



KEMENTERIAN EKONOMI
JABATAN PERANGKAAN MALAYSIA

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PENGUNAAN ICT DAN E-DAGANG OLEH PERTUBUHAN

USAGE OF ICT AND E-COMMERCE BY ESTABLISHMENT

2022

JABATAN PERANGKAAN MALAYSIA
DEPARTMENT OF STATISTICS, MALAYSIA

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JABATAN PERANGKAAN MALAYSIA

PENGUNAAN ICT DAN E-DAGANG OLEH PERTUBUHAN 2022

USAGE OF ICT AND E-COMMERCE BY ESTABLISHMENT 2022

Pemakluman

Jabatan Perangkaan Malaysia (DOSM) sedang menjalankan Banci Ekonomi pada tahun 2023. DOSM amat menghargai kerjasama daripada responden dalam memberikan maklumat kepada DOSM serta menjayakan banci ini. Sila layari www.dosm.gov.my untuk maklumat lanjut.

DOSM telah melancarkan OpenDOSM NextGen sebagai medium yang menyediakan katalog data dan visualisasi bagi memudahkan pengguna menganalisis pelbagai data. OpenDOSM NextGen ialah platform perkongsian data sumber terbuka dan boleh diakses melalui portal <https://open.dosm.gov.my>.

Dimaklumkan bahawa Kerajaan Malaysia telah mengisytiharkan Hari Statistik Negara (MyStats Day) pada 20 Oktober setiap tahun. Tema sambutan MyStats Day adalah
“Connecting the World with Data We Can Trust”

DOSM akan mengeluarkan Anggaran KDNK Awalan bermula pada suku tahun kedua 2023. Anggaran awalan ini merupakan inisiatif yang dilaksanakan oleh DOSM untuk memberikan gambaran prestasi ekonomi empat (4) minggu awal sebelum KDNK Suku Tahunan dikeluarkan.

Announcement

The Department of Statistics Malaysia (DOSM) is conducting the Economic Census in 2023. DOSM greatly appreciates the cooperation of respondents in providing information and ensuring the success of this census. Please visit www.dosm.gov.my for more information.

DOSM has launched OpenDOSM NextGen as a medium that provides a catalogue of data and visualisation to facilitate users in analysing various data. OpenDOSM NextGen is an open source data sharing platform and accessible through <https://open.dosm.gov.my> portal.

*Please be informed that the Government of Malaysia has declared National Statistics Day (MyStats Day) on October 20 each year. MyStats Day theme is
“Connecting the World with Data We Can Trust”.*

DOSM will release the Advance GDP Estimates beginning in the second quarter of 2023. These advance estimates are an initiative by DOSM to provide an overview of the economic performance four (4) weeks prior to the release of Quarterly GDP.

JABATAN PERANGKAAN MALAYSIA
DEPARTMENT OF STATISTICS MALAYSIA

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KATA PENGANTAR

Penerbitan ini memaparkan statistik Penggunaan ICT dan E-Dagang oleh Pertubuhan daripada Survei Ekonomi Tahunan 2022. Penerbitan ini menyediakan statistik mengikut sektor ekonomi dan negeri bagi memenuhi keperluan agensi kerajaan, sektor swasta, ahli akademik serta individu bagi tujuan membuat perancangan dan penggubalan dasar untuk ICT dan e-dagang.

Penggunaan ICT dan E-Dagang meliputi semua industri dalam sektor ekonomi di Malaysia yang dikelaskan mengikut Piawaian Klasifikasi Industri Malaysia (MSIC) 2008 Ver. 1.0, selaras dengan Piawaian Klasifikasi Industri Antarabangsa bagi Semua Aktiviti Ekonomi (ISIC), Semakan Ke-4, 2008. Statistik yang diterbitkan dalam penerbitan ini adalah berdasarkan konsep dan garis panduan daripada *The OECD Model Survey on ICT Usage by Businesses (2nd Revision)*, 2015 yang diterbitkan oleh *Organisation for Economic Co-operation and Development (OECD)*.

Penerbitan ini mengandungi tiga bahagian utama. Bahagian pertama memaparkan penemuan utama dan ringkasan penemuan bagi statistik Penggunaan ICT dan E-Dagang. Bahagian kedua memaparkan jadual perangkaan terperinci, manakala aspek teknikal seperti skop dan liputan, konsep dan definisi serta pembolehubah utama yang digunakan diterangkan di bahagian ketiga bagi memudahkan pengguna memahami statistik yang diterbitkan.

Jabatan merakamkan setinggi-tinggi penghargaan atas kerjasama yang diberikan oleh responden dan juga semua pihak yang telah menyumbang secara langsung dan tidak langsung dalam menjayakan survei ini. Setiap maklum balas dan cadangan untuk penambahbaikan laporan ini pada masa akan datang amat dihargai.

DATO' SRI DR. MOHD UZIR MAHIDIN

Ketua Perangkawan Malaysia

Julai 2023

PREFACE

This publication presents statistics on the Usage of ICT and E-Commerce by Establishment, which is the result of the Annual Economic Survey 2022. It provides statistics by economic sector and state to meet the needs of the government agencies, academicians, private sector, and individuals for planning and formulation of policies for ICT and e-commerce.

Usage of ICT and E-Commerce encompasses all economic sectors in Malaysia 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. Statistics published in this report are based on the concepts and guidelines from The OECD Model Survey on ICT Usage by Businesses (2nd Revision), 2015, published by Organisation for Economic Co-operation and Development (OECD).

This publication is divided into three parts. The first part displays the main findings and summary of findings for Usage of ICT and E-Commerce statistics. The second part provides detailed statistical tables. Meanwhile, technical aspects such as scope and coverage, concepts, and definitions - as well as the key variables used - are described in the third part to assist users in understanding the published statistics.

The Department gratefully acknowledges the cooperation rendered by the respondents as well as all parties who have contributed directly and indirectly to making this survey a success. Every piece of feedback and suggestion towards improving future reports is highly appreciated.

DATO' SRI DR. MOHD UZIR MAHIDIN

Chief Statistician Malaysia

July 2023

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PENEMUAN UTAMA & RINGKASAN PENEMUAN

MAIN FINDINGS & SUMMARY FINDINGS

PENGUNAAN ICT & E-DAGANG OLEH PERTUBUHAN 2022

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PENEMUAN UTAMA

PENGGUNAAN ICT DAN E-DAGANG OLEH PERTUBUHAN 2022

PENGGUNAAN ICT

1. Penggunaan ICT



Komputer
2021: 93.8%
2019: 86.2%



Internet
2021: 90.6%
2019: 85.2%



Web presence
2021: 63.3%
2019: 53.9%

2. Jenis Capaian Internet



Jalur lebar tetap
2021: 92.7%
2019: 83.7%



Jalur lebar mudah alih
2021: 75.4%
2019: 70.8%



Jalur lebar tetap & jalur lebar mudah alih
2021: 68.0%
2019: 60.3%



3. Infrastruktur Rangkaian Komputer

Intranet

2021: 46.6%
2019: 39.7%

Extranet

2021: 16.7%
2019: 13.5%

LAN

2021: 73.4%
2019: 66.9%

WLAN

2021: 67.6%
2019: 61.0%

WAN

2021: 85.1%
2019: 84.9%

Lain-lain

2021: 6.1%
2019: 4.7%

PRESTASI E-DAGANG

4. Pendapatan

2021: RM1,037.2b
2019: RM675.4b

23.9%



Jenis Pasaran



25.5%

Tempatan

2021: RM932.7b
2019: RM591.8b



11.9%

Antarabangsa

2021: RM104.5b
2019: RM83.5b



25.9%

B2B

2021: RM713.1b
2019: RM449.6b



26.2%

B2C

2021: RM308.9b
2019: RM194.0b



-31.0%

B2G

2021: RM15.2b
2019: RM31.8b

Jenis Pelanggan

5. Perbelanjaan

2021: RM460.8b
2019: RM301.5b

23.6%



Jenis Pasaran



25.8%

Tempatan

2021: RM426.8b
2019: RM269.6b



3.2%

Antarabangsa

2021: RM34.0b
2019: RM31.9b



20.5%

B2B

2021: RM403.1b
2019: RM277.6b



85.0%

B2C

2021: RM50.7b
2019: RM14.8b



-12.6%

B2G

2021: RM7.0b
2019: RM9.1b

Jenis Pelanggan

6. Pendapatan E-Dagang Suku Tahunan



Pendapatan E-Dagang
2022^r

RM1,099.7 bilion

6.0%

Pendapatan
E-Dagang

QoQ

YoY

2022^r

2023^r

ST1

ST2

ST3

ST4

ST1

RM264.3b RM273.8b RM274.6b RM287.1b RM291.7b

-4.2% 3.6% 0.3% 4.5% 1.6%

9.2% 7.7% 3.6% 4.1% 10.4%

MAIN FINDINGS

USAGE OF ICT AND E-COMMERCE BY ESTABLISHMENT 2022

ICT USAGE

1. Usage of ICT



Computer
2021: 93.8%
2019: 86.2%



Internet
2021: 90.6%
2019: 85.2%



Web presence
2021: 63.3%
2019: 53.9%

2. Types of Internet Access



Fixed Broadband
2021: 92.7%
2019: 83.7%



Mobile Broadband
2021: 75.4%
2019: 70.8%



Fixed Broadband & Mobile Broadband
2021: 68.0%
2019: 60.3%



3. Computer Network Infrastructure

Intranet

2021: 46.6%
2019: 39.7%

Extranet

2021: 16.7%
2019: 13.5%

LAN

2021: 73.4%
2019: 66.9%

WLAN

2021: 67.6%
2019: 61.0%

WAN

2021: 85.1%
2019: 84.9%

Others

2021: 6.1%
2019: 4.7%

PERFORMANCE OF E-COMMERCE

4. Income

2021: RM1,037.2b
2019: RM675.4b

23.9%



Types of Market



25.5%

Domestic

2021: RM932.7b
2019: RM591.8b



11.9%

International

2021: RM104.5b
2019: RM83.5b



25.9%

B2B

2021: RM713.1b
2019: RM449.6b



26.2%

B2C

2021: RM308.9b
2019: RM194.0b



-31.0%

B2G

2021: RM15.2b
2019: RM31.8b

Types of Customer



5. Expenditure

2021: RM460.8b
2019: RM301.5b

23.6%

Types of Market



25.8%

Domestic

2021: RM426.8b
2019: RM269.6b



3.2%

International

2021: RM34.0b
2019: RM31.9b



20.5%

B2B

2021: RM403.1b
2019: RM277.6b



85.0%

B2C

2021: RM50.7b
2019: RM14.8b



-12.6%

B2G

2021: RM7.0b
2019: RM9.1b

Types of Customer

6. Quarterly E-Commerce Income

2022^r

2023^r

Income of E-Commerce 2022^r

RM1,099.7 billion

6.0%

Income of E-Commerce

QoQ

YoY

	Q1	Q2	Q3	Q4	Q1
Income of E-Commerce	RM264.3b	RM273.8b	RM274.6b	RM287.1b	RM291.7b
QoQ	-4.2%	3.6%	0.3%	4.5%	1.6%
YoY	9.2%	7.7%	3.6%	4.1%	10.4%

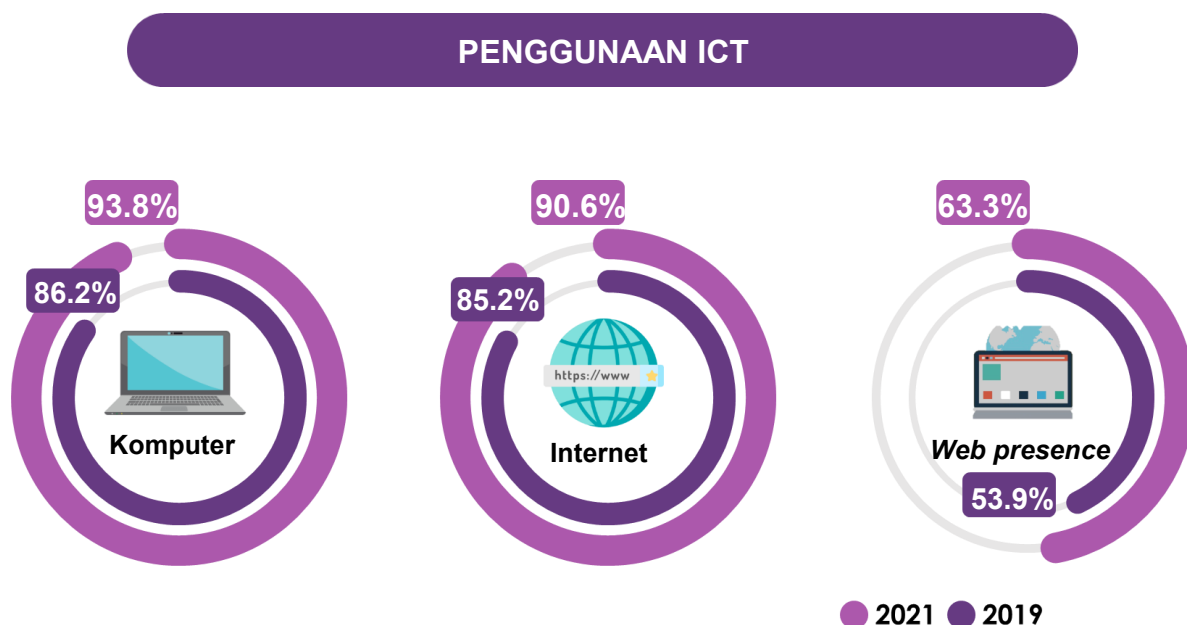
1. PENGENALAN

Penerbitan Penggunaan ICT dan E-Dagang (ICTEC) 2022 membentangkan statistik Penggunaan Teknologi Maklumat dan Komunikasi (ICT) dan E-Dagang di Malaysia yang diperolehi daripada Survei Ekonomi Tahunan (AES) 2022 bagi tahun rujukan 2021. ICTEC 2022 merangkumi lima sektor utama iaitu Pertanian, Perlombongan & Pengkuarian, Pembuatan, Pembinaan dan Perkhidmatan.

2. PENGGUNAAN ICT

Penemuan survei menunjukkan 93.8 peratus pertubuhan menggunakan komputer (termasuk komputer peribadi, komputer riba dan *tablet*) berbanding 86.2 peratus bagi tahun 2019. Penggunaan internet (merangkumi internet yang boleh diakses melalui komputer dan peranti lain seperti telefon mudah alih lain) mencatatkan 90.6 peratus (2019: 85.2%). Pertubuhan yang mempunyai *web presence* pula mencatatkan 63.3 peratus (2019: 53.9%) seperti di **Rajah 1**.

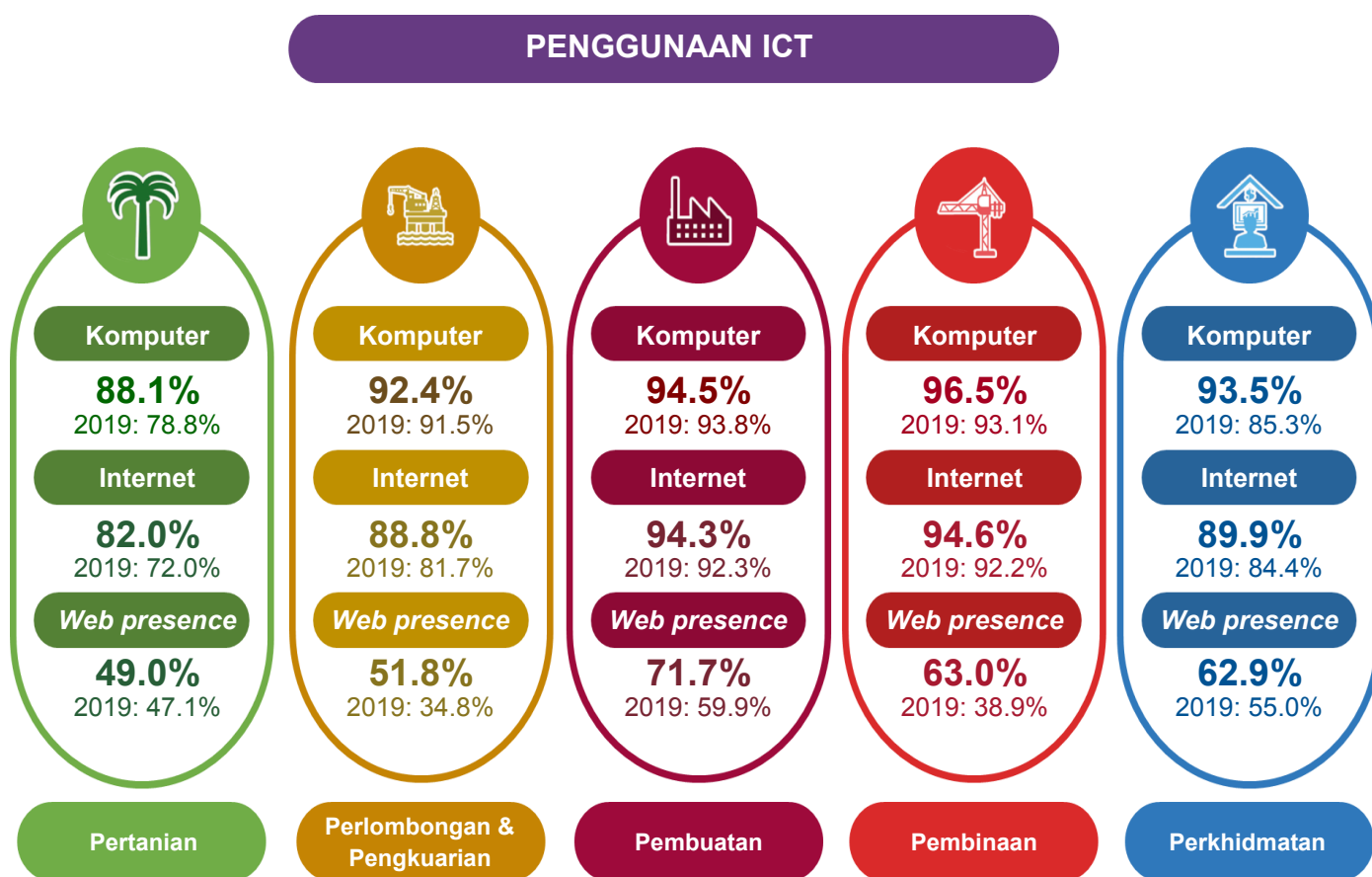
Rajah 1: Penggunaan Komputer, Internet dan Web Presence, 2019 dan 2021



2.1 PENGGUNAAN ICT MENGIKUT SEKTOR

Penggunaan komputer, internet dan *web presence* mengikut sektor seperti paparan di **Rajah 2**. Sektor Pembinaan merekodkan peratus tertinggi dalam penggunaan komputer dan internet iaitu masing-masing 96.5 peratus (2019: 93.1%) dan 94.6 peratus (2019: 92.2%). Walau bagaimanapun, bagi penggunaan *web presence* sektor Pembuatan mencatatkan peratus tertinggi iaitu sebanyak 71.7 peratus (2019: 59.9%).

Rajah 2: Peratus Penggunaan Komputer, Internet dan Web Presence mengikut Sektor, 2019 dan 2021



2.2 PENGGUNAAN ICT MENGIKUT NEGERI

W.P. Putrajaya mencatatkan peratus tertinggi bagi penggunaan komputer dan internet. Manakala, negeri yang merekodkan peratus tertinggi bagi *web presence* adalah Selangor iaitu 80.1 peratus seperti di **Rajah 3**.

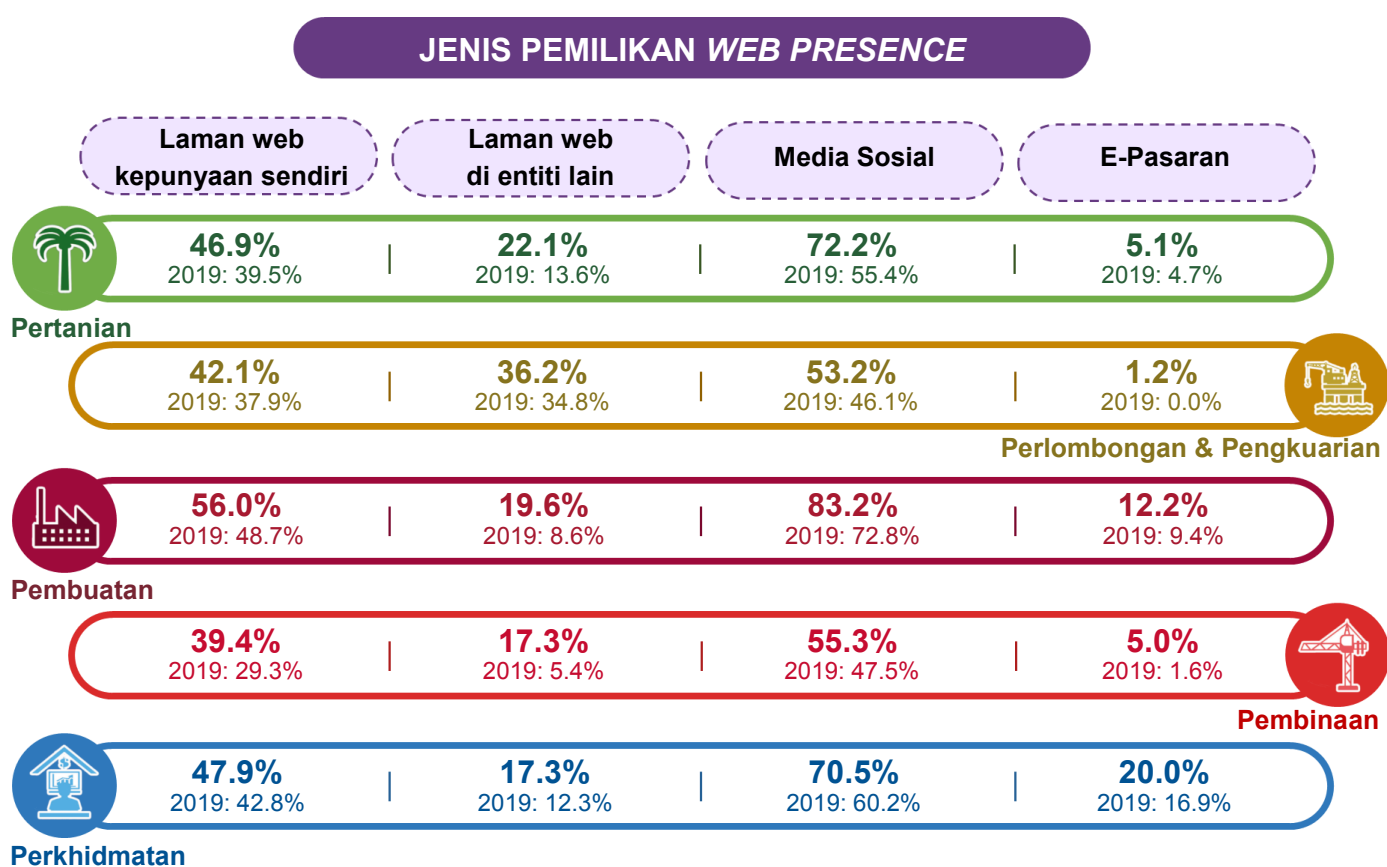
Rajah 3: Penggunaan Komputer, Internet dan *Web Presence* mengikut Negeri, 2021

PENGGUNAAN ICT MENGIKUT NEGERI				
				
	Komputer (%)	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	

3. JENIS PEMILIKAN *WEB PRESENCE* MENGIKUT SEKTOR

Rajah 4 menunjukkan jenis *web presence* yang dimiliki oleh pertubuhan mengikut sektor. Sektor Pembuatan merekodkan peratus tertinggi dalam dua jenis penggunaan *web presence* iaitu penggunaan media sosial (83.2%) dan laman web kepunyaan sendiri (56.0%). Sementara itu, sektor Perlombongan & Pengkuarian mencatatkan peratus tertinggi dalam penggunaan laman web di entiti lain (36.2%) dan sektor Perkhidmatan pula melalui penggunaan e-pasaran (20.0%).

