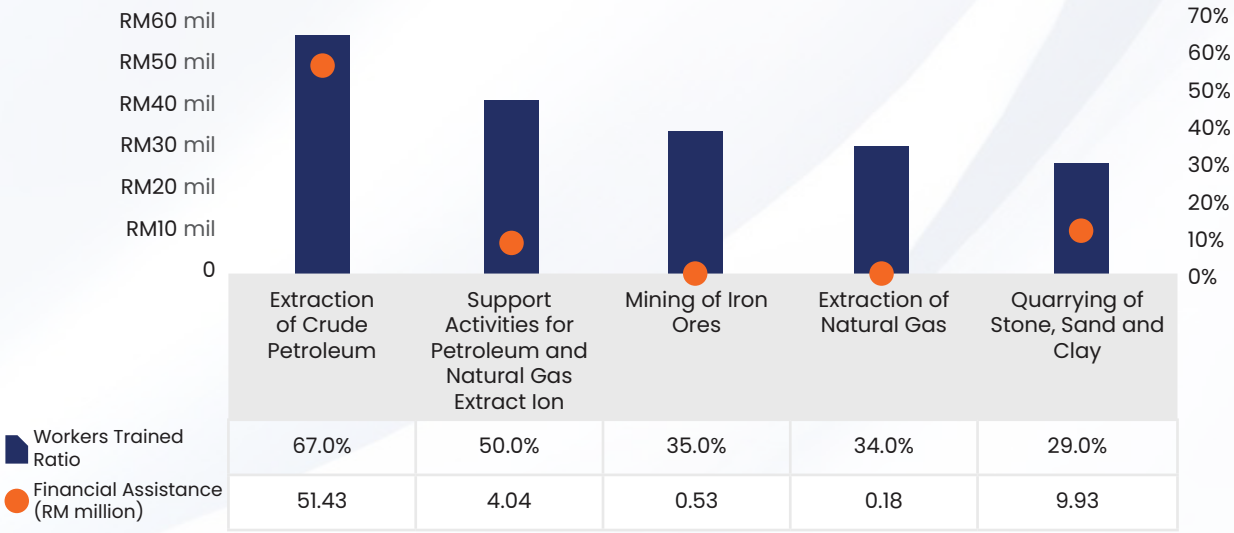
Additionally, providing SMEs with access to advanced service technologies, such as cloud-based customer management systems for small retailers or digital booking platforms for independent hotels, would help elevate service standards.

Furthermore, mentorship schemes and industry partnerships could enable large enterprises in sectors such as banking or professional services to offer guidance and training to SMEs on compliance, financial literacy and service innovation. By equipping SMEs with the necessary skills and resources, Malaysia can cultivate a more inclusive and resilient services sector. This will help SMEs compete effectively, improve service quality and contribute more significantly to national economic growth.

Mining and Quarrying Sector

In the Mining and Quarrying sector, there is a clear correlation between financial assistance and the Workers Trained Ratio. Industries with greater financial support tend to have higher training participation. Notably, the Extraction of Crude Petroleum industry receives the highest financial assistance, amounting to RM51.43 million, to support its 67% trained workers, the highest in the sector. This indicates a strong emphasis on training and development within this sector. The focus on key sectors such as Crude Petroleum Extraction and Support Activities for Petroleum and Natural Gas Extraction highlights their importance in the economy and the need for specialised training.

Figure 24: **Top Five (5) Mining and Quarrying Sub-sectors with Highest Workers Trained Ratio**

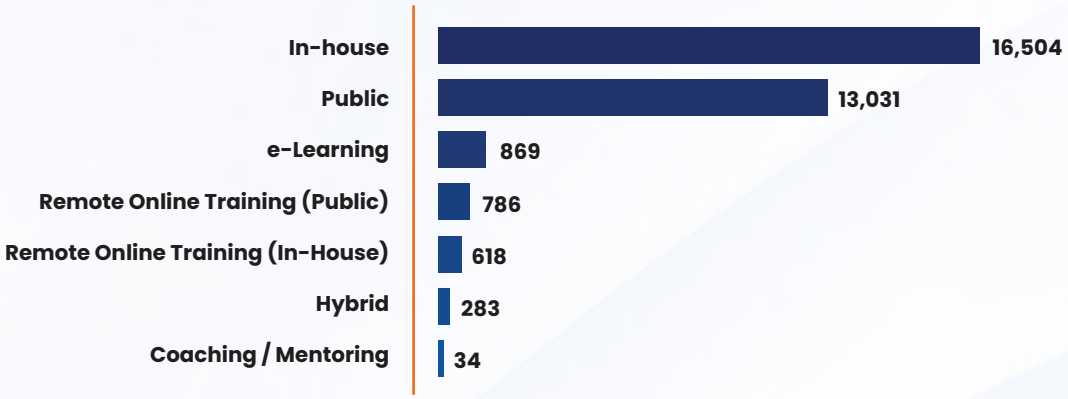


	Extraction of Crude Petroleum	Support Activities for Petroleum and Natural Gas Extract Ion	Mining of Iron Ores	Extraction of Natural Gas	Quarrying of Stone, Sand and Clay
Workers Trained Ratio	67.0%	50.0%	35.0%	34.0%	29.0%
Financial Assistance (RM million)	51.43	4.04	0.53	0.18	9.93

In contrast, the Mining of Iron Ores and Extraction of Natural Gas sectors receive lower financial assistance, RM533,188 and RM184,735 respectively, but still maintain moderate Workers Trained Ratios of 35% and 34%. This suggests efficient use of resources for training. The Quarrying of Stone, Sand and Clay sector, with moderate financial assistance of RM9,926,439, has the lowest Workers Trained Ratio of 29% among the listed industries.

In addition, most trainees in the Mining and Quarrying sector opted for in-house training in 2024, making it the most attended training format with 16,504 enrolments. This figure surpasses other training modes, highlighting a strong preference for hands-on, site-specific skill development.

Figure 25: **Type of Training attended by Mining and Quarrying Trainees for 2024**



The preference for in-house training suggests that mining companies prioritise practical, site-specific skills that require direct application, such as equipment handling, safety procedures and environmental compliance. Conducting training on-site ensures that workers receive hands-on experience tailored to the industry's operational demands. For instance, a coal mining company may organise in-house training on Mine Safety and Hazard Management to enhance workplace safety and regulatory compliance.

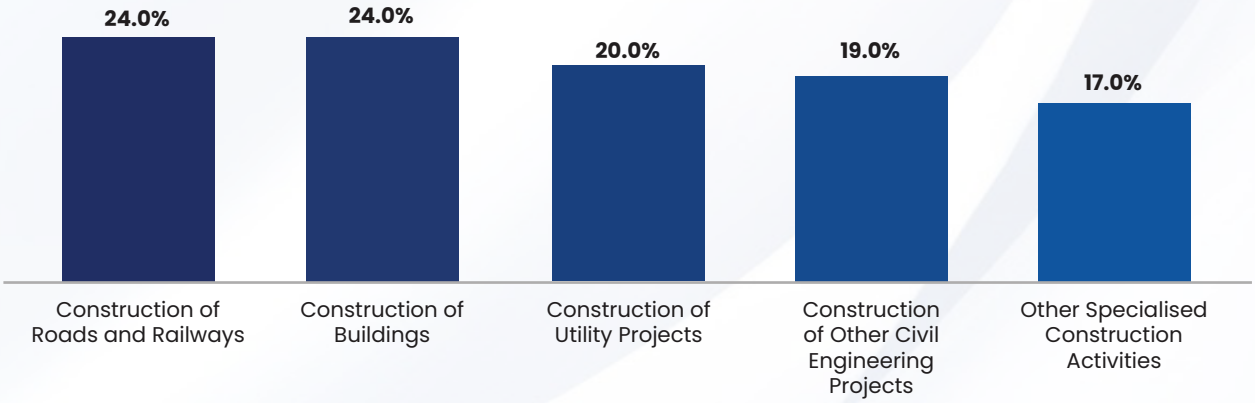
Public training, which recorded the second-highest enrolment, plays a crucial role in standardised certifications and industry-wide skills development, particularly for workers needing specialised training that may not be readily available in-house. A relevant example includes Occupational Health and Safety Certification Programmes designed for mining engineers and technicians. e-Learning and remote online training formats, while less popular, still serve a role in delivering knowledge-based content, particularly in areas such as regulatory compliance, environmental sustainability and industry best practices. A mining professional, for instance, may complete an e-Learning module on sustainable mining practices to stay updated on evolving industry standards.

The lower participation in hybrid training and coaching/mentoring reflects the sector's hands-on and physically demanding nature, where real-time, on-site learning is often more effective than blended or one-on-one mentorship approaches. However, these methods may still be relevant for leadership development and technical skill refinement. In conclusion, the dominance of in-house training in the Mining and Quarrying sector underscores the industry's need for practical, safety-focused and site-specific learning approaches. Public training complements this by providing broader industry knowledge and certification opportunities, while remote and digital learning formats remain supplementary tools for theoretical and regulatory education.

Construction Sector

The Construction sector is poised for substantial growth, driven by the Government's accelerated implementation of large-scale infrastructure projects, including the 5G rollout, East Coast Highway 3, flood-mitigation initiatives, West Coast Expressway and East Coast Rail Link. These projects require a highly skilled workforce, leading to a strong emphasis on workforce training. This is reflected in the Building Construction sub-sector having the highest Workers Trained Ratio, with 40,187 training enrolments recorded in 2024 and RM36.9 million in financial assistance provided to support skill development.

Figure 26: **Top Five (5) Construction Sub-sectors with Highest Workers Trained Ratio**



To meet the increasing demand for skilled labour, financial assistance plays a crucial role in funding training programmes. Higher financial assistance directly correlates with increased training enrolments, ensuring that workers acquire the necessary skills to support complex infrastructure projects.

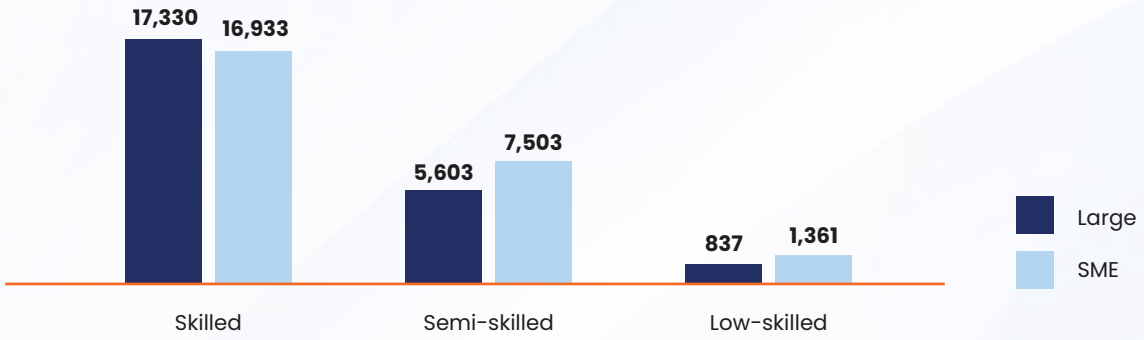
For instance, Building Construction, which requires significant manpower, received the highest financial assistance of RM36.87 million, resulting in 40,187 training enrolments. Similarly, the Construction of Roads and Railways received RM11.45 million, leading to 11,705 training enrolments, while Utility Projects, which play a supporting role in infrastructure, were allocated RM2.25 million with 2,426 enrolments.

The emphasis on training is essential for the successful implementation and maintenance of large-scale projects. Construction of Buildings (24%), Construction of Roads and Railways (24%) and Construction of Utility Projects (20%) are the key sub-sectors driving this trend, as each involves extensive infrastructure development requiring a well-trained workforce.

The direct correlation between financial assistance and training enrolments underscores the importance of government investment in workforce development. By ensuring sufficient funding for training programmes, Malaysia strengthens its construction sector, enhances infrastructure development and supports broader economic growth.

Besides that, the Construction industry demonstrates a significant commitment to workforce training across various skill levels, with notable distinctions between large enterprises and SMEs. Skilled workforce training is a priority for both categories, as evidenced by large enterprises training 17,330 workers and SMEs training 16,933 workers. This near equivalence highlights the industry's collective focus on equipping its workforce with advanced skills necessary for handling complex infrastructure and building projects. Given the technical nature of the Construction sector, ensuring a highly skilled labour force is crucial for successfully executing projects such as highways, rail networks and urban developments.

Figure 27: **Workers Trained According to Skill Category and Industry Size**



A more pronounced difference is observed in the training of semi-skilled workers, where SMEs trained 7,503 individuals compared to 5,603 by large enterprises. This disparity suggests that SMEs in Malaysia's Construction industry place a stronger emphasis on upskilling workers from lower skill levels to semi-skilled roles. SMEs, which often operate in subcontracting capacities, may rely more heavily on in-house skill development to meet project demands, particularly in sectors such as road construction, building renovation and specialised infrastructure projects. The higher investment in semi-skilled training may also indicate a need to bridge skill gaps among workers who enter the industry with minimal formal qualifications, ensuring a steady pipeline of talent to support the growing demand for construction labour.

A similar trend is evident in low-skilled workforce training, where SMEs trained 1,361 individuals compared to 837 trained by large enterprises. The focus on training at this level suggests that SMEs may be investing in foundational skill-building programmes to address the persistent shortage of entry-level construction workers. Many SMEs play a key role in early-stage construction activities such as groundwork, material handling and site preparation, requiring a well-trained workforce that can gradually progress into more skilled roles. In contrast, large enterprises, which often handle major infrastructure projects, may prefer to recruit semi-skilled or skilled workers directly rather than invest heavily in low-skilled training programmes.

These training patterns reflect broader workforce development strategies in Malaysia's Construction industry. The nearly equal numbers in skilled worker training indicate a shared recognition of the importance of maintaining a technically proficient workforce capable of executing high-value projects. Meanwhile, the emphasis by SMEs on semi-skilled and low-skilled training underscores their role in bridging workforce gaps and ensuring skill progression within the industry.

Large enterprises, on the other hand, appear to focus on enhancing the competencies of an already skilled workforce, aligning with their need for efficiency in delivering large-scale infrastructure developments. This distribution of training efforts highlights the differing approaches taken by SMEs and large enterprises in addressing workforce challenges and ensuring sustained growth in Malaysia's Construction sector.

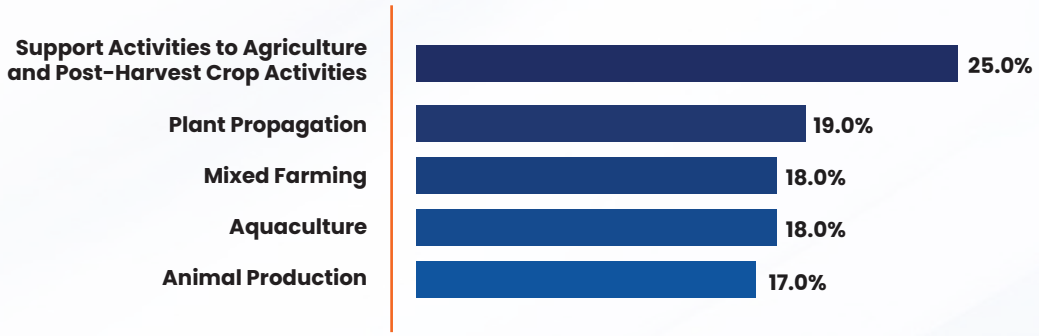
To address the disparities in training focus and further strengthen the Construction workforce, several key recommendations should be considered. Collaboration between large enterprises and SMEs should be encouraged to facilitate knowledge transfer and mentorship programmes, helping SMEs enhance their technical training capabilities. Government and industry stakeholders should enhance certification programmes and establish standardised training modules that align with evolving industry needs, ensuring that workers at all skill levels are equipped with relevant competencies.

Lastly, digital and technological integration in training programmes should be promoted, allowing construction workers to acquire modern construction techniques and digital skills, which are increasingly critical in the evolving construction landscape.

Agriculture, Forestry and Fishing Sector

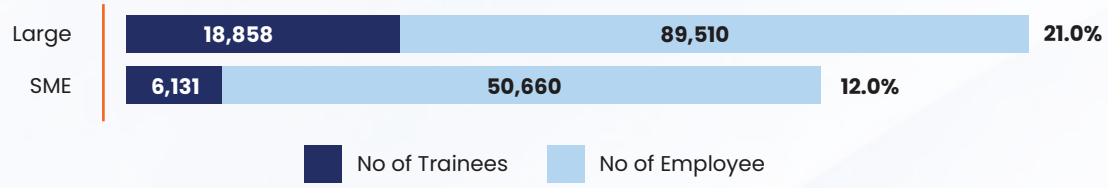
Within the Agriculture, Forestry and Fishing sector, the highest Workers Trained Ratio can be observed in Support Activities to Agriculture and Post-Harvest Crop Activities at 25%. This indicates a significant emphasis on training in these areas, likely due to their crucial role in the agricultural process. The National Agrofood Policy 2021-2030 (NAP 2.0) emphasises the importance of these activities for enhancing productivity, reducing post-harvest losses and improving the quality of agricultural produce. By focusing on efficient post-harvest management, Malaysia aims to increase the market value of its agricultural products, thereby boosting farmers' incomes and contributing to the overall economic growth of the sector.

Figure 28: **Top Five (5) Agriculture, Forestry and Fishing Sub-sectors with Highest Workers Trained Ratio**



Following this, Plant Propagation has a trained workforce ratio of 19%, while both Mixed Farming and Aquaculture share a ratio of 18%. Animal Production has the lowest trained workforce ratio at 17%, suggesting that there may be room for improvement in training efforts within this sub-sector. The NAP 2.0 outlines strategies to modernise post-harvest handling, storage and processing facilities, which are essential for maintaining the quality and safety of agricultural products. By prioritising support activities and post-harvest crop activities, NAP 2.0 aims to create a more sustainable, resilient and high-technology agro-food sector, driving economic growth and improving the well-being of the people.

Figure 29: **Workforce Trained Ratio Between Firm Size**



In Malaysia's Agriculture, Forestry and Fishing sector, there is a significant difference in the percentage of trainees relative to employees between large enterprises and SMEs. Figure 29 shows that large enterprises have a trainee percentage of 21.07%, while SMEs have a trainee percentage of 12.10%. This significant difference highlights the greater capacity of large enterprises to train and employ a larger workforce compared to SMEs. The National Agrofood Policy 2021-2030 (NAP 2.0) emphasises the importance of enhancing training programmes and workforce development across all sub-sectors to ensure sustainable growth and competitiveness. By investing in training and development, both large enterprises and SMEs can improve productivity, reduce post-harvest losses and enhance the quality of agricultural produce, ultimately contributing to the overall economic growth of the Agriculture, Forestry and Fishing sector. To bridge the training gap between large enterprises and SMEs, it is recommended that the Government and industry stakeholders collaborate to provide targeted training programmes for SMEs. This could include access to modern agricultural technologies and mentorship programmes from larger enterprises. By supporting SMEs in enhancing their workforce skills, Malaysia can ensure more balanced and inclusive growth within the Agriculture, Forestry and Fishing sector, leading to increased productivity and economic resilience.



NTI 2024 DIMENSION ANALYSIS:

DIMENSION 2

Worker Skills Development

DIMENSION 2

Worker Skills Development

Developing workers' skills is essential for economic growth and competitiveness. The International Labour Organisation (ILO) and the Organisation for Economic Co-operation and Development (OECD) highlight that global trends such as digital transformation, globalisation and demographic shifts are reshaping labour markets, necessitating continuous skill enhancement among workers. These organisations emphasise that adapting to these changes requires a workforce proficient in both technical and soft skills (ILO, 2022; OECD, 2023). The World Bank notes that addressing skill gaps through targeted training can significantly boost economic output (World Bank, n.d). Moreover, the ILO emphasises the importance of lifelong learning and continuous skill development to keep pace with evolving job requirements. Their research indicates that workers must regularly update their skills to remain competitive and meet the demands of modern workplaces. This approach not only enhances individual employability but also contributes to broader economic resilience and growth (ILO, 2022).

Table 2: **Summary of Training Index for Dimension 2, Worker Skills Development Across the Key Economic Sectors in 2024**

	ECONOMIC SECTORS	MANUFACTURING	SERVICES	MINING AND QUARRYING	CONSTRUCTION	AGRICULTURE, FORESTRY AND FISHING	NATIONAL
D2	**Worker Skills Development**	**0.90**	**1.00**	**0.46**	**0.43**	**0.46**	**0.65**
D2I1	Number of Training Days Attended	**1.00**	**0.81**	**0.89**	**0.85**	**0.91**	**0.89**
D2I2	Enrolment in Technical Courses	**0.53**	**1.00**	**0.02**	**0.05**	**0.02**	**0.32**
D2I3	Number of Skilled Workers Who Attended Certification Courses	**0.97**	**0.45**	**0.48**	**0.37**	**0.47**	**0.55**
D2I4	Enrolment in Practical/Hands-On	**0.53**	**1.00**	**0.03**	**0.05**	**0.03**	**0.33**

BUILDING A FUTURE-READY WORKFORCE:

The Role of Technical Training in Upskilling and Reskilling

Technical Training

Technical training plays a crucial role in equipping individuals with the necessary skills to meet the evolving demands of the workforce. Globally, there is a growing emphasis on Technical and Vocational Education and Training (TVET) as a key driver of inclusive and sustainable economic growth. According to the Organisation for Economic Co-operation and Development (OECD), TVET has significant potential to support inclusive growth, particularly in Southeast Asia, by fostering a skilled workforce that meets industry needs (OECD, 2018). In the ASEAN region, member states recognise TVET as an essential pillar in enhancing human resource competitiveness. Reports by ASEAN highlight that the effectiveness of TVET systems depends on their ability to adapt to shifting labour market trends through continuous data collection and analysis (ASEAN, 2022). In Malaysia, the national TVET system has been assessed to evaluate its responsiveness to labour market demands. Government initiatives aim to strengthen the alignment between TVET curricula and industry requirements, ensuring that graduates possess relevant and in-demand skills (ASEAN, 2022).

The Role of HRD Corp in Supporting Technical Training and TVET

In Malaysia, HRD Corp plays a pivotal role in advancing TVET and technical training initiatives by facilitating upskilling and reskilling programmes for employees under registered employers. HRD Corp supports industries in building a future-ready workforce by subsidising training programmes and incentivising technical course enrolment. This ensures that workers gain industry-relevant competencies, improving employability and productivity across various sectors.

According to HRD Corp data, while 4.79 million employees are covered under HRD Corp-registered employers, participation in technical training courses remains relatively low, with only a small fraction enrolling in skills-based training. At the national level, Malaysia's training index score for enrolment in technical courses stands at 0.32, categorising it as an Adopter, reflecting moderate participation with adequate training plans and resource allocation.

Summary of Technical Training by Sectors

Among the sectors, the Services sector ranks the highest, significantly above the national index, positioning itself as a leader with strong engagement in technical training and high investment in talent development. The Manufacturing sector also exceeds the national index, placing it in the experienced category indicating active participation in structured training initiatives.

In contrast, the Construction, Agriculture, Forestry and Fishing and Mining and Quarrying sectors record NTI scores below the national index, falling into the beginner category which show minimal enrolment in technical courses.

National

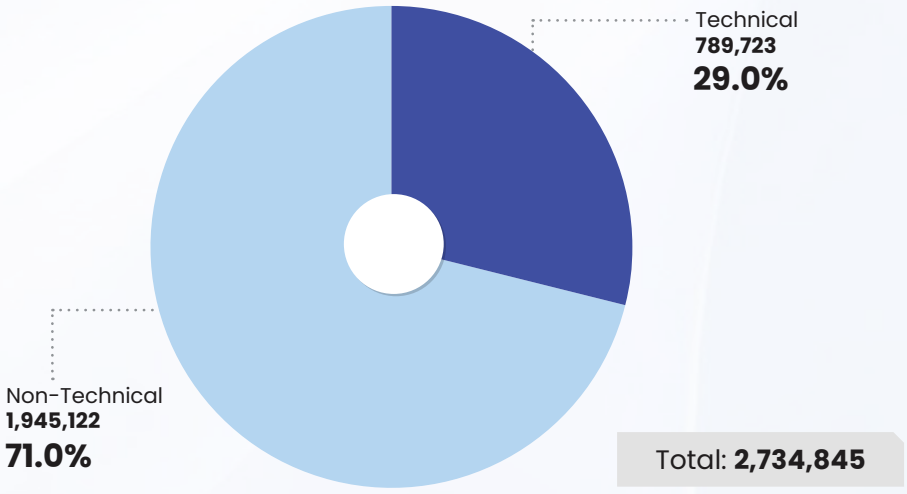
In 2024, Malaysia continued to prioritise the development of a highly skilled workforce to meet the demands of its evolving economy, as outlined in the 12th Malaysia Plan (12MP). The Government identified TVET as a pivotal strategy for cultivating such talent.

To reinforce this commitment, the Malaysian Government allocated RM40 million for skills enhancement programmes, including Career Building Programmes targeting informal and gig workers with qualifications of Sijil Pelajaran Malaysia (SPM) and below (Ministry of Human Resources Malaysia, 2024). By preventing student dropouts and expanding access to TVET programmes, these efforts align with the broader national goal of strengthening workforce capabilities (Ministry of Finance Malaysia, 2023).

However, despite these efforts, further improvements are needed in the technical training landscape. This score suggests a gap in training opportunities and industry participation, underscoring the need for more strategic investments, stronger industry collaboration and targeted initiatives to enhance technical skills development.

Strengthening employer involvement, expanding access to quality training and ensuring better alignment with industry needs will drive Malaysia's workforce towards higher technical proficiency.

Figure 30: **Total Enrolment in Technical Courses in Malaysia in 2024**



Based on the statistics, total enrolment in training courses for 2024 stands at 2,734,845 participants. Of this, technical courses accounted for 789,723 enrolments (29%), while non-technical courses recorded 1,945,122 enrolments (71%). In terms of company size, large enterprises contributed 2,118,605 enrolments (74%), whereas SMEs accounted for 750,230 enrolments (26%). These figures highlight the distribution of training participation across different course categories and company sizes, providing valuable insights into workforce development trends.

The lower enrolment of SMEs in technical training programmes can be attributed to several factors. The operational limitations of SMEs, with smaller teams and less flexibility, mean that releasing employees for training could disrupt daily business activities (OECD, 2020). Additionally, SMEs

often lack the infrastructure to support formal training, leading to lower participation rates in structured skills development initiatives. There is also a perception among SMEs that formal training programmes may not be relevant to their immediate business needs, which encourages reliance on informal, on-the-job training methods (OECD, 2021). Finally, employee resistance to training stems from a lack of clear communication about the benefits, further reducing participation rates in formal programmes (OECD, 2020).

In conclusion, Malaysia has made notable progress in developing a skilled workforce through investments in TVET. However, challenges persist, particularly in ensuring that SMEs are more actively engaged in technical training programmes. Addressing operational limitations and perceptions about the relevance of formal training will be essential for improving participation rates.

A concerted effort to align training initiatives with the needs of SMEs and better communicate the long-term benefits of formal skills development will help achieve Malaysia's goal of a highly skilled and competitive workforce. For a comprehensive overview of the top courses enrolled across sectors in 2024, the figure below provides a detailed breakdown by economic sector.

Table 3: **List of Top Technical Courses Enrolled by Employers According to Sectors in 2024**

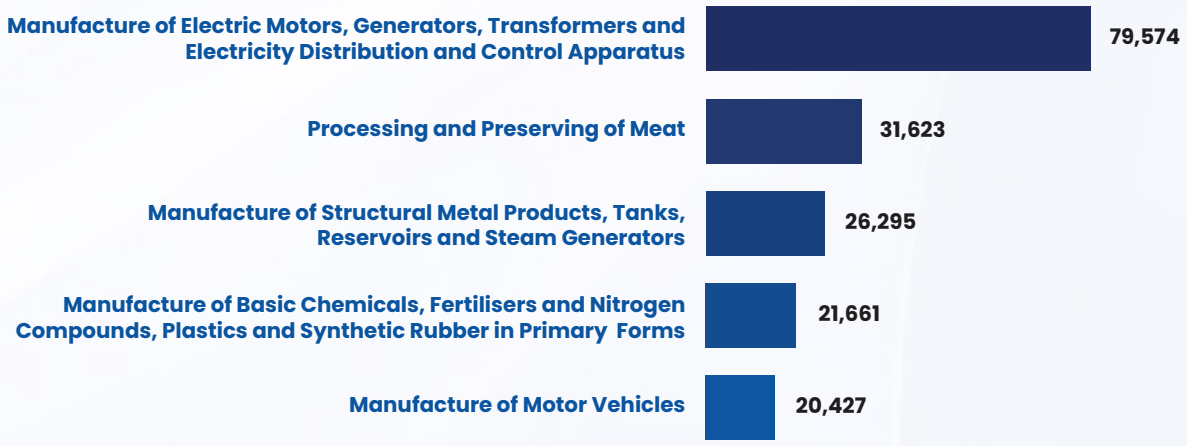
ECONOMIC SECTORS	TOP TECHNICAL COURSES ENROLLED
Manufacturing	Forklift Safety
	Food Handler
	Chemical Safety Awareness
	Overhead Crane, Hoist Safety
	Chemical Spillage Control
Services	Food Handler
	Sales Ninja Unity
	Frontliners
	Cyber Security Awareness
	E-Invoicing
Mining and Quarrying	Authorised Entrant and Standby Person for Confined Space
	Helicopter Landing Officer
	OPITO Basic Hydrogen Sulphide
	Defensive Driving Course
	Tropical FOET with CA-EBS and Travel Safely by Boat
Construction	Authorised Entrant & Standby Person for Confined Space
	Lifting Supervisor
	Oil and Gas Safety Passport
	Slinging, Rigging & Signalman Competency
	Cubicost Basic Takeoff for Architecture and Structure (TAS) and Takeoff for Rebar (TRB)
Agriculture, Forestry and Fishing	Forklift Operators
	Total Plantation Management System (TPMS) - Inventory Web
	Tree and Log Identification
	Certified Environmental Professional in Scheduled Waste Management
	Safe Chemical Handling & Spill Control

Manufacturing Sector

The Manufacturing sector leads with an NTI score of 0.98, placing it in the Leader category. This reflects vigorous engagement in technical training, with substantial investment in talent development and comprehensive training plans. The sector's proactive approach ensures that employees are well-equipped with the necessary technical skills to meet evolving industry demands.

The sector's dedication to upskilling is further evidenced by its strong economic performance. In 2024, Malaysia's manufacturing sector achieved a sales value of RM161.3 billion in October, reflecting a 3.0% increase from the previous month. This growth was driven by significant increases in the Food, Beverage and Tobacco Products Sector (11.2%) and the Electrical and Electronic Products Sector (3.2%). The effectiveness of targeted training initiatives in enhancing productivity and competitiveness was a key factor in this growth (DOSM, 2024). This is further reflected in the index score, which identified these key drivers as the top-performing sub-sectors within Manufacturing.

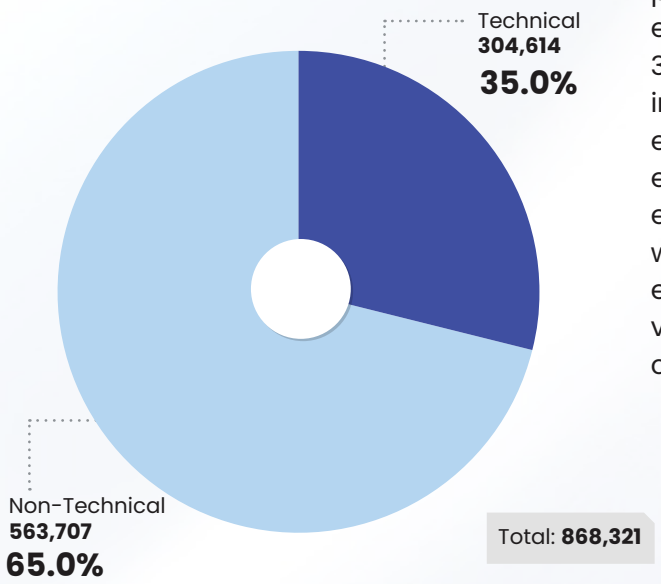
Figure 31: **Top Five (5) Manufacturing Sub-sectors in Enrolment of Technical Courses**



Both the Manufacture of Electric Motors, Generators, Transformers and Electricity Distribution and Control Apparatus and the Processing and Preserving of Meat sub-sectors recorded the highest index scores among Manufacturing sub-sectors, highlighting their significant economic contributions. The Electrical Manufacturing sub-sector plays a crucial role in Malaysia's industrial progress, driving advancements in energy infrastructure, automation and renewable energy adoption (Ministry of Investment, Trade and Industry, 2024). Growing demand for skilled professionals in electrical engineering, digital power systems and energy-efficient technologies has reinforced the need for targeted upskilling to maintain global competitiveness (Energy Commission Malaysia, 2024). Meanwhile, the Meat Processing sub-sector has strengthened Malaysia's position in the global halal market through automation, quality control and sustainable production practices (Halal Development Corporation, 2024).

Investments in workforce development across both have directly contributed to increased productivity, innovation and economic resilience. By strengthening workforce capabilities in these high-performing sub-sectors, Malaysia not only reinforces its economic strength but also paves the way for sustainable industrial growth in an increasingly competitive global landscape.

Figure 32: **Total Enrolment in Technical Courses in Manufacturing Sector in 2024**



In 2024, a total of 868,321 enrolment in training programmes across Malaysia. Of this, 35% engaged in technical courses, accounting for 304,614 enrolments, while 65% participated in non-technical courses, with 563,707 enrolments. In terms of company size, large enterprises accounted for 63% of the total enrolment, contributing 2,118,605 participants, while SMEs made up 37%, with 335,542 enrolments. These figures provide a broad view of training participation trends across course categories and company types.

Services Sector

Following closely, the Services sector has an NTI score of 0.85, also within the Leader category. This signifies robust participation in technical training, supported by well-structured programmes and significant resource allocation. The sector's emphasis on continuous learning and development positions it to adapt effectively to market changes and technological advancements.

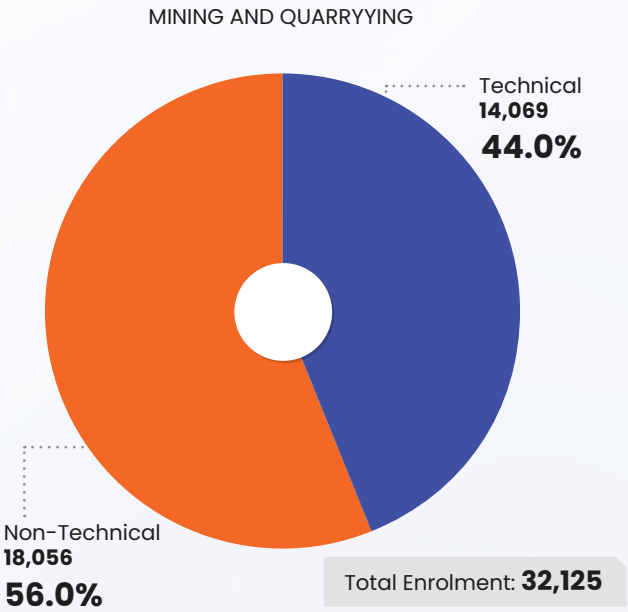
Figure 33: **Top Five (5) Sub-sectors in Enrolment of Technical Courses**



In 2024, the Services sector demonstrated notable engagement in technical training, with the top five (5) sub-sectors including Monetary Intermediation, Architectural and Engineering Activities and Wired Telecommunications Activities. The Monetary Intermediation sub-sector, driven by the rise of financial technology (FinTech), digital banking and cybersecurity, has led financial institutions to invest in upskilling their workforce (Ministry of Finance Malaysia, 2024). In the Architectural and Engineering field, there has been a surge in demand for skills in Building Information Modelling (BIM), sustainable design and digital project management, which align with national development goals (OECD, 2021). Similarly, the Wired Telecommunications sub-sector has experienced increased demand for technical expertise to support the country's 5G infrastructure and fibre-optic networks. This underscores the need for skilled technicians in network design, installation and maintenance (ILO, 2020). These three (3) sub-sectors highlight Malaysia's focus on developing a highly skilled workforce to meet the evolving needs of the economy. In 2024, RM0.36 billion in financial assistance was allocated for technical training in the Services sector, alongside RM1.08 billion for non-technical courses. While the substantial investment in non-technical training emphasises the importance of soft skills, the focus on empowering employees with technical expertise is vital for meeting the demands of rapidly evolving industries. With advancements in digital banking, cybersecurity and telecommunications, the need for skilled professionals in technical fields is more pressing than ever (DOSM, 2024). The financial assistance of RM0.36 billion for technical training highlights the government's commitment to enhancing workforce capabilities in critical areas such as infrastructure, data management and digital technologies. However, given the increasing reliance on technological innovation across the Services sector, it is essential to expand and strengthen technical training initiatives to ensure that the workforce remains competitive and prepared to adapt to the future of work. By balancing investments in both technical and non-technical training, a well-rounded, future-ready workforce can be built, capable of driving growth and maintaining a position as a leader in key Service sectors.

Mining and Quarrying Sector

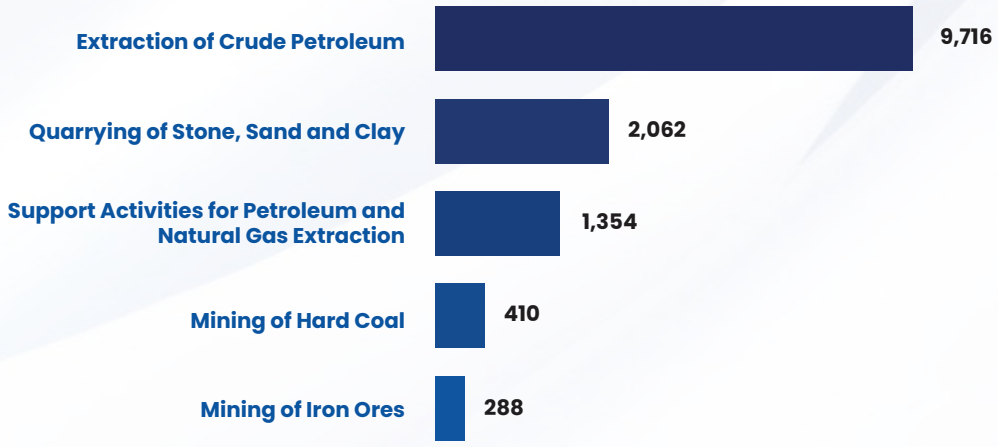
Figure 34: **Total Enrolment of Technical and Non-Technical Courses in Mining and Quarrying in 2024**



The Mining and Quarrying sector records an NTI score of 0.77, categorising it as a leader. This indicates a strong commitment to technical training, with well-established training frameworks and adequate funding. The sector's focus on enhancing technical competencies ensures operational efficiency and adherence to industry standards.

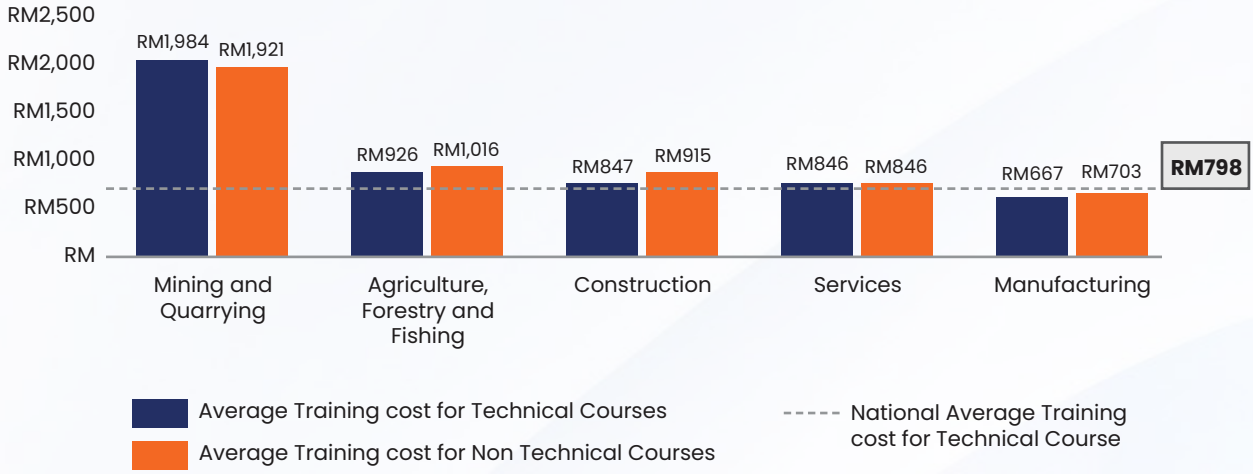
In 2024, the Mining and Quarrying sector in Malaysia saw a total of 14,069 (44%) enrolments in technical courses and 18,056 (56%) in non-technical courses, reflecting the sector's effort to balance technical and non-technical skills development. However, despite these enrolment figures, the sector faces significant challenges in workforce upskilling and reskilling. As the Government works towards increasing automation and improving sustainability within the sector, there is a growing need for workers to develop technical competencies in areas like automation, data analytics and sustainable mining practices (ILO, 2023). The relatively low enrolment in technical courses compared to non-technical ones indicates a need for stronger engagement in technical training programmes, which are essential for meeting industry demands and regulatory compliance. Furthermore, the Mining industry in Malaysia continues to be influenced by global shifts towards cleaner and more efficient resource extraction methods, which makes technical skills increasingly critical. To remain competitive, Malaysia must invest in training that aligns with global standards, offering workers opportunities to advance in their careers through targeted technical education and upskilling initiatives (OECD, 2021). Strengthening the training framework and increasing participation in technical courses will be key to maintaining Malaysia's position in the global mining industry while addressing local workforce development needs.

Figure 35: **Top Five (5) Mining and Quarrying Sub-sectors in Enrolment of Technical Courses**



In 2024, the Mining and Quarrying sector demonstrated a strong commitment to technical training, with notable enrolments in its key sub-sectors. The Extraction of Crude Petroleum led with 9,716 enrolments, followed by Quarrying of Stone, Sand and Clay at 2,062 and Support Activities for Petroleum and Natural Gas Extraction with 1,354. These figures reflect the sector's focus on enhancing technical skills critical for maintaining operational efficiency and safety in resource extraction. The Crude Petroleum sub-sector, in particular, remains a cornerstone of Malaysia's economic performance, as it continues to be a major contributor to national export revenue and GDP. This sub-sector is pivotal in driving Malaysia's energy sector forward, ensuring energy security and providing economic stability (DOSM, 2024). The high training index score for the Mining and Quarrying sector highlights the alignment of technical training initiatives with industry needs. By prioritising the upskilling of the workforce, particularly in Crude Petroleum Extraction, Malaysia is reinforcing its competitive edge in the global energy market, ensuring that its workforce remains proficient and prepared to meet the demands of an increasingly sophisticated and technology-driven industry.

Figure 36: **Average Training Cost for Technical and Non-Technical Courses by Sector in 2024**

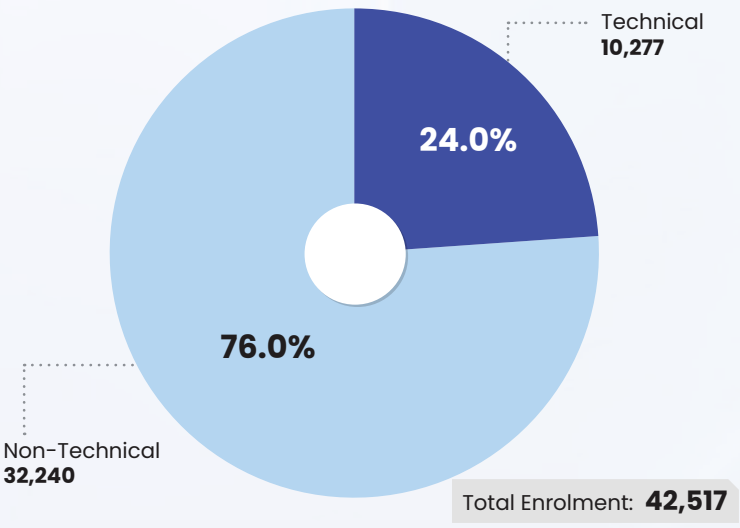


One of the key factors contributing to the lower enrolment in technical courses within the Mining and Quarrying sector is the high cost of training, which exceeds the national average. The specialised nature of technical training in this sector, particularly in areas such as crude petroleum extraction, geological surveying and heavy machinery operation, requires advanced equipment, safety simulations and highly skilled trainers, all contributing to increased training expenses (ILO, 2023). Furthermore, training programmes for the sector often involve on-site practical sessions in high-risk environments, leading to additional costs related to safety compliance, personal protective equipment (PPE) and insurance coverage. Given these financial constraints, many SMEs within the sector struggle to invest in comprehensive upskilling initiatives, resulting in a skills gap and a reliance on a limited pool of highly trained workers (World Bank, 2021).

Agriculture, Forestry and Fishing Sector

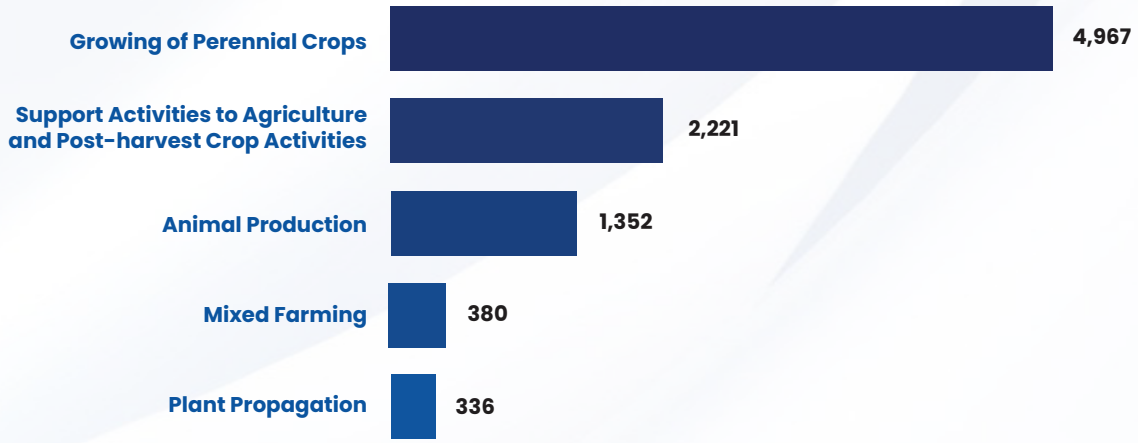
With an NTI score of 0.48, the Agriculture, Forestry and Fishing sector is classified as an 'Adopter'. This reflects moderate engagement in technical training, with room for improvement in structured training initiatives and resource investment. Enhancing training accessibility and awareness is crucial to improving workforce competency and supporting industry modernisation.

Figure 37: **Total Enrolment of Technical and Non-Technical Courses in Agriculture, Forestry and Fishing in 2024**



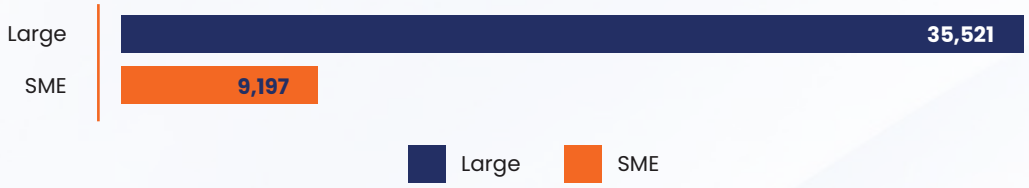
In 2024, enrolment in technical courses within the sector stood at 10,277 enrolments, accounting for only 24% of the total 42,517 enrolments in the sector. In contrast, non-technical courses attracted 32,240 enrolments (76%), highlighting a significant disparity in workforce upskilling priorities. This trend reflects the sector's ongoing struggle to attract talent into specialised technical fields, despite its importance in ensuring food security, sustainable resource management and rural economic development. The industry continues to grapple with labour shortages, slow technology adoption and an ageing workforce, further limiting its ability to enhance productivity and competitiveness (Ministry of Agriculture and Food Security, 2024). Additionally, climate change, land-use constraints and fluctuating commodity prices have increased the demand for technical expertise in precision agriculture, sustainable forestry management and aquaculture innovation (World Bank, 2023). However, limited access to structured training programmes and financial constraints for small-scale farmers and fisheries have hindered workforce upskilling efforts (ILO, 2022).

Figure 38: **Top Five (5) under Agriculture, Forestry and Fishing Sector Sub-sectors in Enrolment of Technical Courses**



In 2024, the Agriculture, Forestry and Fishing sector saw its strongest technical training performance in three key sub-sectors: Growing of Perennial Crops, Support Activities to Agriculture and Post-harvest Crop Activities and Animal Production. The Growing of Perennial Crops, particularly oil palm, rubber and cocoa, remained a dominant force due to its role in the national economy, driving demand for training in precision farming, sustainable plantation management and mechanisation. Similarly, Support Activities for Agriculture and Post-harvest Crop Activities demonstrated high training participation, reflecting the sector's shift towards modern farming techniques, automation in harvesting and improved supply chain efficiency to enhance yield and reduce post-harvest losses. Meanwhile, Animal Production emerged as another top-performing sub-sectors, bolstered by Malaysia's commitment to food security and livestock industry modernisation, necessitating training in veterinary technology, breeding management and disease control. These strong performances align with Malaysia's strategic efforts to increase agricultural productivity, enhance workforce capabilities and reduce reliance on low-skilled labour, reinforcing the importance of continuous skills development in ensuring sectoral sustainability (Ministry of Agriculture and Food Security, 2024; Department of Statistics Malaysia, 2024; Human Resources Development Corporation, 2024).

Figure 39: **Total Enrolment in Technical Courses by Employer Size for Agriculture, Forestry and Fishing Sector in 2024**

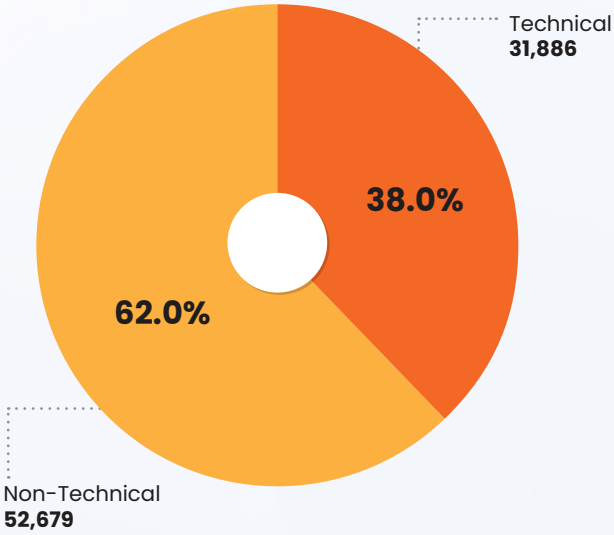


In 2024, SMEs in the Agriculture, Forestry and Fishing sectors recorded 9,197 enrolments in technical courses, underscoring the structural and financial challenges that hinder training participation. A key barrier is the high average training cost of RM926 per technical course, which places a considerable strain on SMEs with limited levy balances under the HRD Corp. Many of these businesses, particularly those in Growing Perennial Crops, Support Activities to Agriculture and Post-harvest Crop Activities and Animal Production, face additional constraints due to remote operations, seasonal labour demands and the necessity for hands-on workforce presence. Travel expenses, operational disruptions and the opportunity cost of attending training further discourage SMEs from investing in upskilling initiatives. Without greater financial support, flexible training models and targeted interventions, SMEs in this sector may struggle to adopt modern agricultural techniques and sustainable practices, ultimately affecting sectoral productivity and resilience (Ministry of Agriculture and Food Security, 2024; World Bank, 2020).

