MINISTRY OF ECONOMY
DEPARTMENT OF STATISTICS MALAYSIA

MALAYSIA DIGITAL ECONOMY 2023

Announcement

The Department of Statistics Malaysia (DOSM) has launched OpenDOSM NextGen as a medium that provides a catalog of data and visualisations to facilitate users' analysis of various data and can be accessed through https://open.dosm.gov.my.

DOSM will conduct the Agricultural Census in 2024. Please visit https://www.myagricensus.gov.my/ for more information. The theme is “Agriculture Census, Key to Agricultural Development.”

The Government of Malaysia has declared National Statistics Day (MyStats Day) on October 20th each year. MyStats Day theme is “Statistics is the Essence of Life”.

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PREFACE

This publication of Malaysia Digital Economy 2023 is a compilation of statistics from published reports by Department namely the Usage of ICT and E-Commerce by Establishments (ICTEC) 2022, Annual Economic Statistics (AES) 2022 for Information and Communication (ICT) Services Sector, ICT Use and Access by Individuals and Households Survey Report (ICTHS) 2022, Information and Communication Technology Satellite Account (ICTSA) 2022, and Quarterly Services Statistics (QSS). This publication provides statistics on digital economy to meet the needs of government agencies, economists, academicians, private sectors and individuals for planning and formulating policies, economic analysis, projection and assist in business development planning.

Malaysia Digital Economy 2023 uses guidelines from Manual for the Production of Statistics on the Digital Economy 2020, United Nations Conference on Trade and Development (UNCTAD), Digital Economy Outlook 2020, Organisation for Economic Co-operation and Development (OECD), Digital Economy Report 2019 (UNCTAD), Internet Economy Outlook 2012 (OECD) and Guide to Measuring the Information Society 2011 (OECD). Economic sectors in Malaysia are classified under the Malaysia Standard Industrial Classification (MSIC) 2008 Ver. 1.0, in accordance with the International Standard Classification of All Economic Activities (ISIC), Revision 4, 2008.

This publication includes the overview of Malaysia digitalisation and followed by six chapters related to the contribution of ICT industry and e-commerce to Gross Domestic Product, performance of e-commerce by establishment, ICT services sector, ICT access & usage, Malaysia e-commerce roadmap and other digital economy indicators. Technical notes, tables and other indicators are provided at the end of this publication to assist users to understand the published statistics.

The Department gratefully acknowledges the co-operation rendered by all parties who have contributed directly and indirectly in making this publication a success. Every feedback and suggestions towards improving future publication is highly appreciated.

DATO' SRI DR. MOHD UZIR MAHIDIN

Chief Statistician Malaysia

November 2023

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CONTENT

CONTENT

CONTENT

CONTENT

CONTENT

CONTENT

CONTENT

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MAIN FINDINGS

MINISTRY OF ECONOMY
DEPARTMENT OF STATISTICS MALAYSIA

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AGRICULTURE CENSUS 2024
KEY TO AGRICULTURAL DEVELOPMENT

MALAYSIA MADANI

MAIN FINDINGS

MALAYSIA DIGITAL ECONOMY 2023

PERFORMANCE OF DIGITAL ECONOMY

1. Contribution of ICT to GDP in 2022

2022: RM412.3 billion
2021: RM359.3 billion
14.8%

Share to National Economy
23.0%
2021: 23.2%

13.6%
Gross value added ICT

9.4%
E-commerce of other industries

2. Imports & Exports, 2022

Net Exports of ICT Products remain **surplus** of **RM135.7 billion**

2021: Surplus of RM95.3 billion

3. Employment & Compensation, 2022

1.22 million **persons** employed in **ICT Industry** contributed **7.9%** to the total employment

2021: 1.21 million | 8.0% share

Compensation of employees **RM85.0** billion share of **34.9%** to **Total ICT Income**

2021: RM78.2 billion | 36.1% share

PERFORMANCE OF E-COMMERCE

4. Contribution of E-Commerce to GDP, 2022

13.3% Share of e-commerce to **GDP**
2021: 13.0%

3.9%
2021: 3.8%
ICT industry

9.4%
2021: 9.2%
E-commerce of other industries

18.9%
2022: RM239.1 billion
2021: RM201.0 billion

5. Quarterly E-Commerce Income by Establishments

	2022				2023		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3
RM billion	264.3	273.8	274.6	287.1	291.7	280.5	289.5
QoQ (%)	-4.2	3.6	0.3	4.5	1.6	-3.8	3.2
YoY (%)	9.2	7.7	3.6	4.1	10.4	2.5	5.4

2021
RM1,037.2 billion
15.7%

2022
RM1,099.7 billion
6.0%

: Annual growth rate
Q : Quarter

GDP : Gross domestic product
QoQ: Percentage change quarter-on-quarter
YoY : Percentage change year-on-year

Source: Malaysia Digital Economy, 2023
Department of Statistics Malaysia (DOSM)

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AGRICULTURE CENSUS 2024
KEY TO AGRICULTURAL DEVELOPMENT

MALAYSIA MADANI

MAIN FINDINGS

MALAYSIA DIGITAL ECONOMY 2023

PERFORMANCE OF ICT SERVICES SECTOR

6. Principal Statistics of ICT Services

Value of Gross Output
5.4%
2021: RM182.2b
2020: RM172.9b

Value of Intermediate Input
5.5%
2021: RM87.4b
2020: RM82.9b

Value Added
5.3%
2021: RM94.8b
2020: RM90.0b

Value of Fixed Assets
2.1%
2021: RM107.0b
2020: RM104.8b

Number of Persons Engaged
2.3%
2021: 241,711 persons
2020: 236,372 persons

Salaries & Wages Paid
2.2%
2021: RM14.8b
2020: RM14.4b

ICT USAGE BY ESTABLISHMENTS & INDIVIDUALS

7. Usage of Computer

Establishment
2021: 93.8%
2019: 86.2%

Individuals
2022: 80.2%
2021: 83.5%

8. Usage of Internet

Establishment
2021: 90.6%
2019: 85.2%

Individuals
2022: 97.4%
2021: 96.8%

Individuals

Rural Area
2022: 63.1%
2021: 66.7%

Urban Area
2022: 85.7%
2021: 88.2%

Rural Area
2022: 94.5%
2021: 93.5%

Urban Area
2022: 98.3%
2021: 97.7%

9. 4G and 5G Coverage

Percentage of population covered by at least **LTE/WIMAX** mobile networks
2022: 96.9%
2021: 95.4%

Percentage of population covered by at least **5G** mobile networks
2022: 47.1%
2021: 4.0%

: Annual growth rate
b : billion

Source: Malaysia Digital Economy, 2023
Department of Statistics Malaysia (DOSM)

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OVERVIEW OF MALAYSIA'S DIGITAL ECONOMY

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OVERVIEW OF MALAYSIA'S DIGITAL ECONOMY

The **Malaysia Digital Economy 2023** publication provides an overview of key digital economy statistics sourced from the Department of Statistics, Malaysia, and other relevant agencies. The featured statistics include data from the Usage of ICT and E-Commerce by Establishment (ICTEC) 2022, Annual Economic Statistics (AES) 2022 - Information and Communication Services, ICT Use and Access by Individuals and Households Survey Report (ICTHS) 2022, Information and Communication Technology Satellite Account (ICTSA) 2022, and Quarterly Services Statistics (QSS). These statistics cover a wide spectrum, incorporating information from businesses, households, and individuals, and encompass both monetary and non-monetary indicators pertinent to Malaysia's Digital Economy. Furthermore, the publication highlights government policies associated with Malaysia's e-commerce roadmap.

CONCEPT OF DIGITAL ECONOMY

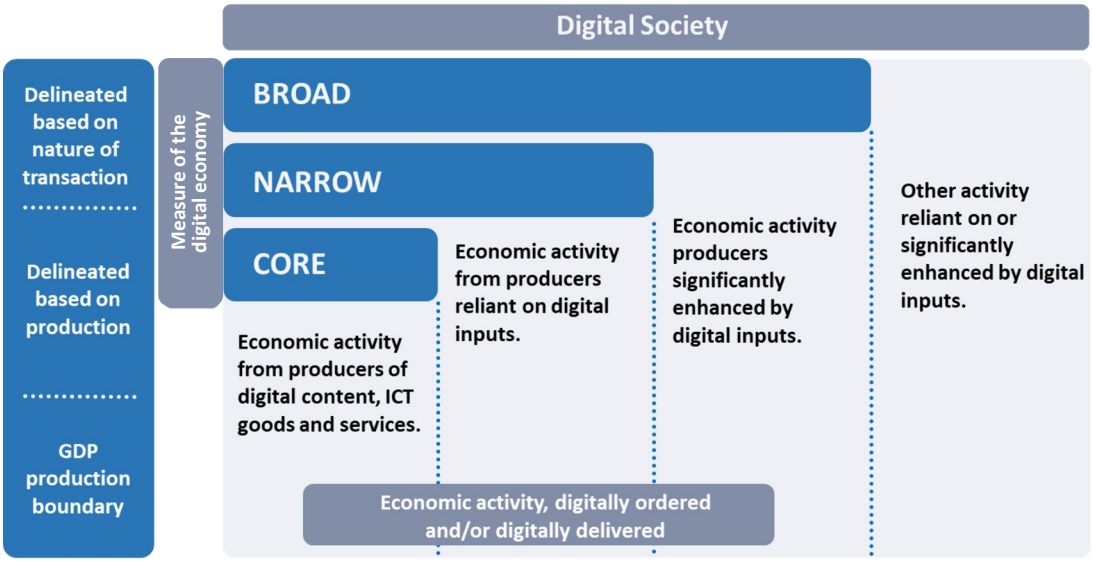
The digital economy is a broad term referring to economic activities that leverage digital information and knowledge in the production of goods and services. The OECD's Trade Union Advisory Committee (2016) provides an expansive definition, encompassing cross-border, networked ecosystems that span diverse sectors and activities facilitated by Information and Communication Technology (ICT), broadband, mobile internet, and the Internet of Things (IoT) - allowing for business and social interactions across networks.

The United States Bureau of Economic Analysis, Economic and Social Council of the United Nations (2019) further elaborates on the digital economy by including in its definition: the digital-enabling infrastructure required for a computer network to exist and operate, the digital transactions occurring within that system ("ecommerce"), and the content generated and accessed by users in the digital economy ("digital media").

According to the Organisation for Economic Cooperation and Development (OECD, 2020), the digital economy encompasses all economic activities heavily dependent on or significantly enhanced by the use of digital inputs, which include digital technologies, digital infrastructure, digital services, and data. The term applies to all producers and consumers, including government entities, utilizing these digital inputs in their economic activities as shown in **Figure a**. The definition is guided by insights derived from the Roadmap Toward a Common Framework for Measuring the Digital Economy by the G20 Digital Economy Task Force.

OVERVIEW OF MALAYSIA'S DIGITAL ECONOMY

Figure a: Tiered Definition of the Digital Economy



Note. Tiered definition of the digital economy. (Adapted from G20 Digital Economy Task Force, 2020)

As for Malaysia, digital economy is defined as economic and social activities that involve the production and use of digital technology by individuals, businesses, and governments (MyDIGITAL, 2021).

This publication's scope on Malaysia's digital economy includes the contribution of ICT industry and e-commerce to gross domestic product, performance of e-commerce by establishment, ICT services sector, ICT access & usage, Malaysia e-commerce roadmap and other digital economy indicators.

DIGITAL ECONOMY LANDSCAPE IN MALAYSIA 1996-2023

The journey began in 1996 as Malaysia entered its digital economy transformation, defined by two distinct phases. The initial phase, spanning from 1996 to 2010, focused on the development of the Multimedia Super Corridor (MSC) with the aim of establishing Malaysia as a hub for multimedia and Information Technology (IT). Additionally, both the MSC and IT were integral parts of the Seventh Malaysia Plan.

Serving as a catalyst, the MSC has played a pivotal role in transforming Malaysia into a knowledge-based economy. It provides a range of incentives to businesses operating within its designated zones, referred to as MSC Malaysia Cybercities and Cybercentres. These incentives encompass tax advantages, grants, and access to top-notch infrastructure. MSC has achieved success in drawing both domestic and global enterprises, establishing Malaysia as a center for ICT and digital innovation. As of 2022, MSC Malaysia has undergone a rebranding and is now known as Malaysia Digital (MD). This enhanced initiative is geared towards expediting the sustainable expansion of Malaysia's digital economy and fostering significant spill-over effects.

OVERVIEW OF MALAYSIA'S DIGITAL ECONOMY

In second phase, between 2016 and 2021, Malaysia shifted its focus to Industry 4.0 (IR 4.0) and the digital economy. This phase aspires to elevate Malaysia into a digitally-driven, high-income nation and a leading player in the regional digital economy. To achieve this goal, the Malaysian government introduced a range of strategies and initiatives to underscore the expansion of the digital economy.

One of the introduced strategies and initiatives is the National E-Commerce Strategic Roadmap (NESR). NESR is the principal driver behind Malaysia's initiatives focused on fostering and expediting the advancement of e-commerce within the country. Begin in 2016 (NESR 1.0), its primary objective was to double Malaysia's e-commerce growth rate by 2020 and was recently updated to NESR 2.0.

In November 2017, the Malaysian Government has launched the Digital Free Trade Zone (DFTZ) with foreign establishment. The main goal of the DFTZ was to streamline and accelerate international e-commerce trade, providing a platform for the engagement of Micro, Small, and Medium Enterprises (MSMEs) from Malaysia in the global e-commerce arena. The DFTZ additionally seeks to bolster Malaysia's aspirations in e-commerce, aligning with the objectives outlined in the NESR.

In late 2019, the emergence of the SARS-CoV-2 virus led to the COVID-19 outbreak, significantly impacting countries globally, including Malaysia, and resulting in widespread health and economic consequences. In Malaysia, the pandemic has underscored the importance of digitalisation, with the emergence of e-commerce and the crucial role of IR4.0 technologies for the survival and expansion of businesses. In response to the challenges posed by the pandemic, the latest version, NESR 2.0, was designed to aligning with the goals of the Malaysia Digital Economy Blueprint. NESR 2.0 focuses on integrating more MSMEs into the realm of e-commerce, boosting the adoption of e-commerce exports, and enhancing the average revenue per user (ARPU).

The COVID-19 pandemic also had heightened our dependence on digital connectivity for work, education, and communication. This increased the demand for reliable internet access, especially in rural and remote communities that may have been previously underserved in terms of connectivity. The Jalinan Digital Negara (JENDELA) action plan, which is a component of the 12th Malaysia Plan (12MP), recognizes this need and aims to provide fast and reliable internet access to these communities, bridging the digital divide and enhancing digital transformation for all Malaysians.

OVERVIEW OF MALAYSIA'S DIGITAL ECONOMY

In September 2023, the Mid-Term Review (MTR) of the 12MP was unveiled, presenting updated policies and strategies for the 2023-2025 period. These revisions are in accordance with the overarching theme of achieving a 'Sustainable, Prosperous, High-Income Nation,' The 'Big Bolds,' comprising 17 key measures, have been instituted to propel socioeconomic development by advancing sustainability, fostering prosperity, and achieving higher incomes. These innovative initiatives, including several bold steps involving technology, innovation, and the digital economy within the 12MP MTR, are poised to elevate Malaysia's economic status according to the MADANI Economy Framework.

To steer Malaysia toward high-income nation status, the primary focus will be on new sources of growth, with a particular emphasis on the adoption of digitalisation across industries such as healthcare, oil & gas, and tourism. Additionally, there will be a concentration on high-growth, high-value (HGHV) sectors. The increasing significance of digital trade and e-commerce in Malaysia was acknowledged in this review after the outbreak of COVID-19. The digital economy in Malaysia is expected to sustain its upward momentum, with an anticipated rise to 25.5 per cent by 2025, up from 23.0 per cent in 2022.

Malaysia actively engages in shaping and putting into action the digital economy framework in the ASEAN region via its commitment to the ASEAN Digital Economy Framework Agreement (DEFA). DEFA is recognised as the 'first significant region-wide digital economy agreement globally' and is hailed as a transformative initiative. It is not only seeks to enhance regional digital integration but also provides a roadmap to potentially double the size of the ASEAN digital economy, increasing it from USD 1 trillion to USD 2 trillion by the year 2030.

The rapid expansion of Malaysia's digital economy in recent years positions it as a potential primary driver of development. Acknowledging the opportunities and challenges posed by the digital economy, the Malaysian government sees it as a key driver for economic growth and, a new source for fiscal revenue.

CHAPTER 1

PERFORMANCE OF INFORMATION AND COMMUNICATION TECHNOLOGY

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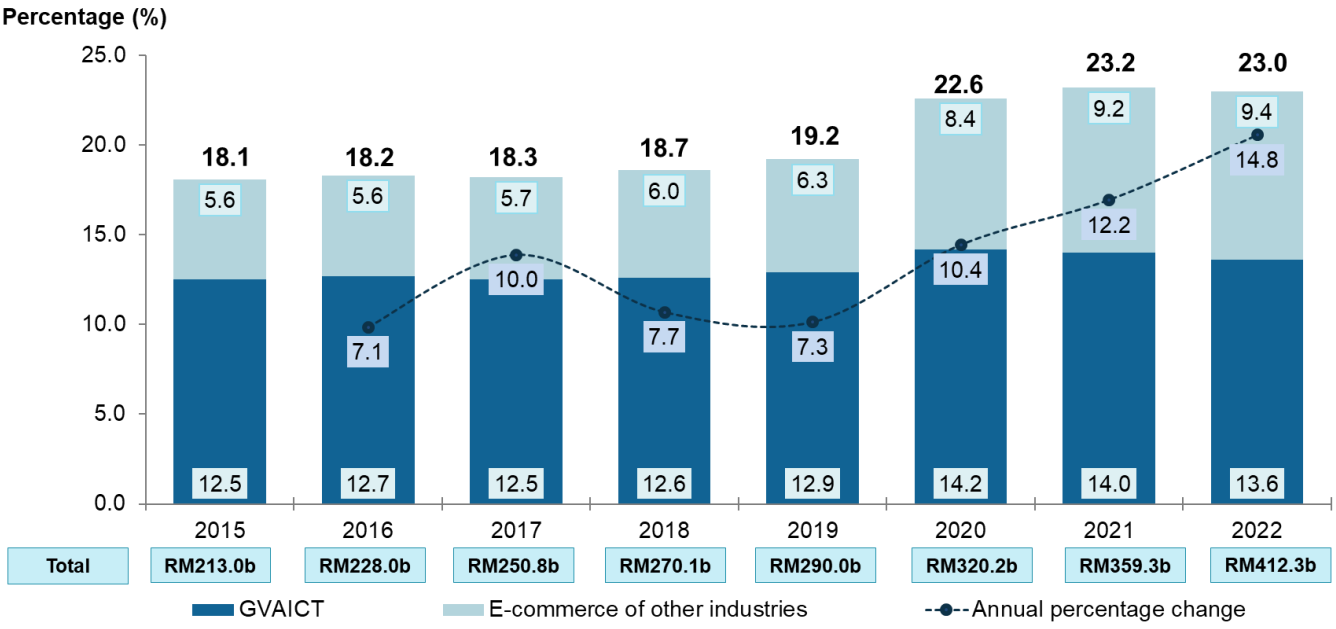
1. PERFORMANCE OF INFORMATION AND COMMUNICATION TECHNOLOGY

This chapter provides details on information encompassing Information and Communication Technology (ICT) satellite accounts and components for the digital economy. The satellite accounts provide statistics about the ICT industry and other industries that produce ICT products, supply and use of ICT products, exports & imports of ICT products, income components, and employment in the ICT industry. Meanwhile, the Gross Value Added of the ICT industry (GVAICT), e-commerce, and the contribution of the ICT to the economy. These statistics are presented by ICT related industries and products at current prices.

1.1 CONTRIBUTION OF ICT TO THE ECONOMY

The contribution of ICT and e-commerce to the national economy was 23.0 per cent with a value of RM412.3 billion in 2022. The performance was contributed by GVAICT with 13.6 per cent, and the e-commerce of other industries, 9.4 per cent. ICT and e-commerce showed an increase of 14.8 per cent compared to 12.2 per cent in the previous year, as shown in **Figure 1.1**.

Figure 1.1: ICT Contribution to Economy, 2015 - 2022



Note.

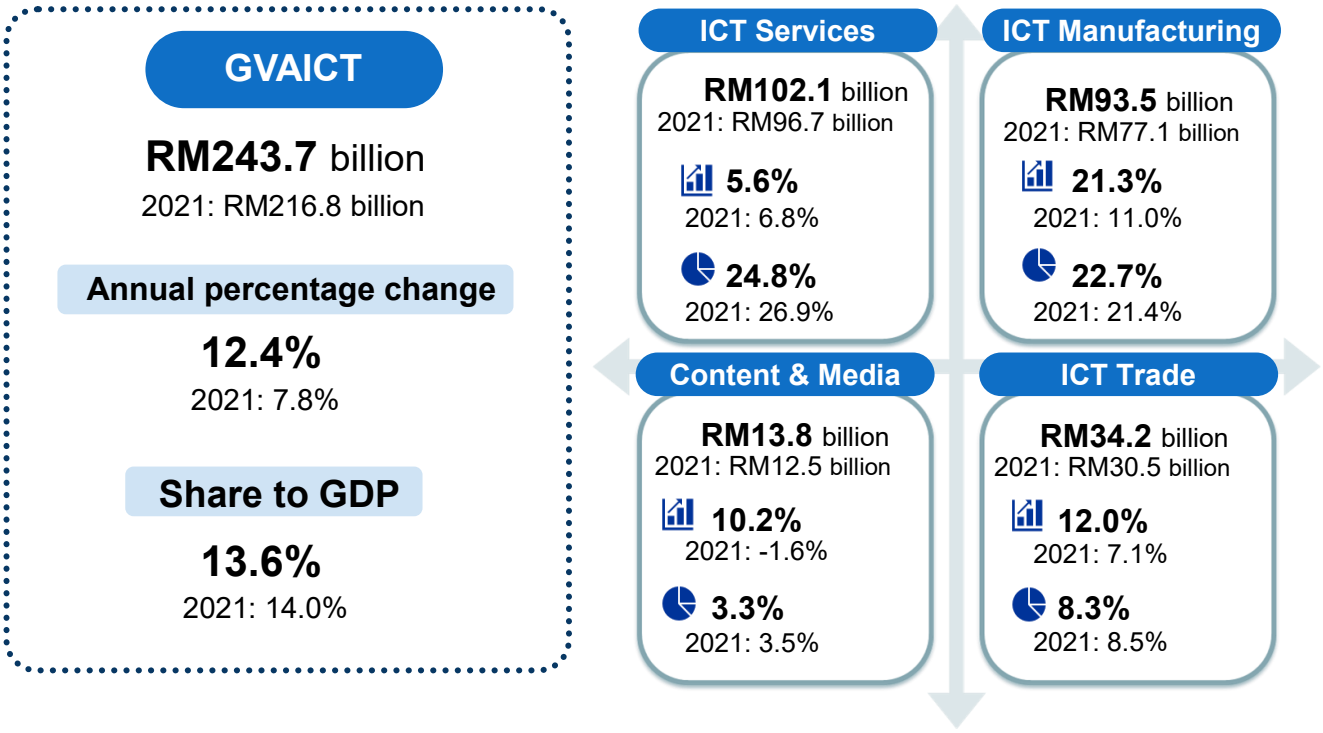
b billion

Source: Information and Communication Technology Satellite Account 2022

1.2 PERFORMANCE OF ICT INDUSTRY

GVAICT recorded RM243.7 billion, reflecting a growth of 12.4 per cent in 2022 compared to 7.8 per cent in the previous year. This growth was supported by the ICT manufacturing industry with a better growth of 21.3 per cent compared to 11.0 per cent in 2021, as illustrated in **Figure 1.2**. Electronic components & boards, communication equipment, and consumer electronics remained the main contributors to ICT manufacturing.

Figure 1.2: Gross Value Added of ICT Industry, 2021 & 2022



Note.

Annual percentage change

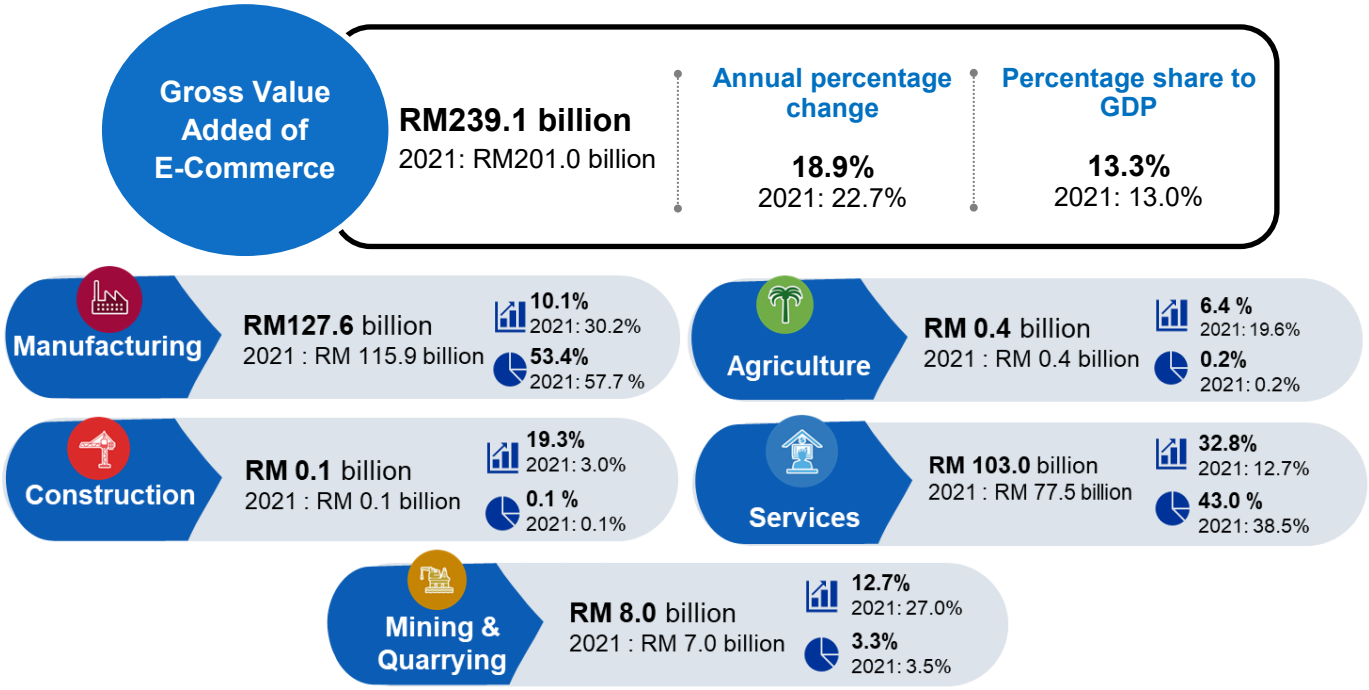
Percentage share

Source: Information and Communication Technology Satellite Account 2022

1.3 GROSS VALUE ADDED OF E-COMMERCE

The gross value added of e-commerce registered RM239.1 billion with a growth of 18.9 per cent in 2022 compared to 22.7 per cent in the previous year. The contribution of e-commerce to GDP was 13.3 per cent, comprising e-commerce in ICT industries at 3.9 per cent and e-commerce of other industries at 9.4 per cent. The Manufacturing sector remained the major contributor to the gross value added of e-commerce with a contribution of 53.4 per cent followed by the Services sector at 43.0 per cent **(Figure 1.3).**

Figure 1.3: Gross Value Added of E-Commerce to GDP, 2021 & 2022



Note.

Annual percentage change

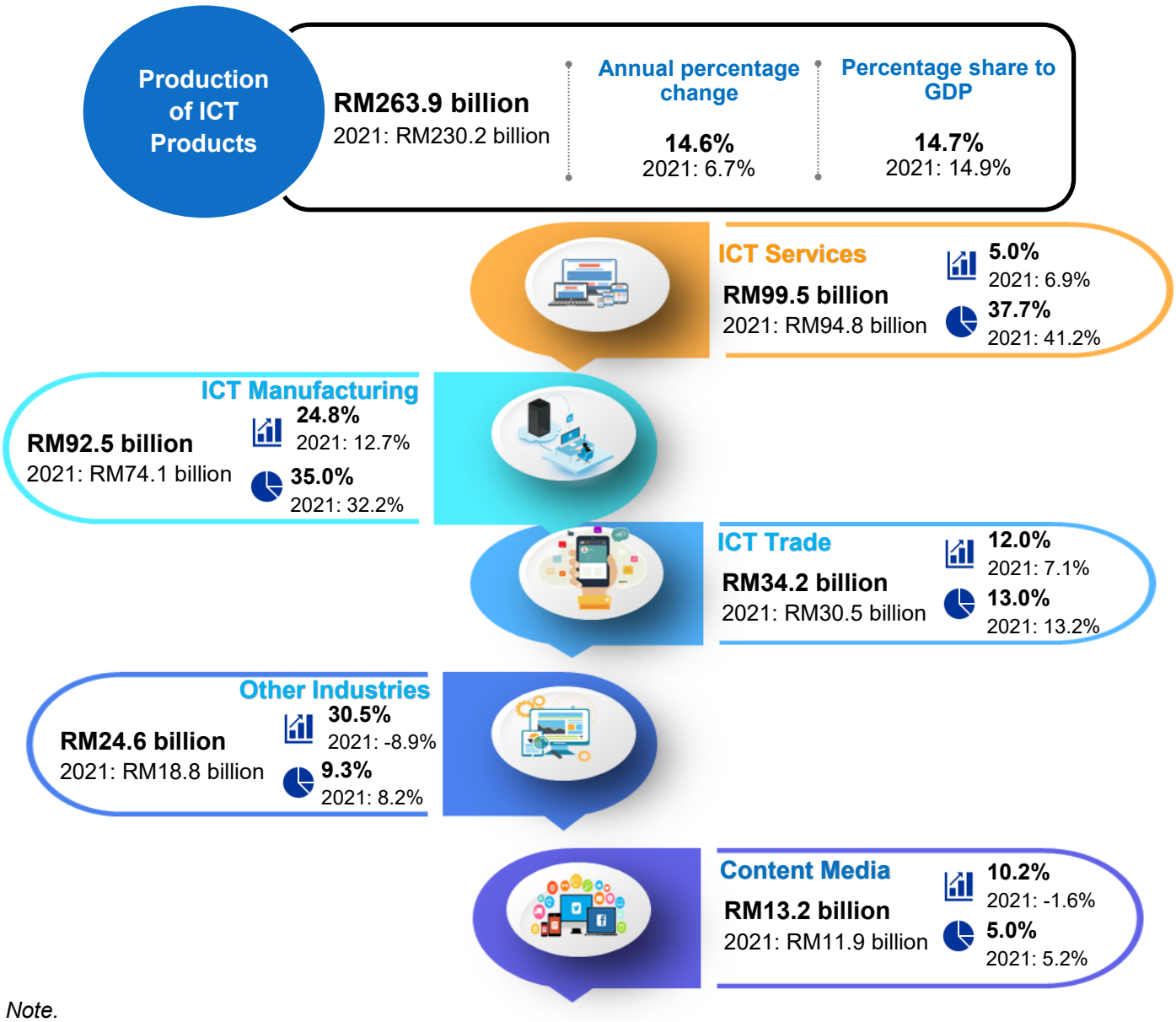
Percentage share

Source: Information and Communication Technology Satellite Account 2022

1.4 PRODUCTION OF ICT PRODUCTS BY INDUSTRY

The production of ICT products expanded by 14.6 per cent (2021: 6.7%) with a value of RM263.9 billion in 2022. The growth was driven by favourable performance in the ICT Manufacturing industry (24.8%) and ICT Trade (12.0%). The production of ICT products was dominated by ICT services with a share of 37.7 per cent followed by ICT Manufacturing (35.0%) and ICT Trade (13.0%) as shown in **Figure 1.4.**

Figure 1.4: ICT Industry and Other Industries that Produce ICT Products, 2021 & 2022



Note.

Annual percentage change

Percentage share

Source: Information and Communication Technology Satellite Account 2022

1.5 SUPPLY AND USE OF ICT PRODUCTS

The supply and use of ICT products increased to RM1.1 trillion with a growth of 18.3 per cent in 2022. The domestic production dominated the total supply of ICT products with a share of 71.7 per cent followed by imports of ICT product (27.7%). Meanwhile, the contribution of intermediate use to ICT products accounted for 45.4 per cent share and exports held 39.9 per cent share of the total use (**Figure 1.5**).

Figure 1.5: Supply and Use of ICT Products, 2021 & 2022

SUPPLY

Total Supply of ICT Products	Domestic Production	Imports	Taxes Less Subsidies
RM1,112.7b	**RM797.6b**	**RM308.8b**	**RM6.2b**
2021:RM940.3b	2021:RM674.1b	2021:RM260.7b	2021:RM5.5b
18.3%	**18.3%**	**18.5%**	**13.6%**
2021: 10.9%	2021: 7.4%	2021: 20.8%	2021: 22.0%
	71.7%	**27.7%**	**0.6%**
	2021: 71.7%	2021: 27.7%	2021: 0.6%

USE

Total Use of ICT Products	Intermediate Use	Final Consumption Expenditure	Gross Capital Formation	Exports
RM1,112.7b	**RM504.6b**	**RM120.6b**	**RM43.0b**	**RM444.5b**
2021:RM940.3b	2021:RM438.3b	2021:RM105.5b	2021:RM40.5b	2021:RM356.0b
18.3%	**15.1%**	**14.3%**	**6.3%**	**24.9%**
2021: 10.9%	2021: 10.5%	2021: 6.2%	2021: 8.7%	2021: 13.1%
	45.4%	**10.8%**	**3.9%**	**39.9%**
	2021: 46.6%	2021: 11.2%	2021: 4.3%	2021: 37.9%

Note.

Annual percentage change

Percentage share

b billion

Source: Information and Communication Technology Satellite Account 2022

1.6 EXPORTS AND IMPORTS OF ICT PRODUCTS

Exports of ICT products increased to RM444.5 billion with a growth of 24.9 per cent in 2022 compared to 13.1 per cent in the previous year. The ICT goods (90.9%) influenced the overall exports performance of ICT products. Exports of ICT products constituted 32.2 per cent of total national exports. Imports of ICT products amounted to RM308.8 billion with a growth of 18.5 per cent driven by the growth of ICT services (19.5%). Imports of ICT products contributed 24.7 per cent of total import in 2022 as illustrated in **Figure 1.6**. Consequently, net exports of ICT products showed a robust performance with a value of RM135.7 billion in 2022.

Figure 1.6: Exports and Imports of ICT Products, 2021 & 2022

Net Export

RM135.7 billion

2021: RM95.3 billion

ICT PRODUCTS	Exports		Imports	
	2021	2022	2021	2022
ICT Goods	RM321.5b 13.8% 90.3%	RM404.1b 25.7% 90.9%	RM228.6b 20.9% 87.7%	RM271.0b 18.5% 87.7%
ICT Services	RM28.7b 12.3% 8.1%	RM35.2b 22.8% 7.9%	RM28.1b 24.0% 10.8%	RM33.6b 19.5% 10.9%
Content and Media	RM5.8b -12.4% 1.6%	RM5.2b -10.6% 1.2%	RM4.0b -1.9% 1.5%	RM4.2b 7.1% 1.4%
Total	RM356.0b 13.1%	RM444.5b 24.9%	RM260.7b 20.8%	RM308.8b 18.5%
Share to National Exports	32.5%	32.2%	26.5%	24.7%

Note.

Annual percentage change

Percentage share

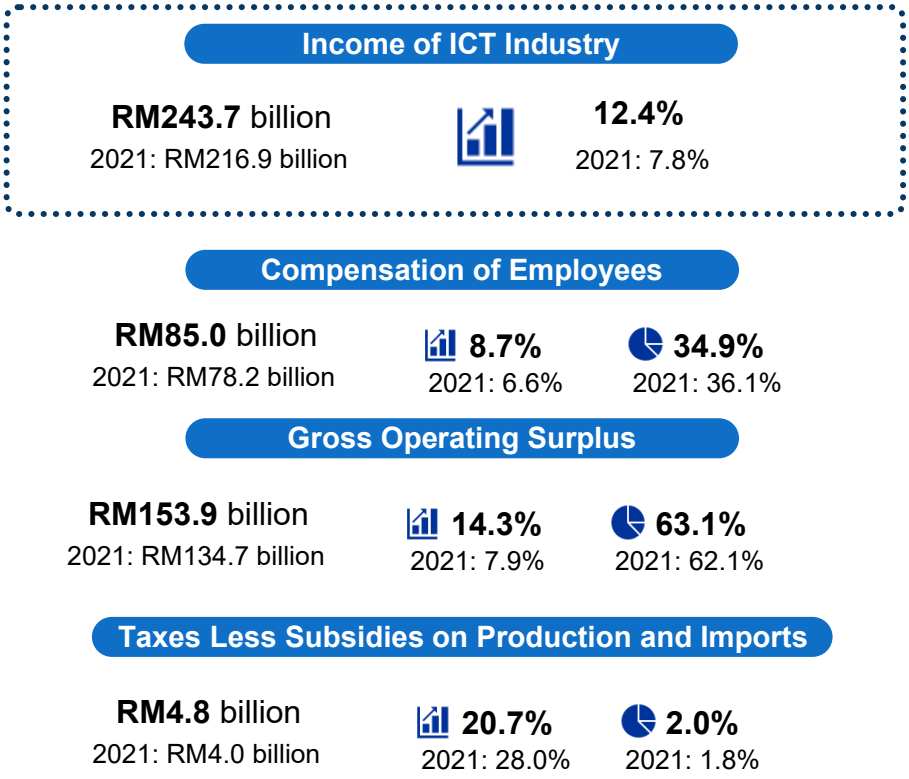
b billion

Source: Information and Communication Technology Satellite Account 2022

1.7 INCOME COMPONENTS OF ICT INDUSTRY

Total income of the ICT industry recorded RM243.7 billion with a double-digit increased by 12.4 per cent in 2022 (2021: 7.8%). The compensation of employees registered a value of RM85.0 billion with a contribution of 34.9 per cent share to the total ICT income. Meanwhile, gross operating surplus contributed 63.1 per cent share and taxes less subsidies on production and imports accounted for 2.0 per cent share as in **Figure 1.7.**

Figure 1.7: Income Components of ICT Industry, 2021 & 2022



Note.

Annual percentage change

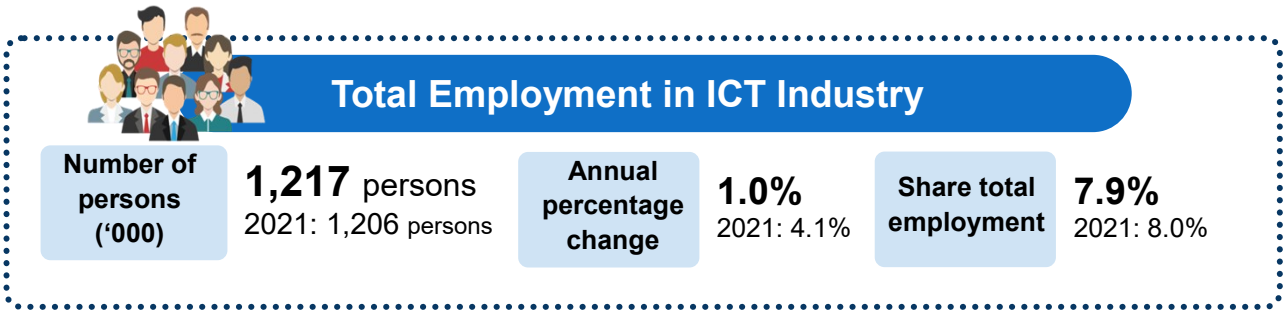
Percentage share

Source: Information and Communication Technology Satellite Account 2022

1.8 EMPLOYMENT IN THE ICT INDUSTRY

Employment in the ICT industry increased 1.0 per cent to 1.22 million persons in 2022, with a contribution of 7.9 per cent to total employment. The contribution was dominated by ICT manufacturing at 36.1 per cent share, followed by ICT services (29.3%) and ICT trade (21.7%) as shown in **Figure 1.8.**

Figure 1.8: Employment in the ICT Industry, 2021 & 2022



Note.

Annual percentage change

Percentage share

b billion

Source: Information and Communication Technology Satellite Account 2022

CHAPTER 2

INFORMATION AND COMMUNICATION SERVICES SECTOR

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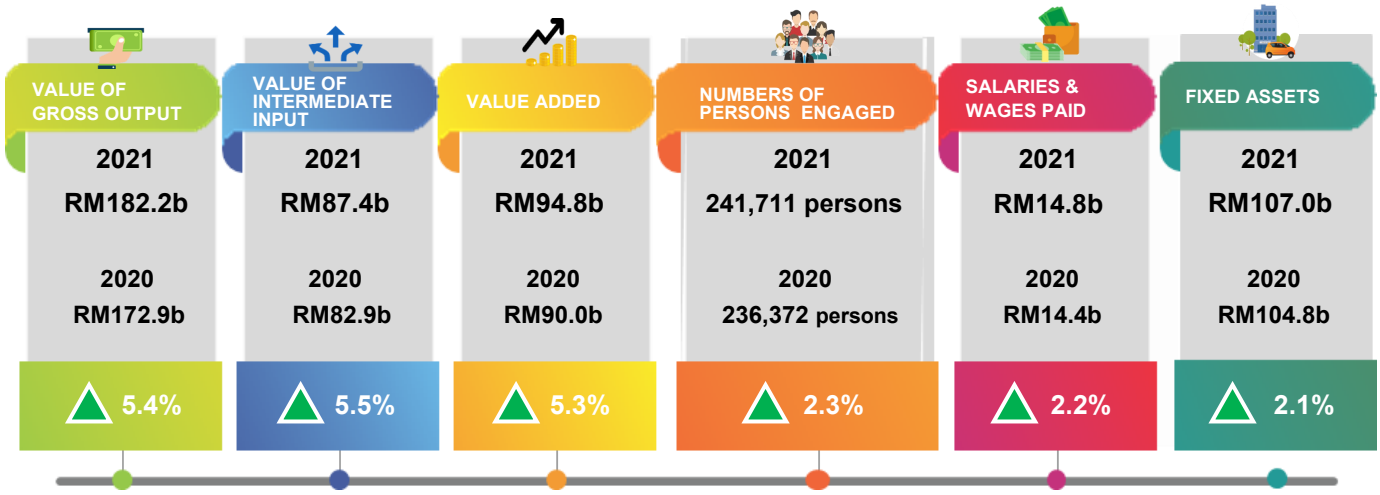
2. INFORMATION AND COMMUNICATION SERVICES SECTOR

This chapter presents statistics on the Information and communication services which resulted from the Annual Economic Survey 2022 for reference year 2021. Information and communication services encompass activities such as publishing; motion picture, video & television programme production, sound recording & music publishing; programming & broadcasting; telecommunications services; computer programming, consultancy & related activities, and information services. The main statistics, including the value of gross output, value of intermediate input, value added, number of persons engaged, salaries & wages paid, as well as value of fixed assets, are also presented in this chapter.

2.1 PERFORMANCE OF INFORMATION AND COMMUNICATION SERVICES SECTOR

The Information and communication services sector recorded a gross output value of RM182.2 billion in 2021, registered a growth of 5.4 per cent compared to 2020 (RM172.9 billion). Aligned with the increase in gross output, the value of intermediate input also rose by RM4.6 billion to record RM87.4 billion (2020: RM82.9 billion), resulting in a value added of RM94.8 billion for the year 2021 (2020: RM90.0 billion). The number of persons engaged in this sector also reported an increase of 2.3 per cent to 241,711 persons as compared to 236,372 persons in 2020. Meanwhile, salaries & wages paid in 2021 amounted to RM14.8 billion, compared to RM14.4 billion in 2020. The value of fixed assets also showed an increase of RM2.2 billion to record RM107.0 billion in 2021 (2020: RM104.8 billion), as shown in Figure 2.1.

Figure 2.1: Principle Statistics of information and Communication Services, 2020 & 2021



Note.

Year-on-Year

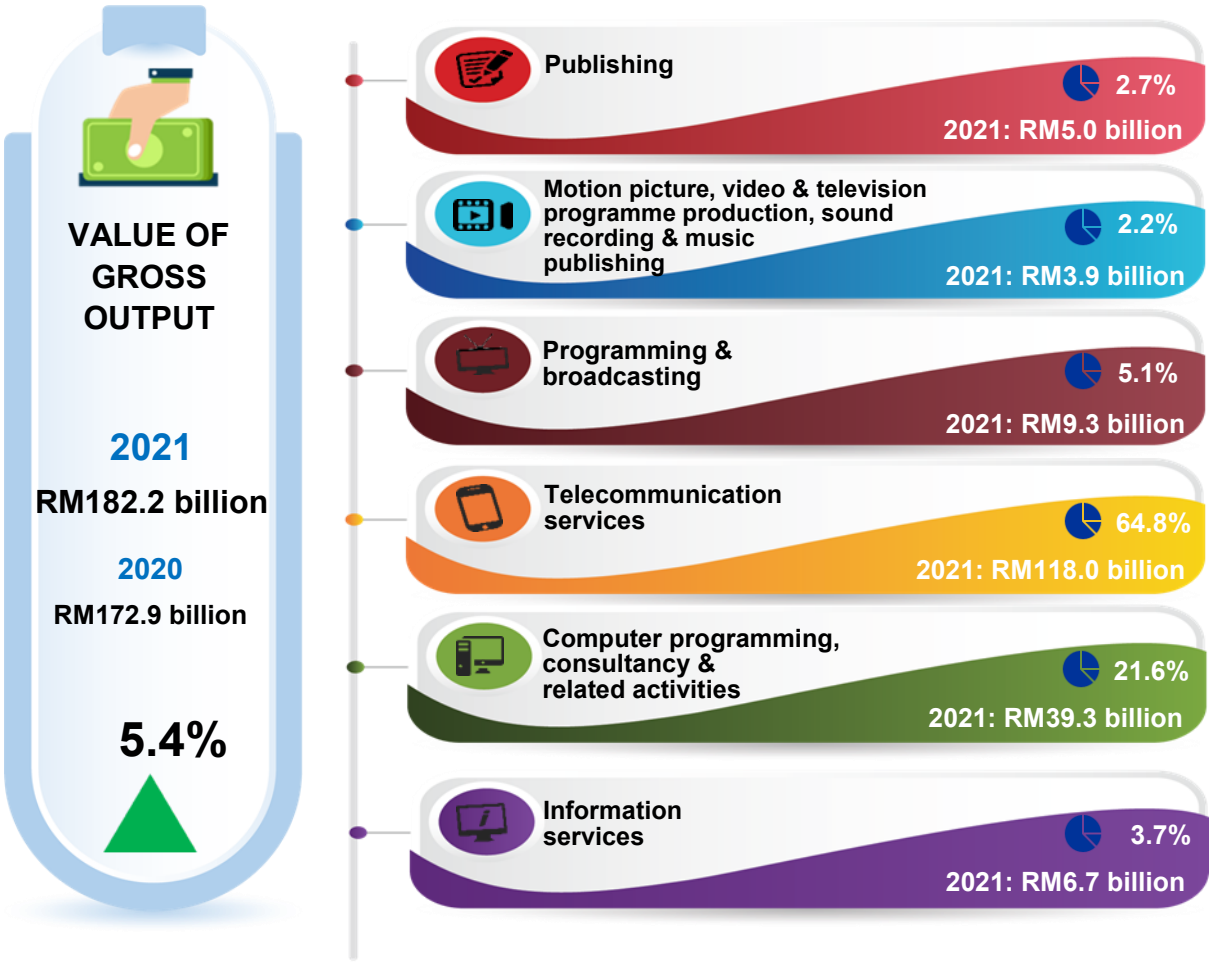
b billion

Source: Annual Economic Statistics (AES) 2022 - Information and Communication Services

2.2 VALUE OF GROSS OUTPUT

The gross output value of Information and communication services rose by 5.4 per cent to RM182.2 billion in 2021. Telecommunications services was the major contributor of gross output value with RM118.0 billion or 64.8 per cent share followed by computer programming, consultancy & related activities with RM39.3 billion (21.6%), and programming & broadcasting with RM9.3 billion (5.1%), as shown in **Figure 2.2**. These three activities together contributed 91.5 per cent to the value of gross output in Information and communication services. Other activities that also contributed were publishing, information services, and motion picture, video & television programme production, sound recording & music publishing with a value of RM15.6 billion.

Figure 2.2: Value of Gross Output for Information and Communication Services by Activity, 2021



Note.

Year-on-Year

Percentage share

Source: Annual Economic Statistics (AES) 2022 - Information and Communication Services

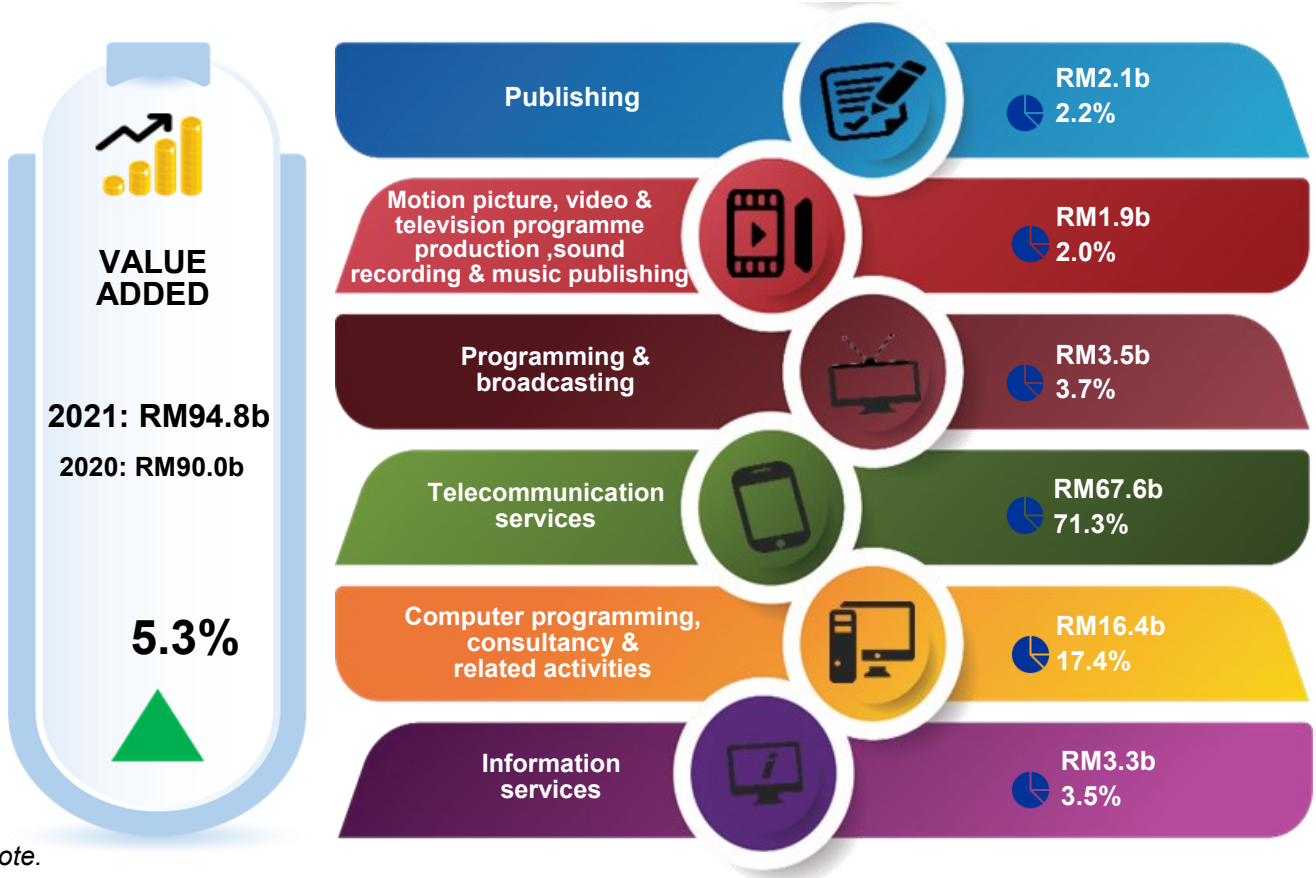
2.2.1 VALUE OF GROSS OUTPUT BY STATE

W.P. Kuala Lumpur remained the main contributor to the gross output value for Information and communication services in 2021, recorded RM120.6 billion with 66.2 per cent share. This was followed by Selangor and Pulau Pinang with the gross output value of RM53.2 billion or 29.2 per cent share and RM5.1 billion (2.8%), respectively. The total value of gross output for the three states amounted to RM178.9 billion (98.2%).

2.3 VALUE ADDED

The total value added recorded in Information and communication services for 2021 was RM94.8 billion or rose 5.3 per cent as compared to the previous year. **Figure 2.3** shows that telecommunications services recorded the highest value added in 2021 which amounted to RM67.6 billion or 71.3 per cent share. This was followed by computer programming, consultancy & related activities of RM16.4 billion (17.4%), and programming & broadcasting of RM3.5 billion (3.7%), respectively.

Figure 2.3: Value Added for Information and Communication Services by Activity, 2021



Note.

Year-on-Year

Percentage share

b billion

Source: Annual Economic Statistics (AES) 2022 - Information and Communication Services

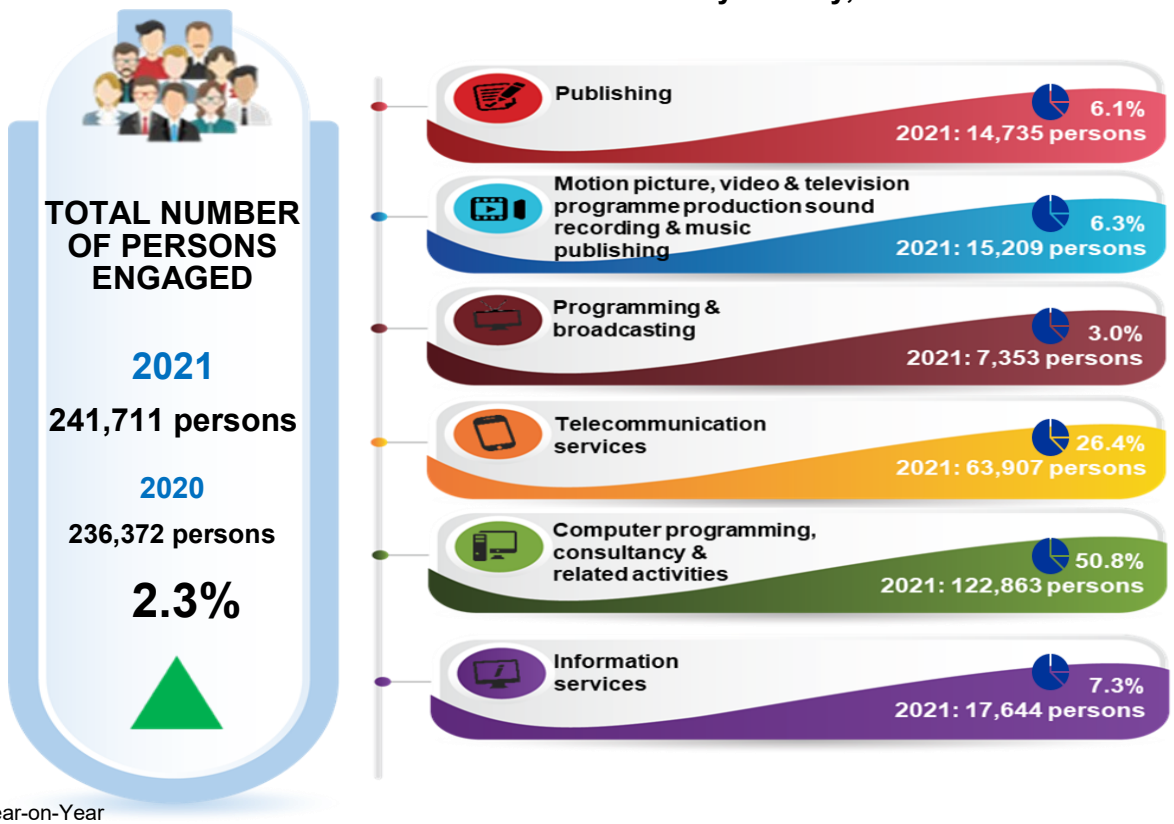
2.3.1 VALUE ADDED BY STATE

The performance of value added by state in 2021 indicated that three states, i.e., W.P. Kuala Lumpur, Selangor and Pulau Pinang were the main contributors to the value added of Information and communication services. W.P. Kuala Lumpur remained the main contributor to the value added of Information and communication services in 2021, recorded RM64.7 billion with a 68.2 per cent share. This was followed by Selangor and Pulau Pinang with value added of RM26.0 billion (27.4%), and RM2.4 billion (2.5%), respectively. The total value added for the three states amounted to RM93.1 billion (98.1%).

2.4 NUMBER OF PERSONS ENGAGED AND CATEGORY OF WORKERS

Computer programming, consultancy & related activities registered the highest number of persons engaged, at 122,863 persons or 50.8 per cent share. The second highest contributor was telecommunications services with 63,907 persons or 26.4 per cent share, followed by information services activity with 17,644 persons or 7.3 per cent share, as shown in **Figure 2.4**. These three activities contributed the most (84.5%) of the total number of persons engaged in Information and communication services in 2021.

Figure 2.4: Number of Persons Engaged for Information and Communication Services by Activity, 2021



Note.

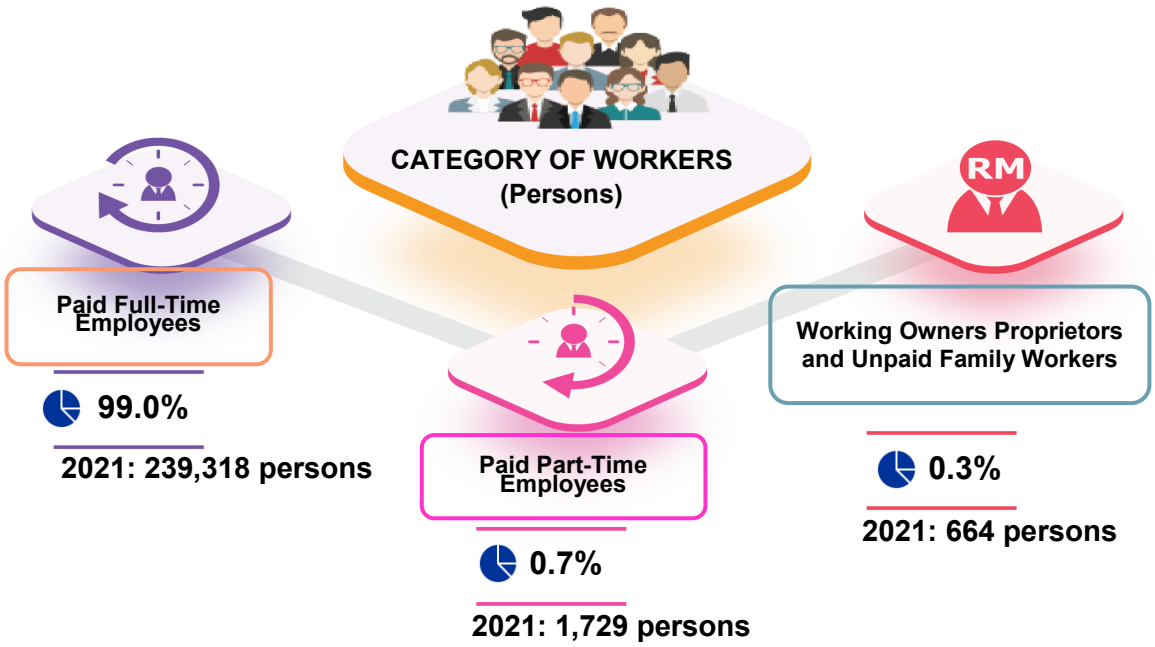
Year-on-Year

Percentage share

Source: Annual Economic Statistics (AES) 2022 - Information and Communication Services

Paid full-time employees in 2021 recorded a total of 239,318 persons with percentage share of 99.0 per cent, as against to paid part-time employees 1,729 persons or 0.7 per cent share, and working proprietors & unpaid family workers (664 persons; 0.3%), as shown in **Figure 2.5**. Based on the total number of full-time employees, manager, professional and researcher recorded the highest number of persons engaged (84,398 persons; 35.3%), followed by clerical and related occupations (79,502 persons; 33.2%), technicians and associate professionals (49,610 persons; 20.7%), and elementary occupations (25,808 persons; 10.6%), respectively.

Figure 2.5: Number of Persons Engaged for Information and Communication Services by Category of Workers, 2021



Note.

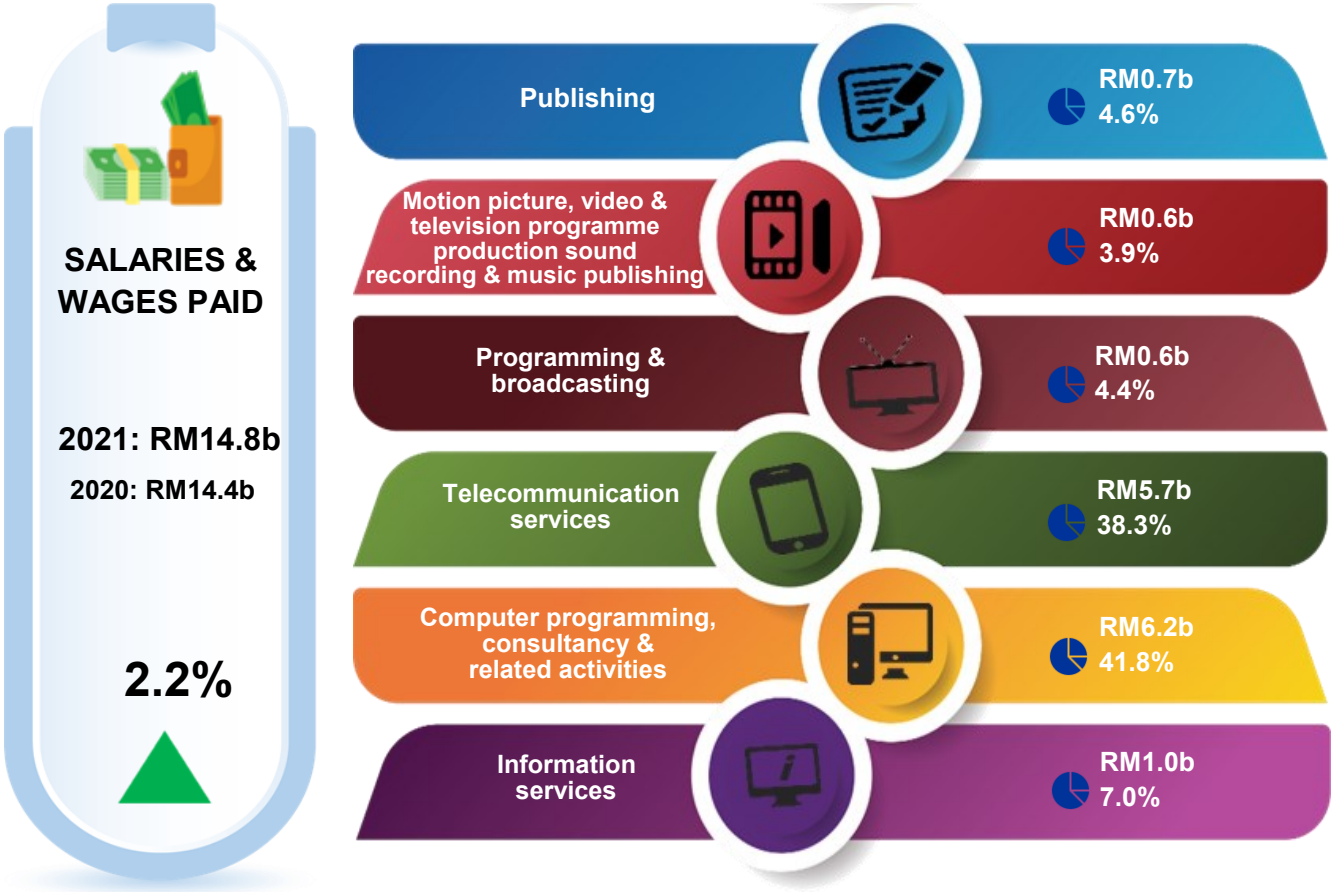
Percentage share

Source: Annual Economic Statistics (AES) 2022 - Information and Communication Services

2.5 SALARIES & WAGES PAID

The total salaries & wages paid in Information and communication services for the year 2021 amounted to RM14.8 billion. Computer programming, consultancy & related activities recorded the highest salaries & wages at RM6.2 billion or 41.8 per cent to the salaries & wages paid. The second highest contributor was telecommunications services with RM5.7 billion or 38.3 per cent share, followed by information services with RM1.0 billion or 7.0 per cent share, as shown in **Figure 2.6**. Collectively, the share of salaries & wages paid to Information and communication services for all three activities were RM12.9 billion (87.1%). On average, salaries & wages received by employees in the Information and communication services amounted to RM5,119 monthly.

