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- 1. Scope and coverage** *The survey comprised registered establishments engaged in professional services based on Malaysia Standard Industrial Classification (MSIC) 2008 Ver. 1.0, in accordance with the International Standard Industrial Classification of All Economic Activities (ISIC), Rev. 4 which included main activities as follows:*
- i. Architecture activities;*
 - ii. Engineering activities;*
 - iii. Land & quantity surveying activities;*
 - iv. Accounting activities;*
 - v. Legal activities;*
 - vi. Advertising activities;*
 - vii. Management consultancy and market research activities;*
 - viii. Veterinary activities;*
 - ix. Scientific research & development and technical testing & analysis activities;*
 - x. Other professional activities.*

*Overall, coverage of the survey for professional services was 36 industries at 5-digit level under the Malaysia Standard Industrial Classification (MSIC), 2008. The complete lists of industries are shown in **Appendix**.*

2. Source of establishment

The main source of updating statistical business frame namely Malaysia Statistical Business Register (MSBR). MSBR is a list of establishments operating in Malaysia which includes the Register of Companies (ROC), Register of Business (ROB) and Limited Liability Partnership (LLP) registered with the Companies Commission of Malaysia (CCM) as well as establishments registered with local authorities and professional bodies. The list in the MSBR is updated regularly based on surveys and censuses conducted by the Department of Statistics Malaysia and administrative data sources from other agencies. The main source of administrative data is from the Companies Commission of Malaysia (CCM). In addition DOSM also works together to obtain the latest information from other agencies such as the Employees' Provident Fund (EPF), the Royal Malaysian Customs Department, the Inland Revenue Board (IRB), local authorities and professional bodies.



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The frame is updated to take into account new establishments and to record any changes in the status of the establishments such as closed down, not in operation, change in activity and location/ correspondence address so as to ensure that the frame is at the most current status.

3. Type of business activity

The type of business activity refers to both principal and secondary activities. The principal activity refers to the activity to which the establishment devoted most of its resources or to which it contributes the largest income. Secondary activities are defined as those incidental or ancillary to the principal activity. The classification of the industry of the establishment is based on the principal activity and is in accordance to the Malaysia Standard Industrial Classification (MSIC) 2008 Ver.1.0. The MSIC 2008 Ver.1.0 conforms to the International Standard Industrial Classification of All Economic Activities (ISIC), Revision 4.

4. Concepts and definitions

The definition of professional services adopted in this publication is based on the recommendations of the Malaysia Standard Industrial Classification (MSIC) 2008 Ver. 1.0:

Professional, scientific and technical includes specialized professional, scientific and technical activities which require a high degree of expertise and training, and specialized knowledge and skills available to users. Activities performed include legal and accounting activities, activities of head offices, management consultancy activities, architecture and engineering activities, technical testing and analysis scientific research and development, advertising and market research, other professional, scientific and technical activities, veterinary activities.

i. Architectural activities

Refers to the provision of architectural services on a fee or contract basis. These services must be provided by establishments operated by persons registered under Section (A) of the Register of Architects and Section (B) of the Register of Building Draughtsman maintained by the Board of Architects under the provisions of the Architects under the provisions of the Architects Act, 1967 (Revised 1973). Architectural consulting activities which concerns building design and draftign and often suoervision of construction, town and city planning and landscape architecture.



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ii. Engineering activities

Refers to the provision of engineering services for others on a fee or contract basis. Included are engineering research, development and testing services. These services must be provided by establishments operated by persons registered under Section 7(1) of the Registration of Engineers Act, 1967 (Revised 1987).

a) Include engineering design (i.e. applying physical laws and principles of engineering in the design of machines, materials, instruments, structures, processes and systems) and consulting activities for:

- Machinery, industrial processes and industrial plant;*
- Projects involving civil engineering, hydraulic engineering, traffic engineering;*
- Water management projects;*
- Projects elaboration and realization relative to electrical and electronic engineering, mining engineering, chemical engineering, mechanical, industrial and systems engineering, safety engineering;*
- Projects management activities related to construction.*

b) Engineering services refers to elaboration of projects using air conditioning, refrigeration, sanitary and pollution control engineering, acoustical engineering, etc.

iii. Land & quantity surveying activities

Refers to the provision of surveying services for others on a fee or contract basis. These services must be provided by establishments operated by persons registered under the Board of Land Surveyor and Board of Quantity Surveyors maintained under the Licensed Land Surveyors Act, 1958 (Revised 1991) and the registration of Quantity Surveyors Act, 1967 (Revised 1992).