Construction Sector

The Construction sector has an NTI score of 0.44, also placing it in the Adopter category. This indicates moderate participation in technical training, with existing training plans and resources that could be further developed. Strengthening training programmes and increasing investment in workforce development are essential to elevating the sector's technical proficiency.

Figure 40: **Total Enrolment of Technical and Non-Technical Courses in Construction Sector in 2024**



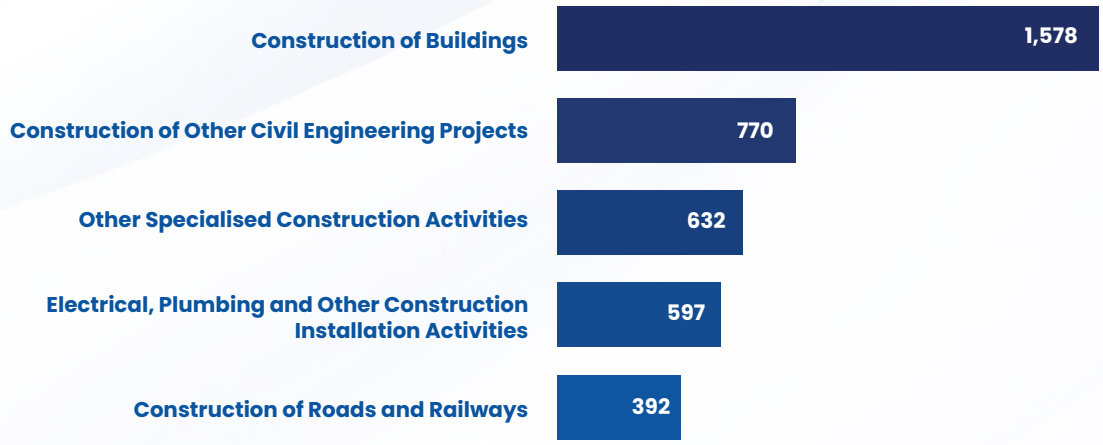
Total Enrolment: **84,565**

In 2024, the Construction sector in Malaysia demonstrated notable participation in both technical and non-technical training, with 31,886 (38%) enrolments in technical courses and 52,679 (62%) in non-technical courses. However, when broken down by employer size, large employers accounted for a significant portion of technical training enrolments, with SMEs recording only 9,197 enrolments. This reflects a broader trend where smaller construction firms often face financial constraints, limiting their capacity to invest in workforce development, despite the RM27.0 million allocated for technical training assistance and RM48.2 million for non-technical training.

The sector's SMEs often turn to informal learning as a solution. With limited formal training opportunities, employees may rely on on-the-job experiences, peer learning, self-directed study and mentorship to acquire new skills. This informal learning, though cost-effective and flexible, may not always provide the same depth or structure as formal training, potentially leaving gaps in more technical skills. However, it helps SMEs continue to develop their workforce despite resource constraints (ILO, 2023).

These factors hinder their ability to fully participate in structured training programmes, thereby impacting the overall sector's competitiveness. The Construction Industry in Malaysia continues to face a critical need for a skilled workforce, particularly in areas requiring advanced technical competencies to meet the increasing demand for infrastructure development. According to the World Bank (2020), a lack of targeted skills development in the sector could pose significant risks to its long-term productivity and growth, particularly as Malaysia aims to achieve its vision of becoming a high-income nation (OECD, 2021).

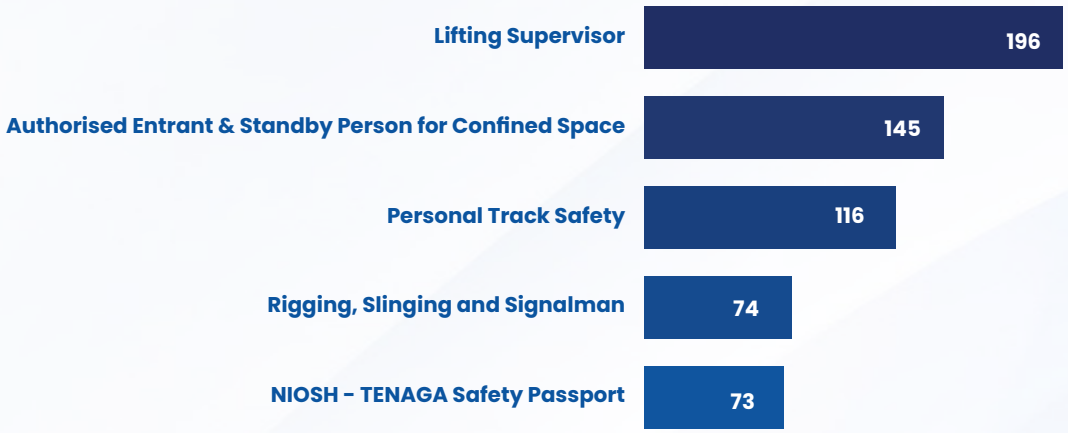
Figure 41: **Top Five (5) Construction Sub-sectors in Enrolment of Technical Courses**



In 2024, the Construction of Buildings sub-sector emerged as the top-performing sub-sector within Malaysia's Construction industry, particularly in terms of technical training enrolment. As Malaysia continues to enhance its infrastructure and real estate sectors, the Construction of Buildings sub-sector stands at the forefront, ensuring that the workforce remains capable of executing complex and large-scale projects. The focus on specialised training, such as structural engineering, safety management and project coordination, is essential to maintain industry standards and competitiveness. Additionally, these training efforts align with Malaysia's long-term goals of advancing its Smart Cities and sustainable development initiatives (Ministry of Works Malaysia, 2024).

The top five (5) technical courses enrolled within this sub-sector reflect these industry needs, emphasising advanced construction techniques, sustainable building practices and high-quality project management. Below are the top five (5) technical courses enrolled in the Construction of Buildings sub-sector.

Figure 42: **Top Five (5) Technical Courses Enrolled in Construction of Building Sub-sector**



Skilled Workers Attended Certification Courses

FROM SKILLED TO CERTIFIED:

A Game Changer for Malaysia's Economic Competitiveness

The number of skilled workers attending certification courses is a crucial indicator of workforce development, particularly in Malaysia's evolving labour market. As the country moves towards a high-income economy, the demand for certified and highly skilled professionals continues to grow. According to the World Bank (2023), Malaysia's transition to a knowledge-based economy requires a strong emphasis on upskilling and reskilling initiatives to meet industry needs. Similarly, the International Labour Organisation (ILO, 2022) highlights that certification programmes enhance employability and productivity, aligning with global labour market trends.

Malaysia's Department of Statistics (DOSM, 2023) reported that while the number of skilled workers in Malaysia has increased, challenges such as mismatched skills, limited training accessibility and low participation rates in certification courses persist. The Organisation for Economic Co-operation and Development (OECD, 2023) stresses that workforce certification is vital for economic competitiveness, particularly in sectors such as manufacturing, information technology and renewable energy. These factors underscore the importance of expanding access to certification courses and strengthening policies that encourage skill development among Malaysian workers.

The Rise of Certified Skilled Workers in Malaysia



"Countries that invest in workforce certification and lifelong learning will be the most competitive in the global economy." OECD (2023).

In an era of automation, digitalisation and technological advancements, the importance of skilled and certified workers has never been more critical. Malaysia, however, faces a significant challenge as enrolment in certification courses remains lower than required to meet the demands of an increasingly competitive global market.

Despite the substantial efforts by HRD Corp to facilitate upskilling and reskilling programmes, the National Training Index (NTI) for skilled workers in certification courses currently stands at 0.55, indicating only moderate participation in workforce certification. While certain sectors, such as Manufacturing, show strong engagement and investment in skill certification, other critical industries such as Construction, Agriculture, Mining & Quarrying and Services have lower enrolment rates, highlighting the need for greater emphasis on certification to build a future-ready workforce.

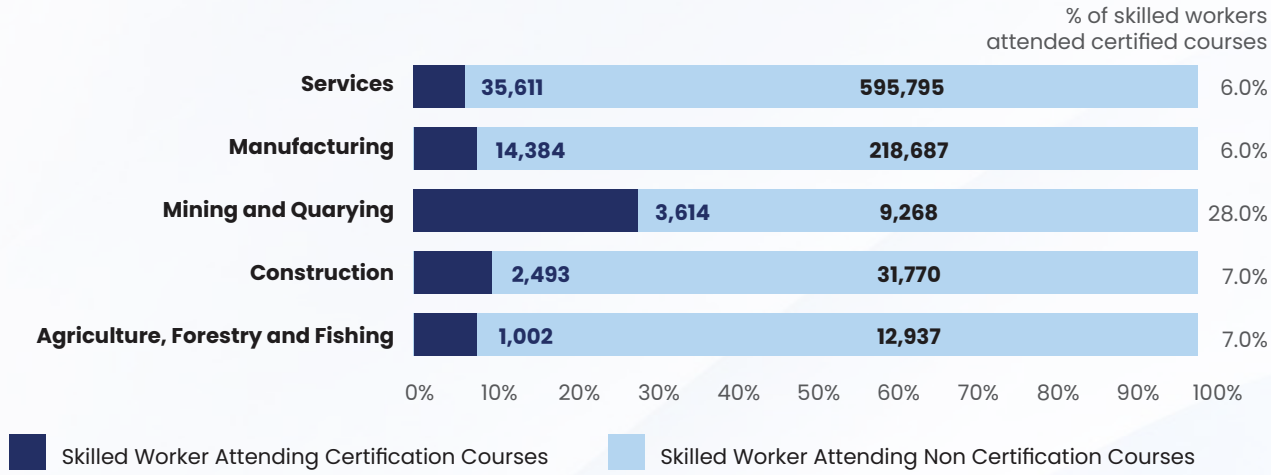
For Malaysia to remain competitive and resilient in the global economy, HRD Corp continues to play a key role in providing subsidies and incentives for certification courses, aiming to equip workers with globally recognised skills. However, the challenge goes beyond financial support. There is an urgent need for wider industry participation and a cultural shift that embraces certification as a fundamental aspect of career development and economic growth.

National

At the national level, the number of skilled workers enrolling in certification with only 57,061 workers (6.2%) opting for certified training compared to 868,500 (93.8%) who attended non-certification courses. This stark difference raises concerns about the recognition and standardisation of skills in Malaysia's workforce.

Without formal certification, many skilled workers may face limited career progression opportunities, lower wages and reduced competitiveness in both local and international job markets. Addressing this gap requires targeted policies, employer-driven Incentives and greater awareness of the long-term benefits of certification, particularly in sectors that demand technical expertise and regulated competencies (Ministry of Human Resources, 2024).

Figure 43: **Number of Skilled Workers Attended Certified Worker by Sector in 2024**

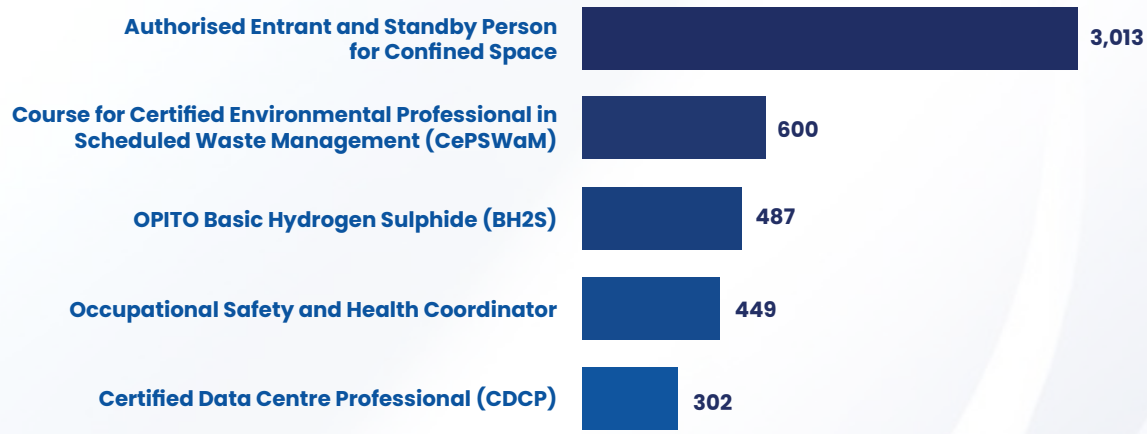


A sectoral breakdown reveals significant disparities in certification course enrolment. The Services sector has the highest number of certified workers (35,611 workers, 6%), yet this represents only a small portion of its total workforce of 631,406. The vast majority (595,795 skilled workers, 94%) continue to rely on non-certification courses, which may limit the industry's long-term skill development and global recognition. The Manufacturing sector, a key driver of Malaysia's industrial growth, sees 14,384 workers (6%) pursuing certification, reflecting structured training efforts within the sector.

In contrast, the Construction sector records only 2,493 skilled workers (7%) in certification courses, despite the industry's reliance on technical expertise and safety standards. The Agriculture, Forestry and Fishing sectors, where modernisation and sustainability are key, show minimal participation, with just 1,002 workers (7%) opting for certified training. Meanwhile, the Mining and Quarrying sector demonstrates a relatively stronger engagement, with 3,614 certified workers (28%), indicating some commitment to professional development in an industry with high safety and technical requirements.

These statistics highlight an urgent need to scale up certification course enrolment across all industries in Malaysia. Without structured accreditation and skill standardisation, Malaysia risks falling behind in workforce competitiveness, limiting both economic growth and industrial resilience in an increasingly skill-driven global economy (Ministry of Education, 2024).

Figure 44: **Top Five (5) Certified Courses Enrolled by Skilled Workers in 2024**



The National Training Index 2024 highlighted the top five certification courses by enrolment among skilled workers. The Authorised Entrant and Standby Person for Confined Space course recorded the highest enrolment, with a total of 3,013 participants. This was followed by the Certified Environmental Professionals in Scheduled Waste Management (CePSWaM) course, which saw 600 enrollees. The OPITO Basic Hydrogen Sulphide (BH2S) course had 487 participants, while the Occupational Safety and Health Coordinator course attracted 449 enrollees. Meanwhile, the Certified Data Centre Professional (CDCP) course recorded 302 participants, making it the fifth most popular certification course among skilled workers.

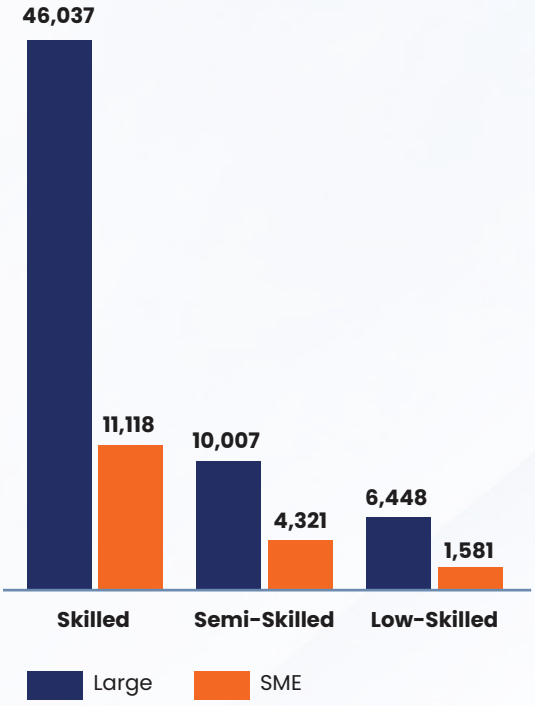
This trend reflects Malaysia's commitment to enhancing the skills and qualifications of its workforce, particularly in critical areas such as safety, environmental management and data centre operations. The high enrolment numbers indicate a growing recognition of the importance of continuous professional development and certification in maintaining competitive advantage and ensuring workplace safety and efficiency. As industries evolve and new challenges emerge, the emphasis on specialised training and certification courses is likely to continue, supporting Malaysia's broader goals of economic growth and sustainable development.

Figure 45: **Type of Certification Enrolled by Skilled Workers in 2024**



This significant enrolment in Professional Certificates underscores the growing demand for specialised skills and certifications in the Malaysian workforce. According to the International Labour Organisation (ILO), continuous professional development is crucial for maintaining a competitive edge in the global market (International Labour Organisation, n.d.). This trend reflects a broader recognition of the importance of acquiring industry-relevant qualifications to enhance employability and career advancement. This focus on professional certification aligns with Malaysia's broader goals of fostering a skilled and competitive workforce to drive economic growth and development (International Labour Organisation, n.d.).

Figure 46: **Enrolment of Certification Courses Based on Skill Category and Industry Size in 2024**



The disparity highlights the emphasis large employers place on upskilling their workforce through certified training programmes. Large companies often have more resources and infrastructure to support extensive training initiatives, which aligns with findings from the International Labour Organisation (ILO) that stress the importance of continuous professional development for maintaining a competitive edge in the global market (International Labour Organisation, 2022).

SMEs, while also investing in training, face more constraints in terms of resources and capacity. However, the impact of training in SMEs is equally crucial. According to a study by Sannagy and Hassan (2023), training and development significantly enhance employee performance in medium-sized manufacturing enterprises, contributing to overall productivity and competitiveness.

Manufacturing sector

The significant increase in Professional Certificate enrolments underscores a growing demand for specialised skills and certifications within Malaysia's workforce. As the World Bank notes, "investing in upskilling or reskilling people for jobs of the future makes economic sense as it can reduce unemployment, increase productivity and improve standards of living" (World Bank, 2023). Similarly, the International Labour Organisation (ILO) highlights that "continuous professional development is crucial for maintaining a competitive edge in the global market, which in turn supports economic growth and development" (International Labour Organisation, 2022). This trend not only reflects a proactive approach to workforce development but also underscores the essential role of education in driving Malaysia's economic success.

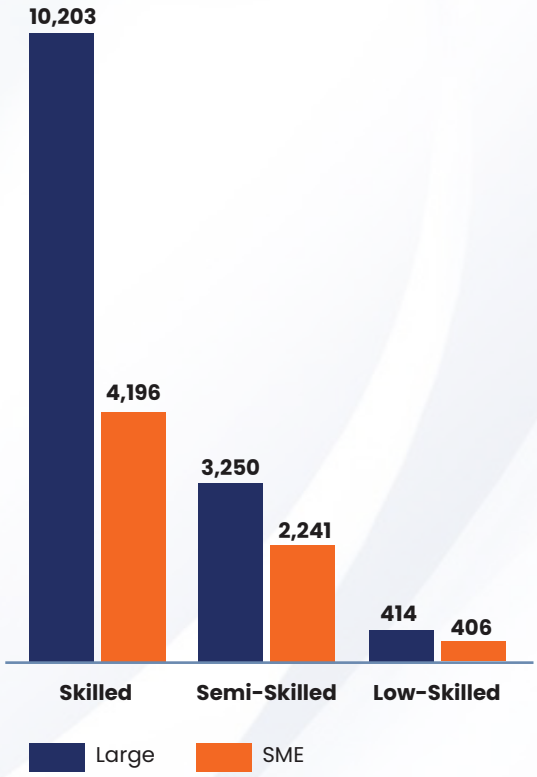
The National Training Index (NTI) score of 0.97 by the Manufacturing sector highlights a strong commitment to enhancing workforce competencies through certified training programmes. This high score reflects the sector's proactive approach to enrolling skilled workers in certification courses, aligning with international standards and best practices. According to the International Labour Organisation (ILO), continuous professional development is essential for maintaining a competitive edge in the global market, thus supporting economic growth and development (International Labour Organisation [ILO], 2025). The Organisation for Economic Co-operation and Development (OECD) also emphasises the importance of addressing skills imbalances to foster productivity and economic growth, noting that supporting disadvantaged groups in developing critical skills can significantly reduce imbalances in the labour market (Organisation for Economic Co-operation and Development [OECD], 2019). By achieving a high NTI score, the Manufacturing sector demonstrates its dedication to upskilling its workforce, which enhances both productivity and competitiveness in the global market.

In 2024, Malaysia's Manufacturing sector places significant emphasis on skilled labour, with 14,399 skilled workers, accounting for 69.5% of the total workforce in the sector. This substantial figure underscores the sector's increasing reliance on certified training and upskilling initiatives to meet the evolving demands of automation, precision engineering and advanced manufacturing technologies. Additionally, 5,491 semi-skilled workers comprise 26.5%, while 820 low-skilled workers constitute 4.0% of the workforce. This structured distribution highlights the critical role of skilled employees in driving productivity, innovation and industrial competitiveness.

According to the International Labour Organisation (ILO, 2024), industries that prioritise continuous skills development are better equipped to adapt to technological advancements and economic fluctuations. Similarly, the Organisation for Economic Co-operation and Development (OECD, 2023) highlights that economies with a higher proportion of skilled workers tend to experience stronger economic growth and improved job quality. Malaysia's commitment to certified training programmes ensures a sustained pipeline of skilled talent, reinforcing the manufacturing sector's contribution to national economic progress and industrial development.

Out of 26,522 total enrolments in certification courses, 14,399 (54.2%) were skilled workers, indicating strong participation in upskilling initiatives. However, despite this engagement, only 6% of the total 233,071 skilled workers in Malaysia's Manufacturing sector have enrolled in certification courses in 2024. This relatively low enrolment rate presents a significant challenge in ensuring that the workforce remains competitive and aligned with evolving industry standards.

Figure 47: **Enrolment of Certification Courses Based on Skill Category and Industry Size in 2024**



The International Labour Organisation (ILO, 2024) emphasises that investing in skills certification is crucial for maintaining adaptability and staying ahead in an increasingly digital and automated global market. Similarly, the Organisation for Economic Co-operation and Development (OECD, 2023) highlights that continuous professional development, particularly through certification, is key to enhancing workforce productivity and driving long-term economic growth. To strengthen its global competitiveness and meet future demands, Malaysia's manufacturing sector must expand access to certification programmes and encourage greater participation among skilled workers.

Figure 48: **Top Five (5) Certified Courses Enrolled by Skilled Workers in 2024**

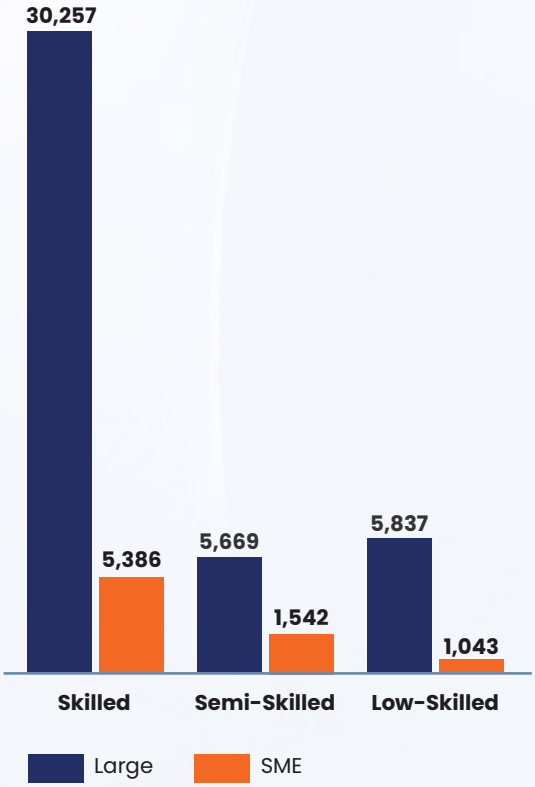


Skilled workers in the Manufacturing sector have enrolled in various certification courses to enhance their expertise and meet industry standards. These certifications reflect the sector's emphasis on occupational safety, environmental compliance and operational excellence, ensuring that the workforce remains competent and aligned with evolving industry demands.

Services Sector

The Services sector in Malaysia plays a crucial role in driving the nation's economic growth, contributing significantly to GDP, employment and the overall development of the economy. In 2024, the sector achieved a growth rate of 5.3%, underscoring its pivotal role in Malaysia's economic performance (DOSM, 2024). As the sector continues to evolve, the need for a highly skilled workforce becomes increasingly evident, particularly in areas such as finance, healthcare, tourism, education and information technology. The index score for 2024 highlights a critical indicator, the number of skilled workers enrolled in certification courses which serves as a key measure of the sector's efforts to upskill and reskill its workforce. This indicator reflects the commitment to enhancing employees' qualifications and their ability to meet the ever-changing demands of a globalised market. By investing in certified training programmes, Malaysia's Services sector is better positioned to foster innovation, improve service delivery and ensure the workforce remains adaptable in the face of technological advancements and industry disruptions.

Figure 49: **Enrolment of Certification Courses Based on Skill Category and Industry Size in 2024**



In 2024, the Services sector employs 35,643 skilled workers, comprising approximately 71.6% of the total workforce in this sector. However, when compared to the semi-skilled workforce of 7,211 (about 14.5%) and the low-skilled workforce of 6,880 (around 13.8%), it becomes evident that the majority of employees in the Services sector are skilled workers. This highlights the sector's significant reliance on a highly skilled workforce to drive productivity, service quality and innovation. Despite this, the enrolment of skilled workers in certification courses remains crucial, as upskilling and reskilling are necessary to maintain competitiveness and meet the evolving demands of the industry. According to the World Bank (2023), investing in continuous professional development is essential for improving productivity, reducing unemployment and fostering economic growth.

The Services sector in Malaysia achieved an index score of 0.45 for the indicator of skilled workers enrolled in certification courses. This places the sector in the 'Experienced' category, which is characterised by moderate activity in training. It reflects a balanced approach to upskilling, with moderate preparation in terms of training, talent development and the quality of courses offered. While the sector has adequate training plans and materials in place, the allocation of resources for training remains moderate. This indicates that while there are efforts to provide certification opportunities for skilled workers, there is room for further improvement in enhancing participation and expanding training programmes to better meet industry needs.

Figure 50: Type of Certification Enrolled by Skilled Workers in 2024



In 2024, the Services sector saw a diverse range of certification course enrolments. Among these, 34,704 skilled workers enrolled in Professional Certificate programmes, representing the largest share of enrolments. As the International Labour Organisation (ILO, 2023) highlights, investing in certification programmes in the Services sector is essential to enhancing the quality and productivity of the workforce, which directly contributes to economic growth and competitiveness. This was followed by 48 skilled workers in the sector who undertook Ph.D programmes, demonstrating a commitment to advanced qualifications and continuous professional development. These enrolment trends reflect the sector's focus on equipping its workforce with a wide range of skills, from foundational certifications to advanced degrees, to meet evolving industry needs.

Figure 51: **Enrolment of Certification Course by Service Sector According to Skill Area in 2024**



In 2024, the top skill areas for certification courses in Malaysia's Services sector were Safety (7,941 enrolments), Management and Leadership (4,524 enrolments), Operation Management (3,229 enrolments), Digitalisation (2,982 enrolments) and Scientific, Technical, or Statistics (1,894 enrolments). These enrolments reflect the sector's emphasis on enhancing expertise in critical areas to meet industry demands.

Table 4: **Top Five (5) Certification Courses Enrolled by Skilled Workers in Services Sector**

01	**Authorised Entrant & Standby Person for Confined Space**
02	**OSH Coordinator Competency**
03	**Basic Occupational First Aid, CPR & AED**
04	**ITIL 4 Foundation**
05	**AHA Advanced Cardiovascular Life Support (ACLS)**

This pattern highlights a strong focus on workplace safety, operational efficiency and digital competencies, ensuring the workforce remains well-equipped for evolving industry challenges.

Mining and Quarrying Sector

In 2024, Malaysia's Mining and Quarrying sector recorded a 0.9% growth in GDP 2024, reflecting a steady contribution to the national economy (DOSM, 2024). Despite its relatively small share compared to other industries, the sector remains crucial for resource extraction and industrial supply chains. Given its high-risk nature, ensuring a highly competent workforce is essential to maintaining safety, efficiency and sustainability. The International Labour Organisation (ILO, 2024) stresses that industries reliant on physical labour and heavy machinery must prioritise structured training to enhance operational standards and mitigate workplace hazards. Likewise, the Organisation for Economic Co-operation and Development (OECD, 2023) highlights that investment in workforce development is key to strengthening sector resilience and long-term productivity. Strengthening

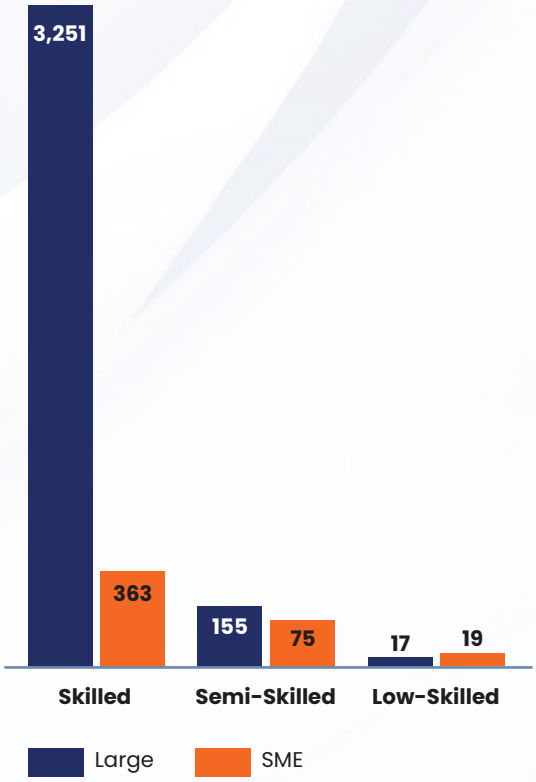
professional certification and technical training frameworks is therefore critical in ensuring that the industry can meet evolving regulatory and technological demands.

In 2024, the Mining and Quarrying sector in Malaysia recorded an index score of 0.48 for the indicator measuring the number of skilled workers who attended certification courses. This score categorises the sector as moderately active in training, indicating that while there is a structured approach to skills development, there remains room for improvement in training participation and effectiveness. The sector demonstrates moderate training preparation, talent development efforts and training quality, with adequate but limited training plans and resource allocation. Given the specialised nature of Mining and Quarrying, continuous certification is essential to enhance workforce competency, safety compliance and operational efficiency. Strengthening training initiatives and increasing enrolment in certification programmes will be crucial to maintaining industry standards and ensuring long-term sector sustainability.

The Mining and Quarrying sector in Malaysia remains highly specialised, with skilled workers forming the backbone of its workforce. In 2024, a total of 3,614 skilled workers, representing approximately 93.0% of the sector's workforce, significantly outnumber the 230 semi-skilled workers (5.9%) and 36 low-skilled workers (0.9%). This workforce composition underscores the industry's reliance on technical expertise and precision in operations. It also reflects the sector's stringent safety regulations, advanced machinery handling and the need for specialised knowledge in extraction and resource management. As the industry evolves with technological advancements and environmental considerations, continuous investment in upskilling and certification programmes will be critical to sustaining efficiency, safety and long-term growth.

In 2024, the Mining and Quarrying sector in Malaysia saw a total of 5,670 enrolments in certification courses, with 3,614 (93.0%) of these enrolments being skilled workers. This demonstrates a strong commitment to continuous professional development within the skilled workforce, emphasising efforts to maintain and enhance expertise amid evolving industry standards and technological advancements. However, this also presents an opportunity to expand training initiatives and engage a larger proportion of the workforce in upskilling.

Figure 52: **Enrolment of Certification Courses Based on Skill Category and Industry Size in 2024**



As the Organisation for Economic Co-operation and Development (OECD, 2023) highlights, a higher number of certified workers in a sector directly contributes to improved productivity, operational efficiency and long-term competitiveness.

Figure 53: **Type of Certification Enrolled by Skilled Workers in 2024**



An analysis of the certification trends within the Mining and Quarrying sector reveals that skilled workers primarily pursue two types of qualifications: the Professional Certificate and the Diploma. The Professional Certificate, with 3,607 enrolments, is the most sought-after certification, indicating its alignment with the sector's current skill requirements. In contrast, only seven (7) skilled workers have enrolled in the Diploma course, reflecting a more limited uptake of advanced qualifications. This distribution suggests that while there is a strong emphasis on practical, industry-relevant certifications, there is an opportunity to encourage further participation in higher-level qualifications to enhance workforce capabilities. As the sector faces increasing technological advancements and the need for specialised expertise, expanding the availability and uptake of diverse certification programmes could be crucial in addressing emerging skill demands and fostering long-term growth within the sector.

In the Mining and Quarrying sector, the top five (5) skill areas for certification courses reflect the industry's primary focus on safety and operational expertise. Safety leads, underscoring the critical importance of maintaining safe working environments in high-risk sectors. Engineering follows, reflecting the sector's ongoing need for technical expertise to support complex operations. Regulation and Certification-Based skills highlight the importance of adhering to industry standards and certifications. Operation Management and Management and Leadership round out the top skill areas, signifying a need for strong leadership and efficient operational oversight within the sector.

Table 5: **Top Five (5) Training Courses in Mining and Quarrying Sector**

01	**Basic H2S**
02	**Authorised Entrant & Standby Person for Confined Space**
03	**OPITO Basic Hydrogen Sulphide (BH2S)**
04	**OPITO Tropical BOSIET with CA-EBS and Travel Safely by Boat**
05	**Helicopter Landing Officer (HLO) Course**

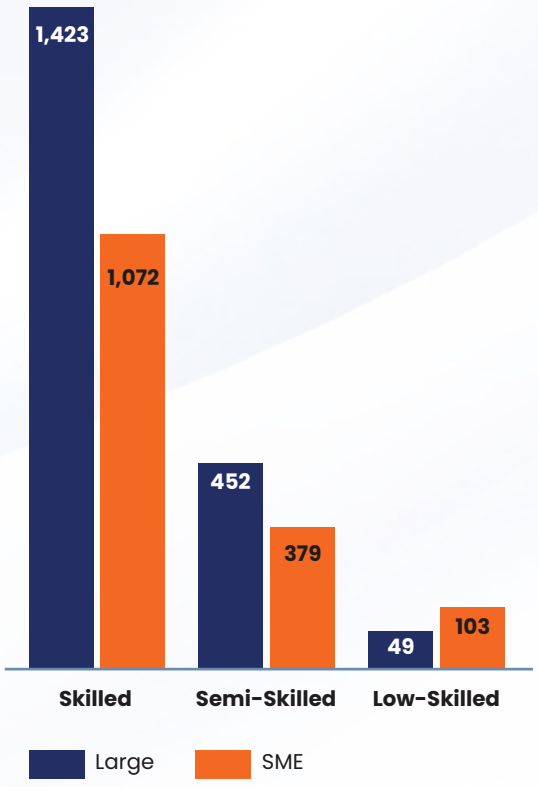
Construction Sector

The Construction sector plays a vital role in Malaysia's economic development, contributing significantly to the country's GDP. According to the Department of Statistics Malaysia (DOSM), the construction sector accounted for 4.8% of the national GDP in 2023, highlighting its importance as a driver of economic growth. The sector's continued growth hinges on the availability of a skilled workforce that can adapt to the rapidly evolving demands of modern construction projects, including the integration of advanced technologies, sustainable practices and safety standards. As the sector faces increasing complexity and competitiveness, the value of certified skilled workers cannot be overstated. Certification not only ensures that workers possess the requisite skills but

also contributes to improving productivity, enhancing safety and maintaining industry standards. The implementation of continuous professional development and certification is essential to meet these challenges and to drive long-term growth and innovation in the construction industry.

The National Training Index (NTI) for the construction sector, with an index score of 0.37 for skilled workers enrolled in certification courses, reflects a moderately active engagement in workforce development. This score indicates that the sector has made some progress in upskilling its workforce, focusing on training preparation, talent development and the quality of training programmes. The construction industry has established sufficient training plans and materials, supported by an adequate allocation of resources for skill development. However, this index score also underscores the need for continued improvement in broadening access to certification programmes and increasing skilled worker enrolment. To enhance sector competitiveness and ensure the workforce remains responsive to evolving industry demands, a concerted effort is needed to boost participation in certification courses and further strengthen the training infrastructure.

Figure 54: **Enrolment of Certification Courses Based on Skill Category and Industry Size in 2024**



In 2024, the Construction sector had 2,495 skilled workers covered under HRD Corp, which constitutes 71.7% of the total workforce in this sector followed by the semi-skilled workforce of 831 (23.9%) and the low-skilled workforce of 152 (4.4%). The sector's reliance on a skilled workforce is crucial to maintaining productivity and quality standards in Construction projects. With Malaysia's continued focus on infrastructure development and major projects such as the Sarawak Corridor of Renewable Energy (SCORE) and the growth of data centres, the demand for skilled workers is expected to increase. This underscores the importance of expanding training opportunities to ensure the workforce remains competitive and aligned with industry needs. The Construction industry remains a key driver of the nation's economic activities, with significant investment in infrastructure (DOSM, 2023). Additionally, initiatives like SCORE further highlight the need for skilled workers in the sector (Sarawak Corridor of Renewable Energy, 2024; WSJ, 2024).

Figure 55: **Top Five (5) Types of Certification Enrolled by Skilled Workers in 2024**



In the construction sector, skilled workers have predominantly enrolled in Professional Certificate courses, with a total of 2,451 enrolments, followed by 24 workers enrolled in Diplomas, 9 in Master's programmes, 5 in Degree courses, 3 in SKM (JPK) and 1 in the Ph.D programme. This distribution of enrolments highlights a strong preference for professional certification within the sector, as workers focus on acquiring relevant, industry-recognised qualifications to enhance their competencies and career prospects. The sector's emphasis on practical, skills-based qualifications underscores the importance of continuous professional development to meet the evolving demands of the construction industry.

Table 6: **Top Five (5) Training Courses in Construction Sector**

01	**Authorised Entrant & Standby Person for Confined Space**
02	**Occupational Safety and Health Coordinator**
03	**AHA Paediatric Advanced Life Support (PALS)**
04	**Certified Data Centre Professional**
05	**PITO Tropical Bosiet with CA-EBS and Travel Safely By Boat**

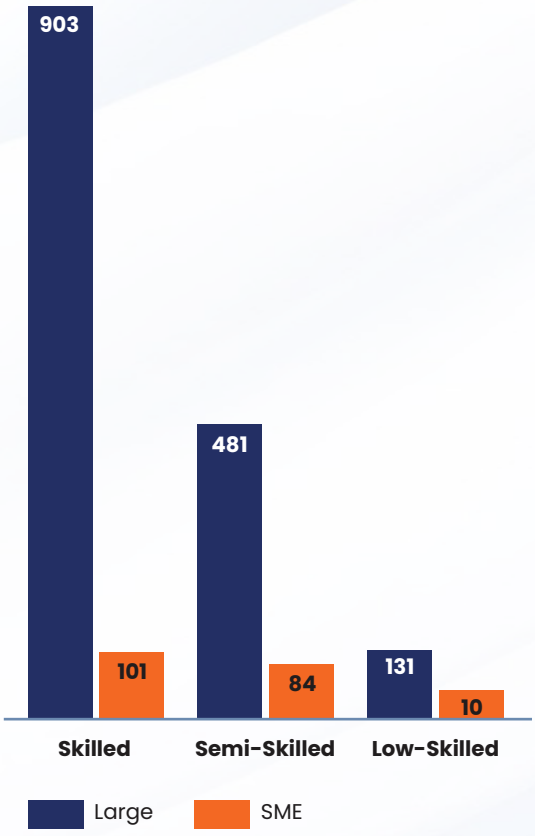
Agriculture, Forestry and Fishing Sector

The Agriculture, Forestry and Fishing sector remains a vital pillar of Malaysia's economy, contributing 3.4% to the nation's Gross Domestic Product (GDP) in the second quarter of 2024 (DOSM, 2024). As global demand for sustainable food production and responsible resource management increases, the sector must prioritise workforce development to maintain competitiveness. According to the Food and Agriculture Organisation (FAO, 2023), investment in skills training and certification enhances agricultural productivity, supports innovation and improves environmental sustainability. Furthermore, the International Labour Organisation (ILO, 2023) highlights that certified workers contribute to safer working environments and greater economic stability, particularly in labour-intensive industries. Certification programmes ensure that skilled workers are equipped with the latest technological advancements and industry best practices, enabling Malaysia's Agriculture, Forestry and Fishing sector to remain resilient, efficient and aligned with international sustainability standards (OECD, 2023).

The Agriculture, Forestry and Fishing sector recorded an index score of 0.47 for skilled workers enrolled in certification courses, reflecting a moderately active engagement in workforce training and development. This score indicates that while the sector has established adequate training plans and materials, further enhancements are needed to optimise training effectiveness and expand enrolment. The moderate level of training preparation, talent development and quality of training suggests that current initiatives are contributing to workforce upskilling but require more strategic investment to fully align with industry advancements and sustainability goals. Strengthening certification programmes accessibility and participation will be crucial in ensuring that skilled workers remain competitive in an evolving sector that increasingly integrates digitalisation, sustainability practices and advanced agricultural technologies (ILO, 2023; OECD, 2023).

Within the Agriculture, Forestry and Fishing sector, a total of 13,939 employees registered under HRD Corp are classified as skilled workers, representing 55.4% of the workforce covered. Meanwhile, 9,008 employees (35.8%) fall under the semi-skilled category, while 1,952 employees (7.8%) are categorised as low-skilled. This distribution underscores the sector's reliance on a skilled workforce to drive productivity, sustainability and technological advancement. Enhancing the participation of skilled employees in certified training programmes is essential to improving sectoral efficiency and competitiveness. Certification courses provide critical knowledge in sustainable agricultural practices, forestry management and modern fisheries operations, ensuring that workers are equipped with the latest industry standards and technological advancements. Strengthening training engagement will contribute to a more resilient and adaptive workforce, supporting national food security and sustainable resource management (Food and Agriculture Organisation, 2023; World Bank, 2022).

Figure 56: **Enrolment of Certification Courses Based on Skill Category and Industry Size in 2024**



In the Agriculture, Forestry and Fishing sector, the distribution of skilled workers covered under HRD Corp highlights a significant concentration within large employers. Out of the overall skilled workers trained, 903 (89.9%) are covered by large employers, while 101 (10.0%) are covered by small and medium-sized employers (SMEs). This distribution suggests that large employers are more likely to provide training and certification opportunities for their skilled workforce. To enhance industry growth and ensure a more balanced development, efforts should be made to expand training access and certification opportunities within SMEs as well.

The average cost of certification training varies by sector, certification type and training provider. In the Construction sector, the average cost for certification courses is reported to be RM2,174. This figure highlights the financial investment required for upskilling the workforce in this sector. However, the cost of training may fluctuate across other industries, such as Agriculture, Forestry and Fishing, based on the complexity of the certification and the resources needed. For SMEs, these training expenses can pose a significant challenge, particularly as they must balance workforce development with operational costs. It is essential for businesses, especially SMEs, to strategically evaluate the cost of certification programmes, ensuring that investments in workforce training align with both short- and long-term goals for industry competitiveness and growth.

In the Agriculture, Forestry and Fishing sector, skilled workers are primarily focusing on certifications that enhance operational safety, management and sustainability. These skill areas play a crucial role in ensuring that the workforce is well-equipped to meet industry standards, maintain productivity and drive environmental compliance.

Table 7: **Top Five (5) Skill Areas Among Skilled Workers in Agriculture, Forestry and Fishing Sector**

01	**Safety**
02	**Operation Management**
03	**Regulation and Certification Based**
04	**Sustainability**
05	**Productivity**

These skill areas align with the most commonly pursued certification courses in the sector, which are designed to address the evolving demands of the industry.

Table 8: **Top Five (5) Training Courses Among Skilled Workers in Agriculture, Forestry and Fishing Sector**

01	**Authorised Entrant and Standby Person for Confined Space**
02	**Remote Pilot Certificate of Competency Basic (RCOC-B)**
03	**Certified Environmental Professional in Scheduled Waste Management (CePSWaM)**
04	**Certified Environmental Professionals in the Treatment of Palm Oil Mill Effluent**
05	**Forklift Operators` & Safety Training-Internal Combustion Engine**

Together, these skill areas and training courses reflect the sector's commitment to maintaining high standards of safety, operational excellence and environmental responsibility.



NTI 2024 DIMENSION ANALYSIS:

DIMENSION 3

Training Provider Effectiveness

DIMENSION 3

Training Provider Effectiveness

FROM DEVELOPMENT TO DISTINCTION:

The Influence of High-Quality Training Providers on Workforce Success

In the context of the NTI, training provider refers to the registered company or organisation that acts as a training vendor to HRD Corp Registered Employers. Generally, employers registered with HRD Corp can gain financial assistance for attending training sessions conducted by HRD Corp Registered Training Providers.

Through Dimension 3: Training Provider Effectiveness, eight (8) indicators were identified to evaluate the effectiveness of training providers. These indicators measure the quality and availability of training providers in supporting the learning ecosystem, focusing on course content, digital training platforms, certification issuance, trainers' competency and training facilities.

Effective training is crucial for enhancing trainees' achievements. Training providers must offer tailored programmes agreed upon with trainees to boost motivation and improve success rates. Selecting and deploying appropriate training strategies is essential to engage trainees. They need to develop employability skills which may be best delivered in the workplace for some, while others may benefit more from a classroom setting. Various training arrangements such as a day or block release or on-the-job training should be considered to meet individual trainees' needs. Good practices should integrate key skills and personal and social skills throughout the learning programmes. This is most effective when vocational and functional skills trainers collaborate through joint planning or team training.



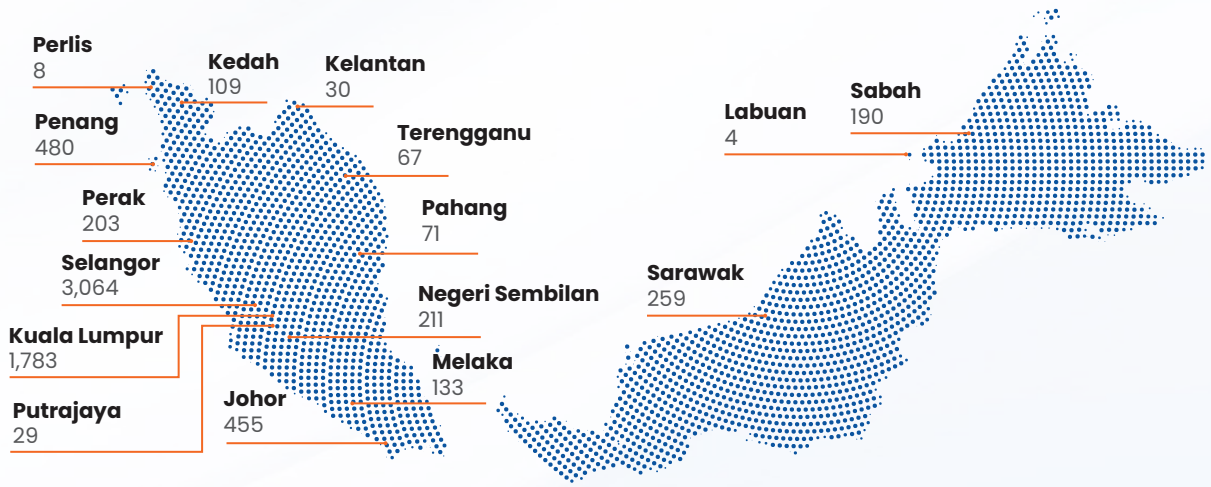
Excellent training providers will ensure consistency in training and learning across the organisation, implement an effective developmental lesson observation process, share best practices and rigorously monitor and evaluate their activities. Constructive feedback significantly influences trainees' motivation and self-esteem, informing them about their strengths, areas for improvement and the actions needed to make those improvements (Ofsted, 2010).

Table 9: **Summary of Training Index for Dimension 3, Training Provider Effectiveness Across the Key Economic Sectors in 2024**

	ECONOMIC SECTORS	MANUFACTURING	SERVICES	MINING AND QUARRYING	CONSTRUCTION	AGRICULTURE, FORESTRY AND FISHING	NATIONAL
D3	**Training Provider Effectiveness**	**0.99**	**0.93**	**1.00**	**0.99**	**0.90**	**0.96**
D3I1	Enrolment in Competent Training Provider	**0.90**	**0.89**	**0.89**	**0.90**	**0.91**	**0.90**
D3I2	Enrolment with Certified Trainer	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**
D3I3	Enrolment in Courses with Regular Content Evaluation	**0.88**	**0.87**	**0.89**	**0.91**	**0.79**	**0.87**
D3I4	Enrolment in Training Provider for Certification Course	**1.00**	**0.59**	**0.99**	**0.78**	**0.61**	**0.79**
D3I5	Enrolment in Digital Training	**0.69**	**0.81**	**0.82**	**1.00**	**0.52**	**0.77**
D3I6	Enrolment in Regular/ Repetitive Training Courses	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**
D3I7	Enrolment in Training Provider with Complete Training Facilities	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**
D3I8	Enrolment with Established Training Provider	**0.59**	**0.54**	**0.62**	**0.53**	**0.55**	**0.57**

Based on the HRD Corp internal database, there were 7,096 registered Training Providers in 2024 – of which 44.3% actively offered training nationwide. In Figure 57, it is apparent that the majority of training providers are concentrated in states such as Selangor, Kuala Lumpur and Penang.

Figure 57: **Distribution of Registered Training Providers According to States**



The dimension gives a wider perspective especially on the enrolment in certification courses offered by training providers (D3I4) – measured using the ratio of the enrolment to the training providers who offer certification courses. The certification process is crucial in this context - it verifies that the trainee has successfully completed a structured training, passed the necessary assessments and earned the qualification based on their acquired competencies (Cedefop, 2015). Therefore, enrolling in training providers that offer certification courses would provide higher assurance among the employees.

Certification Courses Offered by Training Providers

Certificates have outgrown their traditional role as supplementary credentials to become essential for individual career progression and organisational resilience. There were 240 registered Training Providers that offered certification courses during the year.

Certification ensures that training providers align their programmes with industry standards and regulatory requirements. In fields like healthcare, education and engineering, certification guarantees that training providers offer programmes that meet the regulatory expectations set by governing bodies.