Rajah 4: Jenis Pemilikan *Web Presence* mengikut Sektor, 2019 dan 2021

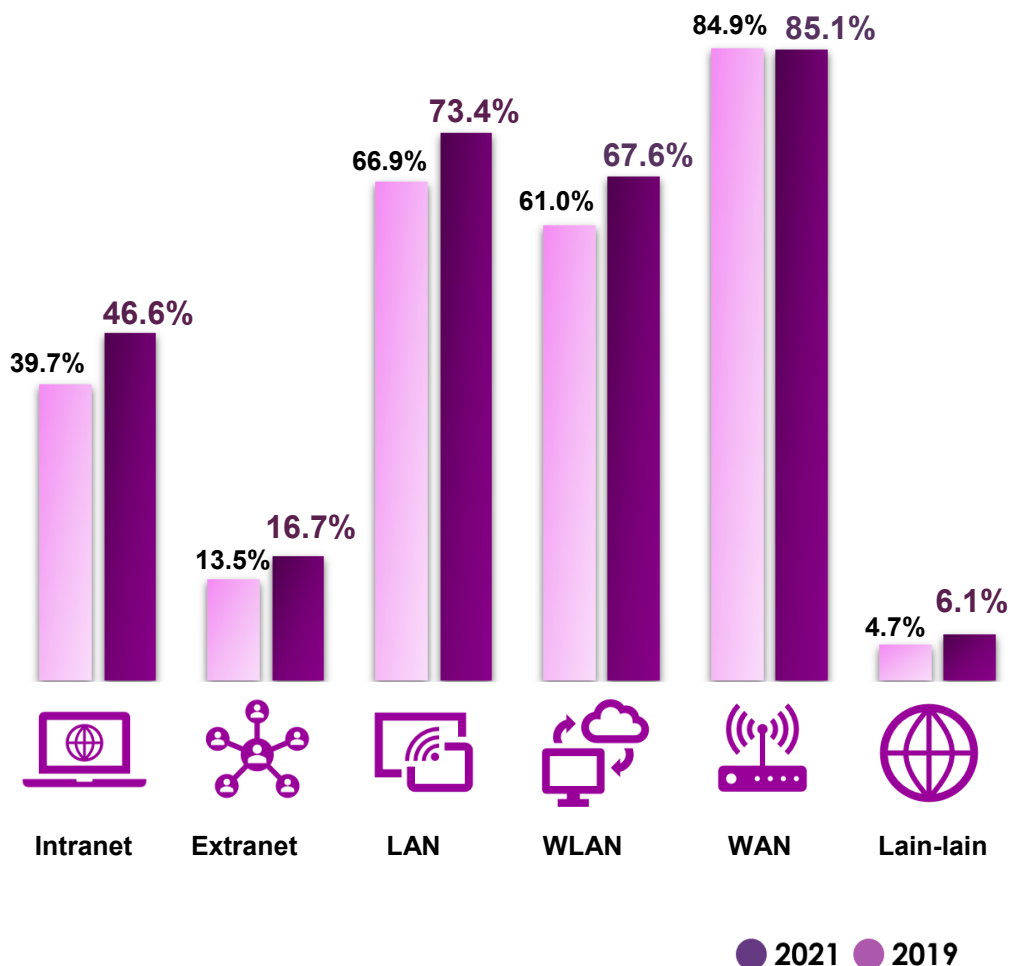


4. INFRASTRUKTUR RANGKAIAN KOMPUTER

Rajah 5 menunjukkan peratus pertubuhan yang menggunakan internet mengikut infrastruktur rangkaian komputer. Rangkaian Kawasan Luas (WAN) merekodkan peratus penggunaan tertinggi iaitu 85.1 peratus (2019: 84.9%), diikuti Rangkaian Kawasan Setempat (LAN) 73.4 peratus (2019: 66.9%) dan intranet 46.6 peratus (2019: 39.7%).

Rajah 5: Jenis Penggunaan Infrastruktur Rangkaian Komputer, 2019 dan 2021

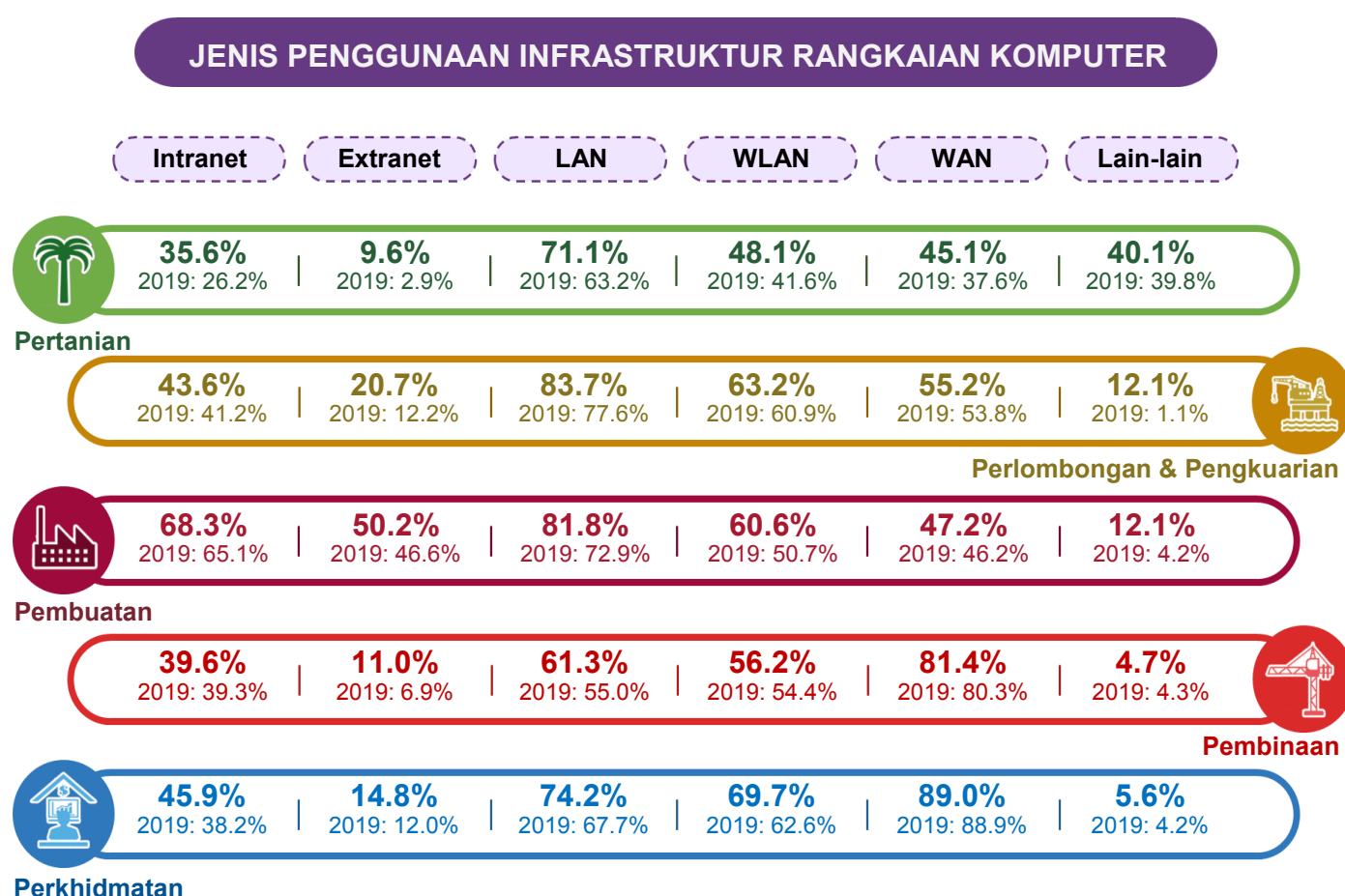
JENIS PENGGUNAAN INFRASTRUKTUR RANGKAIAN KOMPUTER



4.1 INFRASTRUKTUR RANGKAIAN KOMPUTER MENGIKUT SEKTOR

Penggunaan intranet dan extranet didominasi oleh sektor Pembuatan iaitu masing-masing 68.3 peratus dan 50.2 peratus. Bagi LAN, sektor Perlombongan & Pengkuarian merekodkan penggunaan tertinggi (83.7%). Manakala, bagi WLAN (69.7%) dan WAN (89.0%) direkodkan oleh sektor Perkhidmatan dan lain-lain infrastruktur (40.1%) direkodkan oleh sektor Pertanian seperti di **Rajah 6**.

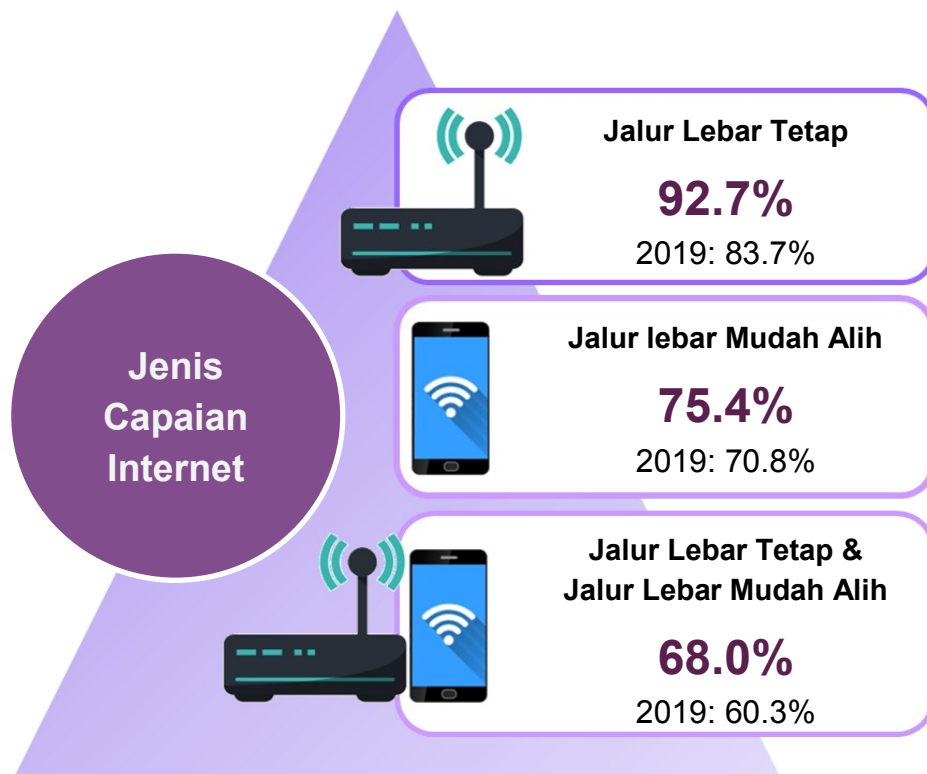
Rajah 6: Jenis Penggunaan Infrastruktur Rangkaian Komputer mengikut Sektor, 2019 dan 2021



5. JENIS CAPAIAN INTERNET

Sebanyak 92.7 peratus (2019: 83.7%) pertubuhan menggunakan jalur lebar tetap bagi capaian internet diikuti oleh jalur lebar mudah alih dan penggunaan kedua-dua jalur lebar tetap & jalur lebar mudah alih masing-masing sebanyak 75.4 peratus (2019: 70.8%) dan 68.0 peratus (2019: 60.3%) seperti di **Rajah 7**.

Rajah 7: Jenis Capaian Internet, 2019 dan 2021

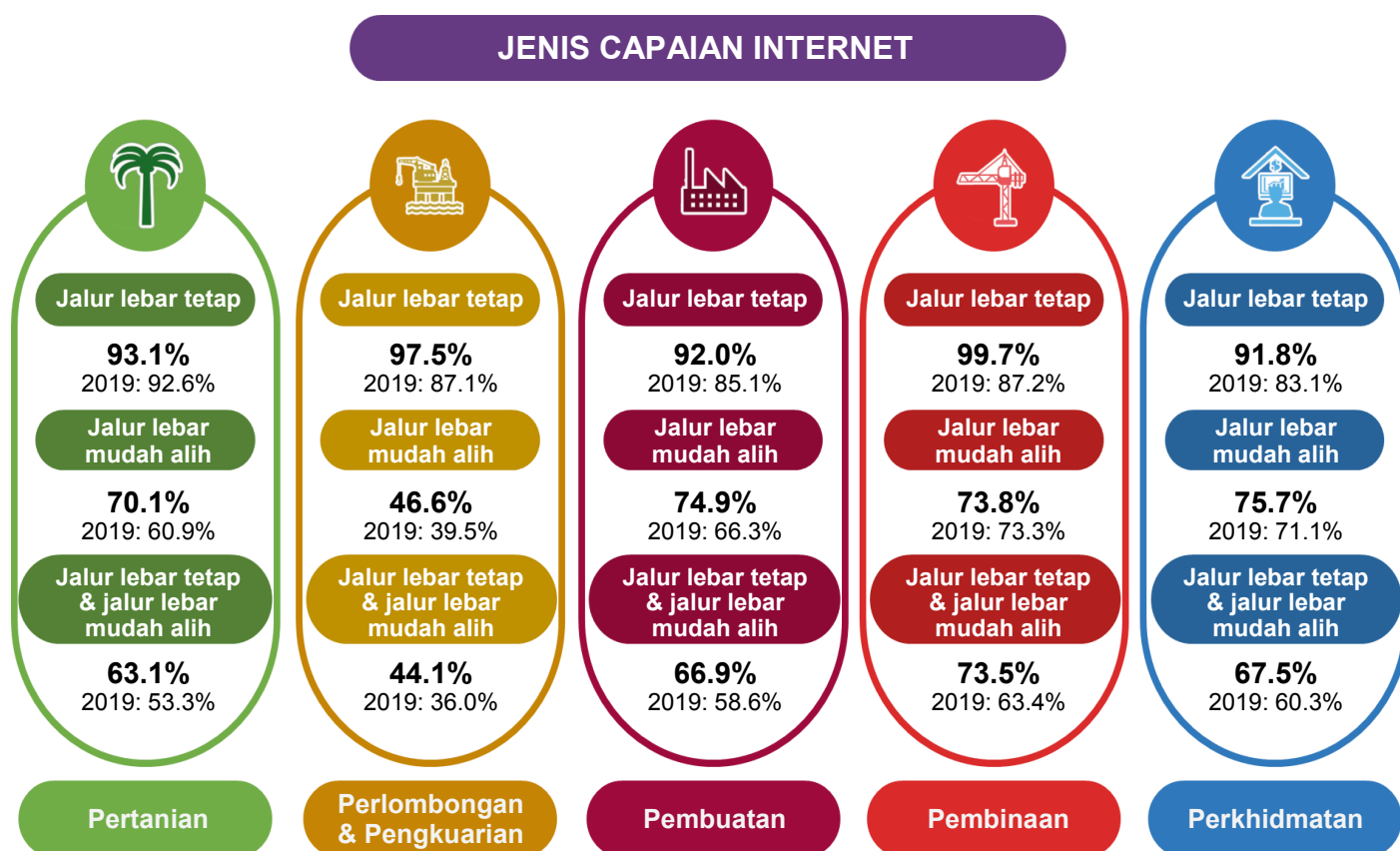


5.1 JENIS CAPAIAN INTERNET MENGIKUT SEKTOR

Pertubuhan dalam sektor Pembinaan merekodkan capaian internet tertinggi bagi penggunaan jalur lebar tetap iaitu 99.7 peratus pada 2021 (2019: 87.2%), diikuti oleh sektor Perlombongan & Pengkuarian, 97.5 peratus (2019: 87.1%) dan sektor Pertanian 93.1 peratus (2019: 92.6%).

Sektor Perkhidmatan merekodkan penggunaan jalur lebar mudah alih tertinggi dengan 75.7 peratus (2019: 71.1%), diikuti oleh sektor Pembuatan 74.9 peratus (2019: 66.3%) dan sektor Pembinaan 73.8 peratus (2019: 73.3%). Manakala, sektor Pembinaan mencatatkan peratus tertinggi bagi penggunaan kedua-dua jalur lebar iaitu 73.5 peratus (2019: 63.4%) seperti di **Rajah 8**.

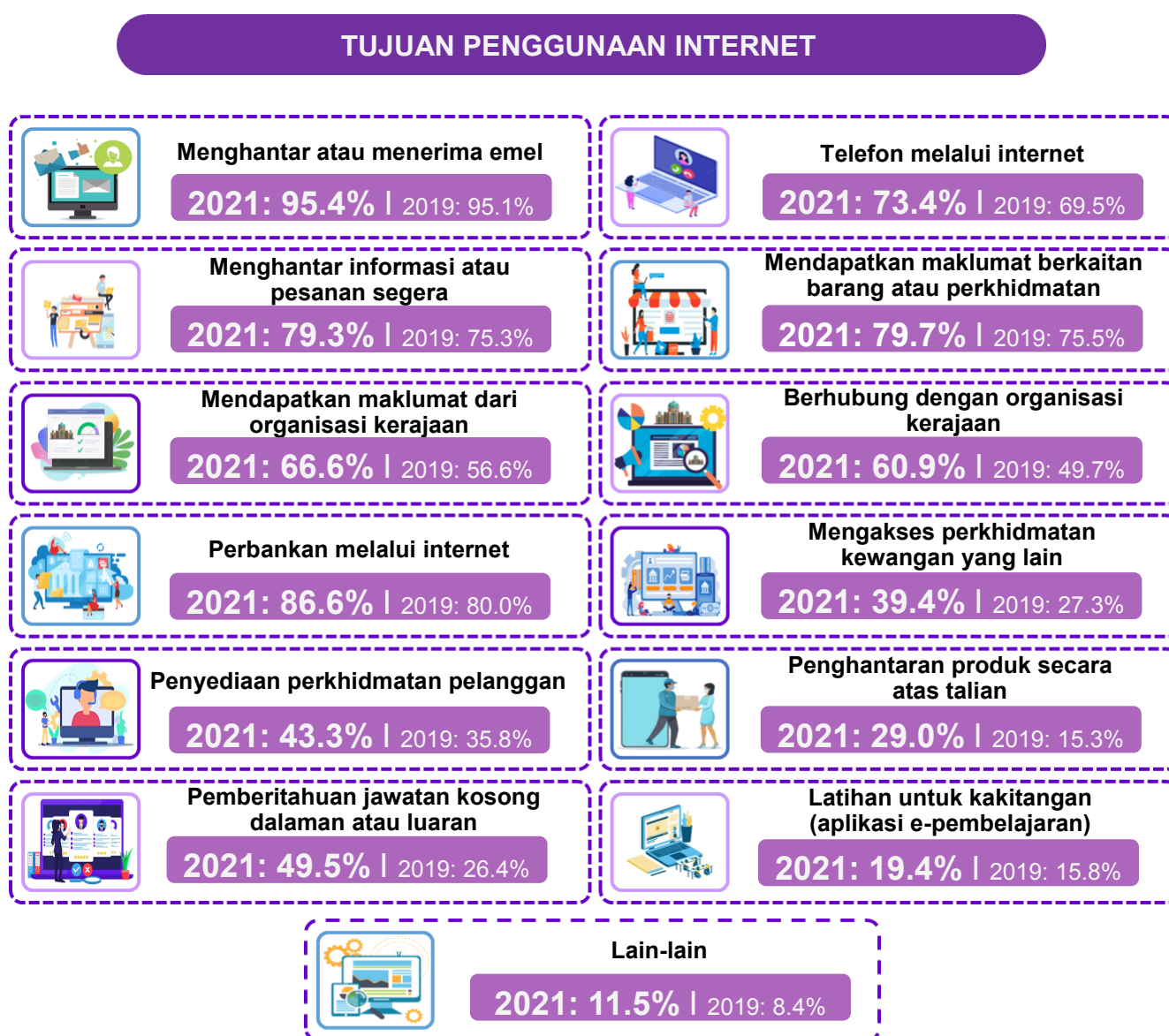
Rajah 8: Jenis Capaian Internet mengikut Sektor, 2019 dan 2021



6. TUJUAN PENGGUNAAN INTERNET OLEH PERTUBUHAN

Rajah 9 menunjukkan peratus bagi tujuan penggunaan internet oleh pertubuhan. Penggunaan internet untuk tujuan menghantar atau menerima e-mel merekodkan peratus tertinggi iaitu 95.4 peratus (2019: 95.1%). Ini diikuti oleh perbankan melalui internet 86.6 peratus (2019: 80.0%) dan mendapatkan maklumat berkaitan barang atau perkhidmatan 79.7 peratus (2019: 75.5%).