Figure 2.6: Salaries & Wages Paid in Information and Communication Services by Activity, 2021



Note.

Year-on-Year

Percentage share

b billion

Source: Annual Economic Statistics (AES) 2022 - Information and Communication Services

INSIGHT OF E-COMMERCE

CHAPTER 3

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3. INSIGHTS OF E-COMMERCE

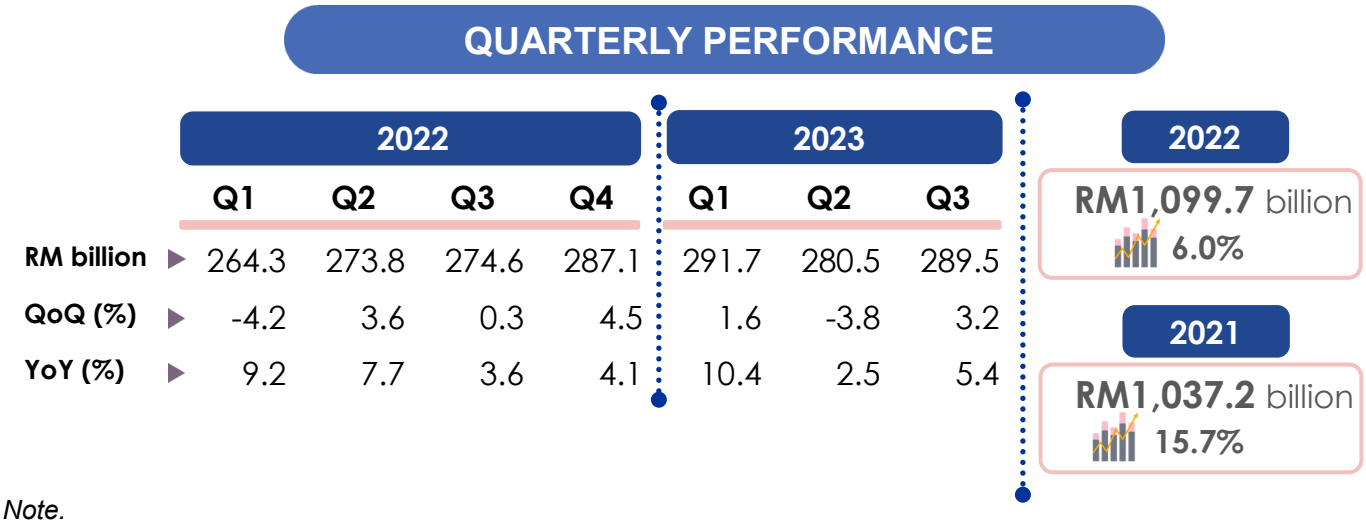
In general, e-commerce is a medium or platform of buying or selling goods and services over the internet. Nowadays, e-commerce has commonly used throughout entire economics activities in Malaysia. In this chapter, statistics on the performance of e-commerce by establishments in Malaysia will be described in terms of quarterly income, index of retail sale and overall findings of e-commerce for the year 2022.

3.1 QUARTERLY PERFORMANCE OF E-COMMERCE INCOME BY ESTABLISHMENTS

Malaysia's e-commerce income by establishment recorded a growth of 5.4 per cent year-on-year in the third quarter of 2023, to reach RM289.5 billion. This was primarily driven by Manufacturing and Services sectors. In the previous year, e-commerce income for 2022 amounted to RM1.1 trillion, rose 6.0 per cent growth compared to the previous year.

On quarterly basis, the first quarter of 2023 recorded an income of RM291.7 billion, which increased to RM280.5 billion in the second quarter. The upward trend continued, with e-commerce income registering RM289.5 billion in the third quarter of 2023 as illustrated in **Figure 3.1.**

Figure 3.1: Quarterly E-Commerce Income by Establishments, Q1 2022 - Q3 2023



Note.

Annual growth rate
QoQ Percentage change quarter-on-quarter
YoY Percentage change year-on-year

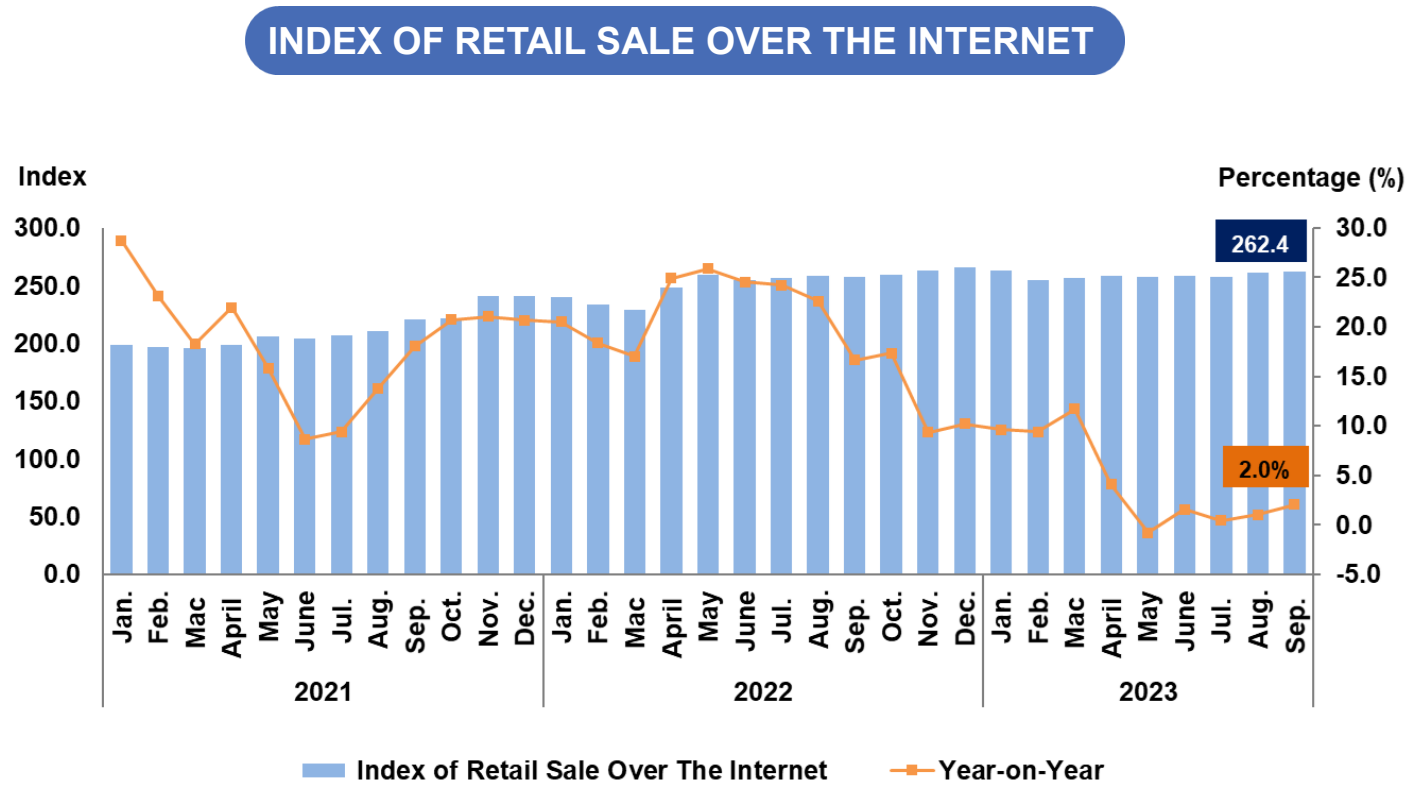
Source: Quarterly Services Statistics, Third Quarter, 2023

3.2 INDEX OF RETAIL SALE OVER THE INTERNET

Wholesale trade can be defined as the resale (sale without transformation) of new and used goods to retailers; industrial, commercial instituional or professional users; or to other wholesalers; or selling merchandise to such persons or companies. Meanwhile, retail trade refers to the resale (sale without transformation) of new and used goods to the general public for personal or household consumption or utilisation.

For the index of retail sale over the internet, the index recorded 2.0 per cent growth year-on-year in September 2023 as compared to 1.0 per cent in August 2023. For seasonally adjusted value, the index went up 0.3 per cent as against the previous month, as shown in **Figure 3.2**.

Figure 3.2: Index of Retail Sale Over the Internet, January 2021 – September 2023



Note.

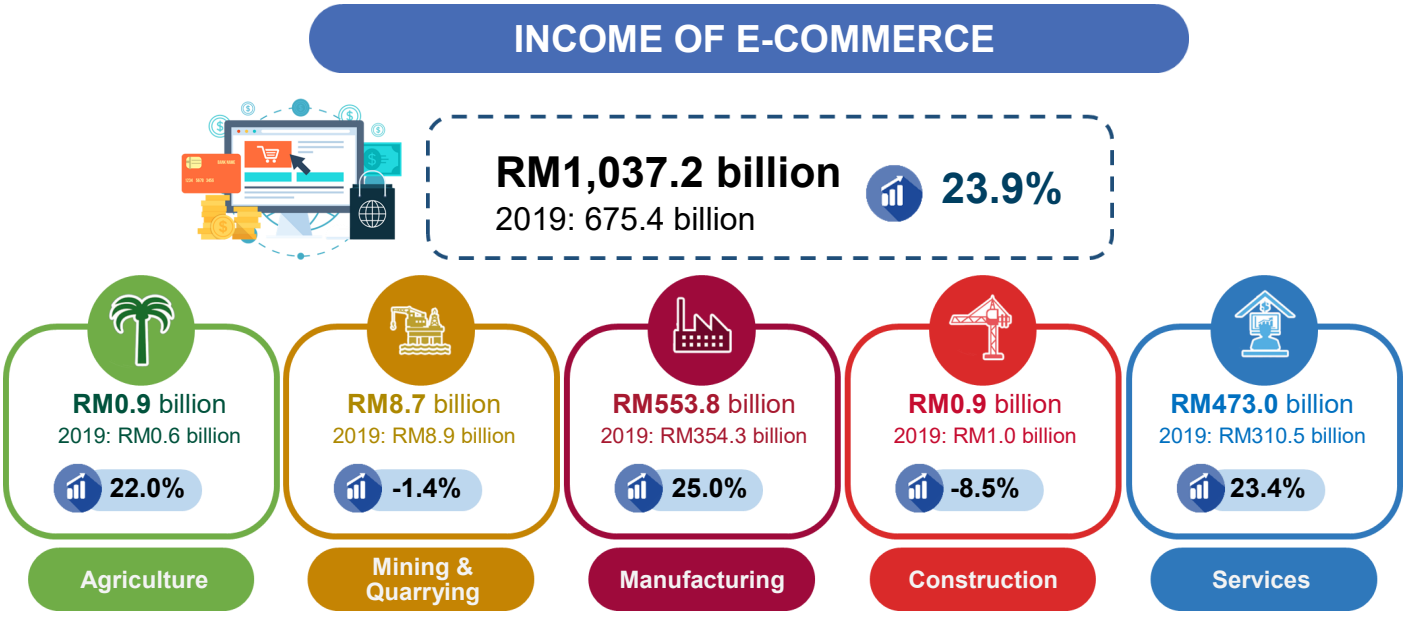
Source: Press Statement Performance of Wholesale & Retail Trade, September 2023

3.3 PERFORMANCE OF E-COMMERCE BY ESTABLISHMENTS

3.3.1 E-COMMERCE INCOME BY SECTOR

In 2021, Malaysia's income via e-commerce transactions recorded RM1,037.2 billion compared to RM675.4 billion in 2019, with an annual growth of 23.9 per cent. The main contributor was the Manufacturing sector, with RM553.8 billion and annual growth rate of 25.0 per cent. This was followed by Services (RM473.0 billion; 23.4%) and Mining & Quarrying (RM8.7 billion; -1.4%) shown in **Figure 3.3**.

Figure 3.3: E-Commerce Income, 2019 & 2021



Note.

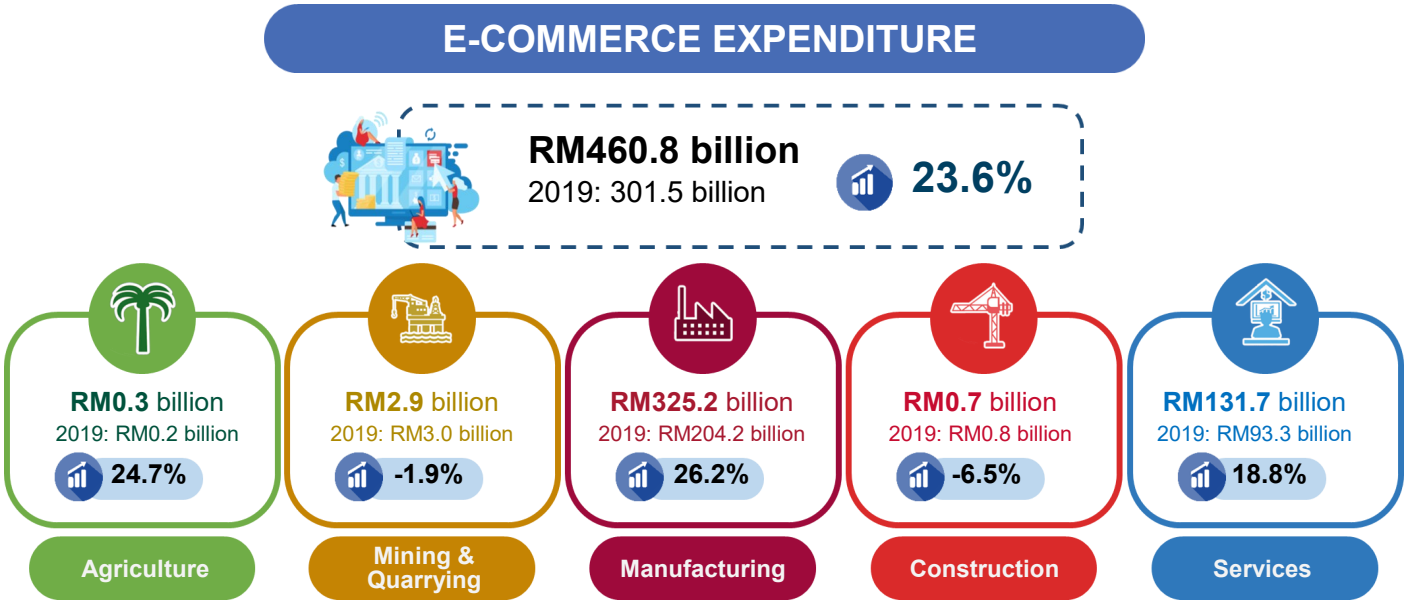
Annual growth rate

Source: Usage of ICT and E-Commerce by Establishment, 2022

3.3.2 E-COMMERCE EXPENDITURE BY SECTOR

Expenditure through e-commerce transactions recorded RM460.8 billion in 2021 compared to RM301.5 billion in 2019, with annual growth rate of 23.6 per cent. The main contributor was Manufacturing sector, which recorded RM325.2 billion with annual growth of 26.2 per cent. This was followed by Services sector (RM131.7 billion; 18.8%) and Mining & Quarrying sector (RM2.9 billion; -1.9%), as shown in **Figure 3.4.**

Figure 3.4: E-Commerce Expenditure by Sector, 2019 & 2021



Note.

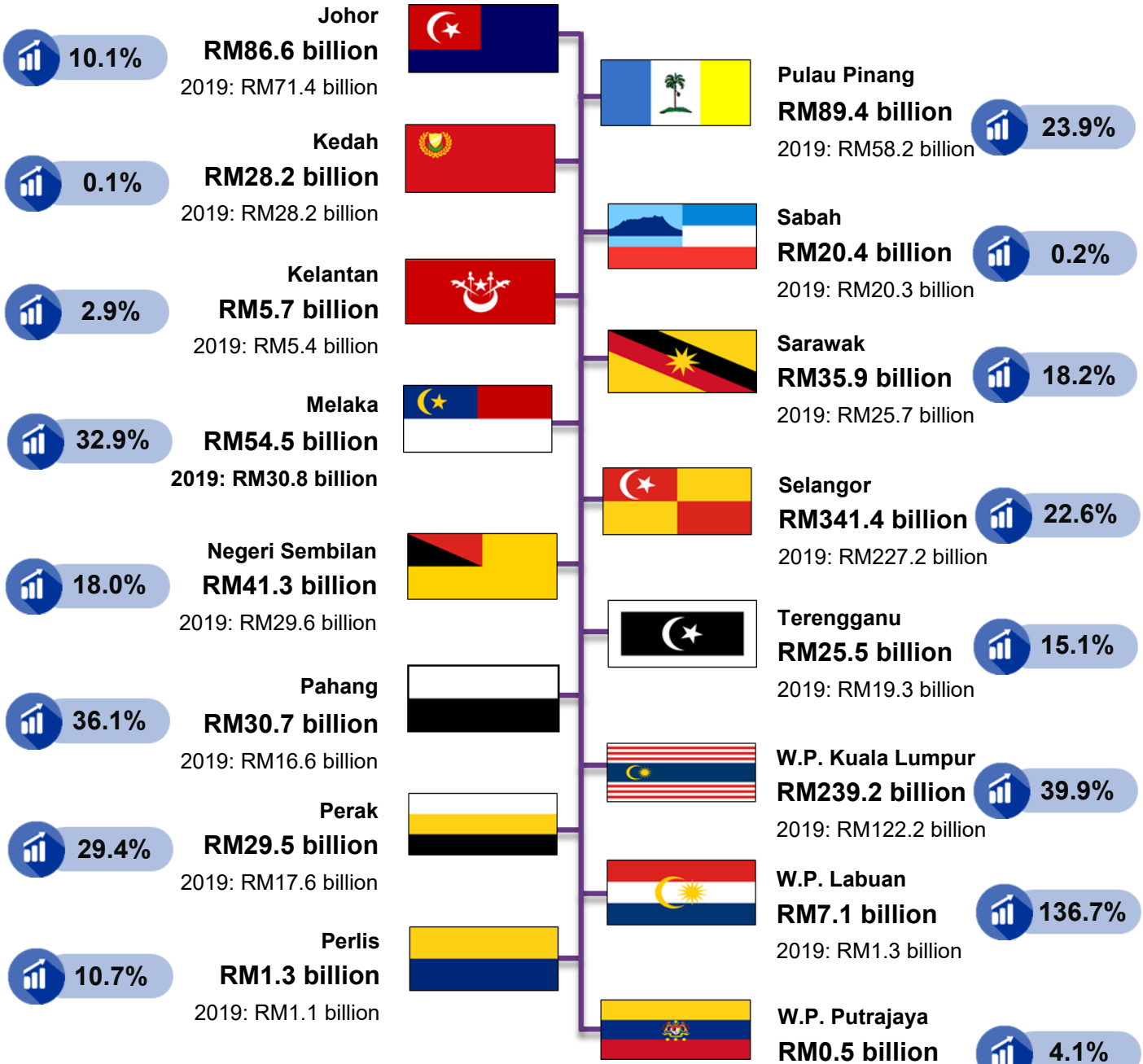
Annual growth rate

Source: Usage of ICT and E-Commerce by Establishment, 2022

3.3.3 E-COMMERCE INCOME BY STATE

Figure 3.5 shows the income of e-commerce by state. Selangor continued to record the highest income of e-commerce transactions with RM341.4 billion, an annual growth rate of 22.6 per cent. This was followed by W.P. Kuala Lumpur, RM239.2 billion (39.9%), and Pulau Pinang, RM89.4 billion (23.9%).

Figure 3.5: E-Commerce Income by State, 2019 & 2021



Note.

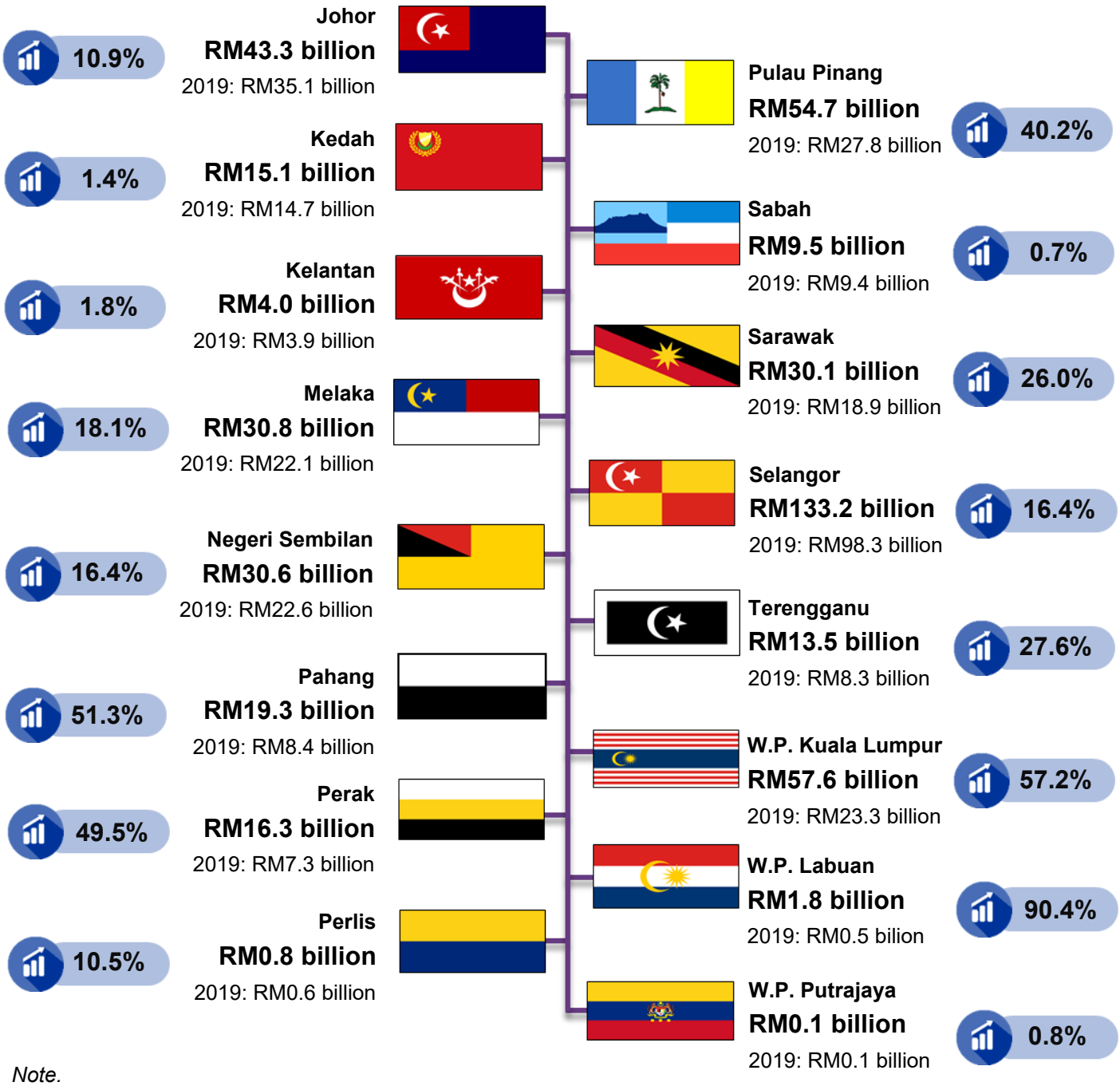
Annual growth rate

Source: Usage of ICT and E-Commerce by Establishment, 2022

3.3.4 E-COMMERCE EXPENDITURE BY STATE

As shown in **Figure 3.6**, Selangor continued to record the highest expenditure from e-commerce transactions RM133.2 billion, with annual growth rate of 16.4 per cent. This was followed by W.P Kuala Lumpur (RM57.6 billion; 57.2%) and Pulau Pinang (RM54.7 billion; 40.2%).

Figure 3.6: E-Commerce Expenditure by State, 2019 & 2021



Note.

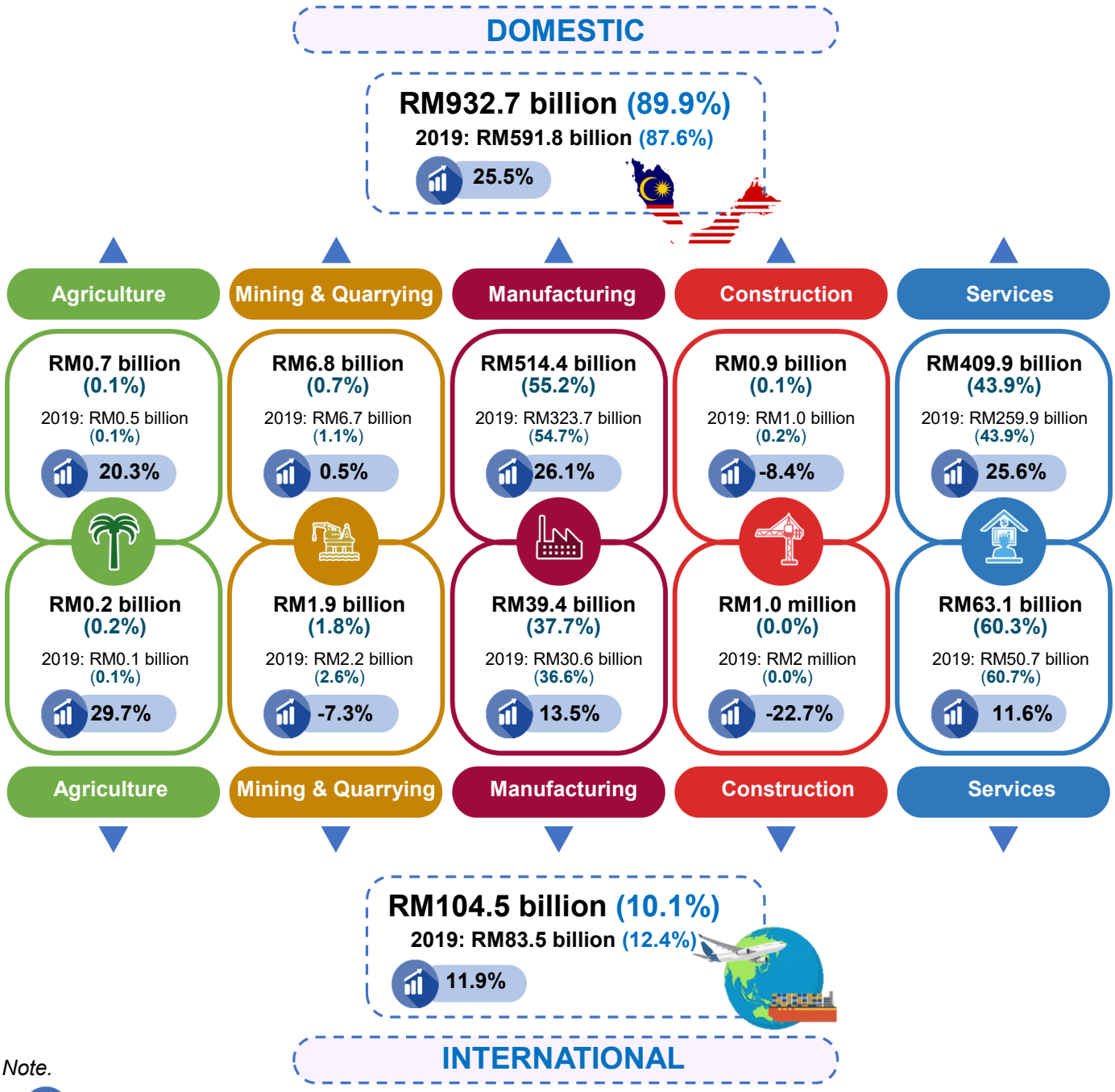
Annual growth rate

Source: Usage of ICT and E-Commerce by Establishment, 2022

3.3.5 E-COMMERCE INCOME BY TYPE OF MARKET

The e-commerce transaction in Malaysia was dominated by the domestic market with RM932.7 billion, a contribution of 89.9 per cent compared to the international market of RM104.5 billion (10.1%). The Manufacturing sector was the main contributor of e-commerce income transactions for the domestic market with a value of RM514.4 billion, while the Services sector was the highest in the international market with RM63.1 billion, as shown in **Figure 3.7.**

Figure 3.7: E-Commerce Income by Type of Market, 2019 & 2021



Note.

Annual growth rate

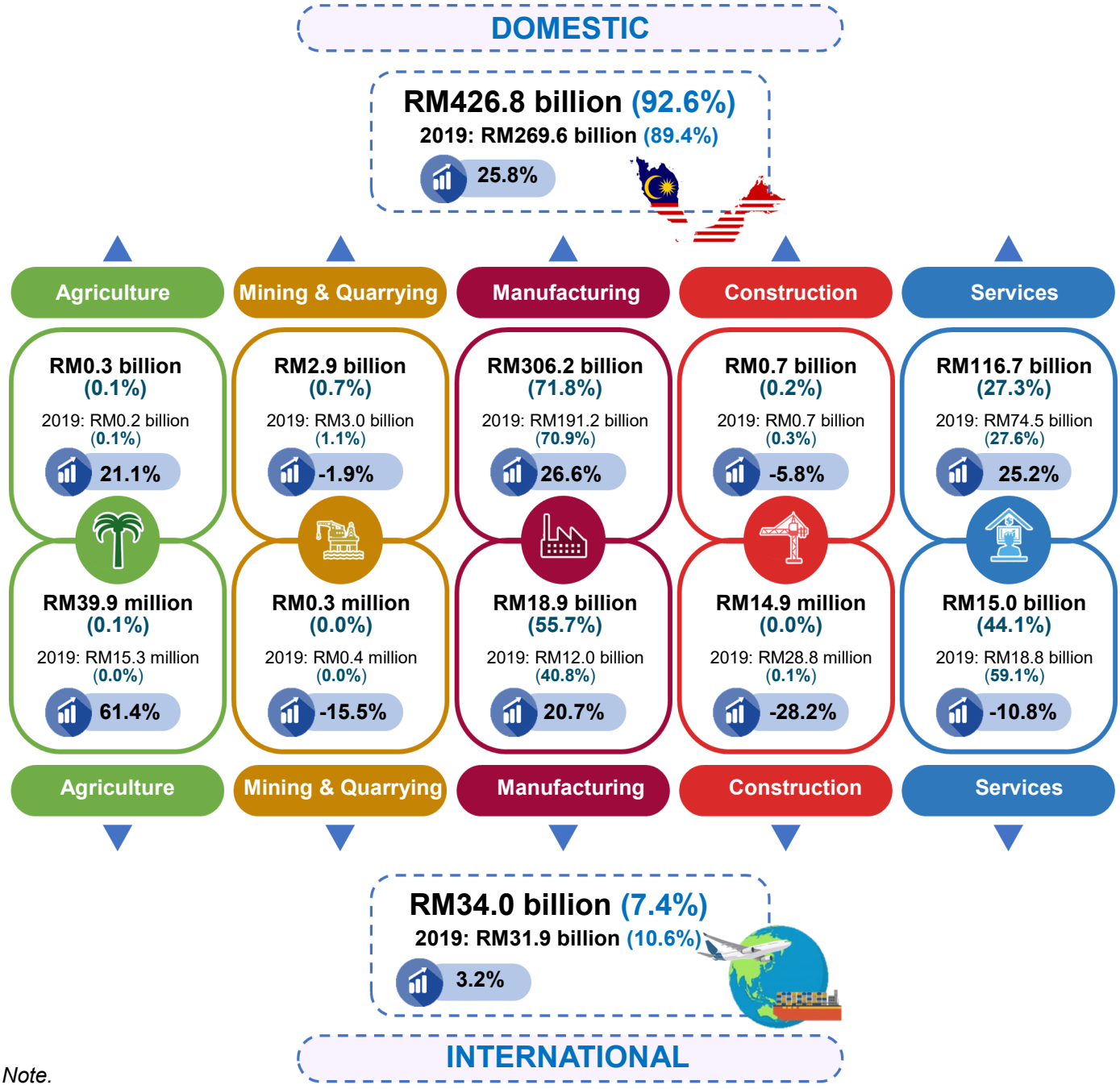
(%) Percentage share

Source: Usage of ICT and E-Commerce by Establishment, 2022

3.3.6 E-COMMERCE EXPENDITURE BY TYPE OF MARKET

Expenditure from e-commerce transactions in Malaysia was dominated by the domestic market of RM426.8 billion, which contributed 92.6 per cent compared to the international market of RM34.0 billion (7.4%). Manufacturing sector was the main contributor of expenditure from e-commerce transactions for the domestic market and international market with RM306.2 billion and RM18.9 billion, respectively as shown in **Figure 3.8.**

Figure 3.8: E-Commerce Expenditure by Type of Market, 2019 & 2021



Note.

Annual growth rate

(%) Percentage share

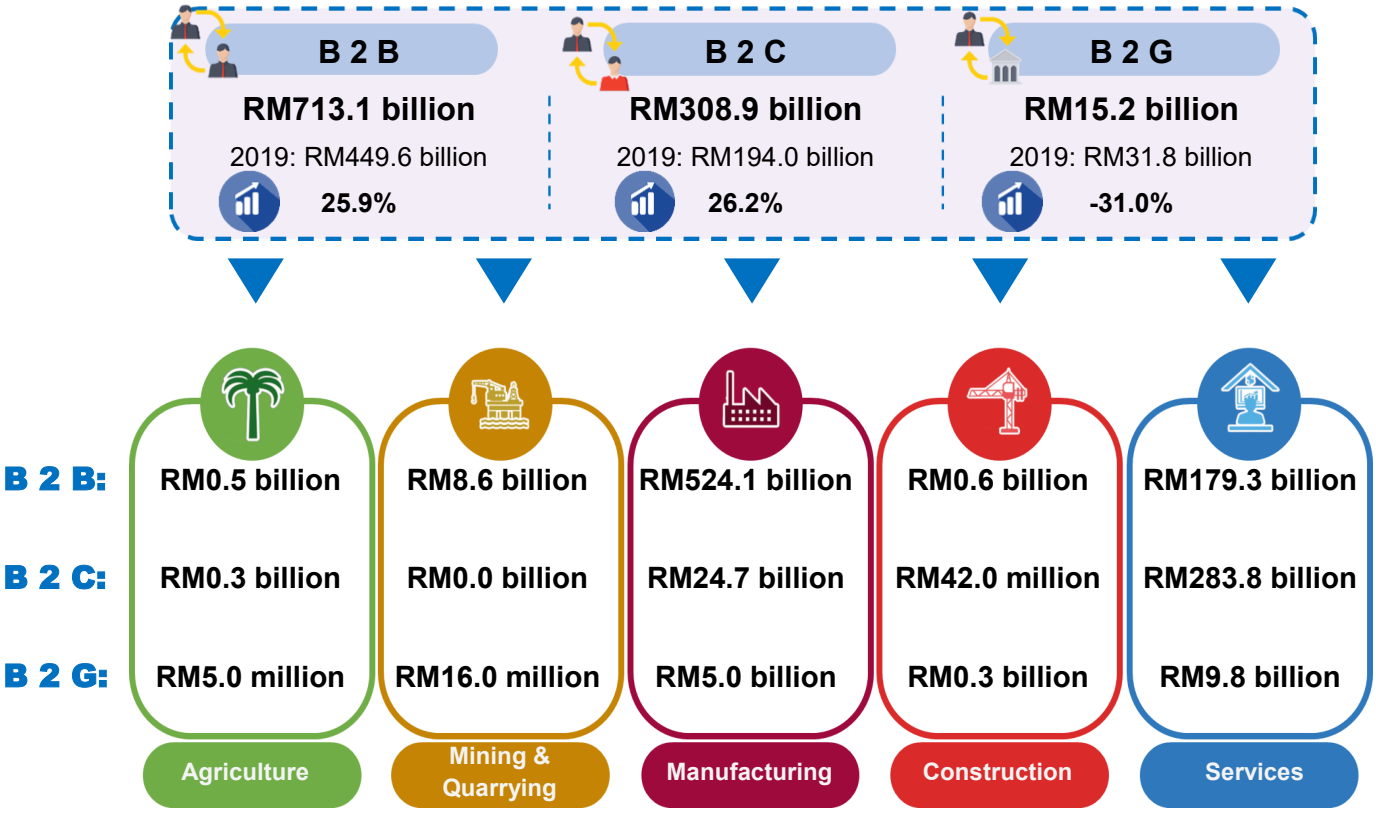
Source: Usage of ICT and E-Commerce by Establishment, 2022

3.3.7 E-COMMERCE INCOME BY TYPE OF CUSTOMER

The highest income from e-commerce transactions by type of customer was obtained through Business to Business (B2B), which was RM713.1 billion with annual growth rate of 25.9 per cent. This was followed by Business to Consumer (B2C) RM308.9 billion (26.2%) and Business to Government (B2G) RM15.1 billion (-31.0%).

The Manufacturing sector dominated income from e-commerce transactions through B2B, with a value of RM524.1 billion. Meanwhile, the highest B2C and B2G contributions were made by the Services sector RM283.8 billion and RM9.8 billion, respectively, as shown in **Figure 3.9.**

Figure 3.9: E-Commerce Income by Type of Customer, 2019 & 2021



Note.

Annual growth rate

"0" Refers to value less than RM500,000

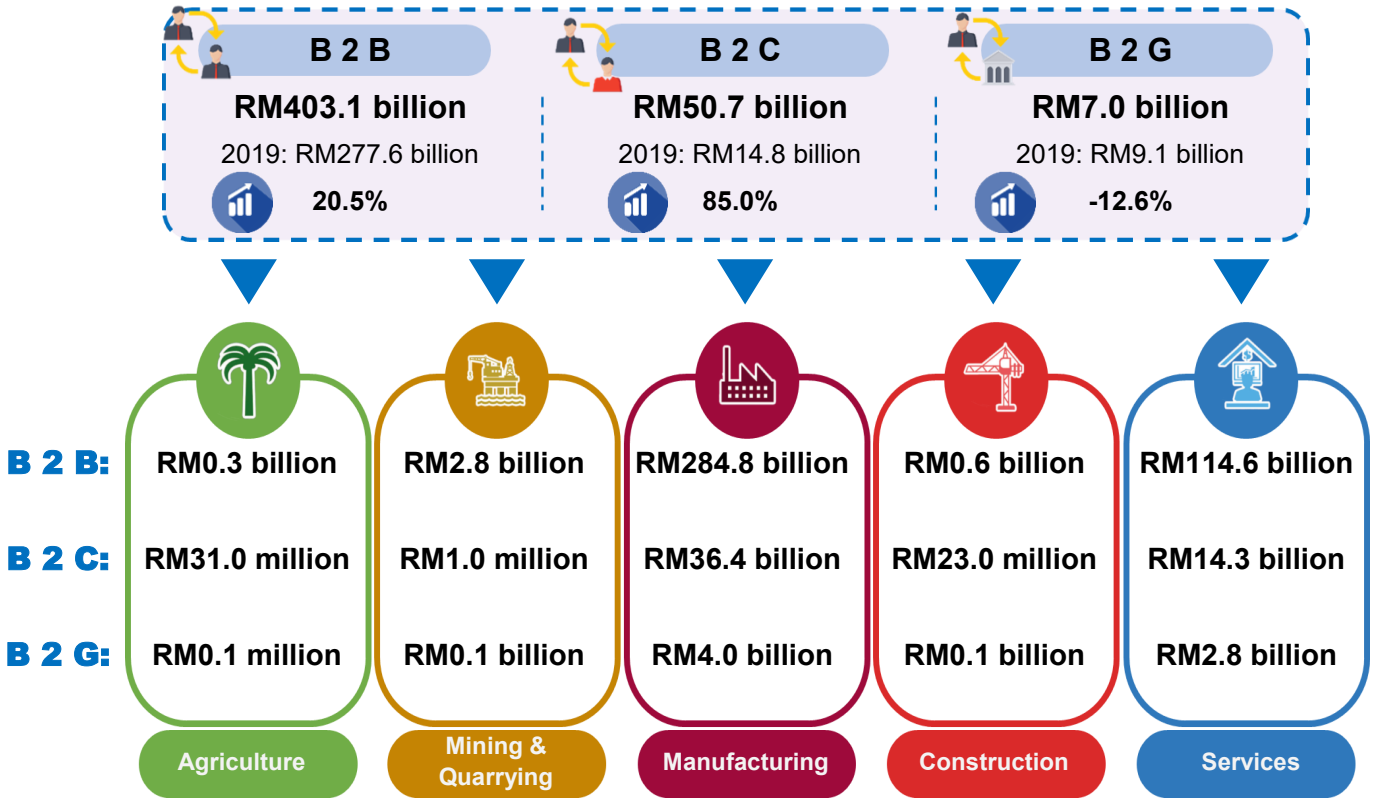
Source: Usage of ICT and E-Commerce by Establishment, 2022

3.3.8 E-COMMERCE EXPENDITURE BY TYPE OF CUSTOMER

Expenditure from e-commerce transactions by type of customer was obtained through Business to Business (B2B), which was RM403.1 billion with annual growth rate of 20.5 per cent. This was followed by Business to Consumer (B2C) RM50.7 billion (85.0%) and Business to Government (B2G) RM7.0 billion (-12.6%).

Manufacturing sector dominated expenditure from e-commerce transactions through these three types of customers, namely B2B (RM284.8 billion), B2C (RM36.4 billion) and B2G (RM4.0 billion), as shown in **Figure 3.10.**

Figure 3.10: E-Commerce Expenditure by Type of Customer, 2019 & 2021



Note.

Annual growth rate

Source: Usage of ICT and E-Commerce by Establishment, 2022

ACCESS AND USAGE OF ICT

CHAPTER 4

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4. ICT ACCESS AND USAGE

This chapter presents information on the access and usage of ICT among individuals, households, and establishments. The data for individuals and households were obtained from the ICT Use and Access by Individuals and Households Survey Report (ICTHS) 2022, while information on establishments was sourced from the Usage of ICT and e-commerce by Establishment (ICTEC) 2022.

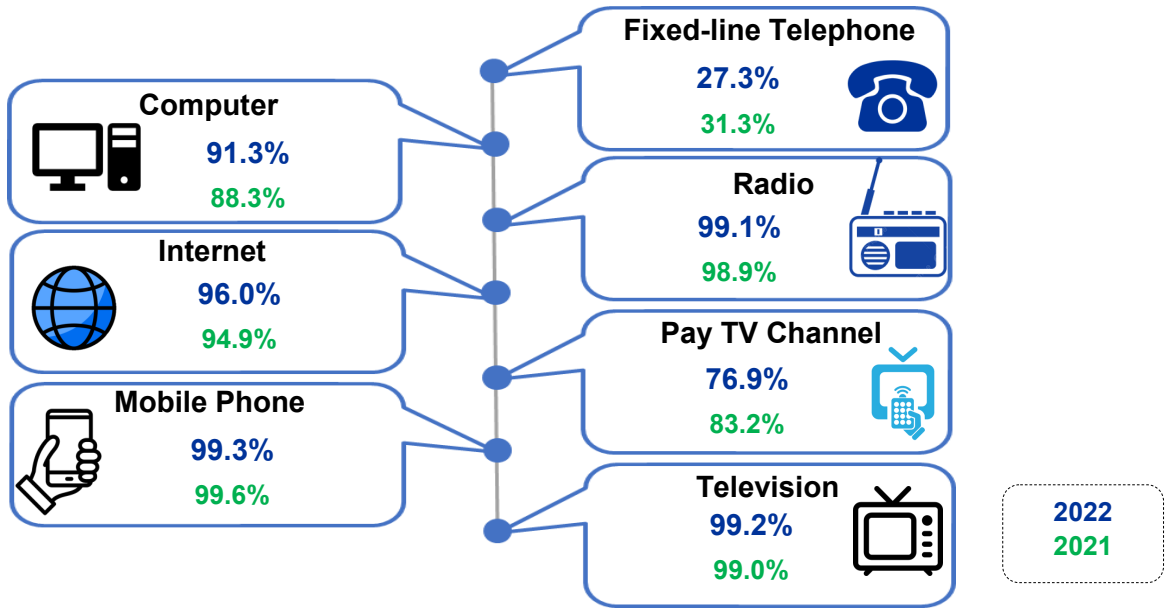
4.1 ICT USE AND ACCESS BY INDIVIDUAL AND HOUSEHOLD

This section, focusing on households and individuals, delves into the access and usage of ICT services and equipment in general and by strata. It also covers the usage patterns of ICT services and equipment by individuals, including mobile phone ownership and usage, computer usage, ICT skills, and computer skills specifically among the youth, as well as detailed insights into internet usage categorised by age group and specific activities.

4.1.1 ACCESS TO ICT SERVICES AND EQUIPMENT BY HOUSEHOLDS

In the ICTHS 2022 survey, a household is considered to have access to ICT services and equipment if it can still be used during the interview session. Based on the survey findings, the percentage of household with access to mobile phone (99.3%), television (99.2%), radio (99.1%) and internet (96.0%) exceeded 95.0 per cent. Meanwhile the percentage of households with access to fixed-line telephone (27.3%) and pay TV channel (76.9%) demonstrated a decrease.

Figure 4.1: Percentage of Households with Access to ICT Services & Equipment, Malaysia, 2021 & 2022



Note.

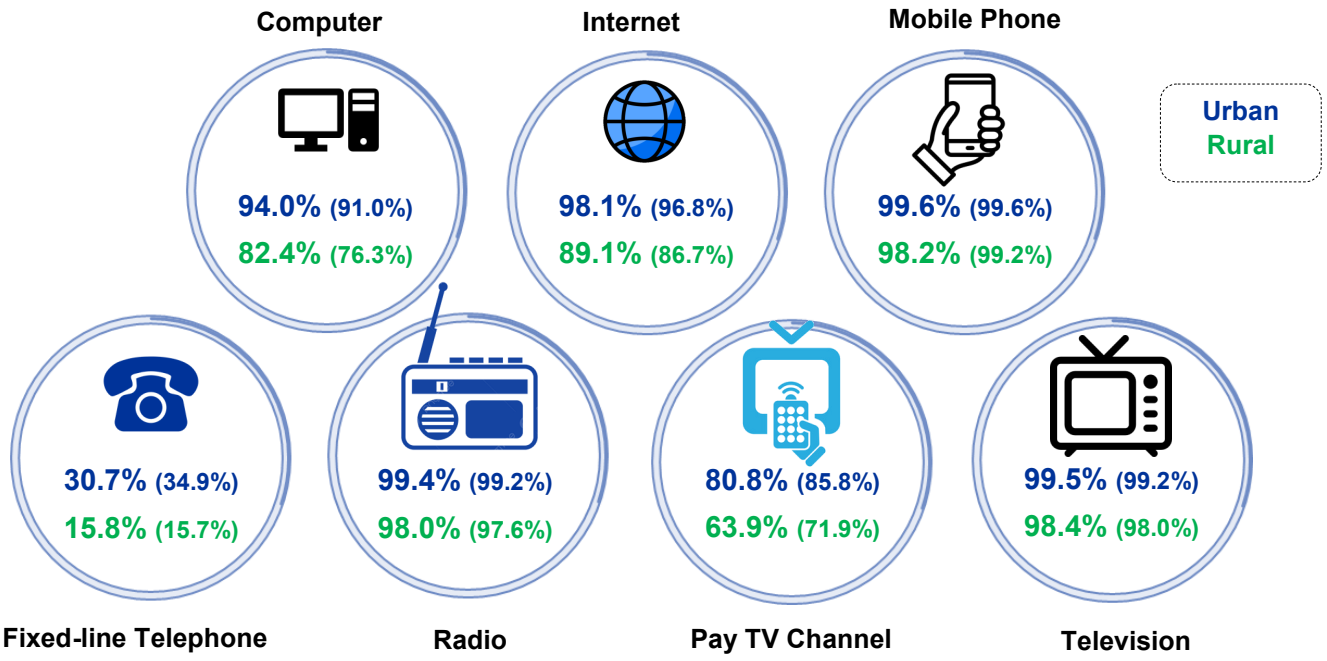
Source: ICT Use and Access by Individuals and Household Survey Report, 2022

4.1.1.1 ACCESS TO ICT SERVICES AND EQUIPMENT BY STRATA

Urban households exhibited an upward trend in the percentage of access to ICT equipment and services, namely, radio (99.4%), television (99.5%), internet (98.1%) and computer (94.0%). Meanwhile, the percentage of household with access to mobile phones remained unchanged at 99.6 per cent. On the other hand, the percentage of household access showed a decrease in fixed-line telephone (30.7%) and pay TV channel (80.8%).

Rural households also witnessed an increase in access to ICT services and equipment, including the Internet (89.1%), television (98.4%), radio (98.0%), computer (82.4%) and fixed-line telephone (15.8%).

Figure 4.2: Percentage of Households with Access to ICT Services and Equipment by Strata, Malaysia, 2021 & 2022



Note. Figures in bracket refers to year 2021

4.1.2 USE OF ICT SERVICES AND EQUIPMENT BY INDIVIDUALS

4.1.2.1 MOBILE PHONE OWNERSHIP AND USAGE

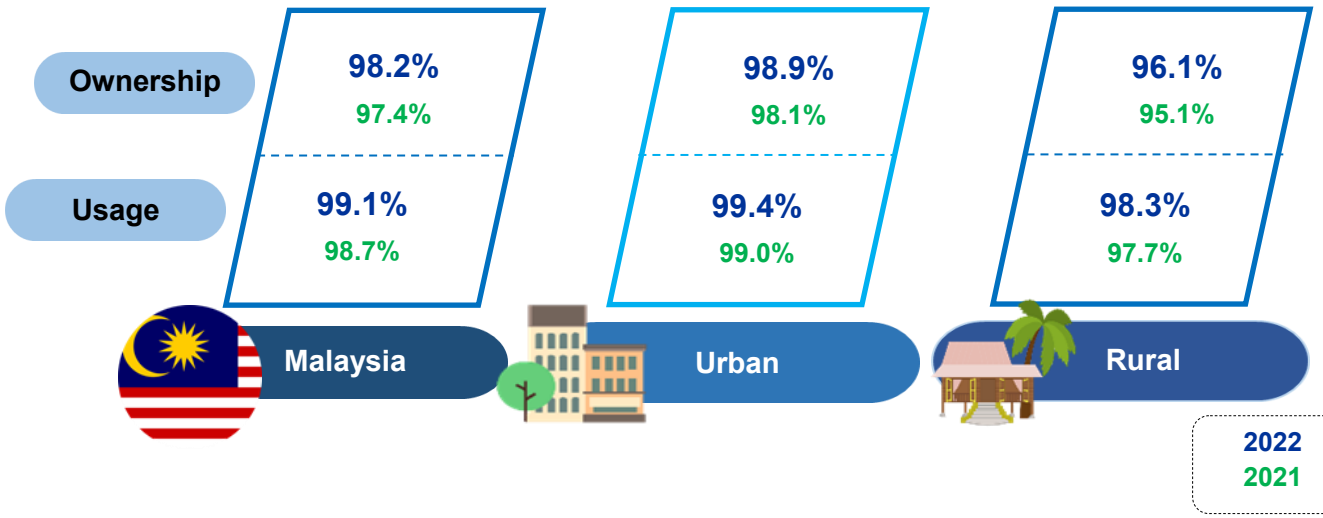
Mobile phone ownership by individuals in Malaysia increased from 97.4 per cent in 2021 to 98.2 per cent in 2022. The percentage contribution of mobile phone ownership by individuals in urban and rural areas was recorded at 98.9 per cent and 96.1 per cent respectively.

Note.

Source: ICT Use and Access by Individuals and Household Survey Report, 2022

In terms of usage, individuals who use mobile phone reached 99.1 per cent. Furthermore, mobile phone usage in urban and rural areas was 99.4 per cent and 98.3 per cent respectively.

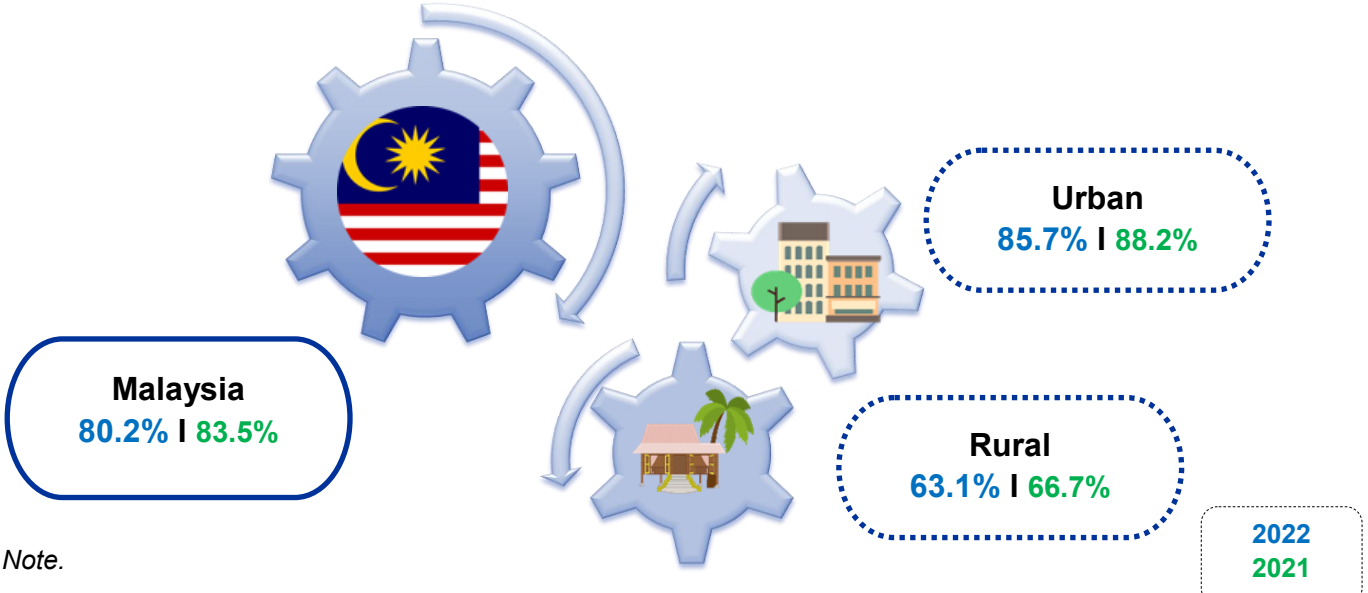
Figure 4.3: Percentage of Individuals Owning and Using Mobile Phone by Strata, Malaysia, 2021 & 2022



4.1.2.2 COMPUTER USAGE

Computer usage includes the use of all types of computers, namely personal computers, laptops or portable electronic boards. Based on ICTHS 2022 survey findings, computer usage also showed a decrease from 83.5 per cent in 2021 to 80.2 per cent in 2022 (-3.3 percentage points). Similarly, computer usage in urban and rural areas also decreased to 85.7 per cent (-2.5 percentage points) and 63.1 per cent (-3.6 percentage points) respectively.

Figure 4.4: Percentage of Individuals Using Computer by Strata, Malaysia, 2021 & 2022



Note.

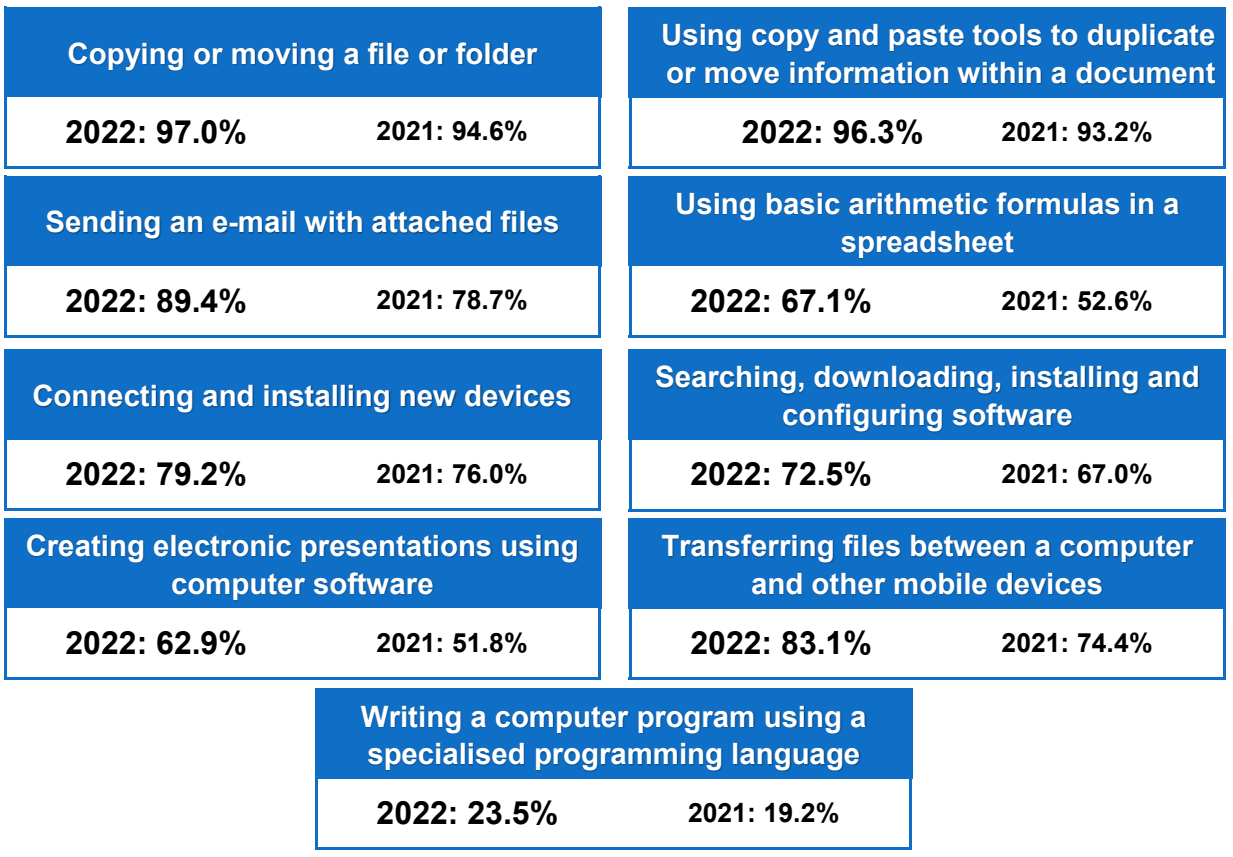
Source: ICT Use and Access by Individuals and Household Survey Report, 2022

4.1.2.3 ICT SKILLS

ICT skills are one of the indicators monitored in the Sustainable Development Goals (SDGs), which is SDG 4.4.1 Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill. To measure ICT skills, computer activities performed by individuals serve as key indicators. The statistics derived from these activities can provide valuable information for policymakers aiming to enhance ICT skills. By prioritizing the improvement of ICT skills, societies can foster an informed and knowledgeable community.

Five activities that showed the highest percentage in 2022 were copying or moving a file or folder (97.0%). This is followed by the activity of using copy and paste tools to duplicate or move information within a document (96.3%), sending an e-mail with attached files (89.4%), transferring files between a computer and other mobile devices (83.1%) and connecting and installing new devices (79.2%)

Figure 4.5: Percentage of Individuals Using Computer by ICT skills, Malaysia, 2021 & 2022



Note.

Source: ICT Use and Access by Individuals and Household Survey Report, 2022

4.1.2.4 COMPUTER SKILLS BY YOUTH

Computer skills are categorized to three skill levels, which are basic, intermediate and advance. Computer skills by youth are measured among individuals aged 15 to 24 years.

Overall, the performance of youth ICT skills reached an intermediate level and approached the performance of advanced skills. Based on the findings of the survey, 98.8 per cent of youth who use a computer carry out the activity of copying or transferring files or folders. For the intermediate level, 76.9 per cent of youth create electronic presentation activities using computer software. Approximately, 31.1 per cent of youth has the skill to write a computer program using a specialised programming language.

Figure 4.6: Percentage of Youth Using Computer by ICT Skills, Malaysia, 2021 & 2022

Copying or moving a file or folder	**Using copy and paste tools to duplicate or move information within a document**
2022: 98.8% 2021: 95.1%	2022: 97.5% 2021: 95.6%
Sending an e-mail with attached files	**Using basic arithmetic formulas in a spreadsheet**
2022: 95.9% 2021: 85.9%	2022: 74.6% 2021: 45.0%
Connecting and installing new devices	**Searching, downloading, installing and configuring software**
2022: 85.8% 2021: 86.0%	2022: 84.4% 2021: 73.7%
Creating electronic presentations using computer software	**Transferring files between a computer and other mobile devices**
2022: 76.9% 2021: 50.6%	2022: 87.5% 2021: 77.4%
Writing a computer program using a specialised programming language	
2022: 31.1% 2021: 20.9%	

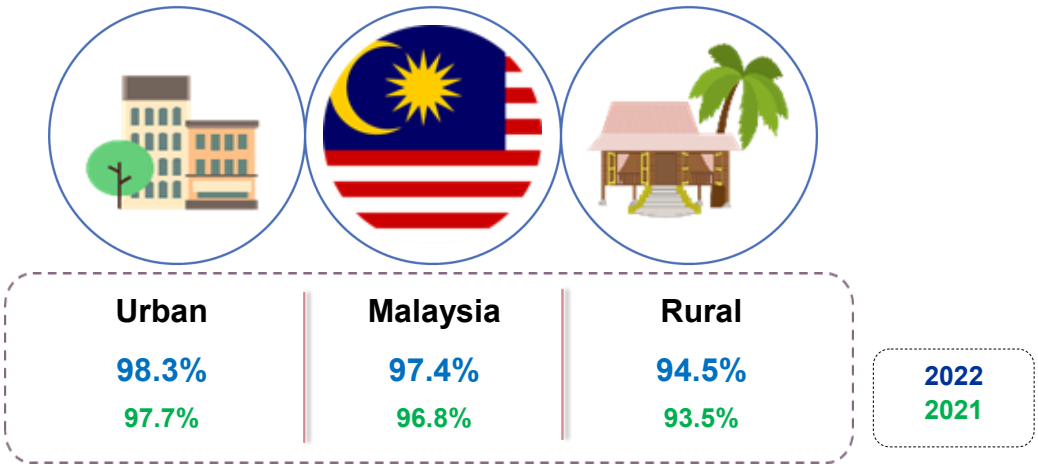
4.1.2.5 INTERNET USAGE

Internet usage by individuals in Malaysia increased to 97.4 per cent in 2022 from 96.8 per cent in 2021 (+0.6 percentage point). Meanwhile, internet users in urban and rural areas were 98.3 per cent and 94.5 per cent respectively.

Note.

Source: ICT Use and Access by Individuals and Household Survey Report, 2022

Figure 4.7: Percentage of Individuals Using the Internet by Strata, Malaysia, 2021 & 2022



4.1.2.6 INTERNET USAGE BY SEX

Internet usage for male displayed a higher rate at 98.8 per cent as compared to female (95.9%) in 2022. The gender gap in internet usage refers to the disparity in the percentage of internet usage between male and female users. The gender gap in internet usage widened by 2.9 percentage points in 2022, indicating a greater difference as compared to the previous year's gap of 0.9 percentage points.