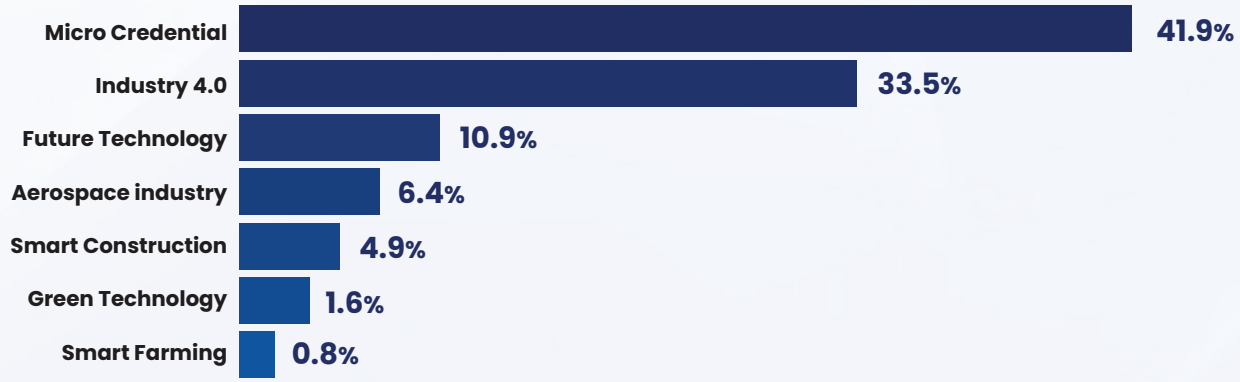
Diving deeper into the training provider's perspective, offering certification courses means gaining a higher chance of a competitive edge over the training provider itself. Achieving certification allows training providers to demonstrate their adherence to these standards, thereby increasing their credibility with both students and employers. This alignment not only enhances enrolment but also strengthens the institution's reputation within the industry, encouraging partnerships and collaborations with certified bodies.

National

At the national level, enrolment in certification courses offered by the training provider ranks at 0.79, illustrating a strong demand for this type of course, up from 0.60. Among 60,210 training programmes registered during the year, 65.3% are newly registered certified courses.

Micro-Credential accounted for 47.0% of the overall training programmes registered with its certification courses registration under the focus area has taken about 41.9%. The greater supply translates to industries demanding specific skills due to evolving technology, creating a continuous need for proficient workers. Certified skills often come with standardised, industry-recognised certifications, clearly indicating proficiency. It is also straightforward to design with clear objectives and outcomes, making course development easier.

Figure 58: **Certification Courses Offered by Training Providers According to Focus Area at National Level**





According to Figure 58, Smart Construction, Green Technology and Smart Farming are still lagging due to rapid evolution, high costs and specialised knowledge required, along with the experimental natureand limited certification course availability.

Looking at the training providers offering certification courses, Table 10 shows the top 10 most offered certification courses by training providers across at national level. The (MC) Food Technology for Halal - HRDCMC07SSBLP1296 racks up the highest supply. This could mean that training providers are heavily emphasising the demand from the employers and employees who find this programme insightful and impactful. This could be attributed to the rising awareness of the importance of national strategic direction for industrial development in line with the National Industrial Master Plan (NIMP) 2030.

Table 10: **Top 10 Certification Courses Offered by Training Providers at National Level**

Certification Course Title	Number of Supply
Food Technology for Halal	736
Analysis and Design of Records Management System - HRDCMC01GP779	552
Site Design Process and Open Space Design - HRDCMC01GP650	368
Pengeluaran Makanan (Pemprosesan)	310
Professional In Lean Six Sigma Improvement Tool - Overall Equipment Effectiveness (OEE)	214
Social Media Marketing	191
Microsoft Excel Data Analysis Essential	185
3D Computer Animation Advance- HRDCMC01GP400	183
Data Analysis and Interactive Dashboard Reporting In Excel	108
AutoCAD 2D & 3D Training	107

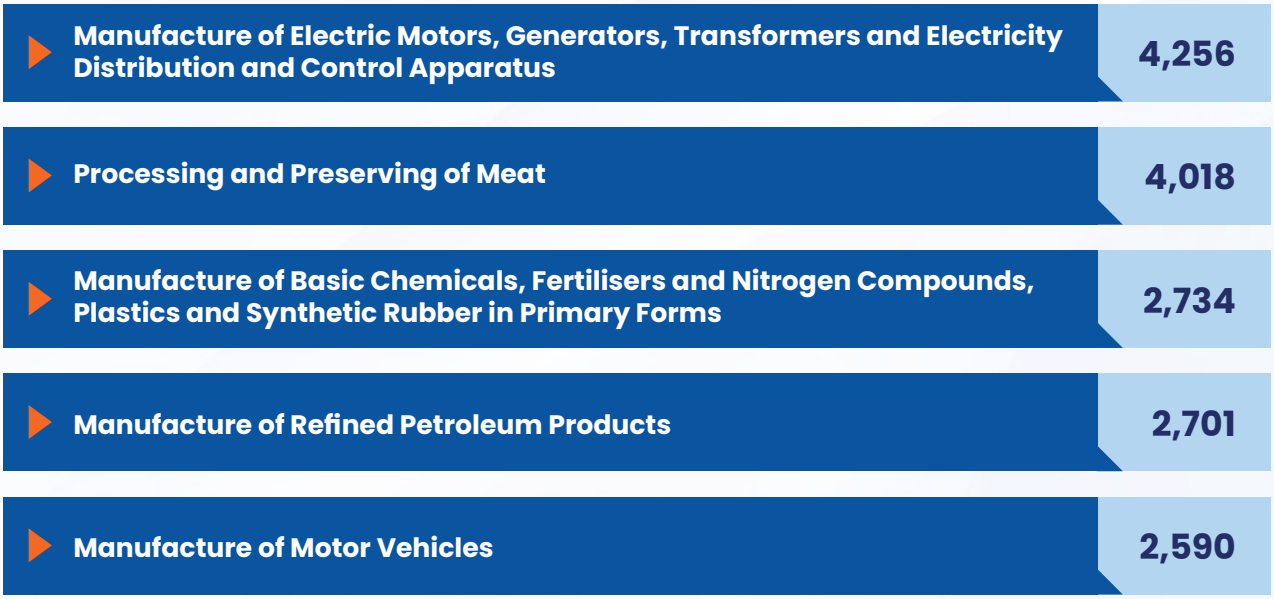


With much attention directed towards certification courses, it is high time for training providers to ramp up their efforts in meeting industry demands. This can be done through partnerships, market research, advisory boards and feedback.

Manufacturing Sector

As the best-performing sector, enrolment in certification courses offered by the training provider in Manufacturing stayed put at 1.00 for the second consecutive year. Among the 19,229 training programmes registered this year, 2.7% are newly registered certified courses. Align with the New Industrial Master Plan 2030 (NIMP 2030) that emphasises the development of a skilled workforce through enhanced Technical and Vocational Education and Training (TVET) programmes, the concerted effort by the training providers successfully lined up training with industry needs, incorporating advanced technologies and smart manufacturing practices.

Figure 59: **Top Five (5) Manufacturing Sub-sectors Enrolled in Certification Courses Offered by Training Providers**



Manufacture of Electric Motors, Generators, Transformers and Electricity Distribution and Control Apparatus and Processing and Preserving of Meat are among the active sub-sectors enrolled in certification courses offered by training providers, based on Figure 59. These sub-sectors emphasised courses such as Good Manufacturing Practices (GMP), Measurement System Analysis (MSA) & Statistical Process Control that aim for efficient product and process development. These programmes were created to equip trainees with comprehensive knowledge, skills and attitudes necessary for designing, implementing and efficiently operating manufacturing systems. Key technologies include robotics, programmable logic controllers and computer-integrated manufacturing, applied in automated production, assembly, inspection and packaging.

Industry 4.0 adoption will also enable manufacturers to create new jobs to meet the increased demand from expanding markets and new products and services. Robotics and other applications, including predictive maintenance and augmented reality, will allow manufacturers to implement new business models that foster job creation (Boston Consulting Group, 2015). The best practice that can be adopted from the Manufacturing sector is the strategic focus on transitioning to higher value-added activities. The sector is moving beyond traditional models towards an innovation-driven manufacturing hub, parallel to NIMP 2030 Mission 1: Advance Economic Complexity. To thrive in the era of Industry 4.0, workers must develop a range of hard skills as they need to blend job-specific knowledge, such as techniques for working with robots or changing machine tools.

The demand for diverse hard skills and the extensive changes on the shop floor make soft skills more crucial than ever. Employees must be more open to change, adaptable to new roles and work environments and committed to continuous interdisciplinary learning in the Services Sector. As the primary engine of the economy, the Services sector accounts for over two-thirds (67.7%) of Malaysia's formal workforce, which translates to approximately 4.61 million individuals, based on Labour Market Review Q4 2024. During the year, the Services sector score on the enrolment in certification courses offered by the training provider climbed to 0.59 (previously, 0.35).

This indicates a more robust training activity for certification courses due to its upper hand in boosting industry recognition. These courses also often lead to higher earning potential, showcasing expertise and dedication, making an individual a standout candidate. As evidence, the number of supplies in certification courses reached 18,983 in 2024.

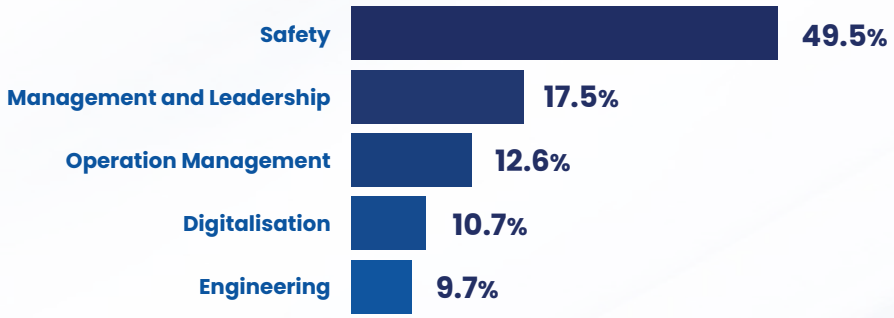
Figure 60: **Certification Courses in Services Sector Offered by Training Providers According to Qualification Level**



Based on Figure 60, an impressive 18,292 certificates courses offered in Professional Certificates, such as Basic Hydrogen Sulphide (H2S) Training, were seen, which implies that training providers have played a crucial role in maintaining quality by ensuring that professionals acquire the essential knowledge and skills needed to perform their jobs effectively.

Skills areas like Safety Management & Leadership are among the prominent certification courses registered by training providers as depicted in Figure 61, attributed to its features that could fit the Services sector across the spectrum.

Figure 61: **Top Five (5) Skills Area of Certification Courses in Services Sector Offered by Training Providers**



To enhance the availability and quality of certification courses in the Services sector, training providers should focus on expanding their course offerings by investing their budget in advanced training technologies and platforms that can significantly improve the learning experience. Collaborating with industry experts to update course content when needed is also another alternative to ensure relevance and alignment with current market demands.

Mining and Quarrying Sector

The transition to a greener economy is driving a surge in global demand for metals, while the Mining and Quarrying sector is under increasing pressure to meet higher standards of sustainability and social responsibility. This dual challenge brings both significant obstacles and opportunities. Throughout the year, the sector saw an increase in the enrolment score for certification courses provided by training providers, rising to a solid 0.99 from 0.80 in the prior year. The sector's contribution to GDP in 2024 averaged 6.0%, as compared to 6.2% in the previous year, as reported in National Account GDP Q4 2024.

Of the 566 training programmes registered this year, 8.5% are newly certified courses. Certification courses provide comprehensive knowledge of advanced technologies for mineral extraction and processing. Skills areas such as Safety, Operation Management and Regulation Certified-Based cover a holistic approach to preparing the trainee to navigate and excel in the rapidly changing Mining sector landscape.

Figure 62: **Top Five (5) Certification Courses Offered by Training Providers in Mining and Quarrying Sub-sectors**



According to Figure 62, Support Activities for Petroleum and Natural Gas Extraction, Quarrying of Stone, Sand and Clay and Extraction of Crude Petroleum are among the most active sub-sectors enrolled in certification courses provided by training providers. These sub-sectors place significant emphasis on courses such as Basic Hydrogen Sulphide (H2S) OPITO Approved (CODE 9014), OPITO Tropical Bosiet with CA-EBS & Travel Safely by Boat (Code:5509) and Authorised Entrant & Standby Person for Confined Space, which focus on efficient resource extraction and process development. These programmes are designed to equip trainees with comprehensive knowledge, skills and attitudes necessary for designing, implementing and efficiently operating mining systems.

Key technologies covered include advanced drilling techniques, automated mining equipment and mineral processing technologies, which are applied in resource extraction, ore processing and environmental management.

Based on a strong score reading, training providers offering certification courses in the sector have successfully attracted and prepared future generations for careers in Mining and Quarrying.

Through partnerships, the training providers crafted programmes on the latest advancements in mining and mineral resources while continually adding new insightful courses.

Agriculture, Forestry and Fishing Sector

The Agriculture, Forestry and Fishing sector in Malaysia is a vital component of the nation's economy, contributing significantly to its GDP and employment. According to the Department of Statistics Malaysia (DOSM), the sector experienced a robust growth of 3.0% during the year, following a 0.7% increase in the previous year. Over the course of the year, the sector experienced a rise in the score for the enrolment of certification courses offered by training providers, increasing to 0.61 from 0.42.

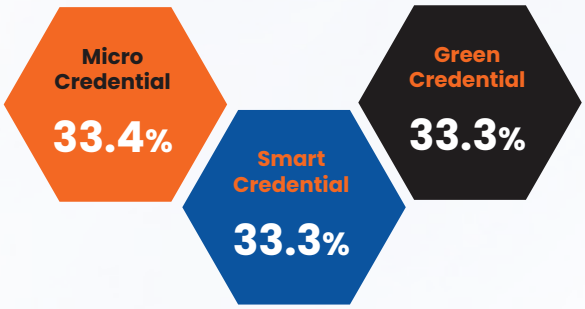
The sector's performance highlights its importance in ensuring food security and supporting rural livelihoods. Continuous advancements in agricultural practices and technologies are essential for sustaining this growth and enhancing productivity.

Table 11: **Top 10 Certification Courses Offered by Training Providers in Agriculture, Forestry and Fishing Sector**

Certification Course Title	Enrolment
Certified Environmental Professional in Scheduled Waste Management (CePSWaM)	121
Working Safely at Height	80
Remote Pilot Certificate of Competency Basic	67
Certified Environmental Professionals in The Treatment of Palm Oil Mill Effluent	38
Kursus Pengendali Makanan	35
Kemahiran Menggred Buah Sawit Wilayah Timur	31
Tree and Log Identification	18
Log Extraction-Tractor (Natural Forest)	12
Tree Felling-Chainsaw (Forest Plantation)	10
Log Loading-Excavator (Forest Plantation)	9

Examining the enrolment in certification courses provided by training providers, Table 11 showcases the top 10 most popular certification courses within the Agriculture, Forestry and Fishing sector. The Certified Environmental Professional in Scheduled Waste Management (CePSWaM) leads in enrolment, largely due to the increasing recognition of the importance of the food system, in alignment with the National Agrofood Policy 2021-2030 (NAP 2.0). This policy emphasises sustainable agricultural practices, food security and the modernisation of the agro-food sector, driving demand for courses that equip professionals with the necessary skills and knowledge to meet these goals.

Figure 63: **Focus Area in Agriculture, Forestry and Fishing Sector According to Certification Courses Offered by Training Providers**



Despite robust training participation, training providers must develop initiatives to enhance the skill set of professionals in the Agriculture sector. This can be done through increasing the number of certification courses offered, by introducing at least several new courses annually. These courses must also cover Micro Credential, Green Technology and Smart Farming, as illustrated in Figure 63.

Emphasising courses on sustainable farming practices, advanced agricultural technologies and food security can address the priorities outlined in the National Agrofood Policy 2021-2030 (NAP 2.0). By adopting these strategies, training providers can attract more participants and support the growth of the Agriculture sector.

Construction Sector

The Construction sector has shown significant growth and resilience in recent years. According to the Department of Statistics Malaysia (DOSM), the total value of construction in 2024 rose by 20.2% to RM158.8 billion, up from RM132.2 billion in 2023, which had seen an 8.4% growth. During the year, the sector saw an increase in the enrolment score for certification courses provided by training institutions, rising from 0.43 to 0.78.

Every part of the Construction sector saw growth in 2024. Special trade activities led the way with a 35.9% increase, followed by Residential Buildings at 24.5%, Civil Engineering at 17.3% and Non-Residential Buildings at 15.5%. Together, Civil Engineering and Non-Residential Buildings made up more than two-thirds of the total construction work done for the year.

Figure 64: **Enrolment to Certification Courses in Construction Sector According to Qualification Level**

Professional Certificate	Diploma	Masters	Degree	SKM (JKM)	Ph.D
4,128	33	19	9	6	2

As depicted in Figure 64, a remarkable number of trainees (4,197) have enrolled in various construction-related qualification levels, such as Authorised Entrant and Standby Person for Confined Spaces.

This indicates that training providers have been focusing on construction-specific courses to ensure that workers are well-prepared to handle the industry's unique challenges, from advanced building techniques to safety regulations.

Figure 65: **Top Five (5) Focus Areas in the Construction Sector According to Certification Courses Offered by Training Providers**

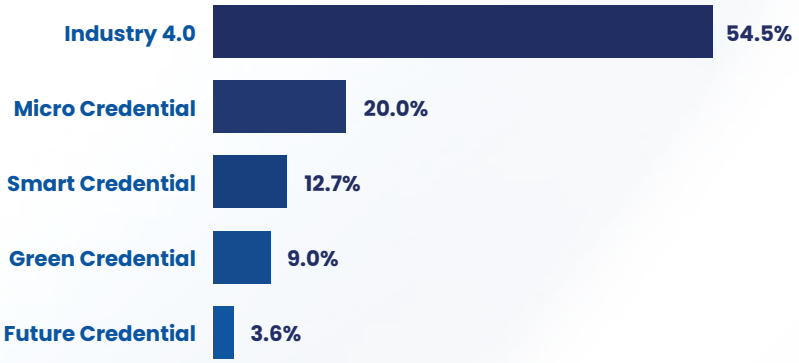


Figure 65 indicates that Industry 4.0, Micro-Credential and Smart Construction are the drivers in the Construction sector. The adoption of these technologies is further amplified by the need for extensive training and adaptation to new methods - construction projects often prioritise tried-and-tested techniques to ensure safety and reliability, making it challenging to integrate cutting-edge technologies without comprehensive certification programmes. Therefore, increasing the accessibility of certification courses in these advanced areas is crucial to bridge the gap and facilitate the sector's modernisation.

Overall, through this indicator (D3I4), training providers are seen as a pivotal point in lifelong learning. The insights into skills proficiency and professional development needs can serve as a valuable guide for crafting essential professional development programmes (Chen, n.d.). Input on the information and recommendations can help the training providers optimise their programme offerings and refine their business models.

Digital Training

Under the same umbrella, the NTI analyses digital training enrolment further from the training provider's perspective (D3I5). The indicator is measured by calculating the ratio of training providers that have invested in digital training platforms to the overall training enrolment. Shifting from offline to online training products allows a training provider to modernise and refresh their content. This enables the creation of innovative, high-demand digital training materials that customers will be eager to purchase and renew.

Digital training enables individuals to learn at any time and place, free from the constraints of space and time, thereby promoting the achievement of lifelong learning. However, the digital training enrolment for the year 2024 stood at 352,998, a 3.0% decrease from the year before. Under HRD Corp's digital training landscape, digital training is divided into remote online training (in-house and public), e-Learning, mobile learning and hybrid.

Digital training offers several advantages in the learning process - enhances interactivity by increasing learning interactions and provides time and place flexibility, allowing learning interactions from anywhere and anytime, higher potential to reach a global audience, thereby widening its reach and also facilitates the improvement and storage of learning materials, making it easy to update content and archive it for future use (Hilir, 2021).

The collaborative environment of digital training fosters dynamic interactions between trainers and trainees, as well as among peers, enhancing the learning experience. The asynchronous format facilitates in-depth discussions, giving trainees time to reflect and respond thoughtfully. This approach allows individuals to focus on topics that interest them, tailoring their learning experience to their needs. Equitable participation is another benefit, as the online environment reduces biases related to age, appearance and other factors, focusing on the quality of contributions. Moreover, online learning provides access to a wide range of resources and expert insights worldwide, enriching the educational experience.

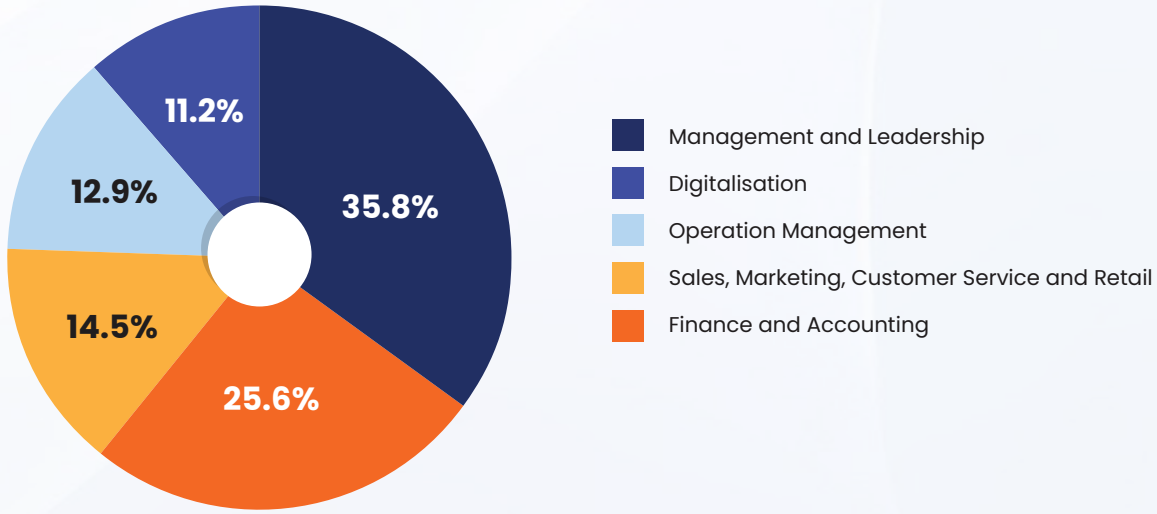
Digital formats encourage innovative teaching methods, promoting self-direction and critical thinking. Training providers can create dynamic, interactive learning environments that engage trainees and enhance their understanding of the material.

National

At the national level, the enrolment rate for digital training stands at 0.77, indicating a robust demand for such courses despite its decline from the previous rate of 0.86. During the year 2024, 12.9% of the overall enrolment were digital courses.

Management and Leadership accounted for 71.3% of the overall digital training programmes registered. Increasing the supply of digital training courses is essential to meet the evolving demands of the workforce, providing up-to-date skills and enhancing productivity. Additionally, personalised learning paths and adaptive technologies cater to individual needs and learning styles, making the experience more effective and engaging. This combination creates a powerful and efficient learning environment, enhancing both engagement and outcomes for trainees.

Figure 66: **Top Five (5) Skills Area of Digital Learning Courses Enrolments in 2024**



Based on Figure 66, Sales, Marketing, Customer Service and Retail and Digitalisation are still falling behind, largely due to hands-on training requirements and infrastructure limitations are closely related when it comes to the low adoption of digital training modes. Courses that require practical, hands-on experience, often need physical presence to practice skills. This necessity is compounded by infrastructure limitations, such as poor network connectivity and lack of access to necessary digital resources, which can hinder the delivery of high-quality digital learning experiences. Without a reliable infrastructure, even courses that could partially transition to digital formats may struggle to provide effective training.

Table 12 shows the top 10 most enrolled digital courses offered by training providers at the national level. The Food Handler racks up the highest enrolment, primarily due to rising awareness of the importance of food safety, hygiene standards and regulatory compliance in the food and beverage industry. The shift towards online learning for this course is driven by its accessibility, flexibility and cost-effectiveness, allowing individuals—especially those in the F&B sector—to complete mandatory certification at their own pace without disrupting work schedules.

Table 12: **Top 10 Enrolment in Digital Learning Courses in Year 2024**

Digital Learning Course Title	Enrolment
Food Handler	8,041
Future of Work - Intensive	4,764
TaxPOD Masterclass 3	2,288
E-Invoice Strategy	2,148
Barista Basic and Halal Awareness Training	1,759
Building Resilience to Change	1,625
Cybersecurity Awareness Training	1,311
Occupational Safety and Health Act 1994 (OSHA) Awareness	1,083
Anti-Money Laundering Act 2001 (AMLA 2001) for New Hire and Bank-wide	883
Oil & Gas Safety Passport Refresher	716



Digital training can reach a global audience, promoting diversity and continuous learning. While the rise in demand is clear, many training providers continue to face the ongoing challenge of developing attractive offerings that resonate with prospective trainees.

Manufacturing Sector

Although the Manufacturing sector continues to lead in performance, enrolment in digital training has decreased from 0.93 to 0.69. Among the training programmes registered this year, a significant percentage goes to digital training courses at 61.2%. By leveraging digital training, Malaysia can build a skilled workforce capable of driving the sector towards the targets set by NIMP 2030 as the masterplan focuses on integrating advanced technologies and digital training ensures that the workforce is equipped with the latest knowledge and skills.

Figure 67: **Percentage of Firm Size Enrolment in Digital Training Courses According to Manufacturing Sector (%)**

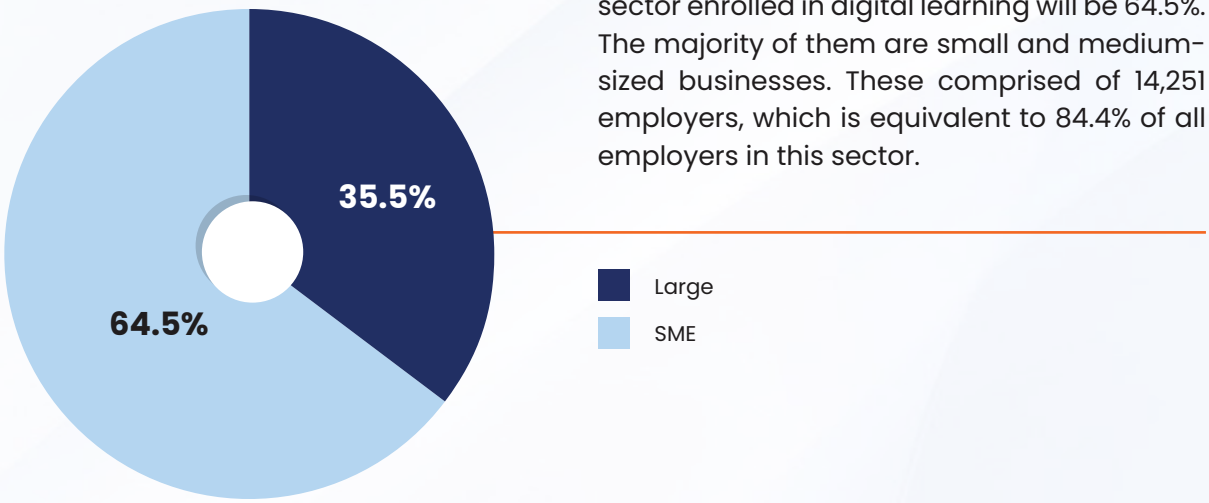
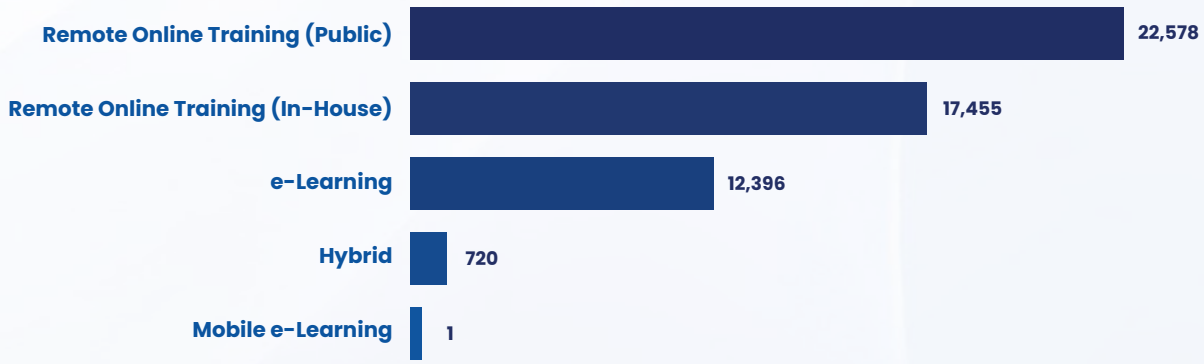


Figure 67 shows that in 2024, the percentage of registered employers in the Manufacturing sector enrolled in digital learning will be 64.5%. The majority of them are small and medium-sized businesses. These comprised of 14,251 employers, which is equivalent to 84.4% of all employers in this sector.

Figure 68: **Enrolment in Courses Conducted via Digital Training Platform in Manufacturing Sector**



Meanwhile, Figure 68 illustrates the preferred digital training platform within the Manufacturing sector. Remote online training was recorded at 40,033 due to its favourable features that allow trainees to study at their own pace and schedule, making it easier to balance their commitments while being accessible from any location (Allison Academy, n.d.). Examples of remote online training are webinars and online courses. In-house is classified as training programmes conducted by utilising its own staff and resources to educate employees on specific skills and knowledge with customisable course content.

Meanwhile, public training is typically conducted at training providers' premises and attended by trainees from different organisations and backgrounds with fixed course content.

Looking at the rather tepid growth of digital training course enrolment, training providers should enhance digital training platforms in the Manufacturing sector by integrating Augmented Reality (AR), Virtual Reality (VR), or Artificial Intelligence (AI) for immersive learning. Having said that, the training provider's development must be performed in all aspects, including the knowledge, techniques and skills related to equipment, media and tools.

Services Sector

The Services sector recorded a marginal increase in score index at 0.81 from 0.79 in digital training. In support towards the Malaysia Digital Economy Blueprint (MyDIGITAL), which aims to develop a digitally skilled workforce and enhance digital literacy, training providers continue offering accessible courses on emerging technologies like AI and the Internet of Things (IoT).

Figure 69: **Top Five (5) Digital Training Courses Enrolled in Services Sub-sectors**

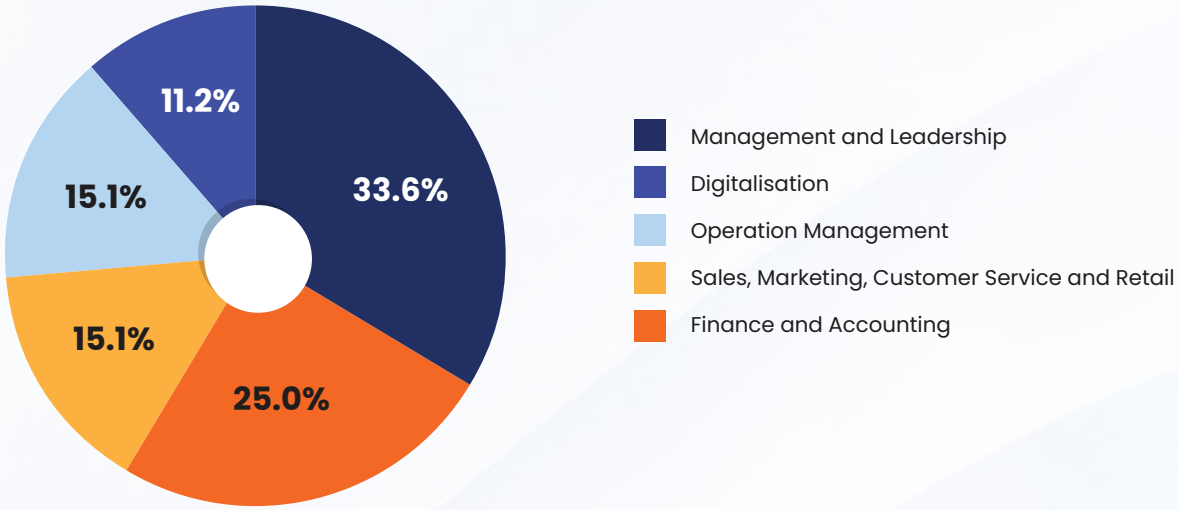


Based on Figure 69, Monetary Intermediation and Wired Telecommunications Activities are prominent sub-sectors participating in digital training offered by training providers. These sub-sectors prioritise courses like; Role Based Compliance for Personal Financial Services and CMF: Change Management Foundation, which focus on streamlining business processes and project management.

Skills areas such as Management and Leadership and Finance and Accounting are highlighted as key digital training, as shown in Figure 70. These courses are particularly valued for their versatility and applicability across the entire Services sector, besides having a digitally skilled workforce is crucial for staying competitive.

The importance of employers investing in digital training can build trust and equip their workforce to navigate these changes confidently is further supported by Future-ready Workers and Investing in People (2025).

Figure 70: **Top Five (5) Skills Area of Digital Learning Courses Enrolments in Services Sector**



Looking at the Services sector performance, training providers could further adopt an engaging teaching approach that involves accommodating various learning environments to meet diverse needs, such as allowing students to select their preferred learning platform. Enhancing learning can also involve real-time collaboration through group work, breakout rooms for discussions, Q&A sessions and free access to external resources like professional standards (Diaz-Infante et. al, 2022).

Mining and Quarrying Sector

Over the course of the year, the sector experienced a significant decline in digital course enrolments, plummeting by 98.18%, from 140,772 in 2023 to just 2,556 in 2024. This sharp reduction in participation contributed to the decrease in the sector's digital training index, which fell from 0.96 to 0.82.

One possible factor behind this decline is the nature of work in the mining industry, which relies heavily on physical, hands-on training rather than digital or online learning. Given the operational demands of the sector, such as heavy machinery handling, site safety protocols and technical fieldwork, employees may prioritise on-site, practical training over virtual courses. Additionally, limited internet access in remote mining locations and a focus on compliance-driven, in-person certifications could have further reduced digital training enrolments.

Addressing this shift may require a blended approach, integrating digital learning modules with practical, on-site applications, ensuring that workers benefit from both technological advancements and hands-on experience to enhance safety, efficiency and skill development.

Figure 71: **Enrolment in Courses Conducted via Digital Training Platform in Mining and Quarrying Sector**

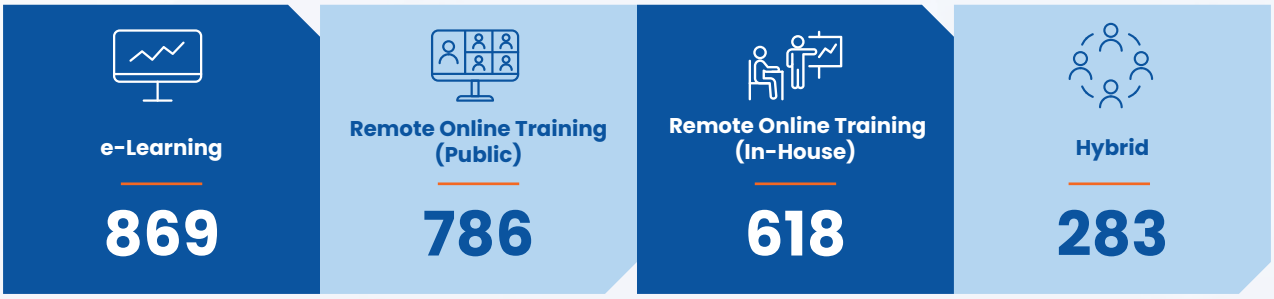


Figure 71 shows e-Learning is the most favourable type of training platform among the Mining and Quarrying sector with enrolment peaked at 869 – this highlights that the demand and supply remain healthy. e-Learning technology enables the Construction sector's employees to learn at a pace that aligns with their individual learning styles rather than conforming to the uniform pace of a larger group class (SB Skills Solutions, 2018).

Training providers must focus on career-specific skills to address employer needs quickly. Although online trainings often offer broad programmes, but training providers should target specific industry skills. This approach may require new content and project-based learning.

Malaysia is set to become an important hub—a key hub for the mineral industry due to its diverse and optimally producible mineral resources. Priorities, accountability and sustainability in the Mining and Quarrying sector activities, exploration and the production of mineral-based products are the main agenda. This focus aims to positively impact the population while minimising adverse effects on the environment, biodiversity and forests (MIDA, 2021).

Agriculture, Forestry and Fishing

Malaysia has made notable progress in modernising its agrofood system, but additional efforts are necessary for the country to achieve high-income status. In 2024, the score index dropped to 0.52 from 0.65 – the weakest index across all sectors. This highlights the urgent need to enhance productivity, efficiency and resilience to drive economic growth and secure Malaysia's food supply, especially in the face of rising demand and the increasing impacts of climate change (World Bank, 2024).

Table 13: **Listing of 10 Digital Courses in Agriculture, Forestry and Fishing Sector**

No.	Digital Course Title
1.	**Malaysian Sustainable Palm Oil (MSPO) MS 2530:2022 Internal Auditor**
2.	**Cyber Security Foundation**
3.	**Data Analytical**
4.	**Pengendali Makanan**
5.	**Occupational Safety and Health (OSH) Train the Trainer**
6.	**CQI and IRCA Certified ISO 45001:2018 Lead Auditor Training Course**
7.	**Certified Payroll Practitioner Administrations and Processing**
8.	**5-Day Energy Manager**
9.	**Halal Competency**
10.	**ICA Certificate in Compliance**

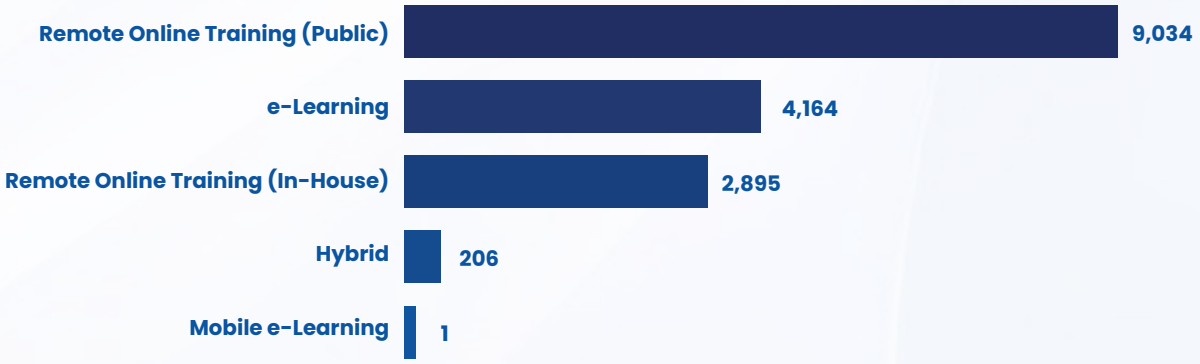
Table 13 highlights the top 10 most popular digital courses in the Agriculture sector, based on enrolment data from training providers. The Malaysian Sustainable Palm Oil (MSPO) MS 2530:2022 Internal Auditor ranks highest in enrolment, reflecting the growing awareness of the food system's significance.

Digital training is vital for the Agriculture sector and aligns with Malaysia's National Agrofood Policy 2.0 (NAP 2.0). It modernises farming through smart agriculture, promotes sustainable practices and enhances market access via e-commerce. Digital skills help farmers use advanced technologies, make informed decisions and access new markets, boosting their income. NAP 2.0 also focuses on developing a skilled workforce and fostering innovation through research and collaboration. By integrating digital training, Malaysia can achieve NAP 2.0's goals of economic growth, food security and sustainable farming.

Construction Sector

The local Construction sector is witnessing a significant revival, fuelled by a combination of increased private and public investments, a rise in infrastructure projects and a recovery in tourism (CIDB, 2024). The sector remained as the outperformer in the digital courses enrolment. As stated in 2024 In Brief: Major Infrastructures, some of the projects involved during the year are strategic investments and initiatives aimed at connectivity, sustainability and digital transformation. This is evident in digital training platform when remote online training is often the top priority to conduct training at 9,034 enrolments such as Full Course CIDB Assessment Through Method 1, The Future of OSH: Trends and Transformation in Occupational Health (OH), Construction Project Management, followed by e-Learning (4,164) as shown in Figure 72.

Figure 72: **Enrolment in Courses Conducted via Digital Training Platform in Construction Sector**



Online platforms can quickly update content to reflect the latest industry or professional standards. e-Learning's scalability on the other hand, allows training for a dispersed workforce, while advanced technologies like VR and AR provide immersiveand practical learning experiences. These benefits help improve workforce skills, safety and competitiveness in the sector.

Figure 73: **Top Five (5) Skills Area Enrolled to Digital Courses in Construction Sector**

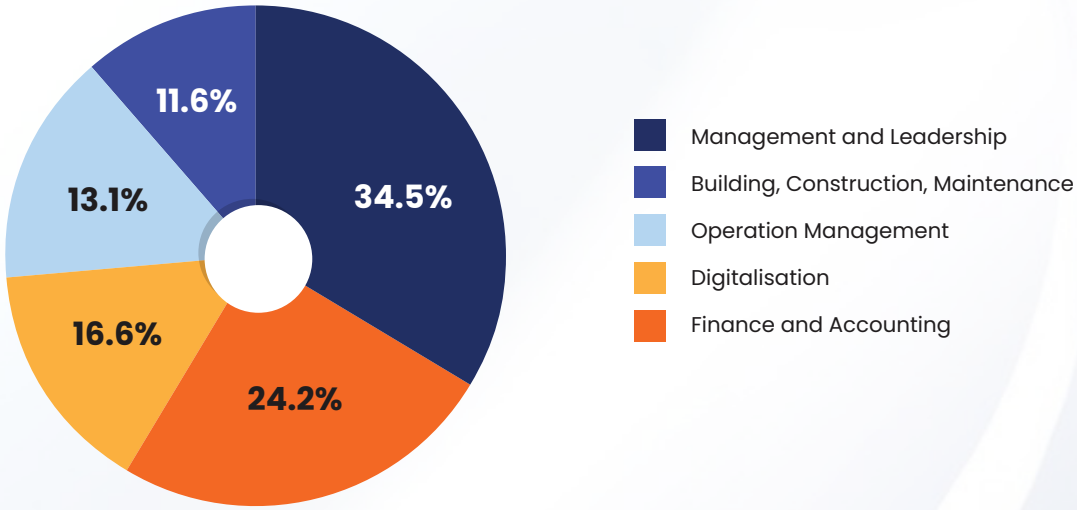


Figure 73 shows that Management and Leadership are the key skills areas in the Construction sector. The courses ensure projects meet industry standards, reducing defects and enhancing client satisfaction. Moreover, digital training in these courses enhances project outcomes, contributing to the industry's growth.

Aligning with the NCP 2030's goals to transform Malaysia's Construction sector through digitalisation, training providers' efforts do not stop at embracing digital training tools to merely enhance efficiency and competitiveness. They also promote sustainable construction practices by including modules on eco-friendly techniques and materials that support innovation, safety and sustainability.

Through this indicator – enrolment in digital training, training providers could reap numerous benefits by offering digital training courses. For instance, digital platforms offer immediate feedback and assessments, allowing trainees to track their progress and trainers to identify areas for improvement. These advantages help training providers optimise their offerings, improve trainees' satisfaction and remain competitive in the evolving education landscape.

2024 Sub-sector Training Index Scores Summary

Table 14 lists 230 sub-sectors out of 238 registered employers in 2024 based on their training index score. Of the registered employers, 50% (116) ranked at the 'Beginner' level, 44% (101) ranked at the 'Adopter' level, 5% (12) ranked at the 'Experienced' leveland only one sub-sector reached the top level of 'Leader'.