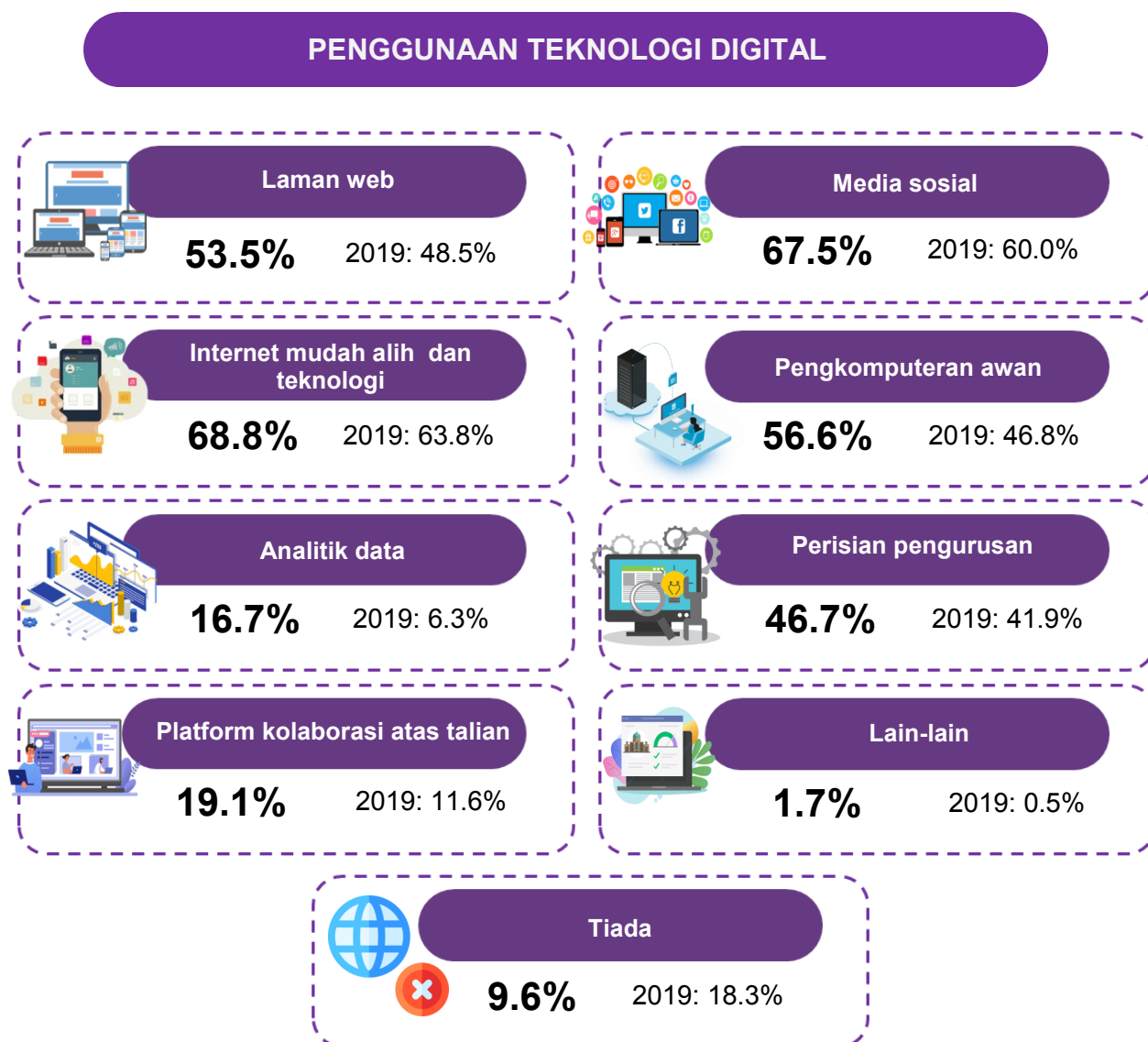
Rajah 9: Tujuan Penggunaan Internet oleh Pertubuhan, 2019 dan 2021



7. PENGGUNAAN TEKNOLOGI DIGITAL

Penggunaan teknologi digital bagi internet mudah alih dan teknologi merekodkan peratus tertinggi dengan 68.8 peratus. Ini diikuti oleh media sosial, 67.5 peratus dan pengkomputeran awan, 56.6 peratus seperti di **Rajah 10**.

Rajah 10: Penggunaan Teknologi Digital, 2019 dan 2021



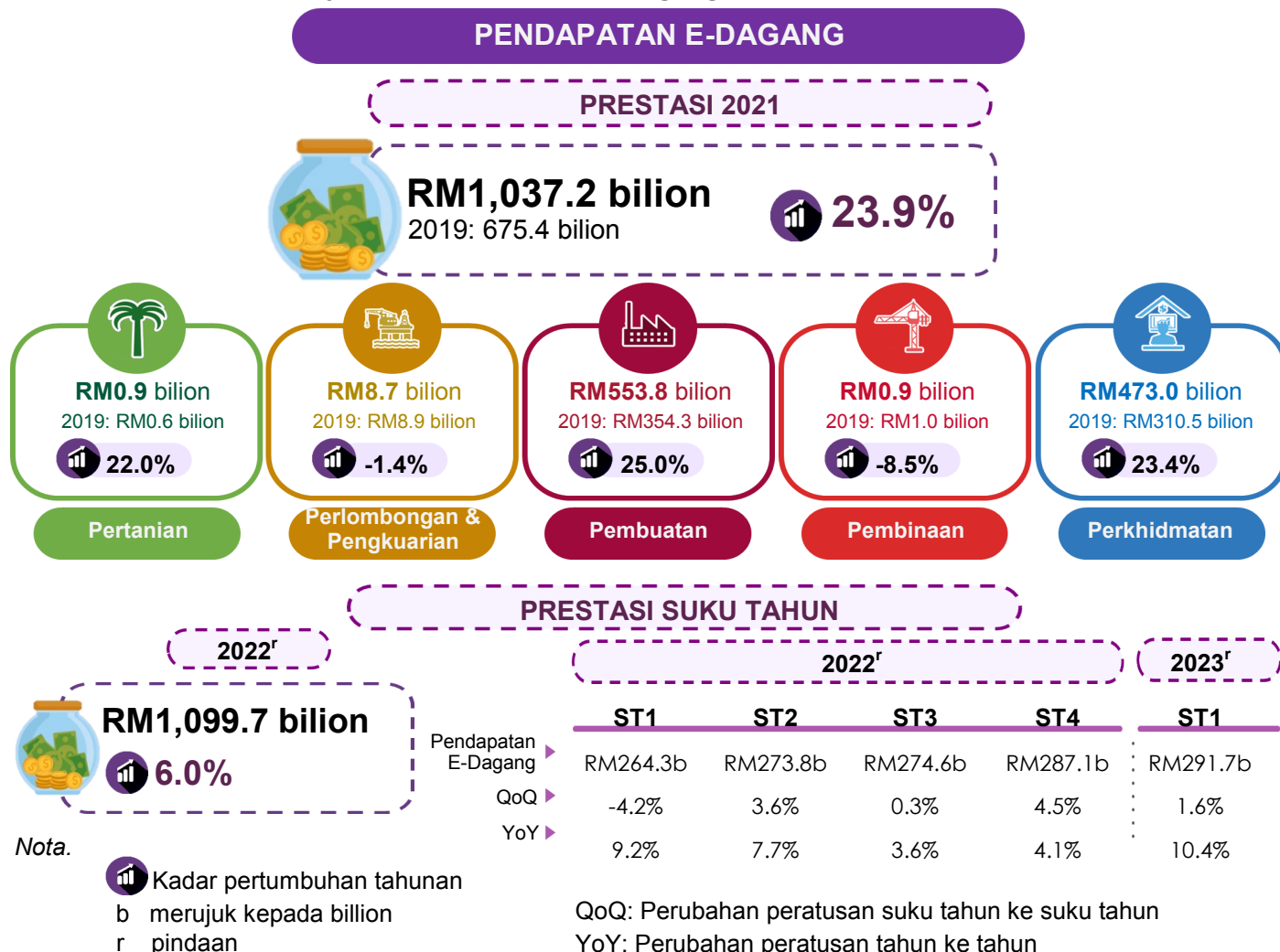
8. PENDAPATAN E-DAGANG

8.1 PENDAPATAN E-DAGANG MENGIKUT SEKTOR

Pada tahun 2021, pendapatan melalui transaksi e-dagang di Malaysia merekodkan nilai RM1,037.2 bilion berbanding RM675.4 bilion pada tahun 2019 dengan pertumbuhan tahunan 23.9 peratus. Penyumbang utama ialah sektor Pembuatan, RM553.8 bilion dengan kadar pertumbuhan tahunan 25.0 peratus. Ini diikuti oleh sektor Perkhidmatan (RM473.0 bilion; 23.4%) dan Perlombongan & Pengkuarian (RM8.7 bilion; -1.4%).

Bagi tahun 2022, pendapatan e-dagang Malaysia diterbitkan secara suku tahun untuk mengukur indikator jangka pendek. Pendapatan e-dagang merekodkan RM1,099.7 bilion, meningkat 6.0 peratus berbanding 2021. Bagi perbandingan suku tahunan, suku tahun pertama merekodkan RM264.3 bilion, diikuti RM273.8 bilion pada suku tahun kedua. Sementara itu, pendapatan e-dagang pada suku tahun ketiga dan keempat 2022 masing-masing mencatatkan RM274.6 bilion dan RM287.1 bilion. Pada suku tahun pertama 2023, pendapatan e-dagang merekodkan RM291.7 bilion meningkat 10.4 peratus tahun ke tahun seperti di **Rajah 11**.

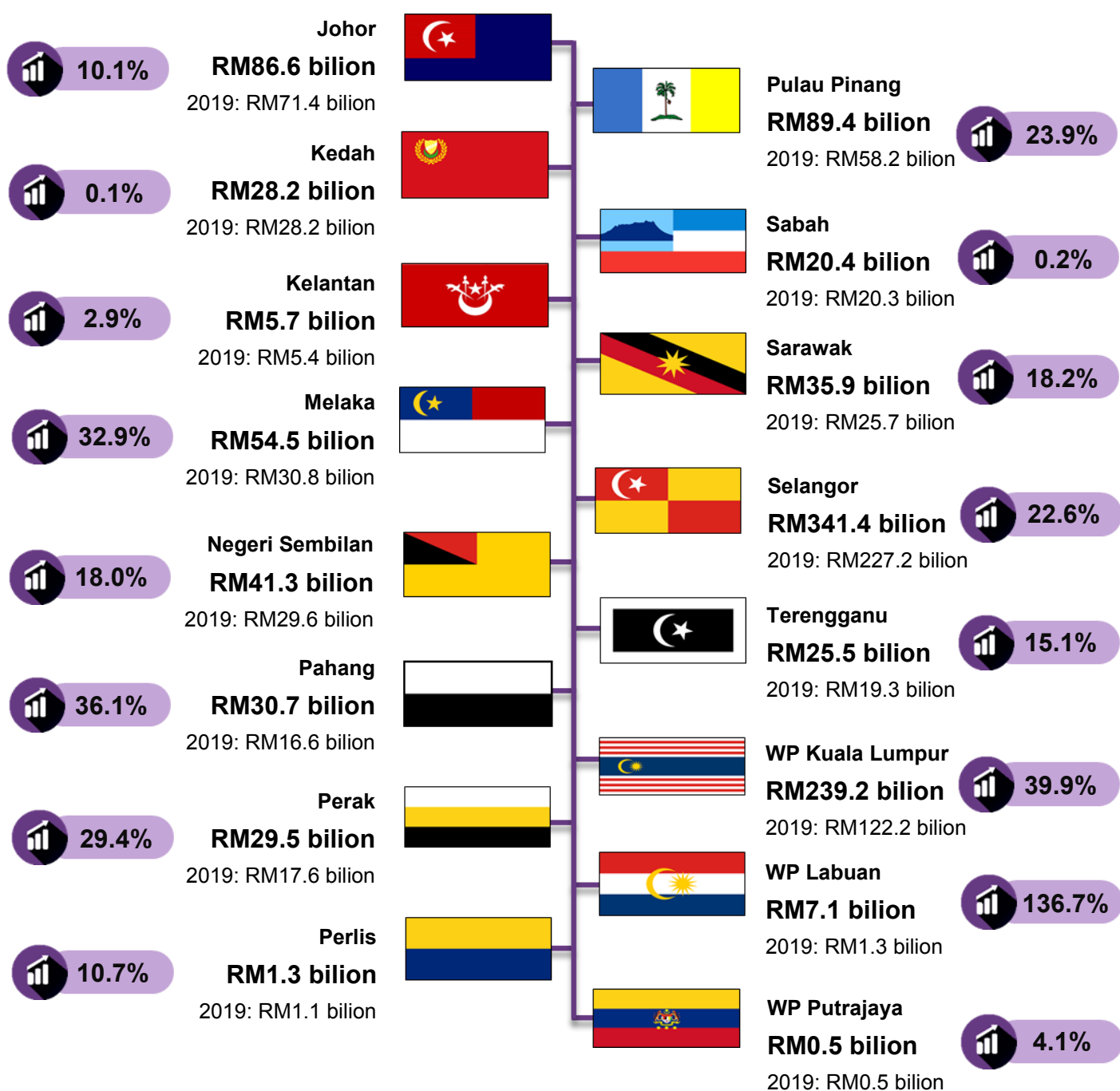
Rajah 11: Pendapatan E-Dagang, 2019 dan 2021 - 2023



8.2 PENDAPATAN E-DAGANG MENGIKUT NEGERI

Rajah 12 menunjukkan pendapatan e-dagang mengikut negeri. Selangor kekal merekodkan pendapatan daripada transaksi e-dagang yang tertinggi iaitu RM341.4 bilion dengan kadar pertumbuhan tahunan 22.6 peratus. Ini diikuti oleh W.P. Kuala Lumpur, RM239.2 bilion (39.9%) dan Pulau Pinang, RM89.4 bilion (23.9%).

Rajah 12: Pendapatan E-Dagang mengikut Negeri, 2019 dan 2021



Nota.

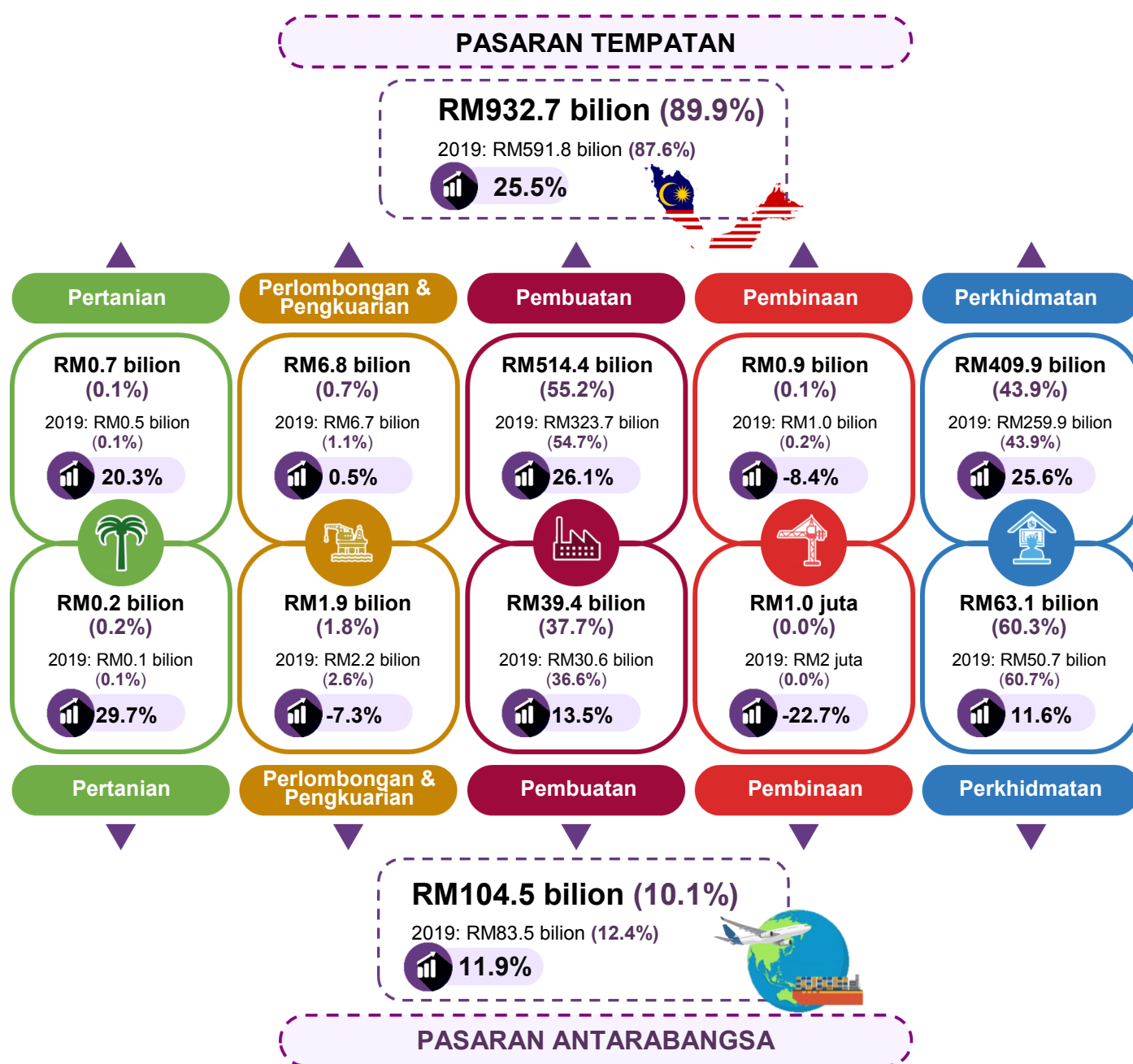


Kadar pertumbuhan tahunan

8.3 PENDAPATAN E-DAGANG MENGIKUT JENIS PASARAN

Pendapatan daripada transaksi e-dagang di Malaysia didominasi oleh pasaran tempatan RM932.7 bilion dengan sumbangan 89.9 peratus berbanding pasaran antarabangsa sebanyak RM104.5 bilion (10.1%). Sektor Pembuatan merupakan penyumbang utama pendapatan daripada transaksi e-dagang bagi pasaran tempatan dengan nilai RM514.4 bilion manakala sektor Perkhidmatan pula merupakan penyumbang tertinggi pasaran antarabangsa dengan nilai sebanyak RM63.1 bilion seperti di **Rajah 13**.

Rajah 13: Pendapatan E-Dagang mengikut Jenis Pasaran, 2019 dan 2021



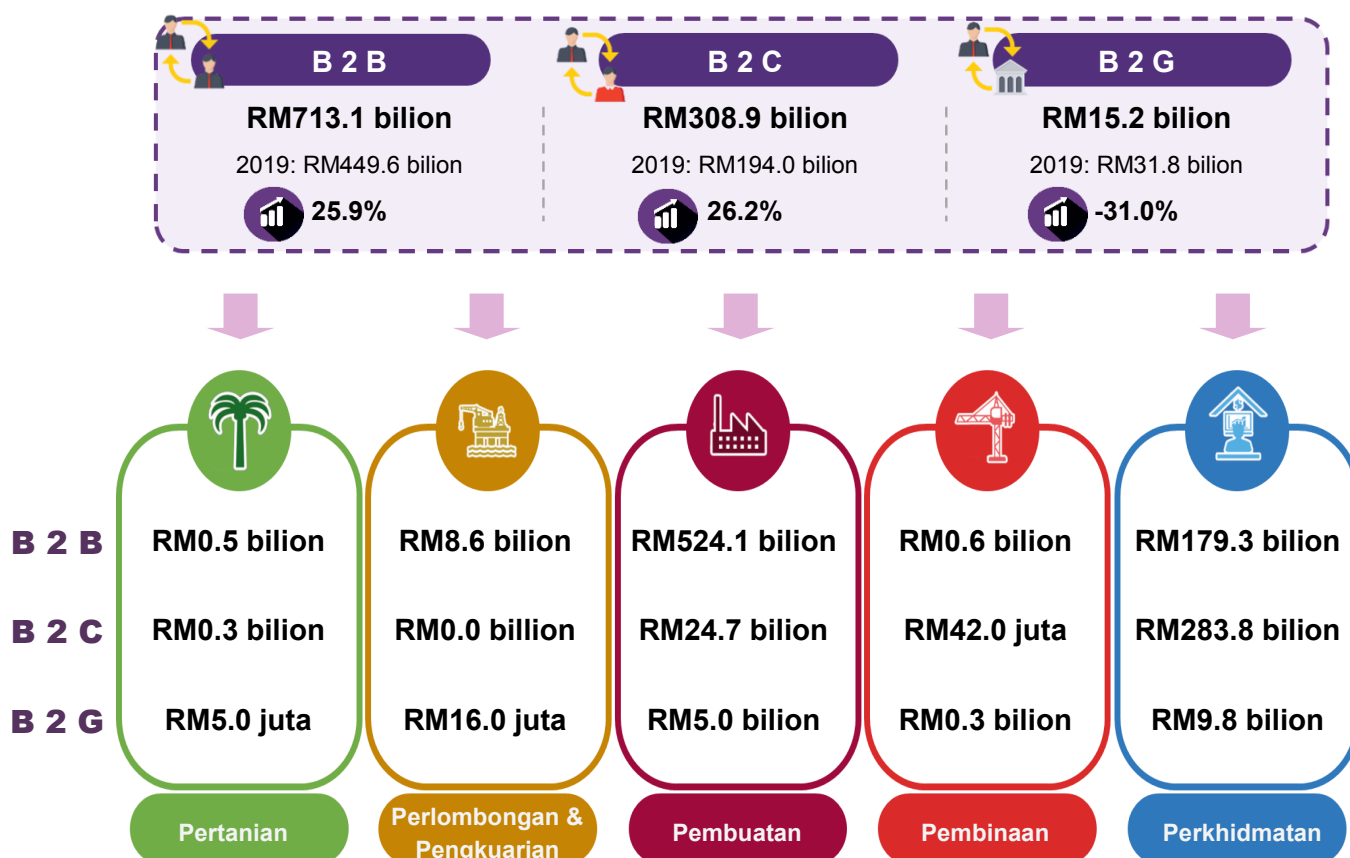
Nota. Kadar pertumbuhan tahunan
(%) Peratus sumbangan

8.4 PENDAPATAN E-DAGANG MENGIKUT JENIS PELANGGAN

Pendapatan daripada transaksi e-dagang mengikut jenis pelanggan tertinggi diperoleh melalui *Business to Business* (B2B) iaitu RM713.1 bilion dengan kadar pertumbuhan tahunan 25.9 peratus. Ini diikuti oleh *Business to Consumer* (B2C) sebanyak RM308.9 bilion (26.2%) dan *Business to Government* (B2G) RM15.2 bilion (-31.0%).