(Note: in 2010, other architectural and engineering activities and related technical consultancy (MSIC 71109) data are combined with other professional, scientific and technical services).



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iv. Accounting services

Refers to services involving the recording of commercial transactions from businesses or others, preparation or auditing of financial accounts, examination of accounts and certification of their accuracy and preparation of personal and business income tax returns. Included are related advisory activities and representation (other than legal representation) on behalf of clients before tax authorities.

v. Legal activities

Refers to legal representation of one party's interest against other party, whether or not before courts or other judicial bodies by, or under supervision of, persons who are members of the bar; general counselling and advising, preparation of legal documents and other activities or notaries public, civil law notaries, bailiffs, arbitrators and examiners and referees.

vi. Advertising activities

Refers to provision of a full range of advertising services through in-house capabilities or subcontracting. Advertising agency activities encompasses:

- Creating and placing advertising in newspaper, periodicals, radio, television, the internet and other media;*
- Creating and placing of outdoor advertising, example: billboards, panels, bulletins and frame, window dressing, showroom design, car and bus carding, and others;*
- Media representation i.e. Sale of time and space for various media soliciting advertising, aerial advertising; distribution or delivery of advertising material or samples, provision of advertising space on billboards, creation of stands and other display structures and sites;*

Include conducting marketing campaigns and other advertising services aimed at attracting and retaining customers (promotion of products; point-of-sale marketing; direct mail advertising; marketing consulting).



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vii. Management consultancy and market research activities

This activities includes the provision of advice, guidance and operational assistance to business and other organizations on management issues, such as strategic and organizational planning; decision areas that are financial in nature; marketing objectives and policies; human resources policies, practices and planning; production scheduling and control planning.

This service may include advice, guidance or operational assistance to businesses and the public service regarding public relations and communication; lobbying activities; design of accounting methods or procedures, cost accounting programmed, budgetary control procedures and advice and help to businesses and public services in planning, organization, efficiency and control, management information, etc.

Market research services refers to investigation into market potential, acceptance and familiarity of products and buying habits of consumers for the purpose of sales promotion and development of new products, including statistical analyses of the results; investigation into collective opinions of the public about political, economic and social issues and statistical analysis thereof.

viii. Veterinary activities

Refers to animal health care and control activities for farm animals and animal health care and control activities for pet animals. These activities are carried out by qualified veterinarians when working in veterinary hospitals as well as when visiting farms, kennels or homes, in own consulting and surgery rooms or elsewhere. It also includes activities of veterinary personnel, clinic-pathological and other diagnostic activities pertaining to animals and animal ambulance activities.

ix. Scientific research & development and technical testing & analysis activities

This activity refers to research and development of natural sciences, engineering and technology, medical sciences, biotechnology, agricultural sciences, social sciences, humanities research and development.



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Technical testing and analysis includes the performance of physical, chemical testing and analytical for all types of materials and products; certification of products, including consumer goods, motor vehicles, aircraft, pressurized containers, nuclear plants and others; periodic road-safety testing of motor vehicles; testing with use of model or replica (e.g. aircraft, ships, dams etc.); operation of police laboratories.

x. Other professional activities

Refers to the activities of their industrial design, namely: creating and developing the specifications and design in order to optimize the use, value and appearance of products, including the determination of the materials, construction, mechanisms, shape, color and polished final product, taking into account the nature and efficiency of production, distribution, use and maintenance.

For photographic activities include commercial and consumer photograph production such as portrait photography for passports, schools, weddings and other; photography for commercials, publishers, fashion, real estate or tourism purposes, aerial photography and videotaping of events: weddings, meetings, etc.; film processing such as developing, printing and enlarging from client-taken negatives or cine-films, film developing and photo printing laboratories, one hour photo shops (not part of camera stores), mounting of slides and copying and restoring or transparency retouching in connection with photographs; activities of photojournalists; microfilming of documents.