Table 14: **Sub-sector Training Index in Year 2024**

NO.	SUB-SECTOR	ECONOMIC SECTORS	INDEX 2024	CATEGORY
1.	Manufacture of Electric Motors, Generators, Transformers and Electricity Distribution and Control Apparatus	Manufacturing	0.85	Leader
2.	Radio Broadcasting	Services	0.73	Experienced
3.	Monetary Intermediation	Services	0.68	Experienced
4.	Processing and Preserving of Meat	Manufacturing	0.62	Experienced
5.	Manufacture of Motor Vehicles	Manufacturing	0.58	Experienced
6.	Manufacture of Basic Chemicals, Fertilisers and Nitrogen Compounds, Plastics and Synthetic Rubber in Primary Forms	Manufacturing	0.58	Experienced
7.	Hospital Activities	Services	0.58	Experienced
8.	Wired Telecommunications Activities	Services	0.55	Experienced
9.	Manufacture of Structural Metal Products, Tanks, Reservoirs and Steam Generators	Manufacturing	0.55	Experienced
10.	Architectural and Engineering Activities and Related Technical Consultancy	Services	0.54	Experienced
11.	Computer Programming, Consultancy and Related Activities	Services	0.52	Experienced
12.	Manufacture of plastics products	Manufacturing	0.52	Experienced
13.	Extraction of Crude Petroleum	Mining and Quarrying	0.52	Experienced
14.	Higher Education	Services	0.50	Adopter
15.	Short-Term Accommodation Activities	Services	0.49	Adopter
16.	Passenger Air Transport	Services	0.49	Adopter
17.	Manufacture of Rubber Products	Manufacturing	0.48	Adopter
18.	Retail Sale in Non-specialised Stores	Services	0.46	Adopter
19.	Support Activities for Transportation	Services	0.46	Adopter
20.	Water Collection, Treatment and Supply	Services	0.45	Adopter
21.	Transport Via Railways	Services	0.44	Adopter
22.	Postal Activities	Services	0.44	Adopter
23.	Activities of Holding Companies	Services	0.44	Adopter
24.	Manufacture of General-purpose Machinery	Manufacturing	0.44	Adopter
25.	Electric Power Generation, Transmission and Distribution	Services	0.43	Adopter

NO.	SUB-SECTOR	ECONOMIC SECTORS	INDEX 2024	CATEGORY
26.	Insurance/Takaful	Services	0.43	Adopter
27.	Manufacture of non-metallic mineral products n.e.c.	Manufacturing	0.43	Adopter
28.	Manufacture of refined petroleum products	Manufacturing	0.43	Adopter
29.	Sale of motor vehicles	Services	0.42	Adopter
30.	Tanning and dressing of leather; manufacture of luggage, handbags, saddlery and harness; dressing and dyeing of fur	Manufacturing	0.43	Adopter
31.	Manufacture of electronic components and boards	Manufacturing	0.42	Adopter
32.	Other financial service activities, except insurance and pension funding activities	Services	0.41	Adopter
33.	Manufacture of basic iron and steel	Manufacturing	0.41	Adopter
34.	Real estate activities with own or leased property	Services	0.40	Adopter
35.	Construction of buildings	Construction	0.39	Adopter
36.	Data processing, hosting and related activities; web portals	Services	0.39	Adopter
37.	Reinsurance/Retakaful	Services	0.39	Adopter
38.	Manufacture of paper and paper products	Manufacturing	0.39	Adopter
39.	Restaurants and mobile food service activities	Services	0.38	Adopter
40.	Casting of metals	Manufacturing	0.38	Adopter
41.	Wholesale of household goods	Services	0.38	Adopter
42.	Accounting, bookkeeping and auditing activities; tax consultancy	Services	0.38	Adopter
43.	Manufacture of optical instruments and photographic equipment	Manufacturing	0.38	Adopter
44.	Activities of households as employers of domestic personnel	Services	0.38	Adopter
45.	Sea and coastal water transport	Services	0.37	Adopter
46.	Management consultancy activities	Services	0.37	Adopter
47.	Other specialised wholesale	Services	0.37	Adopter
48.	Research and experimental development on natural sciences and engineering	Services	0.36	Adopter
49.	Television programming and broadcasting activities	Services	0.36	Adopter
50.	Growing of perennial crops	Agriculture, Forestry and Fishing	0.36	Adopter
51.	Fund management activities	Services	0.36	Adopter
52.	Private security activities	Services	0.35	Adopter
53.	Business support service activities n.e.c.	Services	0.35	Adopter
54.	Retail sale of other goods in specialised stores	Services	0.35	Adopter
55.	Spinning, weaving and finishing of textiles	Manufacturing	0.35	Adopter
56.	Manufacture of vegetable and animal oils and fats	Manufacturing	0.35	Adopter
57.	Advertising	Services	0.34	Adopter
58.	Other education	Services	0.34	Adopter
59.	Manufacture of glass and glass products	Manufacturing	0.34	Adopter
60.	Wholesale of food, beverages and tobacco	Services	0.33	Adopter
61.	Printing and service activities related to printing	Manufacturing	0.33	Adopter
62.	Manufacture of other food products	Manufacturing	0.33	Adopter

NO.	SUB-SECTOR	ECONOMIC SECTORS	INDEX 2024	CATEGORY
63.	Trusts, funds and similar financial entities	Services	0.33	Adopter
64.	Support services to forestry	Agriculture, Forestry and Fishing	0.32	Adopter
65.	Office administrative and support activities	Services	0.32	Adopter
66.	Mining of iron ores	Mining and Quarrying	0.32	Adopter
67.	Activities of employment placement agencies	Services	0.31	Adopter
68.	Other information service activities	Services	0.31	Adopter
69.	Activities of head offices	Services	0.31	Adopter
70.	Wholesale of machinery, equipment and supplies	Services	0.31	Adopter
71.	Courier activities	Services	0.30	Adopter
72.	Construction of roads and railways	Construction	0.31	Adopter
73.	Activities of call centres	Services	0.30	Adopter
74.	Sawmilling and planing of wood	Manufacturing	0.30	Adopter
75.	Other professional, scientific and technical activities n.e.c.	Services	0.30	Adopter
76.	Manufacture of furniture	Manufacturing	0.30	Adopter
77.	Manufacture of transport equipment n.e.c.	Manufacturing	0.30	Adopter
78.	Manufacture of coke oven products	Manufacturing	0.30	Adopter
79.	Secondary education	Services	0.30	Adopter
80.	Support activities for petroleum and natural gas extraction	Mining and Quarrying	0.30	Adopter
81.	Manufacture of tobacco products	Manufacturing	0.30	Adopter
82.	Other human health activities	Services	0.29	Adopter
83.	Real estate activities on a fee or contract basis	Services	0.29	Adopter
84.	Wireless telecommunications activities	Services	0.29	Adopter
85.	Combined facilities support activities	Services	0.29	Adopter
86.	Quarrying of stone, sand and clay	Mining and Quarrying	0.29	Adopter
87.	Manufacture of batteries and accumulators	Manufacturing	0.29	Adopter
88.	Pre-primary and primary education	Services	0.28	Adopter
89.	Retail trade not in stores, stalls or markets	Services	0.28	Adopter
90.	Warehousing and storage	Services	0.28	Adopter
91.	Silviculture and other forestry activities	Agriculture, Forestry and Fishing	0.28	Adopter
92.	Support activities to agriculture and post-harvest crop activities	Agriculture, Forestry and Fishing	0.28	Adopter
93.	Activities auxiliary to insurance/takaful and pension funding	Services	0.28	Adopter
94.	Waste treatment and disposal	Services	0.28	Adopter
95.	Activities auxiliary to financial service activities, except insurance/takaful and pension funding	Services	0.28	Adopter
96.	Satellite telecommunications activities	Services	0.28	Adopter
97.	Construction of other civil engineering projects	Construction	0.28	Adopter
98.	Manufacture of dairy products	Manufacturing	0.28	Adopter
99.	Manufacture of gas; distribution of gaseous fuels through mains	Services	0.28	Adopter

NO.	SUB-SECTOR	ECONOMIC SECTORS	INDEX 2024	CATEGORY
100.	Other specialised construction activities	Construction	0.27	Adopter
101.	Technical testing and analysis	Services	0.27	Adopter
102.	Mining of hard coal	Mining and Quarrying	0.27	Adopter
103.	Manufacture of special-purpose machinery	Manufacturing	0.27	Adopter
104.	Extraction of natural gas	Mining and Quarrying	0.27	Adopter
105.	Processing and preserving of fruit and vegetables	Manufacturing	0.27	Adopter
106.	Manufacture of sports goods	Manufacturing	0.27	Adopter
107.	Manufacture of basic precious and other non-ferrous metals	Manufacturing	0.27	Adopter
108.	Sale of motor vehicle parts and accessories	Services	0.26	Adopter
109.	Other human resources provision	Services	0.26	Adopter
110.	Retail sale of other household equipment in specialised stores	Services	0.26	Adopter
111.	Other amusement and recreation activities	Services	0.26	Adopter
112.	Electrical, plumbing and other construction installation activities	Construction	0.26	Adopter
113.	Manufacture of other chemical products	Manufacturing	0.26	Adopter
114.	Manufacture of musical instruments	Manufacturing	0.26	Adopter
115.	Manufacture of pharmaceuticals, medicinal chemical and botanical products	Manufacturing	0.25	Beginner
116.	Non-specialised wholesale trade	Services	0.25	Beginner
117.	Renting and leasing of other machinery, equipment and tangible goods	Services	0.25	Beginner
118.	Other personal service activities	Services	0.25	Beginner
119.	Animal production	Agriculture, Forestry and Fishing	0.25	Beginner
120.	Manufacture of prepared animal feeds	Manufacturing	0.25	Beginner
121.	Manufacture of other fabricated metal products; metalworking service activities	Manufacturing	0.25	Beginner
122.	Other accommodation	Services	0.25	Beginner
123.	Construction of utility projects	Construction	0.25	Beginner
124.	Motion picture, video and television programmes activities	Services	0.24	Beginner
125.	Organisation of conventions and trade shows	Services	0.24	Beginner
126.	Steam and air conditioning supply	Services	0.24	Beginner
127.	Other land transport	Services	0.24	Beginner
128.	Materials recovery	Services	0.24	Beginner
129.	Medical and dental practice activities	Services	0.24	Beginner
130.	Gambling and betting activities	Services	0.24	Beginner
131.	Sound recording and music publishing activities	Services	0.24	Beginner
132.	Beverage serving activities	Services	0.23	Beginner
133.	Travel agency and tour operator activities	Services	0.23	Beginner
134.	Maintenance and repair of motor vehicles	Services	0.23	Beginner
135.	Retail sale of information and communications equipment in specialised stores	Services	0.23	Beginner

NO.	SUB-SECTOR	ECONOMIC SECTORS	INDEX 2024	CATEGORY
136.	Logging	Agriculture, Forestry and Fishing	0.23	Beginner
137.	Manufacture of grain mill products, starches and starch products	Manufacturing	0.23	Beginner
138.	Freight air transport	Services	0.23	Beginner
139.	Retail sale of cultural and recreation goods in specialised stores	Services	0.23	Beginner
140.	Retail sale of food, beverages and tobacco in specialised stores	Services	0.23	Beginner
141.	Manufacture of games and toys	Manufacturing	0.23	Beginner
142.	Remediation activities and other waste management services	Services	0.23	Beginner
143.	Manufacture of parts and accessories for motor vehicles	Manufacturing	0.23	Beginner
144.	Demolition and site preparation	Construction	0.23	Beginner
145.	Plant propagation	Agriculture, Forestry and Fishing	0.23	Beginner
146.	Manufacture of consumer electronics	Manufacturing	0.23	Beginner
147.	Other telecommunications activities	Services	0.23	Beginner
148.	Manufacture of jewellery, bijouterie and related articles	Manufacturing	0.23	Beginner
149.	Pension funding	Services	0.23	Beginner
150.	Veterinary activities	Services	0.23	Beginner
151.	Event catering and other food service activities	Services	0.22	Beginner
152.	Inland water transport	Services	0.23	Beginner
153.	Manufacture of beverages	Manufacturing	0.22	Beginner
154.	Building completion and finishing	Construction	0.22	Beginner
155.	Manufacture of medical and dental instruments and supplies	Manufacturing	0.22	Beginner
156.	Activities of business, employers and professional membership organizsations	Services	0.22	Beginner
157.	Other social work activities without accommodation n.e.c.	Services	0.22	Beginner
158.	Building of ships and boats	Manufacturing	0.22	Beginner
159.	Sewerage	Services	0.22	Beginner
160.	Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers	Manufacturing	0.22	Beginner
161.	Camping grounds, recreational vehicle parks and trailer parks	Services	0.22	Beginner
162.	Processing and preserving of fish, crustaceans and molluscs	Manufacturing	0.22	Beginner
163.	Other reservation service and related activities	Services	0.22	Beginner
164.	Manufacture of footwear	Manufacturing	0.22	Beginner
165.	Retail sale of automotive fuel in specialised stores	Services	0.21	Beginner
166.	Sale, maintenance and repair of motorcycles and related parts and accessories	Services	0.21	Beginner
167.	Retail sale via stalls and markets	Services	0.21	Beginner
168.	Manufacture of computers and peripheral equipment	Manufacturing	0.21	Beginner
169.	Other manufacturing n.e.c.	Manufacturing	0.21	Beginner
170.	Activities of other membership organisations	Services	0.21	Beginner

NO.	SUB-SECTOR	ECONOMIC SECTORS	INDEX 2024	CATEGORY
171.	Repair of fabricated metal products, machinery and equipment	Manufacturing	0.21	Beginner
172.	Specialised design activities	Services	0.21	Beginner
173.	Cleaning activities	Services	0.21	Beginner
174.	Temporary employment agency activities	Services	0.21	Beginner
175.	Manufacture of other electrical equipment	Manufacturing	0.21	Beginner
176.	Security systems service activities	Services	0.21	Beginner
177.	Installation of industrial machinery and equipment	Manufacturing	0.21	Beginner
178.	Aquaculture	Agriculture, Forestry and Fishing	0.21	Beginner
179.	Growing of non-perennial crops	Agriculture, Forestry and Fishing	0.20	Beginner
180.	Libraries, archives, museums and other cultural activities	Services	0.20	Beginner
181.	Support activities for other mining and quarrying	Mining and Quarrying	0.20	Beginner
182.	Market research and public opinion polling	Services	0.20	Beginner
183.	Sports activities	Services	0.20	Beginner
184.	Manufacture of wiring and wiring devices	Manufacturing	0.20	Beginner
185.	Publishing of books, periodicals and other publishing activities	Services	0.20	Beginner
186.	Wholesale of agricultural raw materials and live animals	Services	0.20	Beginner
187.	Renting and leasing of motor vehicles	Services	0.20	Beginner
188.	Manufacture of electric lighting equipment	Manufacturing	0.20	Beginner
189.	Mixed farming	Agriculture, Forestry and Fishing	0.19	Beginner
190.	Renting and leasing of personal and household goods	Services	0.19	Beginner
191.	Manufacture of other textiles	Manufacturing	0.19	Beginner
192.	Waste collection	Services	0.19	Beginner
193.	Photographic activities	Services	0.19	Beginner
194.	Software publishing	Services	0.19	Beginner
195.	Wholesale on a fee or contract basis	Services	0.19	Beginner
196.	Educational support activities	Services	0.19	Beginner
197.	Manufacture of products of wood, cork, straw and plaiting materials	Manufacturing	0.19	Beginner
198.	Mining and quarrying n.e.c.	Mining and Quarrying	0.18	Beginner
199.	Repair of computers and communication equipment	Services	0.18	Beginner
200.	Creative, arts and entertainment activities	Services	0.17	Beginner
201.	Manufacture of knitted and crocheted apparel	Manufacturing	0.17	Beginner
202.	Manufacture of measuring, testing, navigating and control equipment; watches and clocks	Manufacturing	0.17	Beginner
203.	Landscape care and maintenance service activities	Services	0.17	Beginner
204.	Gathering of non-wood forest products	Agriculture, Forestry and Fishing	0.15	Beginner
205.	Residential care activities for the elderly and disabled	Services	0.15	Beginner
206.	Manufacture of air and spacecraft and related machinery	Manufacturing	0.15	Beginner

NO.	SUB-SECTOR	ECONOMIC SECTORS	INDEX 2024	CATEGORY
207.	Residential care activities for mental retardation, mental health and substance abuse	Services	0.15	Beginner
208.	Leasing of intellectual property and similar products, except copyrighted works	Services	0.15	Beginner
209.	Manufacture of domestic appliances	Manufacturing	0.15	Beginner
210.	Repair of personal and household goods	Services	0.15	Beginner
211.	Residential nursing care facilities	Services	0.15	Beginner
212.	Manufacture of wearing apparel, except fur apparel	Manufacturing	0.14	Beginner
213.	Fishing	Agriculture, Forestry and Fishing	0.14	Beginner
214.	Research and experimental development on social sciences and humanities	Services	0.14	Beginner
215.	Manufacture of railway locomotives and rolling stock	Manufacturing	0.14	Beginner
216.	Legal activities	Services	0.14	Beginner
217.	Activities of trade unions	Services	0.13	Beginner
218.	Manufacture of communication equipment	Manufacturing	0.16	Beginner
219.	Manufacture of weapons and ammunition	Manufacturing	0.12	Beginner
220.	Mining of non-ferrous metal ores	Mining and Quarrying	0.12	Beginner
221.	Administration of the State and the economic and social policy of the community	Services	0.11	Beginner
222.	Transport via pipeline	Services	0.11	Beginner
223.	Other residential care activities	Services	0.11	Beginner
224.	Manufacture of military fighting vehicles	Manufacturing	0.10	Beginner
225.	Social work activities without accommodation for the elderly and disabled	Services	0.03	Beginner
226.	Activities of extraterritorial organizations and bodies	Services	0.00	Beginner
227.	Hunting, trapping and related service activities	Agriculture, Forestry and Fishing	0.00	Beginner
228.	Manufacture of irradiation, electromedical and electrotherapeutic equipment	Manufacturing	0.00	Beginner
229.	Manufacture of man-made fibres	Manufacturing	0.00	Beginner
230.	Mining of lignite	Mining and Quarrying	0.00	Beginner

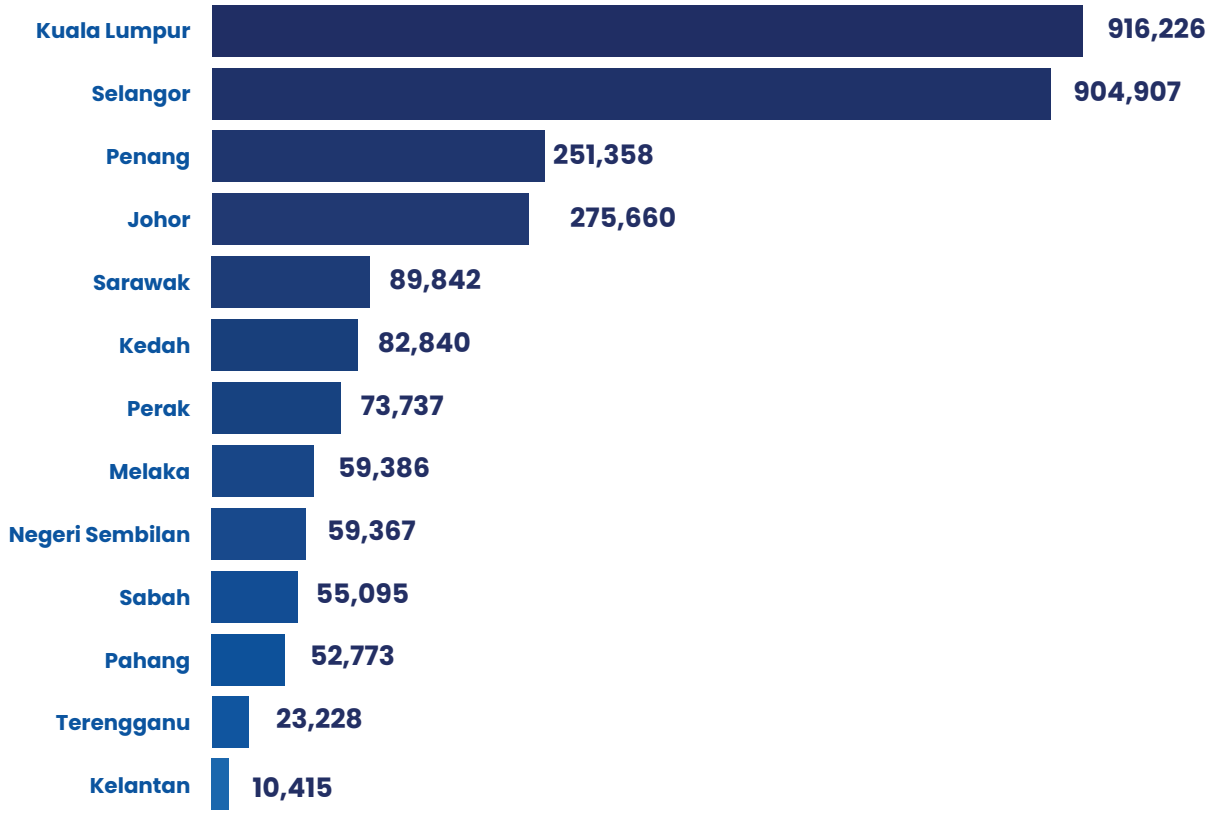


NATIONAL TRAINING INDEX 2024: STATE ANALYSIS

National Training Index 2024 at State Level

With exceptionally high training enrolments exceeding 900,000, Kuala Lumpur and Selangor exemplify regions where firms are highly committed to training and development. This strong performance indicates a robust infrastructure and a proactive approach to equipping employees with the necessary skills. Penang and Johor, with enrolments of around 250,000, also demonstrate significant engagement in training programmes. This suggests that firms in these regions are equally dedicated to enhancing their workforce's capabilities, ensuring they remain competitive and well-prepared for industry demands. The remaining states, while having lower enrolments, still reflect a positive trend in training participation. Sarawak, Kedah and Perak, with enrolments below 100,000, show potential for growth. These regions can benefit from increased investment in training initiatives, further enhancing firm preparedness and commitment. Kelantan, with just over 10,000 enrolments, presents a unique opportunity for targeted training programmes. By focusing on this region, firms can significantly boost their workforce's skills and readiness, contributing to overall regional development. Overall, the data underscores the importance of continuous investment in training across all regions. High enrolment numbers testify to firm preparedness and commitment, while lower numbers highlight areas where targeted efforts can drive substantial improvements.

Figure 74: **Training Places According to States**



Introduction for State Analysis

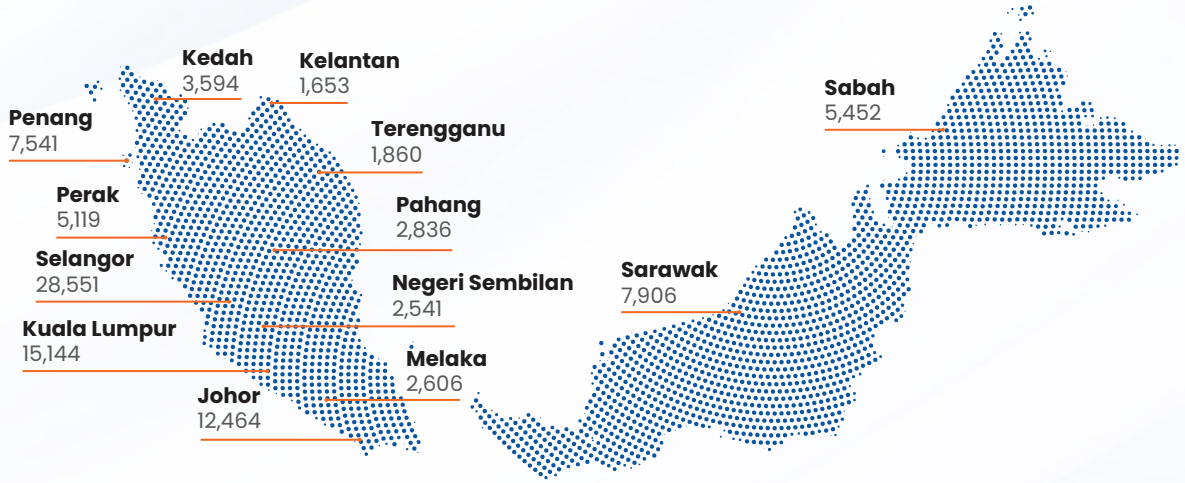
The latest edition of the NTI 2024 report features a comprehensive state analysis that reveals the performance of each state in Malaysia. This report delves into the top sub-sectors driving the state's economic performance, providing an in-depth analysis of the training landscape to identify factors contributing to high performance and areas requiring improvement.

Table 15: **NTI 2024 Index Score Across States**

Rank	State	Overall Index Score
1.	Kuala Lumpur	0.98
2.	Selangor	0.98
3.	Penang	0.80
4.	Johor	0.75
5.	Sarawak	0.67
6.	Melaka	0.67
7.	Pahang	0.67
8.	Negeri Sembilan	0.65
9.	Perak	0.64
10.	Terengganu	0.63
11.	Kedah	0.61
12.	Sabah	0.60
13.	Kelantan	0.51

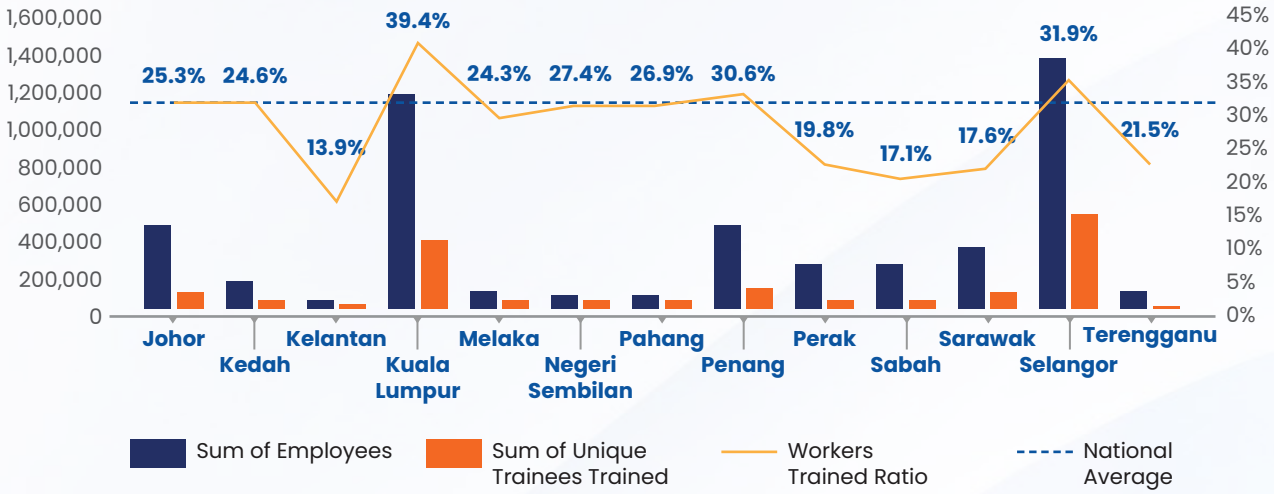
Note: Putrajaya, Perlis and Labuan were excluded because these states did not meet the minimum sample size requirement to adequately represent the entire population in the respective states.

Figure 75: **Total Registered Employers Across Malaysia**



In 2024, Malaysia saw a workforce of 4.8 million employees under the coverage of HRD Corp registered employers. Despite this impressive figure, only 1.4 million individuals, or 30% of the workforce, participated in training programmes. This reveals a significant gap in training participation, which could impact the nation's economic performance and productivity.

Figure 76: **Workers Trained Ratio Across Malaysia in 2024**



At the state level, the story unfolds with notable variations. Kuala Lumpur, Selangor and Penang emerged as frontrunners, with participation rates slightly above 30% (the national average Workers Trained Ratio). These states demonstrated a commendable commitment to upskilling and setting a benchmark for others. Conversely, states like Kedah, Negeri Sembilan, Melaka, Pahang, Sabah, Sarawak, Terengganu and Johor lagged behind, with participation rates ranging from around 17% to 27%.

The reasons behind these disparities are multifaceted. Access to training facilities, awareness of available opportunities and employers' prioritisation of staff development play crucial roles. Regions with better infrastructure and higher awareness levels naturally see higher participation rates.

Addressing these disparities is essential for building a balanced and skilled workforce across the nation. This requires a concerted effort from all stakeholders, including Government agencies, private sector organisations and educational institutions. By fostering a culture of continuous learning and development, Malaysia can enhance its economic performance and achieve sustainable growth.

This report will delve deeper into each state's economic performance, exploring the key sectors and sub-sectors driving growth and how these dynamics influence the training landscape. By understanding the unique challenges and opportunities each state faces, targeted strategies can be developed to promote workforce development and economic prosperity nationwide.

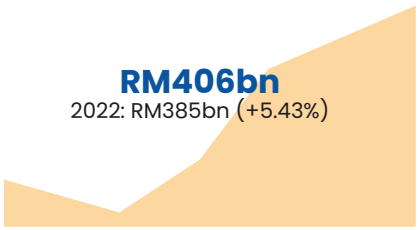
STATES | SELANGOR

Training Index 2024



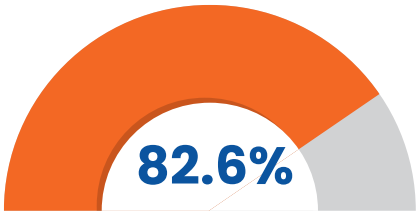
0.95
Training Index 2023

GDP (2023)



RM406bn
2022: RM385bn (+5.43%)

Levy Utilisation Rate %



Training Places

904,907

Financial Assistance

RM695.2M

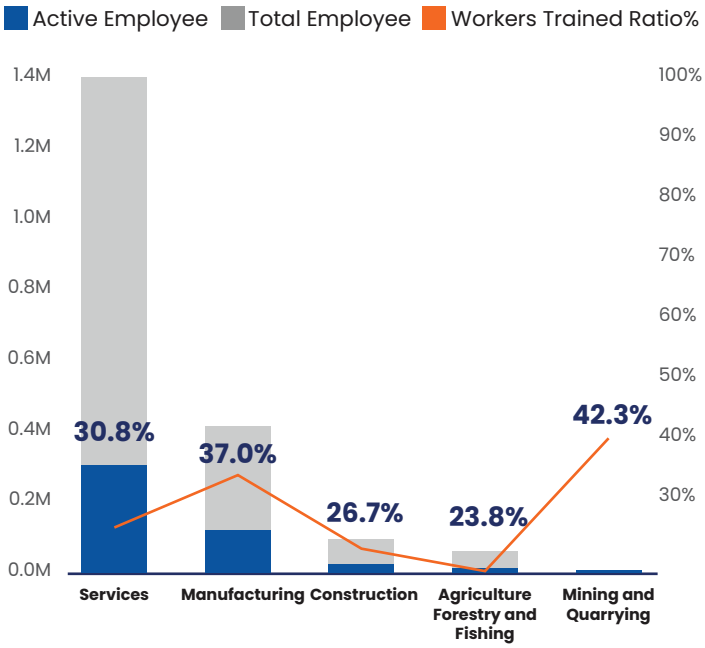
Workers Trained Ratio

31.9%

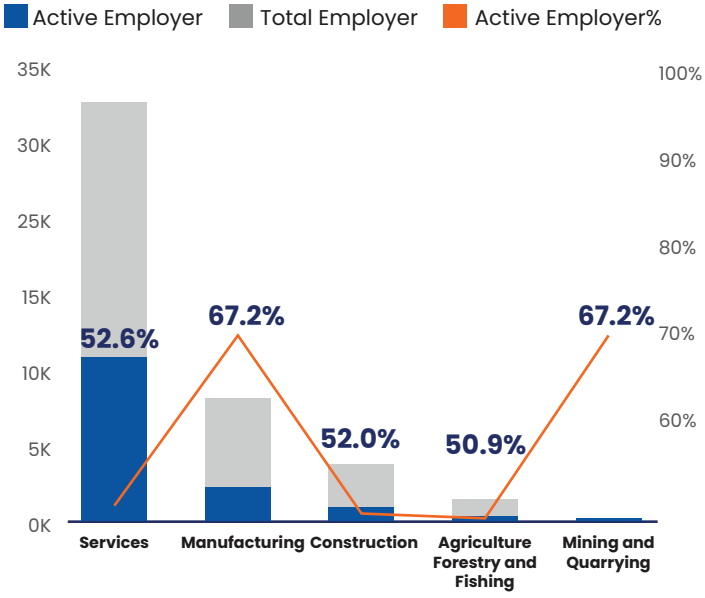
Training Duration (days)

1.62

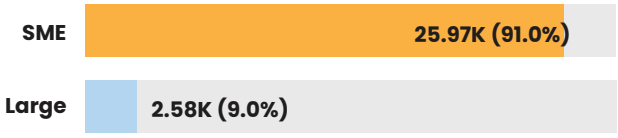
Sectors Breakdown | Workers Trained Ratio %



Sectors Breakdown | Active Employer %



Company Sizes | Number of Registered Employer



Selangor

As of 2024, Selangor remains Malaysia's economic powerhouse, poised to exceed its RM50 billion investment target for the year, driven by strong growth in the Manufacturing, Construction and Services sectors. In the first half of the year alone, the state secured RM34.9 billion in approved investments, reinforcing its position as the nation's most industrialised and urbanised state (MIDA, 2024). Selangor's strategic position in the Klang Valley, supported by robust infrastructure and a diverse economy, continues to drive growth across key sectors such as Aerospace, Logistics and the Halal industry. Major projects, including Port Klang's expansion and renewable energy initiatives, reinforce its commitment to sustainable development. On top of that, Shah Alam is emerging as a key investment hub, with developments like i-City attracting global investors and IT firms. Enhanced connectivity through LRT3 further integrates these economic hubs, solidifying Selangor's position as Malaysia's leader in industrial, technological and urban progress.

Henceforth, the Electrical and Electronics (E&E), Construction of Utility Projects and Digital & ICT Services sub-sectors are key drivers of Selangor's economic growth and industrial progress. The E&E sub-sector continues to attract strong investments, with the establishment of the Malaysian Semiconductor IC Design Park (MSICP) set to enhance Malaysia's integrated circuit (IC) design ecosystem and strengthen its position in the global market. Meanwhile, the Construction of Utility Projects sub-sector, supported by a RM304 million allocation, plays a vital role in developing essential infrastructure to sustain economic expansion. At the same time, Selangor's push for digital transformation is creating new opportunities for digital and ICT service providers, reinforcing the state's vision for smarter governance and sustainable urban development in the Klang Valley.

SUB-SECTOR 1 :

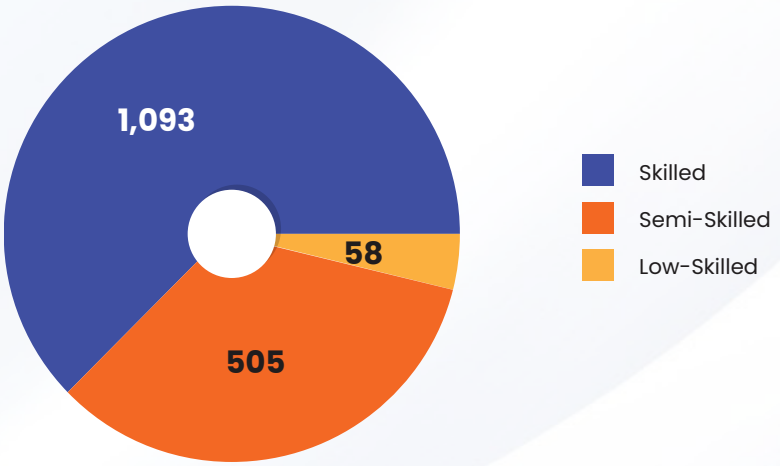
Manufacture of Electronic Components and Boards (0.75)

The Electrical and Electronics (E&E) sub-sector in Selangor experienced remarkable growth in 2024. From January to June, the state approved 821 investment projects in the Manufacturing and Services sectors, totalling RM34.97 billion in investments, with a significant portion directed towards the E&E sector. The E&E products sub-sector alone saw an 8.2% increase in sales value. A key development in this sector is the establishment of the Malaysian Semiconductor IC Design Park (MSICP) in Selangor, which aims to boost the Malaysian integrated circuit (IC) design ecosystem (MIDA, 2024). Regarding training, the NTI score reveals an impressive score of 0.75 which classified this sub-sector within the "Leader" category. This high level of training enrolment is further evidenced by the sector's impressive Workers Trained Ratio of 32%.

Number of Skilled Workers Trained (0.44)

In Selangor's Electronic Components and Boards Manufacturing sector, skilled workers make up approximately 66.0% of the workforce. This high percentage reflects the industry's strong emphasis on advanced technical skills to maintain high-quality production standards. Semi-skilled workers account for about 30.5%, indicating that many roles require intermediate skills and training. Lastly, low-skilled workers comprise approximately 3.4% of the workforce, suggesting a reduced reliance on basic labour, likely due to technological advancements and automation.

Figure 77: **Skills Level Among the Manufacturing Electronic Components and Boards Sub-sector in Selangor for the Year 2024**

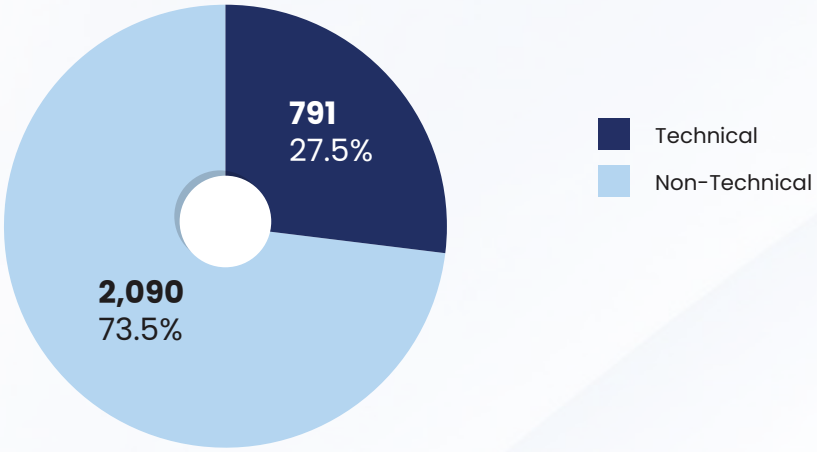


In the sub-sector of Manufacture of Electronic Components and Boards in Selangor, the distribution highlights the critical need for a highly skilled workforce. The region is known for its robust Electronics Manufacturing industry, which includes the production of printed circuit boards (PCBs), semiconductors and other electronic components. Companies in this sub-sector often require workers with specialised skills to handle complex manufacturing processes, ensure product quality and innovate in response to technological advancements. The significant presence of skilled and semi-skilled workers underscores the industry's focus on maintaining competitiveness and efficiency in a rapidly evolving market.

Enrolment in Technical Courses (0.07)

In Selangor's Electronic Components and Boards Manufacturing, the enrolment in technical courses is critically low, constituting only 27% of the total enrolment. This highlights a significant gap in the development of essential technical skills, such as soldering, PCB assembly and surface-mount technology (SMT). On the other hand, enrolment in non-technical courses makes up about 73%, suggesting that a substantial portion of the workforce is focusing on training in areas outside of technical skills. This imbalance underscores the urgent need to increase technical training to ensure the workforce is equipped with the necessary skills to maintain high-quality production standards and competitiveness in the industry.

Figure 78: **The Enrolment of Technical Courses by the Manufacture of Electronic Components and Boards in Selangor**



The importance of technical skills in this sector cannot be overstated. Technical training ensures that workers are proficient in the latest manufacturing technologies and processes, which is crucial for maintaining high-quality production standards and staying competitive in the market. To address this imbalance, it is recommended to collaborate with the Government-Industry TVET Coordination Body (GITC) and engaging with TVET Collaboration Hubs can further align training programmes with industry needs and enhance the quality of technical training. By implementing these targeted upskilling initiatives, the industry can ensure a well-rounded and versatile workforce capable of meeting the evolving demands of the Electronics Manufacturing sector.

SUB-SECTOR 2 :

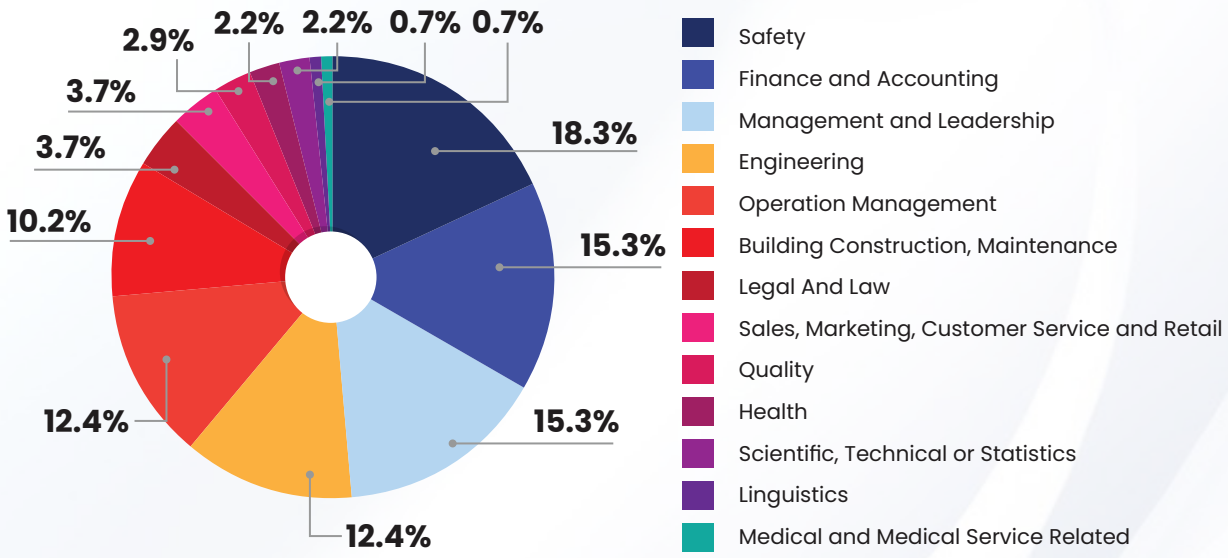
Construction of Utility Projects (0.36)

Through Selangor State Budget 2024, the Construction of Utility Projects sub-sector was granted RM304 million of allocation, which consists of utility infrastructure i.e. connecting water pipeline from Klang to Pulau Indah; and rural infrastructure development i.e. upgrading old infrastructure and providing community centres and social amenities, as well as improving connectivity between rural and urban areas (MIDF Research, 2023).

Enrolment with Certified Trainer (1.00)

Certified trainer in the sub-sector validated professional expertise in the field. Managing utility project construction complexities demands certified trainers that conduct training like contract administration, safety, contractor schedule management, specification conformance, project submittal coordination and reporting, construction document control, environmental conformance and final design/as-built documentation (Construction Management Association of America, n.d.). The year 2024 recorded 104 certified trainers subscribed by the employers under the sub-sector in Selangor.

Figure 79: **Percentage of Certified Trainers According to Skill Area Subscribed by Employers Under the Construction of Utility Projects Sub-sector in Selangor**



Skill areas such as Safety and Engineering make up 31% of certified trainers registered in the HRD Corp Claimable Course database. This highlights the importance of building design, construction and operation that through collaborative partnerships makes full use of digital technologies and techniques. These aims to improve productivity, minimise whole-life costs, improve sustainability and maximise user benefits (Construction Leadership Council, 2018).

Usage of HRD Levy (0.13)

The levy utilisation rate observed in the sub-sector was RM0.7 million, at 52%. Large companies contributed a greater percentage of the levy despite the significant disparity in training participation between employers in the SME and large enterprise sectors.

Figure 80: **Average Percentage of Levy Utilisation According to Firm Size in Construction of Utility Projects Sub-sector in Selangor**



Such hindrance is caused by information gaps that hinder SMEs' awareness of training benefits. Few see it as strategic while many are unaware of options like on-the-job training (OJT) or formal courses. This makes choosing suitable training more difficult apart from cost concerns that deter investment.

Based on the findings from the Study on the Effectiveness of the Human Resources Development Fund by the World Bank Group (2017), the results showed a 3% increase in productivity among employers registered under HRDF who had sent their employees for training either upskilling or reskilling. With this, employers indirectly promote the lifelong learning culture for the benefit of employees' career development and the firm's productivity and efficiency.

SUB-SECTOR 3 :

Computer Programmes, Consultancy and Related Activities (0.74)

The scope of computer programming, consultancy and related activities includes offering IT expertise, designing integrated computer systems, providing hosting or data processing infrastructure and other professional and technical computer-related services (MSIC, 2008). The Selangor State Government aims to enhance its digital capabilities in administration, creating business opportunities for digital and ICT service providers to address issues and challenges in Klang Valley development. The State Government is also committed to reducing emissions in the Klang Valley (MIDF Research, 2023).

Enrolment in Technical Courses (0.60)

Several factors contribute to the high enthusiasm for enrolment in technical courses within the Computer Programmes, Consultancy and Related Activities sub-sector (2024: 7,216 enrolments), including their provision of in-demand skills e.g. programming and cybersecurity, as well as excellent career opportunities with high job prospects. The flexibility these skills offer makes them highly versatile and valuable for career growth. Moreover, careers in this sector offer attractive salaries, making these courses appealing to those seeking higher earnings.

Table 16: **Top 10 Technical Courses Enrolled in Computer Programmes, Consultancy and Related Activities Sub-sector in Selangor**

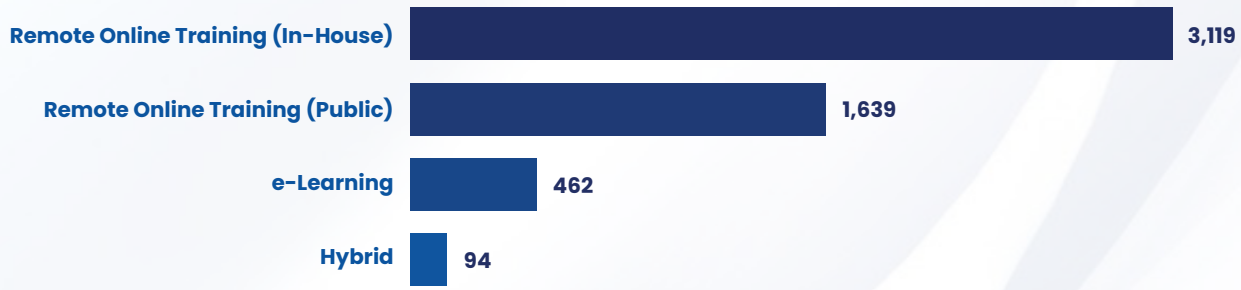
No.	Regular/Repetitive Courses
1.	**Generative AI for Non-IT and IT**
2.	**Microsoft Power Automate for End Users**
3.	**ITIL 4 Foundation**
4.	**TM Safety Passport**
5.	**Udemy for Business License**
6.	**The Rise of Digital Banks in Malaysia**
7.	**Blockchain Foundation**
8.	**Scrum Foundations**
9.	**Machine Learning**
10.	**Microsoft Power Apps for End Users**

Courses such as Generative AI, Power Automate and ITIL 4 Foundation are favourable within the sub-sector due to their sought-after skills such as programming languages, data analysis and data science, cybersecurity, web development, cloud computing and software development. This is in line with the MyDIGITAL Blueprint that emphasises the importance of robust digital infrastructure, including high-speed internet and 5G networks to support the digital economy.

Enrolment in Digital Training Courses (0.10)

Amidst the growing demand for digital skills, the Computer Programmes, Consultancy and Related Activities sub-sector often face challenges due to insufficient enrolment in digital training programmes. This gap can hinder the industry's ability to innovate and meet market needs. Addressing this issue requires targeted efforts to enhance digital literacy, provide accessible training opportunities and encourage more individuals to pursue careers in these critical areas.

Figure 81: **Enrolment in Courses Conducted via Digital Training Platform in Computer Programmes, Consultancy and Related Activities Sub-sector in Selangor**



Remote online training (in-house) recorded the highest enrolment of digital training at merely 3,119 (12%) – this translates to the most favourable platform that often can be accessed through devices such as computers offered by public trainers. Moreover, training materials can be standardised and updated easily, ensuring all participants receive the same high-quality content. Meanwhile, hybrid is the least favourable as the platform may lack the personal interaction and support that is crucial for complex problem-solving and collaborative projects.

Nonetheless, training providers can boost digital training enrolment by offering flexible and high-quality online courses tailored to sub-sector needs by collaborating with tech companies for real-world projects and certifications that can enhance course value. Besides, targeted marketing campaigns, partnerships with educational institutions and incentives like job placement assistance can attract more participants, ensuring a skilled workforce for the Computer Programmes, Consultancy and Related Activities sub-sector.

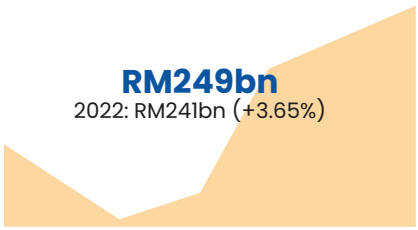
STATES | KUALA LUMPUR

Training Index 2024



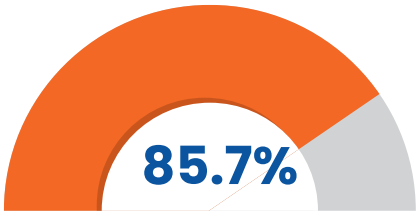
0.94
Training Index 2023

GDP (2023)



RM249bn
2022: RM241bn (+3.65%)

Levy Utilisation Rate %



Training Places

916,226

Financial Assistance

RM883.5M

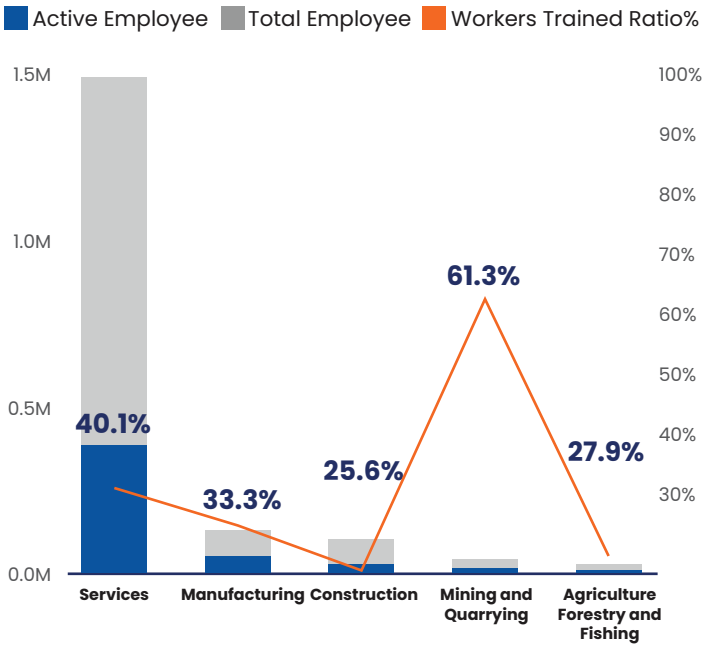
Workers Trained Ratio

39.4%

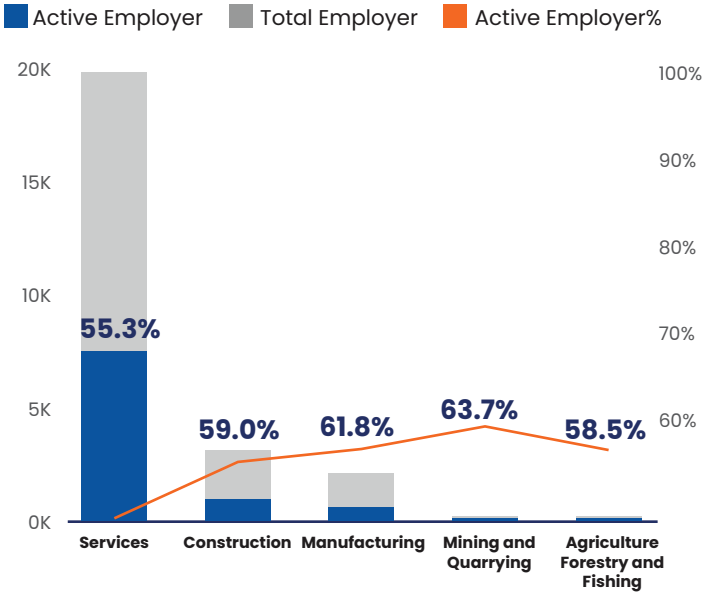
Training Duration (days)

1.74

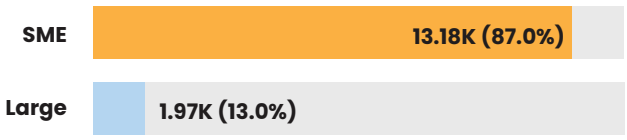
Sectors Breakdown | Workers Trained Ratio %



Sectors Breakdown | Active Employer %



Company Sizes | Number of Registered Employer



Kuala Lumpur

Kuala Lumpur achieved recognition as a 'Leader' for the second year in a row due to its high index score, which was boosted by a levy utilisation rate of 85.7% and a substantial training capacity of over 916,226 available training places. According to the Global Cities Index 2024, it emerges as a key destination in Southeast Asia, coming behind Singapore. It shows a mix of modern skyscrapers and a unique blend of historical architecture.

Based on the Department of Statistics Malaysia's Current Population Estimates Malaysia (2024), the Federal Territories are among the states/territories with the highest population density: 8,518 per km² for Kuala Lumpur, 1,100 per km² for W.P. Labuan and 2,440 per km² for W.P. Putrajaya. Nonetheless, Putrajaya and Labuan were excluded from the analyses because they did not meet the minimum sample size requirement to adequately represent the entire population in the respective states.

Dewan Bandaraya Kuala Lumpur (DBKL) allocated RM2.66 billion for the 2024 operating and development expenditures, with emphasis on various areas. Below are the key sub-sectors that underscore the commitment to enhancing the quality of life and ensuring sustainable urban development for Kuala Lumpur's residents.

At the epicentre of Kuala Lumpur, the capital city mirrors Malaysia's ambitious vision for the future of international finance, tourism and architectural development. Being the lifeblood of the city, these sub-sectors are critical in driving Kuala Lumpur's economic and human capital landscape.

SUB-SECTOR 1 :

Monetary Intermediation (0.92)

Beyond the towering skyscrapers in Tun Razak Exchange, its role as an International Financial Centre (IFC) significantly impacts Malaysia's economic growth and reputation. Thriving IFCs are magnets for top-tier talent and investment.

For this reason, the Monetary Intermediation sub-sector is selected due to its importance as the financial ecosystem leads to a skilled workforce, facilitates capital flow, strong infrastructure and an enhanced quality of life.

Number of Skilled Workers Trained (0.84)

In 2024, there are 56 registered employers under the Monetary Intermediation sub-sector in Kuala Lumpur – 25.0% SMEs and 75.0% Large employers.

Based on the NTI indicator, the number of skilled workers trained came solid at 55,877 within the sub-sector.

Figure 82: **Percentage of Skilled Workers Trained According to Employer Size in Monetary Intermediation Sub-sector in Kuala Lumpur**



Although the skilled workers not attending training gained a larger percentage, which could highlight several possible internal factors, such as perceived irrelevance to the training, lack of managerial support, or tight schedules, Figure 82 also suggests that the same group attending training is more likely to be proactive in contributing to the productivity of the organisation.

Amount of Financial Assistance Allocated for Training per Worker (0.21)

The training cost per trainee is at RM2,131, likely due to the expense of developing comprehensive training programmes and the budgets of financial institutions for such initiatives play a role when an employer sends its employees to training. Moreover, frequent regulatory changes divert resources. Meanwhile, institutions often prioritise immediate operational needs. There is a preference for cost-effective, on-the-job training over extensive certification programmes and economic constraints that further reduce training budgets.

To cushion the impact of this, employers may also implement blended learning to increase flexibility while prioritising training in areas that directly impact operational efficiency.

SUB-SECTOR 2 :

Short-Term Accommodation Activities (0.51)

Kuala Lumpur is well known as a melting pot of Southeast Asia where many different races and cultures make the city a vibrant place to visit. Initially, the main tourism hub in newly formed Malaysia, it has seen industry growth nationwide, necessitating national organisations. In addition to its finance district, Kuala Lumpur boasts premier shopping, world-class museums and a competitive culinary scene. Its growing array of hotels offers attractive rates, enhancing the city's appeal to visitors (Cobaj, 2020).

Enrolment with Certified Trainer (1.00)

It is essential for training providers to offer courses that meet industry standards and ensure quality instruction from certified trainers. This guarantees that employees gain relevant skills, builds credibility and trust, ensures compliance and safety, supports employee development, enhances organisational performance and maintains consistency in operations. Certified trainers with relevant certifications and expertise ensure the training is effective and aligned with industry needs. In 2024, there are 178 certified trainers in the sub-sector in Kuala Lumpur.

Enrolment in Technical Courses (0.09)

In the Hospitality industry, soft skills training is crucial as it enables professionals to deliver exceptional services and build lasting connections with guests. Effective communication, a key soft skill, is essential for success in the hospitality industry (Economic Times, 2023). It lays the groundwork for building strong relationships with guests and colleagues, ensuring smooth operations and exceptional service. This focus on soft skills may contribute to the lower emphasis on technical training in the Short-Term Accommodation sub-sector as illustrated in Figure 83.

Figure 83: **Top Five (5) Enrolled Courses in Short-Term Accommodation Activities Sub-sector in Kuala Lumpur**



Nonetheless, enrolling in technical/hard skills training is equally important in the hospitality industry. Skills such as reservation and booking management, housekeeping management, food and beverage service and event planning and coordination are the backbone of daily operations running efficiently.