Sektor Pembuatan mendominasi pendapatan daripada transaksi e-dagang melalui B2B dengan nilai RM524.1 bilion. Manakala, B2C dan B2G tertinggi disumbangkan oleh sektor Perkhidmatan iaitu masing-masing RM283.8 bilion dan RM9.8 bilion seperti di **Rajah 14**.

Rajah 14: Pendapatan E-Dagang mengikut Jenis Pelanggan, 2019 dan 2021



Nota.



Kadar pertumbuhan tahunan

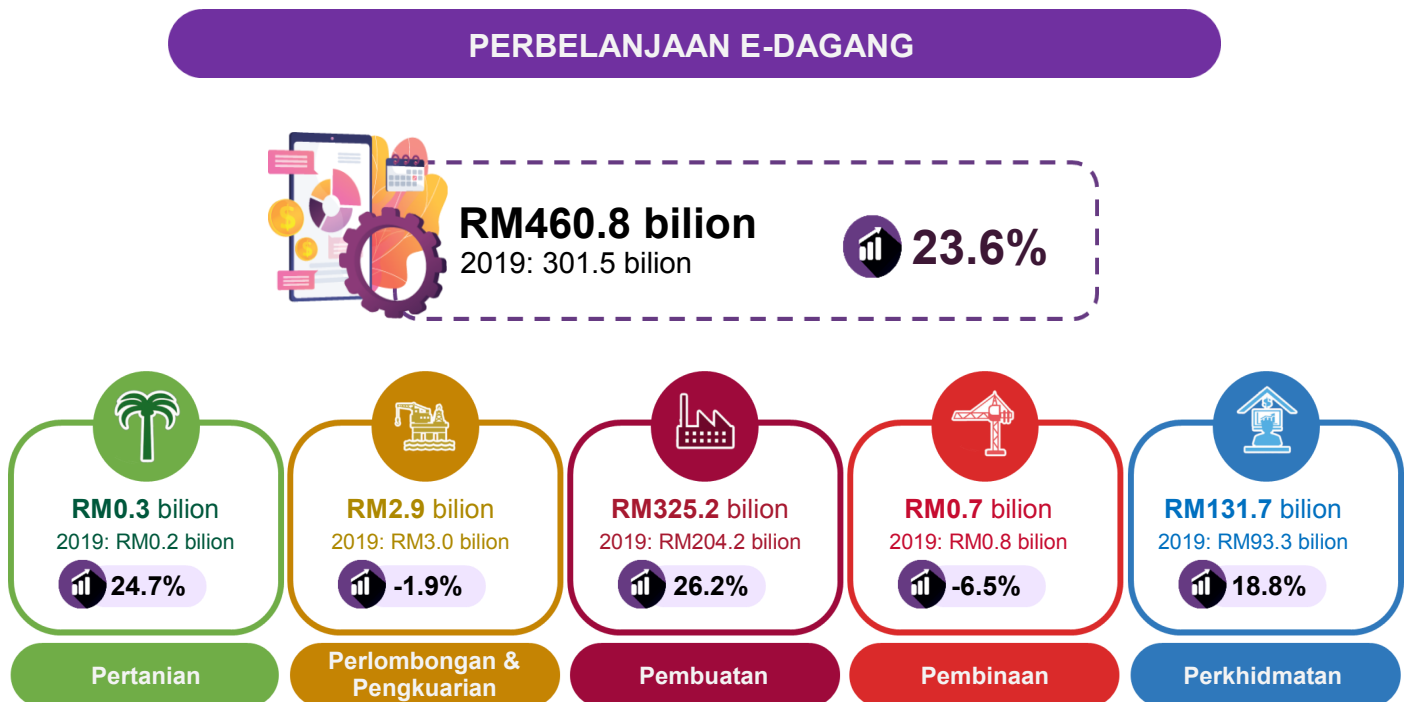
“0” Merujuk kepada nilai kurang daripada RM500,000

9. PERBELANJAAN E-DAGANG

9.1 PERBELANJAAN E-DAGANG MENGIKUT SEKTOR

Pada tahun 2021, perbelanjaan melalui transaksi e-dagang merekodkan nilai sebanyak RM460.8 bilion berbanding RM301.5 bilion pada tahun 2019 dengan kadar pertumbuhan tahunan 23.6 peratus. Penyumbang utama ialah sektor Pembuatan iaitu RM325.2 bilion dengan kadar pertumbuhan tahunan sebanyak 26.2 peratus. Ini diikuti oleh sektor Perkhidmatan (RM131.7 bilion; 18.8%) dan sektor Perlombongan & Pengkuarian (RM2.9 bilion; -1.9%) seperti di **Rajah 15**.

Rajah 15: Perbelanjaan E-Dagang mengikut Sektor, 2019 dan 2021



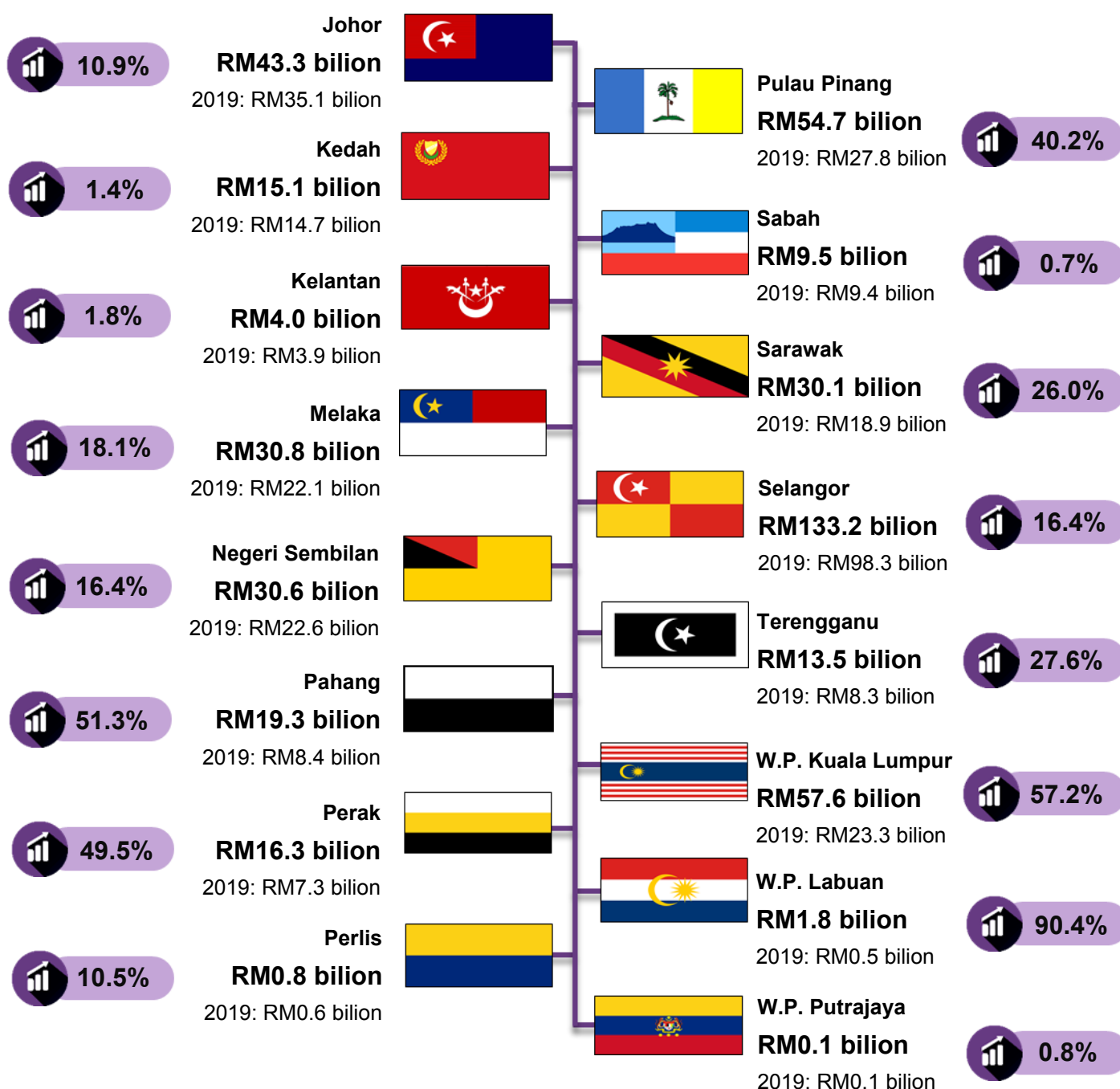
Nota.

 Kadar pertumbuhan tahunan

9.2 PERBELANJAAN DARIPADA TRANSAKSI E-DAGANG MENGIKUT NEGERI

Berdasarkan **Rajah 16**, Selangor kekal merekodkan perbelanjaan daripada transaksi e-dagang yang tertinggi iaitu RM133.2 bilion dengan kadar pertumbuhan tahunan 16.4 peratus. Ini diikuti oleh W.P. Kuala Lumpur (RM57.6 bilion; 57.2%) dan Pulau Pinang (RM54.7 bilion; 40.2%).

Rajah 16: Perbelanjaan E-Dagang mengikut Negeri, 2019 dan 2021



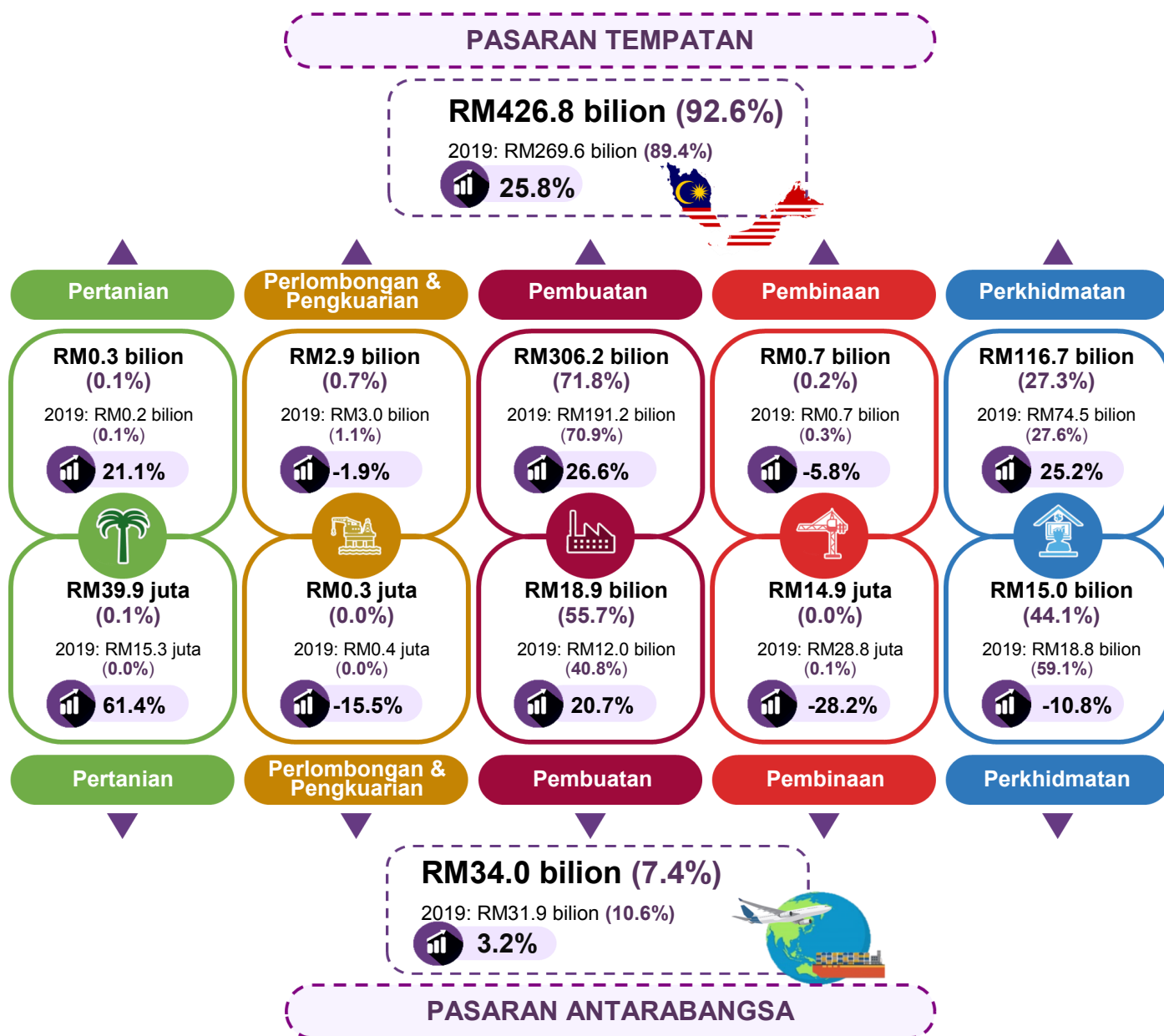
Nota.

 Kadar pertumbuhan tahunan

9.3 PERBELANJAAN MENGIKUT JENIS PASARAN

Perbelanjaan daripada transaksi e-dagang di Malaysia didominasi oleh pasaran tempatan RM426.8 bilion dengan sumbangan 92.6 peratus berbanding pasaran antarabangsa sebanyak RM34.0 bilion (7.4%). Sektor Pembuatan merupakan penyumbang utama perbelanjaan daripada transaksi e-dagang bagi pasaran tempatan dan antarabangsa dengan nilai masing-masing RM306.2 bilion dan RM18.9 bilion seperti di **Rajah 17**.

Rajah 17: Perbelanjaan E-Dagang mengikut Jenis Pasaran, 2019 dan 2021



Nota.

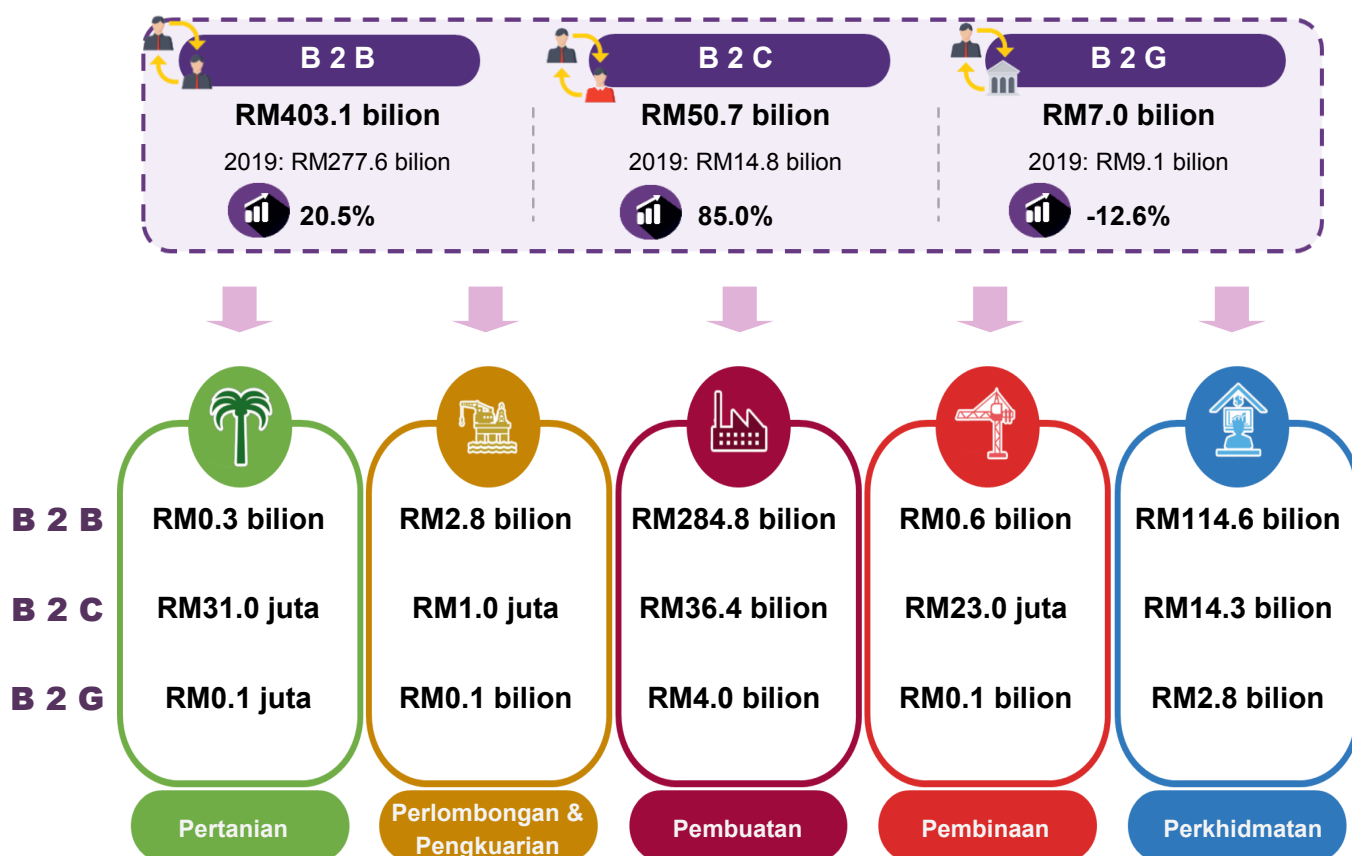
Kadar pertumbuhan tahunan (%)
 Peratus sumbangan

9.4 PERBELANJAAN E-DAGANG MENGIKUT JENIS PELANGGAN

Perbelanjaan daripada transaksi e-dagang mengikut jenis pelanggan yang diperoleh melalui *Business to Business* (B2B) ialah RM403.1 bilion dengan kadar pertumbuhan tahunan 20.5 peratus. Ini diikuti oleh *Business to Consumer* (B2C) sebanyak RM50.7 bilion (85.0%) dan *Business to Government* (B2G) RM7.0 bilion (-12.6%).

Sektor Pembuatan mendominasi perbelanjaan daripada transaksi e-dagang melalui ketiga-tiga jenis pelanggan ini iaitu B2B sebanyak RM284.8 bilion, B2C (RM36.4 bilion) dan B2G (RM4.0 bilion) seperti di **Rajah 18**.

Rajah 18: Perbelanjaan E-Dagang mengikut Jenis Pelanggan, 2019 dan 2021



Nota.



Kadar pertumbuhan tahunan

SUMMARY OF FINDINGS

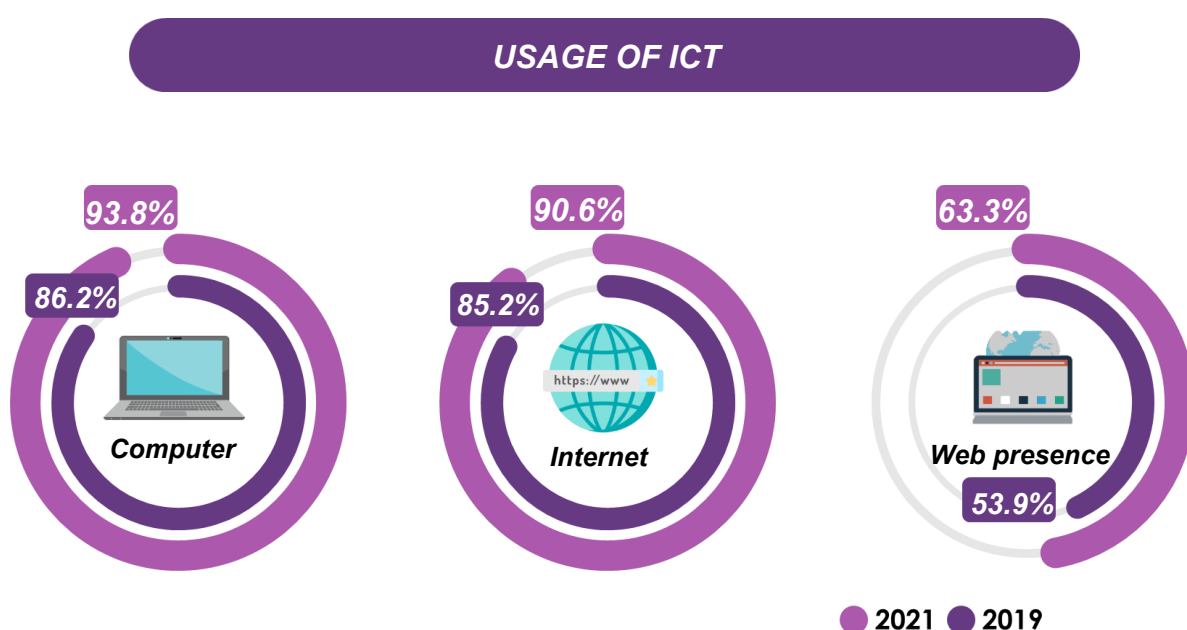
1. INTRODUCTION

This Usage of ICT and E-Commerce (ICTEC) 2022 publication presents the statistics of Usage of Information & Communication Technology (ICT) and E-Commerce in Malaysia that were compiled based on the Annual Economic Survey (AES) 2022 for the reference year 2021. ICTEC 2022 comprises five main sectors, which are Agriculture, Mining & Quarrying, Manufacturing, Construction and Services.