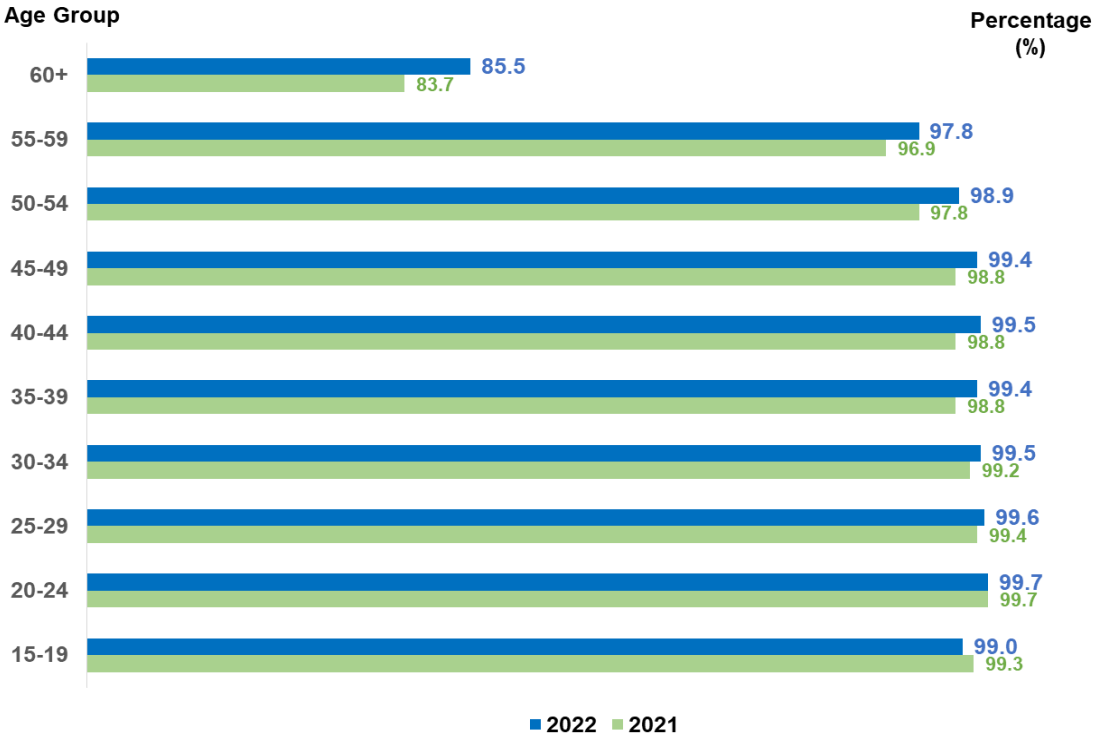
Figure 4.8: Percentage of Individuals Using the Internet by Sex, Malaysia, 2021 & 2022

4.1.2.7 INTERNET USAGE BY AGE GROUP

Internet usage by age group exceeds 90.0 per cent except for the age group of 60 years and above who recorded a low percentage of internet usage which was 85.5 per cent for the year 2022. Meanwhile the highest internet users are in the age group of 20-24 years, which is 99.7 per cent in 2022.

Note.
Source: ICT Use and Access by Individuals and Household Survey Report, 2022

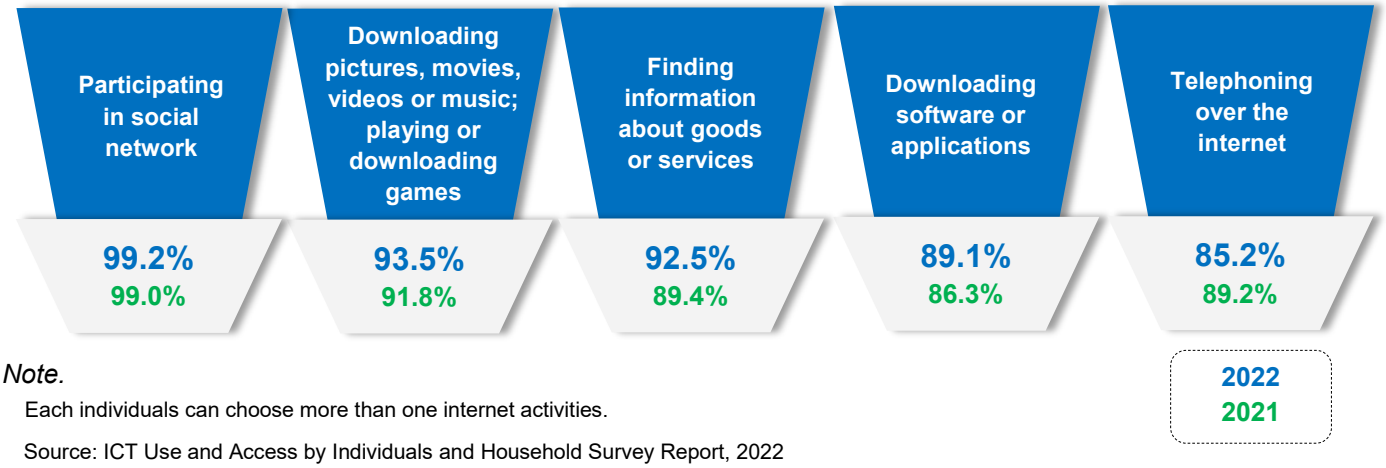
Chart 1: Percentage of Individuals Using The Internet by Age Group, Malaysia, 2021 & 2022



4.1.2.8 INTERNET USAGE BY ACTIVITIES

The most popular internet usage activity in 2022 was participating in social networks, with 99.2 per cent, followed by downloading pictures, movies, videos or music; playing or downloading games (93.5%); finding information about goods or services (92.5%); downloading software or applications (89.1%), and making phone calls via Internet/ VoIP (85.2%).

Figure 4.9: Percentage of Individuals Using the Internet by Top Five Internet Activities, Malaysia, 2021 & 2022



Note.

Each individuals can choose more than one internet activities.

Source: ICT Use and Access by Individuals and Household Survey Report, 2022

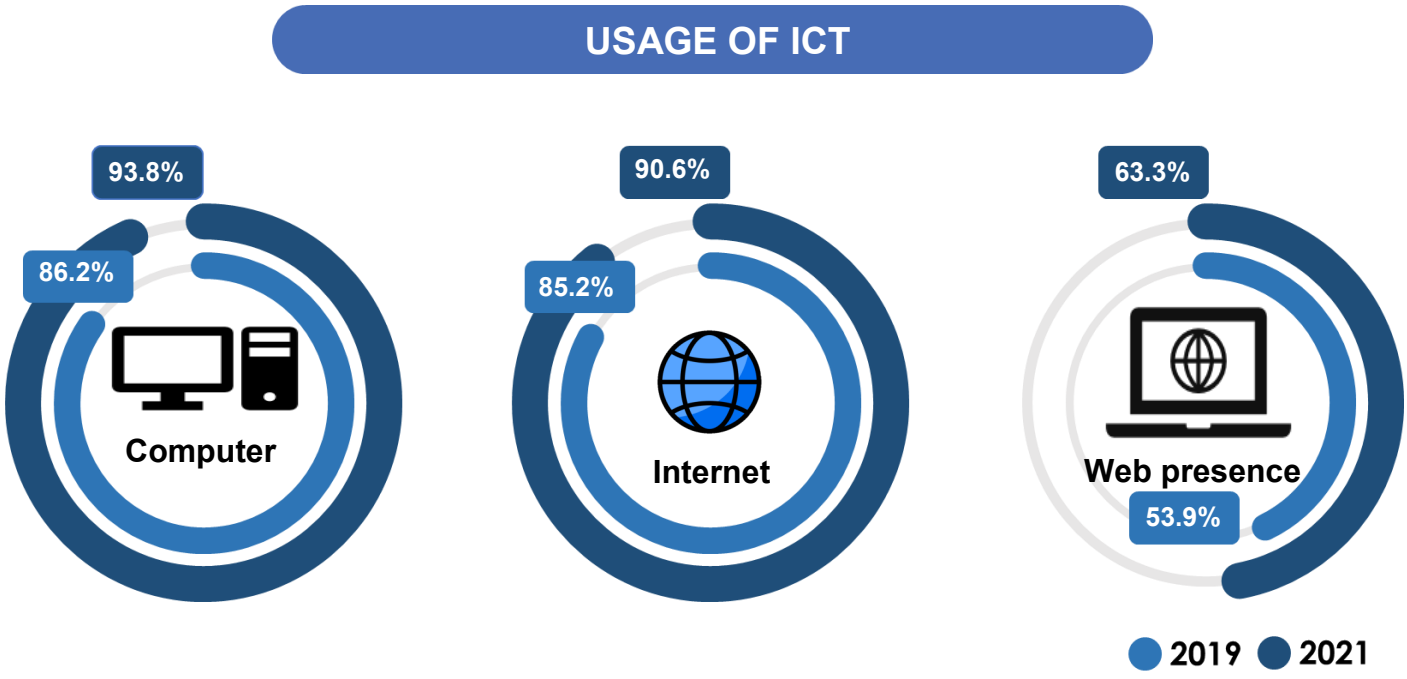
4.2 USAGE OF ICT BY ESTABLISHMENTS

Dedicated to establishments, this section explores the landscape of ICT usage in various sectors and states. Additionally, it provides a comprehensive overview of the types of web presence utilised by different sectors, delves into the computer network infrastructure across sectors, and investigates the types of internet access. The purpose of internet usage by establishments is explored, shedding light on different sectors. Lastly, this part delves into the adoption of digital technology, providing a holistic understanding of how establishments integrate and embrace digital advancements in their operations.

4.2.1 USAGE OF ICT

The survey showed that 93.8 per cent of establishments used computers (including personal computers, laptops, and tablets), as compared to 86.2 per cent in 2019. Internet usage (encompasses internet accessible through computers and other devices such as mobile phones) recorded 90.6 per cent (2019: 85.2%). Establishments with web presence recorded 63.3 per cent (2019: 53.9%) as shown in **Figure 4.10**

Figure 4.10: Usage of Computer, Internet, and Web Presence, 2019 & 2021



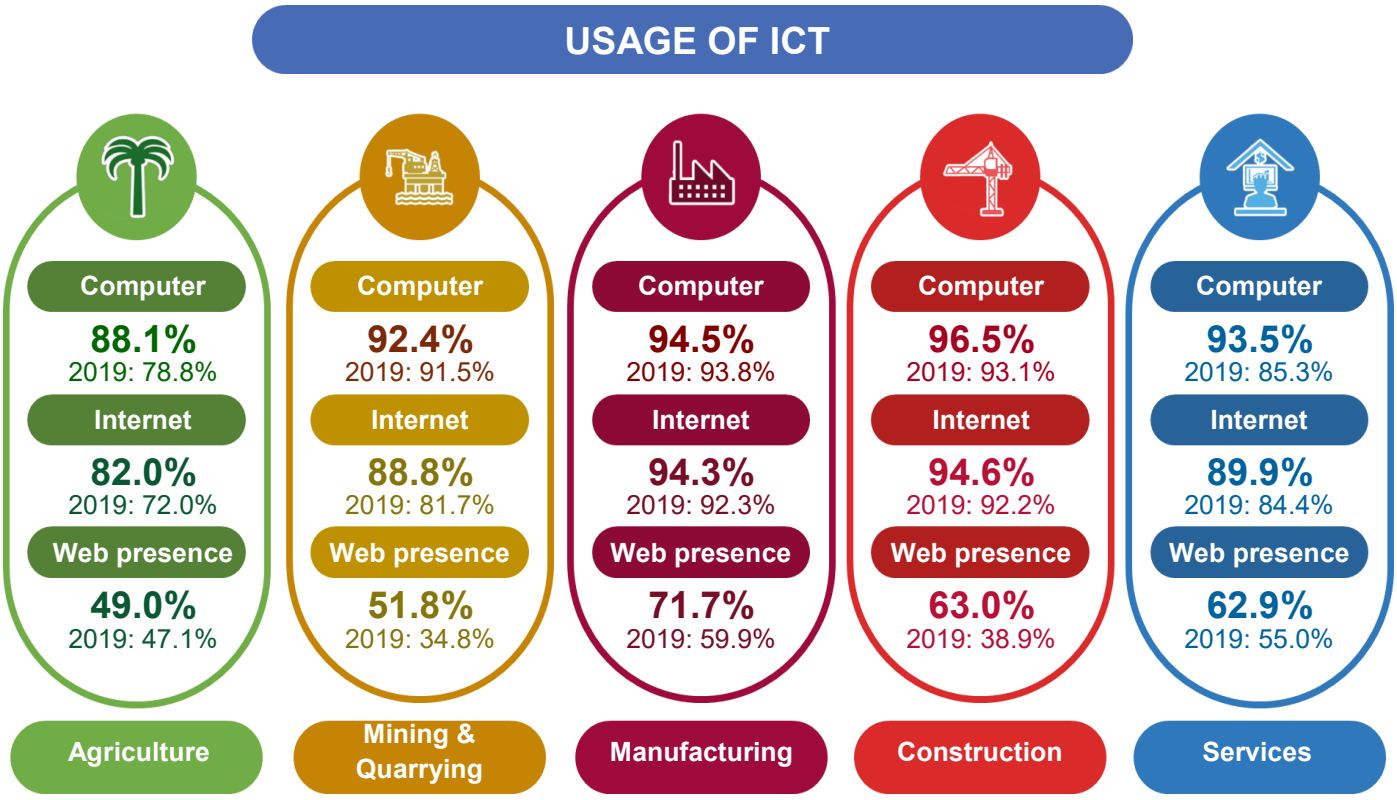
Note.

Source: Usage of ICT and E-Commerce by Establishment, 2022

4.2.1.1 USAGE OF ICT BY SECTOR

The usage of computer, internet, and web presence by sector is shown in **Figure 4.11.** The Construction sector recorded the highest percentage of computer and internet usage at 96.5 per cent (2019: 93.1%) and 94.6 per cent (2019: 92.2%), respectively. However, for the use of web presence, the Manufacturing sector recorded the highest percentage of 71.7 per cent (2019: 59.9%).

Figure 4.11: Usage of Computer, Internet, and Web Presence by Sector, 2019 & 2021



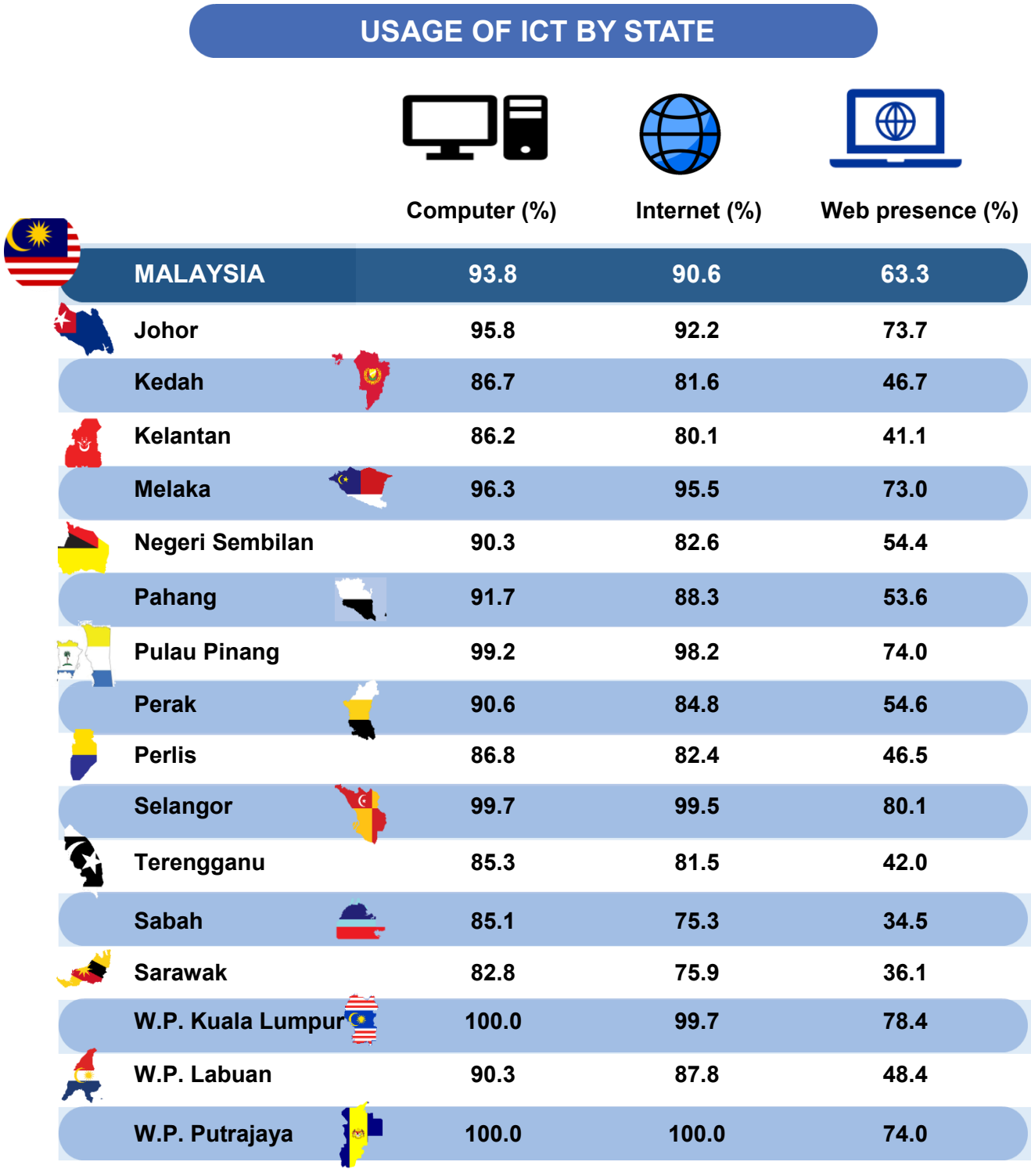
Note.

Source: Usage of ICT and E-Commerce by Establishment, 2022

4.2.1.2 USAGE OF ICT BY STATES

W.P. Putrajaya recorded the highest percentage of computer and internet usage. Meanwhile, state with the highest percentage of web presence usage was Selangor with 80.1 per cent as shown in **Figure 4.12**.

Figure 4.12: Usage of Computer, Internet, and Web Presence by State, 2019



	Computer (%)	Internet (%)	Web presence (%)
MALAYSIA	93.8	90.6	63.3
Johor	95.8	92.2	73.7
Kedah	86.7	81.6	46.7
Kelantan	86.2	80.1	41.1
Melaka	96.3	95.5	73.0
Negeri Sembilan	90.3	82.6	54.4
Pahang	91.7	88.3	53.6
Pulau Pinang	99.2	98.2	74.0
Perak	90.6	84.8	54.6
Perlis	86.8	82.4	46.5
Selangor	99.7	99.5	80.1
Terengganu	85.3	81.5	42.0
Sabah	85.1	75.3	34.5
Sarawak	82.8	75.9	36.1
W.P. Kuala Lumpur	100.0	99.7	78.4
W.P. Labuan	90.3	87.8	48.4
W.P. Putrajaya	100.0	100.0	74.0

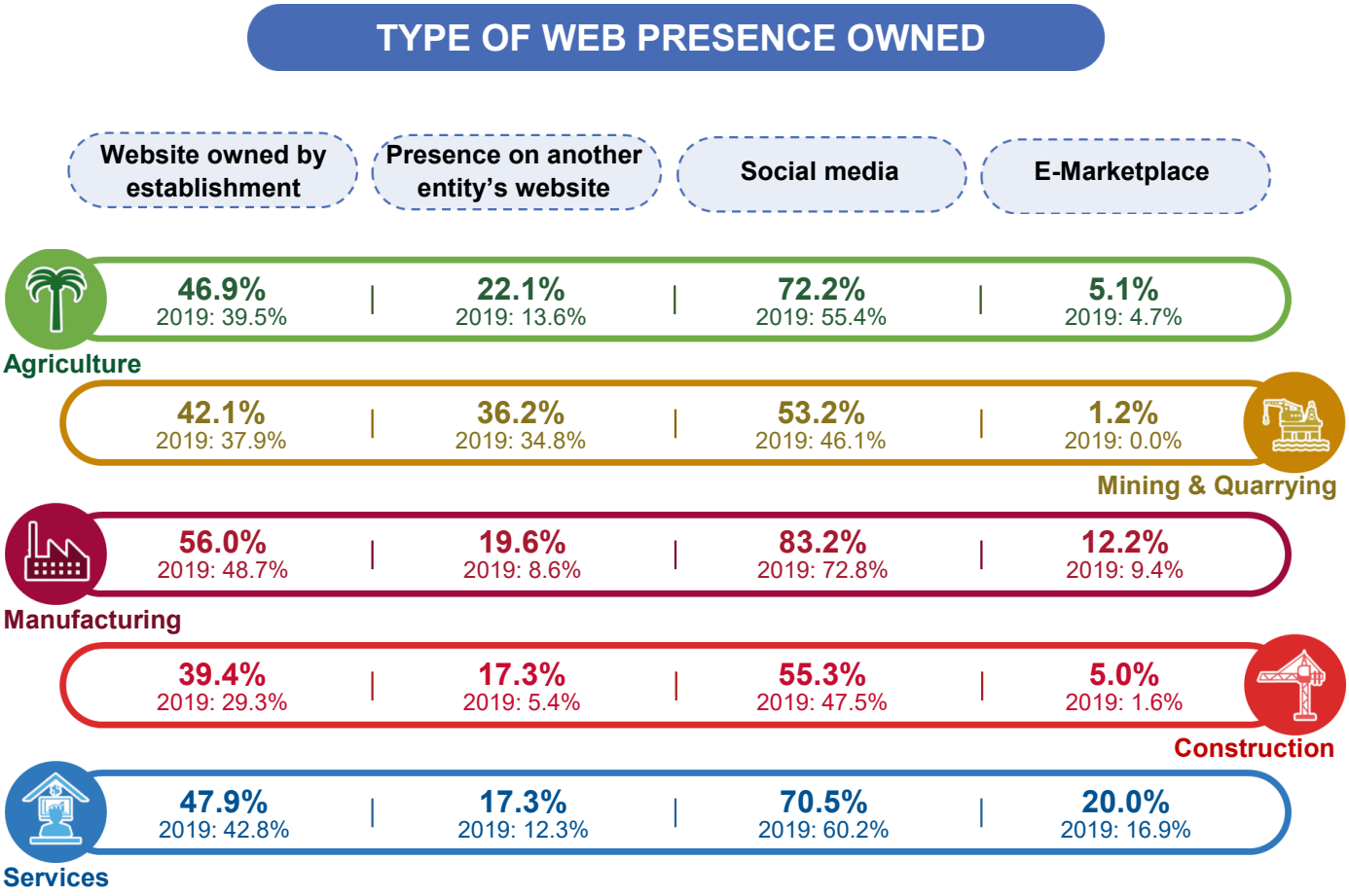
Note.

Source: Usage of ICT and E-Commerce by Establishment, 2022

4.2.2 TYPE OF WEB PRESENCE USED BY SECTOR

Figure 4.13 shows the type of web presence owned by the establishments by sector. The Manufacturing sector recorded the highest percentage in two types of web presence usage, namely social media (83.2%) and own website (56.0%). On the other hand, Mining & Quarrying sector recorded the highest percentage of presence on another entity's website (36.2%) and Services sector on e-marketplace (20.0%).

Figure 4.13: Type of Web Presence Used by Sector, 2019 & 2021



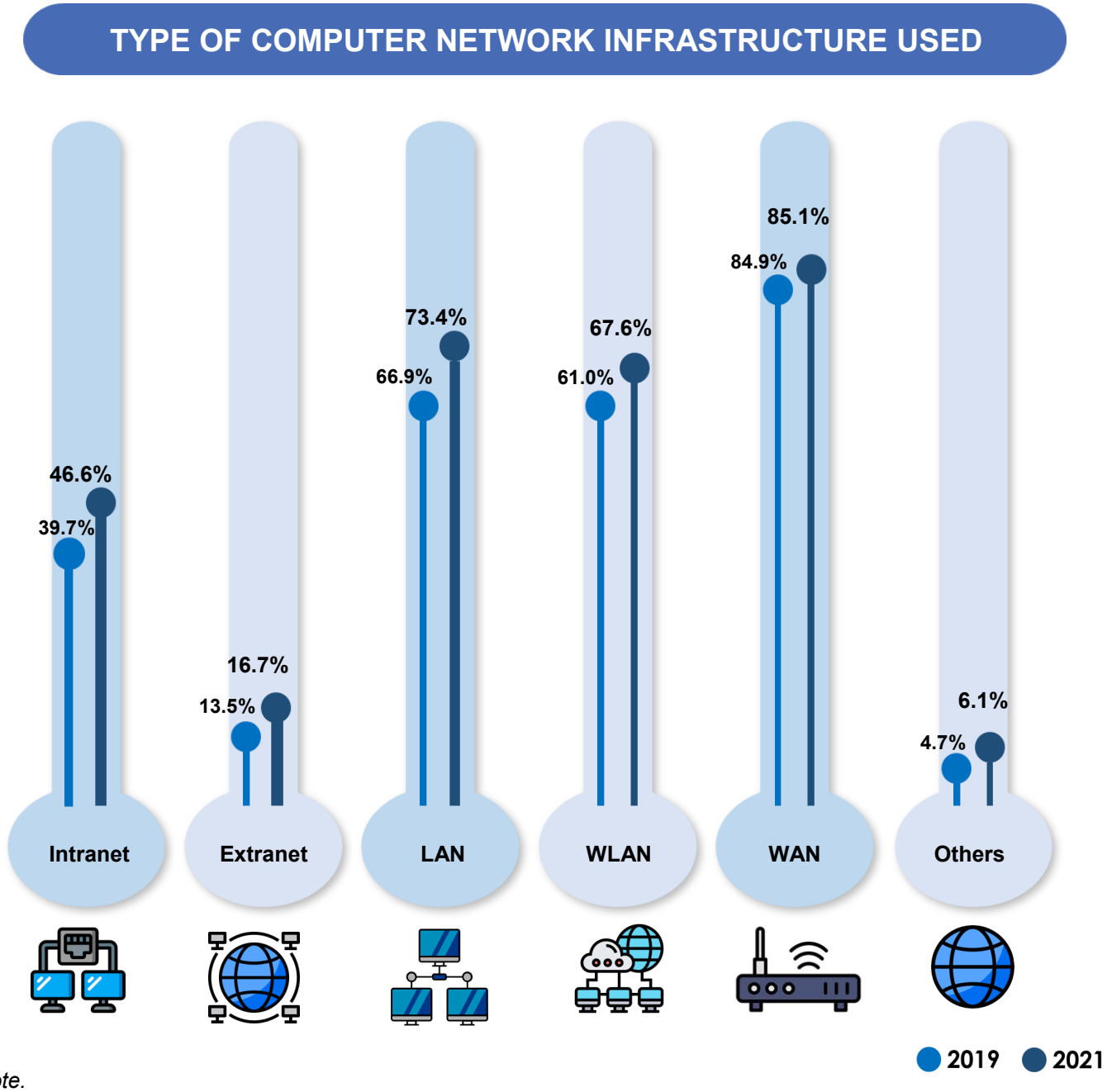
Note.

Source: Usage of ICT and E-Commerce by Establishment, 2022

4.2.3 COMPUTER NETWORK INFRASTRUCTURE

Figure 4.14 presents the percentage of establishments that used the internet via various computer network infrastructures. Wide Area Network (WAN) recorded the highest percentage use with 85.1 per cent (2019: 84.9%), followed by Local Area Network (LAN) 73.4 per cent (2019: 66.9%) and intranet 46.6 per cent (2019: 39.7%).

Figure 4.14: Types of Computer Network Infrastructure Used, 2019 & 2021



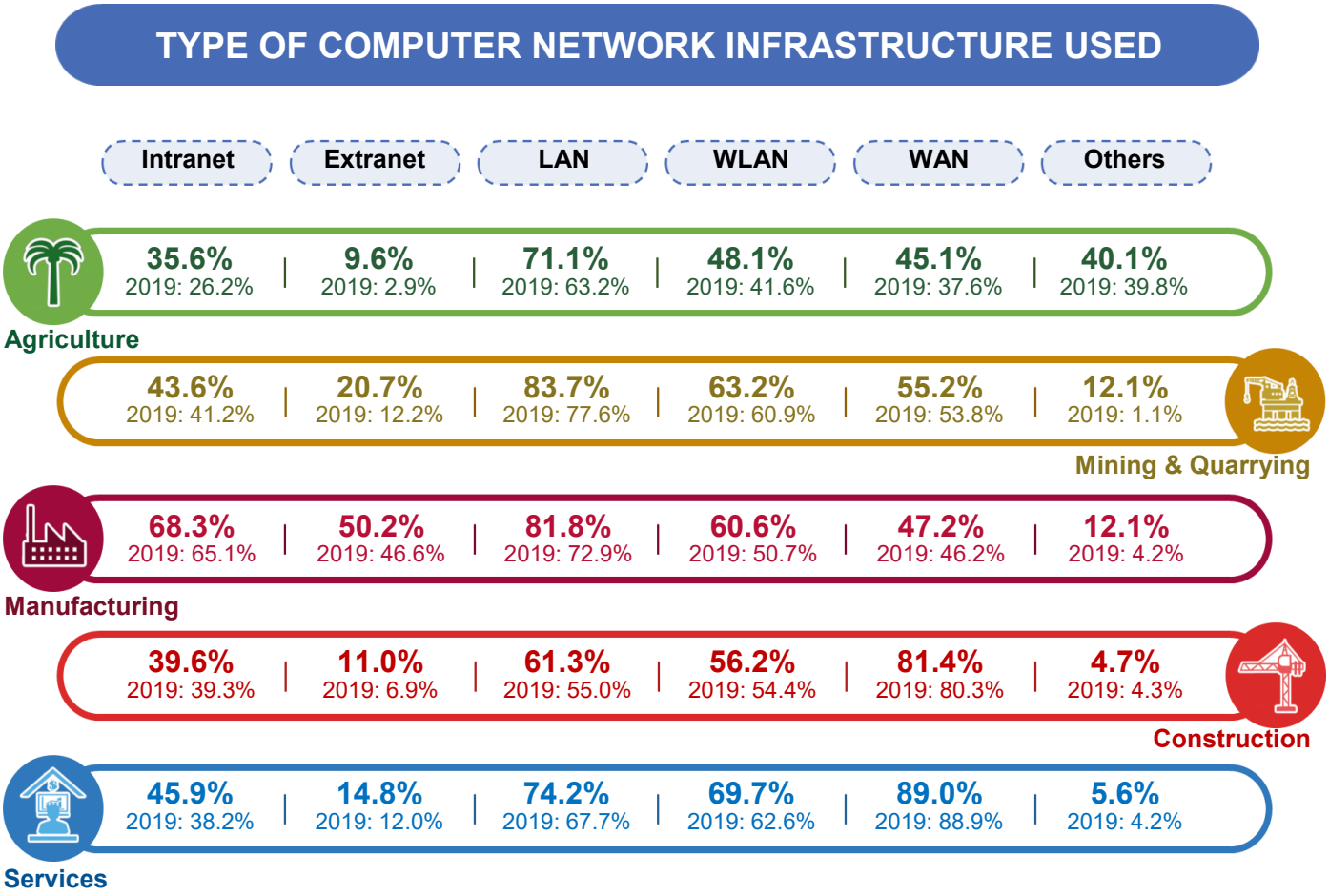
Note.

Source: Usage of ICT and E-Commerce by Establishment, 2022

4.2.3.1 COMPUTER NETWORK INFRASTRUCTURE BY SECTOR

The usage of intranet and extranet was dominated by Manufacturing sector with 68.3 per cent and 50.2 per cent respectively. For LAN, Mining & Quarrying sector recorded the highest usage (83.7%). Meanwhile, for WLAN, (69.7%) and WAN (89.0%) was recorded by the Services sector and others infrastructure (40.1%) was recorded by the Agricultures sector as shown in **Figure 4.15.**

Figure 4.15: Types of Computer Network Used by Sector, 2019 & 2021



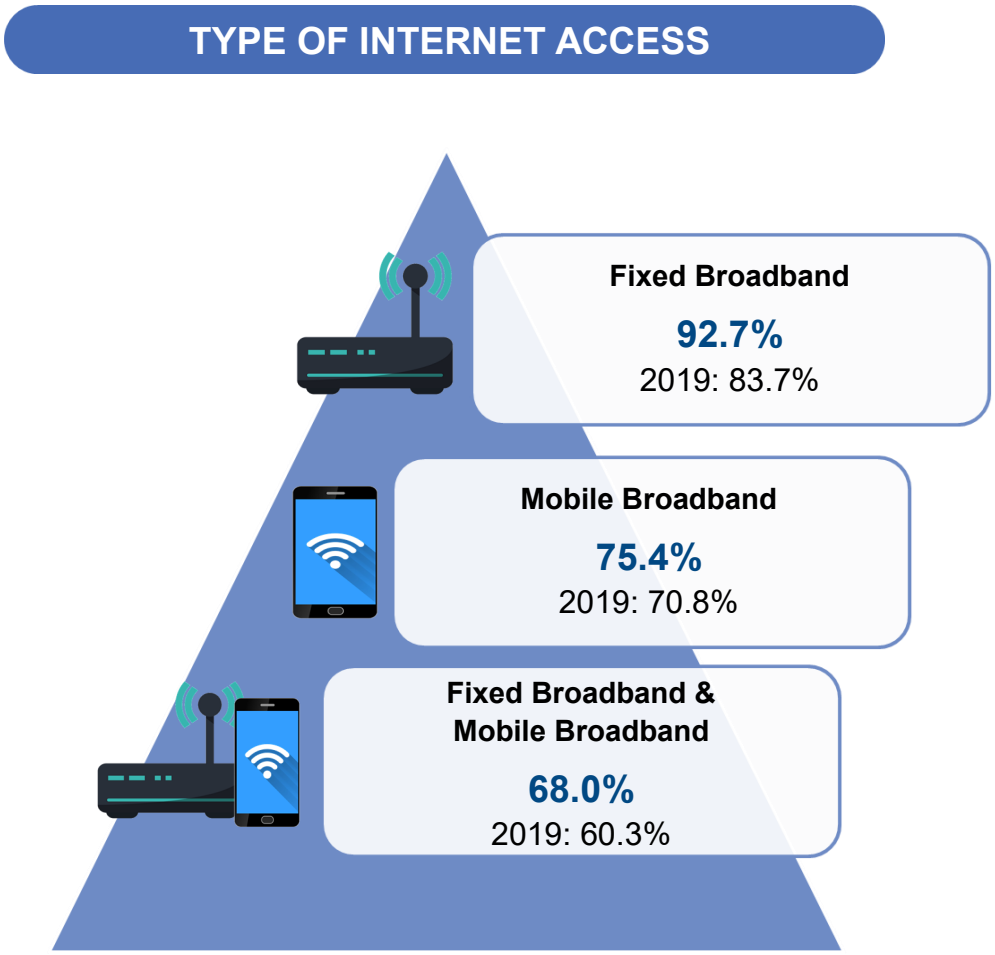
Note.

Source: Usage of ICT and E-Commerce by Establishment, 2022

4.2.4 TYPES OF INTERNET ACCESS

There were 92.7 per cent of establishments (2019: 83.7%) that used fixed broadband for internet access, followed by mobile broadband and both fixed broadband & mobile broadband usage with 75.4 per cent (2019: 70.8%), 68.0 per cent (2019: 60.3%) respectively as shown in **Figure 4.16**.

Figure 4.16: Type of Internet Access, 2019 & 2021



Note.

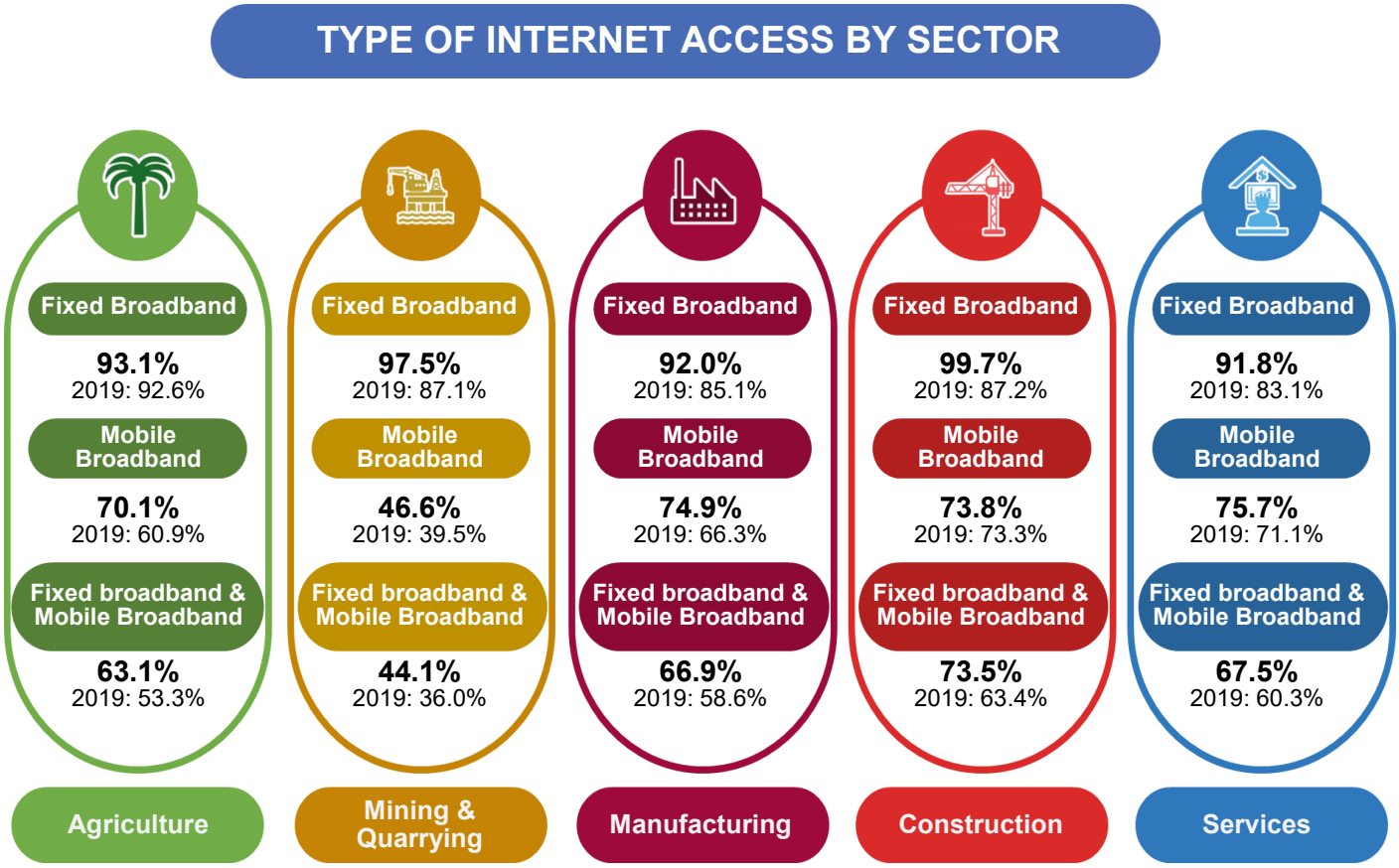
Source: Usage of ICT and E-Commerce by Establishment, 2022

4.2.4.1 TYPES OF INTERNET ACCESS BY SECTOR

Establishment in Construction sector recorded the highest internet access of fixed broadband use in 2021 with 99.7 per cent in 2021 (2019: 87.2%), followed by Mining & Quarrying sector 97.5 per cent (2019: 87.1%) and Agriculture sector 93.1 per cent (2019: 92.6%).

Services sector recorded the highest mobile broadband usage with 75.7 per cent (2019: 71.1%), followed by Manufacturing sector 74.9 per cent (2019: 66.3%) and Construction sector 73.8 per cent (2019: 73.3%). Meanwhile, Construction sector registered the highest percentage of both broadband usage 73.5 per cent (2019: 63.4%) as shown in **Figure 4.17**.

Figure 4.17: Type of Internet Access by Sector, 2019 & 2021



Note.

Source: Usage of ICT and E-Commerce by Establishment, 2022

4.2.5 PURPOSE OF INTERNET USAGE BY ESTABLISHMENTS

Figure 4.18 shows the percentage for the purpose of internet used by establishments. The purpose of using the internet to send or receive emails recorded the highest percentage with 95.4 per cent(2019: 95.1%). This was followed by internet banking 86.6 per cent (2019: 80.0%) and getting information about goods or services 79.7 per cent (2019: 75.5%).

Figure 4.18: Purpose of Internet Usage by Establishment, 2019 & 2021

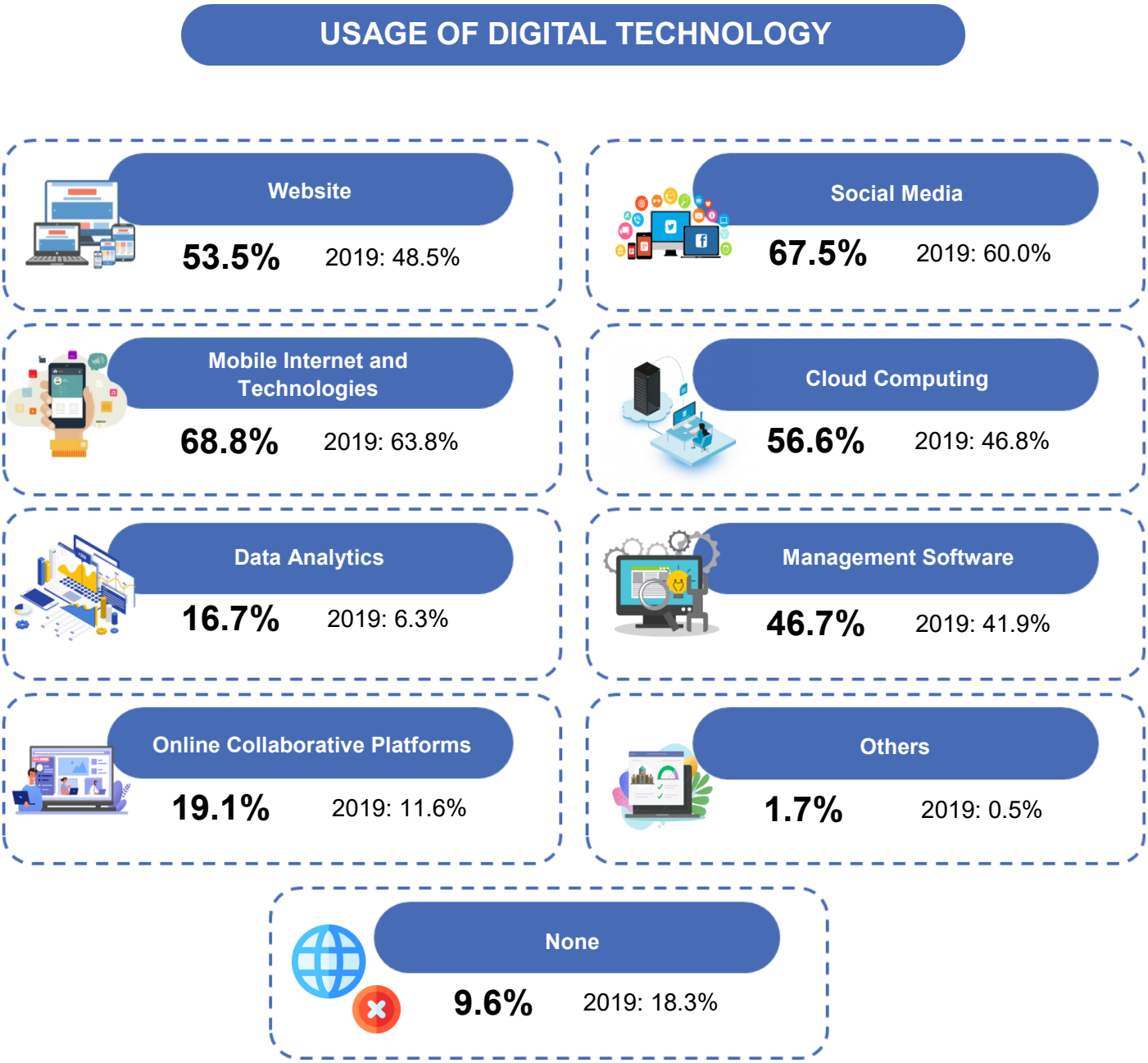
Note.

Source: Usage of ICT and E-Commerce by Establishment, 2022

4.2.6 USAGE OF DIGITAL TECHNOLOGY

Usage of digital technology for mobile internet and technologies was recorded the highest percentage with 68.8 per cent. This was followed by media social 67.5 per cent and cloud computing 56.6 per cent as shown in **Figure 4.19.**

Figure 4.19 : Usage of Digital Technology by Establishments, 2019 & 2021



Note.

Source: Usage of ICT and E-Commerce by Establishment, 2022

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CHAPTER 5

OTHER FACTS ON MALAYSIA DIGITAL ECONOMY

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5. OTHER FACTS ON MALAYSIA DIGITAL ECONOMY

Information on Malaysia's Digital Economy performance and insights are accessible from various sources with different scopes and focuses. The Malaysian Communications and Multimedia Commission (MCMC) has published Communication & Multimedia indicators through their interactive dashboard namely Facts and Figures which consist of statistics related to number of subscriptions, penetration rates and related ICT indices.

5.1 PENETRATION RATES

Year	Quarter	Fixed Broadband per 100 Premises	Mobile Broadband per 100 Inhabitants	Mobile Cellular per 100 Inhabitants	Pay TV per 100 Households
		(%)			
2019	4	32.8	123.7	135.4	86.3
2020	1	33.8	118.5	134.2	87.3
	2	34.5	116.7	132.8	87.6
	3	35.6	117.4	132.8	88.1
	4	37.2	118.7	133.6	89.0
2021	1	39.0	120.1	135.7	82.6
	2	41.0	124.2	139.8	82.6
	3	39.9	127.4	142.1	82.2
	4	40.8	126.4	144.0	80.1
2022	1	42.9	124.1	139.2	78.4
	2	45.3	127.9	143.1	82.6
	3	46.4	128.9	143.7	81.4
	4	47.6	131.0	145.3	80.6
2023	1	48.6	132.0	146.7	79.6
	2	49.1	133.3	148.1	78.5

Note.

All penetration rates are estimated based on population projection as at end of period according to Census 2020 by Department of Statistics, Malaysia (DOSM), except for 4Q 2021 & 1Q 2022, the population figure is estimated using MCMC internal estimation.

Broadband penetration rate is calculated based on fixed-broadband subscriptions with speed equal or more than 1Mbit/s, and mobile-broadband with speed equal or more than 650kbit/s.

Fixed-broadband penetration rate per 100 premises includes household and non-household subscriptions. Household subscriptions cover residential whereas non-household subscriptions inclusive of businesses, government, organization etc.

Commencing 10 2021, methodology to calculate total number of premises is revised by including total number of commercial and industrial premises from National Property Information Centre (NAPIC) and public facilities from DOSM.

The added total may differ due to rounding.

Source: Communications & Multimedia Dashboard - Facts & Figures

5.2 BROADBAND SUBSCRIPTIONS

Year	Quarter	Number of Subscriptions		
		Fixed Broadband	Mobile Broadband	Total
		('000)		
2019	4	2,947.0	40,430.9	43,377.9
2020	1	3,035.9	38,669.7	41,705.6
	2	3,096.9	38,118.8	41,215.7
	3	3,199.4	38,369.5	41,568.9
	4	3,349.5	38,837.2	42,186.6
2021	1	3,512.4	39,340.6	42,852.2
	2	3,679.6	40,571.7	44,251.0
	3	3,585.0	41,630.0	45,214.7
	4	3,727.4	42,016.1	45,743.5
2022	1	3,847.5	41,447.9	45,295.2
	2	3,975.2	41,768.6	45,743.8
	3	4,101.1	42,372.4	46,473.5
	4	4,220.5	43,239.5	47,460.0
2023	1	4,327.9	43,770.8	48,098.8
	2	4,402.3	44,486.0	48,888.3

Note.

Fixed-broadband subscriptions by premise, household and non-household

Mobile-broadband subscriptions by individual

Source: Communications & Multimedia Dashboard - Facts & Figures

5.3 NUMBER OF PAY TV SUBSCRIPTIONS AND PENETRATION RATE

Year	Quarter	Number of Pay TV Subscriptions			Penetration Rate per 100 Households
		Households	Non Households	Total	
		('000)			(%)
2019	4	7,103.4	13.9	7,117.4	86.3
2020	1	7,168.9	14.1	7,183.0	87.3
	2	7,202.0	10.0	7,212.0	87.6
	3	7,247.0	11.1	7,258.2	88.1
	4	7,328.9	10.4	7,339.3	89.0
2021	1	6,810.0	9.5	6,819.3	82.6
	2	6,787.2	7.6	6,794.3	82.6
	3	6,754.2	7.7	6,761.2	82.2
	4	6,692.0	8.4	6,699.6	80.1
2022	1	6,621.3	8.2	6,628.8	78.4
	2	6,584.6	8.3	6,592.9	82.6
	3	6,536.9	8.6	6,545.5	81.4
	4	6,536.9	8.6	6,545.5	80.6
2023	1	6,449.4	9.3	6,458.7	79.6
	2	6,396.9	9.1	6,406.0	78.5

Note.

Pay TV is inclusive of Internet Protocol TV (IPTV) and Satellite TV

Source: Communications & Multimedia Dashboard - Facts & Figures

5.4 DIGITAL SIGNATURE- NUMBER OF CERTIFICATES ISSUED BY TYPE

Year	Quarter	Domestic Holder			Total
		Individual	Organisation		
			Non Households	Total	
		('000)			(%)
2019	4	43.4	456.7	13,310.1	13,811.3
2020	1	46.4	473.9	13,673.2	14,194.7
	2	48.2	493.5	14,568.9	15,111.8
	3	53.4	516.3	14,819.6	15,390.5
	4	53.4	533.5	14,898.1	15,486.1
2021	1	53.4	566.6	15,315.1	15,935.1
	2	53.4	592.8	15,923.6	16,569.7
	3	54.2	622.8	16,127.4	16,804.4
	4	56.2	646.1	16,209.1	16,911.4
2022	1	58.6	674.9	16,739.3	17,473.0
	2	60.4	696.5	17,470.3	18,227.5
	3	66.0	744.5	17,649.8	18,460.0
	4	60.4	778.5	17,736.9	18,575.8
2023	1	60.4	812.5	18,330.1	19,203.0
	2	60.4	873.9	18,956.6	19,891.0

Note.

Source: Communications & Multimedia Dashboard - Facts & Figures

5.5 4G AND 5G COVERAGE

Year	4G Coverage	5G Coverage
	(%)	
2018	79.7	N/A
2019	82.2	N/A
2020	93.5	N/A
2021	95.4	4.0
2022	96.9	47.1

Note.

4G coverage refers to percentage of population covered by at least LTE/WIMAX mobile networks

5G coverage refers to percentage of population covered by at least 5G mobile networks

Source: Communications & Multimedia Dashboard - Facts & Figures

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CHAPTER 6

NATIONAL E-COMMERCE STRATEGIC ROADMAP (NESR)

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6. NATIONAL E-COMMERCE STRATEGIC ROADMAP (NESR)

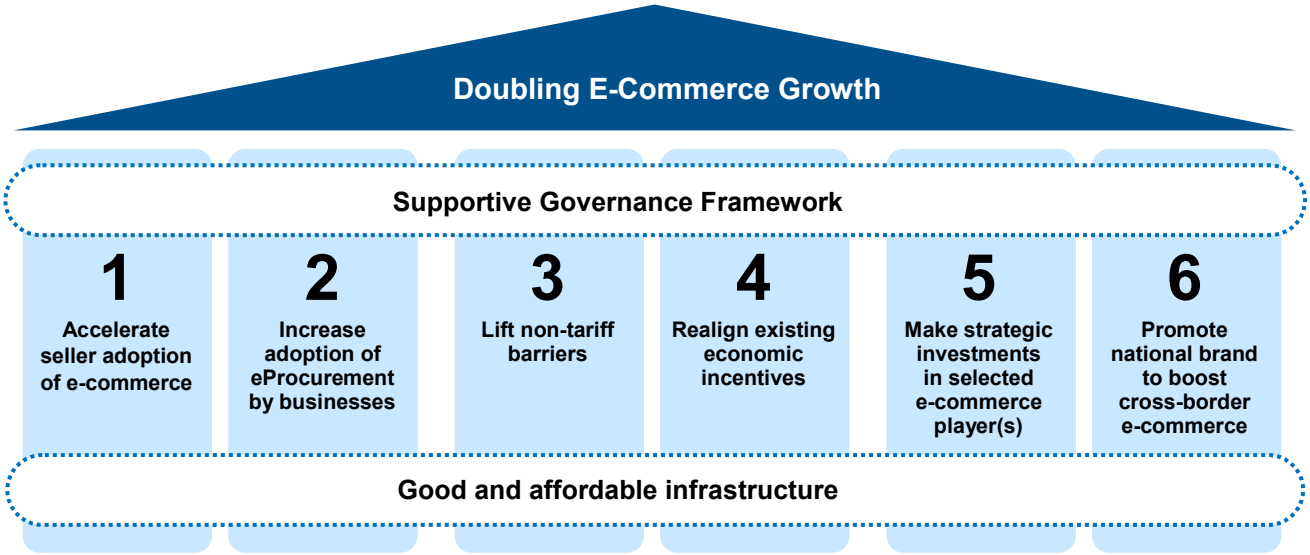
The National E-Commerce Strategic Roadmap (NESR) is a comprehensive initiative that employs a collaborative approach involving both, the public and private sectors to boost and expedite the development and innovation within Malaysia's e-commerce ecosystem. This strategic roadmap received official endorsement during the National Council of Digital Economy and Fourth Industrial Revolution (MED4IRN) meeting on April 22, 2021.

6.1 NATIONAL E-COMMERCE STRATEGIC ROADMAP 2017-2020 (NESR 1.0)

The goal of the 2016 National E-Commerce Strategic Roadmap (NESR 1.0) was to double Malaysia's e-commerce growth rate by 2020. The plan specified key government initiatives focused on speeding the growth of e-commerce in Malaysia between 2017 and 2020 through six thrust areas focused on building good and affordable infrastructure and supportive governance framework. In close collaboration with the industry, 15 programs were developed and implemented, with Ministries and agencies acting as program leads. The National E-Commerce Council (NECC) was established, chaired by the Minister of International Trade and Industry, to govern the implementation of NESR 1.0.

Figure 6.1: Summary of Key Target, Strategic Thrusts, Ministries & Agencies and Programmes

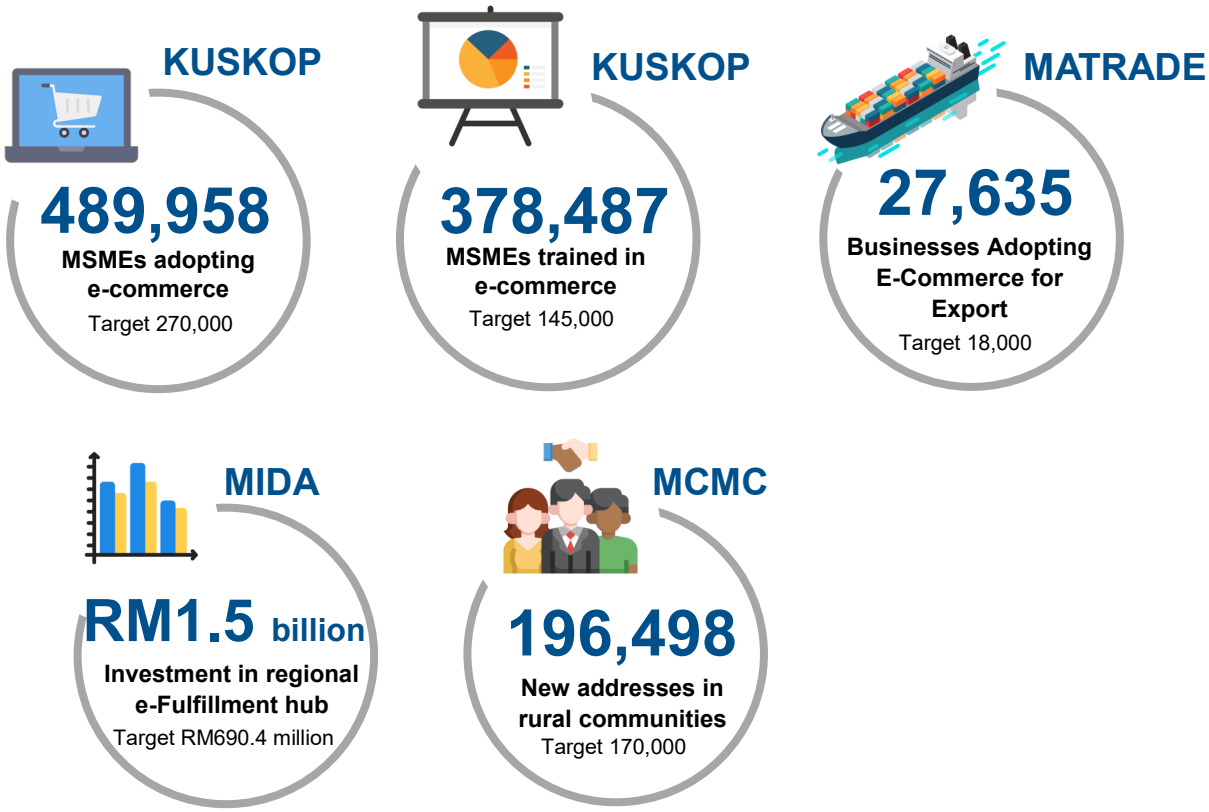
Figure 6.2: Roadmap NESR 1.0



Note.

Source: National E-Commerce Strategic Roadmap 2021 - 2025

Figure 6.3: Achievements by 2020



Note.

Source: National E-Commerce Strategic Roadmap 2021 - 2025

6.2 NATIONAL E-COMMERCE STRATEGIC ROADMAP 2021-2025 (NESR 2.0)

The objective of the National E-Commerce Strategic Roadmap from 2021 to 2025 (NESR 2.0) is to build on the foundations laid by NESR 1.0, with the aim of positioning e-commerce as the primary catalyst for business growth in Malaysia. The concerted efforts of 15 ministries and agencies collaborators, implemented through various programs across six key focus areas, are expected to expand the e-commerce market, enhance the adoption of e-commerce by MSMEs, and amplify e-commerce exports. Notably, the Department of Statistics Malaysia (DOSM) is participating in NESR for the first time, leading the Strategic Thrust 5 “Tap the Power of Data” for Program 2, which involves establishing a data repository with predictive and analytics capabilities for e-commerce stakeholders.

Figure 6.4: Summary of Key Target, Strategic Thrusts, Ministries & Agencies and Programmes

Vision

From 2021 to 2025, the National E-Commerce Strategic Roadmap 2.0 (NESR 2.0) envisions e-commerce as the engine for catalytic growth for businesses in Malaysia. NESR 2.0 is guided by 3 guiding principles and 6 strategic thrusts.

Target 2025

The three guiding principles are based on the size of the e-commerce market, which is valued at RM1.65 trillion in 2025. Additionally, there is a target of 1,148,000 MSMEs (Micro, Small, and Medium Enterprises) to adopt e-commerce, along with 84,000 businesses adopting e-commerce specifically for exporting purposes.

Figure 6.4: Target 2025

Note.

Source: National E-Commerce Strategic Roadmap 2021 - 2025

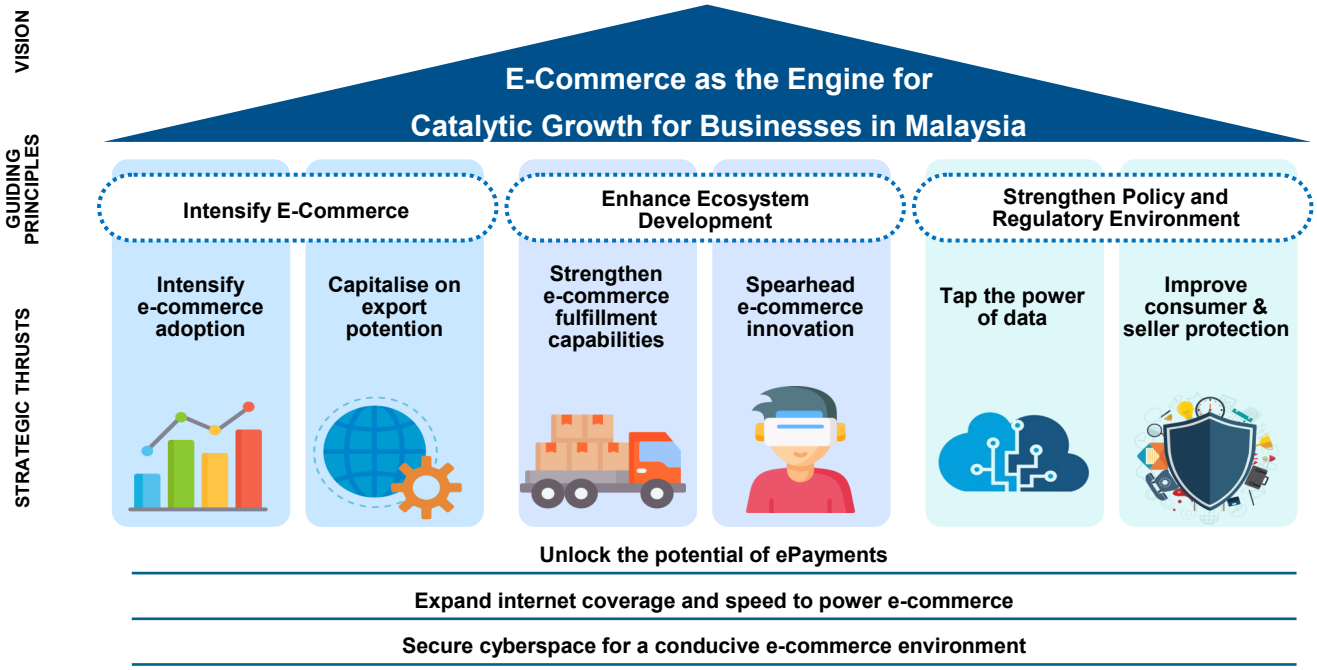
Strategic Thrusts

The strategic plan can be summarized into three main areas. The first area focuses on intensifying e-commerce adoption and growth through effective adoption strategies to increase businesses' conversion rates in e-commerce and maximize on the export potential of e-commerce.

The second area aims to enhance ecosystem development by strengthening e-commerce fulfilment capabilities to improve regional competitiveness and fostering an innovative e-commerce ecosystem through the development of local enablers.

The third area aims to strengthen the policy and regulatory environment by tapping into the power of data for effective planning and decision-making and improving consumer and seller protection through better regulations and enforcement to instill confidence in e-commerce among consumers and businesses.

Figure 6.5: E-Commerce as the Engine for Businesses Catalytic Growth in Malaysia



Note.

Source: National E-Commerce Strategic Roadmap 2021 - 2025

Figure 6.5: E-Commerce as the Engine for Catalytic Growth for Businesses in Malaysia

Note.