SUB-SECTOR 3 :

Construction of Buildings (0.46)

The Construction sector in Kuala Lumpur is experiencing significant growth, driven by increased private and public investments, infrastructure projects and a rebound in tourism. Key developments include the construction of skyscrapers, residential buildings and public infrastructure. The sector's contribution to Malaysia's GDP has been steadily increasing, reflecting its vital role in the nation's economic development.

Enrolment in Regular/Repetitive Courses (1.00)

Repeating courses helps reinforce essential skills and knowledge, ensuring workers remain proficient in critical areas. It keeps workers updated with the latest industry standards and best practices which frequently change.

Table 17: **Top Five (5) Regular/Repetitive Courses Enrolled in Construction of Buildings Sub-sector in Kuala Lumpur**

No.	Regular/Repetitive Courses
1.	**Personal Track Safety**
2.	**Person In Charge At Work**
3.	**Authorised Entrant & Standby Person for Confined Space**
4.	**Awareness of Quality Management Systems (QMS) ISO 9001:2015**
5.	**Rules Regulation For Contractor Driver**

As listed in Table 17, courses such as Personal Track Safety and Corporate Induction: Our Business, Our People, Our Core Values advocate consistent reminders of safety protocols and compliance requirements, reducing the risk of accidents. A continuous training approach ensures that the workforce is both skilled and compliant with current regulations, ultimately enhancing overall performance and safety at the site.

Enrolment to Practical/Hands-on Training (0.06)

Amidst the the Construction of Building's main activities involving the on-site installation and assembly of project equipment and materials, it has shown minimal growth in practical or hands-on training, with 1,372 enrolments during the year. This decline is attributed to the influx and over-reliance on foreign workers, which reached almost 2.5 million (HR Asia, 2025). This group is not eligible for HRD Corp coverage.

To address the challenges in the Construction industry, it is essential to consider integrating automation and advanced construction technologies to reduce reliance on manual labour. This will not only enhance efficiency and productivity but also attract local workers by offering high-tech job opportunities, making the sector more appealing and sustainable for the local workforce.

One of the key thrusts of the National Construction Policy (NCP) 2030 is to improve construction productivity through strategic human resource development. Practical training equips workers with the necessary skills to use modern tools and technologies efficiently, thereby increasing productivity and reducing reliance on foreign labour.

By aligning practical training initiatives with the objectives of NCP 2030, Kuala Lumpur can build a more skilled, productive and competitive construction workforce—driving the sector towards sustainable and inclusive growth.

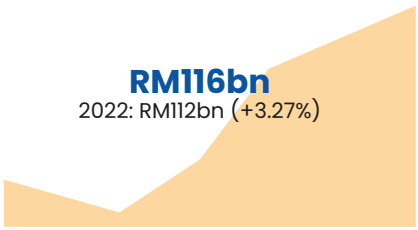
STATES | PENANG

Training Index 2024

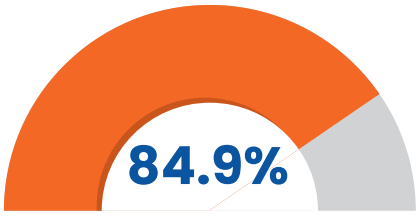


0.74
Training Index 2023

GDP (2023)



Levy Utilisation Rate %



Training Places

275,660

Financial Assistance

RM202.5M

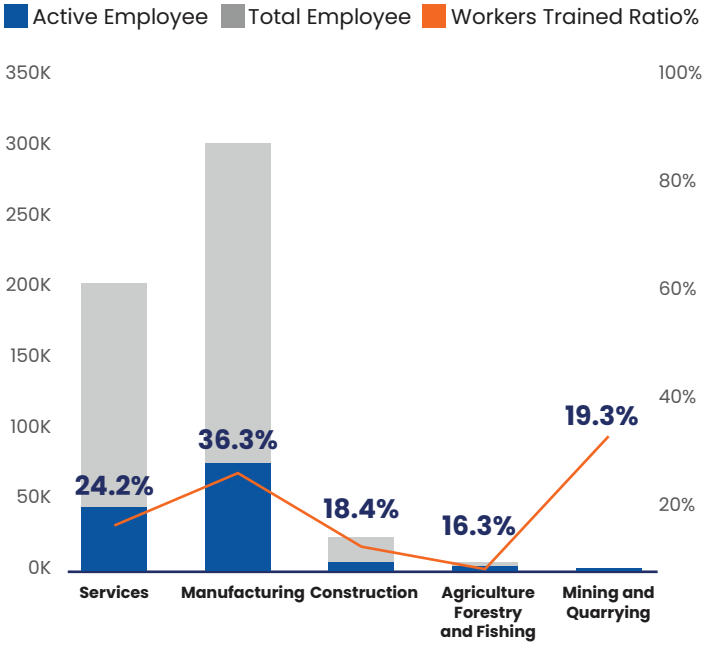
Workers Trained Ratio

30.6%

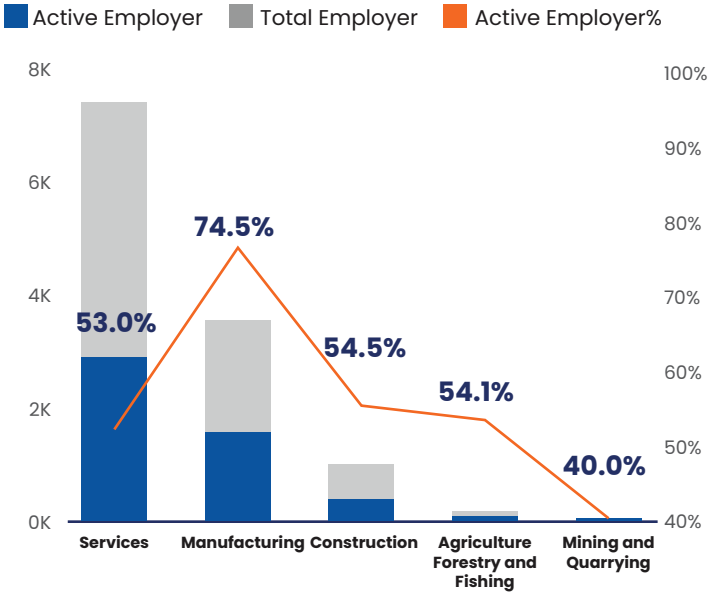
Training Duration (days)

1.57

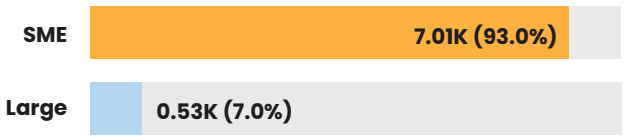
Sectors Breakdown | Workers Trained Ratio %



Sectors Breakdown | Active Employer %



Company Sizes | Number of Registered Employer



Penang

Penang, widely known as the 'Pearl of the Orient,' is a key economic powerhouse in Malaysia. Recognised as the 'Silicon Valley of the East,' it stands out for its thriving industrial sector and technological advancements (Penang State Structure Plan, 2030). The manufacturing and services sectors were the primary contributors to Penang's GDP, collectively accounting for 94.5%, with manufacturing contributing RM55.7 billion and services RM53.9 billion in 2023. This underscores the state's strong industrial foundation and expanding service sector.

The dominance of semiconductor-related and precision engineering industries is evident in manufacturing, as they collectively account for 88.8% of the state's total approved manufacturing investment. This underscores their strategic importance in sustaining Penang's position as a high-tech industrial hub. Meanwhile, in the services sector, targeted upskilling efforts in hospitality ensure that service excellence aligns with international standards, reinforcing Penang's reputation as a premier global tourism destination. The Restaurants and Mobile Food Service Activities sub-sector plays a crucial role in this landscape, as Penang's renowned street food scene continues attracting visitors worldwide. Beyond enhancing the tourist experience, this sub-sector significantly contributes to the local economy by generating employment opportunities and supporting small businesses, further cementing its economic relevance.

SUB-SECTOR 1 :

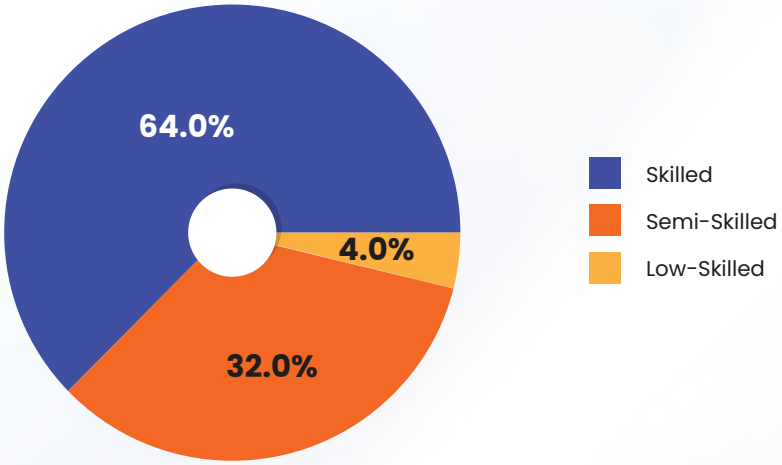
Manufacture of Electronic Components and Boards (0.43)

The Electrical & Electronics (E&E) industry represented the most significant contributor to manufacturing investment for the last decade (2013-2022), contributing 71.4% of total investments, followed by Machinery & Equipment (M&E) (11.2%) and Scientific & Measuring Equipment (6.2%) (Penang Institute, 2023). E&E also serves sectors specialising in semiconductors, medical technology and avionics, as well as their components and equipment production.

Number of Skilled Workers Trained (0.50)

The Manufacture of Electronic Components and Boards sub-sector in Penang's Electrical & Electronics (E&E) sector has a high proportion of skilled workers due to its critical dependence on advanced technical expertise. As of 2024, skilled employees constitute 63.8% (78,009 workers) of the total workforce, significantly surpassing semi-skilled (32.6%) and low-skilled (3.6%) workers. This high concentration of skilled talent is driven by the sector's need for specialised knowledge in semiconductor manufacturing, precision engineering and advanced electronics production. Given the rapid technological advancements in microelectronics, automation and artificial intelligence integration, companies in this sub-sector require a workforce proficient in research and development (R&D), complex problem-solving and high-precision manufacturing processes. Penang's role as a global hub for E&E manufacturing further reinforces the demand for skilled workers, where firms must continuously innovate to remain competitive in the international market.

Figure 84: **Workers Trained According to Skill Category in the Manufacture of Electronic Components and Boards for the Year 2024.**

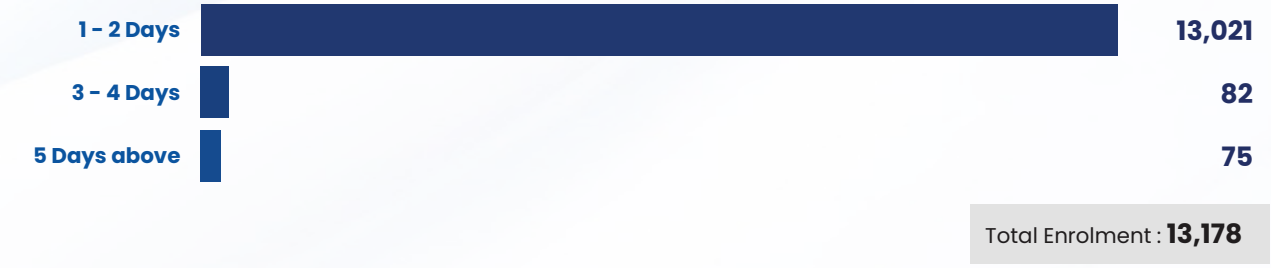


Number of Training Days Attended (0.08)

Training activities in this sub-sector were concentrated mainly in short-term sessions, with 13,021 sessions lasting 1-2 days, making it the most common training duration. This trend suggests that training is designed to be quick and efficient, allowing employees to gain necessary skills without significantly disrupting daily operations.

Given the structured and process-driven nature of the sector, shorter training sessions likely cater to immediate skill application and compliance requirements while ensuring production continuity.

Figure 85: **Enrolment based on Training Duration for Manufacture of Electronic Components and Boards Sub-sector in Penang**



Longer training durations were significantly lower, with only 82 enrolments recorded for 3-4 days and 75 sessions for programmes lasting five days or more. The limited number of extended training sessions may indicate that in-depth or specialised training is conducted less frequently, possibly reserved for more advanced roles or specific upskilling needs. The industry's clear preference for short-term training reflects its focus on efficient workforce development, balancing skill enhancement with operational demands.

SUB-SECTOR 2 :

Short-Term Accommodation Activities (0.35)

The Penang Tourism Master Plan 2021–2030 outlines a strategic vision to position Penang as a premier, sustainable, diversified and innovative tourism destination. The plan is built on four key pillars: Diversifying tourism products, establishing Penang as a leading destination, promoting sustainable and responsible tourism and enhancing innovative tourism initiatives. Aligned with national development plans, Penang 2030 emphasises the diversification and enhancement of the state's tourism offerings to elevate its global appeal. The strategy aims to position Penang as a top destination for health, business, culture and ecotourism, with a strong focus on high-value tourism products and services. Additionally, upskilling the hospitality workforce remains a key priority to ensure service excellence meets international standards, further strengthening Penang's reputation as a world-class tourism hub.

Number of Certified Trainer (1.00)

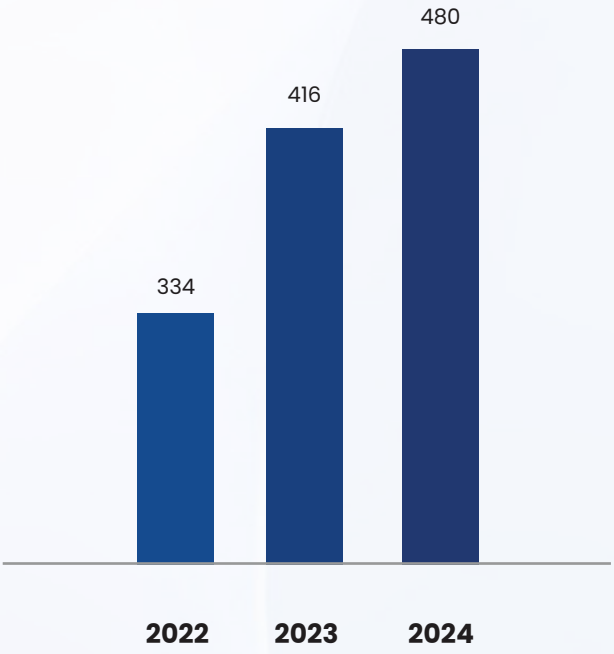
The enrolment of employees under certified trainers in the Short-Term Accommodation Activities sub-sector in Penang has steadily increased over the past three years, reflecting a growing emphasis on structured and quality-driven training.

This upward trend suggests expanding the availability of certified training providers, with more industry professionals obtaining credentials to deliver specialised training.

Furthermore, the consistent enrolment highlights the sector's commitment to workforce development, ensuring that employees receive up-to-date skills and knowledge aligned with evolving industry standards.

This increase enhances service quality within the accommodation sector and strengthens Penang's position as a leading hospitality destination by fostering a highly skilled and competitive workforce.

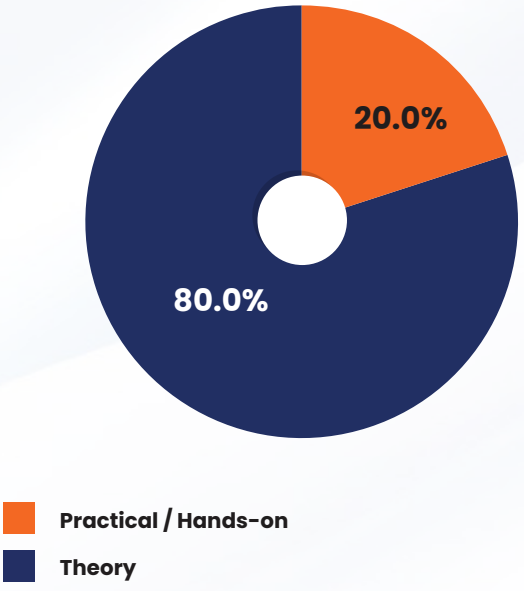
Figure 86: **Number of Enrolment with Certified Trainer in Short-Term Accommodation Activities Sub-sector in Penang for the year 2022-2024**



Enrolment in Practical/Hands-On (0.06)

Training programmes in Penang's Short-Term Accommodation Activities sub-sector were predominantly theoretical, with 4,321 enrolments, while only 1,049 practical training enrolments were conducted. This highlights a stronger emphasis on theoretical learning, such as industry regulations, customer service principles and business management, rather than direct hands-on skill development. While theoretical training is valuable for building foundational knowledge, it may not fully prepare employees for real-world operational demands, especially in a service-driven industry where direct interaction and on-the-job skills are crucial.

Figure 87: **Number of Enrolment of Practical/Hands-On and Theoretical Training in Short-Term Accommodation Activities Sub-sector**



The relatively low number of practical training sessions suggests that many workers may lack hands-on experience in essential tasks such as hospitality service execution, front desk operations, housekeeping efficiency and digital tourism tools. Technical and practical skills are critical in enhancing service quality, improving guest satisfaction and ensuring operational efficiency, as they allow employees to apply learned concepts in real-life scenarios. Without adequate hands-on training, workers may struggle with on-the-spot problem-solving and adaptability, which are crucial in a fast-paced hospitality environment. Increasing the emphasis on practical training could bridge this gap, boost workforce competency and enhance overall industry standards, ensuring that employees are not only knowledgeable but also skilled in delivering high-quality service.

To address the shortage of practical training in the Hospitality sector, a structured apprenticeship programme should be introduced in collaboration with hotels, travel agencies and tourism boards. These programmes should offer hands-on learning opportunities, allowing trainees to gain experience in front desk operations, housekeeping and digital tourism tools under real-world conditions. Additionally, the adoption of simulated training environments using Virtual Reality (VR) and AI-based role-playing scenarios can help workers refine problem-solving skills in guest service and crisis management. This approach enables interactive learning experiences replicating real hospitality challenges without disrupting daily operations. Encouraging industry-led training partnerships, where professionals mentor trainees, can further enhance workforce competency and service quality.

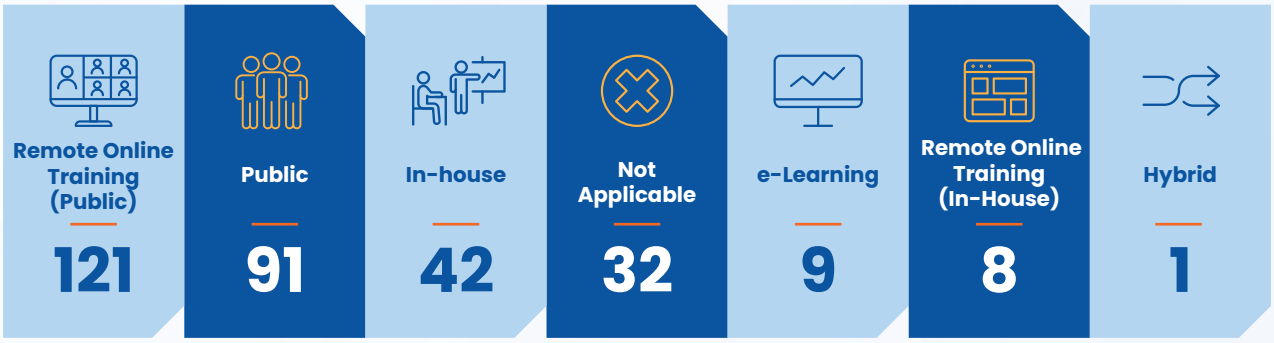
SUB-SECTOR 3 :

Restaurants and Mobile Food Service Activities (0.19)

Penang is widely recognised as the 'Food Capital of Malaysia' and its culinary scene is a major tourist attraction. According to a study by Penang Institute (2022), the unique mix of culture, heritage and food makes Penang one of the most popular tourist destinations. High-quality food services enhance the overall tourist experience, leading to higher visitor satisfaction and encouraging repeat visits. Additionally, the integration of smart tourism initiatives, such as digital payment systems and online food delivery services, modernises the food service industry and aligns with sustainable tourism practices. Thus, the Restaurant and Mobile Food Service sub-sector is vital for showcasing Penang's rich culinary traditions, boosting the local economy and enhancing the overall tourism experience.

The Restaurant and Mobile Food Service Activities sub-sector in Penang strongly preferred remote online (public) and public training, which recorded the highest participation. The high engagement in remote online training (public) suggests that many trainees opted for a flexible learning approach, allowing them to upskill without affecting their work schedules. This training mode is likely favoured due to its convenience, enabling employees to access learning materials remotely while balancing operational responsibilities.

Figure 88: **Enrolment Based on Methodologies for the Restaurants and Mobile Food Service Activities Sub-sector in Penang**



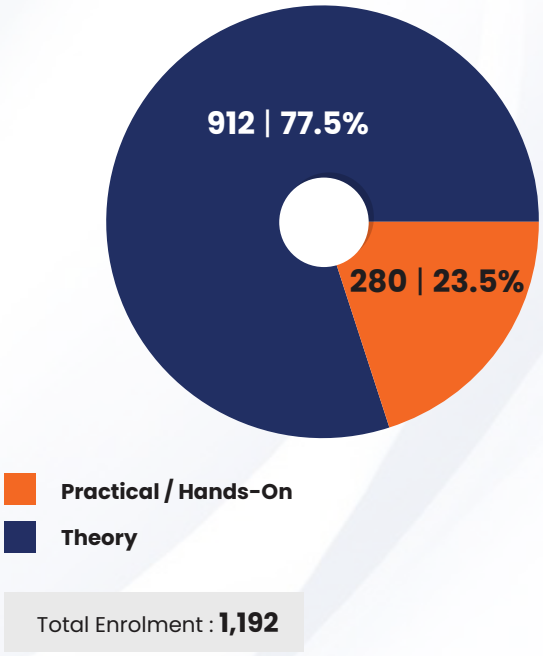
Similarly, the significant participation in public training indicates that many workers attended structured, in-person training sessions conducted by external providers. This reflects the industry's reliance on formal training programmes to equip employees with relevant skills. The preference for accessible and widely available training formats highlights efforts to enhance workforce competency while accommodating the fast-paced nature of the food service sector.

Enrolment in Practical/Hands-On (0.01)

The Restaurants and Mobile Food Service Activities sub-sector in Penang recorded higher participation in theoretical training, which made up 77% of the total training conducted, while practical or hands-on training accounted for only 23%. This indicates a stronger focus on training that is more knowledge-based rather than skill application. Non-practical training may be more accessible or preferred due to its structured format, allowing participants to complete sessions without direct workplace involvement.

Meanwhile, the lower number of practical training enrolments suggests fewer opportunities for hands-on learning experiences. As this sub-sector involves a high level of operational tasks, increasing practical training participation could help strengthen workforce capabilities and improve overall industry standards. A more balanced approach between practical and non-practical training may enhance skill application and efficiency in daily operations.

Figure 89: **Number of Enrolment of Practical/Hands-On Restaurants and Mobile Food Service Activities Sub-sector in Penang**



Number of Training Days Attended (0.02)

In Penang's Restaurants and Mobile Food Service Activities sub-sector, training is predominantly short-term, with 1–2 day sessions being the most common, totalling 1,124 enrolments.

This preference for brief training programmes allows employees to quickly enhance their skills without significant disruptions to their work schedules, which is crucial in fast-paced environments.

Figure 90: **Number of Enrolment by Training Duration for Restaurants and Mobile Food Service Activities Sub-sector in Penang**

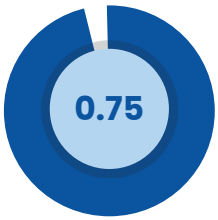


For example, a common short-term training might focus on food safety and hygiene, ensuring staff can handle food properly and maintain cleanliness standards. Conversely, longer training sessions of 3-4 days and beyond five days were much less frequent. An example of a longer-duration course could be a comprehensive restaurant management programmes that covers topics such as labour cost management and customer service strategies and a more complex example might include a multi-week culinary arts programme, where participants learn advanced cooking techniques, kitchen management and menu development, providing in-depth skills that are essential for career advancement in the culinary field. This indicates that extended courses may be impractical due to time constraints and operational demands, highlighting the industry's need for efficient, focused learning approaches that deliver immediate, applicable skills.



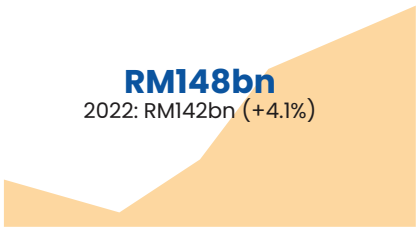
STATES | JOHOR

Training Index 2024



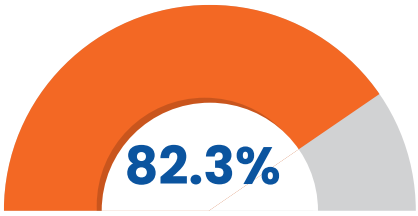
0.73
Training Index 2023

GDP (2023)



RM148bn
2022: RM142bn (+4.1%)

Levy Utilisation Rate %



Training Places

251,358

Financial Assistance

RM193.5M

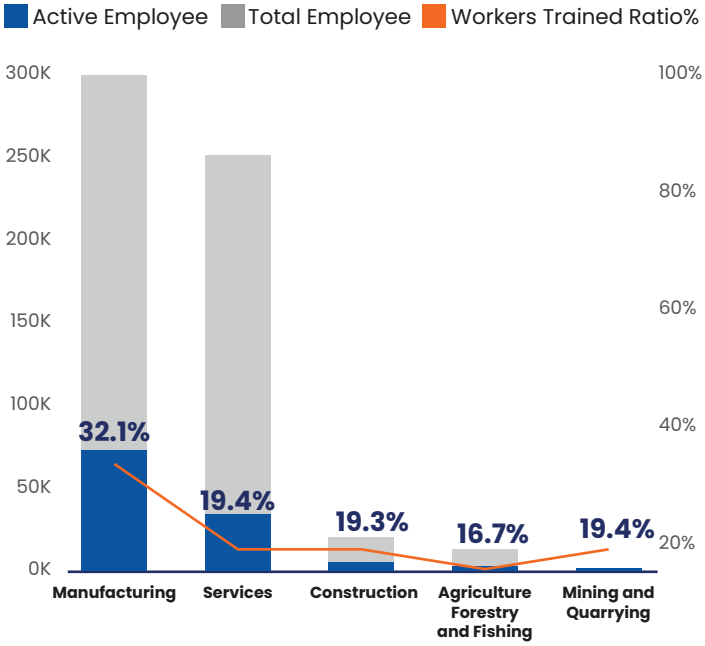
Workers Trained Ratio

25.3%

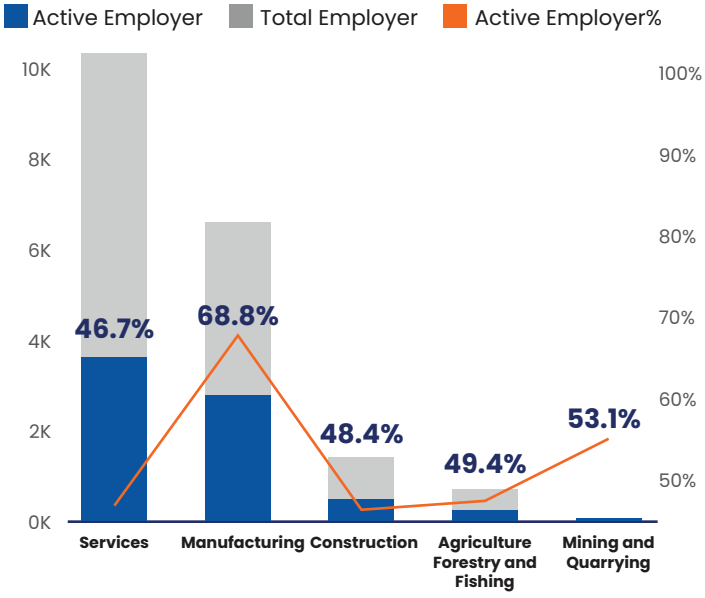
Training Duration (days)

1.91

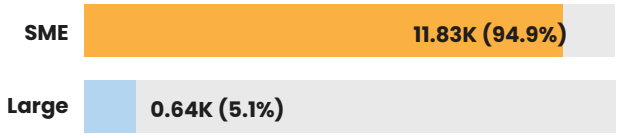
Sectors Breakdown | Workers Trained Ratio %



Sectors Breakdown | Active Employer %



Company Sizes | Number of Registered Employer



Johor

As one of Malaysia's fastest-growing states, Johor is a key driver of economic expansion, supported by various high-impact industries. In 2023, Johor's gross domestic product (GDP) was RM148.2 billion, accounting for 9.6% of Malaysia's GDP (DOSM, 2024).

Johor plays a vital role in Malaysia's economy, with several major sectors driving its growth. According to *Laporan Ekonomi Negeri Johor Darul Ta'zim 2023/2024*, the state's economic expansion is fueled by strategic industries. The oil and gas sector, anchored by the Pengerang Integrated Petroleum Complex (PIPC), has attracted substantial investments, solidifying Johor's position in the energy and petrochemical industry (BPENJ, 2024). Logistics and Trade continue to thrive due to Johor's strategic location near Singapore and major shipping routes, making it a pivotal hub for regional and international trade. The Tourism sector remains a strong contributor to economic growth, driven by world-class attractions such as Legoland Malaysia, Desaru Coast and various eco-tourism destinations in the southern region, significantly boosting the service industry and tourist arrivals. Therefore, to further discuss on the sector, based on:

SUB-SECTOR 1 :

Other Amusement and Recreation Activities (0.18)

As of 2023, Johor's tourism sector attracted over 16 million foreign visitors, with a substantial number from Singapore. In terms of domestic tourism, Johor recorded approximately 15.8 million domestic visitors in 2023, up from 12.4 million in 2022.

Based on Bajet Johor 2024, Johor seems to be prioritising Other Amusement and Recreation Activities, as it aligns with the budget on upgrading national parks, hosting international events and developing recreational tourism infrastructure. Based on the National Training Index (NTI), the sub-sector scored 0.18, placing it in the 'Beginner' category. This suggests that while the sector is growing, there is room for improvement in firm preparedness, worker skills development and training provider effectiveness.

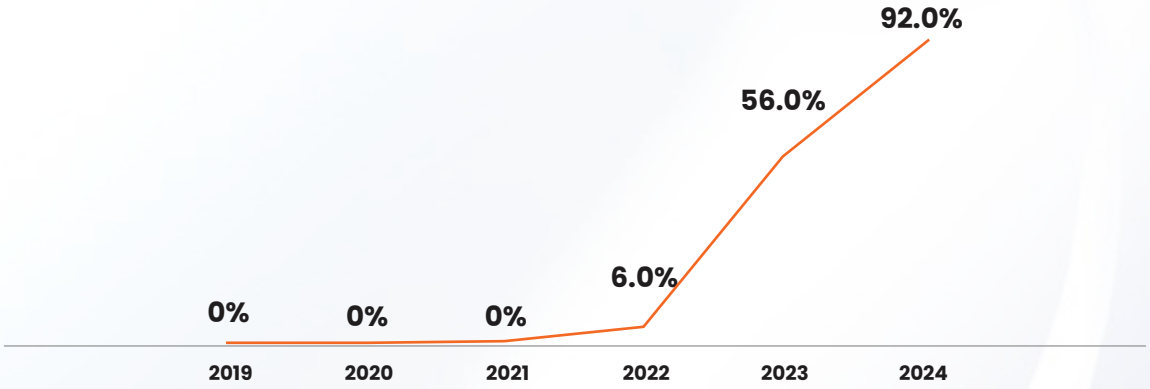
Enhancing Workforce Development in the Amusement and Recreation Sub-sector in Johor

Utilisation Rate of HRD Corp Levy (0.03)

The Other Amusement and Recreation Activities sub-sector was newly covered under HRD Corp's mandate following the expansion of the PSMB Act 2001 on 1 March 2021. This expansion widened HRD Corp's coverage from 63 to 238 sub-sectors across five (5) economic sectors, with this sub-sector beginning active participation in 2022.

The levy utilisation rate within this sub-sector remains notably low, as reflected in its average training index score of 0.03. This suggests that despite the availability of training funds, employers within the amusement parks, recreational centres and cultural attractions segment have yet to fully leverage levy contributions for workforce development.

Figure 91: **Levy Utilisation by Year in Johor (2019-2024)**
Other Amusement and Recreation Activities



The levy utilisation rate for the Other Amusement and Recreation Activities sub-sector in Johor has shown a dramatic increase from 2019 to 2024. Starting at 0% in 2019 and remaining stagnant through 2021 primarily because it was a newly covered sub-sector. The rate saw a significant rise to 6% in 2022. This upward trend accelerated sharply in the following years, reaching 56% in 2023 and an impressive 92% in 2024. This substantial growth in levy utilisation indicates a heightened commitment to investing in workforce development and training within the sub-sector. The increased allocation of levies towards training initiatives reflects a strategic focus on enhancing employee skills and competencies, which is essential for maintaining competitiveness and fostering innovation. This proactive approach aligns with global best practices, as emphasised by the International Labour Organisation (ILO), which advocates for continuous professional development to boost productivity and economic growth. The significant rise in levy utilisation underscores the importance of equipping the workforce with the necessary skills to thrive in the evolving amusement and recreation industry, ultimately contributing to Johor's economic vitality and development.

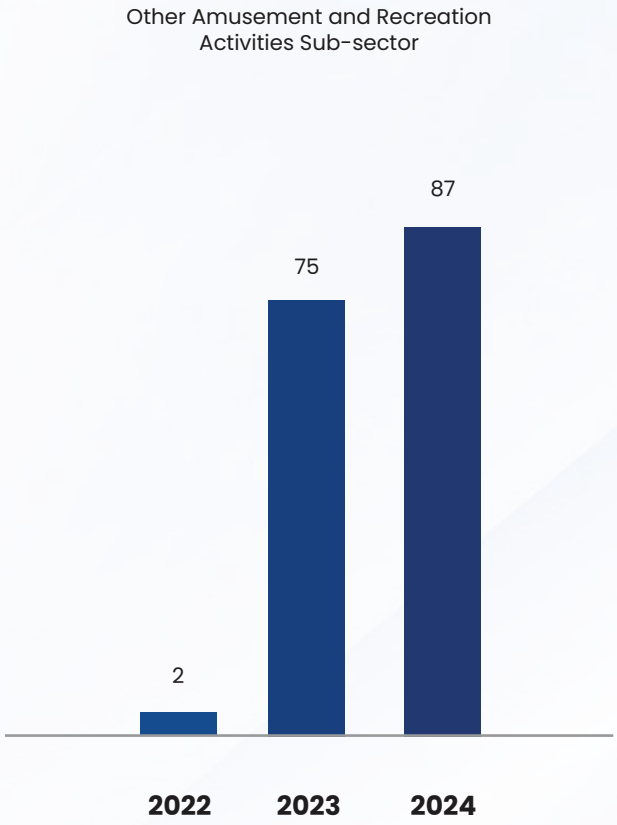
Strengthening Practical and Hands-on Training in the Amusement and Recreation Sub-sector (0.02)

The participation in practical or hands-on training within the Other Amusement and Recreation Activities sub-sector remains critically low, as reflected in its National Training Index (NTI) score of 0.02 in 2024. This indicates a significant underinvestment in skills-based training, which is essential for employees in this sector to deliver high-quality visitor experiences and maintain operational excellence. Unlike theoretical knowledge, hands-on training directly impacts service delivery, customer engagement and workplace efficiency, making it a crucial element for businesses in the industry (OECD, 2015). However, several challenges hinder participation in such training initiatives.

One major factor contributing to this low participation rate is the limited awareness of training incentives among employers and employees. According to the International Labour Organisation (ILO, 2022), sectors with a high concentration of SMEs often struggle to invest in employee training due to resource constraints and a lack of tailored programmes that fit their operational needs.

Additionally, operational constraints, such as irregular working hours and the seasonal nature of the industry, make it difficult for employees to engage in structured learning, further contributing to low training participation (OECD, 2023).

Figure 92: **Enrolment in Hands-On/Practical Training by Year in Johor (2022-2024)**



The National Training Index for 2024 reveals a significant upward trend in total enrolment for hands-on/practical training within the Other Amusement and Recreation Activities sub-sector in Johor. Starting with a modest 2 participants in 2022 due to newly covered sub-sector, enrolment surged to 75 in 2023 and further increased to 87 in 2024. This remarkable growth underscores the rising importance of practical training in enhancing the skills and competencies of the workforce in this dynamic sub-sector. The increasing enrolment figures reflect a proactive approach by employers and training institutions in Johor to equip their employees with the necessary hands-on experience and technical know-how. This trend aligns with global best practices, as emphasised by the International Labour Organisation (ILO), which advocates for continuous professional development to boost productivity and economic growth. The focus on practical training is crucial for maintaining a competitive edge and fostering innovation in the amusement and recreation industry, ultimately contributing to Johor's economic vitality and development.

SUB-SECTOR 2 :

Support Activities for Petroleum and Natural Gas Extraction (0.24)

In 2024, Johor's economic performance in the Support Activities for Petroleum and Natural Gas Extraction industry has been notably strong. The state has benefited from significant investments and strategic initiatives aimed at boosting the oil and gas industry. Johor's strategic location, coupled with its advanced infrastructure, has made it an attractive hub for multinational companies involved in petroleum and natural gas extraction. The Johor-Singapore Special Economic Zone (JS-SEZ) and the Special Financial Zone (SFZ) in Forest City have played crucial roles in attracting foreign investments, enhancing the state's infrastructure and creating a conducive environment for the Oil and Gas sector to thrive (Johor Petroleum Development Corporation, 2024). According to the Malaysian Investment Development Authority (MIDA, 2024), Johor has seen a substantial increase in approved projects related to the oil and gas sector, contributing significantly to the state's economic growth. The World Bank (2024) also highlights that these developments are expected to sustain Johor's economic expansion, making it a key player in Malaysia's overall economic performance.

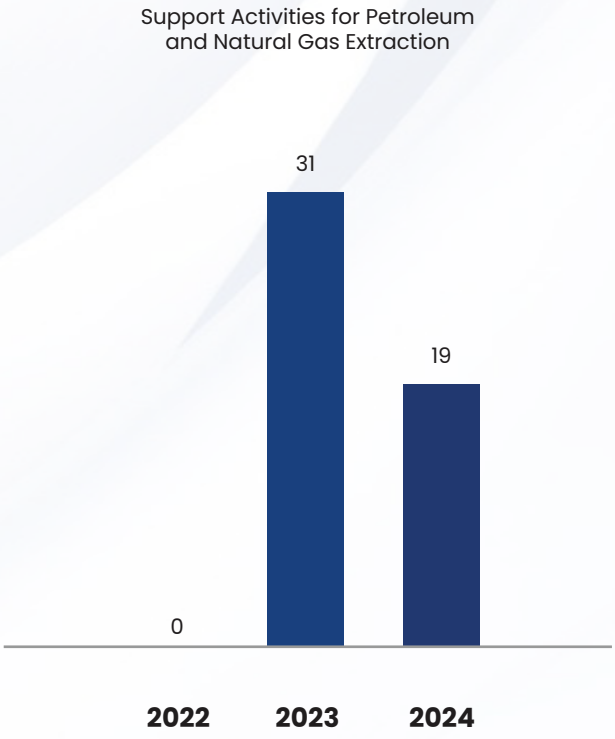
Skilled Workers Trained (0.50)

There are 19 skilled workers in Johor's Support Activities for Petroleum and Natural Gas Extraction sub-sector who participated in upskilling and reskilling programmes. During the year, only workers categorised as skilled attended these training sessions, reflecting the sub-sector's focus on enhancing specialised competencies. According to the National Training Index (NTI), the index for the number of skilled workers trained in this sub-sector stands at 0.50. This initiative aligns with broader efforts to improve workforce capabilities and competitiveness, as highlighted by the International Labour Organisation (ILO) and the World Bank. These efforts are crucial for maintaining a competitive edge in the global market and ensuring sustainable economic growth in the region.

In addition to the general upskilling and reskilling programmes, skilled workers in this sub-sector for the state enrolled in several targeted professional courses. Among these, the OSH Train The Trainer Competency Based Programmes emerged as a top course, focusing on developing trainers' competencies in occupational safety and health. Other notable courses included the Occupational Safety and Health Coordinator course, which aimed to enhance workers' abilities to manage safety and health issues effectively and the On Scene Commander (OSC) course, which prepared workers to take charge during emergency situations. The Advanced Industrial Fire Fighting (AIFF) course provided advanced training in handling industrial fire incidents. In contrast, the Cultivating Sustainability: Strategies For Workplace Safety, Mental Health and Integrity course emphasised the importance of creating a safe, mentally healthy and ethical workplace environment. These specialised courses are designed to equip skilled workers with the necessary knowledge and skills to excel in their roles and contribute to the overall safety and efficiency of the sub-sector.

Collectively, these targeted training initiatives demonstrate a strategic commitment to strengthening the competencies of skilled workers within the Support Activities for Petroleum and Natural Gas Extraction sub-sector. By prioritising specialised programmes in safety, emergency response and workplace well-being, the sub-sector is enhancing its operational readiness, promoting a culture of safety and ensuring sustainable workforce development to meet industry demands.

Figure 93: **Total Skilled Workers Training Participation by Year in Johor (2022-2024)**



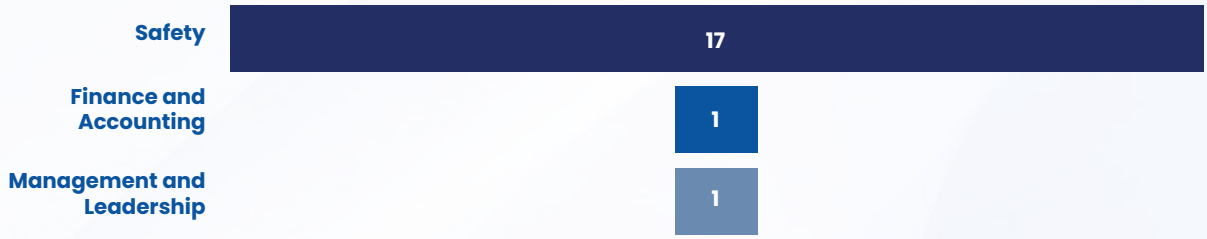
Workers Trained Ratio (0.05)

Johor's Support Activities for Petroleum and Natural Gas Extraction sub-sector recorded a total of 148 employees. Out of these, only 19 employees participated in training programmes, representing approximately 13% of the total workforce in this sub-sector. This relatively low percentage highlights the need for increased investment in training and development to ensure a more comprehensive upskilling of the workforce.

By focusing on enhancing the skills of a select group of employees, the sub-sector aims to improve overall efficiency, safety and productivity. However, expanding these training opportunities to a larger portion of the workforce could further strengthen the industry's capabilities and competitiveness.

Following are the top three (3) skill areas enrolled under the sub-sector during the year.

Figure 94: **Top Skilled Areas for Skilled Workers in Johor, 2024**
Support Activities for Petroleum and Natural Gas Extraction



Johor recorded the highest participation in Safety-related training within the Support Activities for Petroleum and Natural Gas Extraction sub-sector. This emphasis reflects the critical importance of occupational safety and health in an industry characterised by high-risk operations and stringent regulatory requirements. Ensuring a competent workforce in safety practices is essential for minimising operational hazards and maintaining compliance with industry standards.

An analysis of the top skill areas for training enrolment highlights a critical need for employers to intensify their focus on technical training within the sub-sector.

Targeted investment in upskilling initiatives is vital to strengthening workforce capabilities, improving productivity and ensuring alignment with evolving industry demands.

Enhancing technical competencies in this high-value sector is also instrumental in maintaining Johor's competitive advantage and supporting Malaysia's broader energy development goals, in line with international best practices advocated by the International Labour Organisation (ILO, 2023) and the World Bank (2023).

SUB-SECTOR 3 :

Operation of Warehousing and Storage Facilities for General Merchandise (0.31)

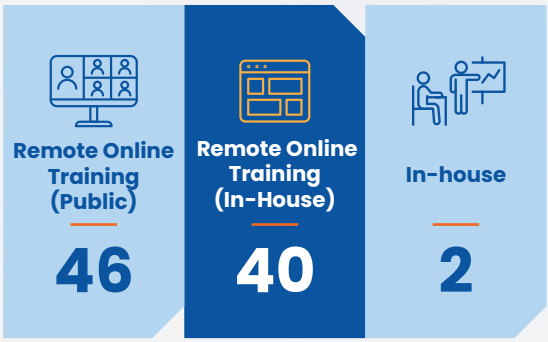
In 2024, the operation of warehousing and storage facilities for general merchandise in Johor has seen significant growth. This industry has been bolstered by Johor's strategic location and its well-developed infrastructure, which have made it an attractive hub for logistics and distribution activities. The establishment of the JS-SEZ has further enhanced the region's appeal, attracting numerous multinational companies to set up their warehousing and storage operations in the state (Economic Research Institute for ASEAN and East Asia, 2024). According to the Economic Research Institute for ASEAN and East Asia (ERIA), Johor's warehousing facilities have expanded to include advanced storage solutions such as refrigerated warehouses and storage tanks, catering to a diverse range of goods (ERIA, 2024). This growth is expected to continue, driven by ongoing investments and the state's commitment to improving its logistics capabilities (World Bank, 2024).

Enrolment in Digital Training (0.09)

In 2024, the operation of warehousing and storage facilities for general merchandise in Johor exhibited a marked disparity between digital and non-digital training enrolments. Digital training registered an index of 0.09, with only 14% of total training participation. In contrast, non-digital training accounted for 84% of the total.

The breakdown of digital training participation included 46 enrolments in remote online training (public), 40 in remote online training (in-house) and two in e-Learning programmes.

Figure 95: **Enrolment in Digital Training in Johor, 2024**
Operation of Warehousing and Storage Facilities for General Merchandise

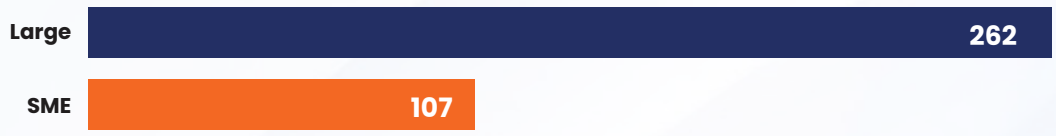


This data highlights a pronounced preference for traditional, non-digital training methods within the sub-sector, indicating substantial potential for growth in digital training adoption. Expanding digital training initiatives could play a pivotal role in enhancing workforce skills and adaptability, in line with the broader objectives of improving workforce capabilities and competitiveness, as advocated by the International Labour Organisation (ILO) and the World Bank.

Technical Training (0.18)

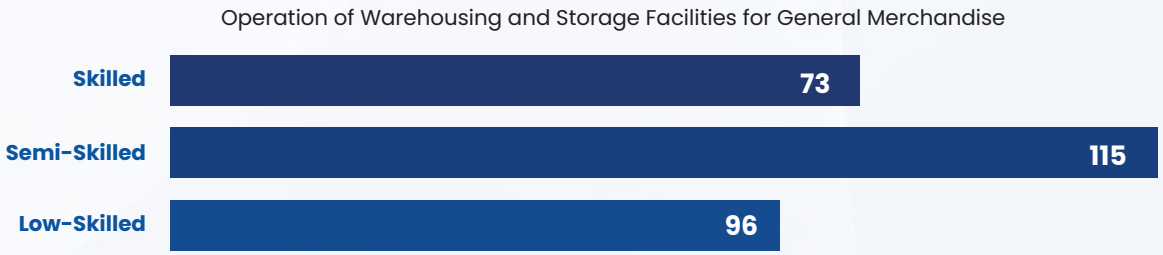
Johor demonstrated a concerted effort to enhance technical competencies within the Warehousing and Storage Facilities sub-sector, recording a total of 369 enrolments in technical courses. Of these, 262 participants were from large employers, while 107 were from SMEs, reflecting a growing recognition of the importance of upskilling across different enterprise sizes. Despite these encouraging figures, the sub-sector's training index score stood at 0.18, signalling significant room for improvement in driving broader participation in technical training. Strengthening enrolment in such courses is essential to building a more skilled and competitive workforce, in line with Johor's strategic aspirations for industrial advancement and aligned with international benchmarks set by organisations such as the International Labour Organisation (ILO, 2023) and the World Bank (2023).

Figure 96: **Enrolment of Technical Courses by Industry Size of Digital in Johor, 2024**
Operation of Warehousing and Storage Facilities for General Merchandise



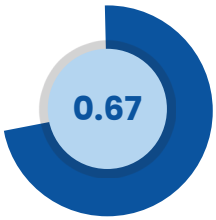
An analysis of enrolment by skill category within technical training for the Operation of Warehousing and Storage Facilities for General Merchandise in Johor reveals a disproportionate focus on semi-skilled workers. In 2024, semi-skilled workers accounted for the highest number of enrolments, with 115 participants—representing 40% of the total. This was followed by 96 enrolments among low-skilled workers (34%) and 73 enrolments among skilled workers (26%). While the strong participation of semi-skilled and low-skilled workers reflects an encouraging commitment to workforce development, the comparatively lower engagement of skilled workers highlights a critical opportunity to enhance advanced technical competencies. Strengthening high-skill training is essential for driving innovation, improving productivity and supporting Malaysia's broader agenda for industrial transformation in alignment with international frameworks advocated by the International Labour Organisation (ILO, 2023) and the World Bank (2023).