2. 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 1**.*

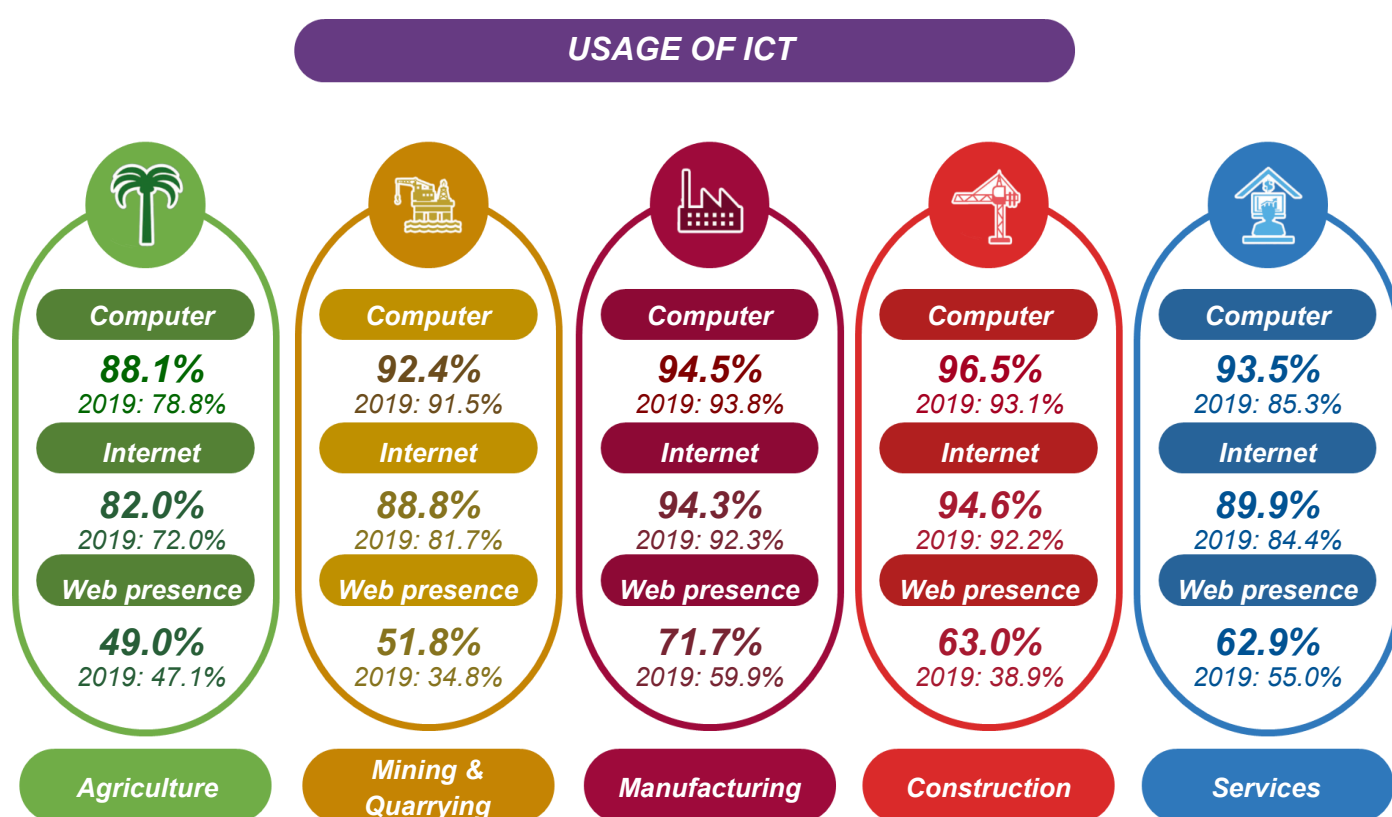
Figure 1: Usage of Computer, Internet, and Web Presence, 2019 and 2021



2.1 USAGE OF ICT BY SECTOR

The usage of computer, internet, and web presence by sector is shown in **Figure 2**. 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%).

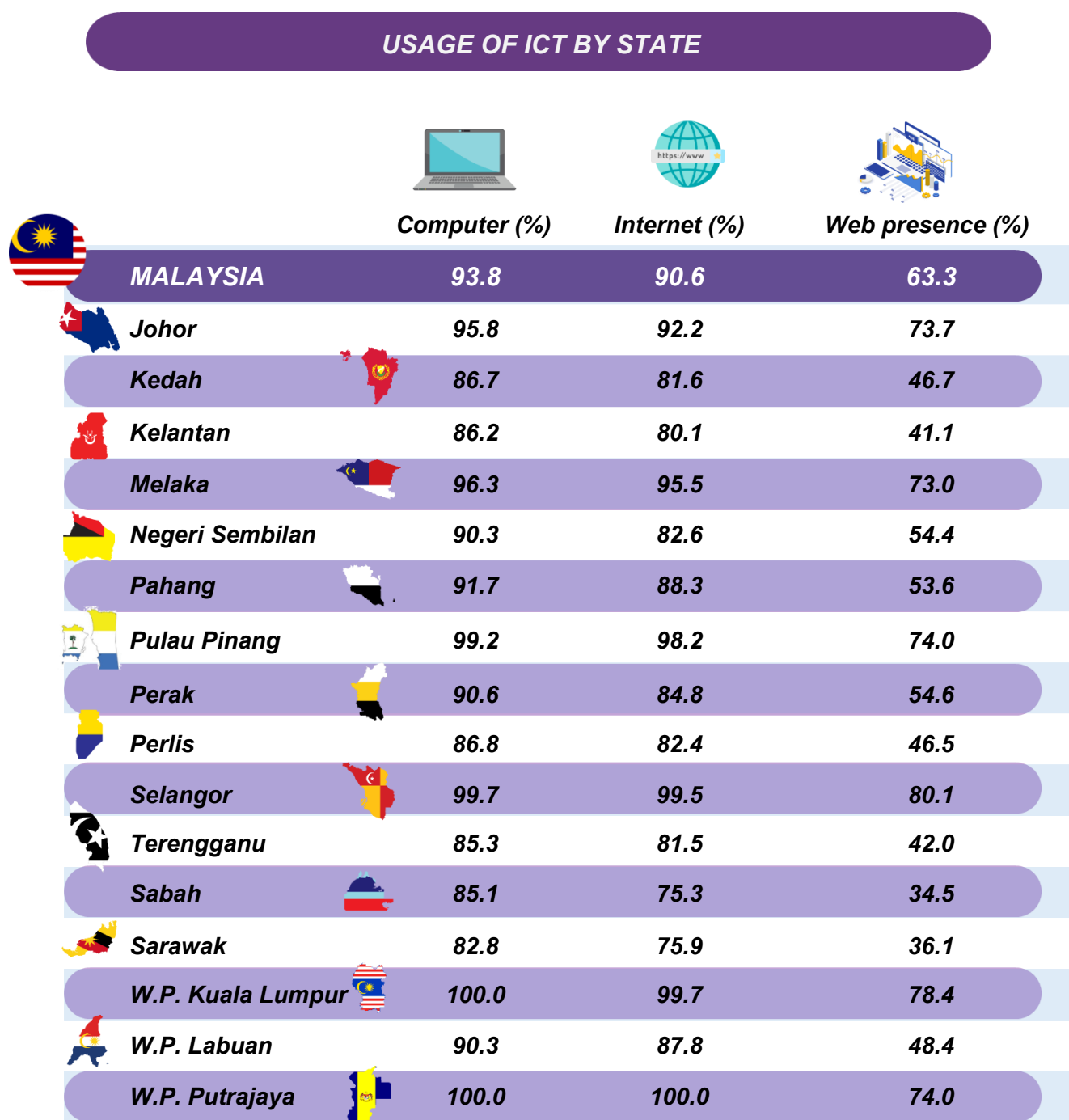
Figure 2: Usage of Computer, Internet and Web Presence by Sector, 2019 and 2021



2.2 USAGE OF ICT BY STATE

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 3**.

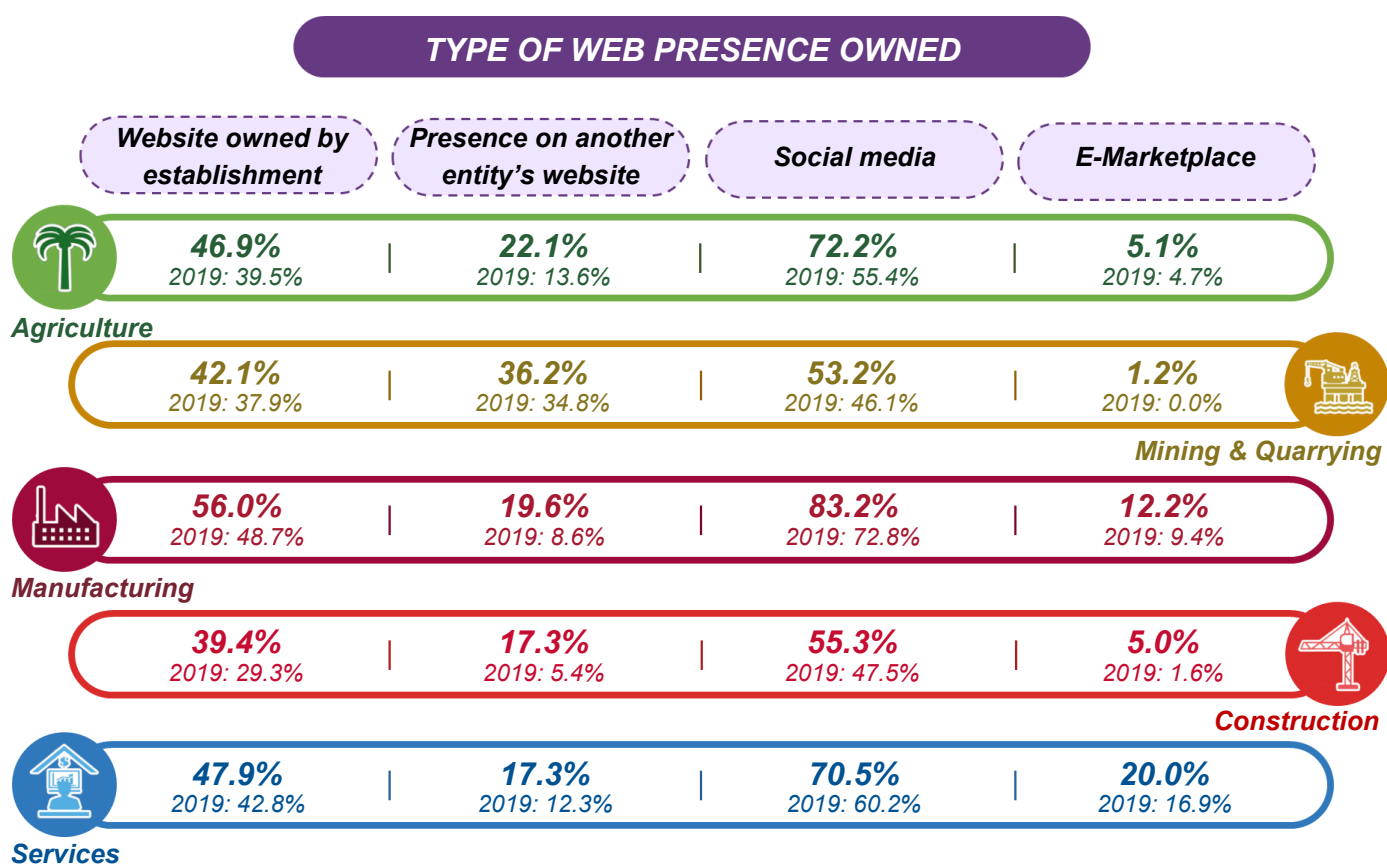
Figure 3: Usage of Computer, Internet and Web Presence by State, 2021



3. TYPE OF WEB PRESENCE OWNED BY SECTOR

Figure 4 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%).

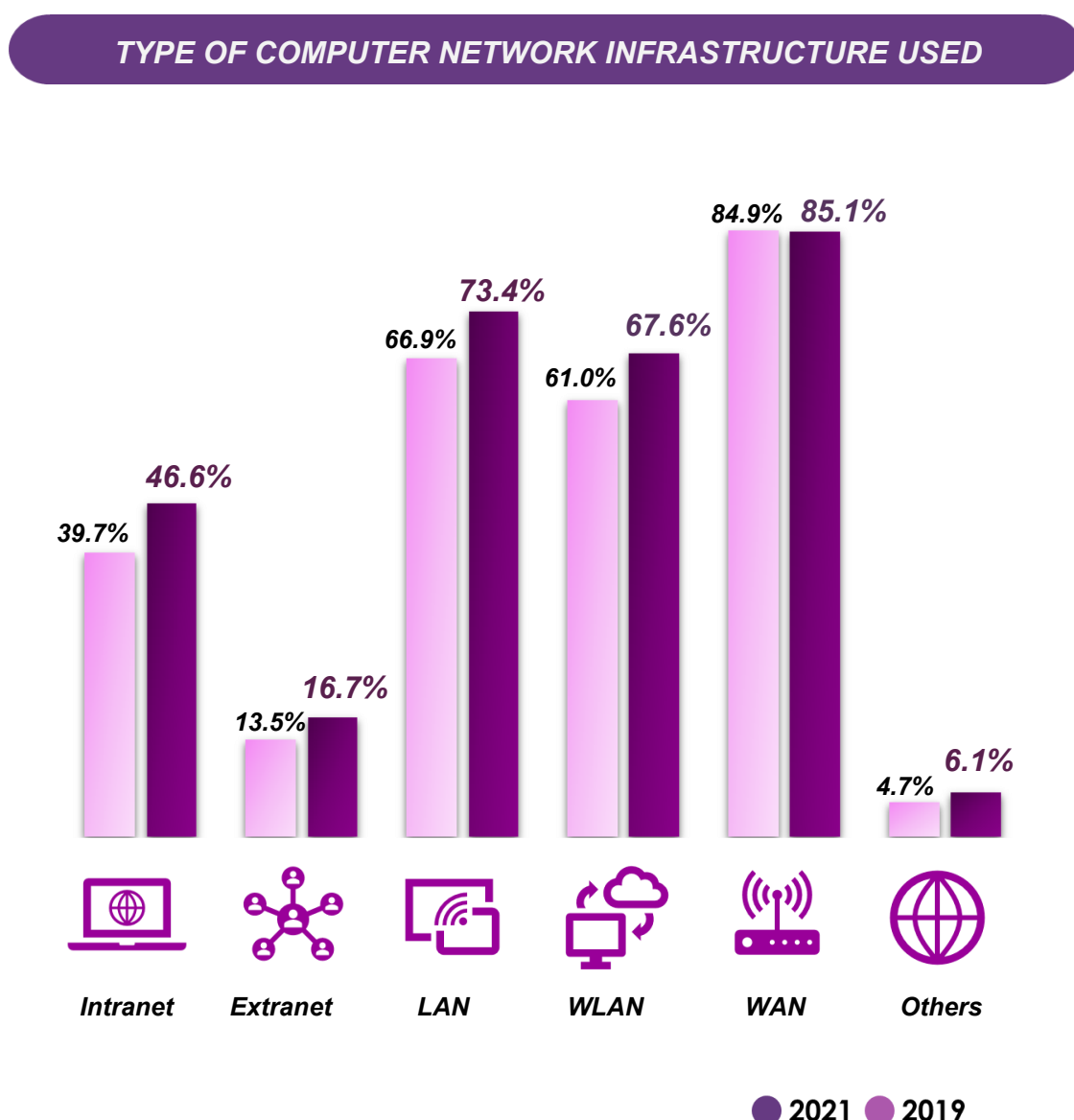
Figure 4: Type of Web Presence Owned by Sector, 2019 and 2021



4. COMPUTER NETWORK INFRASTRUCTURE

Figure 5 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%).

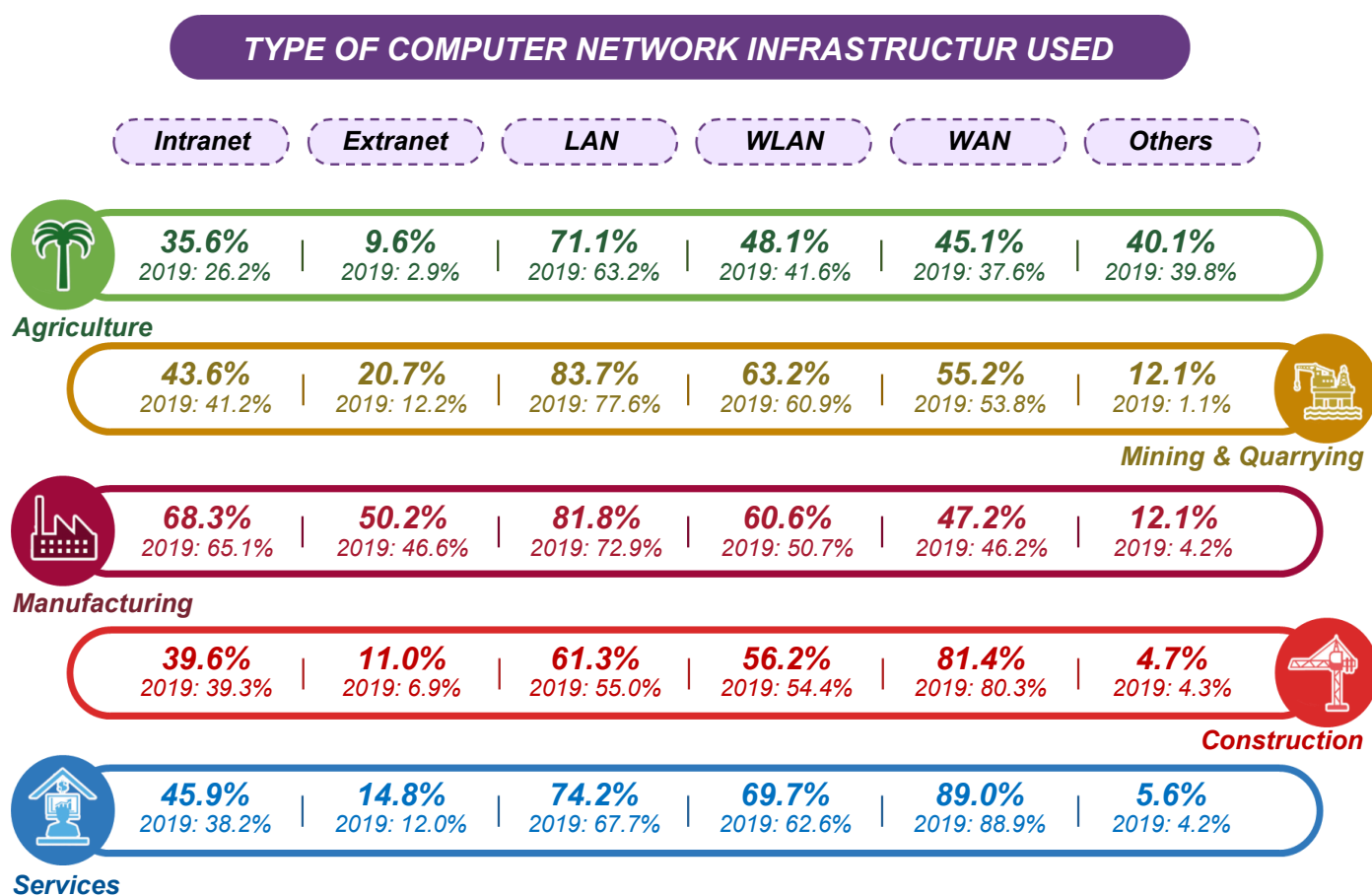
Figure 5: Type of Computer Network Infrastructure Used, 2019 and 2021



4.1 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 Agriculture sector as shown in **Figure 6**.

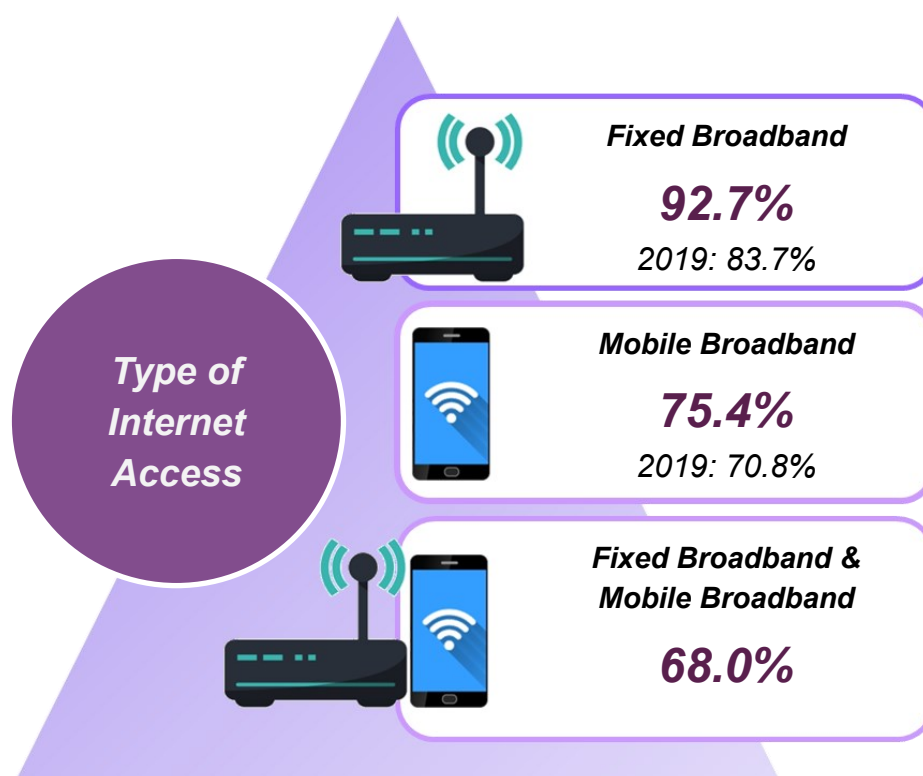
Figure 6: Type of Computer Network Used by Sector, 2019 and 2021



5. TYPE 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 7.

Figure 7: Type of Internet Access, 2019 and 2021

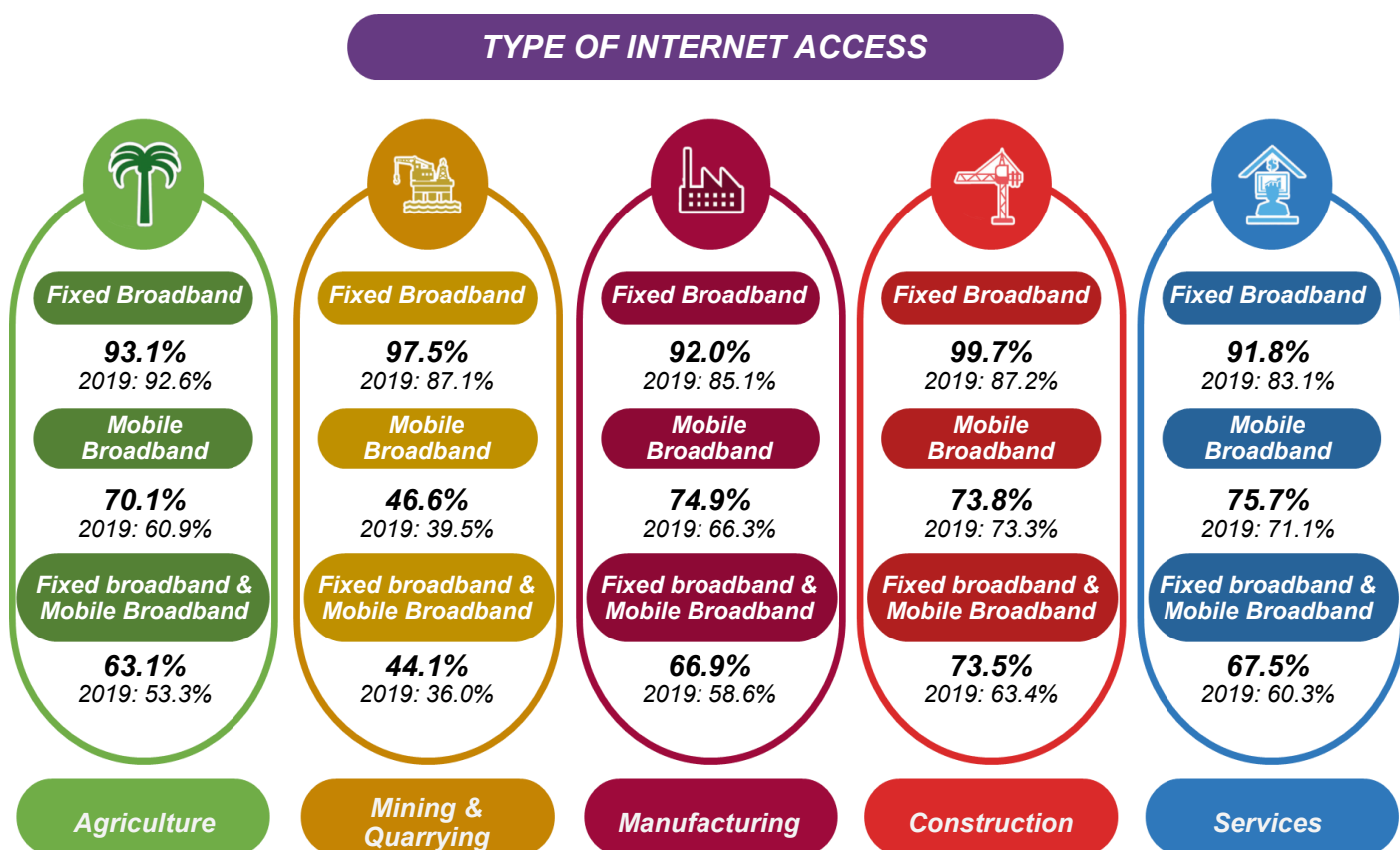


5.1 TYPE OF INTERNET ACCESS BY SECTOR

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 8**.