Source: National E-Commerce Strategic Roadmap 2021 - 2025

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STATISTICAL TABLE

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Table 1: ICT Industry and Other Industries that Produce ICT Products, 2015 - 2022

Industry	2015	2016	2017	2018	2019	2020	2021[e]	2022[p]
					RM Million			
ICT industry	**141,990**	**153,507**	**166,607**	**177,197**	**191,093**	**195,079**	**211,384**	**239,349**
1 ICT manufacturing	49,260	53,231	57,263	58,645	62,417	65,767	74,124	92,473
2 ICT trade	22,430	24,361	26,430	28,189	30,085	28,489	30,521	34,187
3 ICT services	59,535	64,392	70,574	77,427	84,830	88,682	94,792	99,520
4 Content and media	10,765	11,523	12,341	12,936	13,760	12,142	11,947	13,168
Other industries	**14,488**	**14,510**	**20,421**	**21,807**	**21,024**	**20,681**	**18,834**	**24,574**
Total industries that produce ICT products	**156,478**	**168,018**	**187,027**	**199,004**	**212,117**	**215,760**	**230,218**	**263,923**
Gross Domestic Product	**1,176,941**	**1,249,698**	**1,372,310**	**1,447,760**	**1,512,738**	**1,418,491**	**1,548,898**	**1,791,358**
					Annual percentage change			
ICT industry		**8.1**	**8.5**	**6.4**	**7.8**	**2.1**	**8.4**	**13.2**
1 ICT manufacturing		8.1	7.6	2.4	6.4	5.4	12.7	24.8
2 ICT trade		8.6	8.5	6.7	6.7	-5.3	7.1	12.0
3 ICT services		8.2	9.6	9.7	9.6	4.5	6.9	5.0
4 Content and media		7.0	7.1	4.8	6.4	-11.8	-1.6	10.2
Other industries		**0.2**	**40.7**	**6.8**	**-3.6**	**-1.6**	**-8.9**	**30.5**
Total industries that produce ICT products		**7.4**	**11.3**	**6.4**	**6.6**	**1.7**	**6.7**	**14.6**
Gross Domestic Product		**6.2**	**9.8**	**5.5**	**4.5**	**-6.2**	**9.2**	**15.7**
					Percentage share total industries that produce ICT products			
ICT industry	**90.7**	**91.4**	**89.1**	**89.0**	**90.1**	**90.4**	**91.8**	**90.7**
1 ICT manufacturing	31.5	31.7	30.6	29.4	29.4	30.5	32.2	35.0
2 ICT trade	14.3	14.5	14.1	14.2	14.2	13.2	13.2	13.0
3 ICT services	38.0	38.3	37.8	38.9	40.0	41.1	41.2	37.7
4 Content and media	6.9	6.9	6.6	6.5	6.5	5.6	5.2	5.0
Other industries	**9.3**	**8.6**	**10.9**	**11.0**	**9.9**	**9.6**	**8.2**	**9.3**
Total industries that produce ICT products	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
					Percentage share to GDP			
ICT industry	12.1	12.3	12.1	12.2	12.6	13.8	13.6	13.4
Other industries	1.2	1.2	1.5	1.5	1.4	1.5	1.2	1.4
Total industries that produce ICT products	**13.3**	**13.4**	**13.6**	**13.7**	**14.0**	**15.2**	**14.9**	**14.7**
Gross Domestic Product	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Note.
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Table 2a: Supply and Use of ICT Products, 2015 - 2022 (RM Million)

	2015				2016				2017			
Supply												
Component	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**
ICT domestic production	278,948	140,156	25,066	**444,169**	300,874	157,353	27,800	**486,028**	319,666	173,963	31,887	**525,516**
Imports of ICT products	139,893	19,651	4,720	**164,264**	147,360	20,059	4,722	**172,141**	184,867	19,452	4,688	**209,008**
Taxes less subsidies on ICT products	1,733	3,221	1,413	**6,366**	1,736	3,414	1,453	**6,604**	1,821	2,872	1,327	**6,020**
Total supply of ICT products	**420,574**	**163,027**	**31,199**	**614,800**	**449,971**	**180,826**	**33,975**	**664,772**	**506,354**	**196,287**	**37,902**	**740,544**
Usage												
Component	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**
Intermediate use on ICT products	200,382	81,779	15,351	**297,513**	223,575	92,944	17,468	**333,987**	230,812	100,887	20,528	**352,227**
Final consumption expenditure on ICT products	16,537	45,805	8,742	**71,084**	18,023	50,125	9,332	**77,480**	18,369	56,004	10,016	**84,389**
Gross capital formation on ICT products	17,689	15,438	381	**33,508**	19,460	16,813	386	**36,659**	20,223	17,967	505	**38,694**
Exports of ICT products	185,965	20,005	6,725	**212,695**	188,913	20,944	6,789	**216,647**	236,950	21,429	6,854	**265,234**
Total use of ICT products	**420,574**	**163,027**	**31,199**	**614,800**	**449,971**	**180,826**	**33,975**	**664,772**	**506,354**	**196,287**	**37,902**	**740,544**

Table 2a: Supply and Use of ICT Products, 2015 - 2022 (RM Million) [cont'd.]

	2018				2019				2020			
Supply												
Component	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**
ICT domestic production	349,056	192,503	36,330	**577,888**	359,244	207,360	39,543	**606,147**	376,521	214,721	36,303	**627,546**
Imports of ICT products	190,852	19,511	4,601	**214,964**	179,989	20,000	4,619	**204,608**	189,077	22,671	4,041	**215,790**
Taxes less subsidies on ICT products	1,572	1,508	761	**3,841**	2,220	2,925	1,006	**6,152**	1,285	2,651	560	**4,495**
Total supply of ICT products	**541,480**	**213,521**	**41,692**	**796,693**	**541,453**	**230,286**	**45,169**	**816,907**	**566,883**	**240,043**	**40,904**	**847,831**
Usage												
Component	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**
Intermediate use on ICT products	231,360	110,274	28,000	**369,634**	242,564	120,075	30,543	**393,182**	244,337	124,321	27,848	**396,505**
Final consumption expenditure on ICT products	19,544	61,468	6,334	**87,346**	22,278	66,804	7,255	**96,336**	23,519	69,901	5,905	**99,325**
Gross capital formation on ICT products	16,660	19,655	493	**36,808**	10,933	19,900	422	**31,255**	16,453	20,298	479	**37,230**
Exports of ICT products	273,915	22,125	6,866	**302,905**	265,677	23,507	6,949	**296,133**	282,575	25,524	6,672	**314,771**
Total use of ICT products	**541,480**	**213,521**	**41,692**	**796,693**	**541,453**	**230,286**	**45,169**	**816,907**	**566,883**	**240,043**	**40,904**	**847,831**

Table 2a: Supply and Use of ICT Products, 2015 - 2022 (RM Million) [cont'd.]

	2021[e]				2022[p]			
Supply								
Component	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**
ICT domestic production	409,229	229,556	35,302	**674,087**	510,714	246,454	40,479	**797,647**
Imports of ICT products	228,610	28,106	3,965	**260,682**	270,950	33,581	4,248	**308,779**
Taxes less subsidies on ICT products	1,529	3,409	549	**5,486**	1,832	3,946	456	**6,234**
Total supply of ICT products	**639,368**	**261,071**	**39,816**	**940,255**	**783,496**	**283,981**	**45,183**	**1,112,660**
Usage								
Component	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**
Intermediate use on ICT products	274,081	135,636	28,584	**438,301**	326,971	145,536	32,118	**504,625**
Final consumption expenditure on ICT products	25,764	74,856	4,882	**105,502**	34,295	78,998	7,264	**120,557**
Gross capital formation on ICT products	18,033	21,922	504	**40,459**	18,160	24,258	576	**42,994**
Exports of ICT products	321,489	28,656	5,846	**355,992**	404,069	35,189	5,225	**444,484**
Total use of ICT products	**639,368**	**261,071**	**39,816**	**940,255**	**783,496**	**283,981**	**45,183**	**1,112,660**

Note.
e estimate
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Table 2b: Supply and Use of ICT Products, 2016 - 2022 (Annual Percentage Change)

	2016				2017				2018			
Supply												
Component	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**
ICT domestic production	7.9	12.3	10.9	**9.4**	6.2	10.6	14.7	**8.1**	9.2	10.7	13.9	**10.0**
Imports of ICT products	5.3	2.1	0.0	**4.8**	25.5	-3.0	-0.7	**21.4**	3.2	0.3	-1.9	**2.9**
Taxes less subsidies on ICT products	0.2	6.0	2.8	**3.7**	4.9	-15.9	-8.7	**-8.8**	-13.7	-47.5	-42.6	**-36.2**
Total supply of ICT products	**7.0**	**10.9**	**8.9**	**8.1**	**12.5**	**8.6**	**11.6**	**11.4**	**6.9**	**8.8**	**10.0**	**7.6**
Usage												
Component	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**
Intermediate use on ICT products	11.6	13.7	13.8	**12.3**	3.2	8.5	17.5	**5.5**	0.2	9.3	36.4	**4.9**
Final consumption expenditure on ICT products	9.0	9.4	6.8	**9.0**	1.9	11.7	7.3	**8.9**	6.4	9.8	-36.8	**3.5**
Gross capital formation on ICT products	10.0	8.9	1.3	**9.4**	3.9	6.9	30.8	**5.6**	-17.6	9.4	-2.3	**-4.9**
Exports of ICT products	1.6	4.7	1.0	**1.9**	25.4	2.3	1.0	**22.4**	15.6	3.2	0.2	**14.2**
Total use of ICT products	**7.0**	**10.9**	**8.9**	**8.1**	**12.5**	**8.6**	**11.6**	**11.4**	**6.9**	**8.8**	**10.0**	**7.6**

Table 2b: Supply and Use of ICT Products, 2016 - 2022 (Annual Percentage Change) [cont'd.]

	2019				2020				2021[e]			
Supply												
Component	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**
ICT domestic production	2.9	7.7	8.8	**4.9**	4.8	3.5	-8.2	**3.5**	8.7	6.9	-2.8	**7.4**
Imports of ICT products	-5.7	2.5	0.4	**-4.8**	5.0	13.4	-12.5	**5.5**	20.9	24.0	-1.9	**20.8**
Taxes less subsidies on ICT products	41.2	93.9	32.2	**60.1**	-42.1	-9.4	-44.4	**-26.9**	19.0	28.6	-2.0	**22.0**
Total supply of ICT products	**0.0**	**7.9**	**8.3**	**2.5**	**4.7**	**4.2**	**-9.4**	**3.8**	**12.8**	**8.8**	**-2.7**	**10.9**
Usage												
Component	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**
Intermediate use on ICT products	4.8	8.9	9.1	**6.4**	0.7	3.5	-8.8	**0.8**	12.2	9.1	2.6	**10.5**
Final consumption expenditure on ICT products	14.0	8.7	14.5	**10.3**	5.6	4.6	-18.6	**3.1**	9.5	7.1	-17.3	**6.2**
Gross capital formation on ICT products	-34.4	1.2	-14.4	**-15.1**	50.5	2.0	13.6	**19.1**	9.6	8.0	5.1	**8.7**
Exports of ICT products	-3.0	6.2	1.2	**-2.2**	6.4	8.6	-4.0	**6.3**	13.8	12.3	-12.4	**13.1**
Total use of ICT products	**0.0**	**7.9**	**8.3**	**2.5**	**4.7**	**4.2**	**-9.4**	**3.8**	**12.8**	**8.8**	**-2.7**	**10.9**

Note.
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Table 2b: Supply and Use of ICT Products, 2016 - 2022 (Annual Percentage Change) [cont'd.]

	2022[p]			
	Supply			
Component	**ICT goods**	**ICT services**	**Content and media products**	**Total**
ICT domestic production	24.8	7.4	14.7	**18.3**
Imports of ICT products	18.5	19.5	7.1	**18.5**
Taxes less subsidies on ICT products	19.9	15.8	-16.9	**13.6**
Total supply of ICT products	**22.5**	**8.8**	**13.5**	**18.3**

	Usage			
Component	**ICT goods**	**ICT services**	**Content and media products**	**Total**
Intermediate use on ICT products	19.3	7.3	12.4	**15.1**
Final consumption expenditure on ICT products	33.1	5.5	48.8	**14.3**
Gross capital formation on ICT products	0.7	10.7	14.3	**6.3**
Exports of ICT products	25.7	22.8	-10.6	**24.9**
Total use of ICT products	**22.5**	**8.8**	**13.5**	**18.3**

Note.
p estimate

Table 2c: Supply and Use of ICT Products, 2015 - 2022 (Percentage Share)

	2015				2016				2017			
Supply												
Component	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**
ICT domestic production	66.3	86.0	80.4	**72.3**	66.9	87.0	81.8	**73.1**	63.1	88.6	84.1	**71.0**
Imports of ICT products	33.3	12.0	15.1	**26.7**	32.7	11.1	13.9	**25.9**	36.5	9.9	12.4	**28.2**
Taxes less subsidies on ICT products	0.4	2.0	4.5	**1.0**	0.4	1.9	4.3	**1.0**	0.4	1.5	3.5	**0.8**
Total supply of ICT products	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Usage												
Component	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**
Intermediate use on ICT products	47.7	50.1	49.2	**48.4**	49.7	51.4	51.4	**50.2**	45.6	51.4	54.2	**47.6**
Final consumption expenditure on ICT products	3.9	28.1	28.0	**11.6**	4.0	27.7	27.5	**11.7**	3.6	28.5	26.4	**11.4**
Gross capital formation on ICT products	4.2	9.5	1.2	**5.4**	4.3	9.3	1.1	**5.5**	4.0	9.2	1.3	**5.2**
Exports of ICT products	44.2	12.3	21.6	**34.6**	42.0	11.6	20.0	**32.6**	46.8	10.9	18.1	**35.8**
Total use of ICT products	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Table 2c: Supply and Use of ICT Products, 2015 - 2022 (Percentage Share) [cont'd.]

	2018				2019				2020			
Supply												
Component	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**
ICT domestic production	64.5	90.2	87.2	**72.5**	66.4	90.0	87.5	**74.2**	66.4	89.5	88.7	**74.0**
Imports of ICT products	35.2	9.1	11.0	**27.0**	33.2	8.7	10.2	**25.0**	33.4	9.4	9.9	**25.6**
Taxes less subsidies on ICT products	0.3	0.7	1.8	**0.5**	0.4	1.3	2.2	**0.8**	0.2	1.1	1.4	**0.5**
Total supply of ICT products	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Usage												
Component	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**
Intermediate use on ICT products	42.7	51.6	67.1	**46.4**	44.8	52.2	67.6	**48.1**	43.1	51.8	68.1	**46.8**
Final consumption expenditure on ICT products	3.6	28.8	15.2	**11.0**	4.1	29.0	16.1	**11.8**	4.2	29.1	14.4	**11.7**
Gross capital formation on ICT products	3.1	9.2	1.2	**4.6**	2.0	8.6	0.9	**3.8**	2.9	8.5	1.2	**4.4**
Exports of ICT products	50.6	10.4	16.5	**38.0**	49.1	10.2	15.4	**36.3**	49.8	10.6	16.3	**37.1**
Total use of ICT products	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Table 2c: Supply and Use of ICT Products, 2015 - 2022 (Percentage Share) [cont'd.]

	2021[e]				2022[p]			
Supply								
Component	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**
ICT domestic production	64.0	87.9	88.7	**71.7**	65.2	86.8	89.6	**71.7**
Imports of ICT products	35.8	10.8	9.9	**27.7**	34.6	11.8	9.4	**27.7**
Taxes less subsidies on ICT products	0.2	1.3	1.4	**0.6**	0.2	1.4	1.0	**0.6**
Total supply of ICT products	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Usage								
Component	**ICT goods**	**ICT services**	**Content and media products**	**Total**	**ICT goods**	**ICT services**	**Content and media products**	**Total**
Intermediate use on ICT products	42.9	51.9	71.8	**46.6**	41.7	51.3	71.1	**45.4**
Final consumption expenditure on ICT products	4.0	28.7	12.2	**11.2**	4.4	27.8	16.1	**10.8**
Gross capital formation on ICT products	2.8	8.4	1.3	**4.3**	2.3	8.5	1.3	**3.9**
Exports of ICT products	50.3	11.0	14.7	**37.9**	51.6	12.4	11.5	**39.9**
Total use of ICT products	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Note.
e estimate
p preliminary

Table 3: Exports of ICT Products, 2015 - 2022

ICT products	2015	2016	2017	2018	2019	2020	2021[e]	2022[p]
				RM Million				
1 ICT goods	185,965	188,913	236,950	273,915	265,677	282,575	321,489	404,069
2 ICT services	20,005	20,944	21,429	22,125	23,507	25,524	28,656	35,189
3 Content and media products	6,725	6,789	6,854	6,866	6,949	6,672	5,846	5,225
Total exports of ICT products	**212,695**	**216,647**	**265,234**	**302,905**	**296,133**	**314,771**	**355,992**	**444,484**
Total exports	**817,370**	**834,491**	**960,778**	**992,511**	**987,481**	**873,477**	**1,093,895**	**1,378,452**
				Annual percentage change				
1 ICT goods		1.6	25.4	15.6	-3.0	6.4	13.8	25.7
2 ICT services		4.7	2.3	3.2	6.2	8.6	12.3	22.8
3 Content and media products		1.0	1.0	0.2	1.2	-4.0	-12.4	-10.6
Total exports of ICT products		**1.9**	**22.4**	**14.2**	**-2.2**	**6.3**	**13.1**	**24.9**
Total exports		**2.1**	**15.1**	**3.3**	**-0.5**	**-11.5**	**25.2**	**26.0**
				Percentage share total exports of ICT products				
1 ICT goods	87.4	87.2	89.3	90.4	89.7	89.8	90.3	90.9
2 ICT services	9.4	9.7	8.1	7.3	7.9	8.1	8.1	7.9
3 Content and media products	3.2	3.1	2.6	2.3	2.4	2.1	1.6	1.2
Total exports of ICT products	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
				Percentage share total exports				
Total exports of ICT products	**26.0**	**26.0**	**27.6**	**30.5**	**30.0**	**36.0**	**32.5**	**32.2**
Total exports	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Note.
e estimate
p preliminary

Table 4: Imports of ICT Products, 2015 - 2022

ICT products	2015	2016	2017	2018	2019	2020	2021[e]	2022[p]
				RM Million				
1 ICT goods	139,893	147,360	184,867	190,852	179,989	189,077	228,610	270,950
2 ICT services	19,651	20,059	19,452	19,511	20,000	22,671	28,106	33,581
3 Content and media products	4,720	4,722	4,688	4,601	4,619	4,041	3,965	4,248
Total imports of ICT products	**164,264**	**172,141**	**209,008**	**214,964**	**204,608**	**215,790**	**260,682**	**308,779**
Total imports	**728,778**	**751,363**	**866,524**	**895,405**	**873,618**	**783,152**	**981,922**	**1,248,820**
				Annual percentage change				
1 ICT goods		5.3	25.5	3.2	-5.7	5.0	20.9	18.5
2 ICT services		2.1	-3.0	0.3	2.5	13.4	24.0	19.5
3 Content and media products		0.0	-0.7	-1.9	0.4	-12.5	-1.9	7.1
Total imports of ICT products		**4.8**	**21.4**	**2.8**	**-4.8**	**5.5**	**20.8**	**18.5**
Total imports		**3.1**	**15.3**	**3.3**	**-2.4**	**-10.4**	**25.4**	**27.2**
				Percentage share total imports of ICT products				
1 ICT goods	85.1	85.6	88.5	88.8	88.0	87.6	87.7	87.7
2 ICT services	12.0	11.7	9.3	9.1	9.8	10.5	10.8	10.9
3 Content and media products	2.9	2.7	2.2	2.1	2.2	1.9	1.5	1.4
Total imports of ICT products	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
				Percentage share total imports				
Total imports of ICT products	**22.5**	**22.9**	**24.1**	**24.0**	**23.4**	**27.6**	**26.5**	**24.7**
Total imports	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Note.
e estimate
p preliminary

Table 5: Income Components of ICT Industry , 2015 - 2022

Component	2015	2016	2017	2018	2019	2020	2021[e]	2022[p]
				RM Million				
Compensation of employees	56,258	60,600	66,726	70,165	73,415	73,314	78,179	84,971
Gross operating surplus	84,720	91,937	100,060	109,717	116,899	124,813	134,714	153,921
Taxes less subsidies on production and imports	5,594	5,862	5,242	3,196	4,877	3,136	4,012	4,841
Total	**146,571**	**158,399**	**172,029**	**183,078**	**195,191**	**201,263**	**216,906**	**243,734**
				Annual percentage change				
Compensation of employees		7.7	10.1	5.2	4.6	-0.1	6.6	8.7
Gross operating surplus		8.5	8.8	9.7	6.5	6.8	7.9	14.3
Taxes less subsidies on production and imports		4.8	-10.6	-39.0	52.6	-35.7	28.0	20.7
Total		**8.1**	**8.6**	**6.4**	**6.6**	**3.1**	**7.8**	**12.4**
				Percentage share				
Compensation of employees	38.4	38.3	38.8	38.3	37.6	36.4	36.1	34.9
Gross operating surplus	57.8	58.0	58.2	59.9	59.9	62.0	62.1	63.1
Taxes less subsidies on production and imports	3.8	3.7	3.0	1.8	2.5	1.6	1.8	2.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Note.
e estimate
p preliminary

Table 6: Employment in the ICT Industry, 2015 - 2022

Industry	2015	2016	2017	2018	2019	2020	2021[e]	2022[p]
				Number of persons ('000)				
1 ICT manufacturing	408	407	412	415	416	409	433	439
2 ICT trade	218	220	224	234	238	252	263	264
3 ICT services	286	290	302	316	325	341	352	357
4 Content and media	152	155	155	156	156	156	157	158
Total employment in the ICT industry	**1,064**	**1,072**	**1,094**	**1,122**	**1,136**	**1,158**	**1,206**	**1,217**
Total employment	**14,068**	**14,164**	**14,477**	**14,776**	**15,073**	**14,957**	**15,064**	**15,392**
				Annual percentage change				
1 ICT manufacturing		-0.2	1.2	0.7	0.2	-1.6	5.8	1.4
2 ICT trade		0.8	2.2	4.3	1.6	5.8	4.6	0.3
3 ICT services		1.2	4.1	5.0	2.8	4.9	3.3	1.2
4 Content and media		2.0	0.3	0.3	0.2	-0.1	0.6	0.4
Total employment in the ICT industry		**0.7**	**2.1**	**2.5**	**1.2**	**2.0**	**4.1**	**1.0**
Total employment		**0.7**	**2.2**	**2.1**	**2.0**	**-0.8**	**0.7**	**2.2**
				Percentage share total employment in the ICT industry				
1 ICT manufacturing	38.4	38.0	37.7	37.0	36.6	35.3	35.9	36.1
2 ICT trade	20.5	20.5	20.5	20.9	21.0	21.7	21.9	21.7
3 ICT services	26.9	27.0	27.6	28.2	28.7	29.5	29.2	29.3
4 Content and media	14.3	14.5	14.2	13.9	13.7	13.5	13.0	12.9
Total industries that produce ICT products	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
				Percentage share total employment				
Total employment in the ICT industry	**7.6**	**7.6**	**7.6**	**7.6**	**7.5**	**7.7**	**8.0**	**7.9**
Total employment	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Note.
e estimate
p preliminary

Table 7a: Gross Value Added of ICT Industry, 2015 - 2022 (RM Million)

Industry	2015	2016	2017	2018	2019	2020	2021[e]	2022[p]
1 ICT manufacturing	**52,060**	**56,270**	**60,577**	**62,048**	**65,657**	**69,453**	**77,080**	**93,527**
1.1 Computers and peripheral equipment	5,338	5,548	5,161	5,246	5,649	6,035	6,561	6,497
1.2 Electronic components & boards, communication equipment and consumer electronics	46,723	50,722	55,416	56,803	60,008	63,418	70,520	87,031
2 ICT trade	**22,430**	**24,361**	**26,430**	**28,189**	**30,085**	**28,489**	**30,521**	**34,187**
2.1 Wholesale trade	7,768	8,251	8,740	9,163	9,638	9,215	9,607	10,730
2.2 Retail trade	14,661	16,110	17,690	19,026	20,447	19,274	20,914	23,458
3 ICT services	**60,786**	**65,663**	**72,053**	**79,222**	**84,942**	**90,515**	**96,692**	**102,137**
3.1 Telecommunications	40,999	45,077	49,502	53,959	57,793	63,025	68,118	71,235
3.2 Computer programming, consultancy, information and related activities	14,215	15,142	16,317	17,635	18,732	19,437	19,976	21,299
3.3 Other ICT services	5,572	5,444	6,233	7,629	8,417	8,053	8,598	9,603
4 Content and media	**11,260**	**12,068**	**12,921**	**13,582**	**14,439**	**12,733**	**12,527**	**13,799**
4.1 Publishing of books, periodicals and other publishing activities	5,444	5,755	6,011	6,120	6,497	5,929	5,853	6,214
4.2 Motion picture, video, television programme, photographic and creative activities	2,208	2,427	2,672	2,812	3,100	2,209	1,993	2,618
4.3 Other content and media	3,608	3,885	4,238	4,650	4,842	4,595	4,681	4,967
Gross Value Added of ICT industries	**146,537**	**158,361**	**171,981**	**183,042**	**195,123**	**201,190**	**216,820**	**243,650**
Gross Domestic Product	**1,176,941**	**1,249,698**	**1,372,310**	**1,447,760**	**1,512,738**	**1,418,491**	**1,548,898**	**1,791,358**

Note.

e estimate

p preliminary

Table 7b: Gross Value Added of ICT Industry, 2016 - 2022 (Annual Percentage Change)

Industry	2016	2017	2018	2019	2020	2021[e]	2022[p]
1 ICT manufacturing	**8.1**	**7.7**	**2.4**	**5.8**	**5.8**	**11.0**	**21.3**
1.1 Computers and peripheral equipment	3.9	-7.0	1.6	7.7	6.8	8.7	-1.0
1.2 Electronic components & boards, communication equipment and consumer electronics	8.6	9.3	2.5	5.6	5.7	11.2	23.4
2 ICT trade	**8.6**	**8.5**	**6.7**	**6.7**	**-5.3**	**7.1**	**12.0**
2.1 Wholesale trade	6.2	5.9	4.8	5.2	-4.4	4.3	11.7
2.2 Retail trade	9.9	9.8	7.6	7.5	-5.7	8.5	12.2
3 ICT services	**8.0**	**9.7**	**10.0**	**7.2**	**6.6**	**6.8**	**5.6**
3.1 Telecommunications	9.9	9.8	9.0	7.1	9.1	8.1	4.6
3.2 Computer programming, consultancy, information and related activities	6.5	7.8	8.1	6.2	3.8	2.8	6.6
3.3 Other ICT services	-2.3	14.5	22.4	10.3	-4.3	6.8	11.7
4 Content and media	**7.2**	**7.1**	**5.1**	**6.3**	**-11.8**	**-1.6**	**10.2**
4.1 Publishing of books, periodicals and other publishing activities	5.7	4.4	1.8	6.2	-8.8	-1.3	6.2
4.2 Motion picture, video, television programme, photographic and creative activities	9.9	10.1	5.3	10.2	-28.7	-9.8	31.4
4.3 Other content and media	7.7	9.1	9.7	4.1	-5.1	1.9	6.1
Gross Value Added of ICT industries	**8.1**	**8.6**	**6.4**	**6.6**	**3.1**	**7.8**	**12.4**
Gross Domestic Product	**6.2**	**9.8**	**5.5**	**4.5**	**-6.2**	**9.2**	**15.7**

Note.

e estimate

p preliminary

Table 7c: Gross Value Added of ICT Industry, 2015 - 2022 (Percentage Share)

Industry	2015	2016	2017	2018	2019	2020	2021[e]	2022[p]
1 ICT manufacturing	**35.5**	**35.5**	**35.2**	**33.9**	**33.7**	**34.5**	**35.5**	**38.4**
1.1 Computers and peripheral equipment	3.6	3.5	3.0	2.9	2.9	3.0	3.0	2.7
1.2 Electronic components & boards, communication equipment and consumer electronics	31.9	32.0	32.2	31.0	30.8	31.5	32.5	35.7
2 ICT trade	**15.3**	**15.4**	**15.4**	**15.4**	**15.4**	**14.2**	**14.1**	**14.0**
2.1 Wholesale trade	5.3	5.2	5.1	5.0	4.9	4.6	4.4	4.4
2.2 Retail trade	10.0	10.2	10.3	10.4	10.5	9.6	9.7	9.6
3 ICT services	**41.5**	**41.5**	**41.9**	**43.3**	**43.5**	**45.0**	**44.6**	**41.9**
3.1 Telecommunications	28.0	28.5	28.8	29.5	29.6	31.3	31.4	29.2
3.2 Computer programming, consultancy, information and related activities	9.7	9.6	9.5	9.6	9.6	9.7	9.2	8.7
3.3 Other ICT services	3.8	3.4	3.6	4.2	4.3	4.0	4.0	3.9
4 Content and media	**7.7**	**7.6**	**7.5**	**7.4**	**7.4**	**6.3**	**5.8**	**5.7**
4.1 Publishing of books, periodicals and other publishing activities	3.7	3.6	3.5	3.3	3.3	2.9	2.7	2.6
4.2 Motion picture, video, television programme, photographic and creative activities	1.5	1.5	1.5	1.6	1.6	1.1	0.9	1.1
4.3 Other content and media	2.5	2.5	2.5	2.5	2.5	2.3	2.2	2.0
Gross Value Added of ICT industries	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
				Percentage share to GDP				
Gross Value Added of ICT industries	**12.5**	**12.7**	**12.5**	**12.6**	**12.9**	**14.2**	**14.0**	**13.6**
Gross Domestic Product	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Note.

e estimate

p preliminary

Table 8a: Gross Value Added of E-Commerce by ICT Industry, 2015 - 2022

Industry	2015	2016	2017	2018	2019	2020	2021[e]	2022[p]
				RM Million				
ICT industry	**22,712**	**26,013**	**28,520**	**30,341**	**34,507**	**44,854**	**58,577**	**70,475**
1 ICT manufacturing	16,319	18,749	20,044	20,504	22,449	27,758	35,527	43,876
2 ICT trade	1,771	2,086	2,805	3,668	4,824	7,433	10,241	12,284
3 ICT services	3,825	4,156	4,588	5,044	6,033	8,126	11,006	12,260
4 Content and media	797	1,022	1,082	1,126	1,201	1,536	1,803	2,055
Other industries	**66,434**	**69,631**	**78,783**	**87,106**	**94,844**	**119,007**	**142,462**	**168,652**
Gross Value Added of e-commerce	**89,145**	**95,644**	**107,303**	**117,448**	**129,351**	**163,860**	**201,040**	**239,127**
				Annual percentage change				
ICT industry		**14.5**	**9.6**	**6.4**	**13.7**	**30.0**	**30.6**	**20.3**
1 ICT manufacturing		14.9	6.9	2.3	9.5	23.6	28.0	23.5
2 ICT trade		17.8	34.5	30.8	31.5	54.1	37.8	20.0
3 ICT services		8.7	10.4	9.9	19.6	34.7	35.4	11.4
4 Content and media		28.3	5.9	4.1	6.6	27.9	17.4	14.0
Other industries		**4.8**	**13.1**	**10.6**	**8.9**	**25.5**	**19.7**	**18.4**
Gross Value Added of e-commerce		**7.3**	**12.2**	**9.5**	**10.1**	**26.7**	**22.7**	**18.9**
				Percentage share Gross Value Added of e-commerce				
ICT industry	**25.5**	**27.2**	**26.6**	**25.8**	**26.7**	**27.4**	**29.1**	**29.5**
1 ICT manufacturing	18.3	19.6	18.7	17.4	17.4	17.0	17.6	18.4
2 ICT trade	2.0	2.2	2.6	3.1	3.7	4.5	5.1	5.1
3 ICT services	4.3	4.3	4.3	4.3	4.7	5.0	5.5	5.1
4 Content and media	0.9	1.1	1.0	1.0	0.9	0.9	0.9	0.9
Other industries	**74.5**	**72.8**	**73.4**	**74.2**	**73.3**	**72.6**	**70.9**	**70.5**
Gross Value Added of e-commerce	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
				Percentage share to GDP				
ICT industry	1.9	2.1	2.1	2.1	2.3	3.2	3.8	3.9
Other industries	5.6	5.6	5.7	6.0	6.3	8.4	9.2	9.4
Gross Value Added of e-commerce	**7.6**	**7.7**	**7.8**	**8.1**	**8.6**	**11.6**	**13.0**	**13.3**

Note.
e estimate
p preliminary

Table 8b: Gross Value Added of E-Commerce by Main Sectors, 2015 - 2022

	Industry	2015	2016	2017	2018	2019	2020	2021[e]	2022[p]
					RM Million				
1	**Agriculture**	155	170	276	276	293	347	415	441
2	**Mining and Quarrying**	3,743	3,537	4,160	4,875	4,942	5,577	7,081	7,978
3	**Manufacturing**	57,855	60,865	66,933	69,382	73,703	89,030	115,928	127,628
4	**Construction**	64	77	76	76	76	98	101	121
5	**Services**	27,328	30,995	35,858	42,840	50,336	68,808	77,514	102,959
	Gross Value Added of e-commerce	**89,145**	**95,644**	**107,303**	**117,448**	**129,351**	**163,860**	**201,040**	**239,127**
					Annual percentage change				
1	**Agriculture**		9.5	62.7	-0.2	6.4	18.2	19.6	6.4
2	**Mining and Quarrying**		-5.5	17.6	17.2	1.4	12.8	27.0	12.7
3	**Manufacturing**		5.2	10.0	3.7	6.2	20.8	30.2	10.1
4	**Construction**		19.7	-1.0	-0.7	-0.1	30.0	3.0	19.3
5	**Services**		13.4	15.7	19.5	17.5	36.7	12.7	32.8
	Gross Value Added of e-commerce		**7.3**	**12.2**	**9.5**	**10.1**	**26.7**	**22.7**	**18.9**
					Percentage share Gross Value Added of e-commerce				
1	**Agriculture**	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
2	**Mining and Quarrying**	4.2	3.7	3.9	4.1	3.8	3.4	3.5	3.3
3	**Manufacturing**	64.9	63.6	62.4	59.1	57.0	54.3	57.7	53.4
4	**Construction**	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
5	**Services**	30.7	32.4	33.4	36.5	38.9	42.0	38.5	43.0
	Gross Value Added of e-commerce	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
					Percentage share to GDP				
1	**Agriculture**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	**Mining and Quarrying**	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.4
3	**Manufacturing**	4.9	4.9	4.9	4.8	4.9	6.3	7.5	7.1
4	**Construction**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	**Services**	2.3	2.5	2.6	3.0	3.3	4.9	5.0	5.7
	Gross Value Added of e-commerce	**7.6**	**7.7**	**7.8**	**8.1**	**8.6**	**11.6**	**13.0**	**13.3**

Note.
e estimate
p preliminary

Table 9: ICT Contribution to Economy, 2015 - 2022

Industry	2015	2016	2017	2018	2019	2020	2021[e]	2022[p]
					RM Million			
ICT industry	**146,537**	**158,361**	**171,981**	**183,042**	**195,123**	**201,190**	**216,820**	**243,650**
1 ICT manufacturing	52,060	56,270	60,577	62,048	65,657	69,453	77,080	93,527
2 ICT trade	22,430	24,361	26,430	28,189	30,085	28,489	30,521	34,187
3 ICT services	60,786	65,663	72,053	79,222	84,942	90,515	96,692	102,137
4 Content and media	11,260	12,068	12,921	13,582	14,439	12,733	12,527	13,799
E-commerce of other industries	**66,434**	**69,631**	**78,783**	**87,106**	**94,844**	**119,007**	**142,462**	**168,652**
Total ICT and e-commerce	**212,970**	**227,992**	**250,764**	**270,149**	**289,967**	**320,197**	**359,282**	**412,302**
					Annual percentage change			
ICT industry		**8.1**	**8.6**	**6.4**	**6.6**	**3.1**	**7.8**	**12.4**
1 ICT manufacturing		8.1	7.7	2.4	5.8	5.8	11.0	21.3
2 ICT trade		8.6	8.5	6.7	6.7	-5.3	7.1	12.0
3 ICT services		8.0	9.7	10.0	7.2	6.6	6.8	5.6
4 Content and media		7.2	7.1	5.1	6.3	-11.8	-1.6	10.2
E-commerce of other industries		**4.8**	**13.1**	**10.6**	**8.9**	**25.5**	**19.7**	**18.4**
Total ICT and e-commerce		**7.1**	**10.0**	**7.7**	**7.3**	**10.4**	**12.2**	**14.8**
					Percentage share of total ICT and e-commerce			
ICT industry	**68.8**	**69.5**	**68.6**	**67.8**	**67.3**	**62.8**	**60.3**	**59.1**
1 ICT manufacturing	24.4	24.7	24.2	23.0	22.6	21.7	21.4	22.7
2 ICT trade	10.5	10.7	10.5	10.4	10.4	8.9	8.5	8.3
3 ICT services	28.5	28.8	28.7	29.4	29.3	28.2	26.9	24.8
4 Content and media	5.3	5.3	5.2	5.0	5.0	4.0	3.5	3.3
E-commerce of other industries	**31.2**	**30.5**	**31.4**	**32.2**	**32.7**	**37.2**	**39.7**	**40.9**
Total ICT and e-commerce	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
					Percentage share to GDP			
ICT industry	12.5	12.7	12.5	12.6	12.9	14.2	14.0	13.6
E-commerce of other industries	5.6	5.6	5.7	6.0	6.3	8.4	9.2	9.4
ICT contribution to economy	**18.1**	**18.2**	**18.3**	**18.7**	**19.2**	**22.6**	**23.2**	**23.0**

Note.
e estimate
p preliminary

Table 10: Principal Statistics of Information and Communication Services, 2015, 2017-2021

Year	Value of gross output (RM'000)	Value of intermediate input (RM'000)	Value added (RM'000)	Total number of persons engaged	Salaries & wages paid (RM'000)	Value of fixed assets (RM'000)
2021	182,162,740	87,410,149	94,752,590	241,711	14,774,591	106,954,062
2020	172,853,710	82,850,923	90,002,787	236,372	14,449,965	104,755,703
2019	163,785,200	78,171,808	85,613,392	240,693	14,938,599	101,008,145
2018	154,975,847	74,482,977	80,492,869	233,543	14,368,584	96,889,860
2017	144,763,525	70,419,094	74,344,431	225,665	13,751,293	93,749,354
2015*	124,606,402	62,047,504	62,558,898	203,017	11,659,440	82,778,363

Note.
*Refer to census year

Table 10a: Principal Statistics of Information and Communication Services by Activities, 2021

Activities	Value of gross output (RM'000)	Value of intermediate input (RM'000)	Value added (RM'000)	Total number of persons engaged	Salaries & wages paid (RM'000)	Value of fixed assets (RM'000)
Total	**182,162,740**	**87,410,149**	**94,752,590**	**241,711**	**14,774,591**	**106,954,062**
Publishing	4,967,517	2,908,401	2,059,116	14,735	686,139	1,840,560
Motion picture, video and television programme production, sound recording and music publishing	3,933,819	2,071,795	1,862,023	15,209	577,753	2,551,517
Programming and broadcasting	9,293,246	5,774,782	3,518,464	7,353	645,372	6,667,854
Telecommunication services	117,982,624	50,396,579	67,586,045	63,907	5,655,471	80,637,171
Computer programming, consultancy and related activities	39,297,919	22,850,336	16,447,583	122,863	6,183,297	13,870,801
Information services	6,687,615	3,408,256	3,279,359	17,644	1,026,558	1,386,160

Table 11: Principal Statistics of Information and Communication Services by State, 2021

State	Value of gross output (RM'000)	Value of intermediate input (RM'000)	Value added (RM'000)	Total number of persons engaged	Salaries & wages paid (RM'000)	Value of fixed assets (RM'000)
MALAYSIA	**182,162,740**	**87,410,149**	**94,752,590**	**241,711**	**14,774,591**	**106,954,062**
Johor	867,333	427,007	440,326	3,695	112,954	836,456
Kedah	103,759	57,398	46,362	535	16,983	42,265
Kelantan	5,157	2,979	2,177	68	1,204	481
Melaka	166,911	83,297	83,613	707	15,627	71,341
Negeri Sembilan	163,051	83,586	79,465	493	18,459	57,481
Pahang	192,581	64,184	128,398	348	10,905	546,690
Pulau Pinang	5,105,077	2,721,633	2,383,444	11,395	352,736	4,978,027
Perak	411,276	229,244	182,033	1,143	42,310	119,896
Perlis	2,774	1,574	1,201	45	1,032	1,564
Selangor	53,215,083	27,185,287	26,029,796	101,402	5,532,694	20,681,711
Terenganu	23,213	12,408	10,805	229	6,347	12,592
Sabah	265,292	158,702	106,590	1,169	29,307	235,272
Sarawak	995,215	507,817	487,397	2,982	86,479	1,401,209
W.P. Kuala Lumpur	120,561,009	55,825,049	64,735,961	117,225	8,537,584	77,930,040
W.P. Labuan	3,191	1,015	2,176	15	413	452
W.P. Putrajaya	81,818	48,970	32,848	260	9,556	38,587

Table 12: Number of Persons Engaged and Salaries & Wages of Information and Communication Services by Category of Workers, 2021

Category of workers	Number of persons engaged			Salaries & wages paid
	Total	Male	Female	(RM'000)
Total	**241,711**	**144,665**	**97,046**	**14,774,591**
Total working proprietors and unpaid family workers	**664**	**533**	**131**	**-**
Total paid employees (full-time)	**239,318**	**142,899**	**96,419**	**14,748,829**
Manager, professional and researcher	84,398	55,842	28,556	9,726,110
Technicians and associate professionals	49,610	37,129	12,481	2,575,975
Clerical and related occupations*	79,502	35,785	43,717	1,946,545
Elementary occupation	25,808	14,143	11,665	500,198
Paid employees (part-time)	**1,729**	**1,233**	**496**	**25,762**

Note.

***** Includes service & sales workers, craft & related trades workers and plant & machine operators & assemblers

Table 13: Number of Persons Engaged and Salaries & Wages of Information and Communication Services by Category of Skills and Sex, 2021

Category of skills	Number of persons engaged			Salaries & wages paid
	Total	Male	Female	(RM'000)
Total	**239,318**	**142,899**	**96,419**	**14,748,829**
* **High-Skilled**	**134,008**	92,971	41,037	12,302,085
** **Semi-Skilled**	**79,502**	35,785	43,717	1,946,545
*** **Low-Skilled**	**25,808**	14,143	11,665	500,198

Note.

* Includes managers & professionals and technicians & associate professionals

** Includes clerical support workers, service & sales workers, craft & related trades workers and plant & machine operators & assemblers

*** Includes elementary occupations

Table 14: Capital Expenditure and Value of Fixed Asset of Information and Communication Services, 2021

Activities	Capital expenditure (RM'000)	Disposal (RM'000)	Current depreciation (RM'000)	Value of fixed assets (RM'000)
Total	**12,305,200**	**196,283**	**4,129,260**	**106,954,062**
Publishing	182,684	4,289	105,605	1,840,560
Motion picture, video and television programme production, sound recording and music publishing	191,250	7,026	148,472	2,551,517
Programming and broadcasting	2,384,991	5,488	82,291	6,667,854
Telecommunication services	7,279,808	88,401	3,255,034	80,637,171
Computer programming, consultancy and related activities	1,983,410	31,192	454,857	13,870,801
Information services	283,058	59,887	83,001	1,386,160

Table 15: Usage of Computer, Internet and Web Presence by Sector/ Sub-sector, 2015, 2017, 2019 and 2021

Sector/ Sub-sector	Year	Computer usage	Internet usage	Web presence usage
		%	%	%
Total	**2021**	**93.8**	**90.6**	**63.3**
	2019	86.2	85.2	53.9
	2017	78.9	73.3	37.8
	2015	73.5	61.5	28.4
Agriculture	**2021**	**88.1**	**82.0**	**49.0**
	2019	78.8	72.0	47.1
	2017	73.4	61.2	14.2
	2015	69.2	49.4	8.5
Mining and Quarrying	**2021**	**92.4**	**88.8**	**51.8**
	2019	91.5	81.7	34.8
	2017	89.6	78.6	28.8
	2015	88.3	75.5	25.0
Manufacturing	**2021**	**94.5**	**94.3**	**71.7**
	2019	93.8	92.3	59.9
	2017	92.9	89.7	26.5
	2015	91.8	88.1	16.6
Construction	**2021**	**96.5**	**94.6**	**63.0**
	2019	93.1	92.2	38.9
	2017	88.9	85.6	29.5
	2015	73.4	67.7	12.2
Services	**2021**	**93.5**	**89.9**	**62.9**
	2019	85.3	84.4	55.0
	2017	77.6	71.9	39.4
	2015	72.4	59.8	30.2
Utility	**2021**	**97.4**	**97.3**	**64.2**
	2019	96.6	96.5	51.2
	2017	81.1	77.9	19.1
	2015	78.7	71.5	17.3
Wholesale and Retail Trade	**2021**	**95.3**	**94.1**	**67.3**
	2019	92.1	91.8	63.4
	2017	89.4	82.2	50.2
	2015	87.0	74.3	46.2
Transportation and Storage	**2021**	**90.6**	**77.6**	**59.8**
	2019	69.1	73.8	50.0
	2017	46.4	51.0	24.6
	2015	33.7	33.5	22.2
Accommodation	**2021**	**99.1**	**99.1**	**90.2**
	2019	98.1	97.9	89.8
	2017	94.0	88.2	62.0
	2015	90.9	76.1	28.6
Food and Beverages	**2021**	**85.0**	**75.9**	**38.4**
	2019	57.2	52.6	28.6
	2017	44.9	37.4	12.5
	2015	41.3	20.2	6.8
Information and Communication	**2021**	**100.0**	**100.0**	**94.1**
	2019	100.0	100.0	93.9
	2017	100.0	100.0	91.2
	2015	100.0	100.0	89.7

Table 15: Usage of Computer, Internet and Web Presence by Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sector/ Sub-sector	Year	Computer usage	Internet usage	Web presence usage
		%	%	%
Financial and Insurance/Takaful	**2021**	**100.0**	**100.0**	**66.0**
	2019	100.0	100.0	57.7
	2017	100.0	100.0	30.0
	2015	100.0	100.0	26.2
Real Estate	**2021**	**100.0**	**100.0**	**66.6**
	2019	99.9	99.9	51.0
	2017	99.9	99.9	17.5
	2015	99.8	99.7	12.3
Professional, Scientific and Technical	**2021**	**99.9**	**99.6**	**77.3**
	2019	99.8	99.5	65.4
	2017	99.0	98.3	48.7
	2015	98.5	93.8	17.5
Administrative and Support Service	**2021**	**99.1**	**98.5**	**63.7**
	2019	98.2	97.7	58.3
	2017	87.7	82.6	27.6
	2015	84.9	75.2	11.5
Education	**2021**	**98.0**	**97.9**	**67.3**
	2019	96.5	94.2	64.0
	2017	90.4	84.6	45.9
	2015	86.8	74.4	18.0
Human Health and Social Work	**2021**	**98.0**	**95.5**	**64.2**
	2019	92.7	91.4	49.5
	2017	86.0	82.2	29.6
	2015	82.8	68.4	12.7
Arts, Entertainment and Recreation	**2021**	**94.7**	**94.7**	**63.4**
	2019	93.1	92.4	62.9
	2017	91.1	85.3	37.8
	2015	81.7	76.0	15.1
Other Services	**2021**	**88.0**	**87.4**	**72.6**
	2019	70.6	68.4	36.4
	2017	47.5	44.2	14.3
	2015	38.7	23.5	6.2

Table 16: Usage of Computer, Internet and Web Presence by State, 2015, 2017, 2019 and 2021

States	Year	Computer usage	Internet usage	Web presence usage
		%	%	%
MALAYSIA	**2021**	**93.8**	**90.6**	**63.3**
	2019	86.2	85.2	53.9
	2017	78.9	73.3	37.8
	2015	73.5	61.7	28.5
Johor	**2021**	**95.8**	**92.2**	**73.7**
	2019	82.7	83.1	45.7
	2017	75.3	70.6	33.4
	2015	74.7	60.6	24.1
Kedah	**2021**	**86.7**	**81.6**	**46.7**
	2019	74.2	72.5	29.7
	2017	63.7	49.3	20.1
	2015	59.3	45.6	17.8
Kelantan	**2021**	**86.2**	**80.1**	**41.1**
	2019	67.4	67.3	37.1
	2017	58.4	49.1	21.4
	2015	46.5	32.1	11.5
Melaka	**2021**	**96.3**	**95.5**	**73.0**
	2019	92.6	94.8	69.5
	2017	74.2	65.9	38.5
	2015	73.6	64.8	35.9
Negeri Sembilan	**2021**	**90.3**	**82.6**	**54.4**
	2019	76.3	72.0	25.1
	2017	60.9	51.8	24.7
	2015	50.4	38.8	14.9
Pahang	**2021**	**91.7**	**88.3**	**53.6**
	2019	73.5	66.8	21.8
	2017	65.7	55.9	21.0
	2015	64.8	47.2	18.9
Perak	**2021**	**90.6**	**84.8**	**54.6**
	2019	78.1	78.7	28.7
	2017	69.5	68.4	21.2
	2015	64.9	48.9	19.0
Perlis	**2021**	**86.8**	**82.4**	**46.5**
	2019	62.0	54.7	28.7
	2017	53.4	45.0	20.2
	2015	52.7	42.0	16.9
Pulau Pinang	**2021**	**99.2**	**98.2**	**74.0**
	2019	96.9	96.6	66.4
	2017	89.0	83.4	40.6
	2015	87.0	80.4	34.9
Sabah	**2021**	**85.1**	**75.3**	**34.5**
	2019	67.5	59.6	21.4
	2017	64.8	50.0	20.3
	2015	58.5	43.4	17.1

Table 16: Usage of Computer, Internet and Web Presence by State, 2015, 2017, 2019 and 2021 (cont'd.)

States	Year	Computer usage	Internet usage	Web presence usage
		%	%	%
Sarawak	**2021**	**82.8**	**75.9**	**36.1**
	2019	69.5	60.5	31.0
	2017	67.2	51.8	21.7
	2015	63.0	49.2	20.7
Selangor	**2021**	**99.7**	**99.5**	**80.1**
	2019	98.9	98.8	79.8
	2017	94.9	92.1	55.2
	2015	87.9	78.5	43.1
Terengganu	**2021**	**85.3**	**81.5**	**42.0**
	2019	66.3	68.5	38.3
	2017	57.1	59.4	20.2
	2015	51.0	36.8	13.7
W.P. Kuala Lumpur	**2021**	**100.0**	**99.7**	**78.4**
	2019	98.8	98.8	75.9
	2017	91.9	91.3	56.0
	2015	90.7	82.5	40.7
W.P. Labuan	**2021**	**90.3**	**87.8**	**48.4**
	2019	76.9	73.1	36.1
	2017	64.7	53.8	25.1
	2015	63.9	53.1	24.4
W.P. Putrajaya	**2021**	**100.0**	**100.0**	**74.0**
	2019	99.9	99.9	55.3
	2017	84.7	84.1	44.8
	2015	83.9	76.9	36.3

Table 17: Type of Web Presence Owned by Sector/ Sub-sector, 2015, 2017, 2019 and 2021

Sector/ Sub-sector	Year	Website owned by establishment	Presence on another entity's website	Social media	E-Marketplace
		%	%	%	%
Total	**2021**	**47.7**	**17.5**	**69.9**	**17.9**
	2019	42.0	11.6	59.9	15.0
	2017	67.9	18.8	53.2	-
	2015	-	-	-	-
Agriculture	**2021**	**46.9**	**22.1**	**72.2**	**5.1**
	2019	39.5	13.6	55.4	4.7
	2017	67.9	22.0	29.7	-
	2015	-	-	-	-
Mining and Quarrying	**2021**	**42.1**	**36.2**	**53.2**	**1.2**
	2019	37.9	34.8	46.1	0.0
	2017	33.4	11.9	12.9	-
	2015	-	-	-	-
Manufacturing	**2021**	**56.0**	**19.6**	**83.2**	**12.2**
	2019	48.7	8.6	72.8	9.4
	2017	67.5	3.6	33.5	-
	2015	-	-	-	-
Construction	**2021**	**39.4**	**17.3**	**55.3**	**5.0**
	2019	29.3	5.4	47.5	1.6
	2017	31.3	14.9	19.5	-
	2015	-	-	-	-
Services	**2021**	**47.9**	**17.3**	**70.5**	**20.0**
	2019	42.8	12.3	60.2	16.9
	2017	68.6	19.8	55.0	-
	2015	-	-	-	-
Utility	**2021**	**35.2**	**8.9**	**93.5**	**1.7**
	2019	26.3	3.9	84.1	0.1
	2017	86.8	11.6	14.9	-
	2015	-	-	-	-
Wholesale and Retail Trade	**2021**	**50.5**	**16.4**	**72.5**	**25.7**
	2019	47.2	12.6	64.0	23.4
	2017	72.2	20.7	56.2	-
	2015	-	-	-	-
Transportation and Storage	**2021**	**53.3**	**26.3**	**50.6**	**22.6**
	2019	42.5	17.0	44.2	22.3
	2017	55.8	30.5	24.2	-
	2015	-	-	-	-
Accommodation	**2021**	**67.2**	**31.9**	**81.0**	**59.3**
	2019	56.1	26.9	66.7	54.5
	2017	77.9	28.5	52.2	-
	2015	-	-	-	-
Food and Beverages	**2021**	**22.1**	**13.3**	**90.9**	**14.6**
	2019	20.4	12.0	71.7	11.6
	2017	46.4	15.9	74.0	-
	2015	-	-	-	-

Table 17: Type of Web Presence Owned by Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sector/ Sub-sector	Year	Website owned by establishment	Presence on another entity's website	Social media	E-Marketplace
		%	%	%	%
Information and Communication	**2021**	**82.4**	**23.4**	**93.2**	**10.6**
	2019	76.8	13.0	85.6	9.6
	2017	72.1	11.4	23.2	-
	2015	-	-	-	-
Financial and Insurance/Takaful	**2021**	**43.3**	**17.2**	**65.7**	**9.7**
	2019	41.6	15.0	38.1	3.6
	2017	67.1	14.0	36.3	-
	2015	-	-	-	-
Real Estate	**2021**	**25.7**	**23.5**	**67.3**	**14.7**
	2019	21.6	20.3	44.8	11.0
	2017	93.5	5.8	36.3	-
	2015	-	-	-	-
Professional, Scientific and Technical	**2021**	**56.7**	**10.3**	**59.5**	**10.1**
	2019	49.1	6.0	53.8	7.0
	2017	69.1	5.8	45.6	-
	2015	-	-	-	-
Administrative and Support Service	**2021**	**36.7**	**21.0**	**74.3**	**7.4**
	2019	35.9	12.2	64.7	4.5
	2017	42.8	14.2	54.4	-
	2015	-	-	-	-
Education	**2021**	**42.3**	**12.4**	**72.2**	**1.2**
	2019	36.5	11.1	66.7	0.9
	2017	62.1	9.9	36.3	-
	2015	-	-	-	-
Human Health and Social Work	**2021**	**46.2**	**21.6**	**66.1**	**6.9**
	2019	34.9	13.8	43.8	2.7
	2017	48.3	17.7	64.4	-
	2015	-	-	-	-
Arts, Entertainment and Recreation	**2021**	**58.8**	**9.7**	**77.8**	**13.0**
	2019	55.7	6.9	64.3	11.9
	2017	58.9	9.5	68.0	-
	2015	-	-	-	-
Other Services	**2021**	**50.4**	**13.3**	**55.3**	**10.0**
	2019	43.7	4.7	44.5	7.5
	2017	28.0	12.5	76.5	-
	2015	-	-	-	-

Note.
'-' refers to data not available

Table 18: Type of Computer Network Infrastructure Used by Sector/ Sub-sector, 2015, 2017, 2019 and 2021

Sector/ Sub-sector	Year	Intranet	Extranet	Local area network (LAN)	Wireless local area network (WLAN)	Wide area network (WAN)	Others
		%	%	%	%	%	%
Total	**2021**	**46.6**	**16.7**	**73.4**	**67.6**	**85.1**	**6.1**
	2019	39.7	13.5	66.9	61.0	84.9	4.7
	2017	29.4	12.0	55.1	35.7	30.0	3.8
	2015	24.1	9.5	54.2	-	26.1	7.9
Agriculture	**2021**	**35.6**	**9.6**	**71.1**	**48.1**	**45.1**	**40.1**
	2019	26.2	2.9	63.2	41.6	37.6	39.8
	2017	23.5	4.9	56.2	21.1	26.8	4.5
	2015	23.2	4.5	54.2	-	26.4	10.8
Mining and Quarrying	**2021**	**43.6**	**20.7**	**83.7**	**63.2**	**55.2**	**12.1**
	2019	41.2	12.2	77.6	60.9	53.8	1.1
	2017	29.3	8.5	62.1	16.2	35.1	6.8
	2015	28.9	7.7	57.8	-	35.5	7.5
Manufacturing	**2021**	**68.3**	**50.2**	**81.8**	**60.6**	**47.2**	**12.1**
	2019	65.1	46.6	72.9	50.7	46.2	4.2
	2017	47.1	37.6	64.7	18.1	23.9	5.7
	2015	46.1	36.0	61.8	-	22.6	8.8
Construction	**2021**	**39.6**	**11.0**	**61.3**	**56.2**	**81.4**	**4.7**
	2019	39.3	6.9	55.0	54.4	80.3	4.3
	2017	19.4	3.2	52.1	27.5	35.0	4.0
	2015	16.8	2.6	50.8	-	34.1	11.8
Services	**2021**	**45.9**	**14.8**	**74.2**	**69.7**	**89.0**	**5.6**
	2019	38.2	12.0	67.7	62.6	88.9	4.2
	2017	27.8	9.6	54.1	38.0	30.6	3.6
	2015	22.5	7.6	53.7	-	26.0	7.5
Utility	**2021**	**48.9**	**18.5**	**58.2**	**68.7**	**97.9**	**4.8**
	2019	41.5	9.8	54.8	64.8	97.6	4.6
	2017	29.0	9.5	51.4	29.4	39.2	1.1
	2015	26.4	8.0	50.8	-	36.6	11.9
Wholesale and Retail Trade	**2021**	**43.3**	**12.4**	**75.0**	**72.1**	**96.6**	**4.3**
	2019	34.8	11.7	67.6	62.9	96.4	4.2
	2017	24.9	10.2	50.6	36.6	30.4	2.9
	2015	17.3	9.0	48.8	-	24.6	8.6
Transportation and Storage	**2021**	**68.4**	**15.4**	**70.5**	**72.3**	**98.6**	**6.8**
	2019	67.9	12.7	60.9	68.5	98.4	6.1
	2017	53.2	7.3	51.2	32.8	26.9	7.6
	2015	50.8	4.0	43.5	-	19.9	8.3
Accommodation	**2021**	**41.1**	**20.4**	**73.5**	**65.9**	**64.8**	**10.2**
	2019	35.8	19.0	69.8	64.2	61.3	1.3
	2017	27.5	13.5	65.5	38.8	37.7	1.9
	2015	16.3	6.5	60.2	-	35.9	7.9
Food and Beverages	**2021**	**36.3**	**16.6**	**81.9**	**56.7**	**52.2**	**9.2**
	2019	34.3	12.9	79.0	52.8	45.0	8.4
	2017	29.0	8.6	67.5	42.5	34.0	8.4
	2015	20.6	3.6	68.0	-	32.0	3.0

Table 18: Type of Computer Network Infrastructure Used by Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sector/ Sub-sector	Year	Intranet	Extranet	Local area network (LAN)	Wireless local area network (WLAN)	Wide area network (WAN)	Others
		%	%	%	%	%	%
Information and Communication	**2021**	**56.4**	**10.5**	**75.5**	**75.5**	**98.8**	**4.7**
	2019	47.7	10.2	69.7	73.9	98.7	0.3
	2017	32.2	7.9	62.4	48.2	32.5	1.3
	2015	29.0	7.2	61.8	-	29.0	4.4
Financial and Insurance/Takaful	**2021**	**79.0**	**30.0**	**80.6**	**60.9**	**91.1**	**3.3**
	2019	77.4	25.3	79.1	56.2	90.7	2.6
	2017	66.7	18.3	78.0	45.1	59.8	3.2
	2015	64.5	18.4	79.3	-	54.4	3.4
Real Estate	**2021**	**40.7**	**9.4**	**82.5**	**64.8**	**84.8**	**8.0**
	2019	35.8	8.3	80.0	57.0	82.2	5.0
	2017	30.2	6.8	88.9	32.2	12.3	1.7
	2015	26.9	2.0	88.1	-	9.2	1.2
Professional, Scientific and Technical	**2021**	**47.5**	**18.9**	**75.7**	**73.0**	**95.5**	**4.6**
	2019	38.0	10.0	67.6	65.0	93.2	4.0
	2017	34.3	8.1	64.0	36.9	30.4	1.4
	2015	31.9	3.1	63.3	-	24.7	6.4
Administrative and Support Service	**2021**	**38.3**	**12.3**	**72.3**	**74.5**	**97.5**	**2.6**
	2019	35.5	10.7	65.1	65.1	97.2	2.5
	2017	29.5	8.6	57.2	41.5	28.0	4.9
	2015	24.6	3.8	56.9	-	25.6	8.3
Education	**2021**	**35.8**	**24.9**	**70.4**	**60.1**	**79.0**	**0.6**
	2019	31.8	16.6	63.1	53.9	77.8	0.5
	2017	27.7	7.2	53.4	46.8	32.9	2.7
	2015	27.3	4.0	49.5	-	26.0	9.1
Human Health and Social Work	**2021**	**38.2**	**16.4**	**70.6**	**89.6**	**82.7**	**10.4**
	2019	28.8	8.5	62.3	85.8	81.2	0.2
	2017	26.3	7.8	54.8	46.3	30.2	3.7
	2015	25.9	5.8	52.6	-	29.8	8.8
Arts, Entertainment and Recreation	**2021**	**38.3**	**8.8**	**75.2**	**69.6**	**69.9**	**2.4**
	2019	36.8	7.4	67.4	64.7	67.5	0.8
	2017	28.2	6.9	53.0	45.7	25.4	3.5
	2015	27.5	4.3	49.6	-	23.2	9.1
Other Services	**2021**	**34.9**	**16.3**	**46.0**	**74.1**	**91.4**	**8.6**
	2019	25.8	7.9	42.6	66.0	90.2	2.8
	2017	22.1	6.6	42.2	45.7	30.7	5.5
	2015	19.3	4.5	42.0	-	36.9	8.4

Note.
'-' refers to data not available

Table 19: Type of Internet Access by Sector/ Sub-sector, 2015, 2017, 2019 and 2021

Sector/ Sub-sector	Year	Fixed Broadband	Mobile Broadband	Both types of broadband
		%	%	%
Total	**2021**	**92.7**	**75.4**	**68.0**
	2019	83.7	70.8	60.3
	2017	80.5	37.0	-
	2015	74.8	28.5	-
Agriculture	**2021**	**93.1**	**70.1**	**63.1**
	2019	92.6	60.9	53.3
	2017	75.1	36.0	-
	2015	78.4	28.0	-
Mining and Quarrying	**2021**	**97.5**	**46.6**	**44.1**
	2019	87.1	39.5	36.0
	2017	78.8	36.6	-
	2015	79.4	30.5	-
Manufacturing	**2021**	**92.0**	**74.9**	**66.9**
	2019	85.1	66.3	58.6
	2017	76.1	55.7	-
	2015	72.6	54.4	-
Construction	**2021**	**99.7**	**73.8**	**73.5**
	2019	87.2	73.3	63.4
	2017	80.0	48.0	-
	2015	70.1	36.3	-
Services	**2021**	**91.8**	**75.7**	**67.5**
	2019	83.1	71.1	60.3
	2017	81.0	34.7	-
	2015	75.2	25.8	-
Utility	**2021**	**90.6**	**64.1**	**54.7**
	2019	89.0	60.7	46.1
	2017	85.1	22.8	-
	2015	82.2	27.2	-
Wholesale and Retail Trade	**2021**	**89.4**	**71.1**	**60.5**
	2019	80.1	70.3	58.9
	2017	79.9	34.3	-
	2015	71.1	25.7	-
Transportation and Storage	**2021**	**90.5**	**86.4**	**76.9**
	2019	87.4	79.3	68.2
	2017	77.1	40.3	-
	2015	75.9	23.6	-
Accommodation	**2021**	**98.0**	**68.0**	**66.0**
	2019	97.8	66.6	46.0
	2017	96.5	65.5	-
	2015	86.3	22.3	-
Food and Beverages	**2021**	**99.3**	**85.9**	**85.2**
	2019	84.2	83.7	83.7
	2017	87.8	40.0	-
	2015	87.1	30.0	-