Figure 97: **Enrolment of Technical Courses by Skill Category in, 2024**



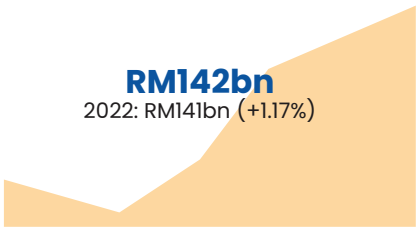
STATES | SARAWAK

Training Index 2024



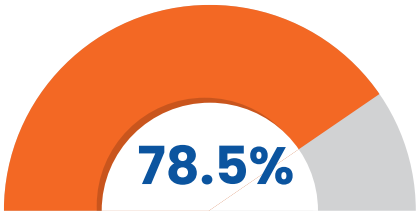
0.61
Training Index 2023

GDP (2023)



RM142bn
2022: RM141bn (+1.17%)

Levy Utilisation Rate %



Training Places

89,842

Financial Assistance

RM104.6M

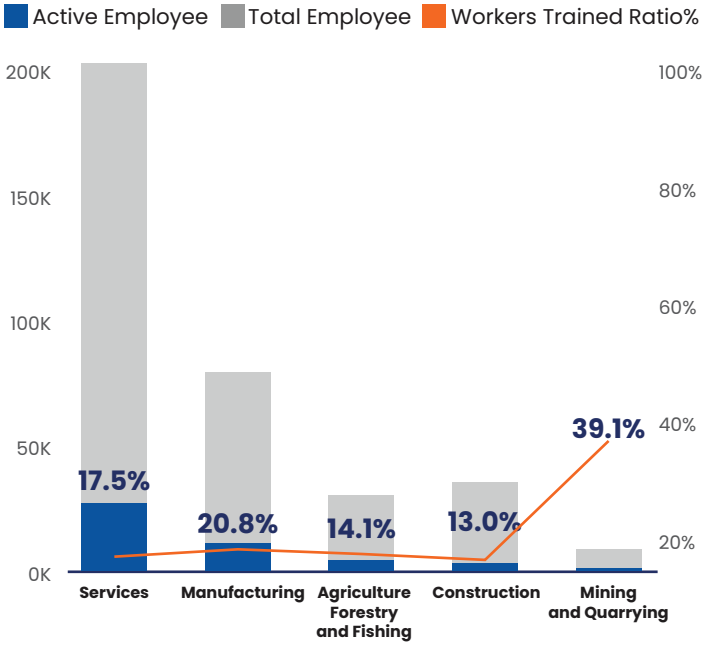
Workers Trained Ratio

17.6%

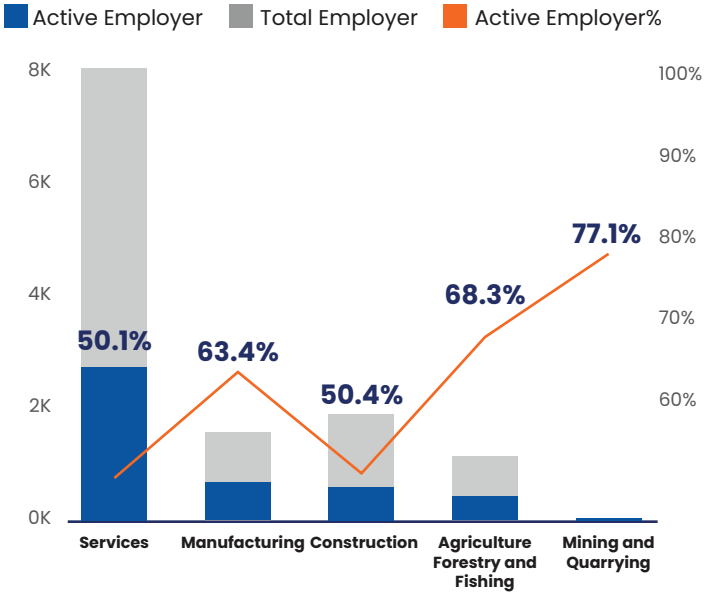
Training Duration (days)

2.08

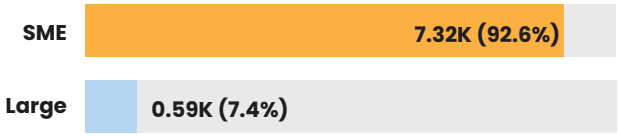
Sectors Breakdown | Workers Trained Ratio %



Sectors Breakdown | Active Employer %



Company Sizes | Number of Registered Employer

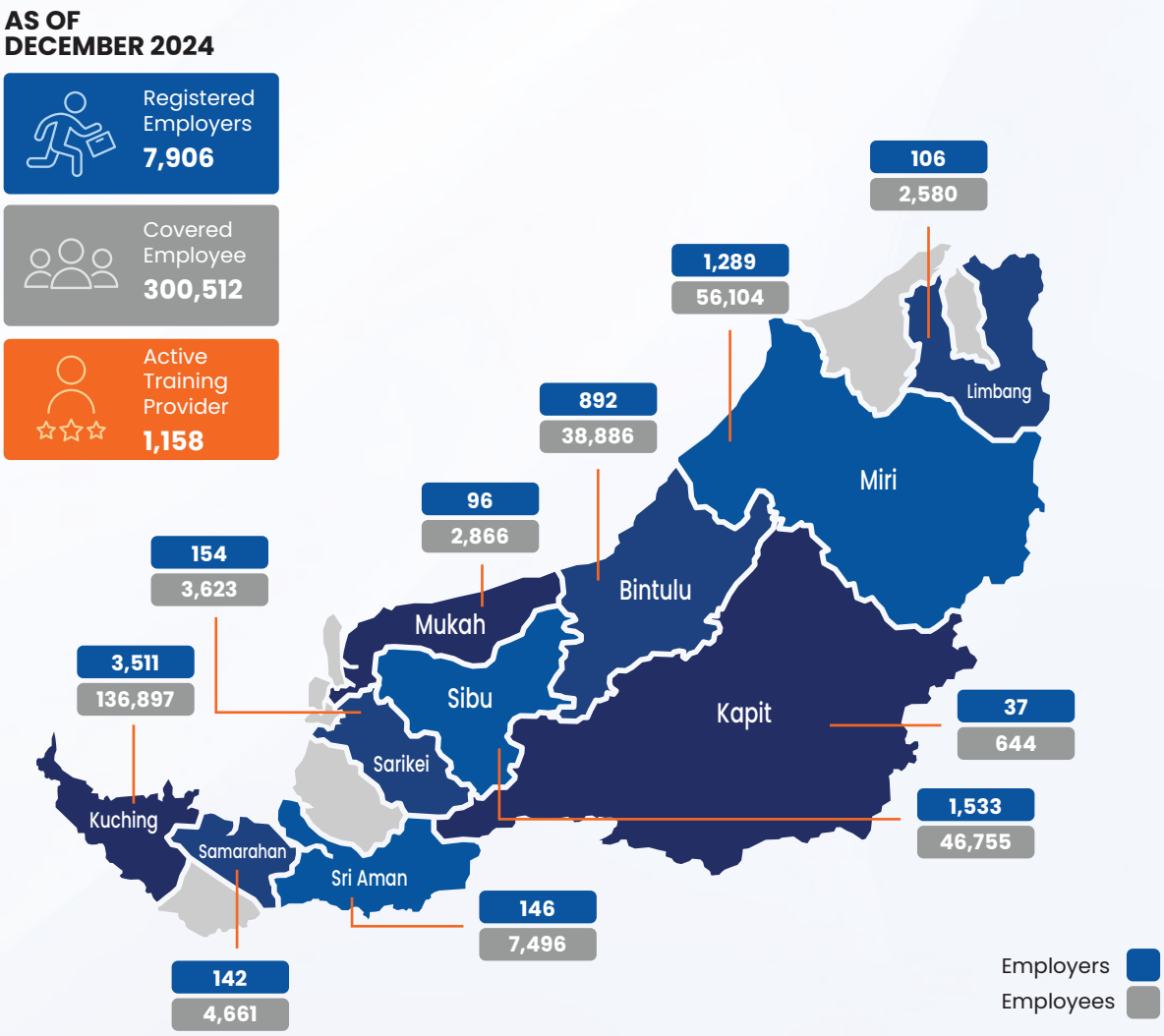


Sarawak

Anchored in the Sarawak Post-COVID-19 Development Strategy 2030, efforts are underway to expand the economy from RM136 billion in 2019 to RM282 billion by 2030, targeting an annual growth rate of 8.0% from 2021 to 2030. To support this ambition, 195,000 new jobs will be created, maintaining an unemployment rate below 1.2%. With Manufacturing, Agriculture and Tourism as priority sectors, Sarawak aims to strengthen its workforce and drive sustainable development, positioning these industries as the backbone of its economic transformation.

Major cities play a pivotal role in this growth, as reflected in the high concentration of HRD Corp-registered employers in Sarawak. Kuching (3,511), Sibu (1,533) and Miri (1,289) collectively account for 80% of registered employers, underscoring their active investment in human capital development. This strong employer presence aligns with Sarawak's development strategy, reinforcing these cities as key drivers of business expansion, job creation and industry growth, particularly in the priority sectors identified for long-term economic sustainability.

Figure 98: **Distribution of Registered Employers in Sarawak, 2024**



SUB-SECTOR 1 :

Sawmilling and Planing of Wood (0.38)

Sarawak's Manufacturing sector is strengthened by its wood and wood-based products industry which focuses on value-added products such as plywood and furniture, leveraging its strong timber industry. Additionally, the Rubber and Plastic Products sector is expanding into palm oil-based bioplastics and industrial rubber products, capitalising on Sarawak's thriving plantation sector.

Enrolment in Competent Training Provider (0.89)

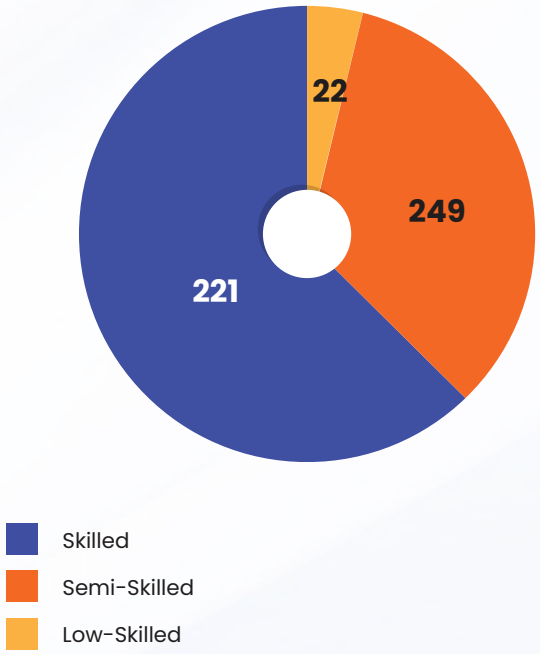
In Sarawak, training providers are well-equipped to meet industry needs, with 95 certified trainers ensuring high-quality instruction and skills development. This reflects a strong commitment to workforce competency, compliance with safety standards and operational excellence. With trainers holding recognised certifications, the training provided is industry-relevant, credible and effective. This ensures employees gain the necessary skills to enhance productivity, maintain safety and support the long-term growth of the sawmilling and planning of wood sub-sector in the region.

Enrolment in Technical Courses (0.13)

The Timber sub-sector (Sawmilling and planing of Wood) relies heavily on technical skills for efficiency, safety and quality. However, the NTI 2024 indicates low technical training participation (42%) compared to non-technical enrolment (58%). This may be derived from the lower skilled worker ratio (45%) in this sector than in any other skills level category.

Given the industry's reliance on hands-on experience, many workers in semi-skilled or entry-level roles develop competencies through informal learning methods such as on-the-job training, peer mentoring and tacit knowledge transfer. While these informal pathways are valuable, they often lack standardisation and certification, resulting in inconsistencies in skill levels across the workforce.

Figure 99: **Skills Category within the Sawmilling and Planing of Wood in Sarawak Sub-sector**



As highlighted by the International Labour Organisation (ILO), over 50% of workers in labour-intensive industries in many developing economies rely on on-the-job training rather than formal technical education due to limited access to structured training programmes (ILO,2021). Similarly, in the Sawmilling and Wood Processing sub-sector, a 2023 report from the Food and Agriculture Organisation (FAO) noted that many companies depend on informal training due to high turnover rates and cost constraints, making it difficult to establish standardised skill development pathways. While these informal pathways are valuable, they often lack standardisation and certification, resulting in inconsistencies in skill levels across the workforce.

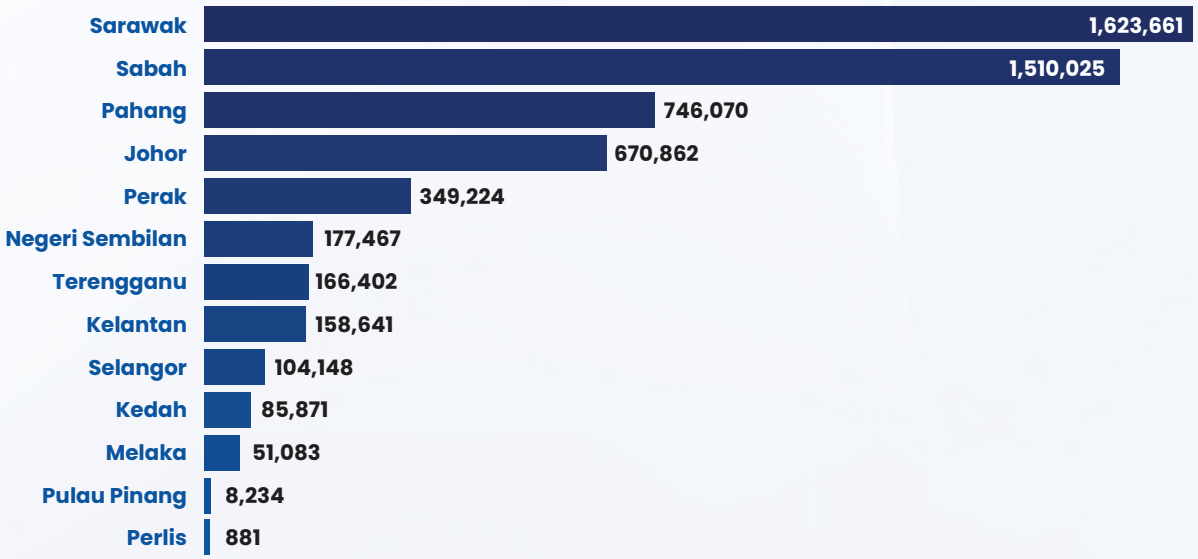
To address these issues, employers should collaborate with TVET institutions to develop hands-on apprenticeship programmes that combine on-the-job training with classroom instruction, ensuring workers gain practical skills in machinery operation, wood grading and safety compliance. By actively shaping curricula to reflect industry advancements and safety standards, employers can ensure trainees are workforce-ready. Structured apprenticeships also facilitate skill transfer from experienced workers to new hires, addressing workforce ageing and skill gaps. Implementing mentorship systems and offering stipends or employment guarantees can further attract and retain talent, strengthening the sector's long-term competitiveness.

SUB-SECTOR 2 :

Growing of Perennial Crops (0.66)

Sarawak's agricultural landscape is characterised by cultivating perennial crops, which play a crucial role in the state's economy. These include rubber, pepper and oil palm, with the latter being the dominant commodity. The state's emphasis on perennial crops aligns with its strategy to enhance agricultural sustainability and economic resilience. Among these, oil palm plantations have expanded significantly, making Sarawak the largest contributor to Malaysia's total oil palm-planted area. According to the Malaysian Palm Oil Board (2023), Sarawak accounts for the country's most extensive hectares of oil palm cultivation, underscoring its pivotal role in Malaysia's Palm Oil industry.

Figure 100: **Statistic of Oil Palm Planted by State (2023)**



Source: Malaysian Palm Oil Board (2023)

Enrolment in Practical/Hands-On Training (0.68)

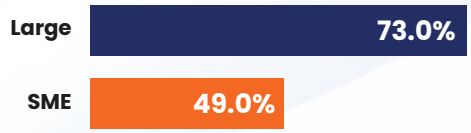
The training landscape for perennial crop cultivation in Sarawak is thriving, driven by a strong emphasis on practical, hands-on learning. This approach enhances expertise in soil management, pest control, harvesting and sustainable farming, improving productivity and crop quality. High enrolment in these programmes is fuelled by the growing demand for skilled labour, particularly in the Oil Palm sub-sector, which dominates the state's agriculture.

	Table 18: Top Practical/Hands-On Training Courses Enrolled by Employers According to Growing of Perennial Crops in Sarawak, 2024
1.	Training in Manuring (Safety)
2.	Pengurusan dan Penyelenggaraan Nurseri Sawit 2024
3.	Menggred Buah Sawit Wilayah Sarawak
4.	Pemantapan Kompetensi Penyeliaan untuk Penyelia Ladang
5.	Certified Environmental Professional in Scheduled Waste Management

Levy Utilisation Rate (0.07)

The levy utilisation rate for the Growing of Perennial Crops sub-sector in 2024 is 65%, with RM 5.9 million in levy collection and RM 3.8 million in levy utilisation.

Figure 101: **Levy Utilisation Rate between Firm Size for Growing of Perennial Crops Sub-sector**



In the context of perennial crop cultivation in Sarawak, the disparity in levy utilisation rates between large firms (73%) and SMEs (49%) can be attributed to several factors. Large construction firms often have more resources and infrastructure to implement comprehensive training programmes, allowing them to utilise levies more effectively. They tend to have dedicated training departments and access to advanced technologies, facilitating continuous skill development and compliance with industry standards.

SUB-SECTOR 3 :

Other Amusement and Recreation Activities (0.20)

Tourism is vital in enhancing Sarawak's global visibility and branding, positioning the state as a prominent destination for travellers worldwide. By 2030, Sarawak aims to establish itself as a leading hub for eco-tourism and business events within the ASEAN region. This ambitious goal is supported by empowered communities dedicated to preserving and promoting Sarawak's heritage, culture and biodiversity. Local communities will be instrumental in safeguarding natural resources while fostering investment and development in the tourism sector. Sarawak's tourism strategy focuses on key areas such as Eco-Tourism and Nature-Based Tourism, capitalising on its rich rainforests, national parks and biodiversity to attract nature lovers and eco-tourists. Additionally, Cultural and Heritage Tourism will showcase Sarawak's indigenous heritage, including its vibrant festivals like the Rainforest World Music Festival, which draws both local and international visitors. These initiatives will strengthen Sarawak's tourism sector, driving economic growth while preserving the state's cultural and natural assets.

Enrolment with Certified Trainer (1.00)

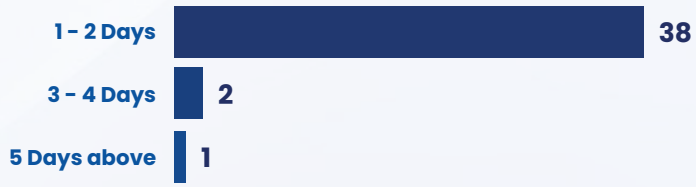
Therefore, the Other Amusement and Recreation Activities sub-sector is keen on engaging certified trainers, with an index score of 0.84 indicating a significant interest. Trainers play a pivotal role in delivering top-notch training to employees. They must possess the requisite skills, knowledge and confidence to facilitate effective learning and knowledge transfer within the organisation.

In the Year 2024, HRD Corp's data showed that organisations within the sub-sector allocated RM17,290 towards employee training, which included expenses for both external and internal trainers. The data indicated a clear preference for internal trainer-led sessions, with 78% of grant applications opting for internal trainers, while only 22% chose external trainers for the year 2024. The high reliance on internal trainers suggests a commitment to building long-term training capabilities within firms, fostering continuous skill enhancement and knowledge retention. This trend underscores the sub-sector's strategic focus on developing in-house expertise, ensuring training is tailored to organisational needs while optimising cost efficiency.

Training Duration (0.02)

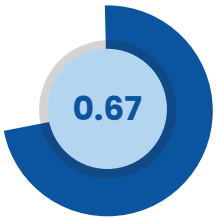
In the Tourism industry, specifically under the sub-sector of Other Amusement and Recreation Activities, maintaining a skilled workforce is crucial for sustaining productivity and achieving production objectives. However, extended training periods for employees can disrupt production schedules, resulting in downtime that negatively impacts overall efficiency and profitability. This situation has prompted many employers registered with HRD Corp in this sub-sector to adopt short-term training programmes, typically lasting around 1 to 3 days. Most training sessions lasting less than five (5) days are classified as non-certification programmes, offering participants certificates of attendance without formal accreditation or certification. These programmes typically focus on short-term skill development or specific topics, providing practical knowledge and hands-on experience rather than formal recognition or credentials.

Figure 102: **Training Durations by Employee in Sarawak's Tourism Sub-sector (Other Amusement and Recreation Activities), 2024**



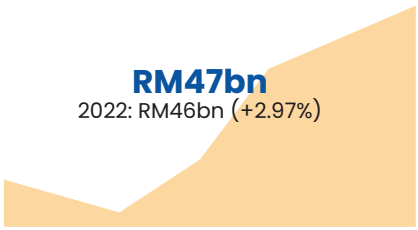
STATES | MELAKA

Training Index 2024



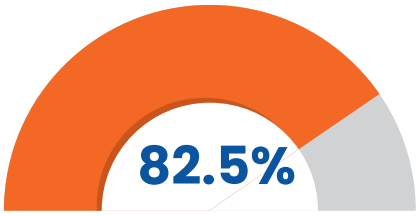
0.68
Training Index 2023

GDP (2023)



RM47bn
2022: RM46bn (+2.97%)

Levy Utilisation Rate %



Training Places

59,386

Financial Assistance

RM44.8M

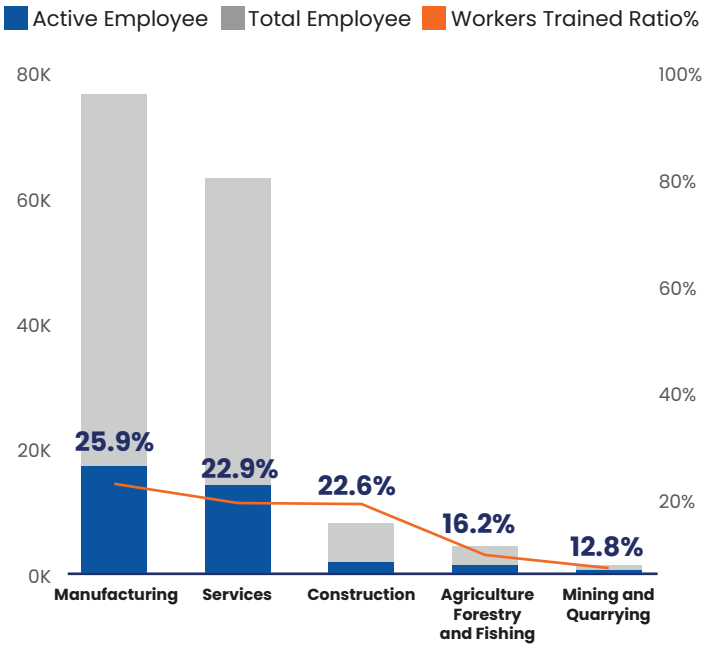
Workers Trained Ratio

24.3%

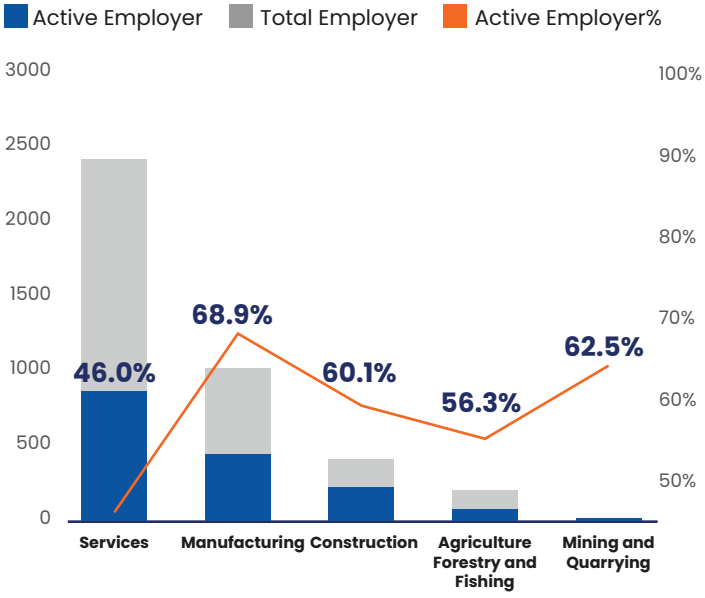
Training Duration (days)

1.85

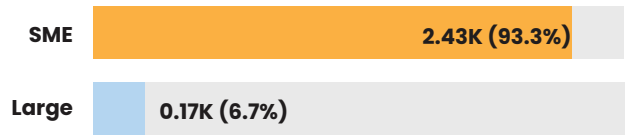
Sectors Breakdown | Workers Trained Ratio %



Sectors Breakdown | Active Employer %



Company Sizes | Number of Registered Employer



Melaka

Melaka's economy is primarily driven by the Manufacturing and Services sectors, with manufacturing playing a pivotal role in the state's industrial growth. According to the Department of Statistics Malaysia (DOSM) 2024, the Manufacturing sector contributed 36.0% to Melaka's Gross Domestic Product (GDP) in 2023, making it a key driver of economic development. The presence of major Multinational Corporations (MNCs) and local manufacturers has further bolstered industrial output, employment opportunities and export performance. Meanwhile, the Services sector remains the dominant force, contributing 51.2% to Melaka's GDP in 2023. This sector encompasses wholesale and retail trade, tourism, logistics, finance and professional services, reflecting Melaka's status as a key commercial and tourism centre. The state's thriving tourism industry, bolstered by its rich historical and cultural heritage, significantly supports business activities, while the growing demand for professional services drives economic diversification.

The combined strength of the Manufacturing and Services sectors underscores Melaka's balanced economic structure, where industrial production fuels export-led growth and services enhance domestic consumption and business expansion. To sustain this momentum, strategic investments in technology adoption, automation and workforce upskilling will ensure continued economic competitiveness and resilience.

SUB-SECTOR 1 :

Electronic Component and Board (0.41)

The Manufacturing sector remains a key driver of economic growth, continuously attracting high-tech investments. Notably, Koa Denko Malaysia Sdn. Bhd., a global electronics supplier from Japan, is expanding its operations with a new project set for completion by 2025. This investment is expected to generate approximately 950 job opportunities initially, with projections reaching 1,820 jobs by 2028. With 50 years of presence in Malaysia, Koa Denko Malaysia is scaling its production capacity to 8.2 billion resistor chips per month by 2028, further strengthening Melaka's position as a leading high-tech manufacturing hub.

Enrolment in Technical Training (0.07)

Nevertheless, this sub-sector recorded an NTI score of 0.41, indicating room for improvement in strengthening technical training activities. In the Electronic Component and Board sector in Melaka, non-technical courses account for 65% of training programmes. In comparison, technical courses make up only 35%, reflecting a strong focus on workplace efficiency, management and soft skills alongside technical expertise. While technical courses cover machine operations, automation and precision manufacturing, the higher proportion of non-technical training suggests that companies prioritise business acumen, leadership and compliance training to enhance overall workforce capability.

Although non-technical skills are crucial for workforce adaptability and organisational growth, the nature of this sector demands a stronger emphasis on technical expertise to keep pace with rapid technological advancements and industry demands. Increasing enrolment in technical courses, particularly in emerging areas such as semiconductor fabrication, AI-driven automation and advanced manufacturing, would better equip the workforce with specialised competencies essential for industry growth and competitiveness. Companies should consider incentivising technical training participation by offering structured career progression pathways, certification-linked training and industry collaborations to enhance the quantity and quality of technical upskilling efforts.

Additionally, the Electronic Component and Board sector in Melaka prioritises technical expertise and precision-driven skills to meet modern manufacturing and quality standards. Training programmes focus on operational efficiency, safety and technological proficiency, ensuring employees can handle industry-specific challenges. The top five technical courses emphasise workplace safety, automation, machining and design, with key areas including machine safety, electroplating for quality control, automation systems (TwinCAT 3), CNC turning and AutoCAD drafting. These courses reflect the sector's commitment to advancing technology, maintaining quality assurance and enhancing workforce skills to stay competitive in the evolving industry.

Figure 103: **Enrolment in Non-Technical and Technical Courses by Trainees in Electronic Component and Board Sub-sector in Melaka, 2024**

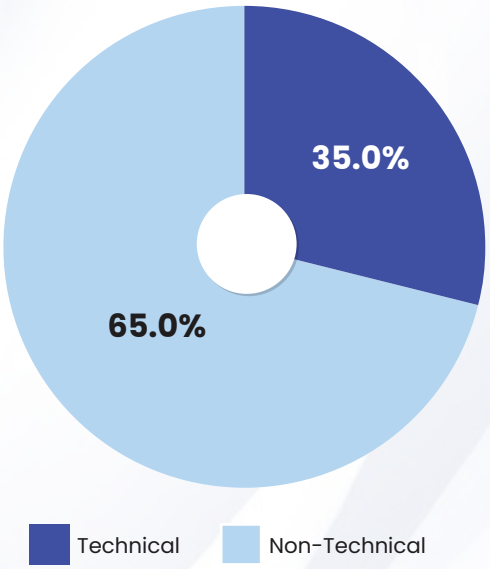


Table 14: **Top Five (5) Technical Courses Enrolled by Electronic Component and Board in Melaka**

1.	Machine Safety and Machine Guarding
2.	Electroplating for Quality Control
3.	TwinCAT 3 Customized Training for Muehlbauer
4.	Fundamental CNC Turning for Manufacturing (ISO/Conversational Shopturn)
5.	Autocad Drafting and Modelling

SUB-SECTOR 2 :

Short-Term Accommodation Activities (0.40)

Tourism remains the backbone of this sector, supported by Melaka's rich cultural heritage, strategic location and dynamic initiatives aimed at attracting both local and international visitors. To further accelerate the recovery of the tourism industry post-COVID-19, the State Government has launched Visit Melaka Year 2024 (TMM2024). The government is targeting 18.7 million visitors, including 7.2 million international tourists and 11.5 million domestic visitors with several key projects and attractions have been introduced under TMM2024. The Melaka Heritage and Cultural Park Centre Pavilion will be established alongside the development of a new downtown area in front of Dataran Pahlawan to strengthen commercial and tourism activities.

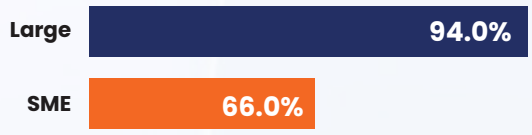
Therefore, Short-Term Accommodation Activities are crucial in supporting Melaka's tourism industry by providing diverse lodging options that cater to the growing influx of visitors. As the demand for high-quality lodging continues to grow, ensuring the competency and professionalism of the hospitality workforce becomes increasingly vital. The NTI index for this sub-sector stands at 0.40, classifying it as an Adopter, which reflects moderate training activity, preparation and quality. This classification is supported by a total enrolment of 2,043 and a levy collection of RM44.45 million, highlighting the sector's ongoing investment in workforce development.

Levy Utilisation Rate (0.21)

The levy utilisation rate disparity between large firms (94%) and SMEs (66%) in the sub-sector reflects differences in resource access, training adoption and workforce development strategies. Large firms, with their higher utilisation rate, demonstrate greater efficiency in channelling levy funds towards employee training, upskilling and service quality improvements, ensuring a well-trained workforce to meet industry standards.

In contrast, SMEs with a lower utilisation rate may face challenges such as limited administrative capacity, financial constraints, or lack of awareness in fully utilising available funds for training initiatives. This gap suggests the need for more targeted support to help SMEs optimise levy usage, ensuring a more balanced skill development landscape across businesses of all sizes in the sector.

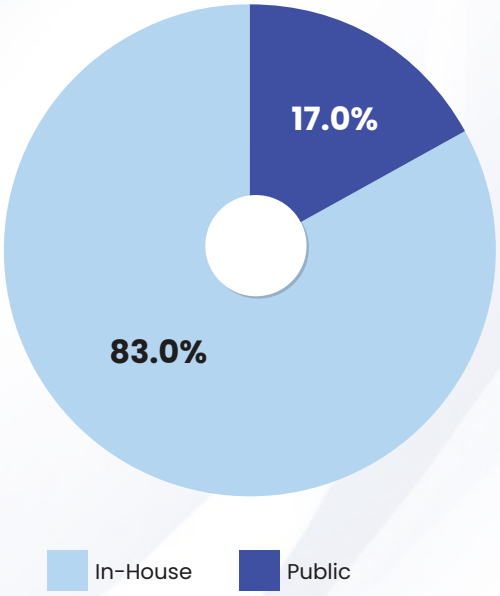
Figure 104: **Levy Utilisation Rate Between Large Firm and SME of Short-Term Accommodation Activities Sub-sector in Melaka**



Type of Training (0.66)

The training distribution in the Short-Term Accommodation industry shows a strong preference for in-house training (83%), with only 17% conducted as public training. This suggests that businesses in the sector prioritise customised and tailored to their specific operational needs, service standards and workplace culture. In-house training allows companies to directly address real-time challenges in hospitality services, ensuring employees are well-equipped with practical skills relevant to their roles. The lower reliance on external training may indicate cost considerations, scheduling flexibility, or a preference for hands-on learning approaches over standardised public courses. This trend highlights the sector's focus on internal workforce development, emphasising practical experience and company-specific service expectations.

Figure 105: **Type of Training Attended by Trainees In Short Term Accommodation Sub-sector in Melaka**



SUB-SECTOR 3 :

Wholesale of Food, Beverages and Tobacco (0.35)

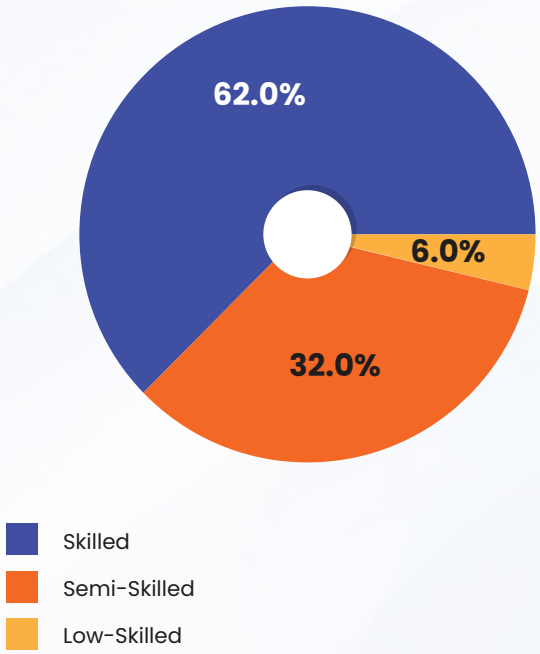
The Wholesale of Food, Beverages and Tobacco plays a crucial role in supporting Melaka's tourism industry by ensuring a steady supply of essential goods to hotels, restaurants, cafes and retail outlets. As a major tourist destination, Melaka attracts millions of visitors annually, creating high demand for food and beverages across the hospitality sector. Wholesalers act as key intermediaries, efficiently distributing products in bulk to meet the needs of businesses catering to tourists.

Moreover, wholesale operations support the broader tourism ecosystem by facilitating large-scale procurement for events, festivals and corporate gatherings, which are common in Melaka. By streamlining logistics and distribution, the wholesale sector strengthens the backbone of the tourism economy, ensuring that businesses can focus on delivering high-quality services to visitors. Thus, the wholesale trade of food, beverages and tobacco is not just an economic driver but an essential enabler of Melaka's thriving tourism industry.

Number of Skilled Workers (0.25)

The Wholesale of Food, Beverages and Tobacco sector in Melaka has a workforce composition of 62% skilled, 32% semi-skilled and 6% low-skilled workers based on enrolment in the sub-sector training, reflecting the industry's strong reliance on expertise to support the state's booming tourism industry. As a UNESCO World Heritage site, Melaka attracts a high number of visitors, driving demand for quality food and hospitality services. This demand requires skilled professionals in supply chain management, food safety and logistics to ensure that hotels, restaurants and retailers receive high-quality products efficiently. The high proportion of skilled workers ensures seamless operations, while semi-skilled employees play key roles in customer service and distribution. The low percentage of low-skilled workers suggests that businesses prioritise efficiency and trained personnel to meet industry standards. As tourism continues to expand, the need for a highly skilled workforce remains essential to maintaining Melaka's reputation as a top travel destination.

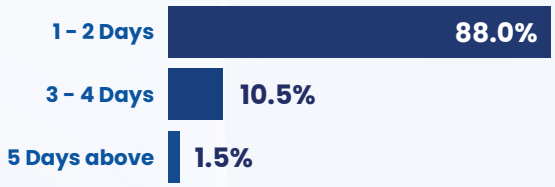
Figure 106: **Trainees Skill Level within Wholesale of Food, Beverages and Tobacco in Melaka**



Number of Training Days Attended (0.05)

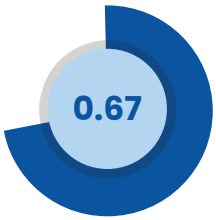
This overwhelming dominance of short-term training underscores the sector's focus on practical and hands-on learning, ensuring that employees quickly adapt to industry demands while maintaining productivity. Given the fast-paced nature of wholesale food and beverage operations, businesses appear to prioritise efficiency and rapid learning cycles, enabling workers to meet regulatory requirements and industry standards with minimal downtime. However, while this approach supports immediate operational needs, incorporating more structured, longer-duration training could enhance workforce expertise, particularly in quality control, supply chain management and emerging food safety regulations.

Figure 107: **Training Duration for Wholesale of Food, Beverages and Tobacco Sub-sector in Melaka**



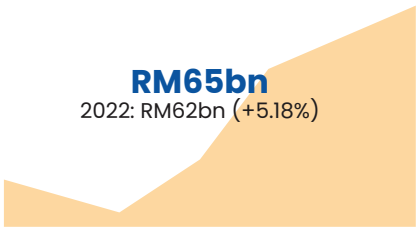
STATES | PAHANG

Training Index 2024



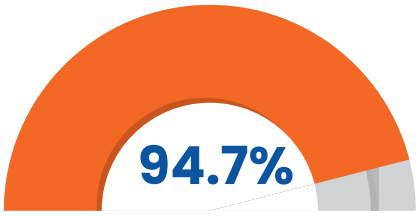
0.65
Training Index 2023

GDP (2023)



RM65bn
2022: RM62bn (+5.18%)

Levy Utilisation Rate %



Training Places

52,773

Financial Assistance

RM39.6M

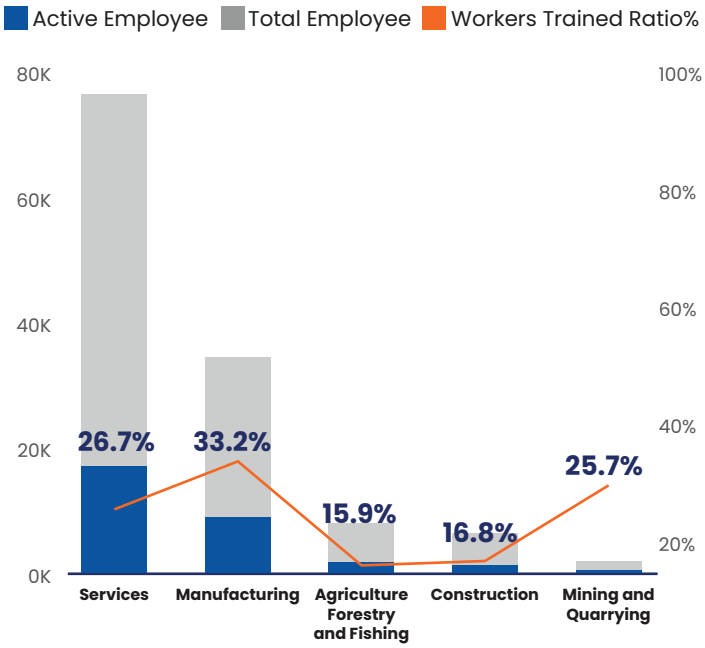
Workers Trained Ratio

26.9%

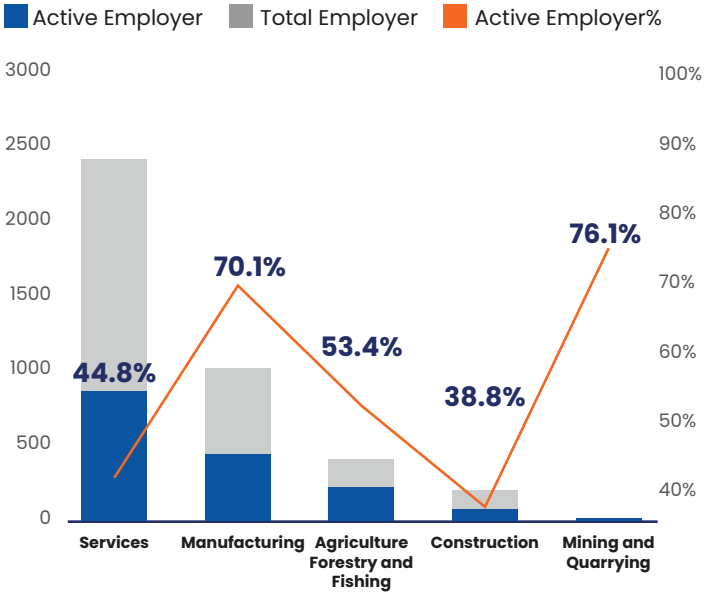
Training Duration (days)

2.98

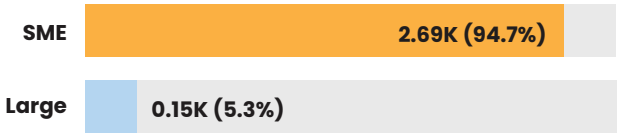
Sectors Breakdown | Workers Trained Ratio %



Sectors Breakdown | Active Employer %



Company Sizes | Number of Registered Employer



Pahang

Pahang covers an area of 35,965 square kilometers (km²) and is divided into 11 administrative districts: Pekan, Kuantan, Rompin, Maran, Bera, Jerantut, Temerloh, Raub, Bentong, Lipis and Cameron Highlands. The total population of the state is approximately 1.75 million people, with a population density of 48.6 people per km² (Pahang State Government, 2025).

Through Belanjawan Negeri Pahang 2024, the State Government is committed to improving the Agriculture sector as to ensure a stable food supply with an allocation of RM58.93 million; as well as tourism industry at RM49.84 million of allocation to develop infrastructure and promote tourism activities especially in preparation for Visit Malaysia Year 2026.

SUB-SECTOR 1 :

Growing of Perennial Crops (0.33)

Perennials flower and fruit multiple times, needing less cultivation after planting. They are key in no-dig agroforestry and forest gardens, with deeper roots, longer growing seasons and better water and nutrient access (Permaculture Association, 2025).

Pahang emphasises the growing of perennial crops such as petai, coconut, durian, guava, mango and sacha inchi to enhance economic growth and support local farmers.

Enrolment in Regular/Repetitive Course (1.00)

Enrolling in a course on perennial crops is vital for gaining specialised knowledge, developing essential skills and staying updated on market trends.

Based on Table 20, courses such as My Job My Pride and Occupational Safety and Health Coordinator are among the in-demand training due to its content covering sustainable farming practices, soil health management, pest control and agroforestry techniques. These courses enhance productivity and profitability in perennial crop cultivation.

Table 20: **Top Regular/Repetitive Courses Enrolled in Growing of Perennial Crops Sub-sector in Pahang**

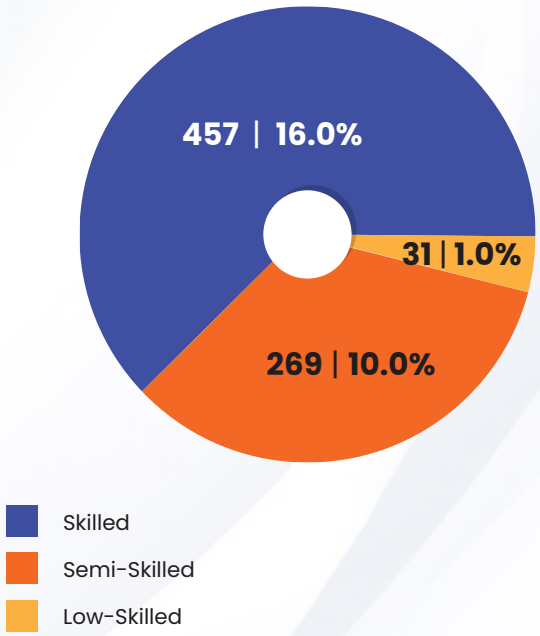
No.	Regular/Repetitive Courses
1.	My Job My Pride
2.	Occupational Safety and Health Coordinator

Workers Trained Ratio (0.05)

Under the sub-sector, there are 2,827 of total employees and 561 of workers trained in Pahang. Divided into three skilled categories, skilled Workers Trained Ratio ranked the highest at 16% as employers consistently tend to send more skilled workers for trainings, followed by semi- and low-skilled groups at 10% and 1%, respectively.

Encouraging training involvement in the sub-sector especially for the semi- and low-skilled workers helps to improve employee retention and adaptability to new techniques. This will give the employers a competitive edge and efficient operations.

Figure 108: **Workers Trained Ratio According to Skilled Level in Growing of Perennial Crops Sub-sector in Pahang**



SUB-SECTOR 2 :

Animal Production (0.22)

Animal Production sub-sector in Pahang focuses on breeding and raising livestock like cattle and sheep.

It also involves genetic improvement projects and professional training for activities like slaughtering and feed production.

Enrolment with Certified Trainer (1.00)

In the Animal Production industry, certified trainers are important for their expertise in animal welfare, biosecurity and sustainable practices. In 2024, there are four certified trainer in the sub-sector in Pahang.

They ensure compliance with regulations, improve animal health and productivity while advocating best practices in husbandry and nutrition. Their role in disease control and capacity building enhances the industry's overall efficiency and sustainability. Certified trainers also help maintain high standards and ensure the long-term viability of farming operations.

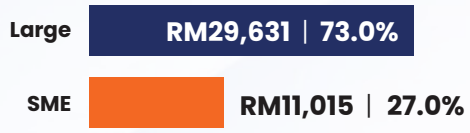


Usage of HRD Levy (Utilisation Rate) (0.22)

The low utilisation of the HRD Corp levy suggests there is significant potential to enhance the training and development culture within organisations, as well as to improve the implementation and effectiveness of HRD Corp training programmes.

The data indicates that only 55% of the levy was utilised by the registered employers during the year. Based on Figure 109, SMEs took up 27% of levy utilisation as compared to 73% by Large firms.

Figure 109: **Levy Utilisation Rate (%) according to Firm Size in Animal Production Sub-sector in Pahang for Year 2024**



To mitigate the situation, employers should plan their training and levy utilisation based on the available training funds and the cost of training programmes.

SUB-SECTOR 3 :

Camping Grounds, Recreational Vehicle Parks and Trailer Parks (0.25)

The State Government aimed at boosting the Tourism sector through stakeholder collaboration to develop infrastructure and promote tourism activities, which in turn would increase tourist arrivals.

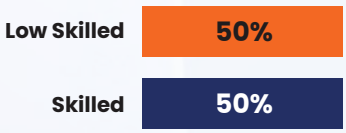
Pahang achieved the highest average hotel occupancy rate at 75% for the first six months of the year. It also led in domestic traveller occupancy, recording 5.92 million tourists, followed by Kuala Lumpur and Johor. Additionally, efforts to promote and highlight the state's tourist attractions were enhanced through the World-Class Tourism Promotion Programmes with activities including the Fraser's Hill International Bird Race, Royal Pahang Billfish International Challenge, Rimba Raid and Cameron Ultra (Tourism Pahang, 2024).

Skilled Workers Trained (0.50)

Year 2024 recorded one (1) registered employer under the Camping Grounds, Recreational Vehicle Parks and Trailer Parks sub-sector in Pahang (SME: 100%, Large: 0%). Based on the NTI indicator, number of skilled workers trained came solid at 50% within the sub-sector.

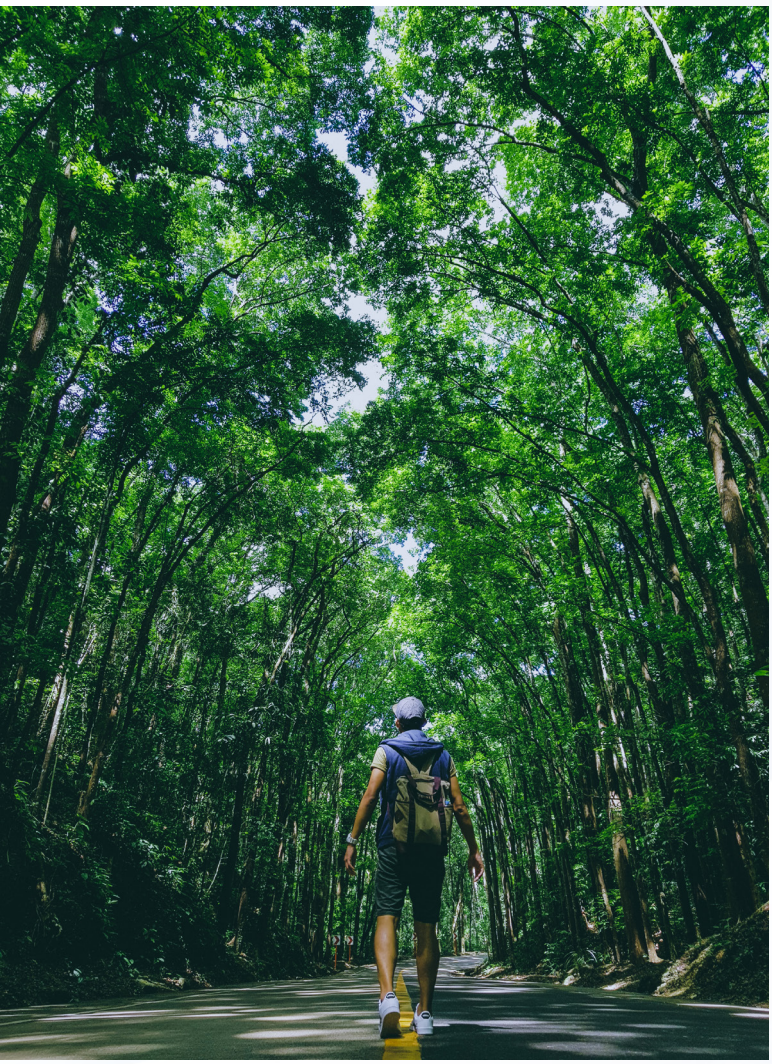
Figure 110 illustrates that skilled workers who attend training are more likely to proactively contribute to the productivity of the organisation. Training helps them prepare for career advancement, ensures they stay updated with the latest technologies and industry standards and enhances their problem-solving skills, making them more effective in their roles.

Figure 110: **Percentage of Enrolment by Skill Level in Camping Grounds, Recreational Vehicle Parks and Trailer Parks Sub-sector in Pahang**



On the other hand, a larger percentage of skilled workers do not attend training, highlight barriers that can prevent workers from recognising the potential benefits of training and engaging in opportunities that could enhance their performance and career growth.

Amount of Financial Assistance Allocated for Training per Worker (0.37)



This sub-sector provides various activities for outdoor enthusiasts such as tourism and eco-tourism. The training cost per trainee is RM2,229 during the year. The low training cost per trainee within the sub-sector can be attributed to growing economic pressures i.e. business leaders are more cost-conscious and sensitive about the return on training investment (Punia and Kant, 2013). The pressure has compelled the training professionals to justify training expenses by demonstrating the positive impact of training in monetary value on business results.

Among the underlying reasons for the low training cost per trainee is the low enrolment of courses among employees within the sub-sector. This could be due to workers doubting the effectiveness of these courses, if they will genuinely improve the skills or career prospects, especially one that prioritises practical experience. Besides, workers prefer on-the-job training over formal courses as it directly applies to their daily tasks and responsibilities.

To increase enrolment, it is crucial to address both employer's and employee's perspective. Employers can actively endorse and facilitate courses, highlighting the long-term advantages for the employees and organisation while ensuring that the training includes on-the-job or practical training that employees can immediately apply in their roles.