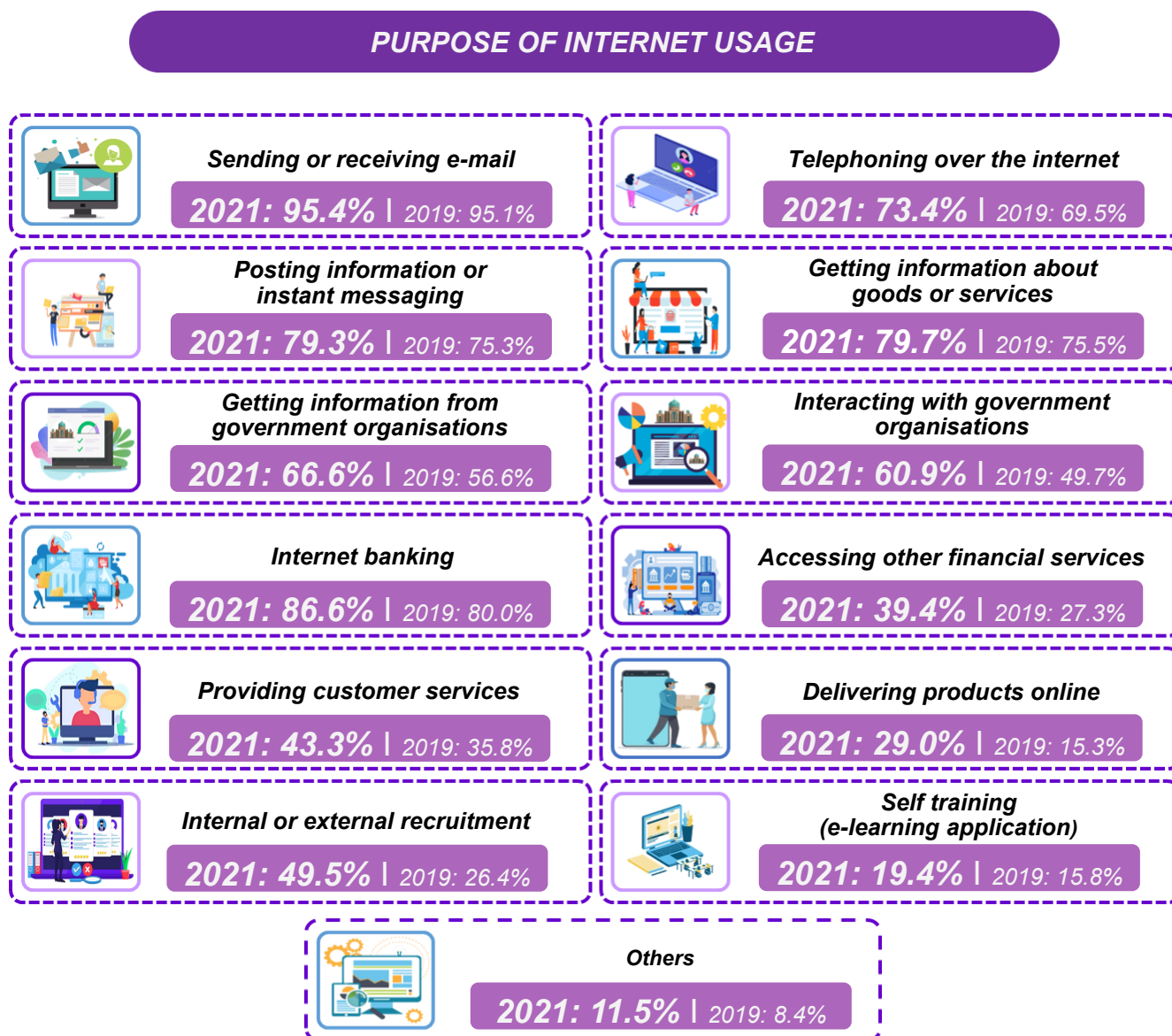
Figure 8: Type of Internet Access by Sector, 2019 and 2021



6. PURPOSE OF INTERNET USAGE BY ESTABLISHMENT

Figure 9 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%).

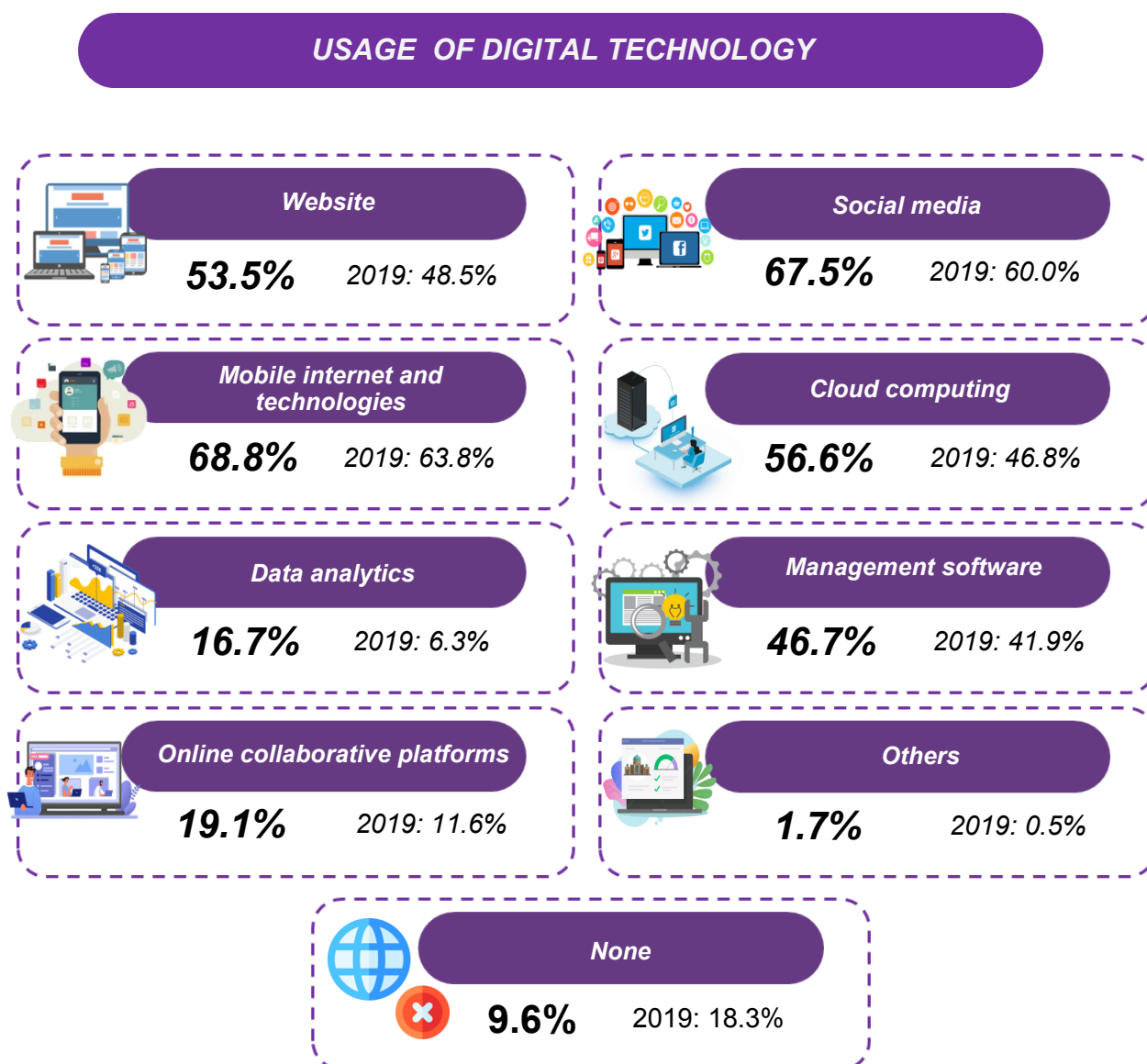
Figure 9: Purpose of Internet Usage by Establishment, 2019 and 2021



7. 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 10**.

Figure 10: Usage of Digital Technology, 2019 and 2021



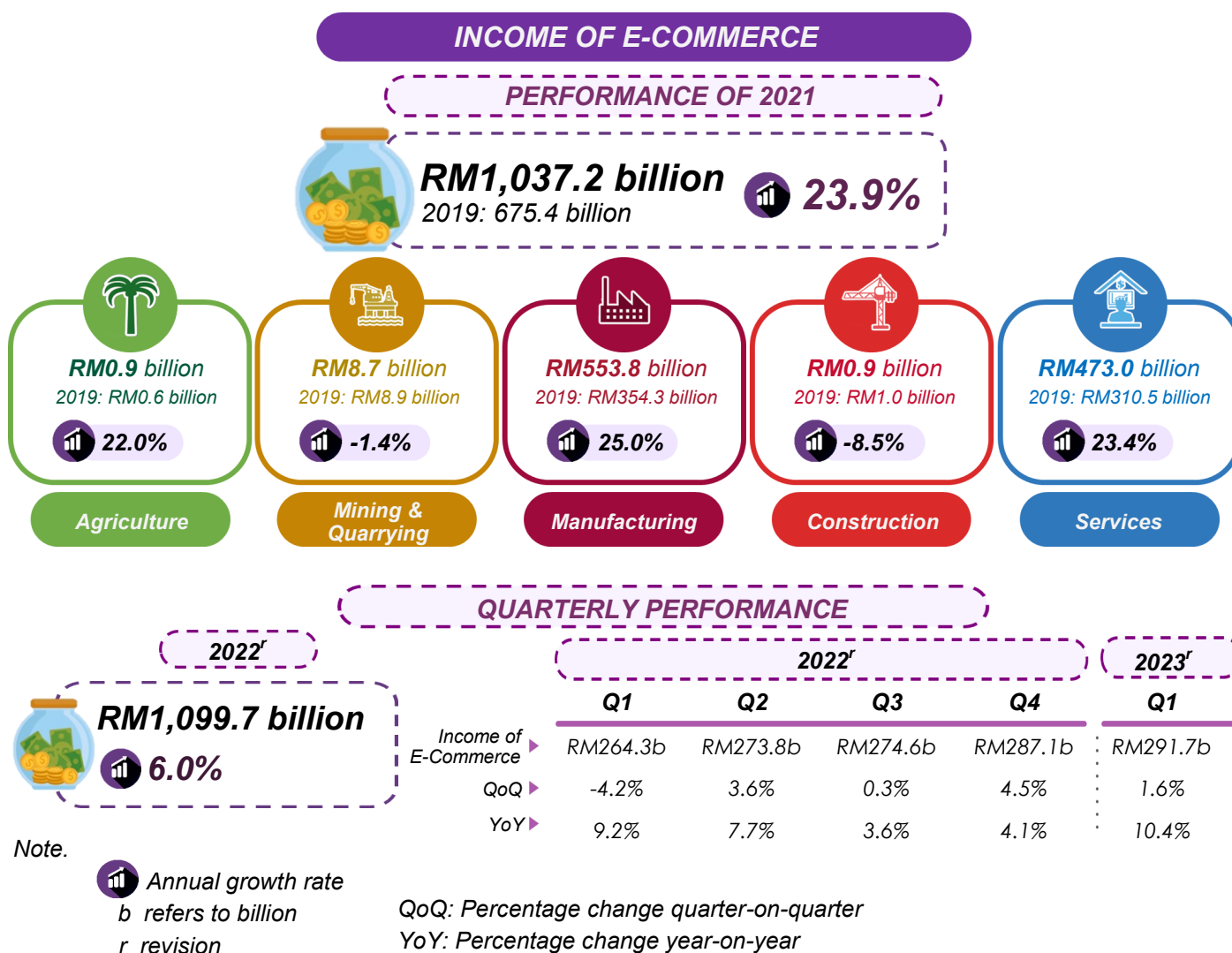
8. E-COMMERCE INCOME

8.1 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 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%).

For the year 2022, income for e-commerce has been produced on a quarterly basis to measure Malaysia's short-term e-commerce indicator. Income for e-commerce was RM1,099.7 billion, an increase of 6.0 per cent compared to 2021. On quarterly basis, the first quarter of 2022 recorded RM264.3 billion, followed by RM273.8 billion in the second quarter. Meanwhile, e-commerce income for the third and fourth quarter of 2022, income for e-commerce registered RM274.6 billion and RM287.1 billion, respectively. In the first quarter 2023, income for e-commerce recorded RM291.7 billion, with an increase of 10.4 per cent year-on-year as shown in Figure 11.

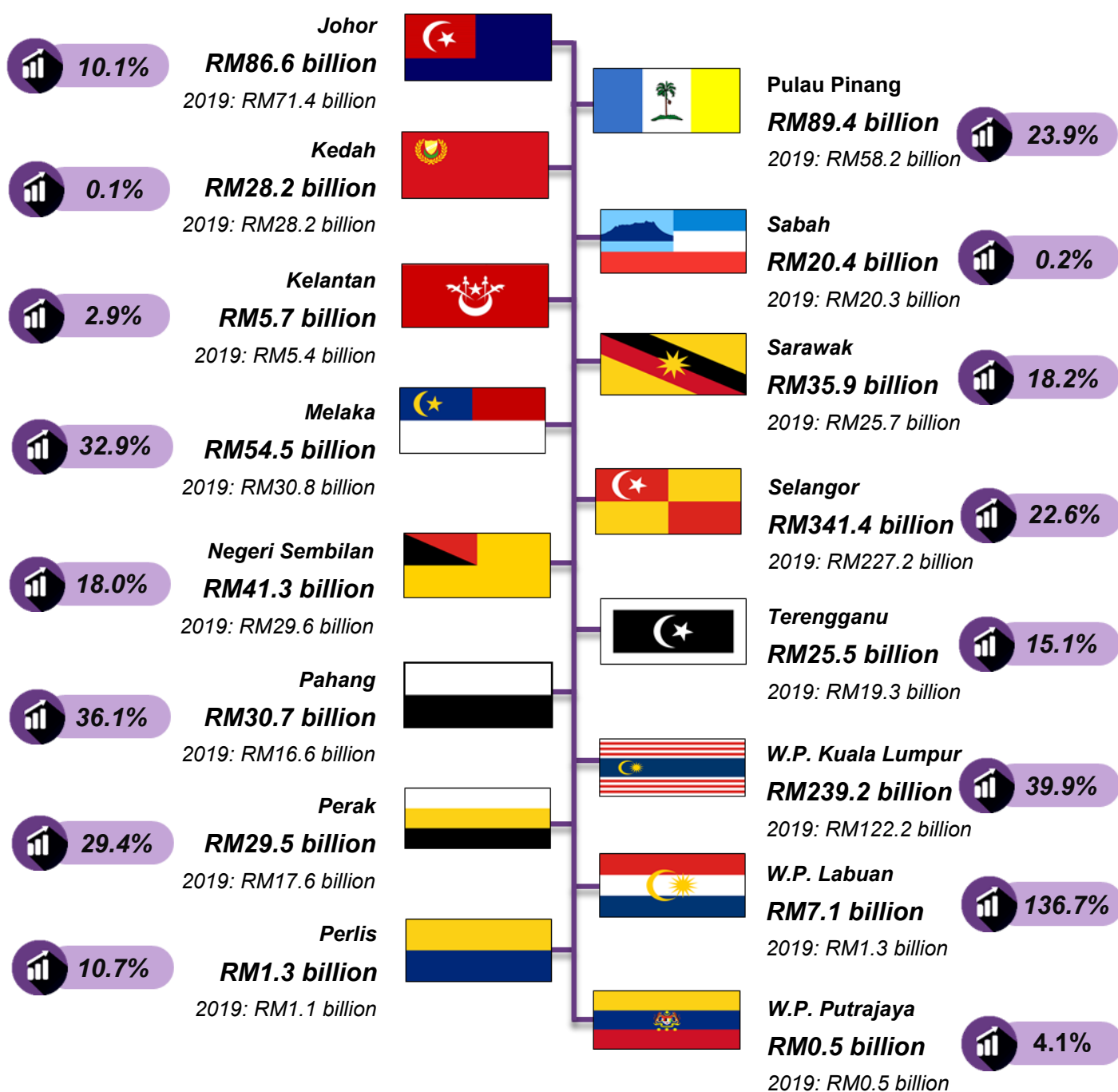
Figure 11: Income of E-Commerce, 2019 and 2021 - 2023



8.2 E-COMMERCE INCOME BY STATE

Figure 12 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 12: E-Commerce Income by State, 2019 and 2021



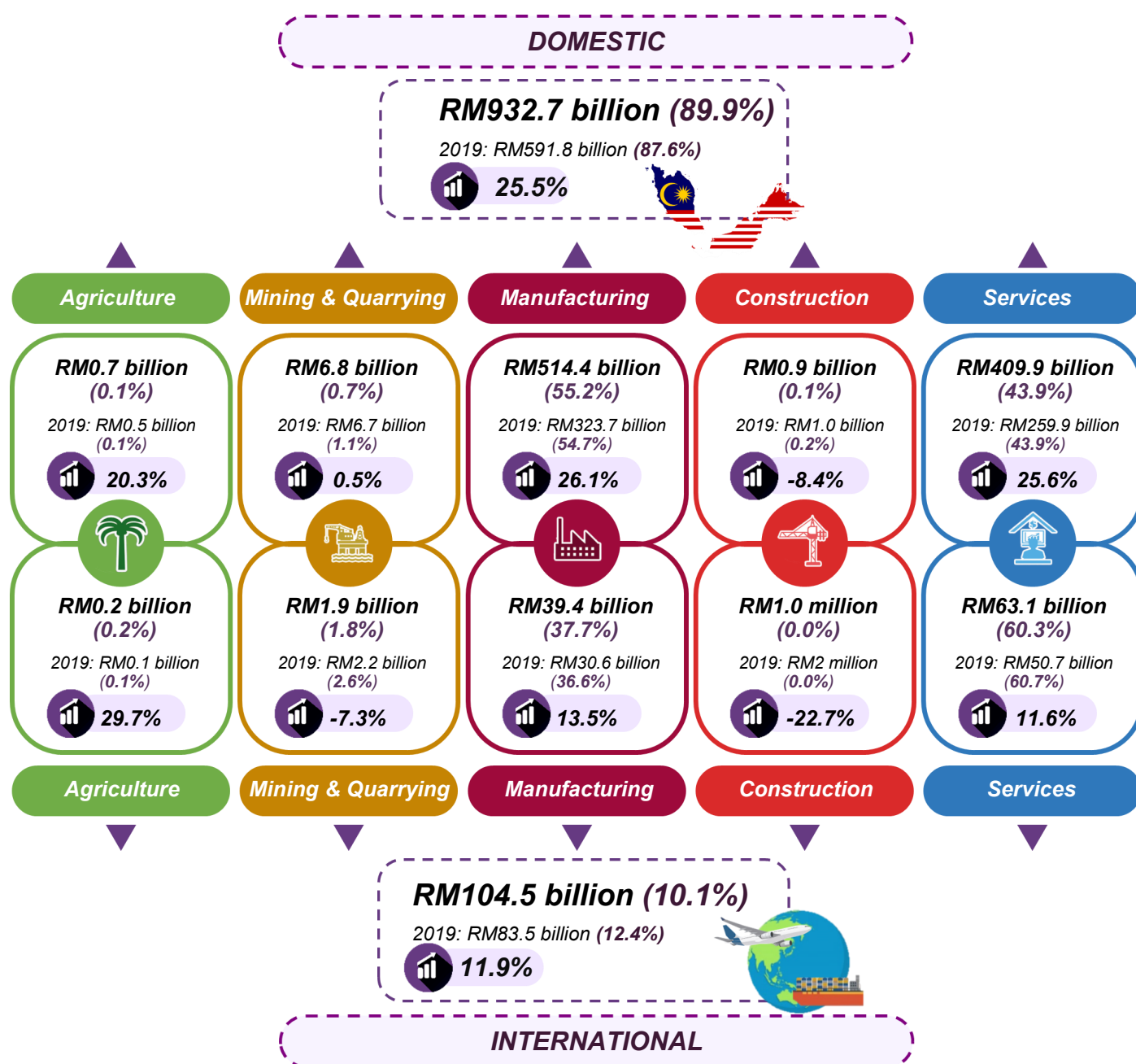
Note.