Table 19: Type of Internet Access by Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sector/ Sub-sector	Year	Fixed Broadband	Mobile Broadband	Both types of broadband
		%	%	%
Information and Communication	**2021**	**100.0**	**86.8**	**86.8**
	2019	94.7	82.9	79.5
	2017	84.2	25.4	-
	2015	81.1	30.3	-
Financial and Insurance/Takaful	**2021**	**96.8**	**60.9**	**57.6**
	2019	95.2	58.4	53.3
	2017	93.8	55.5	-
	2015	93.5	46.4	-
Real Estate	**2021**	**96.5**	**69.1**	**65.6**
	2019	90.8	67.2	61.2
	2017	92.9	13.3	-
	2015	92.0	8.0	-
Professional, Scientific and Technical	**2021**	**92.3**	**75.6**	**67.9**
	2019	87.7	66.6	61.1
	2017	86.9	25.3	-
	2015	79.6	20.3	-
Administrative and Support Service	**2021**	**99.8**	**95.1**	**95.0**
	2019	84.0	71.4	94.6
	2017	80.5	23.4	-
	2015	78.5	24.8	-
Education	**2021**	**91.2**	**88.0**	**79.2**
	2019	84.8	83.0	73.0
	2017	76.2	34.2	-
	2015	77.1	25.1	-
Human Health and Social Work	**2021**	**95.4**	**66.1**	**61.5**
	2019	88.8	58.2	54.1
	2017	77.7	36.4	-
	2015	76.7	26.8	-
Arts, Entertainment and Recreation	**2021**	**99.4**	**74.8**	**74.2**
	2019	93.7	66.6	64.3
	2017	85.7	24.0	-
	2015	84.1	19.7	-
Other Services	**2021**	**81.5**	**76.0**	**56.8**
	2019	72.2	64.3	54.4
	2017	67.5	37.2	-
	2015	66.7	35.6	-

Note.
'-' refers to data not available

Table 20: Purpose of Internet Usage by Sector/ Sub-sector, 2015, 2017, 2019 and 2021

Sector/ Sub-sector	Year	Sending or receiving e-mail	Telephoning over the internet	Posting information or instant messaging	Getting information about goods or services
		%	%	%	%
Total	**2021**	**95.4**	**73.4**	**79.3**	**79.7**
	2019	95.1	69.5	75.3	75.5
	2017	92.1	25.8	65.6	67.3
	2015	70.6	18.6	36.6	38.9
Agriculture	**2021**	**96.6**	**74.7**	**69.3**	**73.3**
	2019	96.5	70.7	62.7	70.8
	2017	89.8	18.1	51.4	49.5
	2015	89.7	13.5	40.1	37.3
Mining and Quarrying	**2021**	**94.4**	**57.3**	**80.4**	**62.2**
	2019	93.9	55.0	78.6	57.3
	2017	93.8	18.6	45.6	47.6
	2015	93.5	14.2	45.2	43.4
Manufacturing	**2021**	**99.0**	**71.2**	**79.8**	**80.7**
	2019	98.0	65.2	77.1	75.3
	2017	95.2	24.8	51.3	67.5
	2015	93.6	12.3	47.0	66.1
Construction	**2021**	**92.0**	**67.1**	**75.9**	**77.2**
	2019	91.4	64.5	74.3	72.7
	2017	91.3	28.1	56.7	57.8
	2015	90.0	18.6	42.2	38.9
Services	**2021**	**95.5**	**74.4**	**79.7**	**80.0**
	2019	95.3	70.3	75.5	75.9
	2017	91.8	26.0	67.6	67.8
	2015	67.2	19.2	35.3	36.5
Utility	**2021**	**98.0**	**54.6**	**72.5**	**72.8**
	2019	97.8	50.9	67.7	69.0
	2017	95.2	28.2	53.2	61.9
	2015	94.1	25.8	45.6	45.7
Wholesale and Retail Trade	**2021**	**95.6**	**73.4**	**81.7**	**83.3**
	2019	95.1	70.6	77.4	77.6
	2017	94.6	28.6	70.9	72.1
	2015	54.3	20.1	30.7	36.1
Transportation and Storage	**2021**	**99.0**	**85.8**	**88.2**	**78.4**
	2019	98.6	78.9	83.4	74.7
	2017	87.2	19.3	56.7	57.9
	2015	91.5	16.1	29.9	20.2
Accommodation	**2021**	**99.6**	**55.2**	**79.5**	**86.1**
	2019	99.2	44.9	76.3	79.6
	2017	98.7	29.7	75.4	79.2
	2015	93.3	20.3	41.6	36.5
Food and Beverages	**2021**	**92.5**	**74.1**	**74.0**	**73.2**
	2019	90.3	68.0	68.3	66.7
	2017	74.2	17.2	54.5	51.6
	2015	78.9	10.8	22.8	31.7

Table 20: Purpose of Internet Usage by Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sector/ Sub-sector	Year	Sending or receiving e-mail	Telephoning over the internet	Posting information or instant messaging	Getting information about goods or services
		%	%	%	%
Information and Communication	**2021**	**99.1**	**88.3**	**88.4**	**82.4**
	2019	98.7	84.6	84.5	79.8
	2017	92.7	25.6	70.8	61.7
	2015	100.0	29.0	99.9	42.0
Financial and Insurance/Takaful	**2021**	**99.3**	**68.9**	**65.3**	**69.3**
	2019	99.1	62.1	60.2	64.0
	2017	98.1	21.9	59.5	53.4
	2015	99.6	0.1	9.1	13.6
Real Estate	**2021**	**93.1**	**67.4**	**69.3**	**72.2**
	2019	84.8	62.6	63.3	68.2
	2017	93.0	16.4	66.3	59.5
	2015	94.0	4.3	90.1	83.3
Professional, Scientific and Technical	**2021**	**97.6**	**72.6**	**88.1**	**83.1**
	2019	97.1	70.2	83.3	77.7
	2017	89.3	30.0	77.7	70.5
	2015	94.3	29.9	48.7	41.8
Administrative and Support Service	**2021**	**91.1**	**70.7**	**80.3**	**88.6**
	2019	90.4	69.8	77.2	83.4
	2017	90.8	17.7	59.2	65.4
	2015	91.4	31.3	48.1	36.1
Education	**2021**	**94.9**	**96.7**	**72.0**	**76.9**
	2019	94.4	91.8	67.1	68.3
	2017	95.7	28.0	64.2	56.5
	2015	89.5	17.9	37.2	32.3
Human Health and Social Work	**2021**	**93.0**	**72.6**	**79.0**	**77.6**
	2019	83.1	70.7	73.8	72.9
	2017	91.6	18.0	60.2	64.2
	2015	90.2	20.9	43.7	35.1
Arts, Entertainment and Recreation	**2021**	**95.9**	**64.3**	**72.5**	**90.2**
	2019	95.8	59.6	70.1	83.8
	2017	91.0	21.0	60.4	55.3
	2015	70.0	21.5	34.3	24.0
Other Services	**2021**	**93.4**	**64.8**	**69.5**	**74.0**
	2019	93.2	58.5	65.9	71.6
	2017	76.7	22.2	61.6	64.2
	2015	83.8	19.8	37.9	27.7

Table 20: Purpose of Internet Usage by Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sector/ Sub-sector	Year	Getting information from government organisations	Interacting with government organisations	Internet banking	Accessing other financial services
		%	%	%	%
Total	**2021**	**66.6**	**60.9**	**86.6**	**39.4**
	2019	56.6	49.7	80.0	27.3
	2017	40.5	32.5	70.9	14.6
	2015	23.5	16.5	41.3	9.9
Agriculture	**2021**	**63.1**	**71.5**	**83.2**	**35.8**
	2019	61.0	62.4	77.3	30.4
	2017	47.1	33.4	36.1	8.0
	2015	42.6	31.6	34.2	6.8
Mining and Quarrying	**2021**	**59.1**	**52.9**	**74.4**	**44.1**
	2019	44.4	41.9	64.3	41.3
	2017	44.6	26.8	47.9	10.4
	2015	39.5	26.5	43.4	9.9
Manufacturing	**2021**	**61.4**	**57.8**	**88.5**	**34.5**
	2019	53.2	43.4	81.0	19.1
	2017	50.0	31.5	78.4	8.1
	2015	48.4	23.4	76.1	9.8
Construction	**2021**	**70.4**	**58.2**	**85.5**	**35.6**
	2019	59.8	48.0	73.9	23.2
	2017	48.1	37.5	62.6	8.1
	2015	30.8	22.6	44.5	7.1
Services	**2021**	**66.6**	**61.5**	**86.6**	**40.2**
	2019	56.5	50.1	80.6	28.2
	2017	39.2	32.5	70.9	15.5
	2015	20.6	15.4	38.1	10.1
Utility	**2021**	**72.2**	**62.6**	**76.1**	**32.3**
	2019	61.5	51.6	64.3	19.2
	2017	60.4	28.4	55.6	15.0
	2015	41.7	28.0	43.0	11.2
Wholesale and Retail Trade	**2021**	**65.1**	**60.8**	**86.2**	**38.0**
	2019	53.2	48.1	78.5	25.0
	2017	38.6	32.9	73.7	16.2
	2015	14.6	8.7	32.3	9.2
Transportation and Storage	**2021**	**74.7**	**69.0**	**89.5**	**42.9**
	2019	61.8	58.7	84.5	30.9
	2017	45.7	29.3	60.4	8.3
	2015	16.4	14.0	27.8	4.6
Accommodation	**2021**	**79.9**	**73.3**	**88.1**	**24.2**
	2019	70.1	60.8	79.4	12.2
	2017	69.4	58.1	75.7	12.1
	2015	35.5	28.8	51.1	10.1
Food and Beverages	**2021**	**62.7**	**55.1**	**81.2**	**31.0**
	2019	53.0	40.5	75.0	16.5
	2017	19.4	21.4	56.4	9.2
	2015	12.1	9.2	26.2	8.9

Table 20: Purpose of Internet Usage by Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sector/ Sub-sector	Year	Getting information from government organisations	Interacting with government organisations	Internet banking	Accessing other financial services
		%	%	%	%
Information and Communication	**2021**	**70.0**	**68.6**	**86.6**	**45.2**
	2019	61.5	57.3	78.6	34.5
	2017	48.3	34.6	75.7	29.0
	2015	23.4	20.1	61.1	12.7
Financial and Insurance/Takaful	**2021**	**52.0**	**47.8**	**96.2**	**96.7**
	2019	42.7	34.9	93.4	96.0
	2017	49.3	32.7	88.6	87.8
	2015	49.7	47.4	96.2	40.3
Real Estate	**2021**	**69.3**	**69.3**	**96.8**	**41.8**
	2019	60.0	61.0	94.0	27.5
	2017	52.5	46.0	98.9	11.7
	2015	74.9	73.9	90.4	7.5
Professional, Scientific and Technical	**2021**	**80.3**	**74.7**	**87.7**	**42.8**
	2019	67.4	63.9	80.4	30.1
	2017	65.3	56.7	65.4	10.0
	2015	34.5	29.0	46.2	13.0
Administrative and Support Service	**2021**	**78.8**	**72.7**	**86.7**	**46.0**
	2019	69.1	62.0	83.3	34.0
	2017	54.4	37.0	59.6	15.7
	2015	24.4	21.3	39.2	8.8
Education	**2021**	**71.8**	**64.5**	**86.2**	**38.2**
	2019	61.5	54.9	77.5	24.4
	2017	57.0	41.5	67.0	12.4
	2015	29.0	20.4	33.3	8.9
Human Health and Social Work	**2021**	**74.2**	**70.7**	**89.7**	**44.1**
	2019	66.3	63.5	83.7	31.4
	2017	44.0	33.2	56.7	12.5
	2015	31.1	22.5	47.9	8.0
Arts, Entertainment and Recreation	**2021**	**73.3**	**65.7**	**84.4**	**39.6**
	2019	64.9	60.2	76.0	29.0
	2017	37.6	29.8	63.9	8.7
	2015	15.8	11.0	34.8	6.1
Other Services	**2021**	**59.8**	**51.7**	**85.0**	**29.0**
	2019	52.9	43.2	75.6	13.6
	2017	22.3	14.8	63.1	4.9
	2015	27.7	23.4	41.4	4.2

Table 20: Purpose of Internet Usage by Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sector/ Sub-sector	Year	Providing customer services	Delivering products online	Internal or external recruitment	Staff training (e-learning application)	Others
		%	%	%	%	%
Total	**2021**	**43.3**	**29.0**	**49.5**	**19.4**	**11.5**
	2019	35.8	15.3	26.4	15.8	8.4
	2017	29.6	13.5	22.1	8.9	19.0
	2015	10.3	5.7	10.8	2.5	12.5
Agriculture	**2021**	**21.9**	**15.8**	**16.3**	**16.5**	**3.9**
	2019	17.0	11.1	10.0	12.9	3.7
	2017	6.3	2.5	8.1	3.7	22.2
	2015	4.9	1.6	6.8	3.3	20.9
Mining and Quarrying	**2021**	**19.9**	**22.1**	**60.7**	**21.9**	**8.6**
	2019	10.9	11.2	52.7	17.8	7.3
	2017	8.4	8.8	9.3	6.1	21.6
	2015	7.1	7.4	9.5	4.6	19.2
Manufacturing	**2021**	**37.0**	**25.0**	**42.1**	**15.0**	**10.7**
	2019	28.0	11.3	26.9	10.2	6.2
	2017	15.8	13.4	16.6	9.1	19.6
	2015	11.0	14.9	10.2	3.2	12.8
Construction	**2021**	**35.3**	**22.9**	**35.1**	**14.9**	**12.2**
	2019	21.6	10.7	24.3	11.6	9.4
	2017	6.0	9.1	13.1	3.5	25.8
	2015	3.3	1.5	6.5	2.4	24.0
Services	**2021**	**45.0**	**30.2**	**52.1**	**20.3**	**11.6**
	2019	38.0	16.1	26.8	16.6	8.5
	2017	32.0	13.8	23.2	9.0	18.7
	2015	10.7	5.1	11.2	2.4	11.7
Utility	**2021**	**37.0**	**27.1**	**57.0**	**11.8**	**14.9**
	2019	31.2	11.8	19.1	9.2	14.1
	2017	10.7	2.0	11.8	2.9	36.0
	2015	9.5	2.4	8.0	1.5	20.2
Wholesale and Retail Trade	**2021**	**46.4**	**32.1**	**51.1**	**22.7**	**12.2**
	2019	37.9	17.2	27.5	19.8	8.4
	2017	35.8	17.3	26.1	10.3	16.8
	2015	6.6	5.6	7.7	1.3	12.2
Transportation and Storage	**2021**	**48.4**	**23.7**	**48.3**	**23.7**	**10.0**
	2019	45.5	5.2	28.7	20.0	9.3
	2017	20.1	2.3	10.2	3.7	24.7
	2015	5.5	1.8	3.6	1.6	9.6
Accommodation	**2021**	**52.2**	**27.3**	**49.2**	**15.1**	**9.8**
	2019	44.6	8.2	31.9	11.4	6.0
	2017	44.0	13.4	25.2	10.5	17.0
	2015	22.4	14.4	9.4	3.1	16.9
Food and Beverages	**2021**	**37.1**	**30.5**	**49.8**	**12.7**	**8.3**
	2019	29.5	5.7	20.6	9.0	6.2
	2017	19.6	5.5	13.0	3.2	29.4
	2015	10.1	5.9	10.4	1.4	8.5

Table 20: Purpose of Internet Usage by Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sector/ Sub-sector	Year	Providing customer services	Delivering products online	Internal or external recruitment	Staff training (e-learning application)	Others
		%	%	%	%	%
Information and Communication	**2021**	**54.4**	**23.9**	**59.1**	**28.7**	**16.1**
	2019	45.9	32.4	26.9	25.3	12.2
	2017	36.1	10.4	15.4	7.0	14.9
	2015	16.7	7.3	12.2	7.2	13.9
Financial and Insurance/Takaful	**2021**	**61.5**	**30.0**	**54.6**	**24.9**	**13.0**
	2019	58.8	19.0	30.4	20.9	10.5
	2017	50.9	5.4	27.0	19.1	26.3
	2015	76.3	4.7	32.9	23.3	0.9
Real Estate	**2021**	**27.8**	**31.2**	**42.6**	**5.6**	**9.6**
	2019	23.3	8.6	32.6	2.8	5.3
	2017	17.4	5.0	32.9	2.6	15.8
	2015	6.5	4.3	69.3	0.5	0.4
Professional, Scientific and Technical	**2021**	**50.2**	**30.5**	**54.6**	**18.7**	**13.9**
	2019	44.1	23.2	27.6	16.2	10.1
	2017	43.2	21.0	12.1	15.3	17.0
	2015	13.5	4.1	9.7	3.7	15.3
Administrative and Support Service	**2021**	**44.2**	**31.0**	**50.8**	**18.1**	**11.1**
	2019	39.7	16.6	30.3	14.4	8.1
	2017	17.9	2.8	14.6	10.0	14.3
	2015	12.3	2.9	6.6	2.0	18.3
Education	**2021**	**41.5**	**24.9**	**58.9**	**39.1**	**16.6**
	2019	35.9	22.0	29.7	36.0	12.6
	2017	27.5	10.5	25.8	13.8	20.8
	2015	11.7	4.1	11.2	5.6	13.7
Human Health and Social Work	**2021**	**48.8**	**30.3**	**61.9**	**11.7**	**10.8**
	2019	44.7	14.4	22.5	6.2	9.4
	2017	17.5	7.2	21.4	5.7	21.2
	2015	14.1	2.2	8.3	3.4	15.9
Arts, Entertainment and Recreation	**2021**	**41.0**	**30.8**	**39.4**	**14.1**	**25.8**
	2019	31.2	18.5	12.7	11.8	21.3
	2017	26.1	7.4	21.9	4.6	20.1
	2015	16.5	5.2	4.0	1.4	26.1
Other Services	**2021**	**32.2**	**27.6**	**67.3**	**11.1**	**10.2**
	2019	27.1	9.5	18.5	3.8	7.0
	2017	18.8	2.7	14.4	3.6	19.3
	2015	21.5	2.3	16.9	1.5	11.6

Table 21: Usage of Digital Technology by Sector/ Sub-sector, 2019 and 2021

Sector/ Sub-sector	Year	Website	Social media	Mobile internet and technologies	Cloud computing
		%	%	%	%
Total	**2021**	**53.5**	**67.5**	**68.8**	**56.6**
	2019	48.5	60.0	63.8	46.8
Agriculture	**2021**	**54.1**	**66.5**	**60.4**	**61.1**
	2019	51.8	56.7	54.7	56.8
Mining and Quarrying	**2021**	**52.4**	**51.0**	**28.3**	**65.0**
	2019	19.2	46.1	24.6	60.8
Manufacturing	**2021**	**59.6**	**78.6**	**65.1**	**54.0**
	2019	53.1	73.0	62.7	46.3
Construction	**2021**	**56.6**	**53.4**	**62.1**	**55.3**
	2019	34.9	47.5	55.9	48.8
Services	**2021**	**52.6**	**68.4**	**70.1**	**56.9**
	2019	49.4	60.4	64.9	46.4
Utility	**2021**	**40.9**	**85.2**	**71.0**	**58.2**
	2019	32.2	84.1	66.4	43.5
Wholesale and retail trade	**2021**	**52.0**	**69.7**	**69.3**	**57.8**
	2019	50.4	64.0	65.3	47.1
Transportation and Storage	**2021**	**61.8**	**54.2**	**84.0**	**69.2**
	2019	55.8	44.2	76.1	54.2
Accommodation	**2021**	**49.6**	**76.0**	**58.6**	**51.9**
	2019	42.5	66.7	51.8	43
Food and Beverages	**2021**	**40.1**	**85.0**	**66.3**	**35.0**
	2019	37.4	72.9	61.7	23
Information and Communication	**2021**	**88.3**	**92.9**	**87.2**	**76.2**
	2019	86.9	85.6	82.6	65
Financial and Insurance/Takaful	**2021**	**57.8**	**51.1**	**73.3**	**60.0**
	2019	52.4	38.1	68.4	44.2
Real Estate	**2021**	**43.4**	**54.7**	**71.9**	**53.7**
	2019	38.2	45.1	65.5	44.6
Professional, Scientific and Technical	**2021**	**62.3**	**63.0**	**76.0**	**73.1**
	2019	53.8	53.8	70.3	61.4
Administrative and Support Service	**2021**	**49.8**	**77.0**	**73.2**	**66.0**
	2019	47.2	65.2	67.9	57.1
Education	**2021**	**55.3**	**73.5**	**72.2**	**63.4**
	2019	52.2	66.7	63.4	49.4
Human Health and Social Work	**2021**	**53.5**	**50.5**	**72.6**	**85.6**
	2019	45.7	43.8	68.5	73.3
Art, Entertainment and Recreation	**2021**	**63.9**	**73.4**	**61.2**	**64.3**
	2019	58.6	64.3	53.5	58.8
Other Services	**2021**	**51.0**	**54.0**	**45.8**	**40.9**
	2019	43.7	44.5	41.1	32.5

Table 21: Usage of Digital Technology by Sector/ Sub-sector, 2019 and 2021 (cont'd)

Sector/ Sub-sector	Year	Data analytics	Management software	Online collaborative platforms	Others	None
		%	%	%	%	%
Total	**2021**	**16.7**	**46.7**	**19.1**	**1.7**	**9.6**
	2019	6.3	41.9	11.6	0.5	18.3
Agriculture	**2021**	**13.9**	**45.6**	**24.7**	**0.6**	**18.7**
	2019	9.0	39.5	13.6	0.1	7.4
Mining and Quarrying	**2021**	**11.0**	**45.2**	**38.2**	**0.0**	**2.8**
	2019	3.4	40.5	34.8	0.1	10.2
Manufacturing	**2021**	**15.5**	**52.7**	**20.6**	**0.2**	**9.1**
	2019	4.3	48.4	8.6	0.2	12.3
Construction	**2021**	**15.0**	**41.8**	**14.7**	**0.1**	**12.9**
	2019	2.8	29.1	5.4	0.0	11.2
Services	**2021**	**17.0**	**46.9**	**19.4**	**2.1**	**9.2**
	2019	6.8	42.7	12.3	0.6	19.5
Utility	**2021**	**18.5**	**30.9**	**13.3**	**0.0**	**16.0**
	2019	2.8	26.3	3.9	1.1	5.3
Wholesale and retail trade	**2021**	**15.6**	**50.7**	**20.0**	**3.2**	**12.3**
	2019	4.6	47.1	12.6	0.7	13.4
Transportation and Storage	**2021**	**27.1**	**49.6**	**19.3**	**0.0**	**1.9**
	2019	25.2	42.5	17.0	0.0	27.6
Accommodation	**2021**	**15.9**	**58.5**	**31.5**	**0.6**	**7.5**
	2019	4.2	56.6	26.9	0.3	10.2
Food and Beverages	**2021**	**13.7**	**25.7**	**18.9**	**1.7**	**12.5**
	2019	3.9	20.4	12.0	0.0	72.0
Information and Communication	**2021**	**24.6**	**84.6**	**20.2**	**0.2**	**4.6**
	2019	14.5	76.8	13.0	2.0	3.1
Financial and Insurance/Takaful	**2021**	**10.6**	**45.7**	**22.0**	**0.0**	**3.4**
	2019	5.3	41.6	15.0	0.0	10.8
Real Estate	**2021**	**19.1**	**31.2**	**30.2**	**0.2**	**5.5**
	2019	9.2	21.6	20.3	0.0	14.5
Professional, Scientific and Technical	**2021**	**18.8**	**55.4**	**13.8**	**0.0**	**3.6**
	2019	7.8	49.5	6.0	0.3	7.3
Administrative and Support Service	**2021**	**12.2**	**41.9**	**19.9**	**4.9**	**10.4**
	2019	3.2	36.0	12.2	0.1	11
Education	**2021**	**19.4**	**41.4**	**15.2**	**0.0**	**1.1**
	2019	7.7	36.5	11.1	3.3	16.5
Human Health and Social Work	**2021**	**37.8**	**40.8**	**19.2**	**0.2**	**4.4**
	2019	30.5	34.9	13.8	1.4	8.1
Art, Entertainment and Recreation	**2021**	**20.3**	**57.4**	**13.9**	**1.4**	**4.6**
	2019	10.6	55.8	6.9	0.8	4.5
Other Services	**2021**	**12.2**	**50.5**	**13.7**	**1.9**	**1.8**
	2019	3.7	43.7	4.7	0.7	25.2

Table 22: Income and Expenditure of E-Commerce by Sector/ Sub-sector, 2015, 2017, 2019 and 2021

Sector/ Sub-sector	Year	Income (RM million)	Expenditure (RM million)
Total	**2021**	**1,037,224**	**460,755**
	2019	675,353	301,498
	2017	447,833	228,750
	2015	398,207	195,098
Agriculture	**2021**	**898**	**317**
	2019	603	204
	2017	279	94
	2015	185	80
Mining and Quarrying	**2021**	**8,658**	**2,925**
	2019	8,902	3,039
	2017	7,049	2,564
	2015	6,827	2,204
Manufacturing	**2021**	**553,820**	**325,166**
	2019	354,265	204,168
	2017	287,459	179,478
	2015	275,857	160,584
Construction	**2021**	**873**	**666**
	2019	1,042	762
	2017	422	486
	2015	207	424
Services	**2021**	**472,976**	**131,682**
	2019	310,541	93,325
	2017	152,624	46,127
	2015	115,131	31,808
Utility	**2021**	**12,641**	**2,340**
	2019	5,922	898
	2017	3,470	459
	2015	2,303	254
Wholesale and Retail Trade	**2021**	**217,075**	**67,002**
	2019	160,678	51,430
	2017	79,676	23,497
	2015	62,427	18,195
Transportation and Storage	**2021**	**23,836**	**13,316**
	2019	41,728	18,007
	2017	25,287	9,685
	2015	21,952	6,889
Accommodation	**2021**	**4,185**	**1,490**
	2019	11,099	5,209
	2017	7,552	4,118
	2015	5,924	3,546
Food and Beverages	**2021**	**8,795**	**1,954**
	2019	8,422	1,752
	2017	3,213	714
	2015	2,043	604
Information and Communication	**2021**	**68,038**	**26,212**
	2019	29,861	8,766
	2017	13,994	4,484
	2015	8,575	173

Table 22: Income and Expenditure of E-Commerce by Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sector/ Sub-sector	Year	Income (RM million)	Expenditure (RM million)
Financial and Insurance/Takaful	**2021**	**131,734**	**17,047**
	2019	45,822	4,699
	2017	16,083	2,078
	2015	9,268	1,818
Real Estate	**2021**	**57**	**39**
	2019	43	30
	2017	16	14
	2015	9	9
Professional, Scientific and Technical	**2021**	**491**	**59**
	2019	454	58
	2017	243	37
	2015	206	33
Administrative and Support Service	**2021**	**2,715**	**758**
	2019	3,623	1,086
	2017	1,993	495
	2015	1,611	181
Education	**2021**	**692**	**647**
	2019	854	917
	2017	412	360
	2015	317	61
Human Health and Social Work	**2021**	**1,002**	**649**
	2019	247	303
	2017	115	133
	2015	4	17
Arts, Entertainment and Recreation	**2021**	**1,692**	**155**
	2019	1,763	157
	2017	556	49
	2015	483	25
Other Services	**2021**	**23**	**13**
	2019	24	13
	2017	13	5
	2015	8	3

Table 23: Income and Expenditure of E-Commerce by State, 2015, 2017, 2019 and 2021

States	Year	Income (RM million)	Expenditure (RM million)
MALAYSIA	**2021**	**1,037,224**	**460,755**
	2019	675,353	301,498
	2017	447,833	228,750
	2015	398,207	195,098
Johor	**2021**	**86,602**	**43,257**
	2019	71,398	35,147
	2017	49,823	29,589
	2015	46,187	25,127
Kedah	**2021**	**28,205**	**15,109**
	2019	28,167	14,687
	2017	20,288	11,378
	2015	19,281	10,203
Kelantan	**2021**	**5,741**	**4,047**
	2019	5,421	3,901
	2017	2,475	1,519
	2015	1,341	598
Melaka	**2021**	**54,489**	**30,821**
	2019	30,828	22,115
	2017	26,882	19,981
	2015	25,881	19,450
Negeri Sembilan	**2021**	**41,265**	**30,639**
	2019	29,614	22,624
	2017	22,333	15,670
	2015	18,081	12,521
Pahang	**2021**	**30,688**	**19,330**
	2019	16,564	8,447
	2017	13,143	6,238
	2015	11,376	4,729
Perak	**2021**	**29,497**	**16,341**
	2019	17,626	7,314
	2017	12,626	5,251
	2015	11,668	4,864
Perlis	**2021**	**1,332**	**763**
	2019	1,086	625
	2017	813	405
	2015	640	264
Pulau Pinang	**2021**	**89,375**	**54,662**
	2019	58,219	27,807
	2017	46,556	22,804
	2015	43,763	20,206
Sabah	**2021**	**20,387**	**9,549**
	2019	20,294	9,423
	2017	14,897	7,461
	2015	11,830	6,763

Table 23: Income and Expenditure of E-Commerce by State, 2015, 2017, 2019 dan 2021 (cont'd.)

States	Year	Income (RM million)	Expenditure (RM million)
Sarawak	**2021**	**35,910**	**30,066**
	2019	25,695	18,939
	2017	23,157	16,656
	2015	22,653	15,737
Selangor	**2021**	**341,356**	**133,176**
	2019	227,231	98,253
	2017	139,004	70,292
	2015	124,736	56,163
Terengganu	**2021**	**25,544**	**13,482**
	2019	19,288	8,285
	2017	15,637	6,231
	2015	15,076	4,685
W.P. Kuala Lumpur	**2021**	**239,203**	**57,619**
	2019	122,196	23,306
	2017	59,115	14,910
	2015	44,749	13,463
W.P. Labuan	**2021**	**7,142**	**1,751**
	2019	1,275	483
	2017	877	291
	2015	765	268
W.P. Putrajaya	**2021**	**488**	**143**
	2019	451	141
	2017	208	74
	2015	179	57

Table 24: Income of E-Commerce by Type of Market and Sector/ Sub-sector, 2015, 2017, 2019 and 2021

Sector/ Sub-sector	Year	Total	Domestic	International
		(RM Million)	(RM Million)	(RM Million)
Total	**2021**	**1,037,224**	**932,685**	**104,539**
	2019	675,353	591,820	83,533
	2017	447,833	399,848	47,985
	2015	398,207	356,887	41,320
Agriculture	**2021**	**898**	**720**	**178**
	2019	603	498	106
	2017	279	181	97
	2015	185	129	56
Mining and Quarrying	**2021**	**8,658**	**6,790**	**1,868**
	2019	8,902	6,728	2,174
	2017	7,049	5,122	1,927
	2015	6,827	4,922	1,906
Manufacturing	**2021**	**553,820**	**514,413**	**39,407**
	2019	354,265	323,683	30,582
	2017	287,459	266,092	21,367
	2015	275,857	255,691	20,166
Construction	**2021**	**873**	**872**	**1**
	2019	1,042	1,040	2
	2017	422	422	0
	2015	207	207	0
Services	**2021**	**472,976**	**409,890**	**63,085**
	2019	310,541	259,871	50,670
	2017	152,624	128,031	24,592
	2015	115,130	95,938	19,192
Utility	**2021**	**12,641**	**12,629**	**12**
	2019	5,922	5,914	8
	2017	3,470	3,470	0
	2015	2,303	2,303	0
Wholesale and Retail Trade	**2021**	**217,075**	**180,058**	**37,017**
	2019	160,678	134,159	26,519
	2017	79,676	68,823	10,853
	2015	62,427	54,719	7,708
Transportation and Storage	**2021**	**23,836**	**16,555**	**7,281**
	2019	41,728	23,224	18,503
	2017	25,287	14,869	10,418
	2015	21,952	13,103	8,849
Accommodation	**2021**	**4,185**	**3,791**	**395**
	2019	11,099	7,713	3,386
	2017	7,552	5,258	2,294
	2015	5,924	3,812	2,112
Food and Beverages	**2021**	**8,795**	**8,785**	**10**
	2019	8,422	8,358	65
	2017	3,213	3,196	17
	2015	2,043	2,032	11
Information and Communication	**2021**	**68,038**	**62,614**	**5,424**
	2019	29,861	29,474	387
	2017	13,994	13,809	185
	2015	8,575	8,517	58

Table 24: Income of E-Commerce by Type of Market and Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sector/ Sub-sector	Year	Total (RM Million)	Domestic (RM Million)	International (RM Million)
Financial and Insurance/Takaful	**2021**	**131,734**	**118,911**	**12,824**
	2019	45,822	44,797	1,025
	2017	16,083	15,510	573
	2015	9,268	8,967	301
Real Estate	**2021**	**57**	**53**	**4**
	2019	43	39	5
	2017	16	14	2
	2015	9	9	0
Professional, Scientific and Technical	**2021**	**491**	**474**	**18**
	2019	454	439	15
	2017	243	233	11
	2015	206	196	9
Administrative and Support Service	**2021**	**2,715**	**2,702**	**13**
	2019	3,623	3,288	336
	2017	1,993	1,890	104
	2015	1,611	1,564	46
Education	**2021**	**692**	**672**	**21**
	2019	854	675	179
	2017	412	359	53
	2015	317	292	25
Human Health and Social Work	**2021**	**1,002**	**992**	**10**
	2019	247	224	23
	2017	115	107	8
	2015	4	3	0
Arts, Entertainment and Recreation	**2021**	**1,692**	**1,634**	**57**
	2019	1,763	1,545	218
	2017	556	482	74
	2015	483	412	71
Other Services	**2021**	**23**	**22**	**1**
	2019	24	22	2
	2017	13	12	2
	2015	8	6	1

Note.
'0' refers to value less than RM500,000

Table 25: Income of E-Commerce by Type of Customer and Sector/ Sub-sector, 2015, 2017, 2019 and 2021

Sector/ Sub-sector	Year	Total	Business to Business	Business to Consumer	Business to Government
		(RM Million)	(RM Million)	(RM Million)	(RM Million)
Total	**2021**	**1,037,224**	**713,125**	**308,940**	**15,160**
	2019	675,353	449,556	193,983	31,814
	2017	447,833	352,196	82,520	13,117
	2015	398,207	320,113	68,847	9,247
Agriculture	**2021**	**898**	**570**	**324**	**5**
	2019	603	361	241	1
	2017	279	167	112	0
	2015	185	103	82	0
Mining and Quarrying	**2021**	**8,658**	**8,642**	**0**	**16**
	2019	8,902	8,886	0	16
	2017	7,049	7,033	0	16
	2015	6,827	6,813	0	14
Manufacturing	**2021**	**553,820**	**524,065**	**24,737**	**5,017**
	2019	354,265	327,848	21,168	5,249
	2017	287,459	268,617	15,439	3,404
	2015	275,857	257,011	18,108	738
Construction	**2021**	**873**	**556**	**42**	**274**
	2019	1,042	584	76	381
	2017	422	386	0	36
	2015	207	207	0	0
Services	**2021**	**472,976**	**179,292**	**283,836**	**9,847**
	2019	310,541	111,877	172,497	26,167
	2017	152,624	75,993	66,970	9,660
	2015	115,131	55,979	50,657	8,495
Utility	**2021**	**12,641**	**12,465**	**143**	**33**
	2019	5,922	5,882	10	30
	2017	3,470	3,461	8	0
	2015	2	2,302	1	0
Wholesale and Retail Trade	**2021**	**217,075**	**94,770**	**116,950**	**5,355**
	2019	160,678	68,934	75,171	16,573
	2017	79,676	53,425	20,348	5,903
	2015	62,427	43,917	12,684	5,826
Transportation and Storage	**2021**	**23,836**	**8,030**	**15,043**	**763**
	2019	41,728	7,985	31,965	1,778
	2017	25,287	5,213	19,179	894
	2015	21,952	3,512	17,627	812
Accommodation	**2021**	**4,185**	**775**	**3,210**	**200**
	2019	11,099	2,087	8,065	947
	2017	7,552	1,688	4,979	885
	2015	5,924	1,603	3,241	1,080
Food and Beverages	**2021**	**8,795**	**708**	**7,962**	**124**
	2019	8,422	1,099	7,012	312
	2017	3,213	490	2,658	65
	2015	2,043	406	1,588	49

Table 25: Income of E-Commerce by Type of Customer and Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sector/ Sub-sector	Year	Total	Business to Business	Business to Consumer	Business to Government
		(RM Million)	(RM Million)	(RM Million)	(RM Million)
Information and Communication	**2021**	**68,038**	**20,331**	**46,304**	**1,402**
	2019	29,861	11,020	17,329	1,512
	2017	13,994	5,187	8,273	534
	2015	8,575	1,473	6,931	171
Financial and Insurance/Takaful	**2021**	**131,734**	**40,195**	**89,857**	**1,682**
	2019	45,822	12,797	28,516	4,509
	2017	16,083	5,470	9,449	1,163
	2015	9,268	2,152	6,706	410
Real Estate	**2021**	**57**	**23**	**33**	**0**
	2019	43	25	18	0
	2017	16	11	5	0
	2015	9	4	5	0
Professional, Scientific and Technical	**2021**	**491**	**295**	**190**	**6**
	2019	454	259	180	15
	2017	243	145	84	14
	2015	206	113	79	14
Administrative and Support Service	**2021**	**2,715**	**1,027**	**1,483**	**205**
	2019	3,623	1,162	2,075	386
	2017	1,993	720	1,101	173
	2015	1,611	462	1,021	128
Education	**2021**	**692**	**91**	**580**	**21**
	2019	854	84	729	41
	2017	412	49	351	12
	2015	317	18	297	3
Human Health and Social Work	**2021**	**1,002**	**343**	**652**	**6**
	2019	247	162	79	6
	2017	115	60	49	6
	2015	4	0	4	0
Arts, Entertainment and Recreation	**2021**	**1,692**	**226**	**1,417**	**48**
	2019	1,763	368	1,339	57
	2017	556	66	481	9
	2015	483	15	468	0
Other Services	**2021**	**23**	**11**	**11**	**1**
	2019	24	13	9	1
	2017	13	7	5	1
	2015	8	3	4	1

Note.
'0' refers to value less than RM500,000

Table 26: Expenditure of E-Commerce by Type of Market and Sector/ Sub-sector, 2015, 2017, 2019 and 2021

Sector/ Sub-sector	Year	Total (RM Million)	Domestic (RM Million)	International (RM Million)
Total	**2021**	**460,755**	**426,796**	**33,959**
	2019	301,498	269,630	31,868
	2017	228,750	202,799	25,951
	2015	195,098	173,963	21,135
Agriculture	**2021**	**317**	**277**	**40**
	2019	204	188	15
	2017	94	90	4
	2015	80	80	0
Mining and Quarrying	**2021**	**2,925**	**2,925**	**0**
	2019	3,039	3,039	0
	2017	2,564	2,564	0
	2015	2,204	2,204	0
Manufacturing	**2021**	**325,166**	**306,236**	**18,930**
	2019	204,168	191,174	12,994
	2017	179,478	168,013	11,466
	2015	160,584	149,387	11,197
Construction	**2021**	**666**	**651**	**15**
	2019	762	734	29
	2017	486	464	22
	2015	424	422	2
Services	**2021**	**131,682**	**116,707**	**14,974**
	2019	93,325	74,496	18,829
	2017	46,127	31,668	14,459
	2015	31,808	21,871	9,937
Utility	**2021**	**2,340**	**2,322**	**18**
	2019	898	891	7
	2017	459	459	0
	2015	254	254	0
Wholesale and Retail Trade	**2021**	**67,002**	**58,471**	**8,530**
	2019	51,430	45,556	5,874
	2017	23,497	18,727	4,770
	2015	18,195	14,920	3,275
Transportation and Storage	**2021**	**13,316**	**7,941**	**5,375**
	2019	18,007	8,484	9,523
	2017	9,685	2,045	7,640
	2015	6,889	1,858	5,031
Accommodation	**2021**	**1,490**	**1,061**	**429**
	2019	5,209	3,408	1,801
	2017	4,118	2,673	1,445
	2015	3,546	2,235	1,311
Food and Beverages	**2021**	**1,954**	**1,651**	**303**
	2019	1,752	1,217	535
	2017	714	586	128
	2015	604	488	116
Information and Communication	**2021**	**26,212**	**26,115**	**98**
	2019	8,766	8,289	477
	2017	4,484	4,319	164
	2015	173	90	83

Table 26: Expenditure of E-Commerce by Type of Market and Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sector/ Sub-sector	Year	Total (RM Million)	Domestic (RM Million)	International (RM Million)
Financial and Insurance/Takaful	**2021**	**17,047**	**17,040**	**8**
	2019	4,699	4,456	243
	2017	2,078	1,977	101
	2015	1,818	1,728	91
Real Estate	**2021**	**39**	**38**	**1**
	2019	30	29	1
	2017	14	14	0
	2015	9	9	0
Professional, Scientific and Technical	**2021**	**59**	**55**	**5**
	2019	58	53	5
	2017	37	34	3
	2015	33	31	2
Administrative and Support Service	**2021**	**758**	**634**	**124**
	2019	1,086	804	282
	2017	495	330	165
	2015	181	165	16
Education	**2021**	**647**	**599**	**48**
	2019	917	865	52
	2017	360	329	30
	2015	61	57	4
Human Health and Social Work	**2021**	**649**	**630**	**18**
	2019	303	294	9
	2017	133	130	3
	2015	17	14	3
Arts, Entertainment and Recreation	**2021**	**155**	**138**	**17**
	2019	157	136	20
	2017	49	42	7
	2015	25	20	5
Other Services	**2021**	**13**	**12**	**1**
	2019	13	11	2
	2017	5	4	2
	2015	3	2	0

Note.
'0' refers to value less than RM500,000

Table 27: Expenditure of E-Commerce by Type of Customer and Sector/ Sub-sector, 2015, 2017, 2019 and 2021

Sector/ Sub-sector	Year	Total	Business to Business	Business to Consumer	Business to Government
		(RM Million)	(RM Million)	(RM Million)	(RM Million)
Total	**2021**	**460,755**	**403,084**	**50,719**	**6,952**
	2019	301,498	277,581	14,816	9,100
	2017	228,750	213,147	9,549	6,055
	2015	195,098	183,002	8,656	3,440
Agriculture	**2021**	**317**	**285**	**31**	**0**
	2019	204	191	9	4
	2017	94	92	0	2
	2015	80	71	8	1
Mining and Quarrying	**2021**	**2,925**	**2,803**	**1**	**120**
	2019	3,039	2,750	0	289
	2017	2,564	2,308	0	256
	2015	2,204	2,204	0	0
Manufacturing	**2021**	**325,166**	**284,786**	**36,383**	**3,997**
	2019	204,168	192,312	7,521	4,334
	2017	179,478	168,872	6,828	3,778
	2015	160,584	151,914	6,517	2,153
Construction	**2021**	**666**	**576**	**23**	**67**
	2019	762	635	55	73
	2017	486	463	0	23
	2015	424	422	1	0
Services	**2021**	**131,682**	**114,634**	**14,281**	**2,767**
	2019	93,325	81,693	7,231	4,400
	2017	46,127	41,412	2,720	1,995
	2015	31,808	28,391	2,130	1,286
Utility	**2021**	**2,340**	**2,278**	**57**	**5**
	2019	898	892	2	4
	2017	459	459	0	0
	2015	254	254	0	0
Wholesale and Retail Trade	**2021**	**67,002**	**56,304**	**8,879**	**1,818**
	2019	51,430	46,488	2,026	2,916
	2017	23,497	21,133	977	1,388
	2015	18,195	16,467	728	1,001
Transportation and Storage	**2021**	**13,316**	**11,119**	**1,911**	**286**
	2019	18,007	13,985	3,314	707
	2017	9,685	9,151	251	283
	2015	6,889	6,696	0	194
Accommodation	**2021**	**1,490**	**993**	**371**	**126**
	2019	5,209	3,524	1,465	220
	2017	4,118	2,802	1,251	66
	2015	3,546	2,260	1,246	40
Food and Beverages	**2021**	**1,954**	**1,854**	**94**	**6**
	2019	1,752	1,683	49	19
	2017	714	669	31	14
	2015	604	576	28	0

Table 27: Expenditure of E-Commerce by Type of Customer and Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sector/ Sub-sector	Year	Total	Business to Business	Business to Consumer	Business to Government
		(RM Million)	(RM Million)	(RM Million)	(RM Million)
Information and Communication	**2021**	**26,212**	**25,811**	**278**	**123**
	2019	8,766	8,559	70	138
	2017	4,484	4,432	10	42
	2015	173	166	6	1
Financial and Insurance/Takaful	**2021**	**17,047**	**14,297**	**2,424**	**327**
	2019	4,699	4,328	118	253
	2017	2,078	1,822	117	139
	2015	1,818	1,687	87	45
Real Estate	**2021**	**39**	**34**	**4**	**1**
	2019	30	28	2	0
	2017	14	14	0	0
	2015	9	9	0	0
Professional, Scientific and Technical	**2021**	**59**	**49**	**8**	**3**
	2019	58	50	5	4
	2017	37	34	0	3
	2015	33	30	3	0
Administrative and Support Service	**2021**	**758**	**549**	**171**	**38**
	2019	1,086	897	121	69
	2017	495	411	73	11
	2015	181	148	27	5
Education	**2021**	**647**	**563**	**56**	**29**
	2019	917	839	29	49
	2017	360	320	5	35
	2015	61	55	5	0
Human Health and Social Work	**2021**	**649**	**628**	**16**	**5**
	2019	303	281	11	10
	2017	133	121	3	9
	2015	17	17	0	0
Arts, Entertainment and Recreation	**2021**	**155**	**143**	**10**	**1**
	2019	157	127	19	11
	2017	49	40	3	5
	2015	25	24	1	0
Other Services	**2021**	**13**	**12**	**1**	**0**
	2019	13	13	1	0
	2017	5	5	1	0
	2015	3	3	0	0

Note.
'0' refers to value less than RM500,000

Table 28: Quarterly Income of E-Commerce, 2015, 2017 and 2019 - 2023

Year	Quarter	Income	YoY	QoQ
		(RM million)	%	%
2015		**398,207**	**-**	
2017		**447,833**	**6.0**	
2019		**675,353**	**22.8**	
2020		**896,394**	**32.7**	
	1	195,877	-	-
	2	216,911	-	10.7
	3	238,183	-	9.8
	4	245,423	-	3.0
2021		**1,037,224**	**15.7**	
	1	241,980	23.5	-1.4
	2	254,261	17.2	5.1
	3	265,128	11.3	4.3
	4	275,855	12.4	4.0
2022		**1,099,721**	**6.0**	
	1	264,269	9.2	-4.2
	2	273,783	7.7	3.6
	3	274,604	3.6	0.3
	4	287,064	4.1	4.5
2023				
	1	291,684	10.4	1.6
	2	280,507	2.5	-3.8
	3	289,458	5.4	3.2

Table 29: Percentage of Households with Access to Mobile Phone by State, Type and Strata, Malaysia, 2022

(%)

State	Mobile phone			Feature phone			Smart phone		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**99.3**	**99.6**	**98.2**	**16.2**	**13.5**	**25.4**	**97.3**	**98.4**	**93.7**
Johor	99.5	99.6	99.2	21.1	21.3	20.4	99.0	99.1	98.6
Kedah	99.4	99.6	99.2	21.3	15.7	33.0	96.0	96.9	94.2
Kelantan	99.2	99.4	99.1	25.8	21.5	29.4	94.3	95.8	93.0
Melaka	99.6	99.6	99.6	19.5	19.1	24.3	97.2	97.3	96.1
Negeri Sembilan	99.3	99.7	98.2	12.4	9.4	19.8	97.5	99.1	93.4
Pahang	99.1	99.3	98.9	17.1	16.3	18.1	94.8	95.6	93.9
Pulau Pinang	99.8	99.9	99.5	14.1	14.0	14.7	98.0	98.1	96.9
Perak	99.1	99.1	99.3	19.5	16.8	27.2	95.9	96.1	95.2
Perlis	99.6	99.5	99.7	23.3	23.3	23.2	96.6	96.3	97.0
Selangor	99.7	99.7	99.1	9.1	8.8	16.9	99.2	99.3	96.3
Terengganu	98.0	98.5	97.3	15.9	13.3	20.7	96.9	97.4	95.9
Sabah	99.2	99.6	98.8	20.0	13.9	27.4	96.7	98.2	94.7
Sarawak	97.2	99.8	93.8	21.1	13.8	30.7	93.0	99.1	84.8
W.P. Kuala Lumpur	100.0	100.0	n.a.	7.8	7.8	n.a.	99.8	99.8	n.a.
W.P. Labuan	99.3	99.6	96.8	4.7	3.8	12.9	99.3	99.6	96.8
W.P. Putrajaya	100.0	100.0	n.a.	10.9	10.9	n.a.	100.0	100.0	n.a.

Note.
Mobile phone includes feature phone and smart phone

Table 30: Percentage of Households with Internet Access by State, Type of Service and Strata, Malaysia, 2022

(%)

State	Internet			Mobile broadband			Fixed broadband		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**96.0**	**98.1**	**89.1**	**95.5**	**97.1**	**90.1**	**46.4**	**53.3**	**23.7**
Johor	98.5	98.9	97.3	97.3	97.7	95.9	52.3	55.8	39.4
Kedah	95.8	97.2	92.8	95.4	96.8	92.5	34.3	42.9	16.4
Kelantan	93.9	95.2	92.9	93.0	93.9	92.2	23.7	32.7	16.3
Melaka	96.2	96.4	94.2	95.5	95.7	92.6	55.2	57.1	35.1
Negeri Sembilan	95.9	98.2	90.1	94.4	97.0	88.2	46.8	52.8	32.4
Pahang	94.9	95.8	94.0	92.9	93.1	92.6	31.1	38.9	22.0
Pulau Pinang	99.2	99.3	96.9	96.9	97.0	96.2	54.9	55.6	44.9
Perak	94.4	95.9	90.3	91.3	93.0	86.4	39.5	44.6	25.5
Perlis	94.6	97.3	91.4	94.6	97.3	91.4	31.5	37.7	23.8
Selangor	99.0	99.1	96.3	99.0	99.1	97.1	59.3	59.9	43.7
Terengganu	93.9	95.0	92.1	92.5	94.1	89.5	27.9	29.2	25.6
Sabah	89.6	97.1	80.6	95.1	97.4	92.4	30.6	42.0	16.7
Sarawak	89.8	97.9	79.1	89.1	97.8	77.6	32.2	43.6	17.0
W.P. Kuala Lumpur	99.8	99.8	n.a.	97.1	97.1	n.a.	73.6	73.6	n.a.
W.P. Labuan	99.7	100.0	96.8	93.9	94.3	90.3	41.6	41.5	41.9
W.P. Putrajaya	100.0	100.0	n.a.	99.2	99.2	n.a.	73.7	73.7	n.a.

Note.
Internet includes mobile broadband and fixed broadband

Table 31: Percentage of Households with Access to ICT Services and Equipment by State and Strata, Malaysia, 2022

(%)

State	Computer			Pay TV channel			Television		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**91.3**	**94.0**	**82.4**	**76.9**	**80.8**	**63.9**	**99.2**	**99.5**	**98.4**
Johor	92.4	94.0	86.8	82.8	83.7	79.2	99.6	99.7	99.3
Kedah	86.3	89.3	80.1	57.7	60.5	52.0	99.4	99.7	98.9
Kelantan	87.5	90.3	85.2	57.2	57.1	57.2	99.0	99.5	98.5
Melaka	91.6	91.6	92.2	82.1	82.3	79.9	99.9	100.0	99.2
Negeri Sembilan	85.7	90.2	74.7	77.4	77.9	76.1	99.7	99.7	99.8
Pahang	87.2	91.5	82.2	77.1	78.3	75.7	99.0	99.4	98.6
Pulau Pinang	95.1	95.0	97.2	81.3	82.0	72.4	99.7	99.6	100.0
Perak	90.6	90.1	92.1	76.0	77.9	70.5	99.2	99.7	98.0
Perlis	88.7	90.4	86.6	78.0	81.1	74.1	98.8	98.8	98.8
Selangor	95.7	95.9	90.1	84.8	85.2	76.3	99.8	99.8	99.3
Terengganu	89.4	92.4	84.1	69.9	68.0	73.3	99.8	99.9	99.4
Sabah	83.4	91.7	73.2	66.2	73.0	57.9	97.1	96.8	97.5
Sarawak	87.7	93.5	79.9	63.0	77.2	44.1	97.6	98.3	96.7
W.P. Kuala Lumpur	100.0	100.0	n.a.	96.0	96.0	n.a.	100.0	100.0	n.a.
W.P. Labuan	97.0	97.7	90.3	90.5	90.6	90.3	99.0	98.9	100.0
W.P. Putrajaya	100.0	100.0	n.a.	96.8	96.8	n.a.	100.0	100.0	n.a.

Table 31: Percentage of Households with Access to ICT Services and Equipment by State and Strata, Malaysia, 2022 (cont'd)

(%)

State	Radio			Fixed-line telephone		
	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**99.1**	**99.4**	**98.0**	**27.3**	**30.7**	**15.8**
Johor	99.9	100.0	99.8	30.5	31.9	25.1
Kedah	99.6	99.9	99.1	16.0	18.6	10.7
Kelantan	99.7	99.8	99.6	16.3	20.4	12.9
Melaka	99.6	99.7	98.8	53.4	56.1	25.7
Negeri Sembilan	99.5	99.6	99.5	48.5	57.3	27.1
Pahang	99.7	99.8	99.5	21.8	25.8	17.1
Pulau Pinang	99.9	99.9	100.0	28.6	28.1	35.7
Perak	97.4	97.6	96.8	20.1	20.7	18.2
Perlis	99.2	99.3	99.1	34.6	43.9	23.2
Selangor	99.5	99.6	97.7	29.2	29.2	30.0
Terengganu	99.8	99.8	99.9	23.2	22.0	25.4
Sabah	97.4	98.2	96.3	17.4	26.2	6.6
Sarawak	97.0	98.8	94.7	17.0	24.5	7.0
W.P. Kuala Lumpur	99.8	99.8	n.a.	42.9	42.9	n.a.
W.P. Labuan	99.3	99.6	96.8	36.2	37.4	25.8
W.P. Putrajaya	100.0	100.0	n.a.	54.3	54.3	n.a.

Table 32: Percentage of Individuals Using and Owning Mobile Phone by State and Strata, Malaysia, 2022

(%)

State	Usage			Ownership		
	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**99.1**	**99.4**	**98.3**	**98.2**	**98.9**	**96.1**
Johor	99.4	99.5	99.1	99.6	99.9	98.7
Kedah	98.9	99.1	98.4	98.0	98.6	97.0
Kelantan	99.1	99.7	98.6	96.6	98.5	94.9
Melaka	99.2	99.2	99.6	98.9	99.0	98.0
Negeri Sembilan	99.1	99.8	97.7	97.8	99.1	95.1
Pahang	99.2	99.2	99.1	98.7	99.2	98.2
Pulau Pinang	99.6	99.7	99.0	98.7	98.8	97.9
Perak	98.4	98.7	97.7	97.1	97.8	95.1
Perlis	98.4	98.8	98.0	96.4	97.1	95.6
Selangor	99.6	99.6	98.9	99.3	99.4	98.1
Terengganu	98.8	98.8	98.6	97.5	97.6	97.4
Sabah	99.0	99.3	98.7	95.9	96.2	95.5
Sarawak	97.9	99.0	96.4	96.4	98.9	92.9
W.P. Kuala Lumpur	99.8	99.8	n.a.	99.8	99.8	n.a.
W.P. Labuan	99.9	99.9	99.6	99.1	99.2	98.3
W.P. Putrajaya	99.9	99.9	n.a.	99.7	99.7	n.a.

Table 33: Percentage of Mobile Phone Ownership by State and Sex, Malaysia, 2022

(%)

State	Total	Male	Female
MALAYSIA	**98.2**	**99.1**	**97.2**
Johor	99.6	99.8	99.4
Kedah	98.0	98.6	97.4
Kelantan	96.6	97.6	95.5
Melaka	98.9	99.5	98.3
Negeri Sembilan	97.8	97.9	97.8
Pahang	98.7	99.4	98.0
Pulau Pinang	98.7	99.3	98.1
Perak	97.1	99.2	94.9
Perlis	96.4	96.9	96.0
Selangor	99.3	99.9	98.6
Terengganu	97.5	99.4	95.6
Sabah	95.9	97.4	94.3
Sarawak	96.4	98.4	94.3
W.P. Kuala Lumpur	99.8	99.7	99.9
W.P. Labuan	99.1	99.1	99.2
W.P. Putrajaya	99.7	100.0	99.3

Table 34: Percentage of Individuals Using Computer by State and Strata, Malaysia, 2022

(%)

State	Total	Urban	Rural
MALAYSIA	**80.2**	**85.7**	**63.1**
Johor	83.7	86.9	72.9
Kedah	73.0	76.9	65.5
Kelantan	73.7	81.3	67.4
Melaka	86.0	86.9	77.6
Negeri Sembilan	75.8	81.8	62.7
Pahang	77.6	83.7	70.5
Pulau Pinang	84.8	85.5	78.1
Perak	77.5	80.5	69.1
Perlis	74.4	75.0	73.8
Selangor	91.2	91.6	80.5
Terengganu	80.2	84.1	73.1
Sabah	60.3	73.4	44.6
Sarawak	67.7	78.5	52.9
W.P. Kuala Lumpur	94.9	94.9	n.a.
W.P. Labuan	87.3	88.7	77.3
W.P. Putrajaya	97.0	97.0	n.a.

Table 35: Percentage of Individuals Using Computer by State, Type of ICT Skills and Strata, Malaysia, 2022

(%)

State	Copying or moving a file or folder			Using copy and paste tools to duplicate or move information within a document			Sending an e-mail with attached files		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**97.0**	**97.0**	**96.9**	**96.3**	**96.8**	**94.5**	**89.4**	**89.6**	**88.4**
Johor	96.4	96.2	97.4	94.3	94.3	94.1	92.3	92.3	92.4
Kedah	98.6	98.1	99.8	99.6	99.7	99.2	94.2	94.6	93.1
Kelantan	98.3	97.8	98.8	95.8	92.4	99.1	90.7	91.6	89.7
Melaka	99.5	99.6	98.7	94.9	95.2	91.7	85.2	85.6	81.0
Negeri Sembilan	98.1	98.8	96.0	94.5	96.0	90.4	96.2	98.5	89.5
Pahang	96.8	98.0	95.0	96.6	96.6	96.5	91.0	92.3	89.1
Pulau Pinang	94.6	94.3	98.5	97.0	97.0	97.1	79.2	79.1	80.2
Perak	94.1	94.2	93.6	96.0	98.1	89.4	85.6	86.9	81.4
Perlis	97.7	96.5	99.2	97.0	96.5	97.6	96.6	96.2	97.1
Selangor	96.5	96.6	94.7	96.2	96.1	96.8	90.8	90.9	88.9
Terengganu	98.4	98.5	98.3	94.8	97.8	88.8	78.0	77.5	79.0
Sabah	97.0	97.9	95.3	97.3	98.3	95.4	88.7	85.7	94.6
Sarawak	97.4	97.3	97.5	95.4	98.1	89.9	81.2	81.0	81.5
W.P. Kuala Lumpur	99.6	99.6	n.a.	99.7	99.7	n.a.	96.6	96.6	n.a.
W.P. Labuan	99.0	98.9	99.6	99.5	100.0	95.6	92.1	93.3	83.1
W.P. Putrajaya	98.8	98.8	n.a.	98.9	98.9	n.a.	95.2	95.2	n.a.

Table 35: Percentage of Individuals Using Computer by State, Type of ICT Skills and Strata, Malaysia, 2022 (cont'd)

(%)

State	Using basic arithmetic formulas in a spreadsheet			Connecting and installing new devices			Searching, downloading, installing and configuring software		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**67.1**	**67.9**	**63.7**	**79.2**	**80.0**	**75.7**	**72.5**	**73.2**	**69.9**
Johor	71.8	71.0	75.0	73.9	74.9	69.8	70.6	71.7	66.2
Kedah	72.4	75.7	64.9	82.4	83.3	80.4	78.3	78.4	77.8
Kelantan	52.0	56.0	48.1	74.4	71.9	76.8	70.0	67.2	72.8
Melaka	71.1	71.1	70.9	75.4	75.6	73.2	75.7	76.9	62.3
Negeri Sembilan	75.4	77.0	70.9	75.4	74.8	77.1	75.1	73.3	80.3
Pahang	69.2	73.8	62.8	73.7	73.7	73.6	70.3	73.3	66.0
Pulau Pinang	63.1	63.1	62.5	79.6	79.2	84.3	69.4	69.1	72.0
Perak	53.6	53.2	54.8	79.3	80.3	76.1	63.9	65.0	60.5
Perlis	47.5	51.0	43.2	74.0	76.2	71.3	65.3	67.4	62.6
Selangor	67.4	67.8	56.2	83.7	83.9	77.1	73.6	74.1	58.2
Terengganu	59.1	58.0	61.3	71.9	71.7	72.2	63.5	61.1	68.4
Sabah	72.7	68.7	80.6	79.2	79.5	78.5	73.8	71.6	78.1
Sarawak	61.9	63.4	58.8	77.0	77.6	75.8	71.4	73.0	68.2
W.P. Kuala Lumpur	76.0	76.0	n.a.	85.2	85.2	n.a.	83.5	83.5	n.a.
W.P. Labuan	89.2	90.5	79.2	88.5	90.7	70.8	76.4	76.6	74.7
W.P. Putrajaya	77.4	77.4	n.a.	89.6	89.6	n.a.	87.0	87.0	n.a.

Table 35: Percentage of Individuals Using Computer by State, Type of ICT Skills and Strata, Malaysia, 2022 (cont'd)

(%)

State	Creating electronic presentations using computer software			Transferring files between a computer and other devices			Writing a computer program using a specialised programming language		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**62.9**	**63.2**	**61.5**	**83.1**	**83.6**	**80.9**	**23.5**	**24.5**	**19.2**
Johor	64.2	64.5	63.3	80.9	80.9	80.5	22.7	24.4	15.7
Kedah	60.3	63.5	53.1	86.9	89.5	81.0	21.7	23.9	17.0
Kelantan	63.2	66.0	60.5	86.8	87.9	85.8	24.3	25.3	23.4
Melaka	60.5	61.9	44.6	84.7	84.7	84.4	26.0	26.5	20.3
Negeri Sembilan	74.7	78.3	64.7	84.7	86.2	80.5	26.8	29.3	19.5
Pahang	59.2	63.0	53.9	87.1	86.8	87.5	21.6	23.5	19.1
Pulau Pinang	53.5	53.9	49.4	72.4	72.3	73.0	25.1	24.8	28.1
Perak	47.8	48.6	45.2	71.7	73.1	67.1	23.2	24.8	18.1
Perlis	49.9	49.7	50.1	87.7	83.2	93.3	17.8	23.2	11.1
Selangor	59.4	59.9	45.7	87.5	87.7	80.2	20.7	20.7	20.9
Terengganu	69.0	66.8	73.6	71.1	69.9	73.6	23.9	24.5	22.8
Sabah	74.4	70.8	81.3	84.4	82.0	89.1	24.1	24.4	23.4
Sarawak	65.8	64.1	69.1	74.9	75.2	74.1	18.1	20.3	13.6
W.P. Kuala Lumpur	76.6	76.6	n.a.	92.0	92.0	n.a.	36.6	36.6	n.a.
W.P. Labuan	92.4	91.4	100.0	97.6	98.4	90.6	21.9	22.8	14.1
W.P. Putrajaya	90.3	90.3	n.a.	98.8	98.8	n.a.	35.8	35.8	n.a.