Activities of head offices refers to the overseeing and managing of other units of the company or enterprise; undertaking the strategic or organizational planning and decision making role of the company or enterprise; exercising operational control and manage the day-to-day operations of their related units.

5. Survey year

Survey year refers to the year in which a survey was conducted.

6. Reference year

The reference year of the survey was the calendar year 2021.



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7. Method of collection

This survey is generally conducted through three (3) methods, namely:

- i. Data collection method via Online method through the e-aes portal: This method targets respondents who have used this method for previous routine surveys.*
- ii. Respondents were given a period of one month to complete and return the questionnaire to the Department.*
- iii. Face-to-face data collection method: Field work operation is carried out to get feedback from organizations that have not yet given answers from the two methods above and this method also targets organizations that have never been involved in a routine DOSM survey.*

8. Sampling design

Sampling design of the survey is a one-stage stratified random sampling. Category of industries five (5), four (4) and three (3) digits MSIC at states level have been classified as stratum and the establishment as the sampling unit.

Each stratum (industry) has been set up into four sub stratum to ensure the sample is distributed taking into account the economy characteristics of the industry. The main sub stratum is heterogeneous, was fully covered while other sub stratum that is homogeneous were sampled.

Main sub stratum comprise large establishments that have significant total revenue in the industry while for the second to fourth sub stratum were formed based on micro, small, and medium enterprises (MSME) category.

9. Sampel size and estimation procedure

The main statistics used to estimate the sample size is the total revenue. The formula used in the estimation of the sample size for a stratum is as follows:

$$n = \frac{(\sum N_i S_i)^2}{V + \sum N_i S_i^2}$$

where,

n	=	Sample size
N_i	=	Population size for stratum i
S_i^2	=	Variance for stratum i
V	=	Desired variance

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$$V = RSE^2 \left(\frac{\hat{Y}_i}{Z} \right)^2$$

where,

\hat{Y}_i	=	Total revenues for stratum i
RSE	=	Relative standard error
Z	=	Value of confidence level

Sample is distributed to substratum of the industry using Neyman Allocation Method as follows:

$$n_{hi} = \left(\frac{N_h S_h}{\sum N_h S_h} \right) n'_i$$

$$h = 2, 3 \text{ and } 4$$

$$i = 1, 2, \dots, k$$

where,

n_{hi}	=	Sample size for substratum h of stratum i
N_h	=	Population size for substratum h
S_h	=	Standard deviation for substratum h
n_i	=	Sample size for stratum i
h	=	Substratum
i	=	Stratum

The optimum sample size for this survey is 4,802 establishments. Establishments of the large categories were fully covered while establishments of the second to the fourth substratum were randomly selected using systematic random sampling.

10. Weights

Weighted analysis is done using sampling weight to ensure that the selected sample can reflect population survey. The weights required are the sampling design weight and non-response weight.

The sampling design weight for the establishment at stratum h is as follows:

$$W_h = \frac{N_h}{n_h}, n = 1, \dots, 4$$

where,

N_h	=	Total population of substratum
n_h	=	Total sample of substratum



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Non response weight at substratum h as below:

$$NRW_h = \frac{1}{n'_h/n_h}, h = 1, \dots, 4$$

where,

n'_h = Numbers of respond sample size for substratum

n_h = Number of sample size for substratum

The method of calculating the sampling design weight after the survey (adjusted weight) on sub stratum h as below:

$$W'_h = W_h \times NRW_h, h = 1, \dots, 4$$

where,

W_h = Sampling design weight at substratum h

NRW_h = Non response weight at substratum h

11. Reporting unit

The reporting unit for this survey is the **establishment**. An establishment ideally defined as “an economic unit that engaged in one activity, under a single legal entity and operating in a single physical location”. Each establishment was assigned an industry classification based on its principal activity and not to that of its parent company.