Annual growth rate

8.3 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 13**.

Figure 13: E-Commerce Income by Type of Market, 2019 and 2021



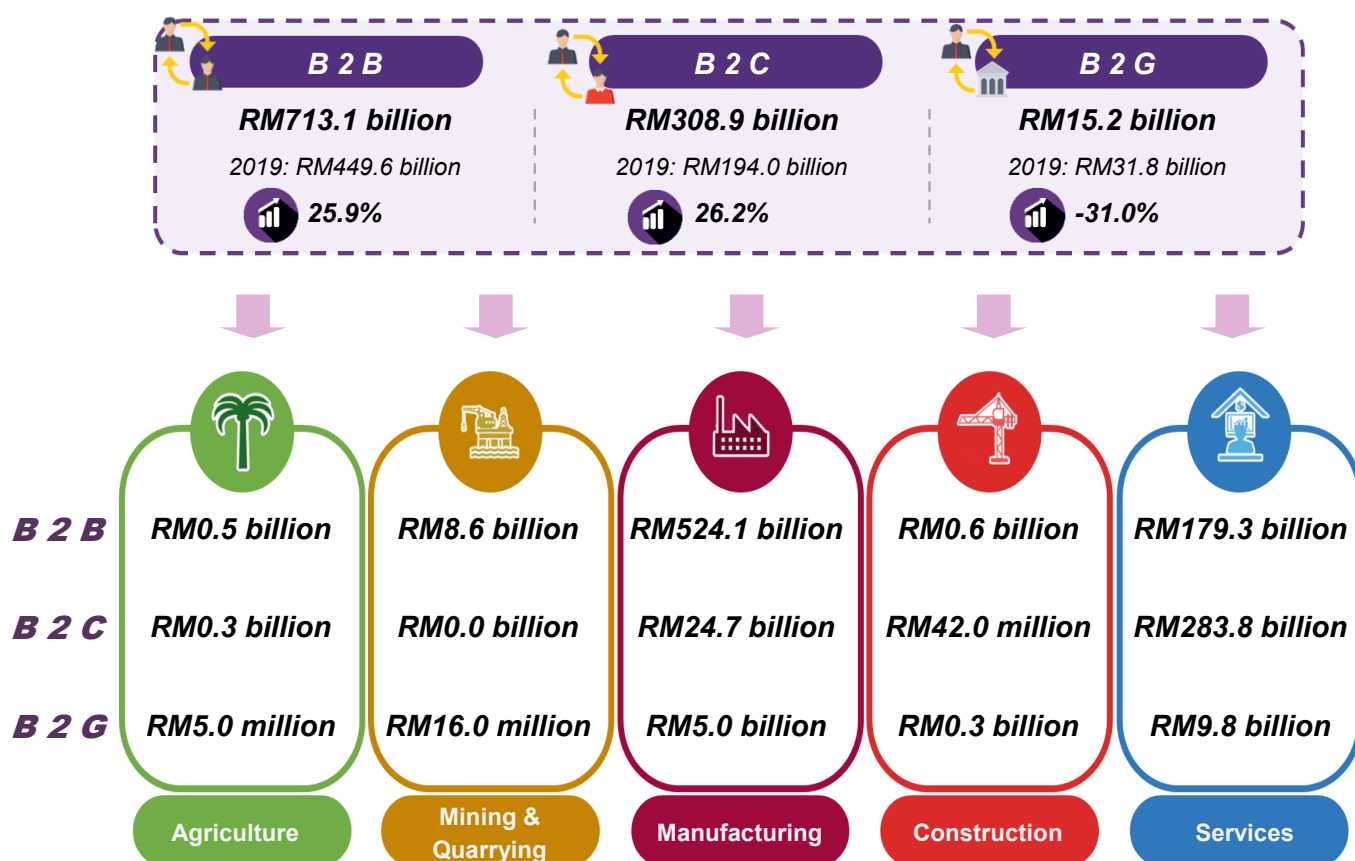
Note. Annual growth rate
(%) Percentage share

8.4 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 14.

Figure 14: E-Commerce Income by Type of Customer, 2019 and 2021



Note.



Annual growth rate

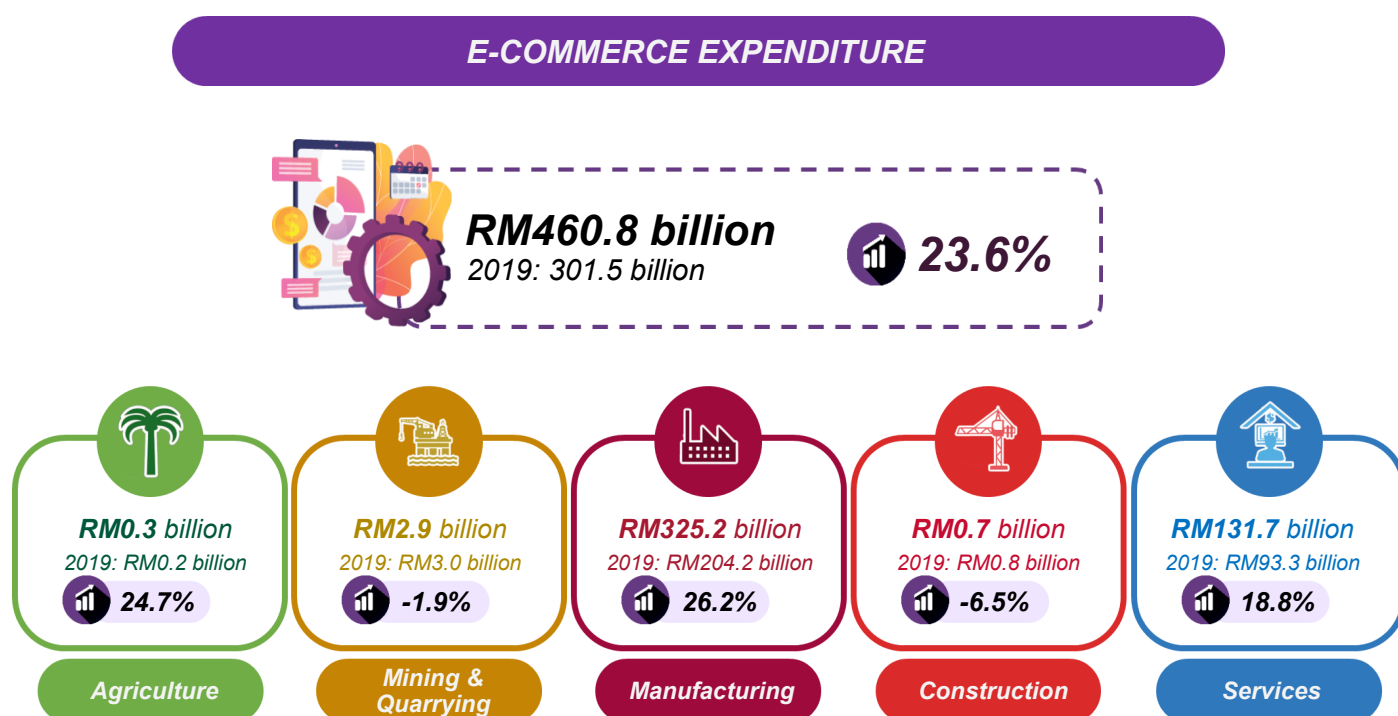
"0" Refers to value less than RM500,000

9. E-COMMERCE EXPENDITURE

9.1 E-COMMERCE EXPENDITURE BY SECTOR

In 2021, expenditure through e-commerce transactions recorded RM460.8 billion 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 15**.

Figure 15: E-Commerce Expenditure by Sector, 2019 and 2021



Note.

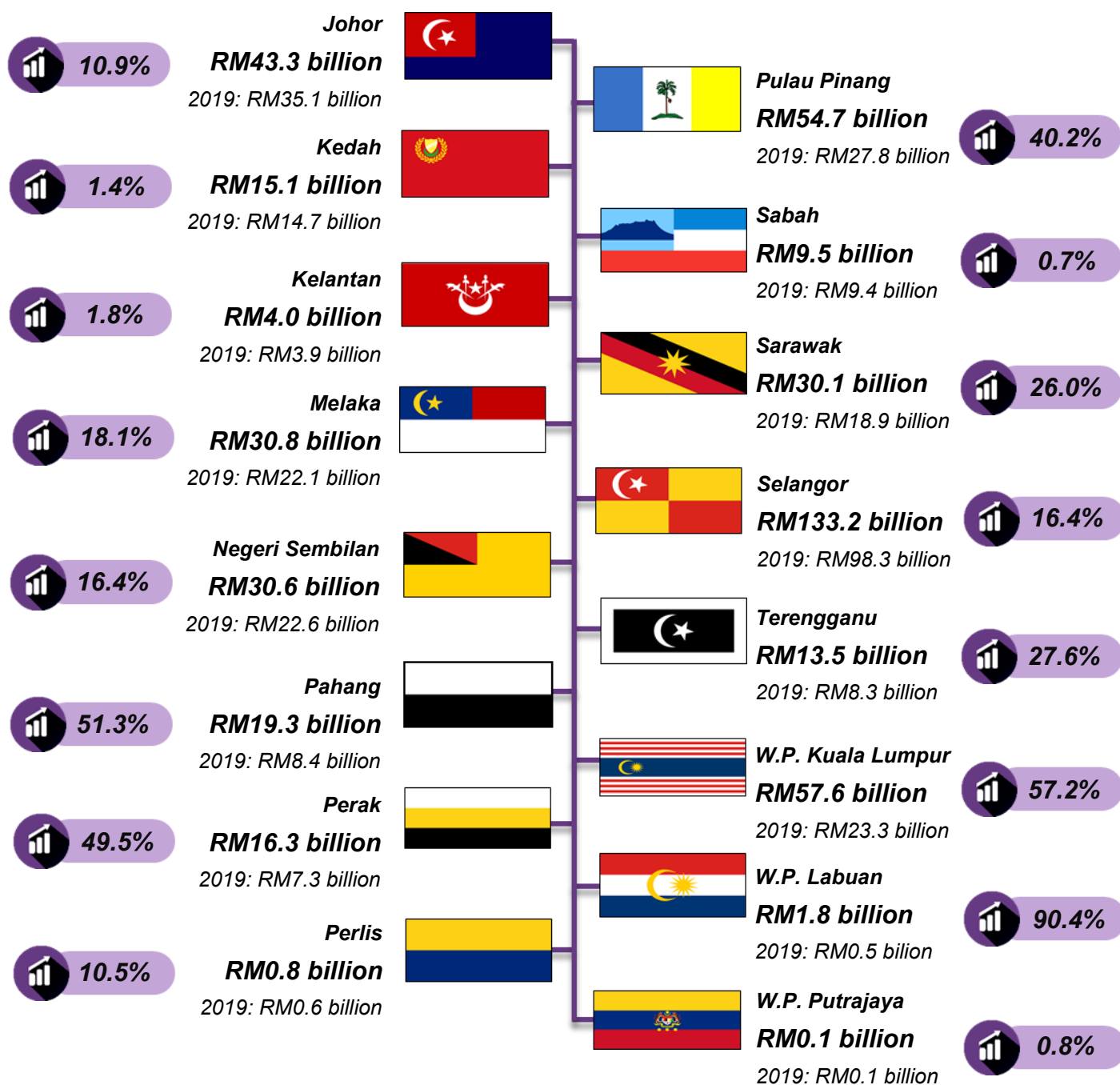


Annual growth rate

9.2 E-COMMERCE EXPENDITURE BY STATE

As shown in **Figure 16**, 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 16: E-Commerce Expenditure by State, 2019 and 2021



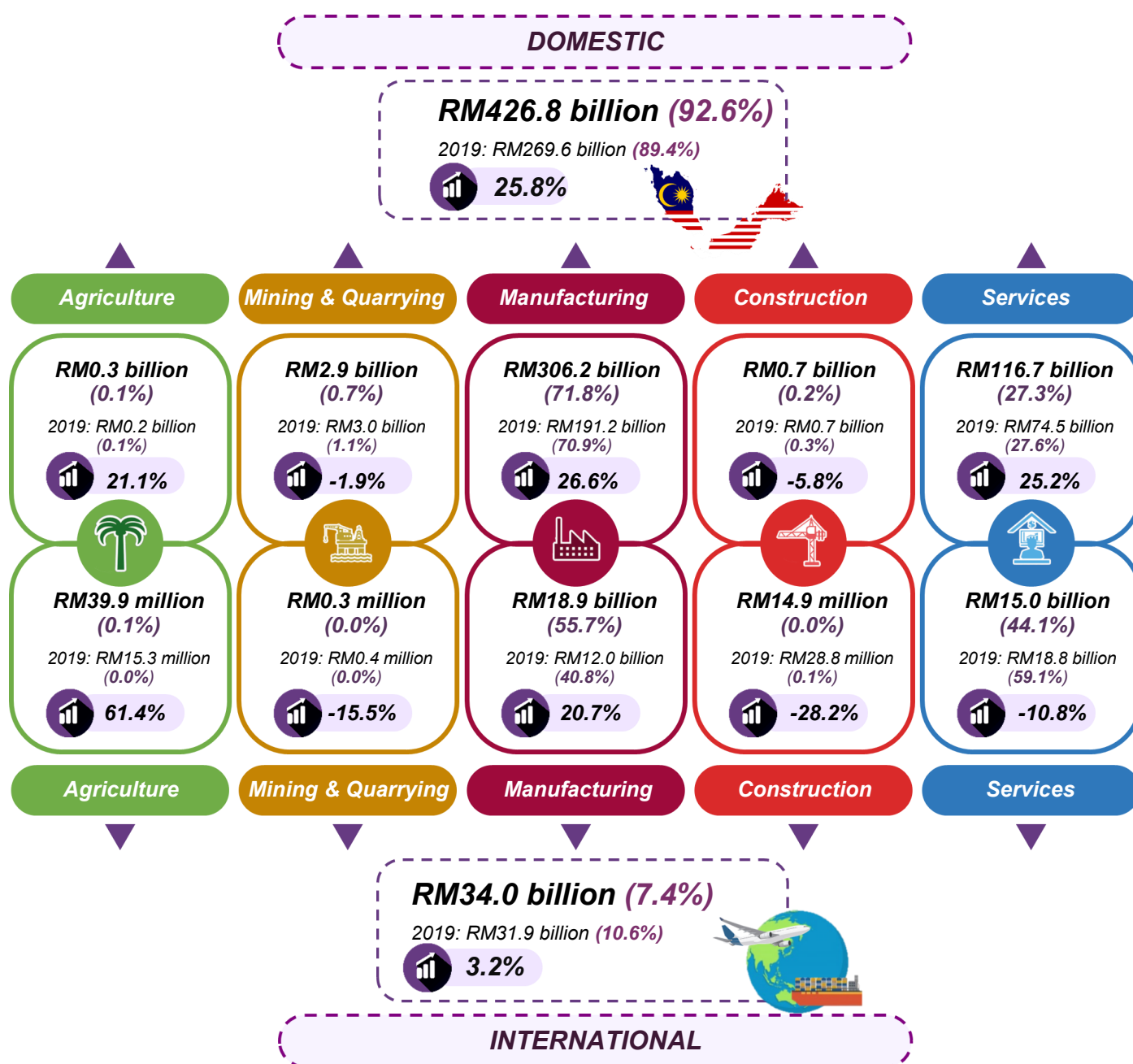
Note.

 Annual growth rate

9.3 E-COMMERCE EXPENDITURE BY TYPE OF MARKET

Expenditure from e-commerce transactions in Malaysia was dominated by the domestic market of RM426.8 billion, 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 17**.

Figure 17: E-Commerce Expenditure by Type of Market, 2019 and 2021



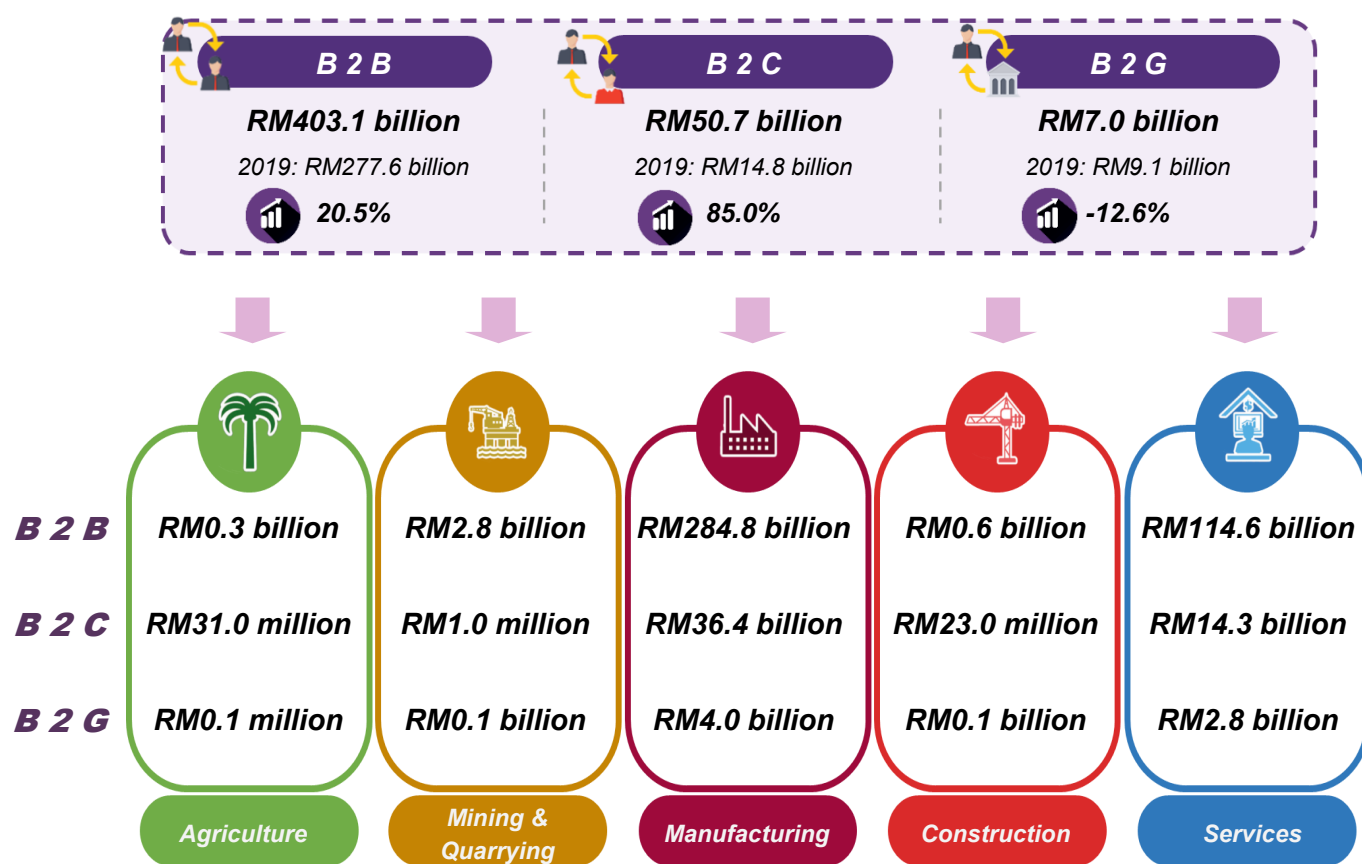
Note. Annual growth rate
(%) Percentage Share

9.4 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 18**.

Figure 18: E-Commerce Expenditure by Type of Customer, 2019 and 2021



Note.



Annual growth rate

2

JADUAL
STATISTIK
STATISTICAL TABLE

PENGUNAAN ICT & E-DAGANG OLEH PERTUBUHAN 2022

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Jadual 1: Penggunaan Komputer, Internet dan Web Presence mengikut Sektor/ Subsektor, 2015, 2017, 2019 dan 2021

Table 1: Usage of Computer, Internet and Web Presence by Sector/ Sub-sector, 2015, 2017, 2019 and 2021

Sektor/ Subsektor Sector/ Sub-sector	Tahun Year	Penggunaan komputer Computer usage	Penggunaan internet Internet usage	Penggunaan web presence Web presence usage
		%	%	%
Jumlah <i>Total</i>	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
Pertanian <i>Agriculture</i>	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
Perlombongan dan Pengkuarian <i>Mining and Quarrying</i>	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
Pembuatan <i>Manufacturing</i>	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
Pembinaan <i>Construction</i>	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
Perkhidmatan <i>Services</i>	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
Utiliti <i>Utility</i>	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
Perdagangan Borong dan Runcit <i>Wholesale and Retail Trade</i>	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
Pengangkutan dan Penyimpanan <i>Transportation and Storage</i>	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
Penginapan <i>Accommodation</i>	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
Makanan dan Minuman <i>Food and Beverages</i>	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

Jadual 1: Penggunaan Komputer, Internet dan Web Presence mengikut Sektor/ Subsektor, 2015, 2017, 2019 dan 2021 (samb.)

Table 1: Usage of Computer, Internet and Web Presence by Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sektor/ Subsektor <i>Sector/ Sub-sector</i>	Tahun <i>Year</i>	Penggunaan komputer <i>Computer usage</i>	Penggunaan internet <i>Internet usage</i>	Penggunaan web presence <i>Web presence usage</i>
		%	%	%
Maklumat dan Komunikasi <i>Information and Communication</i>	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
Kewangan dan Insurans/Takaful <i>Financial and Insurance/Takaful</i>	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
Hartanah <i>Real Estate</i>	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
Profesional, Sainifik dan Teknikal <i>Professional, Scientific and Technical</i>	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
Pentadbiran dan Khidmat Sokongan <i>Administrative and Support Service</i>	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
Pendidikan <i>Education</i>	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
Kesihatan Kemanusiaan dan Kerja Sosial <i>Human Health and Social Work</i>	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
Kesenian, Hiburan dan Rekreasi <i>Arts, Entertainment and Recreation</i>	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
Perkhidmatan Lain <i>Other Services</i>	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

Jadual 2: Penggunaan Komputer, Internet dan Web Presence mengikut Negeri, 2015, 2017, 2019 dan 2021

Table 2: Usage of Computer, Internet and Web Presence by State, 2015, 2017, 2019 and 2021

Negeri States	Tahun Year	Penggunaan komputer Computer usage	Penggunaan internet Internet usage	Penggunaan web presence Web presence usage
		%	%	%
Jumlah <i>Total</i>	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

Jadual 2: Penggunaan Komputer, Internet dan Web Presence mengikut Negeri, 2015, 2017, 2019 dan 2021 (samb.)