Table 36: Percentage of Youth Using Computer by State, Type of ICT Skills and Strata, Malaysia, 2022

(%)

State	Copying or moving a file or folder			Using copy and paste tools to duplicate or move information within a document			Sending an e-mail with attached files		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**98.8**	**99.3**	**97.4**	**97.5**	**97.6**	**97.2**	**95.9**	**95.8**	**96.3**
Johor	97.9	97.9	97.7	93.8	93.5	94.9	98.8	98.6	99.4
Kedah	98.2	97.4	100.0	99.4	99.6	99.0	98.2	98.0	98.5
Kelantan	99.4	99.2	99.7	96.9	94.4	99.1	99.2	99.1	99.2
Melaka	99.9	100.0	99.1	97.4	98.3	88.8	97.1	97.6	92.6
Negeri Sembilan	99.7	100.0	98.6	96.0	96.8	93.0	98.9	100.0	95.1
Pahang	96.8	99.7	93.4	96.0	96.1	96.0	97.8	99.5	95.9
Pulau Pinang	99.8	99.7	100.0	99.2	99.1	100.0	93.6	94.7	87.2
Perak	99.4	99.5	99.2	97.7	97.9	97.4	94.4	95.7	91.1
Perlis	97.3	96.8	97.8	96.8	97.3	96.4	94.7	94.7	94.7
Selangor	99.8	99.8	100.0	99.4	99.4	100.0	95.6	95.6	94.9
Terengganu	100.0	100.0	100.0	99.2	99.9	98.1	94.5	96.3	91.4
Sabah	96.3	99.8	91.6	98.4	98.2	98.7	94.7	92.2	97.9
Sarawak	99.7	99.6	99.9	96.9	97.7	95.2	92.4	92.0	93.3
W.P. Kuala Lumpur	100.0	100.0	n.a.	100.0	100.0	n.a.	86.2	86.2	n.a.
W.P. Labuan	100.0	100.0	100.0	97.0	100.0	65.9	78.1	80.2	56.1
W.P. Putrajaya	97.6	97.6	n.a.	92.1	92.1	n.a.	70.7	70.7	n.a.

Table 36: Percentage of Youth Using Computer by State, Type of ICT Skills and Strata, Malaysia, 2022 (cont'd)

(%)

State	Using basic arithmetic formulas in a spreadsheet			Connecting and installing new devices			Searching, downloading, installing and configuring software		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**74.6**	**74.0**	**76.2**	**85.8**	**85.6**	**86.6**	**84.4**	**84.9**	**82.8**
Johor	71.6	70.6	75.6	78.6	79.5	75.0	83.0	83.8	79.8
Kedah	87.3	89.7	82.2	95.4	96.4	93.3	88.1	89.9	84.2
Kelantan	75.8	78.5	73.6	83.8	80.7	86.5	80.9	80.8	81.1
Melaka	88.8	89.0	86.4	76.5	75.0	90.7	89.6	90.2	84.1
Negeri Sembilan	80.1	80.9	77.2	81.1	80.8	82.4	86.8	86.2	89.2
Pahang	85.3	88.8	81.4	81.8	82.6	80.8	84.5	86.0	82.8
Pulau Pinang	74.2	75.4	67.6	86.7	86.7	87.0	89.6	89.1	92.4
Perak	60.4	56.3	70.4	86.0	84.3	90.2	79.5	79.1	80.4
Perlis	42.0	42.9	41.0	87.9	86.8	89.2	80.2	85.1	74.7
Selangor	77.5	77.9	43.9	92.0	92.0	91.0	88.4	88.5	84.3
Terengganu	63.8	63.3	64.8	91.3	91.9	90.4	80.9	81.9	79.1
Sabah	75.6	66.8	87.1	90.7	90.2	91.4	78.4	76.4	80.9
Sarawak	70.8	70.9	70.7	88.2	88.4	87.8	92.3	92.0	92.9
W.P. Kuala Lumpur	53.1	53.1	n.a.	68.9	68.9	n.a.	72.1	72.1	n.a.
W.P. Labuan	97.6	99.0	83.0	96.3	96.8	90.8	94.2	100.0	34.1
W.P. Putrajaya	69.7	69.7	n.a.	94.3	94.3	n.a.	75.8	75.8	n.a.

Table 36: Percentage of Youth Using Computer by State, Type of ICT Skills and Strata, Malaysia, 2022 (cont'd)

(%)

State	Creating electronic presentations using computer software			Transferring files between a computer and other devices			Writing a computer program using a specialised programming language		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**76.9**	**76.3**	**78.8**	**87.5**	**88.1**	**85.7**	**31.1**	**30.5**	**32.8**
Johor	69.3	69.4	68.7	81.4	81.8	79.5	28.8	29.7	25.6
Kedah	82.3	84.6	77.7	91.5	91.4	91.7	31.7	33.3	28.5
Kelantan	82.5	83.9	81.2	82.3	84.3	80.6	38.7	40.0	37.5
Melaka	77.1	77.8	71.2	82.8	82.5	85.1	46.8	48.1	34.5
Negeri Sembilan	80.7	80.7	80.6	75.2	76.4	71.1	49.5	51.6	41.9
Pahang	82.4	84.6	79.9	84.9	84.8	85.0	32.7	34.4	30.8
Pulau Pinang	72.4	74.3	61.6	89.3	90.5	82.6	25.4	22.6	41.2
Perak	62.9	60.5	68.6	88.3	88.5	87.8	31.8	32.8	29.2
Perlis	59.6	60.9	58.1	81.8	74.3	90.3	20.8	24.4	16.7
Selangor	75.6	75.9	67.3	95.5	95.7	90.4	28.6	28.1	46.1
Terengganu	92.1	93.5	89.5	92.0	93.2	89.8	27.5	27.6	27.3
Sabah	86.0	83.7	89.1	91.9	91.1	92.9	29.9	25.1	36.2
Sarawak	80.6	79.2	83.5	88.2	89.5	85.7	28.5	25.6	33.9
W.P. Kuala Lumpur	65.6	65.6	n.a.	81.5	81.5	n.a.	13.6	13.6	n.a.
W.P. Labuan	97.1	96.8	100.0	98.5	100.0	83.0	23.2	20.4	51.8
W.P. Putrajaya	94.3	94.3	n.a.	98.9	98.9	n.a.	22.4	22.4	n.a.

Table 37: Percentage of Individuals Using Computer by Type of ICT Skills and Sex, Malaysia, 2022

(%)

Type of ICT Skills	Sex		
	Total	Male	Female
Total	**80.2**	**85.0**	**74.9**
Copying or moving a file or folder	97.0	97.1	96.9
Using copy and paste tools to duplicate or move information within a document	96.3	98.1	94.2
Sending an e-mail with attached files	89.4	91.0	87.5
Using basic arithmetic formulas in a spreadsheet	67.1	70.5	62.8
Connecting and installing new devices	79.2	77.6	81.2
Searching, downloading, installing and configuring software	72.5	76.6	67.5
Creating electronic presentations using computer software	62.9	65.0	60.4
Transferring files between a computer and other devices	83.1	83.2	82.9
Writing a computer program using a specialised programming language	23.5	26.0	20.4

Table 38: Percentage of Individuals Using Computer by Type of ICT Skills and Age Group, Malaysia, 2022

(%)

Type of ICT Skills	Age Group									
	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60+
Total	**73.0**	**91.4**	**91.5**	**92.1**	**90.6**	**88.2**	**84.6**	**78.1**	**69.2**	**46.6**
Copying or moving a file or folder	98.7	98.8	99.0	98.7	98.4	98.2	97.3	97.1	97.0	81.9
Using copy and paste tools to duplicate or move information within a document	96.9	98.0	98.0	97.8	97.0	97.9	97.8	97.4	88.6	87.2
Sending an e-mail with attached files	94.7	96.9	95.7	93.9	92.8	93.6	91.9	91.6	77.5	45.4
Using basic arithmetic formulas in a spreadsheet	68.4	79.3	81.7	78.3	74.2	72.0	50.6	49.6	43.3	31.1
Connecting and installing new devices	87.2	84.8	86.5	86.9	85.7	86.3	84.6	77.3	46.0	32.8
Searching, downloading, installing and configuring software	87.5	82.0	80.8	80.9	78.5	79.6	76.5	46.8	42.5	28.3
Creating electronic presentations using computer software	74.0	79.2	72.8	70.5	69.8	54.0	53.8	53.1	39.2	27.0
Transferring files between a computer and other devices	87.2	87.7	88.6	88.3	85.8	88.0	88.5	87.3	71.7	40.4
Writing a computer program using a specialised programming language	29.0	32.7	22.3	21.0	23.2	22.9	24.2	21.9	16.7	13.6

Table 39: Percentage of Individuals Using the Internet by State and Strata, Malaysia, 2022

(%)

State	Total	Urban	Rural
MALAYSIA	**97.4**	**98.3**	**94.5**
Johor	98.3	99.0	96.3
Kedah	96.5	97.5	94.8
Kelantan	96.3	97.5	95.3
Melaka	97.7	97.8	97.3
Negeri Sembilan	98.0	99.2	95.3
Pahang	96.5	97.5	95.3
Pulau Pinang	98.7	98.9	96.6
Perak	96.1	96.4	95.3
Perlis	95.5	96.2	94.7
Selangor	98.5	98.5	96.7
Terengganu	97.0	97.2	96.7
Sabah	96.8	98.0	95.4
Sarawak	93.9	98.4	87.7
W.P. Kuala Lumpur	99.8	99.8	n.a.
W.P. Labuan	96.6	98.2	85.7
W.P. Putrajaya	99.9	99.9	n.a.

Table 40: Percentage of Individuals Using the Internet by State and Sex, Malaysia, 2022

(%)

State	Total	Male	Female
MALAYSIA	**97.4**	**98.8**	**95.9**
Johor	98.3	98.8	97.9
Kedah	96.5	98.0	95.1
Kelantan	96.3	97.8	94.8
Melaka	97.7	98.6	96.8
Negeri Sembilan	98.0	98.2	97.8
Pahang	96.5	98.1	94.7
Pulau Pinang	98.7	99.6	97.9
Perak	96.1	99.4	92.9
Perlis	95.5	100.0	91.3
Selangor	98.5	99.7	97.0
Terengganu	97.0	99.3	94.5
Sabah	96.8	98.4	95.1
Sarawak	93.9	96.9	90.7
W.P. Kuala Lumpur	99.8	99.8	99.8
W.P. Labuan	96.6	96.3	96.9
W.P. Putrajaya	99.9	100.0	99.8

Table 41: Percentage of Individuals Using the Internet by Strata and Sex, Malaysia, 2022

(%)

Sex	Total	Urban	Rural
Total	**97.4**	**98.3**	**94.5**
Male	98.8	99.4	97.0
Female	95.9	97.1	91.9

Table 42: Percentage of Individuals Using the Internet by State, Type of Portable Devices Used and Strata, Malaysia, 2022

(%)

State	Mobile Phone			Tablet			Portable computer			Other portable devices		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**98.8**	**98.8**	**98.6**	**26.2**	**28.9**	**17.7**	**38.4**	**42.4**	**25.4**	**13.1**	**15.3**	**6.2**
Johor	99.2	99.2	99.4	23.2	23.0	23.8	44.6	45.8	40.0	14.2	14.8	12.4
Kedah	99.6	99.7	99.5	19.8	24.0	11.7	29.5	34.7	19.2	5.3	6.5	2.9
Kelantan	97.5	97.2	97.8	20.8	27.4	15.2	30.8	35.7	26.7	2.3	3.3	1.4
Melaka	98.7	98.6	99.7	21.5	22.7	10.1	30.7	31.7	20.0	5.5	5.9	1.9
Negeri Sembilan	99.7	99.9	99.3	21.2	24.1	14.7	31.0	35.4	20.8	1.8	2.1	1.2
Pahang	98.6	99.4	97.6	22.8	28.7	15.7	32.0	37.4	25.6	2.7	3.9	1.3
Pulau Pinang	99.4	99.4	99.9	31.8	32.2	27.6	43.2	44.0	35.6	5.7	5.9	3.5
Perak	98.9	99.3	97.9	16.9	16.8	17.3	36.5	37.7	33.1	22.8	24.9	16.9
Perlis	91.0	92.6	89.0	33.8	38.2	28.3	26.3	30.9	20.7	18.4	19.9	16.5
Selangor	99.3	99.4	97.9	37.3	37.5	30.2	49.9	50.2	41.9	25.2	25.4	21.3
Terengganu	99.4	99.6	99.0	28.1	26.0	31.9	24.2	25.0	22.8	3.0	3.4	2.3
Sabah	99.3	99.2	99.5	16.5	18.6	14.0	24.8	29.9	18.6	10.5	14.7	5.4
Sarawak	99.1	99.1	99.1	19.1	21.4	15.6	29.4	37.0	17.8	6.2	7.6	4.1
W.P. Kuala Lumpur	94.8	94.8	n.a.	37.7	37.7	n.a.	49.7	49.7	n.a.	15.1	15.1	n.a.
W.P. Labuan	92.2	94.2	76.1	34.7	34.7	34.3	69.5	76.7	12.6	9.7	10.4	3.9
W.P. Putrajaya	97.9	97.9	n.a.	56.4	56.4	n.a.	74.8	74.8	n.a.	21.6	21.6	n.a.

Table 43: Percentage of Individuals Using the Internet by State and Type of Activity, Malaysia, 2022

(%)

State	Access to Information		Professional		
	Finding information about goods/ services	Reading newspaper/ magazines online	Applying for jobs	Participating in professional networks	Work from home
MALAYSIA	**92.5**	**68.5**	**35.8**	**11.7**	**15.9**
Johor	97.6	67.1	34.3	9.3	8.3
Kedah	93.6	71.0	31.4	4.9	3.7
Kelantan	90.3	67.3	38.5	2.5	4.7
Melaka	94.5	71.3	34.3	4.6	4.2
Negeri Sembilan	91.0	66.7	40.2	9.8	5.5
Pahang	90.6	69.8	35.8	3.3	5.0
Pulau Pinang	96.0	74.6	32.5	11.6	20.0
Perak	95.8	72.4	34.7	2.1	18.6
Perlis	78.1	56.0	29.3	3.4	5.8
Selangor	98.2	71.9	32.6	20.2	28.6
Terengganu	97.6	70.7	35.4	24.3	19.1
Sabah	78.1	55.7	45.4	10.3	13.2
Sarawak	79.8	56.2	39.2	11.2	17.8
W.P. Kuala Lumpur	93.5	80.0	36.3	19.6	22.0
W.P. Labuan	95.0	82.4	36.3	7.1	14.9
W.P. Putrajaya	96.6	89.4	29.9	15.9	27.3

Table 43: Percentage of Individuals Using the Internet by State and Type of Activity, Malaysia, 2022 (cont'd)

(%)

State	Communication						
	Participating in social networks	Sending e-mail	Telephoning over the internet	Uploading content to a website	Managing personal homepage	Managing blog	Accessing online discussion
MALAYSIA	**99.2**	**81.7**	**85.2**	**17.6**	**10.3**	**5.5**	**39.3**
Johor	99.2	80.5	84.3	18.7	3.8	5.7	34.7
Kedah	99.2	85.6	87.6	16.1	0.4	0.4	22.2
Kelantan	99.4	79.1	89.5	26.0	5.8	3.0	36.2
Melaka	99.1	83.0	87.4	18.2	2.1	2.1	47.1
Negeri Sembilan	99.4	77.7	87.3	20.6	7.2	7.4	42.8
Pahang	98.9	81.0	87.6	15.0	1.4	1.6	29.0
Pulau Pinang	99.5	76.6	82.9	14.9	16.8	4.2	27.4
Perak	98.5	72.0	77.9	15.7	17.2	4.8	27.6
Perlis	99.5	78.4	82.3	8.7	0.7	0.5	32.0
Selangor	99.2	88.3	85.1	23.3	14.8	10.9	52.0
Terengganu	99.4	91.3	90.2	8.7	10.6	0.6	19.0
Sabah	99.4	77.9	92.5	10.1	14.3	3.0	38.0
Sarawak	99.5	74.2	73.5	3.7	1.5	1.5	35.7
W.P. Kuala Lumpur	99.5	85.6	87.0	28.1	22.6	10.1	66.4
W.P. Labuan	99.5	83.9	98.0	23.6	29.8	22.3	33.9
W.P. Putrajaya	99.9	97.8	97.9	22.4	21.4	10.6	64.8

Table 43: Percentage of Individuals Using the Internet by State and Type of Activity, Malaysia, 2022 (cont'd)

(%)

State	Other Online Services						
	Performing tasks to generate income	Using services related to travel/ accommodation	Selling goods/ services other than e-commerce	Ordering goods/ services online other than e-commerce	Using internet banking	Using software for editing texts	Downloading software/ applications
MALAYSIA	**15.5**	**36.6**	**14.2**	**50.4**	**74.8**	**35.9**	**89.1**
Johor	16.0	37.8	12.6	53.2	75.6	33.7	85.6
Kedah	12.0	19.1	11.2	46.3	73.3	25.4	96.7
Kelantan	12.4	22.9	11.7	38.1	66.6	24.5	85.4
Melaka	15.7	23.6	13.0	50.6	74.2	27.5	84.8
Negeri Sembilan	17.3	18.0	10.0	45.9	72.5	45.8	93.1
Pahang	12.8	29.9	10.8	40.0	73.6	21.4	85.5
Pulau Pinang	9.8	35.3	8.4	52.5	78.1	31.8	86.4
Perak	13.5	32.2	12.9	40.7	67.6	32.6	79.6
Perlis	6.4	25.2	9.3	41.0	53.6	13.0	72.4
Selangor	18.6	53.2	21.9	68.7	89.8	55.7	94.7
Terengganu	21.4	49.3	23.5	70.4	83.2	37.8	89.6
Sabah	11.9	30.2	12.6	40.3	52.9	23.0	97.6
Sarawak	12.2	24.7	11.4	25.1	60.1	24.0	84.4
W.P. Kuala Lumpur	24.4	51.9	9.5	50.1	85.9	42.8	83.3
W.P. Labuan	29.4	33.9	10.8	39.2	86.7	21.3	50.4
W.P. Putrajaya	21.9	33.8	16.5	72.7	90.9	42.6	95.9

Table 43: Percentage of Individuals Using the Internet by State and Type of Activity, Malaysia, 2022 (cont'd)

(%)

State	Learning Activities			Entertainment		
	Doing a formal online course	Consulting websites for formal learning purposes	Doing an informal online course	Listening to radio online	Watching television online	Downloading pictures/ movie/ games
MALAYSIA	**26.4**	**52.9**	**26.1**	**72.8**	**68.1**	**93.5**
Johor	22.8	52.8	22.6	79.7	64.5	92.7
Kedah	19.4	48.7	17.7	79.1	67.8	97.5
Kelantan	21.5	39.3	22.9	66.7	62.8	90.8
Melaka	22.5	57.5	22.2	79.0	77.9	94.9
Negeri Sembilan	22.4	48.4	19.2	78.7	70.1	96.0
Pahang	21.8	49.5	21.5	64.8	59.0	88.8
Pulau Pinang	16.1	56.1	15.6	82.5	88.8	93.2
Perak	23.7	46.4	30.4	60.8	67.8	86.9
Perlis	21.5	42.8	26.2	71.7	34.9	86.3
Selangor	37.6	62.9	39.5	77.9	71.6	97.3
Terengganu	43.9	53.1	38.2	96.4	78.9	97.2
Sabah	20.1	45.9	17.8	54.0	56.9	95.1
Sarawak	20.8	48.0	12.5	56.4	68.7	86.4
W.P. Kuala Lumpur	32.9	57.6	33.8	78.9	65.5	93.2
W.P. Labuan	18.0	60.4	14.1	85.3	53.8	99.6
W.P. Putrajaya	31.1	67.6	20.5	96.9	82.3	98.2

Table 43: Percentage of Individuals Using the Internet by State and Type of Activity, Malaysia, 2022 (cont'd)

(%)

State	Storage Space	e-Health		e-Government	
	Using storage space on the internet	Seeking health information	Making a medical appointment	Getting information from government organisations	Interacting with government organisations
MALAYSIA	**51.2**	**62.3**	**31.7**	**54.8**	**38.4**
Johor	51.7	65.7	24.7	67.4	47.2
Kedah	50.8	67.5	16.9	84.4	45.9
Kelantan	41.3	50.7	19.4	39.2	29.3
Melaka	44.9	54.2	18.3	55.9	30.2
Negeri Sembilan	55.2	52.4	22.4	43.9	28.1
Pahang	40.9	51.4	17.2	35.2	30.3
Pulau Pinang	46.7	57.9	21.1	59.1	43.9
Perak	55.4	62.6	27.5	51.6	42.5
Perlis	26.3	46.7	9.6	46.6	35.4
Selangor	57.7	65.7	49.6	53.8	42.4
Terengganu	49.4	71.1	64.6	63.9	69.4
Sabah	45.9	76.4	41.7	57.1	24.2
Sarawak	51.3	45.5	24.4	32.4	20.9
W.P. Kuala Lumpur	55.7	63.7	23.9	54.5	38.1
W.P. Labuan	28.2	49.2	22.9	48.7	39.8
W.P. Putrajaya	77.7	81.2	15.2	61.6	56.1

Table 43: Percentage of Individuals Using the Internet by State and Type of Activity, Malaysia, 2022 (cont'd)

(%)

State	Civic and Politics	e-Commerce		Safety, Online Protection and Awareness
	Posting opinions/ voting	Purchasing goods/ services via e-commerce	Selling goods/ services via e-commerce	Owning online security software and protection
MALAYSIA	**43.3**	**70.4**	**8.2**	**72.9**
Johor	43.2	69.7	8.0	83.8
Kedah	29.7	75.2	6.4	71.0
Kelantan	51.4	65.9	4.6	74.2
Melaka	57.9	77.7	3.4	80.0
Negeri Sembilan	30.1	72.4	3.2	66.2
Pahang	35.0	71.6	2.4	47.4
Pulau Pinang	42.7	66.2	5.6	87.5
Perak	26.6	54.6	5.8	72.5
Perlis	27.4	52.6	4.6	47.8
Selangor	61.3	87.9	14.3	78.8
Terengganu	71.9	81.9	4.6	72.6
Sabah	24.8	48.3	7.9	58.2
Sarawak	36.2	48.1	5.8	58.9
W.P. Kuala Lumpur	37.1	79.7	12.3	78.6
W.P. Labuan	43.5	92.8	24.4	97.4
W.P. Putrajaya	49.9	96.7	5.2	93.8

Table 44: Percentage of Individuals Using the Internet by Sex and Type of Activity, Malaysia, 2022

(%)

Sex	Total	Access to Information		Professional		
		Finding informaton about goods/services	Reading newspaper/ magazines online	Applying for jobs	Participating in professional networks	Work from home
Total	**92.5**	**68.5**	**35.8**	**11.7**	**15.9**
Male	93.3	69.0	42.9	13.2	18.8
Female	91.6	68.0	27.8	10.0	12.7

Table 44: Percentage of Individuals Using the Internet by Sex and Type of Activity, Malaysia, 2022 (cont'd)

(%)

Sex	Communication						
	Participating in social networks	Sending e-mail	Telephoning over the internet	Uploading content to a website	Managing personal homepage	Managing blog	Accessing online discussion
Total	**99.2**	**81.7**	**85.2**	**17.6**	**10.3**	**5.5**	**39.3**
Male	99.5	83.3	85.8	16.2	13.4	7.8	43.5
Female	99.0	79.8	84.5	19.2	6.8	3.0	34.5

Table 44: Percentage of Individuals Using the Internet by Sex and Type of Activity, Malaysia, 2022 (cont'd)

(%)

Sex	Other Online Services						
	Performing tasks to generate income	Using services related to travel/ accommodation	Selling goods/ services other than e-commerce	Using internet banking	Using software for editing texts	Downloading software/ applications	Ordering goods/ services online other than e-commerce
Total	**15.5**	**36.6**	**14.2**	**74.8**	**35.9**	**89.1**	**50.4**
Male	17.9	39.5	17.2	76.3	37.3	89.7	50.9
Female	12.8	33.3	10.9	73.2	34.3	88.4	49.9

Table 44: Percentage of Individuals Using the Internet by Sex and Type of Activity, Malaysia, 2022 (cont'd)

(%)

Sex	Learning Activities			Entertainment		
	Doing a formal online course	Consulting websites for formal learning purposes	Doing an informal online course	Listening to radio online	Watching television online	Downloading pictures/ movie/ games
Total	**26.4**	**52.9**	**26.1**	**72.8**	**68.1**	**93.5**
Male	29.5	54.3	26.3	75.9	69.5	94.0
Female	23.0	51.3	26.0	69.3	66.5	92.9

Table 44: Percentage of Individuals Using the Internet by Sex and Type of Activity, Malaysia, 2022 (cont'd)

(%)

Sex	Storage Space	e-Health		e-Government	
	Using storage space on the internet	Seeking health information	Making a medical appointment	Getting information from government organisations	Interacting with government organisations
Total	**51.2**	**62.3**	**31.7**	**54.8**	**38.4**
Male	52.2	63.5	33.8	56.1	40.4
Female	50.1	61.0	29.5	53.2	36.2

Table 44: Percentage of Individuals Using the Internet by Sex and Type of Activity, Malaysia, 2022 (cont'd)

(%)

Sex	Civic and Politics	e-Commerce		Safety, Online Protection and Awareness
	Posting opinions/ voting	Purchasing goods/ services via e-commerce	Selling goods/ services via e-commerce	Owning online security software and protection
Total	**43.3**	**70.4**	**8.2**	**72.9**
Male	50.0	70.4	8.2	74.0
Female	35.8	70.3	8.2	71.6

Table 45: Percentage of Individuals using the Internet by Age Group and Type of Activity, Malaysia, 2022

(%)

Age Group	Total	Access to Information		Professional		
		Finding information about goods/ services	Reading newspaper/ magazines online	Applying for jobs	Participating in professional networks	Work from home
Total	**97.4**	**92.5**	**68.5**	**35.8**	**11.7**	**15.9**
15 - 19	99.0	91.4	58.7	40.8	13.8	16.8
20 - 24	99.7	94.2	70.4	62.5	15.6	17.7
25 - 29	99.6	95.4	70.1	59.7	14.1	17.9
30 - 34	99.5	95.6	72.0	48.5	14.1	17.6
35 - 39	99.4	96.9	75.3	38.2	14.1	20.8
40 - 44	99.5	95.6	75.1	28.7	14.0	20.9
45 - 49	99.4	94.5	72.3	22.3	10.7	19.0
50 - 54	98.9	91.8	70.6	16.2	8.4	15.5
55 - 59	97.8	89.8	69.2	10.9	6.2	10.2
60+	85.5	79.9	55.3	5.4	2.1	2.4

Table 45: Percentage of Individuals using the Internet by Age Group and Type of Activity, Malaysia, 2022 (cont'd)

(%)

State	Communication						
	Participating in social networks	Sending e-mail	Telephoning over the internet	Uploading content to a website	Managing personal homepage	Managing blog	Accessing online discussion
Total	**99.2**	**81.7**	**85.2**	**17.6**	**10.3**	**5.5**	**39.3**
15 - 19	99.6	94.1	84.5	18.5	18.8	15.1	52.0
20 - 24	99.8	96.3	91.6	23.1	19.7	16.6	58.1
25 - 29	100.0	95.9	90.9	20.0	12.1	4.4	51.6
30 - 34	99.8	94.4	89.5	17.9	8.4	2.8	42.8
35 - 39	99.8	94.0	89.1	19.1	7.6	2.6	37.2
40 - 44	99.8	90.7	84.1	18.6	7.5	2.0	31.9
45 - 49	99.8	87.7	87.0	18.9	6.7	1.1	27.9
50 - 54	99.5	65.5	84.4	17.3	7.3	1.4	27.8
55 - 59	99.4	60.4	80.8	13.7	4.9	1.0	25.7
60+	95.7	26.5	68.9	7.9	4.8	2.7	22.5

Table 45: Percentage of Individuals using the Internet by Age Group and Type of Activity, Malaysia, 2022 (cont'd)

(%)

State	Other Online Services						
	Performing tasks to generate income	Using services related to travel/ accommodation	Selling goods/ services other than e-commerce	Using Internet banking	Using software for editing texts	Downloading software/ applications	Ordering goods/ services online other than e-commerce
Total	**15.5**	**36.6**	**14.2**	**74.8**	**35.9**	**89.1**	**50.4**
15 - 19	29.2	28.0	23.3	55.7	46.1	92.4	43.3
20 - 24	25.6	37.0	34.3	86.1	50.6	95.1	61.8
25 - 29	20.0	38.1	16.8	88.8	40.1	93.2	65.3
30 - 34	14.4	42.5	11.2	89.1	36.3	93.0	61.7
35 - 39	12.3	46.4	10.1	87.4	38.1	92.5	61.3
40 - 44	11.0	46.6	8.6	86.0	37.4	92.3	49.3
45 - 49	10.7	43.2	8.3	78.7	35.5	91.5	44.9
50 - 54	10.7	37.1	7.8	74.5	28.1	89.1	40.4
55 - 59	7.5	32.5	6.7	68.2	26.0	81.7	35.4
60+	6.2	17.1	6.5	34.4	13.6	68.8	28.2

Table 45: Percentage of Individuals using the Internet by Age Group and Type of Activity, Malaysia, 2022 (cont'd)

(%)

State	Learning Activities			Entertainment		
	Doing a formal online course	Consulting websites for formal learning purposes	Doing an informal online course	Listening to radio online	Watching television online	Downloading pictures/ movie/ games
Total	**26.4**	**52.9**	**26.1**	**72.8**	**68.1**	**93.5**
15 - 19	52.1	94.2	39.6	66.8	76.6	97.2
20 - 24	48.9	80.2	47.6	72.1	76.5	98.1
25 - 29	27.6	69.1	28.3	80.5	71.0	97.2
30 - 34	22.3	54.5	21.9	82.0	73.9	97.3
35 - 39	22.5	46.6	25.1	79.1	72.5	96.9
40 - 44	23.1	37.0	23.2	78.0	72.8	95.6
45 - 49	20.7	32.9	21.8	79.7	61.9	93.5
50 - 54	17.4	30.1	18.6	65.2	61.3	90.5
55 - 59	13.6	29.0	14.8	61.5	56.8	89.0
60+	4.9	27.4	10.9	57.5	48.5	77.3

Table 45: Percentage of Individuals using the Internet by Age Group and Type of Activity, Malaysia, 2022 (cont'd)

(%)

State	Storage Space	e-Health		e-Government	
	Using storage space on the internet	Seeking health information	Making a medical appointment	Getting information from government organisations	Interacting with government organisations
Total	**51.2**	**62.3**	**31.7**	**54.8**	**38.4**
15 - 19	50.4	46.0	25.4	46.0	26.5
20 - 24	69.2	59.2	33.1	61.3	36.5
25 - 29	63.1	72.8	31.4	58.7	38.7
30 - 34	60.7	65.5	30.2	56.7	46.8
35 - 39	58.6	64.9	36.7	58.4	44.7
40 - 44	51.6	65.8	36.1	59.1	42.5
45 - 49	46.2	71.9	32.2	57.2	39.6
50 - 54	38.1	65.2	32.1	53.5	35.5
55 - 59	35.5	65.5	29.0	56.0	37.2
60+	24.9	52.8	30.6	42.3	34.7

Table 45: Percentage of Individuals using the Internet by Age Group and Type of Activity, Malaysia, 2022 (cont'd)

(%)

State	Civic and Politics	e-Commerce		Safety, Online Protection and Awareness
	Posting opinions/ voting	Purchasing goods/ services via e-commerce	Selling goods/ services via e-commerce	Owning online security software and protection
Total	**43.3**	**70.4**	**8.2**	**72.9**
15 - 19	36.4	57.2	5.9	68.5
20 - 24	51.7	84.9	8.8	81.5
25 - 29	47.8	84.7	10.8	79.8
30 - 34	44.4	82.2	10.6	77.6
35 - 39	47.9	80.5	8.5	77.2
40 - 44	56.7	78.8	8.6	75.6
45 - 49	52.4	74.7	8.1	74.0
50 - 54	36.1	61.0	7.4	70.2
55 - 59	31.1	52.2	5.6	69.8
60+	24.6	38.3	6.5	53.3

Table 46: Percentage of Households with Access to ICT Services and Equipment by State and Administrative District, Malaysia, 2022

(%)

State	Internet	Computer	Mobile phone	Pay TV channel	Television	Radio	Fixed-line telephone
JOHOR	**98.5**	**92.4**	**99.5**	**82.8**	**99.6**	**99.9**	**30.5**
Batu Pahat	98.5	92.7	99.3	85.7	100.0	100.0	26.2
Johor Bahru	99.2	94.9	99.7	84.2	100.0	100.0	31.2
Kluang	96.7	88.3	99.3	70.0	98.3	99.7	28.7
Kota Tinggi	98.6	90.2	99.5	83.1	99.5	100.0	20.2
Mersing	96.8	88.0	99.1	70.2	99.6	100.0	35.5
Muar	98.0	91.1	99.3	82.6	99.0	99.7	40.4
Pontian	97.8	90.0	99.1	84.0	99.6	100.0	30.5
Segamat	97.4	89.5	99.1	81.3	99.1	99.6	20.5
Kulai	98.8	90.5	99.6	83.3	99.2	100.0	36.3
Tangkak	97.8	89.0	99.6	89.5	99.1	100.0	34.5
KEDAH	**95.8**	**86.3**	**99.4**	**57.7**	**99.4**	**99.6**	**16.0**
Baling	93.8	83.3	99.5	51.9	99.5	99.1	9.8
Bandar Baharu	93.8	82.7	99.1	70.3	99.5	100.0	8.7
Kota Setar	99.0	89.0	99.7	72.1	99.4	99.4	19.4
Kuala Muda	95.4	87.3	99.4	55.4	99.4	100.0	13.5
Kubang Pasu	94.1	85.1	99.3	61.5	99.7	99.7	21.2
Kulim	96.0	87.9	99.3	53.2	99.4	100.0	24.5
Langkawi	97.5	91.7	99.5	57.1	99.5	100.0	12.4
Padang Terap	93.0	75.8	99.6	52.9	99.6	99.1	15.0
Sik	93.1	81.1	99.5	56.0	99.5	98.9	6.1
Yan	95.6	84.8	99.1	43.2	98.6	100.0	5.1
Pendang	95.2	82.0	99.1	43.8	99.6	98.7	7.9
Pokok Sena	94.4	83.3	99.0	47.6	99.0	99.5	14.8

Table 46: Percentage of Households with Access to ICT Services and Equipment by State and Administrative District, Malaysia, 2022 (cont'd)

(%)

State	Internet	Computer	Mobile phone	Pay TV channel	Television	Radio	Fixed-line telephone
KELANTAN	**93.9**	**87.5**	**99.2**	**57.2**	**99.0**	**99.7**	**16.3**
Bachok	92.1	82.8	99.1	54.9	99.1	99.5	12.6
Kota Bharu	95.6	89.8	99.3	52.5	99.7	99.7	18.5
Machang	90.0	87.3	99.0	62.4	98.9	100.0	13.6
Pasir Mas	92.3	87.3	99.2	54.8	98.8	99.6	24.7
Pasir Puteh	93.5	89.1	99.0	54.4	98.1	99.5	26.5
Tanah Merah	93.8	88.0	99.0	59.0	98.1	100.0	6.0
Tumpat	93.0	87.9	99.6	60.3	98.9	99.6	10.5
Gua Musang	95.0	88.1	99.7	69.7	99.1	100.0	14.2
Kuala Krai	95.5	89.7	99.1	67.1	98.7	100.0	16.5
Jeli	94.7	83.0	99.4	57.9	98.2	100.0	4.1
Lojing	92.9	0.0	92.9	64.3	92.9	92.9	0.0
MELAKA	**96.2**	**91.6**	**99.6**	**82.1**	**99.9**	**99.6**	**53.4**
Alor Gajah	95.5	92.0	99.4	86.3	100.0	99.4	51.6
Jasin	96.1	92.1	99.0	82.7	99.3	99.5	54.6
Melaka Tengah	96.5	91.3	99.8	80.3	100.0	99.8	53.9
NEGERI SEMBILAN	**95.9**	**85.7**	**99.3**	**77.4**	**99.7**	**99.5**	**48.5**
Jelebu	88.9	73.4	98.5	76.9	99.5	97.5	36.7
Kuala Pilah	95.4	79.2	99.3	77.7	99.6	99.6	39.0
Port Dickson	98.1	86.3	99.3	81.8	100.0	100.0	55.8
Rembau	91.5	78.1	98.2	70.5	99.6	100.0	29.9
Seremban	97.6	89.1	99.6	77.1	99.8	99.6	52.7
Tampin	93.1	82.7	98.6	81.4	99.3	99.6	45.0
Jempol	89.5	78.3	98.4	74.3	99.7	99.3	35.2

Table 46: Percentage of Households with Access to ICT Services and Equipment by State and Administrative District, Malaysia, 2022 (cont'd)

(%)

State	Internet	Computer	Mobile phone	Pay TV channel	Television	Radio	Fixed-line telephone
PAHANG	**94.9**	**87.2**	**99.1**	**77.1**	**99.0**	**99.7**	**21.8**
Bentong	93.0	87.4	98.4	82.4	99.3	100.0	20.5
Cameron Highlands	93.9	89.7	99.7	72.4	97.5	100.0	17.0
Jerantut	97.3	86.0	98.0	75.0	99.2	99.2	28.1
Kuantan	96.5	90.3	99.7	76.2	99.7	100.0	24.1
Lipis	91.3	83.0	99.5	82.1	97.7	99.1	12.5
Pekan	94.6	86.2	98.7	77.2	96.4	99.1	25.2
Raub	91.1	85.6	98.3	76.3	99.5	99.6	34.2
Temerloh	95.9	86.8	99.0	76.4	99.0	99.3	20.0
Rompin	94.6	83.8	99.8	75.9	98.7	100.0	7.2
Maran	92.2	82.9	97.9	83.1	99.6	99.6	14.0
Bera	94.5	84.1	99.2	74.2	99.1	99.6	24.6
PULAU PINANG	**99.2**	**95.1**	**99.8**	**81.3**	**99.7**	**99.9**	**28.6**
Seberang Prai Tengah	99.3	92.7	100.0	75.1	98.6	100.0	30.8
Seberang Prai Utara	99.0	91.6	99.3	71.0	100.0	100.0	36.8
Seberang Prai Selatan	98.8	95.4	99.7	81.3	100.0	100.0	13.6
Timur Laut	99.3	97.3	100.0	87.1	100.0	100.0	30.8
Barat Daya	98.9	97.5	100.0	89.1	99.6	99.6	21.8
PERAK	**94.4**	**90.6**	**99.1**	**76.0**	**99.2**	**97.4**	**20.1**
Batang Padang	92.8	91.8	100.0	66.0	100.0	99.6	35.1
Manjung	92.1	93.8	99.2	72.0	99.3	98.5	22.2
Kinta	97.8	90.6	99.6	78.9	99.3	98.2	15.7
Kerian	92.3	94.1	99.6	70.0	99.0	97.6	7.6
Kuala Kangsar	95.0	85.6	97.9	72.8	100.0	95.0	16.1

Table 46: Percentage of Households with Access to ICT Services and Equipment by State and Administrative District, Malaysia, 2022 (cont'd)

(%)

State	Internet	Computer	Mobile phone	Pay TV channel	Television	Radio	Fixed-line telephone
Larut Dan Matang	93.6	88.3	98.0	70.8	98.8	95.7	13.7
Hilir Perak	93.3	85.4	98.9	83.5	99.3	97.0	36.6
Hulu Perak	91.9	92.1	98.1	68.4	99.3	98.1	23.8
Perak Tengah	95.0	90.2	99.6	85.6	98.1	97.7	29.0
Kampar	94.9	96.0	98.0	65.7	99.0	95.4	16.7
Muallim	77.8	89.6	100.0	94.2	100.0	95.3	54.2
Bagan Datuk	91.9	89.4	100.0	87.6	98.7	96.9	36.6
Selama	87.5	98.6	98.6	69.4	97.2	95.8	8.3
PERLIS	**94.6**	**88.7**	**99.6**	**78.0**	**98.8**	**99.2**	**34.6**
SELANGOR	**99.0**	**95.7**	**99.7**	**84.8**	**99.8**	**99.5**	**29.2**
Gombak	99.6	94.3	100.0	95.1	100.0	99.6	34.5
Klang	98.9	87.9	100.0	70.0	99.6	99.6	15.7
Kuala Langat	97.5	90.1	99.6	83.6	99.6	99.3	29.5
Kuala Selangor	97.8	92.0	100.0	68.0	99.0	99.0	27.6
Petaling	99.3	98.6	99.3	81.4	100.0	99.7	28.7
Sabak Bernam	97.4	98.4	99.7	69.2	99.3	99.0	27.3
Sepang	99.2	97.7	100.0	96.3	99.6	99.6	34.5
Hulu Langat	98.6	98.0	100.0	95.2	99.6	99.3	35.8
Hulu Selangor	99.3	97.2	98.8	89.4	99.6	98.8	25.1
TERENGGANU	**93.9**	**89.4**	**98.0**	**69.9**	**99.8**	**99.8**	**23.2**
Besut	96.1	86.6	97.0	72.1	99.7	100.0	19.8
Dungun	97.7	93.5	99.7	60.5	99.3	100.0	24.2
Kemaman	96.3	89.5	98.6	70.5	100.0	100.0	19.0
Kuala Terengganu	98.6	91.6	98.0	69.6	100.0	100.0	24.7

Table 46: Percentage of Households with Access to ICT Services and Equipment by State and Administrative District, Malaysia, 2022 (cont'd)

(%)

State	Internet	Computer	Mobile phone	Pay TV channel	Television	Radio	Fixed-line telephone
Marang	94.7	87.5	98.2	70.0	99.6	99.6	30.0
Hulu Terengganu	90.4	83.9	96.7	79.2	99.1	99.5	21.0
Setiu	87.5	86.6	97.8	78.0	99.6	99.6	16.8
Kuala Nerus	78.4	89.9	97.1	69.9	100.0	98.9	28.4
SABAH	**89.6**	**83.4**	**99.2**	**66.2**	**97.1**	**97.4**	**17.4**
Tawau	92.4	94.0	100.0	65.6	97.9	98.7	7.4
Lahad Datu	89.1	84.5	100.0	91.8	99.5	100.0	9.2
Semporna	85.3	77.1	100.0	76.2	98.2	98.2	14.0
Sandakan	93.0	89.3	100.0	36.8	95.5	98.1	16.7
Kinabatangan	63.4	36.6	96.1	36.8	97.1	95.8	6.4
Beluran	64.7	68.9	99.2	34.5	95.8	96.6	4.2
Kota Kinabalu	96.7	91.6	99.2	81.3	97.2	98.8	34.4
Ranau	79.9	93.7	98.6	68.0	100.0	97.9	28.4
Kota Belud	86.3	90.0	98.9	70.0	99.5	96.3	14.2
Tuaran	88.0	87.8	100.0	88.1	97.9	96.9	4.3
Penampang	97.3	91.0	98.9	73.2	98.4	97.4	17.3
Papar	94.4	88.9	100.0	83.4	95.3	96.3	29.8
Kudat	83.1	72.4	97.7	45.2	97.2	97.2	23.3
Kota Marudu	79.7	73.9	98.5	55.7	93.9	94.7	17.1
Pitas	96.1	64.9	97.4	48.1	94.8	94.8	6.5
Beaufort	77.3	76.9	97.5	82.1	98.3	96.1	29.6
Kuala Penyu	92.4	91.1	100.0	86.1	96.2	94.9	5.1
Sipitang	89.2	91.5	97.7	69.0	96.1	95.3	16.3
Tenom	81.7	74.0	98.1	41.3	97.1	100.0	7.7
Nabawan	95.2	93.7	96.8	46.0	95.2	100.0	1.6

Table 46: Percentage of Households with Access to ICT Services and Equipment by State and Administrative District, Malaysia, 2022 (cont'd)

(%)

State	Internet	Computer	Mobile phone	Pay TV channel	Television	Radio	Fixed-line telephone
Keningau	91.1	86.0	98.7	58.9	94.7	99.1	12.8
Tambunan	97.9	66.7	100.0	56.2	96.9	100.0	1.0
Kunak	95.3	70.3	100.0	79.0	98.5	95.5	3.5
Tongod	95.5	65.9	100.0	43.2	90.9	93.2	22.7
Putatan	99.1	99.1	99.1	84.6	99.1	97.4	30.8
Telupid	97.8	91.3	97.8	39.1	95.7	93.5	17.4
Kalabakan	87.5	25.0	100.0	75.0	100.0	75.0	12.5
SARAWAK	**89.8**	**87.7**	**97.2**	**63.0**	**97.6**	**97.0**	**17.0**
Kuching	97.2	88.1	98.3	63.9	98.1	98.9	18.9
Bau	74.4	91.5	98.4	33.3	98.4	97.7	5.4
Lundu	82.6	72.1	90.7	33.7	97.7	95.3	3.5
Samarahan	99.3	90.5	97.4	74.0	97.0	97.6	4.6
Serian	81.1	81.5	95.9	40.3	98.4	97.5	7.2
Simunjan	63.5	68.2	84.7	32.9	97.6	96.5	2.4
Sri Aman	75.4	98.0	98.0	66.6	95.7	95.7	25.9
Lubok Antu	78.4	77.3	92.0	43.2	97.7	96.6	25.0
Betong	78.3	87.5	97.5	63.3	98.3	98.3	0.8
Saratok	79.5	82.8	100.0	51.6	99.2	96.7	2.5
Sarikei	87.8	81.4	93.6	74.8	98.0	96.5	18.6
Maradong	79.6	79.8	92.2	57.6	98.1	92.3	5.7
Daro	76.8	81.1	95.8	45.3	97.9	94.7	6.3
Julau	86.7	82.2	97.8	51.1	95.6	93.3	2.2
Sibu	98.5	98.0	99.0	70.2	97.6	97.1	28.6
Dalat	73.3	93.3	95.0	46.7	96.7	93.3	1.7
Mukah	87.1	90.1	100.0	59.9	95.6	95.7	3.2

Table 46: Percentage of Households with Access to ICT Services and Equipment by State and Administrative District, Malaysia, 2022 (cont'd)

(%)

State	Internet	Computer	Mobile phone	Pay TV channel	Television	Radio	Fixed-line telephone
Kanowit	60.0	84.6	96.9	44.6	96.9	96.9	10.8
Bintulu	99.2	94.0	99.6	82.1	97.8	96.8	29.3
Tatau	76.7	83.3	95.0	55.0	96.7	91.7	1.7
Kapit	86.6	82.9	95.9	59.8	97.6	96.7	5.2
Song	63.4	90.1	95.8	52.1	97.2	100.0	26.8
Belaga	82.8	84.4	100.0	67.2	96.9	96.9	14.1
Miri	97.0	88.5	100.0	92.0	97.5	97.0	34.2
Marudi	78.8	92.4	98.5	65.2	97.0	95.5	3.0
Limbang	92.4	92.4	98.1	63.5	98.0	97.6	11.8
Lawas	85.5	85.5	98.8	53.0	97.6	96.4	6.0
Matu	77.6	81.6	94.7	40.8	97.4	94.7	11.8
Asajaya	75.7	90.5	94.6	51.4	97.3	95.9	1.4
Pakan	78.6	89.3	92.9	53.6	96.4	87.5	1.8
Selangau	70.0	90.0	90.0	48.3	96.7	95.0	8.3
Tebedu	65.5	74.7	83.9	42.5	97.7	93.1	1.1
Pusa	76.6	75.5	94.7	44.7	97.9	96.8	1.1
Kabong	81.3	81.3	95.8	44.8	99.0	95.8	2.1
Tanjung Manis	85.4	83.1	93.3	37.1	97.8	96.6	18.0
Sebauh	79.2	85.4	95.8	20.8	97.9	93.7	22.9
Bukit Mabong	76.9	73.1	76.9	53.8	92.3	100.0	34.6
Subis	72.2	64.3	92.9	38.9	98.4	97.6	5.6
Beluru	81.3	82.8	100.0	43.8	96.9	93.8	14.1
Telang Usan	90.7	76.7	93.0	30.2	95.3	93.0	2.3

Table 46: Percentage of Households with Access to ICT Services and Equipment by State and Administrative District, Malaysia, 2022 (cont'd)

(%)

State	Internet	Computer	Mobile phone	Pay TV channel	Television	Radio	Fixed-line telephone
WILAYAH PERSEKUTUAN							
Kuala Lumpur	99.8	100.0	100.0	96.0	100.0	99.8	42.9
Labuan	99.7	97.0	99.3	90.5	99.0	99.3	36.2
Putrajaya	100.0	100.0	100.0	96.8	100.0	100.0	54.3

Table 47: Percentage of Individuals Using ICT Services and Equipment by State and Administrative District, Malaysia, 2022

(%)

State	Internet	Computer	Mobile phone
JOHOR	**98.3**	**83.7**	**99.4**
Batu Pahat	99.1	80.1	99.1
Johor Bahru	99.0	86.2	99.4
Kluang	98.7	87.1	99.5
Kota Tinggi	98.7	73.3	99.1
Mersing	99.2	72.9	99.5
Muar	97.7	85.6	99.6
Pontian	89.3	77.4	99.5
Segamat	98.5	79.7	99.8
Kulai	99.1	88.1	99.7
Tangkak	97.1	81.5	99.4
KEDAH	**96.5**	**73.0**	**98.9**
Baling	97.1	65.5	98.9
Bandar Baharu	96.3	67.8	98.8
Kota Setar	95.9	78.3	99.5
Kuala Muda	96.8	70.4	98.4
Kubang Pasu	96.2	78.4	99.0
Kulim	97.8	75.4	99.1
Langkawi	96.8	67.6	98.9
Padang Terap	95.7	71.9	98.8
Sik	94.9	70.4	98.5
Yan	96.9	67.2	98.7
Pendang	94.9	70.3	98.9
Pokok Sena	95.6	72.3	98.6

Table 47: Percentage of Individuals Using ICT Services and Equipment by State and Administrative District, Malaysia, 2022 (cont'd)

(%)

State	Internet	Computer	Mobile phone
KELANTAN	**96.3**	**73.7**	**99.1**
Bachok	95.4	74.5	98.4
Kota Bharu	97.2	78.9	99.6
Machang	95.2	76.3	99.1
Pasir Mas	95.5	69.2	99.0
Pasir Puteh	96.1	71.4	97.8
Tanah Merah	96.9	73.5	99.1
Tumpat	96.0	72.2	99.2
Gua Musang	97.4	63.1	99.7
Kuala Krai	95.8	69.2	99.3
Jeli	95.0	70.9	99.4
Lojing	86.2	48.5	90.4
MELAKA	**97.7**	**86.0**	**99.2**
Alor Gajah	97.3	88.3	99.6
Jasin	97.4	77.2	99.1
Melaka Tengah	98.0	87.5	99.1
NEGERI SEMBILAN	**98.0**	**75.8**	**99.1**
Jelebu	93.4	58.0	97.7
Kuala Pilah	92.7	65.7	96.2
Port Dickson	99.3	72.3	99.9
Rembau	96.3	60.2	95.9
Seremban	99.5	85.3	99.9
Tampin	95.9	64.7	97.3
Jempol	96.0	58.2	99.4

Table 47: Percentage of Individuals Using ICT Services and Equipment by State and Administrative District, Malaysia, 2022 (cont'd)

(%)

State	Internet	Computer	Mobile phone
PAHANG	**96.5**	**77.6**	**99.2**
Bentong	96.1	77.1	99.0
Cameron Highlands	97.7	70.6	99.5
Jerantut	96.8	70.9	98.7
Kuantan	97.4	85.7	99.2
Lipis	95.3	72.2	98.8
Pekan	95.8	76.1	98.2
Raub	94.4	72.0	99.7
Temerloh	96.7	73.7	99.7
Rompin	96.7	79.8	99.4
Maran	95.5	72.7	99.4
Bera	95.2	63.1	99.0
PULAU PINANG	**98.7**	**84.8**	**99.6**
Seberang Prai Tengah	98.7	83.2	99.6
Seberang Prai Utara	97.8	88.4	99.7
Seberang Prai Selatan	98.9	84.4	99.5
Timur Laut	99.4	85.6	99.7
Barat Daya	98.4	81.1	99.4
PERAK	**96.1**	**77.5**	**98.4**
Batang Padang	97.1	75.3	99.1
Manjung	93.0	79.1	98.6
Kinta	97.5	80.0	98.8
Kerian	96.5	77.7	99.3
Kuala Kangsar	95.2	75.3	96.9

Table 47: Percentage of Individuals Using ICT Services and Equipment by State and Administrative District, Malaysia, 2022 (cont'd)

(%)

State	Internet	Computer	Mobile phone
Larut Dan Matang	93.0	77.6	97.5
Hilir Perak	98.1	76.8	98.0
Hulu Perak	94.6	75.7	99.3
Perak Tengah	96.7	73.8	98.4
Kampar	97.7	80.5	98.3
Muallim	96.9	71.0	98.8
Bagan Datuk	96.5	67.8	97.6
Selama	96.4	65.7	94.8
PERLIS	**95.5**	**74.4**	**98.4**
SELANGOR	**98.5**	**91.2**	**99.5**
Gombak	98.5	91.2	99.8
Klang	98.3	92.5	99.7
Kuala Langat	98.2	89.5	99.4
Kuala Selangor	98.1	88.7	99.6
Petaling	98.8	92.9	99.4
Sabak Bernam	99.0	89.8	99.6
Sepang	98.0	87.0	99.2
Hulu Langat	98.2	90.0	99.5
Hulu Selangor	98.8	86.3	99.6
TERENGGANU	**97.0**	**80.2**	**98.8**
Besut	96.2	83.3	99.1
Dungun	97.3	85.1	98.8
Kemaman	98.5	83.8	99.5
Kuala Terengganu	97.0	84.6	98.6

Table 47: Percentage of Individuals Using ICT Services and Equipment by State and Administrative District, Malaysia, 2022 (cont'd)

(%)

State	Internet	Computer	Mobile phone
Marang	96.8	70.8	97.8
Hulu Terengganu	96.6	75.7	98.9
Setiu	98.0	74.1	98.9
Kuala Nerus	95.3	72.2	98.2
SABAH	**96.8**	**60.3**	**99.0**
Tawau	97.8	70.4	99.4
Lahad Datu	98.9	58.9	99.4
Semporna	98.0	58.2	99.4
Sandakan	98.5	76.9	99.2
Kinabatangan	97.9	44.3	98.3
Beluran	99.4	26.0	99.1
Kota Kinabalu	99.1	80.0	99.4
Ranau	95.7	60.9	98.7
Kota Belud	97.9	60.4	99.1
Tuaran	97.6	41.5	97.7
Penampang	95.9	63.4	98.8
Papar	97.1	60.7	99.2
Kudat	96.4	50.9	98.4
Kota Marudu	92.1	44.0	98.5
Pitas	91.7	44.7	97.7
Beaufort	91.0	60.0	98.1
Kuala Penyu	94.0	55.6	99.3
Sipitang	94.4	54.0	98.7
Tenom	94.0	46.0	98.2
Nabawan	94.3	45.6	98.1

Table 47: Percentage of Individuals Using ICT Services and Equipment by State and Administrative District, Malaysia, 2022 (cont'd)

(%)

State	Internet	Computer	Mobile phone
Keningau	95.3	49.4	98.3
Tambunan	93.6	41.4	98.8
Kunak	89.0	54.4	98.7
Tongod	65.7	7.4	99.1
Putatan	96.9	51.9	99.4
Telupid	98.9	31.8	100.0
Kalabakan	100.0	8.8	100.0
SARAWAK	**93.9**	**67.7**	**97.9**
Kuching	98.4	76.0	99.3
Bau	97.3	53.5	98.2
Lundu	91.9	67.7	97.7
Samarahan	92.7	73.8	98.8
Serian	82.1	48.1	97.3
Simunjan	82.1	63.3	97.8
Sri Aman	90.6	50.6	95.9
Lubok Antu	78.5	49.2	95.2
Betong	85.1	70.9	96.8
Saratok	83.8	54.4	97.5
Sarikei	92.0	64.0	95.3
Maradong	82.4	58.5	97.0
Daro	84.6	59.0	95.9
Julau	70.4	29.5	95.9
Sibu	97.4	71.1	97.9
Dalat	87.0	28.5	96.9
Mukah	91.2	56.3	96.2

Table 47: Percentage of Individuals Using ICT Services and Equipment by State and Administrative District, Malaysia, 2022 (cont'd)

(%)

State	Internet	Computer	Mobile phone
Kanowit	81.4	48.6	93.7
Bintulu	97.3	75.5	99.4
Tatau	92.4	51.8	98.4
Kapit	92.8	64.9	96.3
Song	92.9	13.0	92.3
Belaga	95.4	26.8	98.4
Miri	98.6	79.2	99.2
Marudi	66.6	32.9	91.1
Limbang	95.8	62.5	97.7
Lawas	95.4	67.3	97.9
Matu	88.0	47.4	96.6
Asajaya	91.5	68.5	95.2
Pakan	84.6	50.0	93.9
Selangau	86.7	53.9	94.8
Tebedu	91.3	82.7	94.7
Pusa	86.5	57.6	96.4
Kabong	91.6	60.3	94.8
Tanjung Manis	95.3	71.7	96.0
Sebauh	97.7	61.0	97.7
Bukit Mabong	54.2	26.6	78.4
Subis	96.5	82.8	98.1
Beluru	92.4	57.9	96.9
Telang Usan	81.9	42.3	95.6

Table 47: Percentage of Individuals Using ICT Services and Equipment by State and Administrative District, Malaysia, 2022 (cont'd)

(%)

State	Internet	Computer	Mobile phone
WILAYAH PERSEKUTUAN			
Kuala Lumpur	99.8	94.9	99.8
Labuan	96.6	87.3	99.9
Putrajaya	99.9	97.0	99.9

Table 48: ICT Services and Equipment Penetration Rate, Malaysia, 2018 - 2022

(%)

ICT Services and Equipment	2018	2019	2020	2021	2022
Broadband	121.1	131.7	-	-	-
Mobile	-	-	118.7	128.2	131.0
Fixed	-	-	37.2	41.4	47.6
Mobile-cellular	130.2	135.4	133.6	144.0	145.3
Pay TV	87.3	86.4	83.4	81.1	80.6

Note.
Fixed-broadband refers to penetration rate per 100 premises
Mobile-broadband and mobile-cellular refer to penetration rate per 100 inhabitants
Pay TV refers to penetration rate per 100 households

Table 49: Number of Pay TV Subscriptions, Malaysia, 2018 - 2022

('000)

Pay TV channel	2018	2019	2020	2021	2022
Total household subscriptions	7,062.2	7,103.4	6,880.5	6,699.6	6,509.4

Note.
Pay TV is inclusive of IPTV

Source: Facts and Figures Interactive Dashboard (Malaysian Communications and Multimedia Commision)

Table 50: Number of Broadband Subscriptions, Malaysia, 2018 - 2022

('000)

Broadband	2018	2019	2020	2021	2022
Mobile	36,794.5	40,430.9	38,837.2	42,016.0	43,239.5
Fixed	2,655.4	2,947.0	3,349.5	3,727.4	4,220.5

Table 51: Number of Mobile-Cellular Subscriptions, Malaysia, 2018 - 2022

('000)

Mobile-cellular	2018	2019	2020	2021	2022
Prepaid	30,837.1	31,260.8	30,152.9	33,023.0	33,657.9
Postpaid	11,576.3	13,340.6	13,570.7	14,178.6	14,294.2

Note.

Commencing 2017, the mobile-cellular penetration rate is based on secondary data

Source: Facts and Figures Interactive Dashboard (Malaysian Communications and Multimedia Commision)

Table 52: Percentage of Households with Internet Access by Selected Countries, 2018 - 2021

(%)

Year	Malaysia	Singapore	Thailand	Republic of Korea	Japan	Hong Kong	Indonesia
2021	95.5	99.3	88.7	99.9	88.2	94.4	82.1
2020	91.7	98.4	85.2	99.7	97.3	93.9	78.2
2019	90.1	98.4	74.6	99.7	96.9	94.1	73.7
2018	87.0	97.7	67.7	99.5	95.7	92.3	66.2

Table 53: Percentage of Households with Access to Computer by Selected Countries, 2018 - 2021

(%)

Year	Malaysia	Singapore	Thailand	Republic of Korea	Japan	Hong Kong	Indonesia
2021	88.3	91.8	25.8	73.6	75.5	75.8	18.2
2020	77.6	89.1	19.3	71.6	75.9	75.3	18.8
2019	71.3	88.8	15.9	71.7	74.6	77.6	18.8
2018	71.7	88.7	20.9	72.4	75.1	75.3	20.1

Note.

Source: International Telecommunication Union (ITU)

Table 54: Percentage of Individuals Using Internet by Selected Countries, 2018 - 2021

(%)

Year	Malaysia	Singapore	Thailand	Republic of Korea	Japan	Hong Kong	Indonesia
2021	**96.8**	**-**	**85.3**	**97.6**	**82.9**	**93.1**	**62.1**
2020	89.6	92.0	77.8	96.5	90.2	92.4	53.7
2019	84.2	88.9	66.7	96.2	92.7	91.7	47.7
2018	81.2	88.2	56.8	96.0	91.3	90.5	39.9

Note.

Source: International Telecommunication Union (ITU)

Table 55: Percentage of Individuals Using Computer by Selected Countries, 2018 - 2021

(%)

Year	Malaysia	Singapore	Thailand	Republic of Korea	Japan	Hong Kong	Indonesia
2021	**83.5**	**-**	**-**	**79.9**	**-**	**78.6**	**11.7**
2020	80.0	-	26.4	82.3	-	79.8	14.1
2019	72.1	73.5	25.3	83.0	75.5	82.7	14.5
2018	70.5	-	28.3	82.0	-	80.3	19.1

Note.

Source: International Telecommunication Union (ITU)

Table 56: Percentage of Individuals Using Internet by Sex and Selected Countries, 2021

(%)

Sex	Malaysia	Singapore	Thailand	Republic of Korea	Japan	Hong Kong	Indonesia
Male	97.2	-	86.3	98.2	86.3	94.4	65.0
Female	96.3	-	84.3	96.9	79.8	91.9	59.1

Table 57: Ranking of ICT- Related Indices for Selected Countries, 2017 and 2022

Rank	Malaysia	Singapore	Thailand	Republic of Korea	Japan	Hong Kong	Indonesia
ICT Development Index (IDI) 2017[1]	63	18	78	2	10	6	111
E-Government Development Index (EGDI) 2022[2]	53	12	55	3	14	-	77

Note.

ICT Development Index (IDI) is a unique benchmark of the level of ICT development in countries across the world. The IDI combines 11 indicators on ICT access, use and skills, capturing key aspects of ICT development in one measure that allows for comparisons to be made between countries and over time. IDI 2017 covers 176 economies worldwide.

E–Government Development Index (EGDI) is a composite index based on the weighted average of three normalize indices. One-third is derived from a Telecommunication Infrastucture Index (TII) based on data provided by the International Telecommunication Union (ITU), one-third from a Human Capital Index (HCI) based on data provided by the United Nations Educational, Scientific and Cultural Organisation (UNESCO), and one-third from the Online Service Index (OSI), based on data collected from an independent survey questionnaire, conducted by UNDESA. The EGDI is used to measure the readiness and capacity of national institutions to use ICTs to deliver public services. This measure is useful for government official, policy maker, researchers and representatives of civil society and the private sector to gain a deeper understanding of the relative position of a country in utilising e-Government for the delivery of public services.