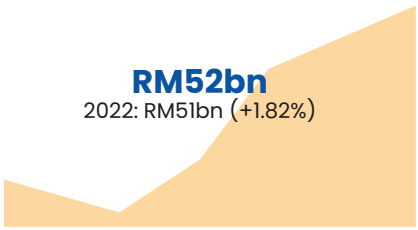
STATES | NEGERI SEMBILAN

Training Index 2024



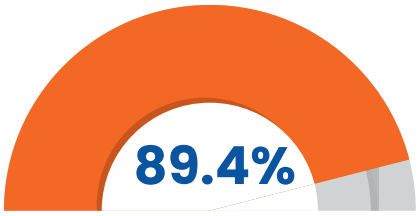
0.70
Training Index 2023

GDP (2023)



RM52bn
2022: RM51bn (+1.82%)

Levy Utilisation Rate %



Training Places

59,367

Financial Assistance

RM44.0M

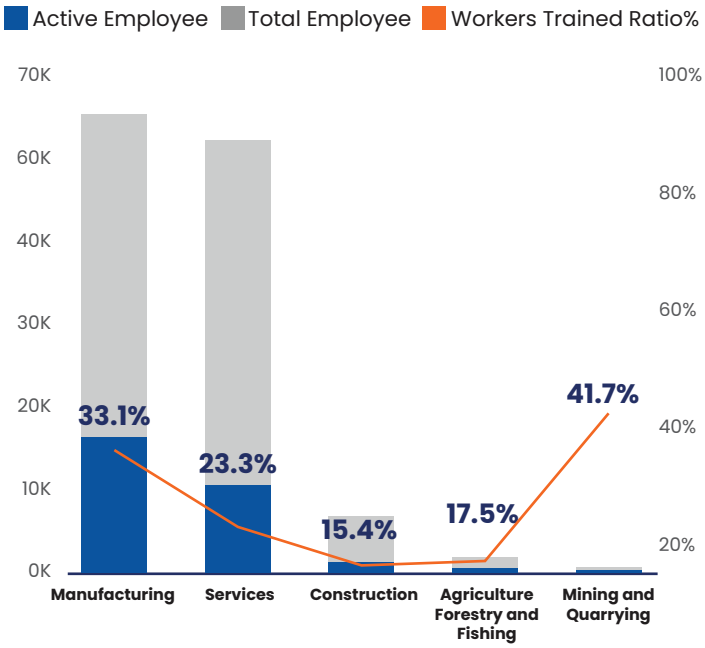
Workers Trained Ratio

27.4%

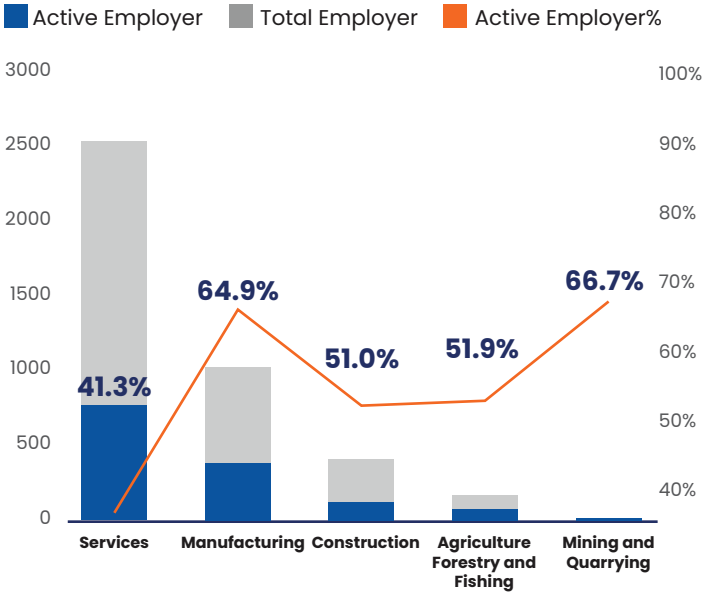
Training Duration (days)

1.50

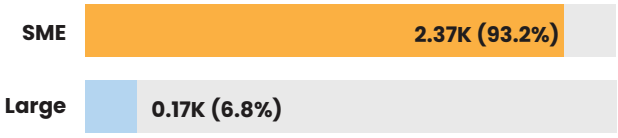
Sectors Breakdown | Workers Trained Ratio %



Sectors Breakdown | Active Employer %



Company Sizes | Number of Registered Employer



Negeri Sembilan

Negeri Sembilan, located in the central region of the peninsula, is bordered by Selangor to the east and Pahang and Johor to the south. Given Negeri Sembilan's strategic location, it is well-positioned to be a major food supplier not only for the local market but also for neighbouring states (Government of Negeri Sembilan, n.d.).

According to the 2020 Malaysian Population and Housing Census (Mycensus), Negeri Sembilan has the ninth position-largest population in Malaysia, with a population of approximately 1.13 million people.

It covers 6,665 km2 land area of Malaysia with seven (7) districts namely, Seremban, Port Dickson, Jempol, Jelebu, Kuala Pilah, Rembau and Tampin.

In Belanjawan Negeri Sembilan 2024, the State Government unveiled a total allocation of RM555 million which includes an estimated revenue of RM520 million and a development budget of RM140 million. The Negeri Sembilan State Government emphasises key focus areas, including the industrial, tourism and agriculture.

SUB-SECTOR 1 :

Manufacture of Electric Motors, Generators, Transformers and Electricity Distribution and Control Apparatus (0.88)

Negeri Sembilan has more than 50 strategically located low-cost and well-equipped industrial estates perfectly suited to a wide range of manufacturing operations.

Prices of industrial land in Negeri Sembilan are significantly lower than those in the Klang Valley (Federation of Malaysian Manufacturers, n.d.).

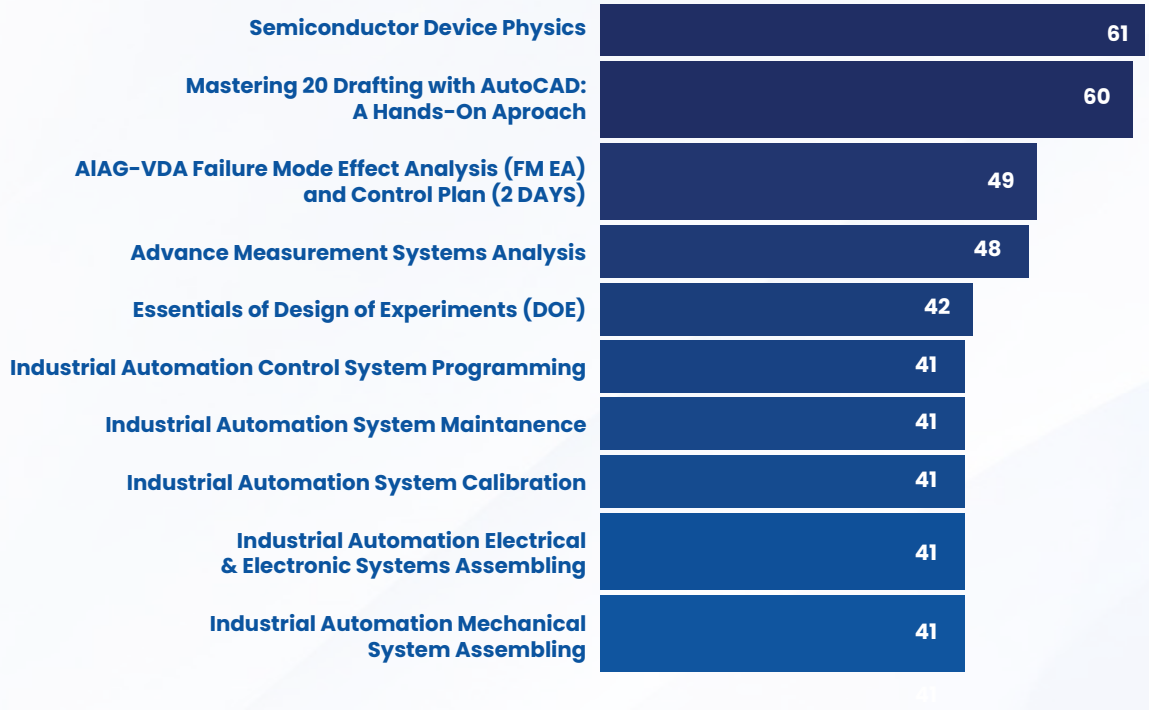
Enrolment in Technical Training (1.00)

With technological advancement largely in the Manufacturing sector, the trickle-down effect spreads onto its sub-sector, further empowering the training activities.

In 2024, the enrolment in technical courses recorded high at 4,833 in result towards attaining developed-state status and moving towards a digital-centric economy (MIDA, 2025).



Figure 111: **Top 10 Technical Courses Enrolled in Manufacture of Electric Motors, Generators, Transformers and Electricity Distribution and Control Apparatus Sub-sector in Negeri Sembilan**



Courses like Semiconductor Device Physics Training Industrial Automation Electrical & Electronic Systems Assembling in Figure 111 cover maintenance, troubleshooting, diagnostics and system knowledge which are critical for the employees in the sub-sector. These trainings boost efficiency, standardise procedures and enhances technical skills which in turn lead to a more productive and compliant workplace.

Workers Trained Ratio (0.13)

Within the sub-sector, 25.4% of trainees are trained from 18,305 employees covered in Negeri Sembilan. This could be due to costly and time-intensive programmes, making it challenging for employers to invest heavily in training. With rapid technological changes, employers may prefer hiring already skilled workers rather than training their current employees. Furthermore, employers might focus on immediate operational needs over long-term training investments, especially in a competitive market.

Among the proactive actions can be taken to mitigate this problem are by ramping up in-house training programmes as it can provide employees with continuous learning and skill development and leveraging online training platforms that focus on electrical engineering and related technologies. This will ensure knowledge transfer within the company.

SUB-SECTOR 2 :

Short Term Accommodation Activities (0.38)

Referring to Belanjawan Negeri Sembilan 2024, a total of RM 13.14 million has been allocated for tourism – including RM 2.5 million for management grants and the Calendar of Events (COE) and RM 5.8 million to enhance ecotourism products such as Ulu Bendul Recreational Forest, Mount Angsi, Kenaboi Forest Reserve and PD Forest.

Enrolment in Regular/Repetitive Courses (1.00)

Maintaining hygiene standards, food safety, emergency procedures and compliance with health regulations are among the regular courses offered by training providers to the employees in the sub-sector. Figure 112 illustrates repetitive courses such as Service Excellence and Customer Service-- Active Listening Training, which gathered 22.8% of enrolments aim to equip employees with crucial skills and knowledge in order to carry out business activities efficiently.

Figure 112: **Top 10 Regular/Repetitive Courses Enrolled in Short-Term Accommodation Activities Sub-sector in Negeri Sembilan**



Enrolment in Practical/Hands-On (0.13)

Amidst high enrolment in repetitive courses, practical courses were low during the year with merely 280 enrolments or 20.3% under the sub-sector. Given the fast-paced nature of the sub-sector, employees often prioritise training that addresses immediate operational needs. As a result, there is less emphasis on comprehensive practical training which may be seen as less urgent compared to the immediate demands of daily operations.

To balance the challenges in the sub-sector, employers can implement online learning that allows employees to access courses at their convenience, making it easier to fit training into their schedules. This flexibility ensures that training does not interfere with daily operations.

SUB-SECTOR 3 :

Animal Production (0.28)

The Agricultural sector in Negeri Sembilan continues to be a focus for the State Government as it is a primary supplier of raw materials that directly impact the food manufacturing industry. It is time for the Agricultural sector to receive special attention as it has not been fully explored despite high demand. Currently, only three food items in the state have exceeded SSL--chicken, eggs and fresh milk, while the rest still depend on other states or imports.

The livestock industry is also given priority, with an allocation of RM2.24 million to enhance livestock production and genetics. This will be supported by improving veterinary quality and expansion with an allocation of RM2.19 million.

Enrolment in Regular/Repetitive Courses (1.00)

The Animal Production sub-sector involves raising and fattening animals for the sale of animals or animal products. This includes establishments such as farms that are primarily engaged in keeping, grazing, breeding or feeding animals.

Courses like Layer (Packer) and Egghouse Grading in Table 21 encompass a wide range of topics, including breeding, nutrition, health management, housing, reproduction, behavior, production systems and sustainable practices. These courses provide comprehensive training and ensure adherence to industry standards in the Animal Production sub-sector.

Table 21: **Top 10 Regular/Repetitive Courses Enrolled in Animal Production Sub-sector in Negeri Sembilan**

No.	Regular/Repetitive Courses
1.	Layer (Packer)
2.	Egghouse Grading
3.	Egghouse Inventory
4.	Egghouse Packer
5.	E-Invoicing Implementation
6.	Feedmill
7.	Fertiliser
8.	Import Export Procedures & Documentation
9.	ISO 22000:2018 Food Safety Management System (FSMS) Foundation
10.	Pelabelan Makanan Berpandukan Food Regulation 1985

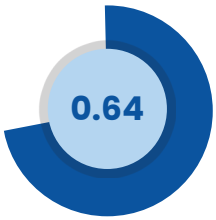
Enrolment in Technical Courses (0.01)

The perception that careers in the Animal Production sub-sector are labour-intensive and less prestigious can discourage employees from enrolling in technical courses with only 51 enrolments or 3.7%. Moreover, the technical nature of these courses can be demanding, requiring significant physical effort and time commitment which can be a barrier for those seeking fewer challenging paths.

By addressing these issues through awareness campaigns, showcasing career development paths and strengthening collaborations with industry stakeholders can boost the enrolment in technical courses for the sub-sector.

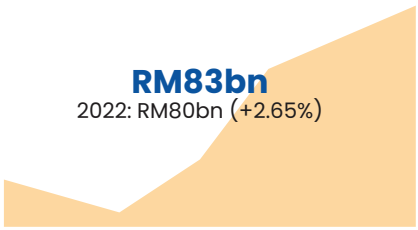
STATES | PERAK

Training Index 2024



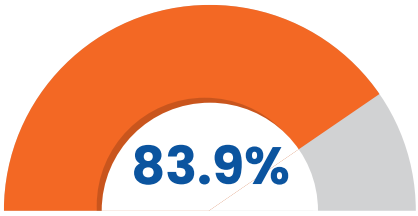
0.65
Training Index 2023

GDP (2023)



RM83bn
2022: RM80bn (+2.65%)

Levy Utilisation Rate %



Training Places

73,737

Financial Assistance

RM62.4M

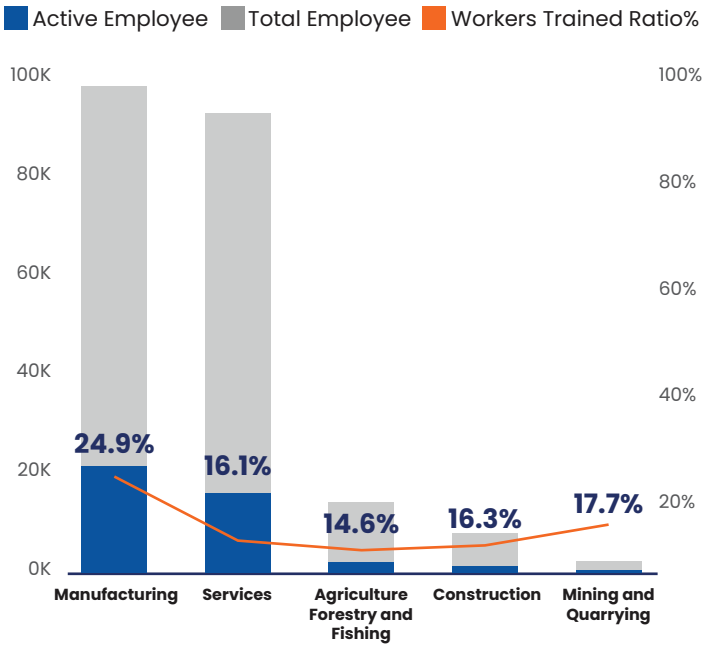
Workers Trained Ratio

19.8%

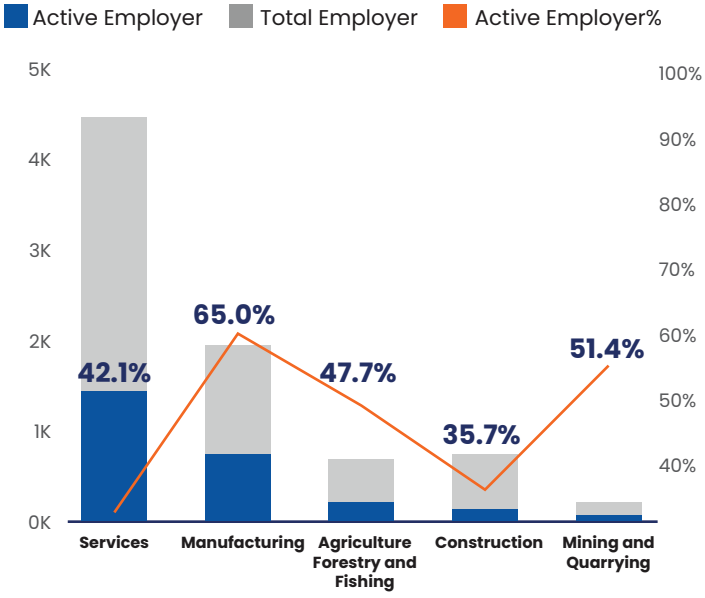
Training Duration (days)

2.03

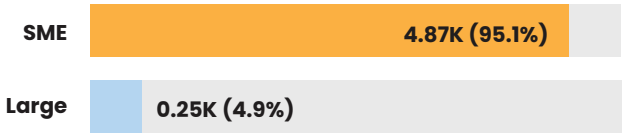
Sectors Breakdown | Workers Trained Ratio %



Sectors Breakdown | Active Employer %



Company Sizes | Number of Registered Employer



Perak

According to the Perak State Budget 2025, the Services sector has made the largest contribution to Perak's GDP, amounting to RM52.3 billion in 2023. Within this sector, Retail and Wholesale Trade have played the most crucial role in driving Perak's economy, highlighting their significance in the region's economic landscape. Following closely are other key industries such as Accommodation, Food and Beverage, Utilities, Transportation and Information and Communications Technology (ICT). These industries collectively support and enhance the economic stability and growth of Perak, making them essential components of the state's overall economic framework.

Furthermore, the Perak State Budget 2025 underscores the critical importance of human resource development in ensuring the success of each industry. Investing in education, training and skill development programmes is essential to equip the workforce with the necessary competencies to thrive in the evolving economic landscape. By fostering a culture of continuous learning and professional growth, Perak aims to enhance productivity and innovation across all sectors. This focus on human capital not only supports the immediate needs of industries such as retail, wholesale trade, accommodation, food and beverage, utilities, transportation and ICT but also lays the foundation for sustainable economic development and long-term prosperity.

SUB-SECTOR 1 :

Wholesale of Food, Beverages and Tobacco (0.32)

Wholesale of food, beverages and tobacco employs nearly 5,000 workers registered under HRD Corp as of 2024. This industry in Perak reflects a Training Index of 0.32, positioned within the 'Adopter' category. Employers in this sector demonstrate moderate engagement in workforce development, with balanced efforts in training preparation, talent nurturing and quality assurance.

While adequate training plans and materials are in place, supported by moderate resource allocation, there remains considerable potential for employers to enhance their training strategies and investments, strengthening workforce capabilities and driving sustainable growth within the industry.



Usage of HRD Levy (Utilisation Rate) (0.12)

The average levy utilisation rate within this sector is 58% of the total levy utilised, benefiting only 617 out of 4,604 employees (13%). According to global labour market trends reported by the International Labour Organisation (ILO) and the Organisation for Economic Co-operation and Development (OECD), efficient levy utilisation is vital for workforce development and enhancing economic productivity (ILO, 2023; OECD, 2023). The underutilisation observed in Perak's wholesale food, beverage and tobacco sector may indicate underlying structural inefficiencies or barriers in workforce planning and levy allocation. Notably, this sector records a low Training Index score of 0.12, categorised under Beginner, reflecting minimal participation in training activities, limited commitment to talent development and generally low-quality training initiatives. Employers in this category also tend to lack proper training allocation, plans and materials, further contributing to underperformance in skills enhancement.

Addressing this low utilisation rate is critical, particularly as most levy contributions are sourced from SME employers. SMEs account for 69% of the total levies collected in the Wholesale of Food, Beverages and Tobacco sub-sector and their limited use of these funds results in missed opportunities for both workforce development and sectoral growth. Employers within the SME segment would benefit from clearer guidance and targeted support on how to access and utilise effectively levies for skills development initiatives. Doing so would ensure employees gain from the investments made on their behalf while also enhancing the sector's overall competitiveness and capacity for sustainable growth.

Figure 113: **Levy Utilisation Rate (%) by Industry Size in Perak, 2024**

Wholesale of Food, Beverages and Tobacco

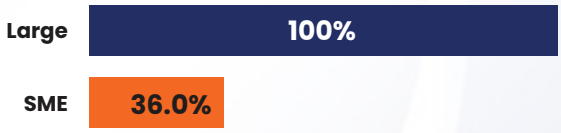
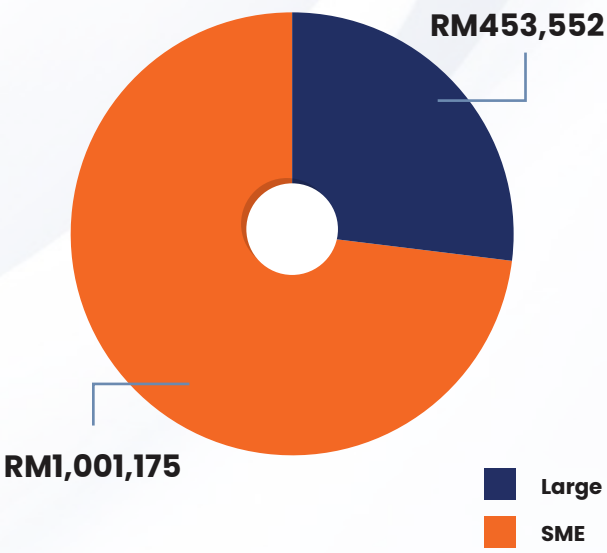


Figure 114: **Levy Collection by Industry Size in Perak, 2024**

Wholesale of Food, Beverages and Tobacco



Enrolment in Practical/Hands-On 0.10

While continuous practical training is essential for workers in Service industries, the scores indicate significantly low enrolment in hands-on training. Only 7% of overall training consists of practical, hands-on sessions, which are especially needed given that most workers belong to the semi-skilled or low-skilled group. More practical training should be taken so that the workers can advance in their careers and improve their competitiveness.

In 2024, the Wholesale of Food, Beverages, and Tobacco sector in Perak demonstrated a significant imbalance between theoretical and practical training enrolment across all skill categories. For skilled workers, only 19 participants enrolled in practical or hands-on training compared to 180 in theory-based programmes. Among semi-skilled workers, 48 participated in practical training, while 330 attended theory sessions. The gap is even more pronounced for low-skilled workers, with just two individuals receiving hands-on training against 60 in theoretical learning. This disparity highlights a critical need to strengthen practical, skills-based training initiatives to ensure the workforce is equipped with competencies essential for productivity and operational efficiency. According to the International Labour Organization (ILO) Global Employment Trends for Youth 2022, hands-on, work-based learning plays a pivotal role in building employable skills, particularly in sectors that require practical competencies (ILO, 2022). Addressing this imbalance is crucial to improving job readiness and enhancing workforce productivity within the sector.

Figure 115: **Workers Trained by Skill Level in Perak, 2024**

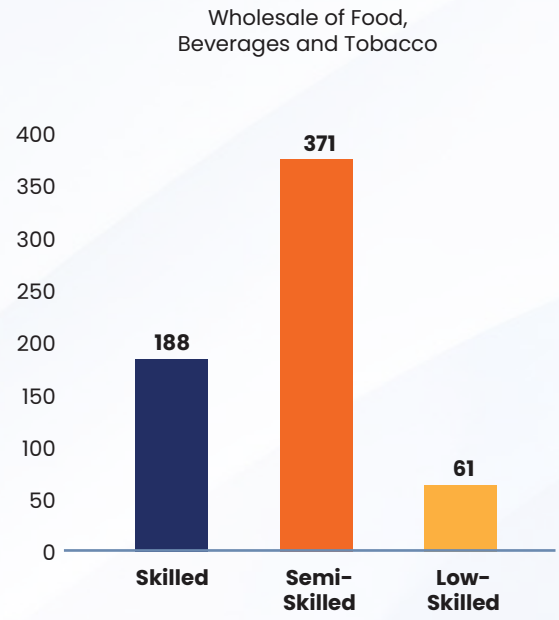
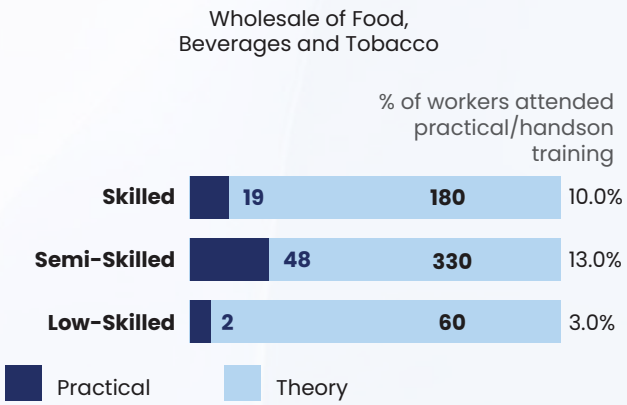


Figure 116: **Total Enrolment in Practical/Hands-on Training by Skill Level in Perak, 2024**



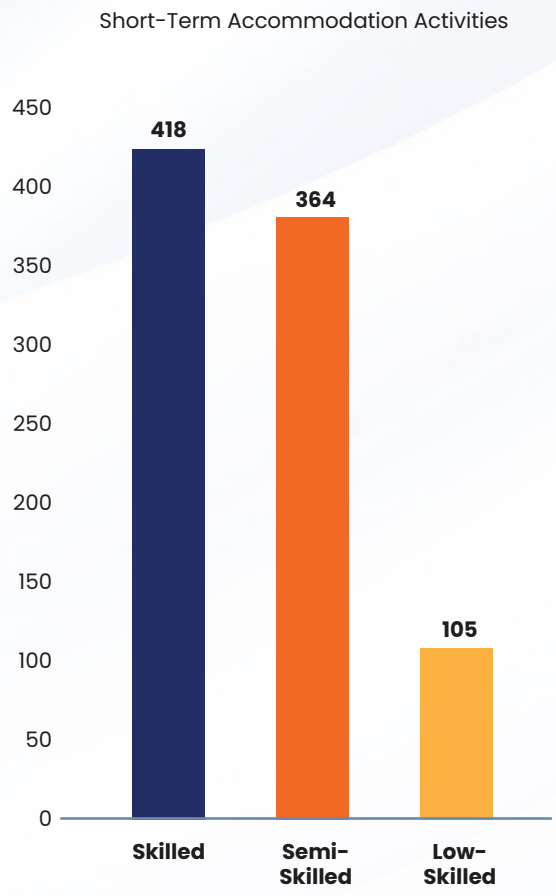
SUB-SECTOR 2 :

Short-term Accommodation Activities
Number of Skilled Workers Trained (0.19)

The index score of 0.19 places the Short-Term Accommodation Activities sub-sector in the Beginner category for workforce training and development. This classification indicates low participation or commitment towards training initiatives and talent development. There is a noticeable lack of training allocation, with many organisations operating without structured training plans or quality training materials to support employee growth.

In 2024, data from HRD Corp indicates that within the Short-Term Accommodation Activities sub-sector in Perak, 47% of the workforce (418 workers) are categorised as skilled, 41% (364 workers) as semi-skilled and 12% (105 workers) as low-skilled. This distribution underscores the importance of strategic investment in upskilling initiatives. Employers are encouraged to enhance career progression opportunities by providing targeted training and development programmes, ensuring clear pathways for employees to advance and contribute more effectively to the sector's growth.

Figure 117: **Workers Trained by Skill Level in Perak, 2024**

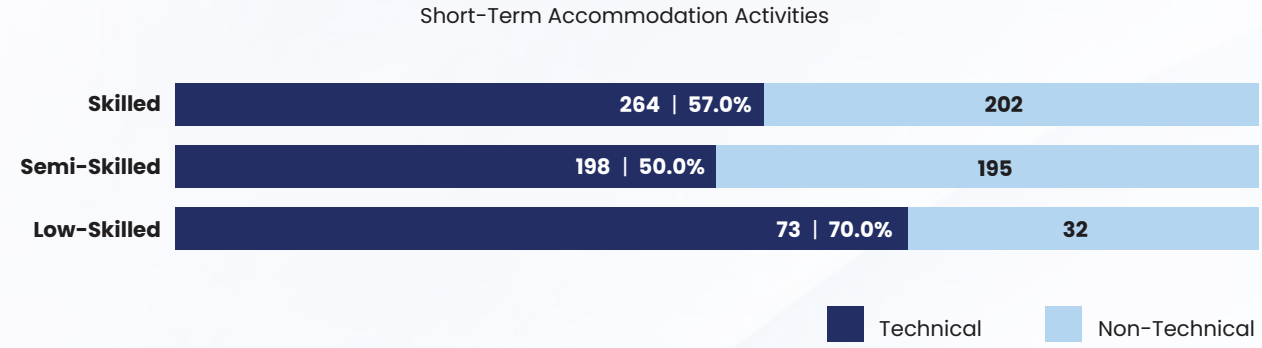


Enrolment in Technical Courses (0.14)

The Enrolment in Technical Courses indicator for the Short-Term Accommodation Activities sub-sector scores 0.14, placing it firmly in the Beginner category. This low score reflects minimal participation or commitment from employers and employees in pursuing technical training essential for enhancing service quality and operational efficiency. The lack of structured training plans, dedicated budgets and quality learning materials has resulted in limited opportunities for workers to develop technical competencies relevant to the industry.

The current score implies that further progress is needed in enrolling workers in technical courses. In 2024, only 535 workers participated in TVET courses at least once. However, the data suggests a clear need for upskilling, particularly among low-skilled workers, as they show a significantly higher uptake of technical training programmes.

Figure 118: **Enrolment in Technical Training by Skill Level in Perak, 2024**



SUB-SECTOR 3 :

Electric Power Generation, Transmission and Distribution

Enrolment in Technical Courses (0.00)

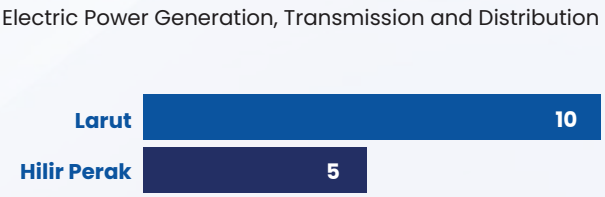
Although all three registered employers under the Electric Power Generation, Transmission and Distribution sub-sector in Perak participated in training programmes in 2024, the number of employees receiving training remains low. Out of 150 employees, only 20 attended training sessions, meaning 130 employees, or 87%, did not receive any technical training. This highlights a significant gap in training engagement and underscores the need for more frequent and accessible training opportunities.

Despite this, there has been some progress in green upskilling initiatives. Of the 15 technical training sessions conducted, 10 focused on digital transformation and energy-efficient technologies. As industries continue to transition to greener operations, it is essential to provide employees with key green skills—such as energy efficiency, waste reduction and the integration of sustainable technologies—to ensure long-term environmental and economic resilience.

In 2024, the Electric Power Generation, Transmission and Distribution sub-sector in Perak conducted two training courses: Digital Transformation—Industry 4.0, which had 10 enrolments and TIMTEC HR—Operational Modules, which had five (5) enrolments.

However, the sub-sector must urgently enrol in more technical courses to further enhance the skills and expertise of its workforce. Expanding technical training opportunities will be crucial to meeting the energy sector's evolving demands and ensuring the long-term sustainability and efficiency of electric power generation, transmission and distribution in Perak.

Figure 119: **Technical Courses Enrolled by District in Perak, 2024**



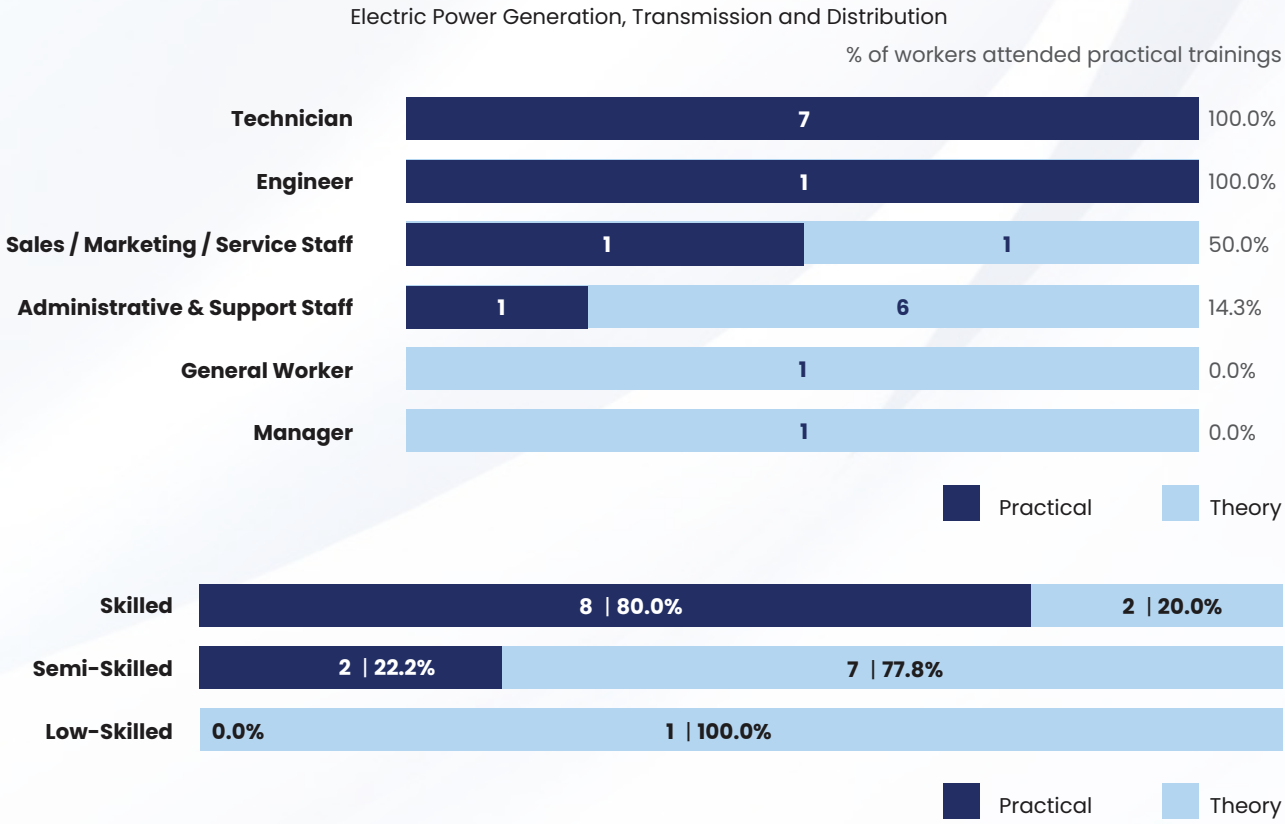
In 2024, technical training in the Electric Power Generation, Transmission and Distribution sub-sector was conducted in only two districts in Perak: Hilir Perak and Larut. To support these training initiatives, RM9,995 was allocated for Hilir Perak, while RM19,750 was allocated for Larut.

Enrolment in Practical/Hands-On (0.01)

In 2024, only 10 practical/hands-on training sessions were conducted, which is significantly low. While workers in technical roles, such as engineers and technicians, participated exclusively in practical training, the participation rate for other professions, such as general workers and administrative staff, was notably low, at 0% and 14%, respectively.

To address this gap, it is crucial for workers, particularly those in roles requiring hands-on skills, to increase their enrolment in future practical training sessions. Enhancing participation in such training will ensure a more skilled and versatile workforce, better equipped to meet the demands of their respective roles.

Figure 120: **Enrolment in Practical Training by Worker's Designation in Perak, 2024**



Enrolment in practical training by workers' skill level in Perak for 2024 highlights a similar trend. Participation was highest among skilled workers at 80.1%, followed by semi-skilled workers at 22.1%, while low-skilled workers recorded 0% participation.

To address this gap, it is essential to expand access to practical training, particularly for low- and semi-skilled workers, to enhance their competencies and employability.

Strengthening practical training opportunities will not only help these workers develop job-specific skills but also improve their career progression prospects, increase their earning potential, and reduce labour market inequalities. Furthermore, equipping them with relevant hands-on experience will support industry demands for a more competent workforce, enhance overall productivity, and contribute to economic growth.

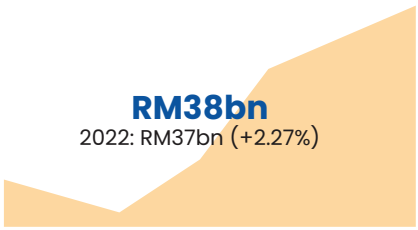
STATES | TERENGGANU

Training Index 2024



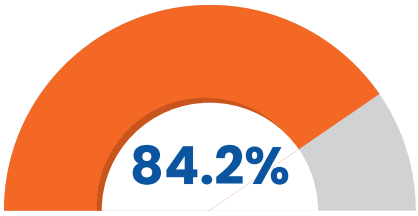
0.65
Training Index 2023

GDP (2023)



RM38bn
2022: RM37bn (+2.27%)

Levy Utilisation Rate %



Training Places

23,228

Financial Assistance

RM23.1M

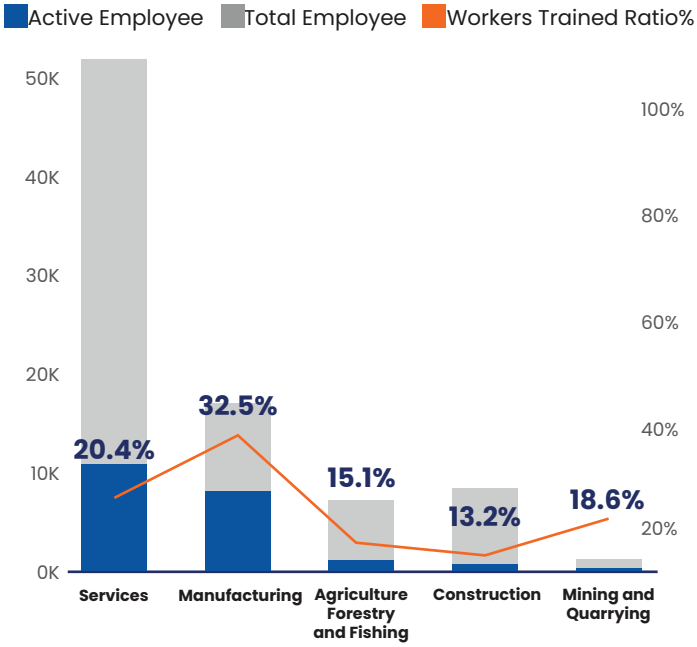
Workers Trained Ratio

21.5%

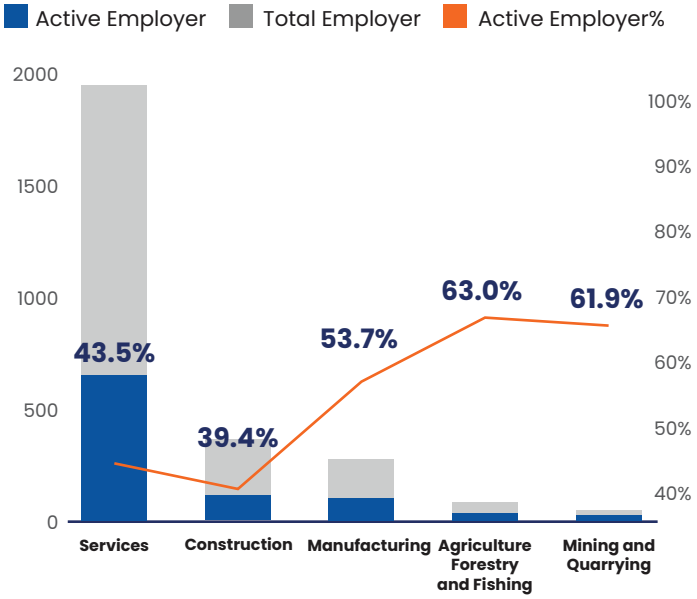
Training Duration (days)

3.08

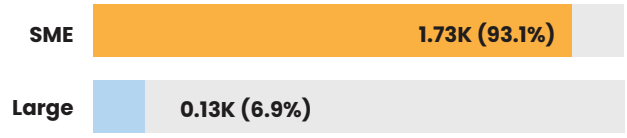
Sectors Breakdown | Workers Trained Ratio %



Sectors Breakdown | Active Employer %



Company Sizes | Number of Registered Employer



Terengganu

Terengganu, known as the 'Gem of the East Coast,' is a key economic driver in Malaysia, with a strong foundation in Oil and Gas, Manufacturing and Services. In 2023, the state's GDP reached RM38.2 billion, growing 2.3% from the previous year. The Services sector led with RM19.9 billion (52.0%), followed by Manufacturing at RM14.1 billion (36.9%).

Agriculture saw a 7.4% rebound, while construction grew 1.6%. With the Terengganu State Budget 2025 focusing on food security, industrial growth and trade, the state is set to strengthen its economic resilience and sustainable development.

SUB-SECTOR 1 :

Growing of Perennial Crops (0.60)

The growth of the Perennial Crops sector in Terengganu is an essential part of the state's agricultural landscape, supporting livelihoods and ensuring long-term food security. With an Index of 0.60, this sector is categorised as 'Experienced', showing steady growth and ongoing efforts to enhance sustainability and productivity.

A key factor shaping the sector's progress is enrolment in Practical/Hands-on Training (0.25). One of the biggest challenges in the Growing of the Perennial Crops sector in Terengganu is that most farmers still prefer theory-based learning over hands-on training. While classroom lessons provide useful knowledge, farming is a practical skill and without real-world experience, it's much harder to put new techniques into action. Many farmers rely on traditional methods simply because they haven't been exposed to modern tools and innovative farming techniques. Without that hands-on experience, improving productivity becomes a struggle.

Another important aspect is the Workers Trained Ratio (0.40). This shows that while some farmers and workers have received training, there is still a long way to go in equipping the workforce with the necessary knowledge and skills. A well-trained agricultural workforce is crucial for increasing crop yields, improving efficiency and ensuring sustainable farming practices. Expanding training programmes, integrating digital tools and offering mentorship opportunities could empower more farmers with the expertise needed to succeed.

To help this sector grow, it's important to invest in financial support for training, make modern farming technology more accessible and build strong partnerships with industry experts. By focusing on these areas, Terengganu can nurture a skilled and resilient farming community—one that not only improves productivity but also ensures a brighter, more sustainable future for farmers and industry.

Enrolment in Practical/Hands-On (0.25)

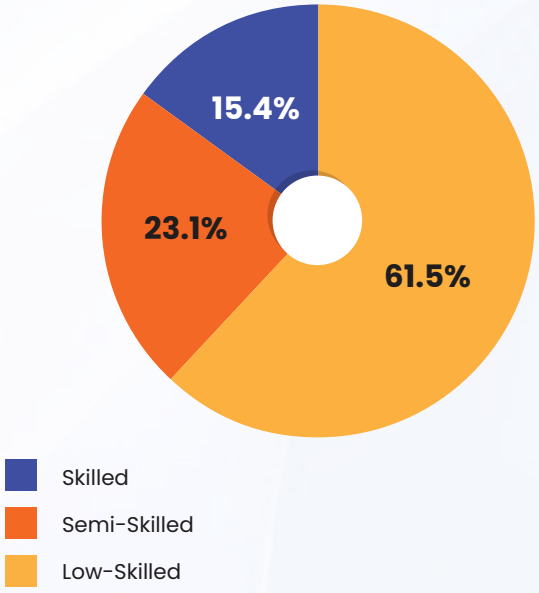
The score indicates a significantly low rate of practical training, accounting for only 4% of the total. In 2024, there were just 43 practical training sessions compared to 987 non-practical ones. When analysing the distribution of training participants by skill group, the highest percentage falls within the low-skilled category, highlighting a strong demand for upskilling among these workers. To address this gap and foster skill development, the allocation of practical training should be increased for this group.

Figure 121: **Enrolment based on Practical and Theory Training According to Growing of Perennial Crops in Terengganu**



In 2024, Terengganu's Growing Perennial Crops sub-sector saw a significant disparity in the participation of practical training across skill groups. Among the low-skilled workers, 61.5% (27 trainees) attended practical sessions, while 23.1% (10 trainees) of semi-skilled workers participated and only 15.4% (6 trainees) of skilled workers were engaged in hands-on training. This distribution highlights the pressing need for more targeted and inclusive practical training opportunities, especially for the semi-skilled and skilled workforce. Such training is crucial to improving productivity and advancing the state's agricultural objectives, as outlined in the Terengganu State Economic Development Plan (2024). The plan underscores the importance of equipping all workers, regardless of skill level, with practical skills to ensure the sustainability and growth of the agriculture sector.

Figure 122: **Percentage of Practical Training by Skill Group (%)**



Workers Trained Ratio (0.40)

In 2024, the Growing Perennial Crops sub-sector in Terengganu recorded a low index score of 0.02 for the Number of Employees Trained, placing it in the "Beginner" category for training readiness. This reflects minimal participation in skills development initiatives, underscoring a lack of commitment towards structured training and talent development in the sub-sector.

The insufficient allocation of resources, absence of comprehensive training plans and limited availability of quality training materials have contributed to this outcome. Strengthening employee training is essential to enhance productivity, encourage the adoption of modern farming techniques and ensure the sustainability and competitiveness of perennial crop cultivation in Terengganu.

Figure 123: **Workers Trained Ratio in Terengganu, 2024**



The score reflects a significantly low Workers Trained Ratio, with only 547 employees, 13.8% of the workforce, receiving training in 2024. This highlights a substantial gap, leaving nearly 3,000 workers without any form of upskilling or reskilling opportunities during the year. Addressing this training shortfall is critical to enhancing workforce competency, improving productivity and supporting the overall development of the sector.

SUB-SECTOR 2 :

Other Education (0.44)

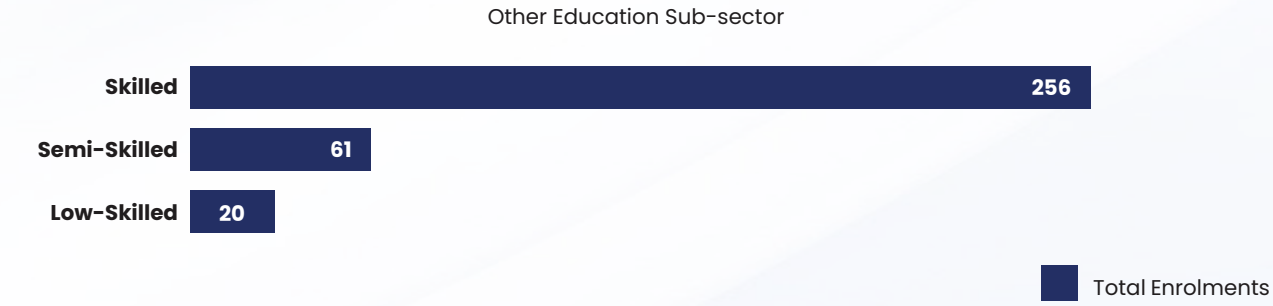
The other Education sub-sector in Terengganu is crucial in providing specialised training beyond formal education, helping individuals gain industry-relevant skills. With an Index of 0.44, this sector falls within the "Adopter" category, reflecting ongoing efforts to strengthen training initiatives.

One key indicator of progress is the Number of Certified Workers (0.40). This suggests that while many workers have obtained formal certifications, there is still room to improve participation rates and ensure a larger workforce gains recognised qualifications.

However, access to training remains a challenge, as reflected in the amount of Financial Assistance Allocated for Training per Worker (0.21). This indicates limited funding support, which may restrict opportunities for workers to upskill. To enhance the impact of this sector, increasing financial aid, expanding structured training programmes and fostering industry partnerships could help bridge skill gaps. Strengthening these areas would not only create more opportunities for workers but also contribute to a more competitive and resilient workforce in Terengganu.

Enrolment in Practical/Hands-On (0.25)

Figure 124: **Number of Enrolments by Skill Category in Terengganu**



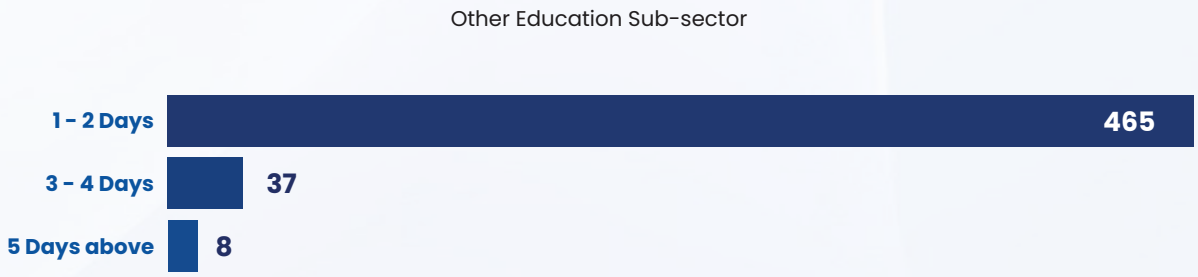
In 2024, the other Education sub-sector in Terengganu showed a strong commitment to workforce development, as reflected in its training enrolment figures. A total of 256 training places were allocated for skilled workers, significantly higher than the 61 training places for semi-skilled and 20 for low-skilled workers. This trend highlights the sector's focus on enhancing the expertise of its highly skilled workforce, which is crucial for maintaining quality education services. However, to ensure balanced growth and greater inclusivity, it is essential to increase upskilling opportunities for semi-skilled and low-skilled workers. Expanding training places for these groups will not only raise overall competency levels but also help the sector stay competitive and adaptable in an evolving educational landscape.

Financial Assistance for Worker (0.21)

In 2024, the other Education sub-sector in Terengganu struggled with limited financial support for worker training, reflected in its Financial Assistance for Workers index of 0.21. With minimal funding available, many employees found it difficult to enrol in training programmes that could help them develop essential skills and advance in their careers. Without proper financial aid, upskilling opportunities remain out of reach for many, slowing down both individual growth and the overall progress of the sector. To change this, there needs to be greater investment in training subsidies, scholarships and employer-sponsored programmes, ensuring that workers have access to the learning opportunities they need. Strengthening financial support for training will benefit employees and contribute to a more skilled workforce and a stronger, more competitive other Education sub-sector in Terengganu.