Each branch of the multiple organisation has branches in different locations of conceptually treated as the different organisation. The establishment was requested to give separate returns for each activity in terms of value. However, if in practice, the accounts were centrally kept such that it was not possible to obtain separate data for each individual unit or branch. The entity or enterprise was treated as a single reporting unit and allowed to submit a consolidated questionnaire covering all units or branches.

12. Value of gross output

The value of gross output is defined to include the following items:

- Revenue from services provided
- + Income from membership fees
- + Rental income received except land
- + Income from management services
- + Commissions and brokerage earned
- + Research and development expenditure (in-house)



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- + *Other operating income*
- + *Value of goods sold in the same condition as purchased*
- + *Value of goods purchased for resale in the same condition as purchased*

13. Value of intermediate input

The value of intermediate input is defined to include the following elements:

- Purchase of goods, materials and services*
- + *Payment for repairs and maintenance*
- + *Expenditure for stationery, office supplies and others*
- + *Purchases of transport services*
- + *Travel and entertainment services*
- + *Expenditure for electricity, water, fuel, lubricants and gas*
- + *Accounting, secretarial and audit*
- + *Legal and other professional services fees*
- + *Management fees*
- + *Commissions and agency fees*
- + *Telecommunication, postage and printing cost*
- + *Advertising, marketing and promotion*
- + *Insurance premiums except workers' compensation work*
- + *Payment for security services*
- + *Rental payments excludes rent for use of hand*
- + *Other operating expenditure*
- + *GST on net purchases are non-claimable as input tax*
- + *Closing stock*
- *Opening stock*

14. Value added

Value added is the increment to the value of commodities and services contributed by the establishment. This value added is derived as the difference between the value of gross output and intermediate input.

15. Number of persons engaged

Number of persons engaged covers all persons engaged during December or the last pay period of the reference year. The number of persons engaged was classified under the following categories:

i. Working proprietors and active business partners

This category refers to all individual proprietors and partners, part-time or full-time, who are actively engaged in the work of the establishment. It therefore, excludes silent and inactive partners.



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ii. Unpaid family workers

This category encompass all persons in the household of any of the owners of the establishment who perform a specified job (full-time or part-time) and work for a minimum of one third of the normal working time of the establishment but do not receive regular payment either in cash or in kind for the work done. Such workers generally receive food, shelter and other support as a part of the household of an owner but this would continue whether they workers in the establishment or not.

iii. Paid full-time employees

It refers to all paid workers who work for at least 6 hours a day and 20 days a month.

iv. Paid part-time employees

This is defined as all paid workers who work for less than 6 hours a day and/or less than 20 days a month.

16. Category of skills

Category of skills has been categorized according to Malaysia Standard Classification of Occupations 2020 (MASCO) as follow:

i. High-skilled workers

Managers and professionals, researcher, technician and associate professionals;

ii. Semi-skilled workers

Clerical support, service and sales, craft and related trades workers and plant and machine operators and assemblers; and

iii. Low-skilled workers

Elementary occupations.

17. Value of fixed assets

Fixed assets covers all goods, new or used, tangible or intangible and repeated & continuously that have a normal economic life span of more than one year. Included are land, buildings and structure, transport equipment, other machinery equipment, computer software and furniture and fittings. The research and development expenditure is also treated as capital asset in line with the recommendation of System of National Accounts (SNA) 2008. Value of assets as at the beginning and end of 2017 were based on net book value. Purchases, alterations and major repairs or capital expenditure during the year valued at actual cost incurred. Value of assets sold during the year refers to the realized value.

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18. Rounding

The sum of the component figures may not tally with the sub-total or total figures due to rounding.

19. Percentage change year-on-year

The calculation is based on the following formula:

$$Y_t = Y_0 (1+r)^t$$

Where r ,

$$r = \left[e^{\frac{1}{t} \ln \left(\frac{Y_t}{Y_0} \right)} - 1 \right] \times 100$$

Where,

Y_t = Value at current year

Y_0 = Value at previous year

t = Number of years, $Y_t - Y_0$

r = Annual growth rate

20. Symbols and abbreviations

-	: nil
%	: per cent
&	: and
RM	: Ringgit Malaysia
etc.	: et cetera
n.e.c	: not elsewhere classified
W.P.	: Federal Territory