Source:

[1] Measuring the Information Society Report 2017 Volume 1, International Telecommunication Union (ITU)

[2] United Nation e-Government Survey 2022, United Nation

Table 58: Percentage of Households with Access to Mobile Phone by State and Strata, 2019 - 2022

(%)

State	2019			2020			2021			2022		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**98.2**	**98.8**	**96.2**	**98.6**	**99.0**	**96.8**	**99.6**	**99.6**	**99.2**	**99.3**	**99.6**	**98.2**
Johor	99.3	99.5	98.5	99.4	99.5	99.1	99.9	99.9	99.6	99.5	99.6	99.2
Kedah	97.1	97.7	95.6	98.6	98.7	98.0	99.7	99.7	99.6	99.4	99.6	99.2
Kelantan	97.2	98.3	96.1	97.3	98.2	96.3	99.8	99.7	99.8	99.2	99.4	99.1
Melaka	97.4	97.5	95.1	98.5	98.5	97.0	98.8	98.8	98.8	99.6	99.6	99.6
Negeri Sembilan	98.4	98.8	96.9	98.4	99.4	95.3	99.6	99.8	99.1	99.3	99.7	98.2
Pahang	97.9	98.5	96.9	98.0	98.7	96.9	98.7	98.7	98.6	99.1	99.3	98.9
Pulau Pinang	97.7	97.7	98.2	98.9	98.9	98.1	99.8	99.3	99.7	99.8	99.9	99.5
Perak	97.0	97.7	94.3	97.4	97.6	96.1	98.5	99.9	97.7	99.1	99.1	99.3
Perlis	98.4	98.6	98.0	97.7	97.6	97.8	99.3	99.3	99.3	99.6	99.5	99.7
Selangor	99.5	99.5	98.5	99.3	99.4	98.7	99.9	99.8	99.4	99.7	99.7	99.1
Terengganu	97.7	98.3	96.6	98.2	98.4	97.6	99.2	99.8	98.9	98.0	98.5	97.3
Sabah	98.1	98.7	97.3	98.6	98.8	98.2	99.8	99.8	99.8	99.2	99.6	98.8
Sarawak	96.3	98.5	92.8	96.6	99.0	92.8	99.4	99.9	98.8	97.2	99.8	93.8
W.P. Kuala Lumpur	99.2	99.2	n.a.	99.5	99.5	n.a.	99.9	99.0	n.a.	100.0	100.0	n.a.
W.P. Labuan	98.4	98.3	99.3	98.6	98.6	99.2	99.0	99.0	99.3	99.3	99.6	96.8
W.P. Putrajaya	99.7	99.7	n.a.	99.5	99.5	n.a.	100.0	100.0	n.a.	100.0	100.0	n.a.

Table 59: Percentage of Households with Internet Access by State and Strata, 2019 - 2022

(%)

State	2019			2020			2021			2022		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**89.6**	**92.1**	**79.4**	**91.0**	**93.4**	**81.3**	**94.9**	**96.8**	**86.7**	**96.0**	**98.1**	**89.1**
Johor	94.1	95.1	89.9	92.9	93.7	89.5	98.0	98.5	95.7	98.5	98.9	97.3
Kedah	82.6	84.3	77.7	90.8	92.1	86.9	95.1	96.3	91.5	95.8	97.2	92.8
Kelantan	83.4	86.9	79.5	89.3	91.2	87.1	92.6	94.3	90.6	93.9	95.2	92.9
Melaka	88.8	89.1	82.7	93.1	93.2	91.6	95.1	95.3	91.6	96.2	96.4	94.2
Negeri Sembilan	90.8	92.5	85.2	93.3	95.8	85.0	94.4	96.3	87.7	95.9	98.2	90.1
Pahang	85.2	89.0	78.9	86.8	88.7	83.6	93.8	94.9	91.7	94.9	95.8	94.0
Pulau Pinang	90.0	90.0	88.4	94.7	94.8	92.3	97.4	97.4	96.4	99.2	99.3	96.9
Perak	83.0	83.9	78.8	81.1	82.5	74.5	89.1	89.4	87.7	94.4	95.9	90.3
Perlis	92.2	93.0	90.4	93.0	94.7	89.2	93.8	95.0	90.9	94.6	97.3	91.4
Selangor	95.3	95.8	87.7	94.6	94.9	88.9	98.4	98.6	96.2	99.0	99.1	96.3
Terengganu	91.2	93.1	87.0	90.5	91.0	89.4	92.7	94.2	89.3	93.9	95.0	92.1
Sabah	86.2	93.7	73.4	87.1	94.0	74.8	89.4	96.0	77.2	89.6	97.1	80.6
Sarawak	83.4	91.5	70.7	85.4	95.8	68.5	89.3	97.4	75.6	89.8	97.9	79.1
W.P. Kuala Lumpur	94.6	94.6	n.a.	98.0	98.0	n.a.	99.8	99.8	n.a.	99.8	99.8	n.a.
W.P. Labuan	98.0	98.3	95.6	98.1	98.1	98.4	99.9	100.0	99.3	99.7	100.0	96.8
W.P. Putrajaya	96.8	96.8	n.a.	99.2	99.2	n.a.	100.0	100.0	n.a.	100.0	100.0	n.a.

Table 60: Percentage of Households with Access to Computer by State and Strata, 2019 - 2022

(%)

State	2019			2020			2021			2022		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**71.3**	**76.6**	**50.1**	**77.6**	**82.8**	**55.5**	**88.3**	**91.0**	**76.3**	**91.3**	**94.0**	**82.4**
Johor	71.7	75.9	55.0	81.4	85.9	62.9	91.7	93.3	85.0	92.4	94.0	86.8
Kedah	59.6	66.1	41.7	62.1	65.8	51.6	85.6	87.7	79.3	86.3	89.3	80.1
Kelantan	58.2	68.1	47.1	56.6	68.5	42.7	87.5	89.9	84.5	87.5	90.3	85.2
Melaka	73.3	74.2	54.4	87.2	87.2	87.8	90.9	90.8	91.8	91.6	91.6	92.2
Negeri Sembilan	61.7	66.9	45.2	74.1	80.9	50.7	85.5	88.9	73.0	85.7	90.2	74.7
Pahang	59.7	71.9	39.7	71.2	77.1	60.9	87.2	91.3	80.1	87.2	91.5	82.2
Pulau Pinang	76.9	77.1	71.7	86.7	87.2	72.6	89.6	89.6	90.7	95.1	95.0	97.2
Perak	66.9	69.5	55.9	69.0	71.7	57.1	86.0	86.8	82.5	90.6	90.1	92.1
Perlis	68.2	71.9	60.4	70.6	75.0	60.5	88.0	89.0	85.7	88.7	90.4	86.6
Selangor	86.2	87.8	58.0	91.4	91.8	83.6	94.7	94.7	96.1	95.7	95.9	90.1
Terengganu	71.3	76.7	59.5	74.2	81.1	58.4	87.1	89.6	81.1	89.4	92.4	84.1
Sabah	59.8	65.8	49.7	60.7	67.2	49.4	73.1	77.3	65.4	83.4	91.7	73.2
Sarawak	63.6	72.9	48.9	64.8	74.0	49.7	77.1	87.7	58.9	87.7	93.5	79.9
W.P. Kuala Lumpur	77.0	77.0	n.a.	94.5	94.5	n.a.	99.1	99.1	n.a.	100.0	100.0	n.a.
W.P. Labuan	71.3	71.7	68.4	89.3	90.0	84.0	93.8	94.1	91.1	97.0	97.7	90.3
W.P. Putrajaya	94.2	94.2	n.a.	99.2	99.2	n.a.	100.0	100.0	n.a.	100.0	100.0	n.a.

Table 61: Percentage of Households with Access to Pay TV Channel by State and Strata, Malaysia, 2019 - 2022

(%)

State	2019			2020			2021			2022		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**74.4**	**77.9**	**60.4**	**78.9**	**81.9**	**66.5**	**83.2**	**85.8**	**71.9**	**76.9**	**80.8**	**63.9**
Johor	78.6	79.9	73.4	78.6	80.1	72.3	83.5	85.3	75.7	82.8	83.7	79.2
Kedah	56.1	59.3	47.3	69.7	73.9	57.5	71.7	73.9	65.1	57.7	60.5	52.0
Kelantan	55.4	57.2	53.3	63.1	67.4	58.0	67.7	69.2	65.9	57.2	57.1	57.2
Melaka	81.2	81.7	72.3	89.7	90.3	75.8	92.6	92.8	85.3	82.1	82.3	79.9
Negeri Sembilan	81.6	83.4	75.6	82.2	84.6	73.9	86.3	87.0	83.9	77.4	77.9	76.1
Pahang	76.7	78.7	73.5	79.6	80.8	77.5	82.2	83.9	79.0	77.1	78.3	75.7
Pulau Pinang	79.9	80.2	72.5	80.3	80.7	67.9	83.0	83.3	73.8	81.3	82.0	72.4
Perak	68.6	70.9	58.7	74.8	76.9	65.6	84.3	86.0	76.4	76.0	77.9	70.5
Perlis	72.9	75.8	66.7	74.5	76.2	70.6	82.2	84.5	76.6	78.0	81.1	74.1
Selangor	85.4	85.6	81.3	86.4	86.6	81.5	89.4	89.5	88.3	84.8	85.2	76.3
Terengganu	67.6	68.6	65.4	80.7	81.8	78.2	82.5	84.0	78.9	69.9	68.0	73.3
Sabah	62.6	68.9	51.9	70.9	77.5	59.3	73.3	77.7	65.2	66.2	73.0	57.9
Sarawak	59.2	65.9	48.8	68.7	72.9	61.9	76.6	83.6	64.6	63.0	77.2	44.1
W.P. Kuala Lumpur	89.3	89.3	n.a.	91.4	91.4	n.a.	95.9	95.9	n.a.	96.0	96.0	n.a.
W.P. Labuan	88.3	88.3	88.2	92.0	91.4	97.6	97.1	97.0	97.8	90.5	90.6	90.3
W.P. Putrajaya	96.1	96.1	n.a.	96.5	96.5	n.a.	96.6	96.6	n.a.	96.8	96.8	n.a.

Table 62: Percentage of Households with Access to Television by State and Strata, Malaysia, 2019 - 2022

(%)

State	2019			2020			2021			2022		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**97.6**	**98.2**	**95.4**	**98.5**	**99.0**	**96.3**	**99.0**	**99.2**	**98.0**	**99.2**	**99.5**	**98.4**
Johor	98.7	99.0	97.4	99.7	99.7	99.4	99.5	99.6	99.2	99.6	99.7	99.3
Kedah	98.3	99.0	96.3	99.1	99.2	98.7	99.3	99.5	98.8	99.4	99.7	98.9
Kelantan	95.7	96.8	94.5	98.2	98.4	98.0	98.2	99.1	97.1	99.0	99.5	98.5
Melaka	97.8	97.8	97.0	99.0	99.1	98.5	99.6	99.6	99.3	99.9	100.0	99.2
Negeri Sembilan	98.7	98.9	98.3	99.2	99.7	97.3	99.2	99.5	98.4	99.7	99.7	99.8
Pahang	97.8	98.5	96.5	98.1	98.7	97.2	98.1	99.1	96.4	99.0	99.4	98.6
Pulau Pinang	97.0	96.9	97.5	99.0	99.0	98.6	99.6	99.6	99.4	99.7	99.6	100.0
Perak	96.7	96.8	96.1	99.0	99.4	97.3	99.3	99.7	97.4	99.2	99.7	98.0
Perlis	96.9	96.4	97.8	96.5	96.6	96.2	98.9	98.8	99.2	98.8	98.8	98.8
Selangor	98.5	98.6	97.8	98.9	99.0	98.1	99.3	99.2	99.5	99.8	99.8	99.3
Terengganu	98.9	99.8	97.0	98.9	99.5	97.8	99.8	99.8	99.7	99.8	99.9	99.4
Sabah	95.2	96.9	92.2	95.4	97.5	91.8	96.3	96.3	96.2	97.1	96.8	97.5
Sarawak	95.3	96.4	93.6	96.2	97.8	93.6	98.4	98.3	98.6	97.6	98.3	96.7
W.P. Kuala Lumpur	99.6	99.6	n.a.	99.9	99.9	n.a.	99.9	99.9	n.a.	100.0	100.0	n.a.
W.P. Labuan	97.9	97.8	98.5	98.2	98.1	99.2	99.0	99.0	99.3	99.0	98.9	100.0
W.P. Putrajaya	98.7	98.7	n.a.	99.5	99.5	n.a.	99.8	99.8	n.a.	100.0	100.0	n.a.

Table 63: Percentage of Households with Access to Radio by State and Strata, Malaysia, 2019 - 2022

(%)

State	2019			2020			2021			2022		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**97.2**	**98.0**	**93.6**	**98.5**	**98.9**	**97.0**	**98.9**	**99.2**	**97.6**	**99.1**	**99.4**	**98.0**
Johor	99.0	99.2	98.3	99.0	99.2	98.5	99.6	99.6	99.3	99.9	100.0	99.8
Kedah	96.1	96.8	94.2	97.9	98.4	96.4	99.3	99.6	98.4	99.6	99.9	99.1
Kelantan	95.5	95.7	95.3	98.0	98.7	97.1	98.7	99.2	98.1	99.7	99.8	99.6
Melaka	93.8	94.0	90.1	98.5	98.5	96.9	98.5	98.5	98.1	99.6	99.7	98.8
Negeri Sembilan	98.8	99.0	98.1	98.4	99.1	95.8	98.6	99.1	96.5	99.5	99.6	99.5
Pahang	97.1	98.6	94.6	97.8	98.7	96.2	97.6	98.2	96.5	99.7	99.8	99.5
Pulau Pinang	97.7	97.7	98.1	99.4	99.4	98.6	99.8	99.8	99.4	99.9	99.9	100.0
Perak	94.5	95.4	90.9	97.6	97.6	97.4	97.3	97.4	96.6	97.4	97.6	96.8
Perlis	98.0	98.1	97.6	97.7	98.3	96.2	98.2	98.0	98.7	99.2	99.3	99.1
Selangor	99.2	99.3	96.6	99.2	99.3	96.7	99.4	99.6	97.2	99.5	99.6	97.7
Terengganu	98.7	99.1	97.8	97.0	96.6	97.8	99.8	99.7	99.9	99.8	99.8	99.9
Sabah	90.6	94.9	83.2	97.2	98.2	95.5	97.3	98.4	95.4	97.4	98.2	96.3
Sarawak	97.8	99.0	95.9	98.7	99.2	97.9	98.9	99.3	98.2	97.0	98.8	94.7
W.P. Kuala Lumpur	99.2	99.2	n.a.	99.9	99.9	n.a.	99.8	99.8	n.a.	99.8	99.8	n.a.
W.P. Labuan	97.0	97.2	95.6	99.1	99.0	99.2	99.5	99.5	99.3	99.3	99.6	96.8
W.P. Putrajaya	99.7	99.7	n.a.	99.5	99.5	n.a.	99.8	99.8	n.a.	100.0	100.0	n.a.

Table 64: Percentage of Households with Access to Fixed-Line Telephone by State and Strata, Malaysia, 2019 - 2022

(%)

State	2019			2020			2021			2022		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**22.4**	**25.0**	**12.0**	**22.4**	**25.5**	**9.2**	**31.3**	**34.9**	**15.7**	**27.3**	**30.7**	**15.8**
Johor	26.8	27.6	23.4	18.8	20.1	13.4	31.2	31.3	30.8	30.5	31.9	25.1
Kedah	12.4	14.6	6.2	14.0	16.4	7.1	17.3	20.6	7.6	16.0	18.6	10.7
Kelantan	10.4	14.5	5.9	7.7	10.7	4.2	19.0	24.8	12.1	16.3	20.4	12.9
Melaka	32.3	32.5	27.7	36.3	36.9	23.7	57.5	58.8	25.9	53.4	56.1	25.7
Negeri Sembilan	33.1	35.5	25.6	30.7	33.5	21.2	53.1	61.6	22.0	48.5	57.3	27.1
Pahang	17.3	18.5	15.2	15.1	18.2	9.8	21.0	23.1	17.3	21.8	25.8	17.1
Pulau Pinang	26.4	26.8	15.0	31.9	32.0	29.6	37.0	36.9	38.9	28.6	28.1	35.7
Perak	19.5	19.9	17.9	20.9	21.8	16.5	25.7	28.0	14.4	20.1	20.7	18.2
Perlis	18.2	20.8	12.8	24.4	27.7	16.8	33.3	41.4	13.3	34.6	43.9	23.2
Selangor	26.5	27.0	17.1	28.1	28.4	23.5	32.9	33.4	24.5	29.2	29.2	30.0
Terengganu	18.3	21.7	10.9	13.0	15.7	6.9	29.6	31.9	24.3	23.2	22.0	25.4
Sabah	12.0	16.0	5.3	9.2	12.7	3.0	24.9	32.8	10.4	17.4	26.2	6.6
Sarawak	19.9	28.6	6.3	15.0	22.6	2.5	18.8	25.9	6.7	17.0	24.5	7.0
W.P. Kuala Lumpur	29.7	29.7	n.a.	42.7	42.7	n.a.	54.4	54.4	n.a.	42.9	42.9	n.a.
W.P. Labuan	31.4	32.2	25.0	36.6	37.3	30.4	38.1	38.6	34.1	36.2	37.4	25.8
W.P. Putrajaya	26.8	26.8	n.a.	36.1	36.1	n.a.	59.9	59.9	n.a.	54.3	54.3	n.a.

Table 65: Percentage of Individuals Using Mobile Phone by State and Strata, Malaysia, 2019 - 2022

(%)

State	2019			2020			2021			2022		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**97.9**	**98.3**	**96.8**	**98.2**	**98.5**	**97.2**	**98.7**	**99.0**	**97.7**	**99.1**	**99.4**	**98.3**
Johor	98.2	98.5	97.4	98.7	99.0	97.6	99.0	99.3	98.0	99.4	99.5	99.1
Kedah	96.9	97.5	95.2	97.4	97.8	96.2	97.7	98.2	96.3	98.9	99.1	98.4
Kelantan	97.0	97.4	96.5	97.8	97.5	98.2	98.6	98.7	98.4	99.1	99.7	98.6
Melaka	96.7	96.9	94.4	97.2	97.3	95.6	97.7	97.8	97.5	99.2	99.2	99.6
Negeri Sembilan	96.7	97.1	95.5	97.4	97.8	96.3	98.3	98.8	97.0	99.1	99.8	97.7
Pahang	98.5	98.8	98.0	98.5	98.8	98.1	98.9	99.2	98.5	99.2	99.2	99.1
Pulau Pinang	96.9	96.9	96.8	97.4	97.5	96.7	99.0	99.1	96.9	99.6	99.7	99.0
Perak	97.0	97.3	96.1	97.1	97.3	96.2	98.1	98.2	97.4	98.4	98.7	97.7
Perlis	96.7	97.0	96.0	97.3	97.7	96.5	98.0	98.2	97.6	98.4	98.8	98.0
Selangor	98.9	99.0	95.7	99.0	99.1	97.1	99.5	99.5	98.8	99.6	99.6	98.9
Terengganu	97.0	97.4	96.2	97.4	97.7	96.6	98.3	98.3	98.5	98.8	98.8	98.6
Sabah	98.9	99.2	98.6	99.0	99.1	98.7	99.0	99.1	98.8	99.0	99.3	98.7
Sarawak	96.8	97.7	95.3	97.1	98.3	95.3	97.5	98.7	95.7	97.9	99.0	96.4
W.P. Kuala Lumpur	99.6	99.6	n.a.	99.6	99.6	n.a.	99.7	99.7	n.a.	99.8	99.8	n.a.
W.P. Labuan	99.7	99.8	99.4	99.7	99.7	99.6	99.8	99.8	99.6	99.9	99.9	99.6
W.P. Putrajaya	99.7	99.7	n.a.	99.8	99.8	n.a.	99.8	99.8	n.a.	99.9	99.9	n.a.

Table 66: Percentage of Individuals Owning Mobile Phone by Sex, Malaysia, 2019 - 2022

(%)

Sex	2019	2020	2021	2022
Total	**95.7**	**96.4**	**97.4**	**98.2**
Male	96.8	97.7	98.2	99.1
Female	94.8	95.0	96.6	97.2

Note.

Goal 5: Achieve gender equality and empower all women and girls

Target 5.b: Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women

Indicator 5.b.1: Proportion of individuals who own a mobile telephone, by sex

Table 67: Percentage of Individuals Owning Mobile Phone by State and Strata, 2019 - 2022

(%)

State	2019			2020			2021			2022		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**95.7**	**96.5**	**92.7**	**96.4**	**97.2**	**93.4**	**97.4**	**98.1**	**95.1**	**98.2**	**98.9**	**96.1**
Johor	97.3	97.6	96.2	98.8	99.2	97.3	98.9	99.3	97.4	99.6	99.9	98.7
Kedah	93.5	94.5	90.8	93.7	94.8	91.0	96.6	97.1	95.4	98.0	98.6	97.0
Kelantan	92.6	94.1	90.9	93.2	95.2	90.9	94.7	95.8	93.5	96.6	98.5	94.9
Melaka	94.4	94.7	90.2	95.7	95.9	93.7	96.7	96.7	96.9	98.9	99.0	98.0
Negeri Sembilan	93.9	94.6	91.6	95.3	96.4	91.8	96.4	96.8	95.1	97.8	99.1	95.1
Pahang	95.5	97.2	92.7	96.0	97.8	93.1	97.0	99.1	93.7	98.7	99.2	98.2
Pulau Pinang	95.7	95.8	95.0	96.8	96.8	95.3	98.4	98.6	95.8	98.7	98.8	97.9
Perak	93.7	94.3	91.3	94.5	95.3	91.4	95.0	95.4	93.5	97.1	97.8	95.1
Perlis	94.4	95.4	92.4	95.7	96.0	95.1	96.0	96.2	95.5	96.4	97.1	95.6
Selangor	97.8	98.0	93.8	98.1	98.2	96.0	99.3	99.3	98.0	99.3	99.4	98.1
Terengganu	95.7	95.4	96.2	95.9	95.8	96.3	97.2	97.4	96.8	97.5	97.6	97.4
Sabah	95.2	95.9	94.3	95.7	95.9	95.4	96.8	96.9	96.7	95.9	96.2	95.5
Sarawak	93.5	95.9	89.7	94.5	97.4	89.9	95.5	97.7	92.0	96.4	98.9	92.9
W.P. Kuala Lumpur	98.6	98.6	n.a.	99.2	99.2	n.a.	99.7	99.7	n.a.	99.8	99.8	n.a.
W.P. Labuan	99.0	99.5	97.0	99.5	99.6	99.0	99.7	99.8	99.0	99.1	99.2	98.3
W.P. Putrajaya	98.8	98.8	n.a.	99.6	99.6	n.a.	99.6	99.6	n.a.	99.7	99.7	n.a.

Table 68: Percentage of Individuals Using Computer by State and Strata, 2019 - 2022

(%)

State	2019			2020			2021			2022		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**72.1**	**77.3**	**54.0**	**80.0**	**85.3**	**61.0**	**83.5**	**88.2**	**66.7**	**80.2**	**85.7**	**63.1**
Johor	75.5	78.9	63.4	86.9	90.7	73.5	89.2	92.1	79.9	83.7	86.9	72.9
Kedah	61.7	65.5	51.6	68.5	70.6	63.1	76.6	80.1	66.4	73.0	76.9	65.5
Kelantan	62.4	69.3	54.3	73.2	82.0	62.6	78.8	84.4	72.1	73.7	81.3	67.4
Melaka	80.7	81.2	71.9	86.1	86.5	81.1	88.1	88.7	81.6	86.0	86.9	77.6
Negeri Sembilan	69.6	75.2	53.5	74.7	80.1	58.3	80.1	84.9	66.2	75.8	81.8	62.7
Pahang	69.7	77.2	57.9	79.2	85.7	68.9	81.6	87.7	72.6	77.6	83.7	70.5
Pulau Pinang	75.9	76.3	66.3	87.1	87.5	77.6	87.5	87.8	79.9	84.8	85.5	78.1
Perak	67.5	70.7	55.5	76.8	79.5	65.4	80.4	82.0	73.6	77.5	80.5	69.1
Perlis	70.8	74.2	64.2	76.8	80.6	68.5	79.2	80.8	75.3	74.4	75.0	73.8
Selangor	85.1	85.6	74.7	93.2	93.7	84.8	95.0	95.4	87.4	91.2	91.6	80.5
Terengganu	74.5	79.3	63.2	82.4	88.5	69.2	85.3	88.7	77.1	80.2	84.1	73.1
Sabah	55.5	63.2	44.1	59.3	67.7	44.1	65.2	75.4	48.0	60.3	73.4	44.6
Sarawak	64.1	74.8	47.5	69.8	81.8	50.7	74.2	84.2	58.4	67.7	78.5	52.9
W.P. Kuala Lumpur	86.7	86.7	n.a.	94.3	94.3	n.a.	96.0	96.0	n.a.	94.9	94.9	n.a.
W.P. Labuan	78.6	80.7	71.1	88.4	90.0	80.4	91.6	93.3	82.9	87.3	88.7	77.3
W.P. Putrajaya	99.2	99.2	n.a.	99.9	99.9	n.a.	99.9	99.9	n.a.	97.0	97.0	n.a.

Table 69: Percentage of Individuals Using Computer by State and Type of ICT Skills, Malaysia, 2020- 2022

(%)

State	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
	Copying or moving a file or folder			Using copy and paste tools to duplicate or move information within a document			Sending an e-mail with attached files			Using basic arithmetic formulas in spreadsheet		
MALAYSIA	**86.4**	**94.6**	**97.0**	**87.7**	**93.2**	**96.3**	**69.0**	**78.7**	**89.4**	**39.3**	**52.6**	**67.1**
Johor	86.3	96.4	96.4	86.4	93.4	94.3	65.7	78.6	92.3	30.3	48.1	71.8
Kedah	82.5	96.3	98.6	80.4	91.5	99.6	67.4	75.7	94.2	31.2	59.5	72.4
Kelantan	76.5	96.5	98.3	81.8	91.5	95.8	62.7	70.2	90.7	28.9	40.1	52.0
Melaka	88.7	99.4	99.5	81.1	93.7	94.9	65.1	76.8	85.2	41.3	53.9	71.1
Negeri Sembilan	85.4	96.5	98.1	86.1	93.5	94.5	63.6	73.6	96.2	39.1	62.7	75.4
Pahang	86.1	94.6	96.8	88.8	94.5	96.6	63.6	74.3	91.0	35.3	51.0	69.2
Pulau Pinang	78.6	90.1	94.6	80.6	87.6	97.0	65.1	73.5	79.2	40.8	55.0	63.1
Perak	85.4	89.5	94.1	90.9	93.4	96.0	68.9	80.2	85.6	35.6	42.7	53.6
Perlis	86.2	90.7	97.7	89.3	92.0	97.0	61.0	62.1	96.6	25.3	45.6	47.5
Selangor	89.9	92.6	96.5	91.8	93.0	96.2	76.5	85.2	90.8	51.0	53.2	67.4
Terengganu	87.2	96.8	98.4	83.3	92.1	94.8	61.9	69.1	78.0	28.1	52.0	59.1
Sabah	86.0	94.8	97.0	88.5	94.7	97.3	63.3	77.0	88.7	36.0	58.8	72.7
Sarawak	88.6	95.6	97.4	87.8	91.7	95.4	65.8	74.8	81.2	33.7	50.6	61.9
W.P. Kuala Lumpur	89.5	99.4	99.6	91.6	99.6	99.7	82.0	89.2	96.6	50.9	60.2	76.0
W.P. Labuan	85.2	97.7	99.0	94.6	98.2	99.5	75.9	83.6	92.1	46.4	56.8	89.2
W.P. Putrajaya	96.3	98.5	98.8	97.1	98.6	98.9	84.9	93.2	95.2	67.4	75.4	77.4

Note.

Goal 4: Ensure inclusive and equitable education and promote lifelong learning opportunities for all

Target 4.4: By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneuship

Indicator 4.4.1: Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill

Table 69: Percentage of Individuals Using Computer by State and Type of ICT Skills, Malaysia, 2020- 2022 (cont'd)

(%)

State	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
	Connecting and installing new device			Searching, downloading, installing and configuring software			Creating electronic presentations using computer software			Transferring files between a computer and other devices			Writing a computer program using a specialised programming language		
MALAYSIA	**72.0**	**76.0**	**79.2**	**57.8**	**67.0**	**72.5**	**38.8**	**51.8**	**62.9**	**68.3**	**74.4**	**83.1**	**13.9**	**19.2**	**23.5**
Johor	70.0	71.9	73.9	48.7	56.9	70.6	29.7	42.0	64.2	59.2	72.6	80.9	9.9	13.6	22.7
Kedah	69.1	78.8	82.4	51.1	61.9	78.3	35.9	59.4	60.3	69.9	75.5	86.9	8.0	15.4	21.7
Kelantan	63.5	67.5	74.4	46.2	62.7	70.0	28.3	50.3	63.2	53.6	59.3	86.8	11.3	16.3	24.3
Melaka	71.6	75.1	75.4	45.0	59.0	75.7	32.8	49.1	60.5	65.0	67.5	84.7	14.7	25.3	26.0
Negeri Sembilan	72.9	78.2	75.4	57.9	67.5	75.1	43.1	56.0	74.7	63.8	73.7	84.7	13.3	19.2	26.8
Pahang	68.1	71.0	73.7	49.0	67.4	70.3	33.1	45.9	59.2	68.8	70.9	87.1	10.5	19.6	21.6
Pulau Pinang	72.9	78.5	79.6	59.1	67.8	69.4	40.3	50.3	53.5	61.7	65.5	72.4	16.4	21.2	25.1
Perak	67.8	74.3	79.3	56.4	63.2	63.9	37.2	42.7	47.8	69.1	67.2	71.7	10.6	18.4	23.2
Perlis	75.0	76.2	74.0	54.4	63.2	65.3	38.6	48.3	49.9	61.7	64.7	87.7	12.5	20.0	17.8
Selangor	75.6	78.3	83.7	69.0	72.3	73.6	45.4	54.2	59.4	73.8	84.6	87.5	15.4	18.8	20.7
Terengganu	66.7	71.1	71.9	51.3	60.0	63.5	32.9	52.7	69.0	63.5	63.8	71.1	15.2	20.5	23.9
Sabah	73.7	77.4	79.2	54.3	71.9	73.8	36.6	55.7	74.4	74.1	77.0	84.4	13.9	20.9	24.1
Sarawak	70.2	75.6	77.0	57.3	70.4	71.4	33.1	51.4	65.8	70.2	70.1	74.9	10.5	12.7	18.1
W.P. Kuala Lumpur	78.7	81.8	85.2	70.5	75.3	83.5	58.8	65.9	76.6	75.0	83.8	92.0	27.4	32.8	36.6
W.P. Labuan	76.3	84.4	88.5	60.4	72.7	76.4	45.4	51.7	92.4	75.9	75.6	97.6	21.1	55.5	21.9
W.P. Putrajaya	87.9	88.6	89.6	77.8	85.7	87.0	69.7	86.3	90.3	95.6	97.1	98.8	46.2	72.9	35.8

Note.

Goal 4: Ensure inclusive and equitable education and promote lifelong learning opportunities for all

Target 4.4: By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneuship

Indicator 4.4.1: Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill

Table 70: Percentage of Youth Using Computer by State and Type of ICT Skills, Malaysia, 2020 - 2022

(%)

State	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
	Copying or moving a file or folder			Using copy and paste tools to duplicate or move information within a document			Sending an e-mail with attached files			Using basic arithmetic formulas in spreadsheet		
MALAYSIA	**83.0**	**95.1**	**98.8**	**94.7**	**95.6**	**97.5**	**71.2**	**85.9**	**95.9**	**40.2**	**45.0**	**74.6**
Johor	89.4	94.2	97.9	97.4	94.2	93.8	69.0	86.4	98.8	41.8	42.6	71.6
Kedah	71.2	92.2	98.2	98.1	92.2	99.4	75.0	81.8	98.2	27.9	44.6	87.3
Kelantan	56.4	93.1	99.4	93.7	93.1	96.9	67.7	89.0	99.2	26.8	36.9	75.8
Melaka	83.5	97.9	99.9	96.4	97.9	97.4	75.8	82.7	97.1	34.6	50.7	88.8
Negeri Sembilan	92.6	91.4	99.7	96.5	91.4	96.0	80.0	77.5	98.9	49.1	53.3	80.1
Pahang	87.6	92.0	96.8	92.8	96.9	96.0	62.2	82.8	97.8	40.4	41.0	85.3
Pulau Pinang	84.0	94.5	99.8	97.9	94.5	99.2	79.2	90.3	93.6	54.3	54.9	74.2
Perak	80.9	98.1	99.4	95.2	98.1	97.7	72.3	92.7	94.4	47.4	48.5	60.4
Perlis	88.7	91.9	97.3	95.5	94.3	96.8	63.9	78.7	94.7	19.7	41.5	42.0
Selangor	88.7	99.2	99.8	91.1	98.5	99.4	76.2	89.4	95.6	59.3	47.9	77.5
Terengganu	83.5	94.6	100.0	86.8	94.6	99.2	69.1	84.7	94.5	24.7	49.1	63.8
Sabah	75.7	92.9	96.3	95.5	95.2	98.4	61.5	79.1	94.7	24.2	42.9	75.6
Sarawak	91.3	94.1	99.7	96.1	94.1	96.9	66.5	84.6	92.4	30.8	36.7	70.8
W.P. Kuala Lumpur	93.7	96.6	100.0	96.9	97.9	100.0	85.2	90.3	86.2	48.3	47.2	53.1
W.P. Labuan	94.5	94.7	100.0	91.9	98.5	97.0	79.2	91.5	78.1	34.4	53.7	97.6
W.P. Putrajaya	100.0	98.2	97.6	100.0	98.2	92.1	70.3	83.8	70.7	38.0	54.7	69.7

Note.

Goal 4: Ensure inclusive and equitable education and promote lifelong learning opportunities for all

Target 4.4: By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneuship

Indicator 4.4.1: Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill

Table 70: Percentage of Youth Using Computer by State and Type of ICT Skills, Malaysia, 2020 - 2022 (cont'd)

(%)

State	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
	Connecting and installing new device			Searching, downloading, installing and configuring software			Creating electronic presentations using computer software			Transferring files between a computer and other devices			Writing a computer program using a specialised programming language		
MALAYSIA	**75.4**	**86.0**	**85.8**	**54.2**	**73.7**	**84.4**	**45.1**	**50.6**	**76.9**	**83.4**	**77.4**	**87.5**	**17.6**	**20.9**	**31.1**
Johor	73.9	84.3	78.6	47.2	63.6	83.0	41.7	44.1	69.3	91.3	78.3	81.4	18.5	14.8	28.8
Kedah	68.5	89.5	95.4	52.6	63.4	88.1	44.2	63.1	82.3	90.1	80.3	91.5	10.8	13.2	31.7
Kelantan	57.9	75.7	83.8	40.8	65.0	80.9	33.1	49.8	82.5	47.1	68.4	82.3	13.0	18.6	38.7
Melaka	83.9	88.3	76.5	20.0	65.7	89.6	51.5	50.1	77.1	67.5	69.7	82.8	4.6	28.3	46.8
Negeri Sembilan	92.5	80.5	81.1	61.3	72.1	86.8	54.5	55.9	80.2	73.1	82.8	75.2	13.6	22.7	49.5
Pahang	71.3	70.7	81.8	50.8	74.8	84.5	39.3	47.5	82.4	82.7	79.3	84.9	13.5	19.2	32.7
Pulau Pinang	83.2	91.6	86.7	65.1	77.2	89.6	53.5	56.7	72.4	70.2	70.7	89.3	22.4	27.9	25.4
Perak	81.9	91.2	86.0	57.5	72.5	79.5	48.8	49.9	62.9	88.3	77.6	88.3	17.2	33.6	31.8
Perlis	78.0	86.8	87.9	51.1	78.8	80.2	42.5	41.6	59.6	68.8	67.1	81.8	14.9	24.2	20.8
Selangor	84.8	91.4	92.0	65.5	90.1	88.4	57.5	53.7	75.6	94.2	77.6	95.5	18.5	18.5	28.6
Terengganu	61.5	85.7	91.3	35.8	66.4	80.9	40.3	51.8	92.1	74.5	68.8	92.0	27.7	25.1	27.5
Sabah	75.3	82.0	90.7	46.4	66.1	78.4	32.5	40.6	86.0	85.1	84.2	91.9	11.0	17.5	29.9
Sarawak	60.7	85.3	88.2	65.2	70.5	92.3	32.2	48.1	80.6	87.2	77.7	88.2	19.7	20.7	28.5
W.P. Kuala Lumpur	88.6	95.6	68.9	69.9	96.7	72.1	66.4	62.3	65.6	85.1	75.4	81.5	42.4	26.5	13.6
W.P. Labuan	89.2	84.9	96.3	45.9	83.6	94.2	39.5	64.3	97.1	91.0	81.7	98.5	33.5	57.3	23.2
W.P. Putrajaya	79.5	90.2	94.3	68.6	90.7	75.8	52.8	82.2	94.3	100.0	95.4	98.9	38.4	71.1	22.4

Note.

Goal 4: Ensure inclusive and equitable education and promote lifelong learning opportunities for all

Target 4.4: By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneuship

Indicator 4.4.1: Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill

Table 71: Percentage of Individuals Using the Internet by State and Strata, 2019 - 2022

(%)

State	2019			2020			2021			2022		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
MALAYSIA	**84.2**	**87.5**	**72.7**	**89.6**	**92.4**	**79.4**	**96.8**	**97.7**	**93.5**	**97.4**	**98.3**	**94.5**
Johor	89.6	91.7	82.2	93.9	95.3	89.2	98.1	98.6	96.4	98.3	99.0	96.3
Kedah	75.6	78.5	68.0	82.9	84.8	77.8	95.5	96.6	92.4	96.5	97.5	94.8
Kelantan	73.9	77.9	69.1	81.6	85.3	77.2	95.9	96.9	94.7	96.3	97.5	95.3
Melaka	85.6	85.7	84.5	92.2	92.3	90.8	96.4	96.5	95.6	97.7	97.8	97.3
Negeri Sembilan	81.3	83.3	75.5	88.9	92.7	77.4	95.5	97.1	90.8	98.0	99.2	95.3
Pahang	81.8	87.1	73.5	88.8	93.3	81.6	94.9	96.8	92.2	96.5	97.5	95.3
Pulau Pinang	86.7	86.9	82.9	90.2	90.2	88.2	97.8	97.9	95.6	98.7	98.9	96.6
Perak	80.6	82.4	74.1	87.5	88.6	82.9	95.7	95.9	94.6	96.1	96.4	95.3
Perlis	83.8	84.9	81.6	90.2	93.9	82.3	95.0	95.4	94.1	95.5	96.2	94.7
Selangor	91.7	92.4	78.4	96.1	96.8	85.8	98.0	98.1	96.1	98.5	98.5	96.7
Terengganu	81.0	83.6	74.7	84.2	85.8	80.5	95.5	96.0	94.4	97.0	97.2	96.7
Sabah	80.0	84.5	73.3	85.8	88.6	80.7	97.3	98.0	96.2	96.8	98.0	95.4
Sarawak	76.4	85.0	63.0	81.3	91.0	65.8	93.6	98.0	86.7	93.9	98.4	87.7
W.P. Kuala Lumpur	93.4	93.4	n.a.	97.3	97.3	n.a.	99.6	99.6	n.a.	99.8	99.8	n.a.
W.P. Labuan	94.9	98.2	82.5	95.9	98.3	84.2	99.8	99.8	99.5	96.6	98.2	85.7
W.P. Putrajaya	98.4	98.4	n.a.	99.7	99.7	n.a.	99.8	99.8	n.a.	99.9	99.9	n.a.

Note.

Goal 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

Target 17.8: Fully operationalize the technology bank and science, technology and innovation capacity-buiding mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology

Indicator 17.8.1: Proportion of individuals using the Internet

Table 72: Percentage of Individuals Using the Internet by State and Type of Activity, Malaysia, 2020 - 2022

(%)

State	Access to Information						Professional								
	Finding information about goods/ services			Reading newspaper/ magazines online			Applying for jobs			Participating in professional networks			Work from home		
	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
MALAYSIA	**85.4**	**89.4**	**92.5**	**69.0**	**78.0**	**68.5**	**21.4**	**33.0**	**35.8**	**10.6**	**12.4**	**11.7**	**16.1**	**18.1**	**15.9**
Johor	86.1	97.3	97.6	58.9	76.8	67.1	21.9	29.9	34.3	5.7	10.1	9.3	10.8	14.9	8.3
Kedah	88.2	92.4	93.6	63.8	84.5	71.0	22.2	28.6	31.4	11.1	1.7	4.9	13.8	10.0	3.7
Kelantan	84.9	89.6	90.3	59.5	69.5	67.3	22.1	36.7	38.5	8.7	12.2	2.5	11.6	11.0	4.7
Melaka	90.3	91.6	94.5	74.1	76.1	71.3	20.1	31.2	34.3	5.7	9.0	4.6	13.3	21.2	4.2
Negeri Sembilan	87.4	89.0	91.0	68.6	79.6	66.7	26.8	33.8	40.2	6.5	6.7	9.8	14.2	18.7	5.5
Pahang	86.7	88.8	90.6	50.9	72.9	69.8	19.5	34.9	35.8	10.7	13.9	3.3	14.5	14.6	5.0
Pulau Pinang	89.8	93.8	96.0	68.9	86.3	74.6	15.6	29.5	32.5	10.8	9.6	11.6	18.1	18.0	20.0
Perak	81.5	90.4	95.8	74.8	79.3	72.4	16.8	31.9	34.7	6.6	7.5	2.1	10.5	14.7	18.6
Perlis	84.1	85.8	78.1	71.5	65.3	56.0	22.3	27.9	29.3	4.3	4.4	3.4	13.8	10.0	5.8
Selangor	91.4	93.1	98.2	82.6	83.9	71.9	21.6	28.7	32.6	16.7	16.8	20.2	21.1	24.6	28.6
Terengganu	93.4	96.5	97.6	75.0	74.9	70.7	26.7	33.9	35.4	6.0	22.4	24.3	12.1	16.8	19.1
Sabah	70.0	74.1	78.1	55.9	74.6	55.7	17.7	42.2	45.4	4.7	9.8	10.3	10.9	12.2	13.2
Sarawak	75.6	78.3	79.8	60.2	68.3	56.2	22.5	38.7	39.2	6.8	12.4	11.2	15.6	17.7	17.8
W.P. Kuala Lumpur	93.6	95.0	93.5	90.4	79.4	80.0	30.4	32.4	36.3	26.6	25.4	19.6	34.3	34.4	22.0
W.P. Labuan	94.2	98.3	95.0	61.7	91.0	82.4	15.4	34.8	36.3	6.5	30.4	7.1	13.7	28.4	14.9
W.P. Putrajaya	94.2	95.1	96.6	91.5	74.0	89.4	26.3	24.1	29.9	43.7	18.9	15.9	41.9	50.0	27.3

Table 72: Percentage of Individuals Using the Internet by State and Type of Activity, Malaysia, 2020 - 2022 (cont'd)

(%)

State	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
	Communication														
	Participating in social networks			Sending e-mail			Telephoning over the internet			Uploading content to a website			Managing personal homepage		
MALAYSIA	**98.0**	**99.0**	**99.2**	**76.3**	**79.6**	**81.7**	**81.2**	**89.2**	**85.2**	**9.2**	**10.3**	**17.6**	**5.4**	**7.2**	**10.3**
Johor	98.1	99.0	99.2	74.2	78.2	80.5	77.0	88.2	84.3	6.9	10.9	18.7	1.1	2.8	3.8
Kedah	98.5	99.2	99.2	71.5	84.9	85.6	77.2	96.9	87.6	1.5	1.1	16.1	0.6	0.4	0.4
Kelantan	98.6	99.4	99.4	70.8	78.1	79.1	85.9	94.6	89.5	1.7	4.7	26.0	0.9	1.3	5.8
Melaka	95.6	98.4	99.1	70.9	75.5	83.0	78.6	91.9	87.4	12.5	5.2	18.2	9.2	3.7	2.1
Negeri Sembilan	97.8	98.5	99.4	73.8	76.2	77.7	86.6	93.1	87.3	7.6	12.6	20.6	2.5	11.5	7.2
Pahang	97.6	98.7	98.9	72.5	79.4	81.0	72.3	86.2	87.6	5.2	3.6	15.0	1.8	0.9	1.4
Pulau Pinang	99.0	99.2	99.5	73.0	74.6	76.6	67.8	82.0	82.9	13.6	12.9	14.9	8.6	12.7	16.8
Perak	97.9	98.3	98.5	66.7	70.4	72.0	82.8	84.1	77.9	6.7	12.8	15.7	2.9	8.8	17.2
Perlis	98.3	99.2	99.5	74.3	76.2	78.4	84.9	86.8	82.3	4.4	7.5	8.7	1.5	7.0	0.7
Selangor	98.0	99.2	99.2	82.7	86.3	88.3	80.0	88.0	85.1	17.4	14.1	23.3	14.4	11.7	14.8
Terengganu	100.0	99.8	99.4	81.2	89.9	91.3	88.5	86.2	93.7	10.6	3.4	8.7	3.3	2.0	10.6
Sabah	98.2	99.2	99.4	75.9	77.7	77.9	89.6	94.0	92.5	3.3	8.8	10.1	1.3	5.6	14.3
Sarawak	98.0	98.9	99.5	67.0	73.1	74.2	82.4	82.4	73.5	4.9	2.3	3.7	0.9	1.5	1.5
W.P. Kuala Lumpur	96.4	98.8	99.5	96.4	85.1	85.6	86.3	92.9	87.0	17.2	28.7	28.1	9.2	23.9	22.6
W.P. Labuan	99.1	99.1	99.5	93.5	82.2	83.9	98.1	99.4	98.0	3.7	30.7	23.6	0.9	29.5	29.8
W.P. Putrajaya	99.4	99.9	99.9	98.5	96.1	97.8	82.5	97.2	97.9	18.2	3.3	22.4	21.0	2.9	21.4

Table 72: Percentage of Individuals Using the Internet by State and Type of Activity, Malaysia, 2020 - 2022 (cont'd)

(%)

State	Communication						Other Online Services								
	Managing blog			Accessing online discussion			Performing tasks to generate income			Using services related to travel/ accommodation			Selling goods/ services other than e-commerce		
	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
MALAYSIA	**4.1**	**5.3**	**5.5**	**22.4**	**38.2**	**39.3**	**8.3**	**10.9**	**15.5**	**31.6**	**40.8**	**36.6**	**10.6**	**11.3**	**14.2**
Johor	1.6	2.6	5.7	9.9	33.7	34.7	3.9	9.9	16.0	23.7	36.3	37.8	8.5	11.4	12.6
Kedah	0.7	0.3	0.4	17.4	20.3	22.2	4.7	3.6	12.0	30.7	41.4	19.1	5.4	5.5	11.2
Kelantan	1.3	1.2	3.0	11.2	34.2	36.2	6.8	10.4	12.4	10.6	31.5	22.9	10.0	9.9	11.7
Melaka	7.7	5.1	2.1	12.1	46.7	47.1	7.9	9.5	15.7	40.0	39.8	23.6	16.0	10.2	13.0
Negeri Sembilan	2.5	11.2	7.4	16.5	42.0	42.8	5.9	8.1	17.3	21.5	46.9	18.0	9.1	5.7	10.0
Pahang	1.5	1.1	1.6	19.1	24.0	29.0	3.2	6.1	12.8	17.5	26.7	29.9	5.7	6.7	10.8
Pulau Pinang	10.5	5.0	4.2	30.8	28.4	27.4	8.1	8.6	9.8	46.8	44.9	35.3	8.8	6.7	8.4
Perak	3.5	8.0	4.8	15.4	26.1	27.6	5.6	7.5	13.5	25.4	32.0	32.2	10.0	11.5	12.9
Perlis	1.0	5.8	0.5	21.0	28.4	32.0	7.2	5.0	6.4	20.9	14.6	25.2	9.6	5.4	9.3
Selangor	5.9	9.0	10.9	32.3	53.1	52.0	14.2	17.2	18.6	41.2	52.1	53.2	14.5	16.0	21.9
Terengganu	3.0	0.9	0.6	11.2	16.2	19.0	16.2	20.0	21.4	55.1	60.3	49.3	19.2	20.6	23.5
Sabah	0.9	4.0	3.0	20.6	39.0	38.0	7.8	9.1	11.9	22.4	32.2	30.2	9.7	10.1	12.6
Sarawak	1.2	1.3	1.5	23.6	38.5	35.7	4.5	9.8	12.2	17.3	28.9	24.7	6.5	9.6	11.4
W.P. Kuala Lumpur	15.1	13.4	10.1	45.6	62.3	66.4	11.7	12.6	24.4	61.0	61.4	51.9	13.9	13.7	9.5
W.P. Labuan	1.3	28.9	22.3	2.1	30.0	33.9	4.2	28.4	29.4	16.9	59.8	33.9	5.9	30.7	10.8
W.P. Putrajaya	9.8	4.6	10.6	37.6	60.8	64.8	16.7	10.2	21.9	51.9	52.2	33.8	13.2	16.2	16.5

Table 72: Percentage of Individuals Using the Internet by State and Type of Activity, Malaysia, 2020 - 2022 (cont'd)

(%)

State	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
	Other Online Services												Learning Activities		
	Using internet banking			Using software for editing texts			Downloading software/ applications			Ordering goods/ services online other that e-commerce			Doing a formal online course		
MALAYSIA	**61.9**	**70.5**	**74.8**	**26.3**	**39.9**	**35.9**	**78.4**	**86.3**	**89.1**	**54.4**	**60.6**	**50.4**	**18.0**	**29.9**	**26.4**
Johor	58.2	72.0	75.6	15.9	34.2	33.7	69.4	79.9	85.6	51.1	60.7	53.2	10.3	28.0	22.8
Kedah	60.3	72.4	73.3	23.3	27.2	25.4	73.2	95.7	96.7	55.8	59.7	46.3	19.7	24.5	19.4
Kelantan	49.2	61.3	66.6	14.4	37.4	24.5	81.3	83.4	85.4	52.5	49.3	38.1	12.9	30.9	21.5
Melaka	69.8	69.2	74.2	23.1	45.1	27.5	68.5	82.7	84.8	69.1	67.9	50.6	22.9	24.3	22.5
Negeri Sembilan	65.4	69.0	72.5	24.3	59.9	45.8	77.8	92.3	93.1	41.9	61.4	45.9	19.2	17.7	22.4
Pahang	56.2	66.7	73.6	18.4	35.0	21.4	75.6	80.3	85.5	43.4	52.3	40.0	8.9	25.2	21.8
Pulau Pinang	70.2	75.4	78.1	25.5	32.2	31.8	78.5	86.3	86.4	58.6	58.0	52.5	16.0	22.7	16.1
Perak	57.4	66.2	67.6	17.9	30.4	32.6	70.7	73.3	79.6	52.6	50.4	40.7	15.3	33.7	23.7
Perlis	51.1	52.7	53.6	24.3	15.6	13.0	79.3	78.2	72.4	63.0	45.4	41.0	19.6	26.7	21.5
Selangor	73.4	84.6	89.8	41.9	63.2	55.7	87.1	93.4	94.7	59.7	79.3	68.7	25.4	40.1	37.6
Terengganu	73.3	81.0	83.2	35.8	39.1	37.8	79.8	85.8	89.6	73.8	80.2	70.4	18.1	46.3	43.9
Sabah	42.5	49.2	52.9	16.2	22.4	23.0	83.1	91.7	97.6	46.0	49.7	40.3	10.4	21.4	20.1
Sarawak	49.0	59.5	60.1	17.3	28.2	24.0	75.5	83.0	84.4	44.1	34.2	25.1	11.0	28.9	20.8
W.P. Kuala Lumpur	83.2	85.8	85.9	49.0	54.2	42.8	79.9	83.2	83.3	68.0	78.0	50.1	39.1	29.0	32.9
W.P. Labuan	64.5	85.5	86.7	28.1	59.2	21.3	85.1	83.6	50.4	18.0	82.0	39.2	9.0	38.7	18.0
W.P. Putrajaya	86.3	89.5	90.9	44.2	36.2	42.6	88.8	95.3	95.9	72.3	72.4	72.7	69.0	61.1	31.1

Table 72: Percentage of Individuals Using the Internet by State and Type of Activity, Malaysia, 2020 - 2022 (cont'd)

(%)

State	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
	Learning Activities						Entertainment								
	Consulting websites for formal learning purposes			Doing an informal online course			Listening to radio online			Watching television online			Downloading pictures/ movie/ games		
MALAYSIA	**40.3**	**59.0**	**52.9**	**20.8**	**28.7**	**26.1**	**53.8**	**64.9**	**72.8**	**55.5**	**65.0**	**68.1**	**87.9**	**91.8**	**93.5**
Johor	39.6	59.3	52.8	17.9	21.9	22.6	64.7	78.3	79.7	44.8	63.1	64.5	85.7	88.9	92.7
Kedah	34.9	56.0	48.7	14.5	18.5	17.7	53.5	68.2	79.1	42.4	63.8	67.8	91.4	96.7	97.5
Kelantan	37.2	47.4	39.3	14.5	29.2	22.9	43.9	48.0	66.7	36.6	49.5	62.8	87.8	90.0	90.8
Melaka	32.7	61.7	57.5	17.5	31.3	22.2	49.6	73.6	79.0	57.9	72.6	77.9	89.4	92.1	94.9
Negeri Sembilan	45.0	56.2	48.4	26.6	25.3	19.2	78.0	73.7	78.7	49.7	65.5	70.1	85.0	93.9	96.0
Pahang	30.4	56.7	49.5	10.4	20.3	21.5	33.6	38.3	64.8	44.8	50.8	59.0	84.3	85.5	88.8
Pulau Pinang	31.8	60.3	56.1	17.4	20.6	15.6	69.6	80.3	82.5	70.3	84.5	88.8	90.0	92.6	93.2
Perak	39.1	54.7	46.4	17.0	38.0	30.4	49.9	55.1	60.8	54.0	67.4	67.8	81.1	86.1	86.9
Perlis	37.0	50.1	42.8	34.6	17.4	26.2	67.6	67.8	71.7	38.9	55.1	34.9	84.3	85.7	86.3
Selangor	60.6	69.4	62.9	37.5	46.3	39.5	49.0	71.8	77.9	63.3	66.9	71.6	89.7	96.6	97.3
Terengganu	38.6	60.6	53.1	18.7	49.0	38.2	61.0	94.5	96.4	75.7	78.0	78.9	91.5	96.6	97.2
Sabah	24.2	51.8	45.9	12.5	17.4	17.8	40.9	45.5	54.0	46.0	54.3	56.9	89.4	92.5	95.1
Sarawak	26.8	52.7	48.0	9.0	16.2	12.5	47.2	49.3	56.4	66.5	67.8	68.7	86.7	86.0	86.4
W.P. Kuala Lumpur	45.9	65.9	57.6	25.4	28.2	33.8	74.6	78.7	78.9	69.0	69.4	65.5	90.6	92.2	93.2
W.P. Labuan	18.0	62.3	60.4	6.0	37.8	14.1	84.2	83.2	85.3	73.0	98.4	53.8	95.6	98.5	99.6
W.P. Putrajaya	62.3	76.0	67.6	32.1	33.7	20.5	86.2	76.8	96.9	76.6	83.3	82.3	92.2	96.2	98.2

Table 72: Percentage of Individuals Using the Internet by State and Type of Activity, Malaysia, 2020 - 2022 (cont'd)

(%)

State	Storage Space			e-Health						e-Government					
	Using storage space on the internet			Seeking health information			Making a medical appointment			Getting information from government organisations			Interacting with government organisations		
	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
MALAYSIA	**53.5**	**64.6**	**51.2**	**61.9**	**73.8**	**62.3**	**10.7**	**43.5**	**31.7**	**52.9**	**68.1**	**54.8**	**35.2**	**51.9**	**38.4**
Johor	53.2	65.5	51.7	46.1	75.7	65.7	12.1	41.7	24.7	50.5	74.9	67.4	35.9	62.3	47.2
Kedah	42.7	68.0	50.8	68.0	87.6	67.5	6.6	22.8	16.9	43.9	95.8	84.4	25.2	67.5	45.9
Kelantan	35.0	60.8	41.3	45.8	77.7	50.7	1.6	63.3	19.4	43.6	60.7	39.2	21.1	29.4	29.3
Melaka	53.2	64.9	44.9	52.4	74.6	54.2	12.9	29.3	18.3	52.7	63.3	55.9	40.3	43.1	30.2
Negeri Sembilan	63.3	62.4	55.2	60.2	81.8	52.4	8.3	24.8	22.4	55.7	71.5	43.9	36.9	29.8	28.1
Pahang	54.3	62.7	40.9	42.1	63.5	51.4	4.0	38.6	17.2	52.0	59.3	35.2	32.3	40.8	30.3
Pulau Pinang	53.2	58.7	46.7	56.9	66.2	57.9	11.2	22.0	21.1	51.3	68.6	59.1	34.2	65.9	43.9
Perak	33.0	59.5	55.4	53.0	71.1	62.6	3.8	37.2	27.5	45.1	68.9	51.6	28.4	69.9	42.5
Perlis	54.1	54.9	26.3	65.8	70.9	46.7	4.3	11.9	9.6	59.5	74.9	46.6	28.4	60.2	35.4
Selangor	72.4	75.1	57.7	77.4	74.7	65.7	18.9	56.5	49.6	63.8	65.4	53.8	42.0	44.5	42.4
Terengganu	55.5	67.2	49.4	70.6	91.5	71.1	11.5	75.5	64.6	59.6	93.6	63.9	44.0	90.8	69.4
Sabah	35.1	54.6	45.9	66.6	79.9	76.4	3.7	47.8	41.7	38.4	66.3	57.1	25.5	41.2	24.2
Sarawak	45.8	58.3	51.3	59.2	57.9	45.5	7.3	39.2	24.4	49.1	46.6	32.4	29.7	45.4	20.9
W.P. Kuala Lumpur	75.4	70.1	55.7	72.1	65.6	63.7	22.1	43.7	23.9	73.1	66.6	54.5	59.2	54.2	38.1
W.P. Labuan	57.1	76.5	28.2	64.1	79.3	49.2	4.4	49.7	22.9	33.2	54.8	48.7	21.0	29.6	39.8
W.P. Putrajaya	75.8	86.2	77.7	89.8	71.4	81.2	24.6	31.3	15.2	74.2	94.8	61.6	65.7	87.7	56.1

Table 72: Percentage of Individuals Using the Internet by State and Type of Activity, Malaysia, 2020 - 2022 (cont'd)

(%)

State	Civic and Politics			e-Commerce						Safety, Online Protection and Awareness		
	Posting opinions/ voting			Purchasing goods/ services via e-commerce			Selling goods/ services via e-commerce			Owning online security software and protection		
	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
MALAYSIA	**23.5**	**41.2**	**43.3**	**45.0**	**64.7**	**70.4**	**5.9**	**7.0**	**8.2**	**36.9**	**48.3**	**72.9**
Johor	15.5	43.5	43.2	40.8	65.8	69.7	2.2	5.7	8.0	41.7	54.5	83.8
Kedah	18.6	29.2	29.7	52.3	71.2	75.2	3.2	1.6	6.4	36.9	57.2	71.0
Kelantan	24.2	50.6	51.4	27.5	61.5	65.9	4.6	5.7	4.6	22.6	36.1	74.2
Melaka	22.4	53.9	57.9	48.9	66.7	77.7	15.1	6.4	3.4	42.7	47.2	80.0
Negeri Sembilan	10.1	29.7	30.1	45.7	64.2	72.4	4.6	4.9	3.2	20.3	57.9	66.2
Pahang	13.4	27.1	35.0	38.2	58.8	71.6	2.2	4.2	2.4	30.6	22.0	47.4
Pulau Pinang	25.8	40.6	42.7	53.3	56.3	66.2	6.8	3.5	5.6	47.9	72.1	87.5
Perak	21.4	24.9	26.6	41.2	53.3	54.6	4.7	3.8	5.8	25.0	34.4	72.5
Perlis	26.6	13.0	27.4	49.7	43.8	52.6	6.1	3.4	4.6	28.9	46.7	47.8
Selangor	30.5	59.0	61.3	55.6	83.7	87.9	7.2	13.9	14.3	49.2	56.9	78.8
Terengganu	34.8	70.3	71.9	45.5	79.5	81.9	15.6	4.2	4.6	27.5	68.2	72.6
Sabah	20.6	22.7	24.8	27.1	47.1	48.3	6.5	7.0	7.9	23.7	35.9	58.2
Sarawak	11.0	35.9	36.2	36.2	45.4	48.1	2.9	4.7	5.8	22.0	19.2	58.9
W.P. Kuala Lumpur	48.5	46.9	37.1	66.2	79.5	79.7	9.2	8.3	12.3	58.2	72.6	78.6
W.P. Labuan	7.8	49.4	43.5	23.5	91.4	92.8	4.0	27.9	24.4	58.2	95.9	97.4
W.P. Putrajaya	64.3	55.8	49.9	78.6	90.9	96.7	13.9	9.5	5.2	72.0	29.4	93.8

Table 73: Relative Standard Error of Estimates for Percentage of Households with Access to ICT Services and Equipment by Strata, Malaysia, 2022

ICT Services and Equipment	Percentage of ICT Access by Households			Standard Error of Estimates (%)						Percentage of ICT Access by Households at 95% Confidence Interval		
				Relative value			Standard error					
	Malaysia	Urban	Rural	Malaysia	Urban	Rural	Malaysia	Urban	Rural	Malaysia	Urban	Rural
Internet	96.0	98.1	89.1	0.1	0.1	0.3	0.1	0.1	0.3	95.8 - 96.3	97.9 - 98.3	88.5 - 89.7
Computer	91.3	94.0	82.4	0.2	0.2	0.5	0.2	0.2	0.4	90.9 - 91.7	93.5 - 94.4	81.5 - 83.1
Mobile phone	99.3	99.6	98.2	0.1	0.1	0.1	0.1	0.1	0.1	99.2 - 99.4	99.5 - 99.7	97.9 - 98.4
Pay TV channel	76.9	80.8	63.9	0.4	0.5	0.7	0.3	0.4	0.5	76.2 - 77.5	80.0 - 81.5	62.9 - 64.8
Television	99.2	99.5	98.4	0.1	0.1	0.1	0.1	0.1	0.1	99.1 - 99.3	99.3 - 99.6	98.1 - 98.6
Radio	99.1	99.4	98.0	0.1	0.1	0.1	0.1	0.1	0.1	99.0 - 99.2	99.3 - 99.6	97.6 - 98.3
Fixed-line telephone	27.3	30.7	15.8	1.5	1.6	2.3	0.4	0.5	0.4	26.5 - 28.0	29.7 - 31.7	15.1 - 16.5

Table 74: Relative Standard Error of Estimates for Percentage of Individuals Using ICT Services and Equipment by Strata, Malaysia, 2022

ICT Services and Equipment	Percentage of Individuals using ICT			Standard Error of Estimates (%)						Percentage of Individuals using ICT at 95% Confidence Interval		
				Relative value			Standard error					
	Malaysia	Urban	Rural	Malaysia	Urban	Rural	Malaysia	Urban	Rural	Malaysia	Urban	Rural
Internet	97.4	98.3	94.5	0.1	0.1	0.2	0.1	0.1	0.2	97.2 - 97.5	98.1 - 98.5	94.2 - 94.9
Computer	80.2	85.7	63.1	0.3	0.3	0.8	0.3	0.3	0.5	79.8 - 80.8	85.4 - 86.5	61.7 - 63.7
Mobile phone	99.1	99.4	98.3	0.0	0.1	0.1	0.0	0.1	0.1	99.1 - 99.2	99.3 - 99.5	98.2 - 98.5

TECHNICAL NOTES

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TECHNICAL NOTES

A) Information and Communication Technology Satellite Account (ICTSA)

CONCEPTS AND DEFINITIONS

1. OVERVIEW

Information and Communication Technology Satellite Account (ICTSA) of Malaysia 2022 is based on the System of National Accounts 2008, the OECD Guide to Measuring the Information Society 2011 and the OECD Internet Economy Outlook 2012. The concepts and definitions are adapted to Malaysia's requirement.

This section will briefly present the concepts and definitions practiced by Malaysia in constructing ICTSA tables.