In 2024, the enrolment distribution across different training durations in Terengganu is accompanied by varying average training costs. The 1–2 day courses, which recorded the highest enrolment (465 participants), had an average cost of RM4,336.54 per participant. In contrast, the 3–4-day courses, with 37 participants, had a higher average cost of RM5,952.96 per participant. For courses lasting five (5) days or more, with only 8 participants, the average cost was RM4,643.79 per participant. This data suggests a preference for shorter, more cost-effective training programmes, yet it also highlights the financial challenges associated with longer sessions. To maximise the impact of training investments, the sub-sector should explore ways to optimise the cost-effectiveness of extended training programmes while ensuring participants receive comprehensive skill development.

Figure 125: **Number of Enrolments by Training Duration in Terengganu**



SUB-SECTOR 3 :

Retail Sale in Non-Specialised Stores (0.34)

In the Retail Sale in the Non-Specialised Stores sub-sector, Terengganu has recorded an Index of 0.34, placing it within the "Experienced" category of training readiness. This classification reflects a moderate level of participation and commitment to training and talent development activities in this sector.

The factor measuring training support and facilities (0.25) indicates that while some resources are available, the overall infrastructure remains limited, affecting the effectiveness and accessibility of training initiatives. Additionally, the low enrolment in digital training (0.10) highlights a gap in adopting digital skills, which are increasingly critical for business competitiveness and efficiency.

Given the role of this sub-sector in supporting Terengganu's retail landscape, particularly in the sale of diverse consumer goods, addressing these gaps is crucial. Strengthening investment in training facilities, improving structured training plans and increasing participation in digital learning programmes can help enhance workforce competencies, improve service quality and ensure long-term sustainability in the region's retail industry.

Training Support/Facilities (0.25)

The Retail Sale in Non-Specialised Stores sub-sector in Terengganu shows a clear preference for in-house training, which recorded 185 training places, making it the most utilised format. This suggests that businesses prioritise customised, operational-specific training, allowing employees to acquire practical skills that are directly relevant to their daily tasks. In-house training is likely favoured due to its immediacy, flexibility and alignment with operational needs, ensuring minimal disruption to business activities.

Similarly, Public training (119 training places) saw significant participation, reflecting the sector's reliance on structured, externally conducted training programmes to equip employees with broader industry knowledge and compliance-related skills. The dominance of in-house and public training indicates a strong preference for hands-on, face-to-face learning approaches within the sector, reinforcing the importance of practical, industry-specific skill development.

The focus areas for the in-house and public training include key areas such as productivity, sales, marketing, customer service, retail, finance and accounting. The Team Building 2024 and Basic Digital and Electronic Marketing courses are the leading training courses offered for the sub-sectors, aimed at enhancing teamwork and strengthening digital marketing skills. With 185 participants in in-house training and 119 in public training, these courses are integral to improving workforce capabilities in the core areas essential to the success of the retail sector.

Although training support and facilities are available, the overall index of 0.25 suggests that there is still room for improvement in both the breadth and depth of training offered, particularly regarding resources and participation. Further investment in training infrastructure and a more structured approach to talent development will be key to boosting employee skills and supporting the sector's growth.

Figure 126: **Enrolment in Different Type of Training for Retail Sale in Non-Specialised Stores Sub-sectors in Terengganu**



Enrolment in Digital Training (0.10)

In Terengganu's Retail Sale in Non-Specialised Stores sub-sector, training participation remains heavily skewed towards non-digital programmes, with 311 enrolments in conventional training compared to only 20 enrolments in digital training. This stark difference suggests that retail businesses still favour traditional training formats, despite the increasing importance of digital skills in modern retail operations.

The Terengganu State Budget 2025 highlights entrepreneurial development and digital adoption as key economic drivers. Yet, the low uptake of digital training indicates a gap in digital literacy or accessibility within the sector. Given the state's initiatives to integrate e-commerce and financial technology into business growth, shifting non-digital training—such as leadership, tax compliance and business management—into digital formats could help bridge this gap. Encouraging a higher adoption of digital learning will better align workforce development with Terengganu's long-term economic goals for retail modernisation and trade competitiveness.



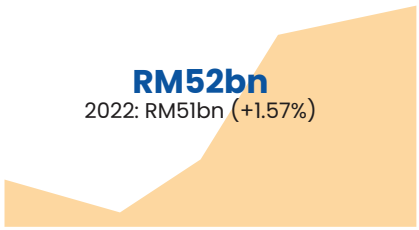
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Training Index 2024

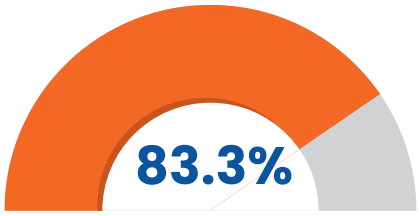


0.61
Training Index 2023

GDP (2023)



Levy Utilisation Rate %



Training Places

82,840

Financial Assistance

RM56.3M

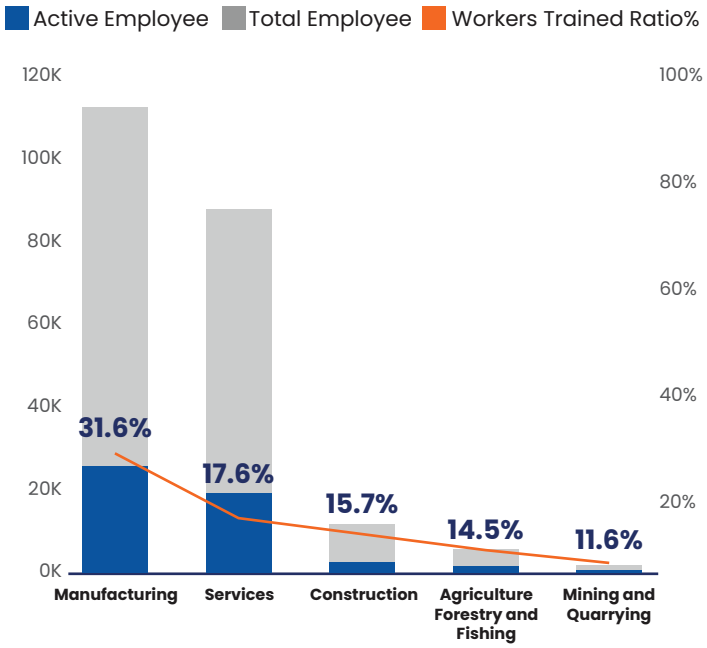
Workers Trained Ratio

24.6%

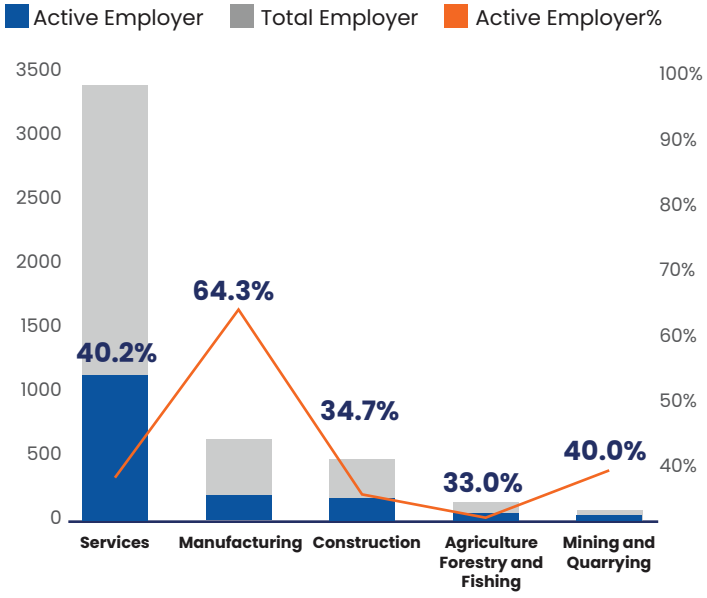
Training Duration (days)

1.52

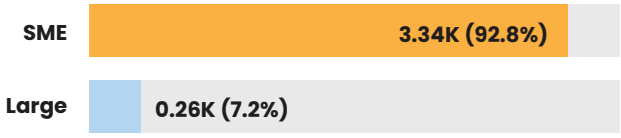
Sectors Breakdown | Workers Trained Ratio %



Sectors Breakdown | Active Employer %



Company Sizes | Number of Registered Employer



Kedah

Kedah has shown impressive economic growth, particularly in its Manufacturing, Tourism and Agriculture sectors. In the first quarter of 2024, Kedah recorded an exceptional RM30.98 billion in foreign investments, the highest in Malaysia for the Manufacturing sub-sector, surpassing major industrial regions such as Klang Valley and Johor (Kedah State Government, 2024). Kedah's strategic investment in industrial growth, paired with its emphasis on sustaining agricultural productivity and enhancing tourism infrastructure, places it on a strong path for continued economic expansion.

SUB-SECTOR 1 :

Manufacture of Electronic Components and Boards (0.52)

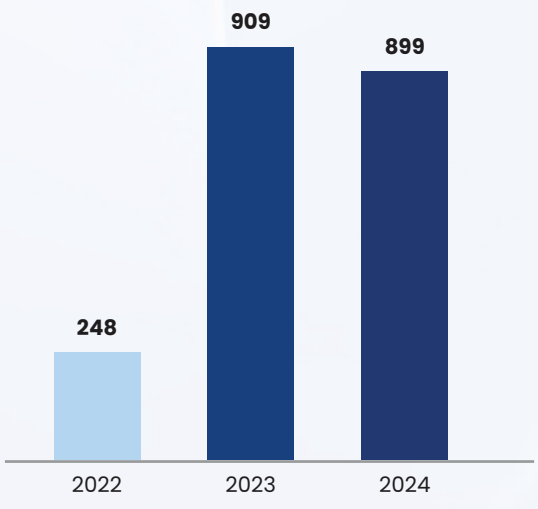
At the forefront of this industrial transformation is the Kulim Hi-Tech Park (KHTP), a premier investment destination in Asia that continues to attract global companies. Initially developed around five (5) economic clusters, which include agro-food, nanotechnology, biotechnology, chemical products and advanced materials, KHTP has since expanded to include key high-tech sub-sectors such as electronics manufacturing. This expansion has positioned Kedah as a crucial hub for advanced manufacturing, with companies like OSRAM Opto Semiconductors and Intel operating state-of-the-art facilities within the park.

Number of Skilled Workers Trained (0.62)

In 2024, HRD Corp data indicates that the Manufacture of Electronic Components and Boards sub-sector has made significant strides in workforce upskilling, achieving an index score of 0.62. The number of skilled workers in this sub-sector has increased by 262.5% from 2022 to 2024, reflecting a continuous upward trend in talent development. This impressive trend reflects the broader industrial transformation driven by Industry 4.0 (IR4.0), particularly within Kulim Hi-Tech Park (KHTP), a leading hub for high-tech industries in Malaysia. As one of the country's premier technology parks, KHTP has been at the forefront of smart manufacturing and digitalisation, fostering an ecosystem that supports automation, artificial intelligence and the Internet of Things (IoT). The park's emphasis on research, innovation and industry-academia collaboration has accelerated the adoption of IR4.0 solutions, reinforcing the demand for a highly skilled workforce.

To sustain this momentum, continuous upskilling initiatives are essential to equip workers with the expertise needed to navigate and optimise intelligent production systems.

Figure 127: **Skilled Workers Trained in the Manufacture of Electronic Components and Boards Sub-sector in Kedah for 2022, 2023 and 2024**



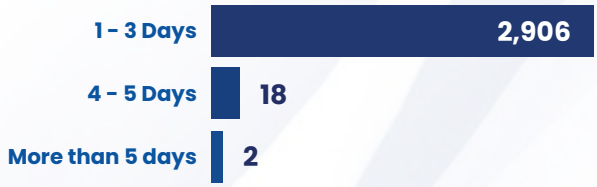
Training Duration (0.06)

HRD Corp data shows that 99.3% (2,906) of total training duration comprises sessions under three days, while 0.6% (18) falls within the four-to-five-day and only 0.1% (2) extends beyond 5 days. Most of these short programmes are non-certification training, offering practical skills without formal accreditation.

This preference is driven by cost efficiency, immediate skill application and adaptability to Industry 4.0 advancements. Shorter training reduces costs, minimises production disruptions and allows workers to apply new skills quickly. Given the fast-paced, technology-driven environment, frequent short courses ensure employees stay updated without prolonged absences.

Moreover, the sub-sector requires task-specific expertise rather than broad training. Short programmes focus on precision assembly, quality control and automation system maintenance, equipping workers with practical skills. Many companies also integrate on-the-job training (OJT) to reinforce learning while maintaining production efficiency.

Figure 128: **Training in the Manufacture of Electronic Components and Boards Sub-sector in Kedah, 2024**



SUB-SECTOR 2 :

Short-Term Accommodation Activities (0.50)

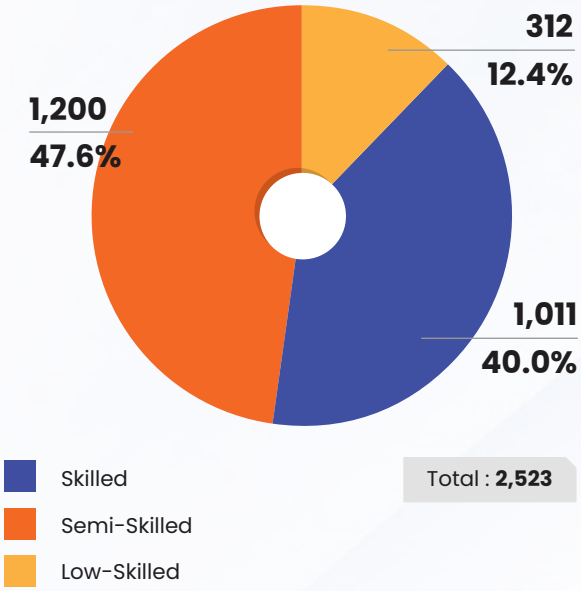
In 2024, the Strategic Planing Division of Tourism Malaysia identified Pulau Langkawi as the top island destination in Malaysia, surpassing Pulau Redang and Pulau Tioman. This growing appeal underscores Kedah's rising prominence as a tourist hotspot and highlights the critical role of the Short-Term Accommodation sub-sector in supporting visitor demand. Short-Term Accommodation has become a key pillar of Kedah's tourism industry, offering a diverse range of lodging options, from luxury resorts to budget-friendly stays. These accommodations ensure that tourists have comfortable and convenient places to stay while exploring renowned attractions such as the Bujang Valley, Malaysia's richest archaeological site, along with the state's other cultural and natural landmarks. The surge in tourism has amplified the need for varied lodging options to cater to the expanding influx of visitors seeking to experience Kedah's unique heritage and landscapes.

Training Support/Facilities (0.92)

The training support/facilities in the sub-sector of the Tourism industry demonstrated an impressive index score of 0.92 in 2024, reflecting strong investment and commitment to enhancing training resources and infrastructure. This high score highlights the sector's recognition of the critical role training plays in improving workforce quality and service delivery. Employers in the sub-sector are increasingly equipping employees with essential skills through modern training rooms, on-the-job spaces and technology-enabled platforms for continuous development. This investment not only ensures employees have access to both theoretical knowledge and practical experience but also provides employers with cost savings, flexibility and greater control over the training process. Moreover, in-house training facilities help foster a stronger organisational culture, boosting employee engagement and retention, improving service quality and a competitive edge in the market.

Number of Skilled Workers Trained (0.23)

Figure 129: **Worker's Skills Level in the Sub-sector of Short-Term Accommodation Activities in Kedah**



The sub-sector faces challenges in skilled worker training, reflected by a low index score of 0.23 in 2024, indicating limited participation in upskilling initiatives. This is largely due to the high proportion of low-skilled and semi-skilled workers (60.0%) who comprise a significant portion of the workforce, with skilled workers representing only 40.0%. The nature of roles like housekeeping, front desk services and maintenance typically requires only basic to intermediate skills. The seasonal nature of the industry, reliance on temporary or part-time workers and low entry barriers also contribute to this trend.

SUB-SECTOR 3 :

Growing of Non-Perennial Crops (0.17)

In 2024, the Kedah Regional Development Authority (KEDA) allocated RM3.37 million to strengthen the nation's food security, reinforcing its commitment to the implementation of the National Food Security Policy 2021–2025 and the National Agro-Food Policy 2021–2030 within its operational areas. As Malaysia's "Rice Bowl," Kedah remains a cornerstone of the country's agricultural sector, with significant growth potential in paddy industries. Kedah prioritises revitalising its paddy industry through the Estate Management Model 2.0 (EMM2.0), designed to boost productivity and improve farmers' livelihoods. This model integrates modern, efficient and sustainable farming methods, incorporating advanced agricultural technologies to enhance yield and profitability. With these strategic developments, Kedah is poised to solidify its position as Malaysia's leading agricultural hub, with paddy serving as a key economic driver for the state's long-term growth and prosperity.

Number of Certified Trainer (1.00)

The Growing of Non-Perennial Crops sector in Kedah is undergoing significant transformation, bolstered by strategic initiatives to enhance agricultural productivity and sustainability. With the growing emphasis on certified trainers, recorded at 1,634 there is a clear recognition of the importance of skilled trainers in ensuring effective knowledge transfer and developing the capabilities of the agricultural workforce. This focus is crucial in adapting to the evolving agricultural landscape, especially as Kedah seeks to optimise its agricultural practices.

1.5 RPEL (0.00)



Kedah's Non-Perennial Crops Sector recorded a total of 206 workers who have been certified through the RPL Scheme based on their competency level. This plays a significant role in its agricultural landscape, contributing to the state's economic development. While the sector has faced challenges in implementing advanced learning systems like Recognition of Prior Learning (RPL), growth opportunities exist. The traditional methods and work culture in agriculture may present challenges for adopting RPL, where the benefits of formal recognition might not be immediately obvious to small-scale farmers.

Despite these challenges, the growing demand for high-quality agricultural products, especially in Kedah's robust non-perennial crop sector, presents an opportunity to upskill the workforce, allowing farmers to better adapt to market trends and environmental changes. Overcoming these barriers could allow the non-perennial crops sector in Kedah to improve its productivity and increase its competitiveness in the market by better recognising and developing the skills of its workers. This would be crucial for ensuring sustainable growth and meeting the rising demand for food products.

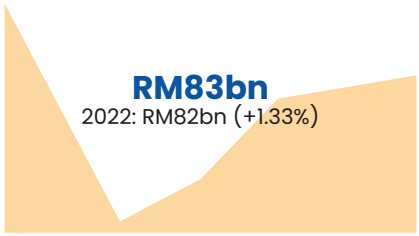
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Training Index 2024



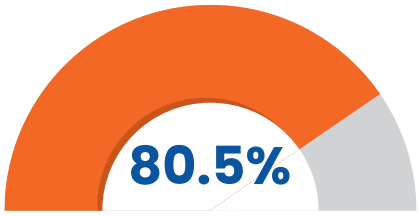
0.57
Training Index 2023

GDP (2023)



RM83bn
2022: RM82bn (+1.33%)

Levy Utilisation Rate %



Training Places

55,095

Financial Assistance

RM56.5M

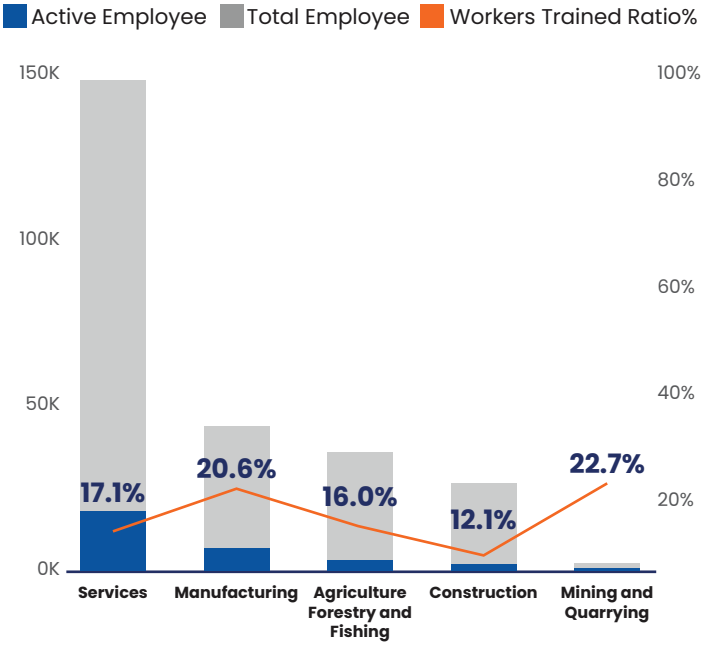
Workers Trained Ratio

17.1%

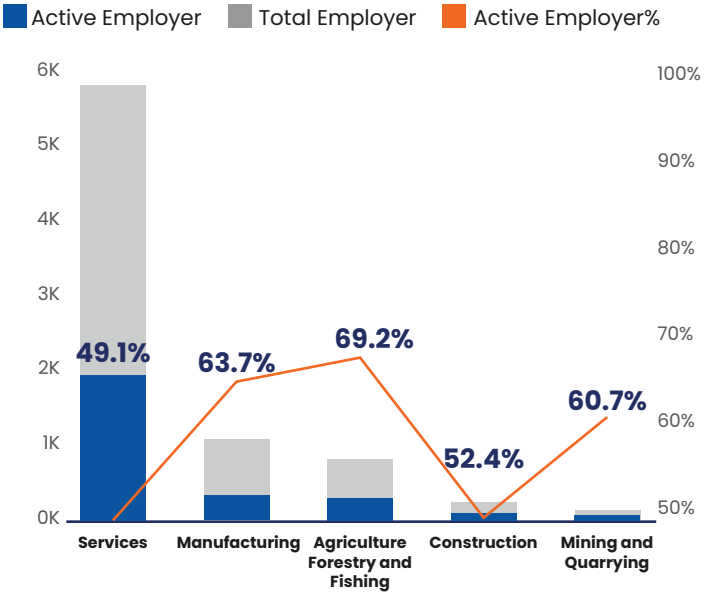
Training Duration (days)

1.79

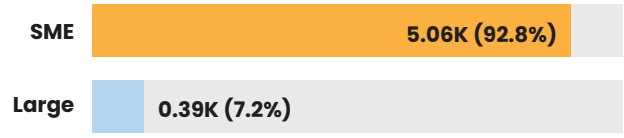
Sectors Breakdown | Workers Trained Ratio %



Sectors Breakdown | Active Employer %



Company Sizes | Number of Registered Employer



Sabah

Sabah is situated at the northern tip of Borneo, Malaysia's second-largest state with a population of 3.59 million. Its strategic location within the Brunei Darussalam–Indonesia–Malaysia–Philippines East ASEAN Growth Area (BIMP-EAGA) region makes it an ideal hub for businesses (SEDIA, 2021). According to the 2020 Malaysian Population and Housing Census (Mycensus), Sabah has the second-largest population in Malaysia, after Selangor, at 3.4 million people.

Sabah's economy traditionally relies on exporting its primary and minimally processed goods. While lumber milling remains common, the Agriculture, Tourism and Manufacturing sectors are rapidly expanding and are becoming key economic drivers in the region. Despite this growth, petroleum, palm oil and cacao continue to be among the top exports from Sabah. Thanks to the area's abundant natural resources, nearly one-seventh of the land around Sabah is suitable for agricultural development (Government of Sabah, 2025).

SUB-SECTOR 1 :

Growing of Perennial Crops (0.65)

The Belanjawan Sabah 2024 allocates RM 553.07 million to the Agriculture sector, with RM363.91 million designated for supplies and RM189.16 million for development. This allocation accounts for 9.7% of the total budget of RM5.701 billion.

Sabah's cocoa-producing interior regions such as Sook, Tenom, Nabawan and Sipitang have produced 54 tonnes of dry cocoa beans, contributing 37.5% of the national production total of 144 tonnes in the first quarter of 2024 (Ministry of Plantation and Commodities, 2024).

Moreover, as a powerhouse in Malaysia's palm oil industry, innovations such as precision agriculture, mechanisation and advanced pest management techniques are being implemented to improve yields and promote sustainability (Chief Minister of Sabah, 2024).

Enrolment in Practical/Hands-on Training (0.77)

Investing in downstream processing, embracing advanced technologies and maintaining the highest sustainability standards in the sub-sector have garnered 799 enrolments in practical training.



Figure 130: **Top 10 Practical/Hands-on Courses Enrolled in Growing of Perennial Crops Sub-sector in Sabah**



Practical courses such as Palm Oil Cost Saving with Process Optimisation (Specialise in Physical Refining Process) and Pemantapan *Kompetensi Penyeliaan untuk Penyelia Ladang* are among the several key training courses as illustrated in Figure 130.

These trainings revolve around proper harvesting techniques, pruning techniques, soil management and pest and disease control to maximise yield and quality.

Amount of Financial Assistance Allocated for Training per Worker (0.02)

Financial assistance for the sub-sector stands at RM4.60 million. This amount is attributed to the training characteristics that have well-established growing practices and techniques that have been refined over time. Another factor contributing to the low amount of financial assistance is that perennial crops are generally seen as more stable and less risky compared to annual crops. This perception can lead to a lower prioritisation of financial support for training, as the need for intervention is viewed as less urgent (Food and Agriculture Organisation of the United Nations, 2014).

SUB-SECTOR 2 :

Short Term Accommodation Activities (0.66)

Allocation for Sabah's tourism gained RM 150.3 million in 2024. Tourism in Sabah is highly reliant on its rich natural endowment and cultural heritage. Sabah also attracts adventure seekers with activities like the Mount Kinabalu International Climbathon, which challenges participants to race up and down one of Southeast Asia's highest peaks.

Enrolment in Practical/Hands-on Training (0.99)

1,114 enrolments were recorded on the back of an upbeat training activity in the sub-sector. Practical training in Short-Term Accommodation Activities sub-sectors, such as Applying Food Safety Requirements Training and Crises Management for Business Continuity for Hotels and Resorts, is vital for skill development, quality assurance, operational efficiency, safety compliance, and adaptability, ensuring high service standards and enhancing guest experiences as shown in Figure 131.

Figure 131: **Top 10 Practical/Hands-on Courses Enrolled in Short-Term Accommodation Activities Sub-sector in Sabah**



Enrolment in Digital Training (0.04)

However, the coverage of digital training in the sub-sector was tepid with 210 enrolments recorded during the year. Possible factors influencing the scenarios include limited access to the necessary technology or reliable internet and there may also be a preference for in-person, hands-on training over digital alternatives.

Training providers must consider these strategies to help increase enrolment and make digital training more appealing and accessible. This can be done by ensuring that digital training programmes are accessible on various devices i.e. smartphones or tablets, which are commonly used in the hospitality industry. Furthermore, providing training sessions at various times will accommodate the schedules of the trainees.

SUB-SECTOR 3 :

Animal Production (0.29)

The Sabah Government also allocated RM99.05 million for operational expenses and the implementation of 43 development projects aimed at enhancing the security of quality livestock-based food and improving food safety standards.

The quality control of livestock will be supported by development and research (R&D) programmes to enhance production through efficient management systems, the production of high-quality livestock breeds and effective disease control (Department of Veterinary Services Sabah, n.d.).

Enrolment in Regular/Repetitive Courses (1.00)

Essential concepts and practices in animal production, i.e. breeding, nutrition and health management, need regular reinforcement. There is a steady need for training in both basic and advanced animal production techniques.

Having said that, training providers continue offering regular/repetitive courses to ensure that the needs of new entrants and those seeking to update their skills are met.

Courses such as Vistage Chief Executive and 2025 Budget and Tax Conference in Table 22 cover leadership, regulatory compliance and sustainable practices to ensure comprehensive training and industry standards adherence.

Table 22: **Top 10 Regular/Repetitive Courses Enrolled in Animal Production Sub-sector in Sabah**

No.	Regular/Repetitive Courses
1.	Halal Competency
2.	2025 Budget and Tax Conference
3.	Data Analysis & Dashboard Reporting Using Microsoft Excel with Power Query
4.	Hazard Analysis Critical Control Point Training (HACCP)
5.	Pengendali Makanan
6.	Perburuhan Rang Undang-Undang Pindaan Ordinan Buruh (Sabah Bab 67)
7.	Course for Certified Environmental Professional in Scheduled Waste Management (CePSWaM)
8.	Developing Effective Key Performance Indicator (KPI)
9.	Purchasing and Negotiation Skills
10.	Anti-Bribery and Anti-Corruption / Corporate and Personal Liability under Section 17A of MACC Act 2009 & Risk Management



Enrolment in Technical Courses (0.08)

Several reasons exist for lukewarm enrolment in technical courses within the Animal Production sub-sector (2024: 8 enrolments). Firstly, careers within the sub-sector are perceived as less prestigious compared to other fields, which can deter employees from enrolling.

Resource constraints are another factor; technical training often requires significant resources, including facilities and qualified instructors. If these resources are lacking, it can impact the quality and attractiveness of the courses.

To boost enrolment in technical courses within the Animal Production sub-sector, awareness campaigns, perception, job placement, training facilities upgrade and industry experts' engagement are among the strategies that can attract more employees, ultimately ensuring a skilled workforce.



STATES | KELANTAN

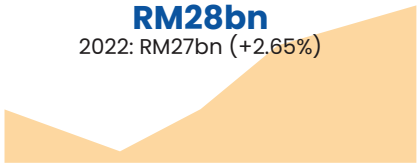
Training Index 2024



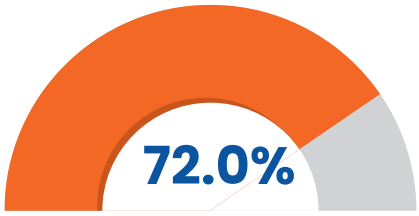
0.52
Training Index 2023

GDP (2023)

RM28bn
2022: RM27bn (+2.65%)



Levy Utilisation Rate %



Training Places

10,415

Financial Assistance

RM9.2M

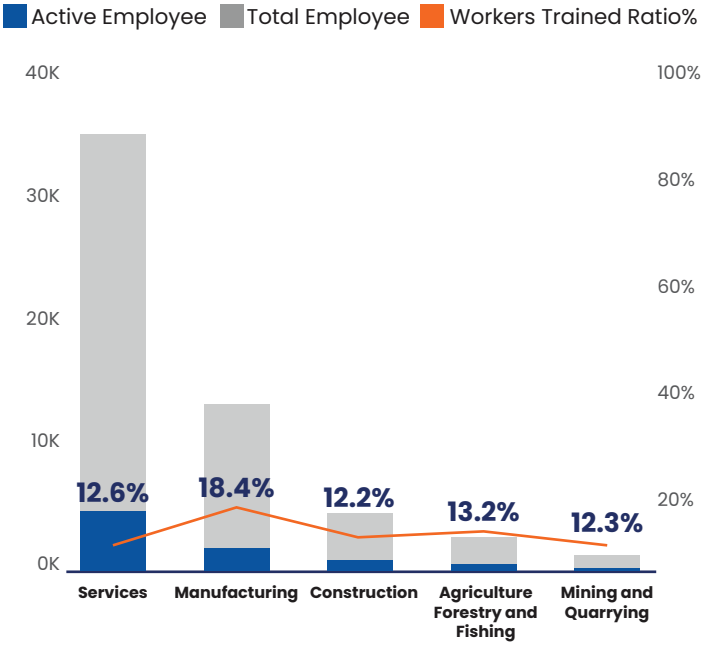
Workers Trained Ratio

13.9%

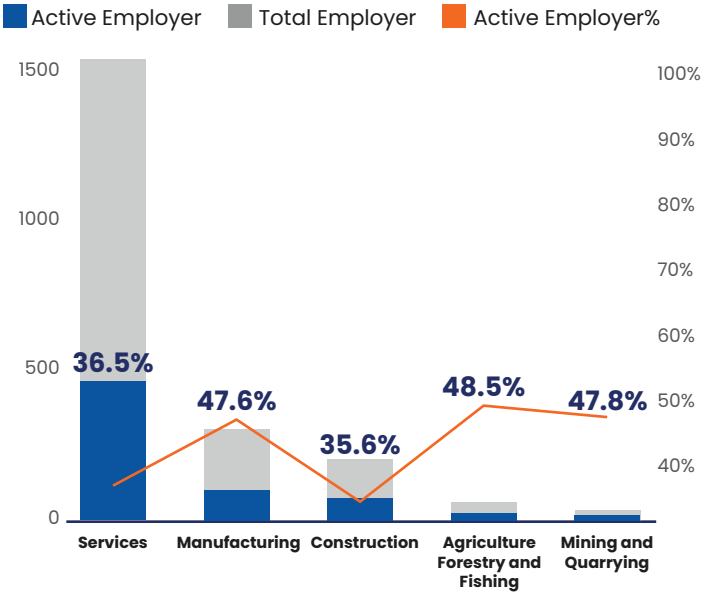
Training Duration (days)

2.78

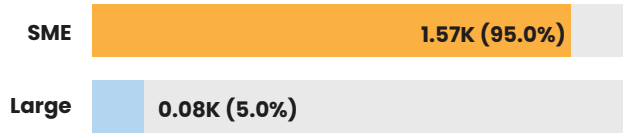
Sectors Breakdown | Workers Trained Ratio %



Sectors Breakdown | Active Employer %



Company Sizes | Number of Registered Employer



Kelantan

Kelantan recorded a Gross Domestic Product (GDP) of RM31.28 billion at current prices in 2023, rising from RM30.31 billion in 2022 and contributing 1.6% to Malaysia's total GDP (Department of Statistics Malaysia [DOSM], 2024). Despite this nominal growth, the state's economy faced headwinds, particularly in the Manufacturing sector, which experienced a decline due to reduced production in key sub-sectors such as Electrical, Electronic and Optical Products. Recognising these challenges, Kelantan's 2024 economic strategy has sharpened its focus on three priority sectors: Agriculture, Tourism and Manufacturing. Agriculture remains the backbone of the state's rural economy, with the cultivation of non-perennial crops like paddy, fruits and vegetables playing a vital role in food security and sustaining community livelihoods. Meanwhile, the tourism sector is capitalising on Kelantan's rich cultural heritage and ecotourism assets to attract more visitors, supported by the expansion of travel agencies and tour operator activities. In parallel, the manufacturing sector is pivoting towards higher-value production, particularly in traditional food products such as snacks and herbal-based items, to add economic value and generate job opportunities (Kelantan State Economic Development Corporation [PKINK], 2023).

Supporting this economic transformation, Kelantan is strengthening its human capital development initiatives to build a future-ready workforce. In 2024, the state achieved a training index score 0.51, categorising Kelantan as an "Adopter" in training performance. This reflects a proactive approach to upskilling and reskilling, underpinned by a moderately advanced training ecosystem, practical planning and sufficient funding allocation. These initiatives are designed to cultivate a skilled talent pool that meets the evolving demands of Kelantan's priority sectors—Agriculture, Tourism and Food Manufacturing. By investing in talent development and fostering an environment conducive to learning and innovation, Kelantan is well-positioned to overcome current economic headwinds and drive inclusive, sustainable growth in the years ahead.

SUB-SECTOR 1 :

Growing of Non-Perennial Crops (0.12)

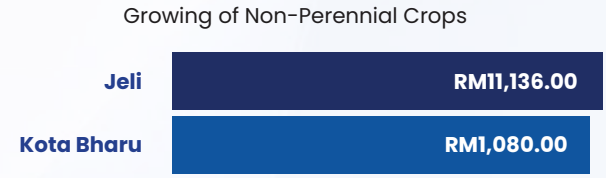
Amount of Financial Assistance Allocated for Training Per Worker (0.21)

In the Growing of Non-Perennial Crops sub-sector, Kelantan has recorded a training index of 0.21, placing it within the "Beginner" category of training readiness. This classification reflects a low level of participation and commitment to training and talent development activities in this area. The indicator measuring the amount of financial assistance allocated for training per worker highlights a significant shortfall in funding. The absence of structured training plans, comprehensive learning materials and systematic implementation strategies further compounds this. Given the importance of this sub-sector in supporting Kelantan's agricultural production, particularly in cultivating paddy, fruits and vegetables, addressing these gaps is critical. Increased financial investment and the development of targeted training programmes are essential to strengthen workforce competencies, improve productivity and support the long-term sustainability of Kelantan's agricultural economy.

The low financial assistance allocated for training per worker (0.21) has contributed to a limited number of employees receiving training (0.06) and very few enrolling in training providers with complete training facilities (0.00). These factors highlight significant challenges in the effective development of the workforce, underscoring the need for increased investment in training resources and infrastructure to enhance workforce capability and training accessibility.

In 2024, Kelantan received RM9.1 million in financial assistance for upskilling and reskilling initiatives. Within this context, the *Growing of Non-Perennial Crops* sub-sector was allocated RM12,216 in financial support. Most of the funds were distributed to Jeli and Kota Bharu, who received RM11,136 and RM1,080, respectively. The financial assistance supported a total of six enrolments in the sub-sector across Kelantan, with five (5) enrolments from Jeli and one (1) from Kota Bharu.

Figure 132: **Financial Assistance Allocation by Kelantan Districts, 2024**





Enrolment in Practical/Hands-On (0.25)

In 2024, the Growing of Non-Perennial Crops sub-sector in Kelantan recorded **no enrolment in practical or hands-on training**. Throughout the year, the sub-sector only had seven enrolments, all of which were theory-based with no practical component. This highlights a critical gap in practical skill development, which is essential for enhancing productivity and sustainability, especially in cultivating crops such as paddy, fruits, and vegetables. The lack of hands-on training opportunities indicates a pressing need to prioritise practical training to equip workers with the necessary skills to implement modern farming techniques and drive improvements in agricultural outcomes in Kelantan.

Reflecting this challenge, the training index for enrolment in practical or hands-on training in the Growing of Non-Perennial Crops sub-sector stands at a concerning 0.04, placing it firmly in the 'Beginner' category for training readiness.

This low score underscores minimal engagement in hands-on skill development and highlights deficiencies in resource allocation for training. It also indicates the absence of structured training plans, appropriate materials, and effective implementation strategies. Given the importance of non-perennial crops to Kelantan's agricultural economy, addressing these gaps is vital. An increased focus on practical, hands-on training is critical to improving workforce skills, enhancing sector productivity, and ensuring the long-term sustainability of agricultural practices.

SUB-SECTOR 2 :

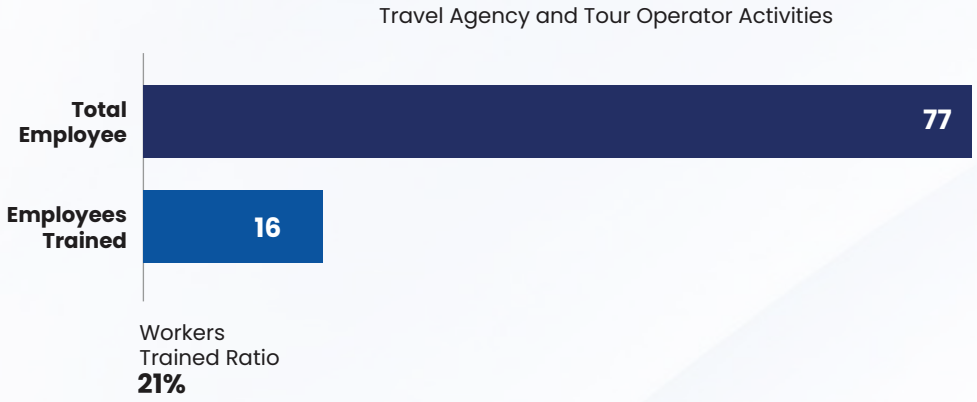
Travel Agency and Tour Operator Activities (0.14)

Number of employees Trained (0.40)

In 2024, the Travel Agency and Tour Operator Activities sector in Kelantan employed a total of 77 individuals, with 16 employees receiving training, resulting in a training participation rate of 21%. This is notably above the state average of 14%, indicating that the sub-sector is performing better in terms of training engagement compared to the overall state level. While this is a positive sign, there is still room for improvement to ensure that a larger proportion of the workforce receives the necessary skills to meet the evolving demands of the Tourism industry.

Expanding training opportunities in key areas, such as digital transformation and customer service excellence, will be essential to further enhance the sector's competitiveness and workforce capabilities. HRD Corp's continued support and emphasis on upskilling and reskilling will be vital to the sub-sector's ongoing growth and success.

Figure 133: **Workers Trained Ratio in Kelantan, 2024**



HRD Corp Levy Utilisation Rate (0.02)

In addition to the encouraging trainee participation rate, the Travel Agency and Tour Operator Activities sub-sector in Kelantan has demonstrated varying trends in levy utilisation over the past three years. In 2022, despite a levy collection of RM1,133, there was no recorded claim, resulting in a 0% levy utilisation rate. However, in 2023, the sub-sector made significant progress, with a levy collection of RM5,676 and claims amounting to RM5,775 surpassing the amount collected and achieving a utilisation rate of 100%. This reflects a strong commitment to leveraging available HRD Corp resources for workforce development.

By 2024, the sub-sector collected RM12,310 in levy contributions but only claimed RM6,000, resulting in a decreased utilisation rate of 49%. While the increase in levy collection signals growing compliance and capacity to fund training initiatives, the drop in utilisation indicates underperformance in maximising available funds for upskilling and reskilling. Moving forward, the sub-sector must strategise more effectively to optimise levy utilisation. Enhancing awareness and encouraging employers to take full advantage of HRD Corp initiatives will drive higher training participation, ultimately strengthening the tourism workforce and contributing to Kelantan's economic growth.

Figure 134: **Levy Collection vs Claims in Kelantan, 2024**

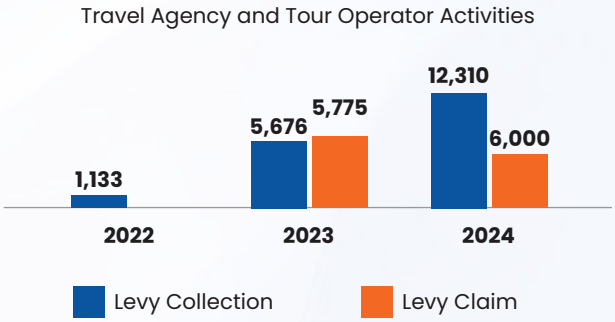
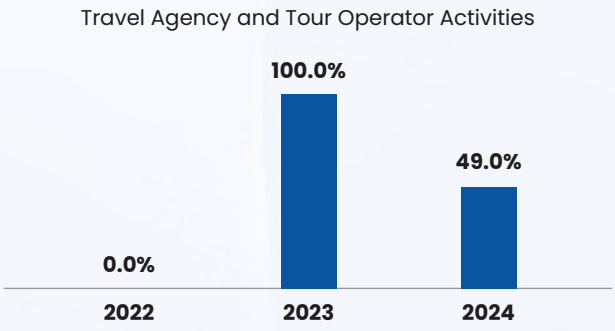


Figure 135: **Levy Utilisation Rate in Kelantan, 2024**



SUB-SECTOR 3 :

Manufacture of Other Food Products (0.38)

Number of Skilled Workers Trained (0.10)

In 2024, within the Manufacture of Other Food Products sub-sector in Kelantan, only 20 out of 196 workers were classified as Skilled category, representing only 10% of the total workforce. This reflects a significant skills gap that has contributed to a low training index score for the sub-sector. Addressing this challenge requires the implementation of targeted upskilling and reskilling programmes, particularly for semi-skilled and low-skilled workers. Enhancing the competency of these groups is crucial, as the Manufacturing sector increasingly demands specialised skills to improve productivity, ensure food safety standards, and enable value-added production processes (Kelantan State Economic Development Corporation [PKINK], 2023). Moreover, leveraging HRD Corp levy schemes and support mechanisms will be essential to increase training participation, maximise levy utilisation, and foster a more competitive workforce capable of driving the state's manufacturing growth.

The statistics indicate that the average number of training days among skilled workers is 1.8 days. By skill area, Digitalisation recorded the highest average at 3.0 days, followed by Safety at 2.3 days, Management and Leadership at 2.0 days, Finance and Accounting at 1.4 days, Quality at 1.3 days, and both Operations Management and Productivity at 1.0 day each.

The longer average training days for Digitalisation, at 3.0 days, reflect the complexity and evolving nature of digital technologies. These programmes often require more in-depth learning, hands-on practice, and comprehensive understanding to ensure participants can effectively adopt and apply new digital tools, systems, and processes in the workplace. Additionally, the rapid advancement of technology necessitates more extensive training to keep the workforce updated with current digital trends and innovations (ILO, 2018; OECD, 2023).

Figure 136: **Workers by Skill Category in Kelantan, 2024**

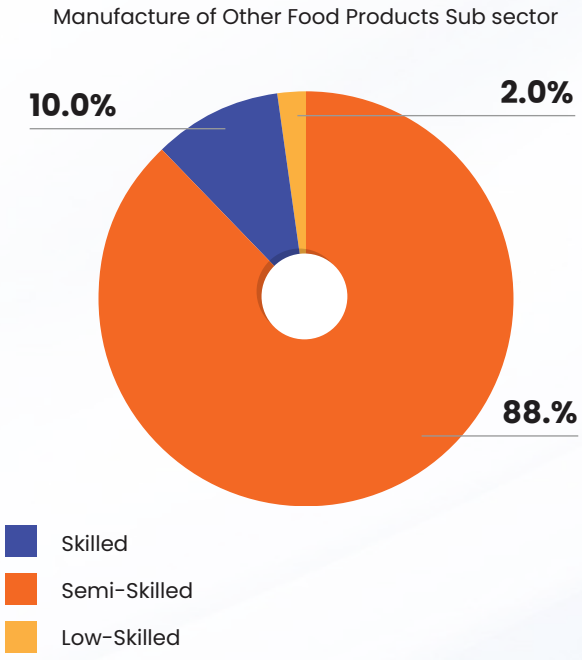
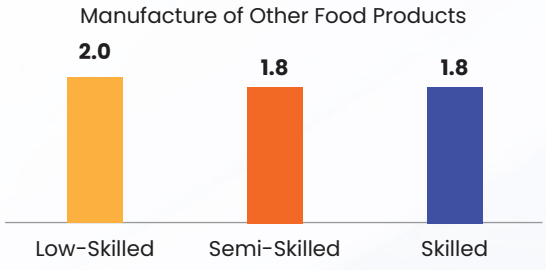


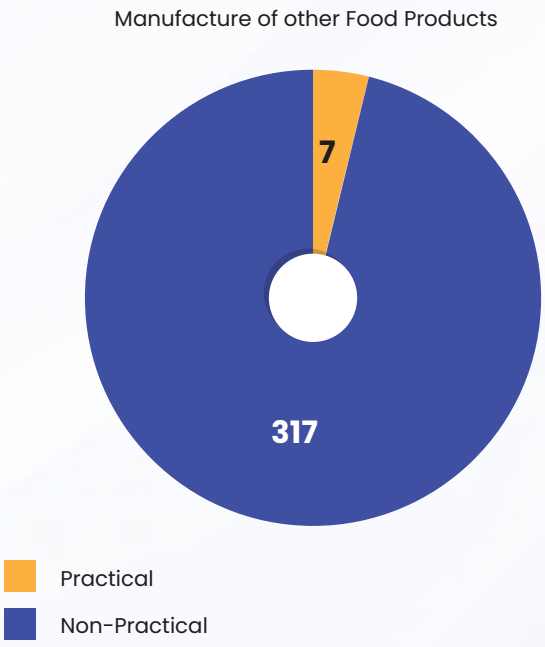
Figure 137: **Training Days Allocated by Skill Category, 2024**



Enrolment in Practical/Hands-On (0.25)

The Manufacture of other Food Products sub-sector recorded an enrolment score of 0.25 for Practical or Hands-on Training, placing it in the 'Beginner' category. This reflects low participation and limited commitment to skills development, as well as challenges related to the quality of training provided. In 2024, the sub-sector recorded a total of 324 enrolments in various training programmes; however, only 7 were for practical or hands-on training. This highlights a critical gap in experiential learning, which is essential for enhancing technical competencies and improving productivity within the sector.

Figure 137: **Enrolment in Practical/Hands-On in Kelantan, 2024**



Total Enrolment in Practical/Hands-on: **321**

During the year, a total of seven practical or hands-on training sessions were conducted only in Kota Bharu under the Manufacture of Other Food Products sub-sector. This concentration of training activities in Kota Bharu was due to higher industry demand and the availability of training providers offering relevant programmes in the district. The following are the practical or hands-on training programmes enrolled in 2024:

1.	Seminar Perundangan dan Pengurusan Buangan Terjadual serta Hands-on Penggunaan Electronic Schedule Waste Information System (eSWIS) 2024
2.	Seminar Revolusi Landskap Keselamatan dan Kesihatan Pekerjaan (KKP)
3.	Pasca Akta Keselamatan dan Kesihatan Pekerjaan (Pindaan) 2022 dan Akta Kilang dan Jentera (Pemansuhan) 2022
4.	Documentation Training
5.	Occupational Safety and Health Coordinator (OSH-C)



Conclusion

The National Training Index (NTI) 2024 offers an insightful overview of the current state of training and development initiatives across the nation, providing valuable data and trends that will inform strategic decisions about workforce development in the future. The findings from the 2024 report emphasise the significant strides made in expanding access to training opportunities, especially in key sectors like digital skills, healthcare and green technologies, which have become pivotal in addressing the evolving needs of the labour market.

One of the major highlights of the NTI 2024 is the growing importance of digital transformation in training delivery. The shift towards online and hybrid learning models has proven effective in broadening access to training programmes, particularly for underserved populations and remote areas. However, the report also identifies ongoing challenges related to digital literacy, the need for better infrastructure and ensuring equitable access to these digital platforms for all demographic groups.

Despite progress, disparities remain in the accessibility and relevance of training programmes across certain industries and regions. Sectors such as manufacturing, construction and some service industries have faced difficulties in aligning training programmes with the rapidly changing demands of the workforce. The skills gap in these areas continues to be a barrier, highlighting the need for a more targeted approach to training that bridges the gap between education and industry-specific skills.

Furthermore, the NTI 2024 emphasises the importance of fostering closer partnerships between employers, training providers and policymakers. Collaborative efforts are essential to ensure that training programmes are aligned with the labour market's needs and that graduates are equipped with skills that match current and future demands. Additionally, the report points to a critical need for investment in emerging fields like artificial intelligence, cybersecurity and renewable energy, which present opportunities for job creation and economic growth.

The report concludes with several key recommendations to address these challenges. First, there is a need to increase investment in digital training infrastructure, particularly in rural and remote areas. Second, stronger industry partnerships are essential to ensure training programmes are more responsive to specific sector needs. Finally, policymakers must prioritise inclusivity in training and ensure that vulnerable populations are not left behind in the shift towards more advanced training models.

In summary, the NTI 2024 provides a clear picture of the successes, challenges and opportunities within the nation's training landscape. By leveraging the insights and recommendations from this report, stakeholders across sectors can work together to enhance the quality, accessibility and relevance of training programmes, ultimately ensuring that the workforce is prepared to meet the demands of the future.

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