2. CONCEPTS AND DEFINITIONS OF ICT

a. ICT

Information and Communication Technology (ICT) refers to the technologies and services that enable information to be accessed, stored, processed, transformed, manipulated and disseminated, including the transmission or communication of voice, image and/or data over a variety of transmission media.

b. ICT industry

ICT industry refers to the industries which produce ICT products as primary activities. Details of ICT industry are described in the Classification Section. The main categories of ICT industry in the compilation of ICTSA are as follows:

1. ICT manufacturing
2. ICT trade
3. ICT services
4. Content and media

c. Other industries

Other industries refers to the other non ICT industries that produce ICT products.

d. ICT products

The details of **ICT products** are listed in the Classification Section. The main categories of ICT products are as follows:

1. **ICT goods**

   1.1. Computers and peripheral equipment
   1.2. Communication equipment
   1.3. Consumer electronic equipment
   1.4. Miscellaneous ICT components and goods

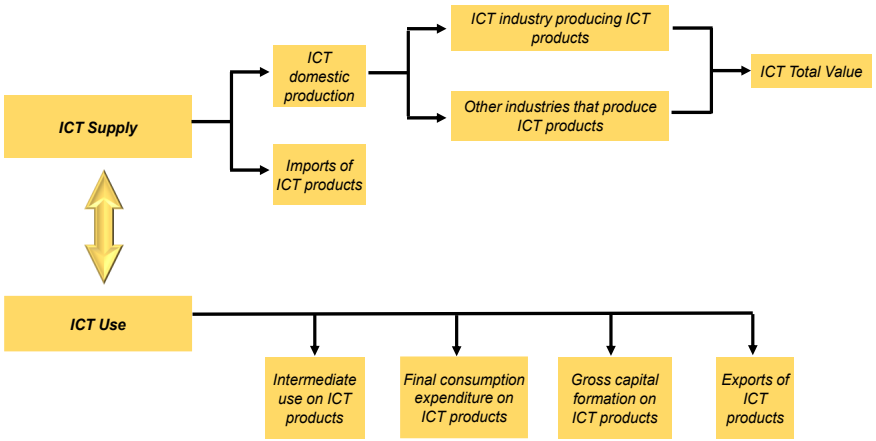
2. **ICT services**

   2.1. Manufacturing services for ICT equipment
   2.2. Business and productivity software and licensing services
   2.3. Information technology consultancy and services
   2.4. Telecommunications services
   2.5. Leasing or rental services for ICT equipment
   2.6. Other ICT services

3. **Content and media products**

   3.1. Printed and other text-based content on physical media, and related services
   3.2. Motion picture, video, television and radio content, and related services
   3.3. Music content and related services
   3.4. Games software
   3.5. On-line content and related services
   3.6. Other content and related services

e. Schematic view of ICTSA



f. E-commerce

E-commerce transaction is the sale or purchase of goods or services, conducted over computer networks by methods specifically designed for the purpose of receiving or placing of orders. E-commerce transaction can be between enterprises, households, individuals, governments and other public or private organisations.

Method of payment and the ultimate delivery of the e-commerce goods or services might be done through computer network/internet or traditionally.

E-commerce transactions include orders made in web pages, extranet or Electronic Data Interchange (EDI). Nevertheless, orders made by telephone calls, facsimile or manually typed e-mail are not categorised as an e-commerce transactions.

g. E-commerce other industries

E-commerce other industries is an industries not categorized under the ICT industry classification.

h. ICT to economy

ICT to economy consists of ICT industry plus e-commerce of other industries.

3. PRODUCTION ACCOUNTS FOR ICT

a. Production account

The **production account** records the activity of producing goods and services as defined within the System of National Accounts. The production account shows output as resources and intermediate consumption as uses and the balancing item is value added.

b. Gross Domestic Product

Gross Domestic Product (GDP) is the total value of all goods and services produced in a certain period after deducting the cost of goods and services used up in the process of production. This value is before deducting the allowances for consumption of fixed capital i.e. the sum of value added of resident producers in producers' prices plus import duties. GDP is equivalent to expenditure on the GDP (in purchasers' prices) i.e. the sum of all components of final expenditure on goods and services less imports of goods and services. GDP can be measured by using three approaches namely Production, Expenditure and Income Approach.

c. Value added

Value added is the value that a producer adds to the raw material of goods and services it purchases in the process of production. Thus, value added is the value of output less the value of intermediate consumption.

d. Gross Value Added of ICT

Gross Value Added of ICT industry (GVAICT) is the total Gross Value Added of all establishments belonging to ICT industry, regardless of whether all their output is provided for ICT and of degree of specialisation of their production process.

4. INCOME ACCOUNTS FOR ICT

a. Compensation of employees

Compensation of employees includes remuneration, in cash or in kind, payable by an enterprise to an employee in return for work done during the accounting period.

b. Gross operating Surplus

Gross operating surplus refers the operating surplus before deducting the consumption of fixed capital and mixed income.

1. Operating surplus

Operating surplus refers to measures the surplus or deficit accruing from processes of production before deducting any explicit or implicit interest charges, rent or other property income payable on the financial assets, land or other natural resources required to carry on the production. By definition, operating surplus can only be earned by industries.

2. Mixed income

Mixed income includes an unknown element of remuneration for work done by the owner of the enterprise, or other members of the household, as well as operating surplus accruing from the production.

3. Consumption of fixed capital

Consumption of fixed capital is defined as the decline in the current value of the stock of fixed assets owned and used by a producer during the course of the accounting period as a result of physical deterioration, normal obsolescence or nominal accidental damage.

c. Taxes less subsidies on production and imports

Taxes less subsidies on production and imports consists of taxes on products and other taxes on production less subsidies on product and other subsidies on production.

1. Taxes on products

Taxes that are payable per unit of some goods or services and usually become payable when they are produced, delivered, sold, transferred or otherwise disposed by their producer. The tax may be a specific amount of money per unit of quantity of a good or service, or it may be calculated ad valorem as a specified percentage of the price per unit or value of the goods or services transacted. For example, sales taxes, excise taxes, import duties, export duties, etc.

2. Other taxes on production	Other taxes on production consists of all taxes except taxes on products that enterprises incur as a result of engaging in production such as taxes payable on land, fixed assets or labour employed in the production process or certain activities or transactions. Examples of other taxes on production are taxes payable by enterprises for business licenses, payroll taxes, stamp duties, etc.
3. Subsidies on products	A subsidy payable per unit of a good or service. The subsidy may be a specific amount of money per unit of quantity of a good or service, or it may be calculated ad valorem as a specified percentage of the price per unit of the goods or services. A subsidy on products usually becomes payable when the good or service is produced, sold or imported, but it may be also payable in other circumstances such as when a good is transferred.leased, delivered or used for own consumption or own capital formation. The subsidy may be designed to influence resident enterprises' levels of production or the prices at which their outputs are sold.
4. Other subsidies on production	Other subsidies on production consists of subsidies except subsidies on products that resident enterprises may receive as a consequence of engaging in production such as subsidies on payroll or workforce. The subsidy may be designed to influence the remuneration of the institutional units engaged in production.

METHOD OF COMPILATION AND DATA SOURCES

1. Establishment of ICTSA

The compilation of ICTSA is made possible due to the well established of System of National Accounts in Malaysia. The term "satellite account" is adopted to reflect the nature of the account developed. It is a "satellite" to the core set of National Accounts that presents additional information which is beyond the available information provided in the National Accounts.

This satellite information focuses on a particular aspect of the economy for example contribution of ICT to the nation. It also permits further linkages to additional information specific to ICT such as income, exports, imports and employment. ICT consists of industries such as manufacturing, trade, services and content & media.

The development of satellite account is a systematic statistical measurement that applies concepts, definitions and classification which are based on international standard to enable comparison among countries. Various information available in different agencies is compiled to provide holistic and better picture of the impact of ICT industry in Malaysia.

2. Framework of ICTSA

The basis of ICTSA compilation in Malaysia is the framework of supply and use tables (SUT). However, it only focuses on ICT products and industries. The supply table indicates the goods and services of ICT products that are supplied by each producer. Meanwhile, use table tracks the usage of those products by industries, government, households and exports.

Supply of each product (valued at purchasers' prices) consists of;

- Domestic production by industry (valued at basic prices);
- Imports;
- Transport, retail and wholesale trade margins; and
- Taxes less subsidies on production and imports.

Use of each product (valued at purchasers' prices) consists of:

- Intermediate use by industries (products that are consumed by industries in the process of producing other products); and
- Final use by type of expenditure. Final use includes consumption households and government, products that have been capitalised, changes in inventories and exports.

The following table illustrates the basic structure of SUT.

SUPPLY TABLE

Supply of product	Output of industries at basic prices* (economic activities)				Imports	Total supply at basic prices	Trade and transport margins	Taxes less subsidies on products	Total supply at purchasers' prices**
	Industry A	Industry B	Industry ...	Total industry (1)	(2)	(3) = (1) + (2)	(4)	(5)	(6) = (3) + (4) +(5)
ICT product A	Output by product and by industry				Imports by product	Supply by product			
ICT product B									
ICT product C									
ICT product									
Total Supply (ICT product)	Total output by industry				Total imports	Total supply by product			

USE TABLE

Use of product	Intermediate use by industry (economic activities)				Final consumption expenditure	Gross capital formation	Exports	Total use at purchasers' prices**
	Industry A	Industry B	Industry ...	Total intermediate use (1)	(2)	(3)	(4)	(5) = (1) + (2) +(3) + (4)
ICT product A	Intermediate consumption by product and by industry				Final use by product and by type of expenditure***			
ICT product B								
ICT product C								
ICT product …								
Total use (ICT product)	Total intermediate consumption by industry				Total final use by product and by type of expenditure***			
Compensation of employees	Value added by component and by industry							
Gross operating surplus								
Taxes less subsidies on production and imports								
Industry output at basic prices*								

Note.

* Basic prices is the price received by the producer for a unit of good and service produced as output, excluding any tax payable or including any subsidy receivable on the product as a subsequent of its sales or use. It also excludes any delivery charges invoiced separately by the producer.

** Purchasers' prices is the price paid by the purchaser to take delivery of a good and service at the time and place required by the purchaser. It includes any transport charges paid separately by the purchaser.

*** Type of expenditure refers to the final consumption expenditure, gross capital formation and exports.

A comprehensive use table includes primary inputs of production namely compensation of employees, gross operating surplus and other taxes less subsidies on products and production for each industry.

The SUT are used to assemble and integrate all data required to produce estimates of economic aggregates related to ICT. Output consists of those goods and services produced within an establishment which become available for use outside that establishment. The value of ICT output is the market value of ICT goods and services. Value added will be computed for ICT industry and other industries which produce ICT products.

3. Measurement of e-commerce

Measurement of e-commerce value added is based on the manual OECD Internet Economy Outlook 2012. There are two recommended approaches, which are narrow and broad approaches. Narrow approach only takes into account value added from the wholesale and retail sectors. While, broad approach includes all industries across the economy.

It is assumed that the share of revenue from e-commerce to total revenue for each industry is proportional to the percentage of value added from e-commerce to the total value added for the same industry. Broad approach is used in measuring the e-commerce in Malaysia. E-commerce consists of the value of ICT industry and other industries.

4. Data sources

The data sources in compiling ICTSA are as follows:

INDUSTRY / DATA	DATA SOURCES
ICT manufacturing industries ICT trade industries ICT services industries Publishing of books, periodicals and other publishing activities Motion picture, video and television programme activities Sound recording and music publishing activities Programming and broadcasting activities Other information service activities Other industries	• Economic Census • Annual Survey • SUT • GDP

INDUSTRY / DATA	DATA SOURCES
Exports and imports of ICT goods and services	• External Trade Statistics • Statistics of International Trade in Services
Tax and subsidies	• Accountant General's Department of Malaysia • Royal Malaysian Customs Department • GDP Income Approach
Government final consumption expenditure	• Financial Accounts of Federal Government, State Government, Local Authorities and Statutory Bodies
Private final consumption expenditure	• Household Expenditure Survey
Gross capital formation	• GDP • Gross Fixed Capital Formation
Compensation of employees	• Household Income Survey • Financial Accounts of Federal Government, State Government, Local Authorities and Statutory Bodies • Labour Force Survey • GDP Income Approach
Gross operating surplus	• GDP Income Approach
Employment	• Labour Force Survey • Annual Economic Survey • Quarterly Survey of Services • Monthly Manufacturing Survey • Monthly Survey of Wholesale & Retail Trade

5. Main tables Malaysia's ICTSA

ICTSA comprises of nine (9) tables of each table and the explanation are as follows:

Table 1

ICT industry and other industries that produce ICT products

Table 1 contains the statistics on all industries that produce ICT products. This table derived from SUT 2015 according to the ICT product classification. For the subsequent years, data is based on published Annual GDP.

Table 2A, 2B and 2C

Supply and use of ICT products

Table 2A, 2B and **2C** present the statistics on the supply and use of ICT products. The value of supply must be equal to the value of use of ICT product. The data on the supply and use of ICT products are derived from the SUT 2015. For the subsequent years, data are based on published Annual GDP. Industry and products have been selected based on the ICTSA classification. Supply of ICT products data comprises of domestic production of ICT products, imports of ICT products and tax less subsidies on ICT products. Use of ICT products data consists of intermediate use of ICT products, final consumption expenditure of ICT products by households and governments, gross capital formation for ICT products and export of ICT products.

Table 3 and Table 4

Exports and imports of ICT products

Tables 3 and **4** consists the exports and imports statistics for ICT products. Data from goods extracted from the customs declaration (International Trade Statistics) where the compilation is based on the Harmonized Commodity Description and Coding Systems (HS) code. Meanwhile, the value of the exports and imports services is derived from the balance of payments statistics. The arrangement also took into account the recommendations by the SNA 2008 and Balance of Payments and International Investment Position Manual Sixth Edition (BPM6) particularly in implementation on treatment of Goods for Processing from Abroad (GFP) and Manufacturing Services (MS).

Table 5

Income components of ICT industry

Table 5 consists statistics on Income components of ICT industry comprises of compensation of employees, gross operating surplus and taxes less subsidies on production and imports. This statistics is derived using on SUT 2015 according to the industry that produces ICT products. For the subsequent years, data is based on published Annual GDP Income Approach.

Table 6

Employment in the ICT industry

Table 6 is statistics on employment data in the ICT industry. The statistics is compiled using Labor Force Survey, Annual Economic Survey, Quarterly Survey of Services, Monthly Manufacturing Survey and Monthly Survey of Wholesale & Retail Trade are obtained by the Department of Statistics Malaysia.

Table 7A, 7B and 7C

Gross Value Added of ICT industry

Table 7A, 7B and **7C** comprise the Value Added statistics of ICT industry at current prices. Its measure the Gross Value Added of ICT industries as a whole, whether the output is provided for ICT or non ICT products. Data is based on published Annual GDP.

Table 8A and 8B

Gross Value Added of e-commerce

There are two table for e-commerce. **Table 8A** are present the Gross Value Added statistics of e-commerce by ICT industry while **Table 8B** was Gross Value Added of e-commerce by main sector. Measurement of e-commerce value added is based on the OECD Internet Economy Outlook 2012. Data are based on the percentage of e-commerce revenues by industries from the Economic Census 2016.

Table 9

ICT contribution to economy

Table 9 is statistics to economy which is comprises Gross Value Added of the ICT industry **(Table 7)** and the Gross Value Added of e-commerce by other industries **(Table 8A).**

6. Publication and data revision

This publication presents ICTSA for the year 2015 to 2022. The series will be updated whenever any latest data available.

7. Symbols

-	:	negative
..	:	not applicable
e	:	estimate
p	:	preliminary
0	:	value less than 0.05
%	:	per cent

B) Annual Economic Statistics (AES) for ICT Services Sector

1. Scope and coverage

The survey covered all registered establishments engaged in **Information and communication services** which included main activities as follows:

i. Publishing;
ii. Motion picture, video & television programme production, sound recording & music publishing;
iii. Programming & broadcasting;
iv. Telecommunication services;
v. Computer programming, consultancy & related activities; and
vi. Information services.

Overall, coverage of the survey for information and communication services was 35 industries at 5-digit level under the Malaysia Standard Industrial Classification (MSIC), 2008.

Coverage for year 2010 and above are not the same as the coverage in 2009 and below, due to differences in the classification of activity (2010 and above - MSIC 2008; 2009 and below - MSIC 2000). Publishing activities are not covered in information and communication services prior to 2009 and motion picture, video and television programme production, sound recording and music publishing activities are covered only in this services after 2010.

2. Source of establishments

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.

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.

4. Concepts and definitions

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

i. Publishing activities

Publishing includes the acquisition of copyrights to content (information products) and making this content available to the general public by engaging in (or arranging for) the reproduction and distribution of this content in various forms. All the feasible forms of publishing (in print, electronic or audio form, on the internet, as multimedia products such as CD-ROM reference books, etc.), are included in this division except publishing of motion pictures.

ii. Motion picture, video and television programme production, sound recording and music publishing activities

Motion picture, video and television programme production, sound recording and music publishing activities include production of theatrical and non-theatrical motion pictures whether on film, video tape or disc for direct projection in theatres or for broadcasting on television; supporting activities such as film editing, cutting, dubbing, etc; distribution of motion pictures and other film productions projection to other industries; as well as motion picture or other film production projection.

Also included is buying and selling of motion picture or other film productions distribution rights. Besides, it also includes the sound recording activities, i.e. produce, release, promote and distribute the original sound master recordings, publishing of music as well as sound recording service activities in a studio or elsewhere.

4. Concepts and definitions (cont'd)

iii. Programming and broadcasting activities

Programming and broadcasting activities includes the activities of creating content or acquiring the right to distribute content and subsequently broadcasting that content, such as radio, television and data programme of entertainment, news, talk, and the like. Also included is data broadcasting, typically integrated with radio or TV broadcasting. The broadcasting can be performed using different technologies, over-the-air, via satellite, via a cable network or via internet. This division also includes the production of programme that are typically narrowcast in nature on a subscription or fee basis, to a third party, for subsequent broadcasting to the public (limited format, such as news, sports, education, or youth-oriented programming).

iv. Telecommunication services

Telecommunication services includes the activities of providing telecommunication and related service activities, i.e. transmitting voice, data, text, sound and video. The transmission facilities that carry out these activities may be based on a single technology or a combination of technologies. The commonality of activities classified in this division is the transmission of content, without being involved in its creation. The breakdown in this division is based on the type of infrastructure operated.

v. Computer programming, consultancy and related activities

Computer programming, consultancy and related activities includes the following activities of providing expertise in the field of information technologies such as writing, modifying, testing and supporting software to meet the needs of a particular customer; planning and designing computer systems that integrate computer hardware, software and communication technologies; on-site management and operation of clients' computer systems and/ or data processing facilities; providing infrastructure for hosting or data processing services; and other professional and technical computer related activities.

vi. Information services activities

Information services activities include the activities of web search portals, data processing and hosting activities, as well as other activities that primarily supply information.

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.

7. Method of data 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. Categories of industries at two (2), three (3), four (4) and five (5) digit MSIC at state level have been classified as stratum and the establishment as the sampling unit.

Each stratum (industry) has been set up into four substrata to ensure the distributed sample takes into account the economic characteristics of the industry. The main substratum is heterogeneous and was fully covered. Whereas, other substratum that is homogeneous were sampled.

Main substratum includes large establishments that have significant total revenue in the industry while for the second to fourth substratum are based on micro, small, and medium enterprise (MSME) categories.

9. Sample 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

S_i^2 = Variance for stratum

V = Desired variance

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

where,

$\hat{Y}_i$ = Total revenues for stratum

RSE = Relative standard error

Z = Value of confidence level

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

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

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

$i = 1, 2, \ldots k$

where,

N_h = Sample size for substratum h of stratum i

n_{hi} = Population size for substratum h

S_h = Standard deviation for substratum h

n_i = Sample size for stratum i

h = Substratum

i = Stratum

9. Sample size and estimation procedure (cont.)

The optimum sample size for this survey is 79,481 establishments. Establishments of the large categories were fully covered while establishments of the second to 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:

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

where,

N_h = Total population of substratum h; and

n_h = Total sample of substratum h

Non response weight at substratum h as below:

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

where,

n'_h = Numbers of respond sample size for substratum h; and

n_h = Number of sample size for substratum h

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

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

where,

W_h = Sampling design weight at substratum h

NRW_h = Non response weight at substratum h

11. Reporting unit

The reporting unit used in the survey was **establishment**. An establishment is 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 to an industry classification based on its principal activity.

Each branch of a multi-branch organisation at a different location was conceptually treated as a different establishment. 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. That 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 of **Information and communications services** is defined to include the following items:

+ Income from services rendered
+ Income from repair and maintenance services for telecommunication services and installation services for telecommunication networks
+ Income from advertising and online advertising space
+ Subscription income and income from providing program to other broadcasting establishments
+ Royalties, copyrights, licensing, franchise fees and licensing of rights to use syndicated media content
+ Income from commissions and brokerage earned and management services
+ Rental income received (except land) and leasing of computer hardware
+ Value of sales (good/ materials purchased for resales without undergoing further processing)
+ Other operating income
+ In-house research and development expenditure
+ Buillt/ self-produced fixed assets
- Cost of goods sold (goods/ material purchased for resale without undergoing further processing)

13. Value of intermediate input

The value of intermediate input of **Information and communications services** is defined to include the following elements**:**

+ Purchase of goods, materials and services
+ Payment for data processing and other services related to information technology
+ Cost of material used includes materials for repairs and maintenance
+ Costs of films purchased for projection, payment for programmed provider and payment for rental of films
+ Amount paid for outsourcing, payment for current repairs & maintenance work done by others and payment for providing workers
+ Domestic interconnect and international out payment
+ Royalties paid to non-government organizations/ corporate sponsorship (local and foreign)
+ Telecommunication, printing cost and advertising and promotion
+ Expenditure for electricity, water, fuel, lubricants, gas, stationery, office supplies and others
+ Payment for security services and warranty claim
+ Operation expenditure and Operational lease
+ Fees paid to non-working directors for their attendance at Board of Directors' meetings
+ Other operating expenditure
+ Opening stock except trading stock
- Closing stock except trading stock

Effective 2014, research and development expenditure has been removed from calculation of intermediate input and treated as capital asset in line with the Recommendation of System of National Accounts (SNA) 2008.

14. Value added

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

15. Number of persons engaged

Employment 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. Therefore, it excludes silent and inactive partners.

15. Number of persons engaged (cont.)

ii. Unpaid family workers

This is defined as all persons (full-time or part-time) in the household of any of the owners of the establishment who perform a specified job and work for a minimum of one third of the normal working time for 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 part of the household of an owner but this would continue whether they worked in the establishment or not.

iii. Paid employees (full-time)

This is defined as all paid workers who work for at least 6 hours a day and at least 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 (MASCO) 2020 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. Value of assets as at the beginning and end of 2021 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. Research and development expenditure also treated as capital asset in line with the recommendation of System of National Accounts (SNA) 2008.

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:

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

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_o = Value at previous year

t = Number of years, $Y_t - Y_o$

r = Annual growth rate

20. Symbols and abbreviations

-	:	nil
%	:	per cent
&	:	and
>	:	more than
<	:	less than
}	:	combined
RM	:	Ringgit Malaysia
etc.	:	et cetera
cont.	:	continue
i.e	:	that is
n.e.c	:	not elsewhere classified
W.P.	:	Federal Territory

C) Usage of ICT and E-Commerce by Establishment (ICTEC)

1. INTRODUCTION

This report provides information on usage of ICT and e-commerce by establishment for reference year 2021. The data were collected and compiled from Annual Economic Survey 2022.

The ICT indicators has been developed by the World Summit on the Information Society (WSIS) and was launched in June 2004. The purpose of the core list as a guidance/ input to countries that are conducting ICT surveys. The core list also assists in produce quality and internationally comparable ICT data.

There are 48 ICT indicators in six groups as follows:

- ICT infrastructure and access - 10 indicators
- Usage and access of ICT by households and individuals - 13 indicators
- Usage of ICT by businesses - 12 indicators
- ICT sector (producing) - 2 indicators
- International trade in ICT goods - 2 indicators
- ICT in education - 9 indicators

2. LEGAL AUTHORITY

The Survey on the Usage of ICT and E-Commerce by Establishment is conducts under the **Statistics Act 1965 (Revised 1989). Section 5** under this Act requires any establishment operating in Malaysia to provide actual or best estimate information to the Department. According to the Act, the contents of the questionnaire are **confidential** and only aggregate figures are published.

3. SCOPE AND COVERAGE

This publication covers registered establishments in the Agriculture, Mining & Quarrying, Manufacturing, Construction and Services sectors.

The survey coverage for the overall economic activity encompass of **1,122** industries at 5-digit level according to the Malaysian Industrial Classification Standards (MSIC), 2008 Version 1.0.

The details by sectors are as follows:

Sector	Number of Industries
Agriculture	140
Mining & quarrying	56
Manufacturing	259
Construction	72
Services	595
Total	**1,122**

4. SOURCE OF FRAME

The main source of information for the frame was the Companies Commission of Malaysia (SSM). Apart from SSM, information on the frame also updated from other sources such as the Malaysian Industrial Development Authority (MIDA), Ministry of Agriculture and Agro-based Industry, Construction Industry Development Broad, Malaysia (CIDB), Minerals & Geosciences Department, Malaysia (JMG), Energy Commission, various businesses and trade associations, newspaper advertisements and websites.

The frame is updated every year 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 to ensure that the frame is at the most current status.

5. TYPE OF BUSINESS ACTIVITY

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 activity which derived most of its 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 accordance with the Malaysia Standard Industrial Classification (MSIC), 2008 Ver. 1.0. The MSIC 2008 conforms to the International Standard Industrial Classification of All Economic Activities (ISIC), Rev. 4, published by United Nations Statistics Division, with modifications to suit local conditions.

6. CONCEPT AND DEFINITION

The definition adopted in this publication based on the recommendations of the MSIC 2008 Ver. 1.0. The definitions include the following activities:

6.1 Agriculture

Agriculture comprising the activities of growing, breeding and rearing of animals and production of animal products, felling of trees and other plants, as well as capture fishery and aquaculture includes the utilisation of plants and animals natural resources.

6.1.1 **Crops** refer to production of crops products including organic farming. Crops also include the growing of non-perennial and perennial crops for the purpose of seed production.

6.1.2 **Livestocks** refer to animals or bird that preserved for commercial and breeding purposes. Livestock production includes raising (farming) and breeding of all animals, also production of livestock products such as eggs, milk, honey, etc.

6.1.3 **Forestry and logging** includes the production of round wood for the forest-based manufacturing industries as well as the extraction and gathering of wild growing non-wood forest product. Besides the production of timber, forestry activities which produce the product through the minimum process, such as fire wood, charcoal, wood chips and round wood used in unprocessed form. These activities can be carried out in natural or forests plantation. This also includes part of the forestry operation based on fee or contract basis.

6.1.4 **Fisheries** comprise of fishing and aquaculture, covering the use of fishery resources from marine, brackish or freshwater, with the purpose of capturing or gathering fish, crustaceans, mollusks and other marine organisms and products. Aquaculture refer to the production process involving the culturing or farming (including harvesting) of aquatic organisms using techniques designed to increase the production of the organisms beyond the natural capacity of the environment.

6.2 Mining & Quarrying

Mining and quarrying include the extraction of minerals occurring naturally as solids (coal and ores), liquids (petroleum) or gases (natural gas). Extraction can be achieved by different methods such as underground or surface mining, well operation, seabed mining, etc.

6.2.1 **Mining** is defined as the extraction, dressing and beneficiating of minerals occurring naturally as solids, such as coal and ores; liquids, such as crude oil; or gases, such as natural gas. Mining also includes underground and surface mines, quarries and wells and all supplemental activities for dressing and beneficiating ores and other crude minerals such as crushing, screening, washing, cleaning, grading, milling, flotation, melting, pelleting, topping and other preparations needed to render the material marketable. Mining activities are classified into groups on the basis of the principal mineral produced.

6.2.2 **Quarrying** refers to activity of extraction from a mine or quarry, and also dredging of alluvial deposits, rock crushing and the use of salt marshes. The products are used most notably in construction (e.g. sands, stones, etc.), manufacture of materials (e.g. clay, gypsum, calcium, etc.), manufacture of chemicals, etc.

It includes quarrying, rough trimming and sawing of monumental and building stone such as marble, granite, sandstones, etc., quarrying, crushing and breaking of lime stone, mining of gypsum and anhydrite, mining of chalk and unclaimed dolomite, extraction and dredging of industrial sand, sand for construction and gravel, breaking and crushing of stone and gravel, quarrying of sand and mining of clays, refractory clays and kaolin.

Activities of It also include mining of chemical and fertilizer minerals, extraction of peat, extraction of salt, etc.

6.2.3 **Petroleum & natural gas** refers to the production of crude petroleum, the mining and extraction of oil from oil shale and oil sands and the production of natural gas and recovery of hydrocarbon liquids. This includes the overall activities of operating and/ or developing oil and gas field properties, including such activities as drilling, completing and equipping wells, operating separators, emulsion breakers, desilting equipment and field gathering lines for crude petroleum and all other activities in the preparation of oil and gas up to the point of shipment from the producing property.

It also includes support activities for petroleum and gas extraction, such as oil and gas field services, performed on a fee or contract basis, oil and gas well exploration and test drilling and boring activities.

6.3 Manufacturing

The physical or chemical transformation of materials or components into new products, whether the work is performed by power-driven machines or by hand, whether it is done in a factory or in the worker's home, and whether the products are sold at wholesale or retail.

The Manufacturing sector consists of 24 divisions namely:

6.3.1 Manufacture of food products;

6.3.2 Manufacture of beverages;

6.3.3 Manufacture of tobacco products;

6.3.4 Manufacture of textiles;

6.3.5 Manufacture of wearing apparel;

6.3.6 Manufacture of leather and related products;

6.3.7 Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials;

6.3.8 Manufacture of paper and paper products;

6.3.9 Printing and reproduction of recorded media;

6.3.10 Manufacture of coke and refined petroleum products;

6.3.11 Manufacture of chemicals and chemical products;

6.3.12 Manufacture of basic pharmaceutical;

6.3.13 Manufacture of rubber and plastics products;

6.3.14 Manufacture of other non-metallic mineral products;

6.3.15 Manufacture of basic metals;

6.3.16 Manufacture of fabricated metal products;

6.3.17 Manufacture of computer, electronics and optical products;

6.3.18 Manufacture of electrical equipment;

6.3.19 Manufacture of machinery and equipment n.e.c.;

6.3.20 Manufacture of motor vehicles, trailers and semi-trailers;

6.3.21 Manufacture of other transport equipment;

6.3.22 Manufacture of furniture;

6.3.23 Other manufacturing; and

6.3.24 Repair and installation of machinery and equipment.

6.4 Construction

New construction, renovation, repair and demolition. The installation of any type of machinery or equipment installed during the original construction is taken into account, as is the installation of machinery or equipment after the original construction but requires a structural change for its installation.

6.5 Services

Services related to Electricity, gas, steam & air conditioning supply; Water supply, sewerage, waste management & remediation activities, Wholesale & retail trade; Transportation & storage; Information & communication; Accommodation; Food & beverage; Finance; Real estate; Professional, scientific & technical, Administrative & support services, Private education; Private health & social work; Art, entertainment & recreation and Personal services & other activities.

6.5.1 **Electricity, gas, steam & air conditioning** is defined as the activity of supplying electricity, natural gas, steam, hot water and the like through a fixed infrastructure (network) of lines, mains and pipelines. The dimensions of this network cannot be determined; also includes the distribution of electricity, gas, steam, hot water and the like in industrial areas or residential buildings. Therefore, this section includes the operation of electric and gas utilities that generate, control and distribute electricity or gas. Also includes steam supply and electric air conditioning.

6.5.2 **Water supply; sewerage, waste management & remediation activities** cover activities related to waste management including collection, treatment and disposal such as scheduled waste, solid waste and wastewater from industrial and household, including recovery materials & contaminated sites. The waste from the treatment process can be disposed off or used as input for other production process. Related activities in water treatment and supply are also included in this sector.

6.5.3 **Wholesale and retail trade** includes wholesale and retail trade, sale and repair of motor vehicles & motorcycles.

6.5.3.1 **Wholesale trade** is defined as the resale (without modification) of new and used goods to locksmiths, industrial, commercial, institutional or professional consumers; or to other wholesalers; or sell merchandise to a person or company.

6.5.3.2 **Retail trade** refers to the resale (sale without transformation) of new and used goods to the general public for personal or household consumption or utilisation.

6.5.3.3 **Motor vehicles** refers to wholesale and retail sale of motor vehicles and motorcycles, either new or used, sale of motor vehicle parts and accessories, maintenance and repair of motor vehicles and motorcycles including washing, polishing as well as commission agents.

6.5.4 **Transportation & storage** includes all establishment provides land transport, freight transport by road other land transport, water transport, warehousing & support activities such as storage & warehousing, terminal operations, car parking services, highway operations, port operations, cargo handling/ stevedoring, shipping agencies & forwarding of freight and other supporting activities for transportation services.

6.5.5 **Information & communication** comprised of motion picture, video & television program production, sound recording & music publishing activities, programming & broadcasting activities, telecommunication services, computer programming, consultancy & related activities and information services activities.

6.5.6 **Accommodation** refers to the provision on a fee of short-term lodging, whether open to the general public or restricted to members of a particular organization. It excludes rental of long term furnished accommodation which is classified in Real estate.

6.5.7 **Food & beverage r**efers to establishments that includes food and beverage serving activities providing complete meals or drinks fit for immediate consumption, whether in traditional restaurants, self-service or take-away restaurants, whether as permanent or temporary stands with or without seating. Determinant is the fact that meals fit for immediate consumption are offered, not the kind of facility providing them.

6.5.8 **Financial services** include monetary intermediation activities; other financial service activities and activities auxiliary to financial services; insurance/ takaful, reinsurance/ retakaful and pension & provident funding activities; and activities auxiliary to insurance/takaful and pension funding.

6.5.9 **Real estate** services includes acting as lessors, agents and/or brokers in one or more of the following: selling or buying real estate, renting real estate, providing other real estate services such as appraising real estate, property management or acting as real estate escrow agents. Activities in this division may be carried out on own or leased property and may be done on a fee or contract basis. Also included is the building of structures, combined with maintaining ownership of leasing of such structures.

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

6.5.11 **Administrative & support services** includes a variety of activities that support general business operations including rental & leasing activities, employment activities, travel agency, tour operator & other reservation service activities, security & investigation activities, services to building & landscape activities and office administrative, office support & other business support activities.

6.5.12 **Private educational** services refer to establishments registered with the Ministry of Education, Malaysia and the Ministry of Higher Education that provides academic, pre-primary & primary education, secondary education, higher education, other education and educational support activities.

6.5.13 **Human health & social work activities** includes hospital services, medical & dental practice activities, other human health activities, residential care activities and social work activities without accommodation.

6.5.14 **Arts, entertainment & recreation services** includes a wide range of activities to meet varied cultural, entertainment & recreational interests of the general public, including live performances, operation of museum sites, gambling, sport and recreation activities.

6.5.15 **Personal services & other activities** includes activities of membership organisations, activities of business, employers and professional membership organisations, activities of trade unions, activities of others membership organisations, repair of computers and personal and household goods and others personal services activities such as washing and dry-cleaning of textiles and fur products; hairdressing and other beauty treatment and funeral and other services activities.

7. E-COMMERCE DEFINITIONS

Based on Organisation for Economic Co-operation and Development (OECD), 2015, e-commerce transaction is defined as sale or purchase of goods or services, through a network of computers that have been designed for this purpose. E-commerce transactions can occur between enterprises, households, individuals, governments and public or private organisation to another.

Goods or services that have been ordered through e-commerce methods, but the payment or receipt of goods or services can be received either through online or offline.

E-commerce transaction, includes orders placed on websites, extranet or Electronic Data Interchange (EDI). However, the transactions made by telephone, fax, e-mail (mail that is typed manually) and the similar transactions are not categorised as e-commerce transactions.

(i) **E-commerce income** means the total income of establishments with e-commerce transactions. Income for wholesale and retail trade establishments refers to the value of sales of goods and services. Sales value means the value of all items for which ownership or effective right to use with a view to ultimate purchase, has been transferred to others.

(ii) **E-commerce expenditure** means the amount of expenses for establishments that have e-commerce transactions.

(iii) **E-commerce by type of market**

(a) **Domestic** means e-commerce transactions sales/ purchase that conducted in Malaysia.

(b) **International** means e-commerce transactions sales/ purchase that conducted which involves international transaction.

(iv) **E-commerce by type of customers**

(a) **Other business**

Business to Business (B2B) is related to e-commerce transaction between businesses which sell/ buy products or services to/ from another business. For example, a manufacturer can sell to a wholesaler or a wholesaler can sell to a retailer.

(b) **Individual consumers**

Business to Consumer (B2C) is related to e-commerce transaction between businesses and consumers which sell/ buy products or services. For example, business sells garment to consumer (income) or business provide discount coupon to consumers through e-commerce platform (expenditure).

(c) **Government and other non-business organisations**

Business to Government (B2G) is a business model that refers to businesses selling/ paying for products, services or information governments or government agencies. B2G networks or models provide a way for businesses to bid on government projects or products that governments might purchase or need for their organisations. This can encompass public sector organisations that propose the bids. B2G activities are increasingly being conducted via the internet through real-time bidding. B2G is also referred to as public sector marketing.

8. ICT DEFINITION

Based on OECD 2015 definition:

(i) **Computer**

Computer includes personal computer, portable computer (e.g. laptop), tablet and other devices such as smartphone*.

(ii) **Intranet**

Refers to the internal communications network using internet protocols and allowing communication within the organisation.

(iii) **Extranet**

Refers to a closed network that uses internet protocols to secure the sharing of business information with suppliers, vendors, customers or other business partners. It also can be part of a personal website business, where business partners can navigate after being confirmed in the login page.

(iv) **Local Area Network (LAN)**

A network connecting computers and associated devices within a localized area such as a single building, department or site; it may be wireless.

Note. * For Malaysia including smartphone

(v) **Wireless Local Area Network (WLAN)**

Local area network using high frequency radio waves instead of wires to communicate between networks-enabled devices. WLAN allows users to move around a small area within a radius of 20 to 91 meters.

(vi) **Wide Area Network (WAN)**

A network that connects computers and associated devices within a wide geographic area, such as a region or country.

(vii) **Fixed Broadband**

Refers to a technology with a speed of at least 256 kbit/s in one or both directions. It consists of wired fixed broadband and fixed wireless broadband.

Wired fixed broadband internet access most commonly used to send/ receive information via cable/ fiber optic (ADSL, SDSL, VDSL), fiber optic technology/ cable technology.

(viii) **Mobile broadband**

Refers to technology at speeds of not less than 256 kbit/s in one or both directions. It covers technologies such as 3G/ LTE/ 4G, UMTS, CDMA2000 and future technologies Including both standard and dedicated data subscriptions. Typically used by mobile devices (e.g. laptops, tablets, USB wireless modems, smart phones and other mobile device.

Mobile broadband connection to the internet refers to access via WIFI hotspot (tethering) and not through a router (e.g. USB dongle/ modem/ surfstick such as YES dongle etc.).

(ix) **Website**

A website is a collection of network-related web resources such as a website, multimedia content that is usually identified by a common domain name and published by at least one web server. Websites can be accessed through public Internet Protocol (IP) networks such as the Internet or private local area network (LAN) by the URL that identifies the site. A website can be a personal website, a corporate website for a company, a government website, an organisation website and so on.

(x) **Social Media**

Refers to those who have a user profile, account or user license depending on the needs and types of social media. Types of social media are social networks (e.g. Facebook and Instagram), enterprise blogs or enterprise microblogs (e.g. Twitter) and multimedia content sharing websites (e.g. YouTube).

(xi) **Mobile internet and technologies**

Refers to an inevitable product in the development of the PC internet. It combines mobile and internet communications into one. This is a general term for activities where technology, platforms, business models and internet applications are combined with mobile communication technology (e.g. mobile IT equipment, Global Positioning System (GPS) equipment, wireless debit/ credit card payment terminals).

(xii) **Cloud computing**

Cloud computing refers to ICT services used over the internet to access software, computing power, storage capacity, etc. (e.g. HUAWEI Cloud Server, AVM Cloud).

(xiii) **Data Analytic**

Data analytic is a process or effort to process data into new information so that the characteristics of the data become easier to understand and useful for solving problems, especially those related to research (e.g. Tableau, Big Data Analytics, Mobile Business Intelligence).

(xiv) **Management software**

Management software is application software that helps users while performing management activities (e.g. Enterprise Resource Planning, etc.).

(xv) **Collaborative online platforms**

Refers to economic partnerships (e.g. Lazada, Shopee, Grab, etc.).

9. SURVEY YEAR

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

10. REFERENCE YEAR

The reference year of the survey was the calendar year 2021. Establishments whose accounting year differed from calendar year were requested to report according to the accounting year or financial year covering the major part of the reference period.

11. METHOD OF DATA COLLECTION

This survey 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) **Data collection method via e-mail/ post/ fax/ telephone:** This method targets respondents who have used this method for previous routine surveys. Respondents were given a period of one (1) month to complete and return the questionnaire to DOSM.

(iii) **Face-to-face data collection method:** Field work operation is carried out to get feedback from establishments that have not yet given answers from the two (2) methods above and this method also targets establishments that have never been involved in a routine DOSM survey.

12. PUBLICATION AND DATA REVISION

The publication presents the revision of the estimation e-commerce income for the year 2021 until Third Quarter 2023. The revisions were based on the latest data of annual surveys and account of company for the year 2021. For the latest year 2022 until First Quarter 2023, estimation was based on the quarterly data sources.

13. SAMPLING DESIGN

Sampling design of the survey is a one-stage stratified random sampling. Categories of industries at two (2), three (3), four (4) and five (5) digit MSIC at state level have been classified as stratum and the establishment as the sampling unit.

Each stratum (industry) has been set up to four substrata to ensure the distributed sample takes into account the economic characteristics of the industry. The main substratum is heterogeneous, was fully covered. Whereas, other substratum that are homogeneous were sampled.

Main substratum include large establishments that have a significant total revenue in the industry while for the second to fourth substratum are based on small and medium enterprise (MSME) categories.

14. SAMPLE SIZE

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:

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

where;

n = Sample size

Ni = Population size for stratum i

Si2 = Variance for stratum i

V = Desired variance

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

where;

$\hat{Y}_i$ = Estimated total revenue 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,and 4*

i = *1,2,...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 **109,506** establishments. Establishments of the large categories were fully covered while establishments of the second to fourth substratum were randomly selected using systematic random sampling.

15. 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:

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

where;

N_h = Total population of substratum h; and

n_h = Total sample of at substratum h

Non response weight at substratum h as below:

$$NRW_h = \frac{1}{\acute{n}_h / n_h}, h = 1, \ldots, 4$$

where;

n'_h = Numbers of respond sample size for substratum h

n_h = Numbers of sample size for substratum h

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

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

where;

W_h = Sampling design weigh at substratum h

NRW_h = Non response weight at substratum h

16. USAGE OF ICT PERCENTAGE CALCULATION

(i) Percentage of computer usage

$$= \frac{\text{Number of establishment used computer}}{\text{Number of establishment operating}} \text{x100}$$

(ii) Percentage of internet usage

$$= \frac{\text{Number of establishment used internet}}{\text{Number of establishment operating}} \text{x100}$$

(iii) Percentage of businesses having web presence

$$= \frac{\text{Number of establishment have web presence}}{\text{Number of establishment operating}} \text{x100}$$

(iv) Percentage of computer usage by state

$$= \frac{\text{Number of establishment used computer by state}}{\text{Number of establishment operating by state}} \text{x100}$$

(v) Percentage of internet usage by state

$$= \frac{\text{Number of establishment used internet by state}}{\text{Number of establishment operating by state}} \text{x100}$$

(vi) Percentage of businesses having web presence by state

$$= \frac{\text{Number of establishment having web presence by state}}{\text{Number of establishment operating by state}} \text{x100}$$

(vii) Percentage of owned website

$$= \frac{\text{Number of establishment with owned website}}{\text{Number of establishment operating having web presence}} \text{x100}$$

(viii) Percentage of presence on another entity's website

$$= \frac{\text{Number of establishment with web presence on another entity's website}}{\text{Number of establishment operating having web presence}} \text{x100}$$

(ix) Percentage of social media

$$= \frac{\text{Number of establishment with social media}}{\text{Number of establishment operating having web presence}} \text{x100}$$

(x) Percentage of intranet

$$= \frac{\text{Number of establishment owned intranet}}{\text{Number of establishment operating using internet}} \text{x}100$$

(xi) Percentage of extranet

$$= \frac{\text{Number of establishment owned extranet}}{\text{Number of establishment operating using internet}} \text{x}100$$

(xii) Percentage of Local Area Network (LAN)

$$= \frac{\text{Number of establishment owned LAN}}{\text{Number of establishment operating using internet}} \text{x}100$$

(xiii) Percentage of Wireless Local Area Network (WLAN)

$$= \frac{\text{Number of establishment owned WLAN}}{\text{Number of establishment operating using internet}} \text{x}100$$

(xiv) Percentage of Wide Area Network (WAN)

$$= \frac{\text{Number of establishment owned WAN}}{\text{Number of establishment operating using internet}} \text{x}100$$

(xv) Percentage of others area network (Others)

$$= \frac{\text{Number of establishment owned others infrastructure network}}{\text{Number of establishment operating using internet}} \text{x}100$$

(xvi) Percentage of Fixed broadband

$$= \frac{\text{Number of establishment owned fixed broadband}}{\text{Number of establishment operating using internet}} \text{x}100$$

(xvii) Percentage of Mobile broadband

$$= \frac{\text{Number of establishment owned mobile broadband}}{\text{Number of establishment operating using internet}} \text{x}100$$

(xviii) Percentage of sending or receiving email

$$= \frac{\text{Number of establishment used for sending or sending email}}{\text{Number of establishment operating using internet}} \text{x}100$$

(xix) Percentage of telephoning over the internet

$$= \frac{\text{Number of establishment used telephoning over the internet}}{\text{Number of establishment operating using internet}} x100$$

(xx) Percentage of posting information or instant messaging

$$= \frac{\text{Number of establishment posting information or instant messaging}}{\text{Number of establishment operating using internet}} \text{x}100$$

(xxi) Percentage of getting information about goods or services

$$= \frac{\text{Number of establishment getting information about goods or services}}{\text{Number of establishment operating using internet}} x100$$

(xxii) Percentage of getting information from government organisations

$$= \frac{\text{Number of establishment getting information from gov. organisations}}{\text{Number of establishment operating using internet}} \text{x}100$$

(xxiii) Percentage of interacting with government organisations

$$= \frac{\text{Number of establishment interacting with government organisations}}{\text{Number of establishment operating using internet}} x100$$

(xxiv) Percentage of internet banking

$$= \frac{\text{Number of establishment used internet banking}}{\text{Number of establishment operating using internet}} \text{x}100$$

(xxv) Percentage of accessing other financial services

$$= \frac{\text{Number of establishment accesing other financial services}}{\text{Number of establishment operating using internet}} \text{x}100$$

(xxvi) Percentage of providing customer service

$$= \frac{\text{Number of establishment providing customer service}}{\text{Number of establishment operating using internet}} x100$$

(xxvii) Percentage of delivering products online

$$= \frac{\text{Number of establishment delivering product online}}{\text{Number of establishment operating using internet}} \text{x}100$$

(xxviii) Percentage of internal or external recruitment

$$= \frac{\text{Number of establishment used internal or external recruitment}}{\text{Number of establishment operating using internet}} x100$$

(xxix) Percentage of staff training (e-learning applications)

$$= \frac{\text{Number of establishment used for staff (e - learning)}}{\text{Number of establishment operating using internet}} \text{x}100$$

(xxx) Percentage of used for others

$$= \frac{\text{Number of establishment used for others}}{\text{Number of establishment operating using internet}} \text{x}100$$

17. REPORTING UNIT

The reporting unit used in the survey was establishment. An establishment is 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.

Each branch of a multi-branch organisation at a different location was conceptually treated as a different establishment. 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, that entity or enterprise was treated as a single reporting unit and allowed to submit a consolidated questionnaire covering all units or branches.

18. ROUNDING

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

19. ANNUAL GROWTH RATE

The calculation of annual growth rate (r) is based on the following formula:

$$y_t = y_0 (1 + r)^t$$

Solving for 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_o = Value at previous year

t = Value at previous year, $y_t - y_0$

r = Annual growth rate

20. SYMBOLS AND ABBREVIATIONS

-	:	Nil
&	:	and
%	:	per cent
b	:	billion
etc.	:	et cetera
RM	:	Ringgit Malaysia
ISIC	:	International Standard Industrial Classification
MSIC	:	Malaysian Standard Industry Classification
Q	:	Quarter
QoQ	:	Percentage change quarter-on-quarter
YoY	:	Percentage change year-on-year
W.P.	:	Federal Territories

D) ICT Use and Access by Individuals and Household (ICTHS)

1. INTRODUCTION

The statistics released in this report are findings of the ICT Use and Access by Individuals and Households Survey (ICTHS) 2022. It provides data at national, state and administrative district levels. The guidelines, concepts and definitions used in this publication are based on the Manual for Measuring ICT Access and Use by Households and Individuals, 2020 Edition published by the International Telecommunication Union (ITU).

ICTHS was carried out starting reference year 2013, followed by 2015 and 2017. Since 2018, this survey is conducted annually. These technical notes will facilitate users with better understanding pertaining to the published statistics.

2. OBJECTIVES OF SURVEY

The main objectives are as follows :

i. To collect the latest and specific information on ICT use and access by individuals and house holds (HH);

ii. To serve as an input in the compilation of ICT Satellite Account (ICTSA); and

iii. To calculate ICT indicators to measure development of national ICT and Digital Economy.

3. METHOD OF DATA COLLECTION

3.1 ICTHS uses the personal interview method using the questionnaire form to obtain information from respondents. During the survey period, trained interviewers visit households in selected living quarters (LQs) to collect demographic information on all household members and detailed information on the use and access of ICT equipment and services.

3.2 Quality checks were done by experienced officers from the DOSM State office to detect and correct any possibility of errors or omissions at the time when the survey is conducted. The review processes were also implemented for selected HH to ensure the quality of the data collected.

4. REFERENCE PERIOD

ICTHS 2022 was conducted for three months from September to November 2022. The reference period for ICT use by individuals was for the last three months prior to the interview. Example, if the survey month is in October 2022, then the reference period for individuals is calculated from 1st July 2022 until 30st September 2022.

5. SCOPE AND COVERAGE

5.1 The selection of the sample of this survey has taken into consideration both urban and rural areas in administrative district for all states in Malaysia.

5.2 The coverage of the survey is HH living in private LQs only and excluding those who are living in residential institutions such as hostels, hotels, hospitals, old folk's homes, military bar racks and police, prisons, welfare homes and other institutions.

5.3 This survey involved individuals aged five years and above. However, to enable the comparison to be made with the previous survey, the analysis for the use of ICT only involves individuals aged 15 years and above.

6. SAMPLING FRAME

6.1 The sampling frame used for the selection of ICTHS 2022 sample are based on the Household Sampling Frame which is made up of enumeration blocks (EBs) created for the 2020 Population and Housing Census which was updated from time to time. EBs are geographical contiguous areas of land with identifiable boundaries created for survey operation purposes, which on average, contains about 80 to 120 LQs. All EBs are formed within gazette boundaries i.e. within administrative, districts or local authority areas.

6.2 The EBs in the sampling frame is classified by urban and rural areas. Urban areas are defined as in 2020 Population and Housing Census. Urban areas are gazetted areas with their adjoining built-up areas which had a combined population of 10,000 or more. Meanwhile, gazetted area with population less than 10,000 and not gazetted area are classified as rural area.

6.3 Built-up areas are the areas contiguous to a gazetted area and have at least 60 per cent of their population (aged 15 years and above) engaged in non-agricultural activities.

6.4 The definition of urban areas also takes into account the special development areas i.e. areas that are not gazetted and development can be identified and separated from the gazetted are as or built-up area of more than five kilometres and has a population of at least 10,000 people with 60 per cent of the population (aged 15 years and above) engaged in non-agricultural activities.

6.5 Urbanisation is a dynamic process and keeps changing with development and growth. Thus, the urban areas for 2010 and 2020 Population and Housing Censuses do not necessarily refer to the same areas, as areas fulfilling the above criteria of urban continue to expand and grow within the time.

6.6 The classification of areas by strata is as follows:

Strata	Population of gazetted, built-up areas and special development area
Metropolitan	75,000 and above
Urban large	10,000 to 74,999
Urban small	1,000 to 9,999
Rural	All other areas

6.7 For sampling purposes, classification of areas as stated in item 6.6 is used for all states and federal territories. For Sabah and Sarawak, due to inaccessibility, the rural strata had to be further stratified based on the time taken to reach the area from the nearest urban centre.

6.8 For the purpose of tabulation, the strata reclassified were combined as follows:

Urban = Metropolitan + urban large

Rural = Urban small + all rural

7. SAMPLE DESIGN

7.1 The two-stage stratified sampling design was used in ICTHS 2022. The first level sampling unit were EBs, randomly selected using Probability Proportionate to Size Sampling.

7.2 EBs were selected separately according to the following strata:

Primary strata	State
Secondary strata	Administrative district by state
Tertiary strata	Urban/ rural area by administrative district

7.3 Next, the second level sampling unit were LQs and sample for LQs were selected from the EBs by using Systematic Random Sampling method that generates random number and interval class to ensure every LQs have an equal probability to be selected as a sample. This procedure is performed systematically and scientifically to produce an unbiased sample and can represent the entire populations of HH in Malaysia.

8. SAMPLE SIZE

8.1 The sample of ICTHS 2022 represents the population of the analysis level. The sample size calculation has considered the following elements:

i. Selected statistics from previous surveys;
ii. The level of sampling design;
iii. Desired error; and
iv. Respond rate

8.2 The distribution of sample size for ICTHS 2022 is as follows:

State	Number of selected EBs	Number of selected LQs
Johor	336	2,688
Kedah	370	2,960
Kelantan	331	2,648
Melaka	150	1,200
Negeri Sembilan	264	2,112
Pahang	349	2,792
Pulau Pinang	190	1,520
Perak	380	3,040
Perlis	93	744
Selangor	314	2,512
Terengganu	278	2,224
Sabah	508	3,967
Sarawak	577	4,615
W.P. Kuala Lumpur	71	568
W.P. Labuan	37	296
W.P. Putrajaya	32	256
MALAYSIA	**4,280**	**34,142**

9. DATA EVALUATION

9.1 Data obtained from probability sample survey are subject to two types of error i.e. sampling error and non-sampling error.

i. Sampling Error

Sampling error is a result of estimating data based on a probability sampling. This error can be measured by estimating the Relative Standard Error (RSE) and expressed as a percentage. It is used as an indicator of the precision of the estimated parameters studied. This estimate reflects the level of variation that was estimated through a survey variables compared with the population parameter.

For instance, in ICTHS 2022, the percentage of Internet access by household for Malaysia was 96.0 per cent with RSE of 0.1 per cent. In other words, the standard error (SE) is approximately 0.1 per cent. Based on a 95 per cent confidence level (a=0.05), the percentage of Internet access by household was found to be in the range of 95.8% - 96.3%.

ii. Non-Sampling Error

These errors may arise through incomplete survey coverage, weaknesses in the frame, esponse errors, non-response errors and also errors during processing such as editing, coding and data capture. To ensure high quality data, several administrative procedures were taken to keep non-sampling errors to a minimum. Intensive training was conducted for the supervisors and enumerators. In addition, close supervision and random checks were carried out on households which were covered by the enumerators to ensure the validity of the information recorded.

In order to resolve the case of non-response error due to several reasons such as vacant house, no one at home, refusal to co-operate or not qualified LQ, the sample size estimation for ICTHS 2022 has taken into account all the possibilities.

The survey frame is updated regularly to overcome the problem of non-response due to vacant home. Wide publicity was carried out through electronic and printed media to minimise the case of ‘no one at home’ and refusal to cooperate.

In addition, at the data processing stage, each variable’s consistency checking and validation process has been systematically implemented in order to minimise the non-sampling error.

10. LIMITATIONS OF SURVEY

Several challenges and limitations occurred during the implementation of this survey. Among them are:

i. This survey was conducted among selected households and individuals throughout Malaysia. Howewer, it can also be used to provide an overview of ICT accessibility and usage.

ii. The coverage of this survey only covers the state level for strata 1 and 2 for urban areas, whereas for strata 3 to 6 for rural areas.

iii. A detailed analysis of ICT use and access by individuals and households by administrative districtlevel is based on a relative value reliability of not more than 20 per cent tolerance interval.

iv. The findings of the survey should be used with high precaution, and DOSM will not be responsible for any impications resulting from the use of these statistics.

11. DATA EVALUATION

11.1 Living Quarters

Living quarters are defined as **independent** and **separate** structures and are usually used as place of abode. The terms separate and independent mean the following:

i. Separate: A structure is considered separate if it is surrounded by walls, fence, etc and is covered by roof.

ii. Independent: A structure is said to be independent if it has direct access via public path, communal passageway or space (that is, occupants can come in or go out of their LQs without passing through others' premises).

11.2 Household

A person or group of people, whether related or unrelated who usually live together in a living quarter and make provisions (expenses) for food and necessities of life together.

11.3 Head of Household

Living Head of household is defined as any members whether male or female which is considered as head of HH by other members. The Head of HH must be an income recipient and is aged 15 years and above.

11.4 ICT Access and Usage

11.4.1 ICT access by households: In order for a household to have access to ICT services or equipment, it should be able to be used during interview.

11.4.2 ICT use by individuals:

- Use of ICT services and equipment by one or more individuals in a household either it was used in LQ or elsewhere;
- Individuals in a household aged 15 years and above; and
- Use of mobile phone, computer and Internet for the last three months

11.4.3 Core ICT Indicators

i. Radio

A radio is defined as a device capable of receiving broadcast radio signals, using common requencies, such as FM, AM, LW and SW. A radio may be a stand-alone device, or it may be integrated with another device, such as an alarm clock, an audio player, a mobile phone or a computer. It in cludes radio in a car.

$$\frac{\text{(number of in-scope household with a radio)}}{\text{(total number of in-scope households)}} \times 100$$

ii. Television

A television (TV) is a device capable of receiving broadcast television signals, using popular access means such as over-the-air, cable and satellite. A television set is typically a stand-alone device, but it may also be integrated with another device, such as a computer or a mobile phone.

$$\frac{\text{(number of in-scope household with a a television)}}{\text{(total number of in-scope households)}} \times 100$$

iii. Fixed-line telephone

A fixed telephone refers to a telephone line connecting a customer's terminal equipment (e.g. telephone set, facsimile machine) to the Public Switched Telephone Network (PSTN) and which has a dedicated port on a telephone exchange. This term is synonymous with the terms main station or Direct Exchange Line (DEL) that are commonly used in telecommunication documents. It may not be the same as an access line or a subscription.

$$\frac{\text{(number of in-scope household with a fixed-line telephone)}}{\text{(total number of in-scope households)}} \times 100$$

iv. Mobile phone

A mobile phone refers to a portable telephone subscribing to a public mobile phone service using cellular technology, which provides access to the PSTN. This includes analogue and digital cellular systems and technologies such as IMT-2000 (3G) and IMT-Advanced. Users of both postpaid subscriptions and prepaid accounts are included.

$$\frac{\text{(number of in-scope household with a mobile phone)}}{\text{(total number of in-scope households)}} \times 100$$

v. Computer

A computer refers to a desktop, a laptop (portable) computer or a tablet (or similar handheld computer). It does not include equipment with some embedded computing ability such as mobile phones, Personal Digital Assistant (PDA) or a TV set.

$$\frac{\text{(number of in-scope household with a a computer)}}{\text{(total number of in-scope households)}} \times 100$$

vi. Internet

The internet is a worldwide public computer network. It provides access to a number of communication services including the World Wide Web and carries e-mail, news, entertainment and data files, irrespective of the device used (not assumed to be only via a computer - it may also be by mobile phone, tablet, PDA, games machine, digital TV and etc.). Internet can be accessed via a fixed or mobile network.

$$\frac{\text{(number of in-scope household with a internet)}}{\text{(total number of in-scope households)}} \times 100$$

iv. Internet Activities

Internet activities are categorised as follows:

a) Access to information

- Finding information about goods or services
- Reading or downloading online newspaper or magazines, electronic books

b) Communication

- Participating in social networks (e.g. Facebook, WhatsApp, Instagram, Twitter etc.)
- Sending or receiving e-mail
- Telephoning over the Internet/ VoIP
- Uploading self - created content to a website
- Managing personal homepage
- Blogging: Maintaining or adding contents to a blog
- Accessing chat sites, blogs, newsgroups or online discussions

c) Professional

- Looking for a job or submitting a job application
- Participating in professional networks (e.g. LinkedIn and Xing)
- Accessing office's computing system for the purpose of doing work from home

d) Civic and Politics

- Posting opinions or voting on civic or political issues (e.g. blogs, social networks, websites)

e) Other Online Services

- Performing tasks online to generate income
- Using services related to travel or travel-related accommodation
- Selling goods or services (via Mudah, Facebook, WhatsApp etc.)
- Purchasing or ordering goods or services other than e-Commerce (via Mudah, Facebook , WhatsApp etc.)
- Internet Banking
- Using software run over the Internet for editing text documents, spread sheets or presentations
- Downloading software or applications

f) Storage Space

- Using storage space on the Internet to save documents, pictures, music, video or other files (e.g. Google Drive, Dropbox, Window Sky Drive, iCloud, Amazon Cloud Drive)

g) Learning Activities

- Doing a formal online course
- Consulting wikis (Wikipedia etc.), online encyclopedias or other websites for formal learning purposes
- Doing an informal online course/ assessment

h) e-Health

- Seeking health related informationor services related infomation (e.g. on disease, injuries, nutrition etc.)
- Making an appointment with a health practitioner via a website

i) e-Government

- Getting information from government organisations
- Interacting with government organisations

j) Entertainment

- Listening to radio online
- Watching television online
- Downloading images, movies, videos or music; playing or downloading games

k) e-commerce

- Purchasing or ordering goods or services (e-commerce)
- Selling goods or services via e-commerce

l) Safety, Online Protection and Awareness

- Owning online security tools & adopt measures to ensure online protection
- Verifying the reliability of information found online
- Setting up effective measure (E.g. strong password, log-in attempt notifications) to protect devices and online accounts
- Changing privacy settings on devices, accounts or app to limit the sharing of personal data and information (E.g. name, contact information, photos)
- As an Internet user are you aware of the following cybercrimes: (E.g. spam, hacking, online, fraud stalking, phishing, cyber-bullying, catfish, fake news and spreading of computer virus)

11.4.4 Selected Statistics of Malaysia from Malaysian Communications and Multimedia Commission (MCMC)

i. Broadband

The broadband penetration rate per 100 inhabitants is calculated by dividing the sum of fixed and mobile-broadband subscriptions by total number of population and multiplying by 100. Public Wi-Fi subscriptions are not taken into account.

ii. Mobile-Cellular

The mobile-cellular penetration rate refers to the total subscriptions divided by total number of population and multiplied by 100. A penetration rate over 100% can occur because of multiple subscriptions.

iii. Fixed-Telephone

The fixed-telephone penetration rate refers to the total subscriptions divided by total number of population and multiplied by 100.

iv. Pay TV

The pay TV penetration rate per 100 households is calculated by dividing the number of household subscriptions by the number of households and multiplied by 100.

11.5 Rounding of Estimates

The calculation of certain categories may not always be the same between tables due to independent rounding. However, the differences were insignificant.

Percentages shown in the tables were computed from actual absolute figures and may not always add up exactly to 100 per cent due to rounding, although the totals were shown as 100 per cent.

11.6 Notes and Symbols

W.P.	Wilayah Persekutuan
n.a.	Not applicable
ICT	Information and Communication Technology
-	Not available
0.0	Less than half the smallest unit shown. For example, less than 0.05 per cent.

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