Table 2: Usage of Computer, Internet and Web Presence by State, 2015, 2017, 2019 and 2021 (cont'd.)

Negeri <i>States</i>	Tahun <i>Year</i>	Penggunaan komputer <i>Computer usage</i>	Penggunaan internet <i>Internet usage</i>	Penggunaan web presence <i>Web presence usage</i>
		%	%	%
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

Jadual 3: Jenis Web Presence yang Dimiliki mengikut Sektor/ Subsektor, 2015, 2017, 2019 dan 2021

Table 3: Type of Web Presence Owned by Sector/ Sub-sector, 2015, 2017, 2019 and 2021

Sektor/ Subsektor Sector/ Sub-sector	Tahun Year	Laman web kepunyaan sendiri Website owned by establishment	Laman web di entiti lain Presence on another entity's website	Media sosial Social media	E-Pasaran E-Marketplace
		%	%	%	%
Jumlah <i>Total</i>	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	-	-	-	-
Pertanian <i>Agriculture</i>	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	-	-	-	-
Perlombongan dan Pengkuarian <i>Mining and Quarrying</i>	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	-	-	-	-
Pembuatan <i>Manufacturing</i>	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	-	-	-	-
Pembinaan <i>Construction</i>	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	-	-	-	-
Perkhidmatan <i>Services</i>	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	-	-	-	-
Utiliti <i>Utility</i>	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	-	-	-	-
Perdagangan Borong dan Runcit <i>Wholesale and Retail Trade</i>	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	-	-	-	-
Pengangkutan dan Penyimpanan <i>Transportation and Storage</i>	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	-	-	-	-
Penginapan <i>Accommodation</i>	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	-	-	-	-
Makanan dan Minuman <i>Food and Beverages</i>	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	-	-	-	-

Jadual 3: Jenis Web Presence yang Dimiliki mengikut Sektor/ Subsektor, 2015, 2017, 2019 dan 2021 (samb.)

Table 3: Type of Web Presence Owned by Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sektor/ Subsektor Sector/ Sub-sector	Tahun Year	Laman web kepunyaan sendiri Website owned by establishment	Laman web di entiti lain Presence on another entity's website	Media sosial Social media	E-Pasaran E-Marketplace
		%	%	%	%
Maklumat dan Komunikasi <i>Information and Communication</i>	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	-	-	-	-
Kewangan dan Insurans/Takaful <i>Financial and Insurance/Takaful</i>	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	-	-	-	-
Hartanah <i>Real Estate</i>	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	-	-	-	-
Profesional, Saintifik dan Teknikal <i>Professional, Scientific and Technical</i>	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	-	-	-	-
Pentadbiran dan Khidmat Sokongan <i>Administrative and Support Service</i>	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	-	-	-	-
Pendidikan <i>Education</i>	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	-	-	-	-
Kesihatan Kemanusiaan dan Kerja Sosial <i>Human Health and Social Work</i>	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	-	-	-	-
Kesenian, Hiburan dan Rekreasi <i>Arts, Entertainment and Recreation</i>	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	-	-	-	-
Perkhidmatan Lain <i>Other Services</i>	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	-	-	-	-

Nota .

'-' merujuk kepada data tidak tersedia

Notes.

'-' refers to data not available

Jadual 4: Jenis Rangkaian Komputer yang Digunakan mengikut Sektor/ Subsektor, 2015, 2017, 2019 dan 2021

Table 4: Type of Computer Network Infrastructure Used by Sector/ Sub-sector, 2015, 2017, 2019 and 2021

Sektor/ Subsektor Sector/ Sub-sector	Tahun Year	Intranet Intranet	Extranet Extranet	Rangkaian kawasan setempat Local area network (LAN)	Rangkaian kawasan setempat tanpa wayar Wireless local area network (WLAN)	Rangkaian kawasan luas Wide area network (WAN)	Lain- lain Others
		%	%	%	%	%	%
Jumlah <i>Total</i>	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
Pertanian <i>Agriculture</i>	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
Perlombongan dan Pengkuarian <i>Mining and Quarrying</i>	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
Pembuatan <i>Manufacturing</i>	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
Pembinaan <i>Construction</i>	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
Perkhidmatan <i>Services</i>	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
Utiliti <i>Utility</i>	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
Perdagangan Borong dan Runcit <i>Wholesale and Retail Trade</i>	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
Pengangkutan dan Penyimpanan <i>Transportation and Storage</i>	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
Penginapan <i>Accommodation</i>	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
Makanan dan Minuman <i>Food and Beverages</i>	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

Jadual 4: Jenis Rangkaian Komputer yang Digunakan mengikut Sektor/ Subsektor, 2015, 2017, 2019 dan 2021 (samb.)

Table 4: Type of Computer Network Infrastructure Used by Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sektor/ Subsektor Sector/ Sub-sector	Tahun Year	Intranet Intranet	Extranet Extranet	Rangkaian kawasan setempat Local area network (LAN)	Rangkaian kawasan setempat tanpa wayar Wireless local area network (WLAN)	Rangkaian kawasan luas Wide area network (WAN)	Lain- lain Others
		%	%	%	%	%	%
Maklumat dan Komunikasi <i>Information and Communication</i>	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
Kewangan dan Insurans/Takaful <i>Financial and Insurance/Takaful</i>	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
Hartanah <i>Real Estate</i>	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
Profesional, Saintifik dan Teknikal <i>Professional, Scientific and Technical</i>	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
Pentadbiran dan Khidmat Sokongan <i>Administrative and Support Service</i>	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
Pendidikan <i>Education</i>	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
Kesihatan Kemanusiaan dan Kerja Sosial <i>Human Health and Social Work</i>	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
Kesenian, Hiburan dan Rekreasi <i>Arts, Entertainment and Recreation</i>	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
Perkhidmatan Lain <i>Other Services</i>	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

Nota .

'-' merujuk kepada data tidak tersedia

Notes.

'-' refers to data not available

Jadual 5: Jenis Capaian Internet mengikut Sektor/ Subsektor, 2015, 2017, 2019 dan 2021

Table 5: Type of Internet Access by Sector/ Sub-sector, 2015, 2017, 2019 and 2021

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

Jadual 5: Jenis Capaian Internet mengikut Sektor/ Subsektor, 2015, 2017, 2019 dan 2021 (samb.)
Table 5: Type of Internet Access by Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sektor/ Subsektor Sector/ Sub-sector	Tahun Year	Jalur lebar tetap Fixed Broadband	Jalur lebar mudah alih Mobile Broadband	Kedua-dua jalur lebar Both types of broadband
		%	%	%
Maklumat dan Komunikasi <i>Information and Communication</i>	2021	100.0	86.8	86.8
	2019	94.7	82.9	79.5
	2017	84.2	25.4	-
	2015	81.1	30.3	-
Kewangan dan Insurans/Takaful <i>Financial and Insurance/Takaful</i>	2021	96.8	60.9	57.6
	2019	95.2	58.4	53.3
	2017	93.8	55.5	-
	2015	93.5	46.4	-
Hartanah <i>Real Estate</i>	2021	96.5	69.1	65.6
	2019	90.8	67.2	61.2
	2017	92.9	13.3	-
	2015	92.0	8.0	-
Profesional, Saintifik dan Teknikal <i>Professional, Scientific and Technical</i>	2021	92.3	75.6	67.9
	2019	87.7	66.6	61.1
	2017	86.9	25.3	-
	2015	79.6	20.3	-
Pentadbiran dan Khidmat Sokongan <i>Administrative and Support Service</i>	2021	99.8	95.1	95.0
	2019	84.0	71.4	94.6
	2017	80.5	23.4	-
	2015	78.5	24.8	-
Pendidikan <i>Education</i>	2021	91.2	88.0	79.2
	2019	84.8	83.0	73.0
	2017	76.2	34.2	-
	2015	77.1	25.1	-
Kesihatan Kemanusiaan dan Kerja Sosial <i>Human Health and Social Work</i>	2021	95.4	66.1	61.5
	2019	88.8	58.2	54.1
	2017	77.7	36.4	-
	2015	76.7	26.8	-
Kesenian, Hiburan dan Rekreasi <i>Arts, Entertainment and Recreation</i>	2021	99.4	74.8	74.2
	2019	93.7	66.6	64.3
	2017	85.7	24.0	-
	2015	84.1	19.7	-
Perkhidmatan Lain <i>Other Services</i>	2021	81.5	76.0	56.8
	2019	72.2	64.3	54.4
	2017	67.5	37.2	-
	2015	66.7	35.6	-

Nota .

'-' merujuk kepada data tidak tersedia

Notes.

'-' refers to data not available

Jadual 6: Tujuan Penggunaan Internet mengikut Sektor/ Subsektor, 2015, 2017, 2019 dan 2021

Table 6: Purpose of Internet Usage by Sector/ Sub-sector, 2015, 2017, 2019 and 2021

Sektor/ Subsektor <i>Sector/ Sub-sector</i>	Tahun <i>Year</i>	Menghantar atau menerima e-mel <i>Sending or receiving e-mail</i>	Telefon melalui internet <i>Telephoning over the internet</i>	Menghantar informasi atau pesanan dengan segera <i>Posting information or instant messaging</i>	Mendapatkan maklumat berkenaan barangan atau perkhidmatan <i>Getting information about goods or services</i>
		%	%	%	%
Jumlah <i>Total</i>	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
Pertanian <i>Agriculture</i>	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
Perlombongan dan Pengkuarian <i>Mining and Quarrying</i>	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
Pembuatan <i>Manufacturing</i>	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
Pembinaan <i>Construction</i>	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
Perkhidmatan <i>Services</i>	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
Utiliti <i>Utility</i>	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
Perdagangan Borong dan Runcit <i>Wholesale and Retail Trade</i>	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
Pengangkutan dan Penyimpanan <i>Transportation and Storage</i>	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
Penginapan <i>Accommodation</i>	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
Makanan dan Minuman <i>Food and Beverages</i>	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

Jadual 6: Tujuan Penggunaan Internet mengikut Sektor/ Subsektor, 2015, 2017, 2019 dan 2021 (samb.)

Table 6: Purpose of Internet Usage by Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sektor/ Subsektor Sector/ Sub-sector	Tahun Year	Menghantar atau menerima e-mel Sending or receiving e-mail	Telefon melalui internet Telephoning over the internet	Menghantar informasi atau pesanan dengan segera Posting information or instant messaging	Mendapatkan maklumat berkenaan barangan atau perkhidmatan Getting information about goods or services
		%	%	%	%
Maklumat dan Komunikasi <i>Information and Communication</i>	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
Kewangan dan Insurans/Takaful <i>Financial and Insurance/Takaful</i>	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
Hartanah <i>Real Estate</i>	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
Profesional, Saintifik dan Teknikal <i>Professional, Scientific and Technical</i>	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
Pentadbiran dan Khidmat Sokongan <i>Administrative and Support Service</i>	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
Pendidikan <i>Education</i>	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
Kesihatan Kemanusiaan dan Kerja Sosial <i>Human Health and Social Work</i>	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
Kesenian, Hiburan dan Rekreasi <i>Arts, Entertainment and Recreation</i>	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
Perkhidmatan Lain <i>Other Services</i>	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

Jadual 6: Tujuan Penggunaan Internet mengikut Sektor/ Subsektor, 2015, 2017, 2019 dan 2021 (samb.)

Table 6: Purpose of Internet Usage by Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sektor/ Subsektor <i>Sector/ Sub-sector</i>	Tahun <i>Year</i>	Mendapatkan maklumat dari organisasi kerajaan <i>Getting information from government organisations</i>	Berhubung dengan organisasi kerajaan <i>Interacting with government organisations</i>	Perbankan melalui Internet <i>Internet banking</i>	Mengakses perkhidmatan kewangan yang lain <i>Accessing other financial services</i>
		%	%	%	%
Jumlah <i>Total</i>	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
Pertanian <i>Agriculture</i>	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
Perlombongan dan Pengkuarian <i>Mining and Quarrying</i>	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
Pembuatan <i>Manufacturing</i>	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
Pembinaan <i>Construction</i>	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
Perkhidmatan <i>Services</i>	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
Utiliti <i>Utility</i>	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
Perdagangan Borong dan Runcit <i>Wholesale and Retail Trade</i>	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
Pengangkutan dan Penyimpanan <i>Transportation and Storage</i>	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
Penginapan <i>Accommodation</i>	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
Makanan dan Minuman <i>Food and Beverages</i>	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

Jadual 6: Tujuan Penggunaan Internet mengikut Sektor/ Subsektor, 2015, 2017, 2019 dan 2021 (samb.)

Table 6: Purpose of Internet Usage by Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sektor/ Subsektor Sector/ Sub-sector	Tahun Year	Mendapatkan maklumat dari organisasi kerajaan Getting information from government organisations	Berhubung dengan organisasi kerajaan Interacting with government organisations	Perbankan melalui Internet Internet banking	Mengakses perkhidmatan kewangan yang lain Accessing other financial services
		%	%	%	%
Maklumat dan Komunikasi <i>Information and Communication</i>	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
Kewangan dan Insurans/Takaful <i>Financial and Insurance/Takaful</i>	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
Hartanah <i>Real Estate</i>	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
Profesional, Saintifik dan Teknikal <i>Professional, Scientific and Technical</i>	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
Pentadbiran dan Khidmat Sokongan <i>Administrative and Support Service</i>	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
Pendidikan <i>Education</i>	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
Kesihatan Kemanusiaan dan Kerja Sosial <i>Human Health and Social Work</i>	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
Kesenian, Hiburan dan Rekreasi <i>Arts, Entertainment and Recreation</i>	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
Perkhidmatan Lain <i>Other Services</i>	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

Jadual 6: Tujuan Penggunaan Internet mengikut Sektor/ Subsektor, 2015, 2017, 2019 dan 2021 (samb.)

Table 6: Purpose of Internet Usage by Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sektor/ Subsektor Sector/ Sub-sector	Tahun Year	Penyediaan perkhidmatan pelanggan Providing customer services	Penghantaran produk secara atas talian Delivering products online	Pemberitahuan jawatan kosong dalam atau luaran Internal or external recruitment	Latihan untuk kakitangan (aplikasi e-pembelajaran) Staff training (e-learning application)	Lain- lain Others
		%	%	%	%	%
Jumlah <i>Total</i>	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
Pertanian <i>Agriculture</i>	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
Perlombongan dan Pengkuarian <i>Mining and Quarrying</i>	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
Pembuatan <i>Manufacturing</i>	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
Pembinaan <i>Construction</i>	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
Perkhidmatan <i>Services</i>	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
Utiliti <i>Utility</i>	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
Perdagangan Borong dan Runcit <i>Wholesale and Retail Trade</i>	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
Pengangkutan dan Penyimpanan <i>Transportation and Storage</i>	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
Penginapan <i>Accommodation</i>	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
Makanan dan Minuman <i>Food and Beverages</i>	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

Jadual 6: Tujuan Penggunaan Internet mengikut Sektor/ Subsektor, 2015, 2017, 2019 dan 2021 (samb.)

Table 6: Purpose of Internet Usage by Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sektor/ Subsektor <i>Sector/ Sub-sector</i>	Tahun <i>Year</i>	Penyediaan perkhidmatan pelanggan <i>Providing customer services</i>	Penghantaran produk secara atas talian <i>Delivering products online</i>	Pemberitahuan jawatan kosong dalam atau luaran <i>Internal or external recruitment</i>	Latihan untuk kakitangan (aplikasi e-pembelajaran) <i>Staff training (e-learning application)</i>	Lain- lain <i>Others</i>
		%	%	%	%	%
Maklumat dan Komunikasi <i>Information and Communication</i>	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
Kewangan dan Insurans/Takaful <i>Financial and Insurance/Takaful</i>	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
Hartanah <i>Real Estate</i>	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
Profesional, Saintifik dan Teknikal <i>Professional, Scientific and Technical</i>	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
Pentadbiran dan Khidmat Sokongan <i>Administrative and Support Service</i>	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
Pendidikan <i>Education</i>	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
Kesihatan Kemanusiaan dan Kerja Sosial <i>Human Health and Social Work</i>	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
Kesenian, Hiburan dan Rekreasi <i>Arts, Entertainment and Recreation</i>	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
Perkhidmatan Lain <i>Other Services</i>	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

Jadual 7: Penggunaan Teknologi Digital mengikut Sektor/ Subsektor, 2019 dan 2021

Table 7: Usage of Digital Technology by Sector/ Sub-sector, 2019 and 2021

Sektor/ Subsektor <i>Sector/ Sub-sector</i>	Tahun <i>Year</i>	Laman web <i>Website</i>	Media sosial <i>Social media</i>	Internet mudah alih dan teknologi <i>Mobile internet and technologies</i>	Pengkomputeran awan <i>Cloud computing</i>
		%	%	%	%
Jumlah <i>Total</i>	2021 2019	53.5 48.5	67.5 60.0	68.8 63.8	56.6 46.8
Pertanian <i>Agriculture</i>	2021 2019	54.1 51.8	66.5 56.7	60.4 54.7	61.1 56.8
Perlombongan dan Pengkuarian <i>Mining and Quarrying</i>	2021 2019	52.4 19.2	51.0 46.1	28.3 24.6	65.0 60.8
Pembuatan <i>Manufacturing</i>	2021 2019	59.6 53.1	78.6 73.0	65.1 62.7	54.0 46.3
Pembinaan <i>Construction</i>	2021 2019	56.6 34.9	53.4 47.5	62.1 55.9	55.3 48.8
Perkhidmatan <i>Services</i>	2021 2019	52.6 49.4	68.4 60.4	70.1 64.9	56.9 46.4
Utiliti <i>Utility</i>	2021 2019	40.9 32.2	85.2 84.1	71.0 66.4	58.2 43.5
Perdagangan borong dan runcit <i>Wholesale and retail trade</i>	2021 2019	52.0 50.4	69.7 64.0	69.3 65.3	57.8 47.1
Pengangkutan dan Penyimpanan <i>Transportation and Storage</i>	2021 2019	61.8 55.8	54.2 44.2	84.0 76.1	69.2 54.2
Penginapan <i>Accommodation</i>	2021 2019	49.6 42.5	76.0 66.7	58.6 51.8	51.9 43
Makanan dan Minuman <i>Food and Beverages</i>	2021 2019	40.1 37.4	85.0 72.9	66.3 61.7	35.0 23
Maklumat dan Komunikasi <i>Information and Communication</i>	2021 2019	88.3 86.9	92.9 85.6	87.2 82.6	76.2 65
Kewangan dan Insurans/Takaful <i>Financial and Insurance/Takaful</i>	2021 2019	57.8 52.4	51.1 38.1	73.3 68.4	60.0 44.2
Hartanah <i>Real Estate</i>	2021 2019	43.4 38.2	54.7 45.1	71.9 65.5	53.7 44.6
Profesional, Saintifik dan Teknikal <i>Professional, Scientific and Technical</i>	2021 2019	62.3 53.8	63.0 53.8	76.0 70.3	73.1 61.4
Pentadbiran dan Khidmat Sokongan <i>Administrative and Support Service</i>	2021 2019	49.8 47.2	77.0 65.2	73.2 67.9	66.0 57.1
Pendidikan <i>Education</i>	2021 2019	55.3 52.2	73.5 66.7	72.2 63.4	63.4 49.4
Kesihatan Kemanusiaan dan Kerja Sosial <i>Human Health and Social Work</i>	2021 2019	53.5 45.7	50.5 43.8	72.6 68.5	85.6 73.3
Kesenian, Hiburan dan Rekreasi <i>Art, Entertainment and Recreation</i>	2021 2019	63.9 58.6	73.4 64.3	61.2 53.5	64.3 58.8
Perkhidmatan Lain <i>Other Services</i>	2021 2019	51.0 43.7	54.0 44.5	45.8 41.1	40.9 32.5

Jadual 7: Penggunaan Teknologi Digital mengikut Sektor/ Subsektor, 2019 dan 2021 (samb.)

Table 7: Usage of Digital Technology by Sector/ Sub-sector, 2019 and 2021 (cont'd)

Sektor/ Subsektor Sector/ Sub-sector	Tahun Year	Analitik data Data analytics	Perisian pengurusan Management software	Platform kolaborasi atas talian Online collaborative platforms	Lain-lain Others	Tiada None
		%	%	%	%	%
Jumlah <i>Total</i>	2021 2019	16.7 6.3	46.7 41.9	19.1 11.6	1.7 0.5	9.6 18.3
Pertanian <i>Agriculture</i>	2021 2019	13.9 9.0	45.6 39.5	24.7 13.6	0.6 0.1	18.7 7.4
Perlombongan dan Pengkuarian <i>Mining and Quarrying</i>	2021 2019	11.0 3.4	45.2 40.5	38.2 34.8	0.0 0.1	2.8 10.2
Pembuatan <i>Manufacturing</i>	2021 2019	15.5 4.3	52.7 48.4	20.6 8.6	0.2 0.2	9.1 12.3
Pembinaan <i>Construction</i>	2021 2019	15.0 2.8	41.8 29.1	14.7 5.4	0.1 0.0	12.9 11.2
Perkhidmatan <i>Services</i>	2021 2019	17.0 6.8	46.9 42.7	19.4 12.3	2.1 0.6	9.2 19.5
Utiliti <i>Utility</i>	2021 2019	18.5 2.8	30.9 26.3	13.3 3.9	0.0 1.1	16.0 5.3
Perdagangan borong dan runcit <i>Wholesale and retail trade</i>	2021 2019	15.6 4.6	50.7 47.1	20.0 12.6	3.2 0.7	12.3 13.4
Pengangkutan dan Penyimpanan <i>Transportation and Storage</i>	2021 2019	27.1 25.2	49.6 42.5	19.3 17.0	0.0 0.0	1.9 27.6
Penginapan <i>Accommodation</i>	2021 2019	15.9 4.2	58.5 56.6	31.5 26.9	0.6 0.3	7.5 10.2
Makanan dan Minuman <i>Food and Beverages</i>	2021 2019	13.7 3.9	25.7 20.4	18.9 12.0	1.7 0.0	12.5 72.0
Maklumat dan Komunikasi <i>Information and Communication</i>	2021 2019	24.6 14.5	84.6 76.8	20.2 13.0	0.2 2.0	4.6 3.1
Kewangan dan Insurans/Takaful <i>Financial and Insurance/Takaful</i>	2021 2019	10.6 5.3	45.7 41.6	22.0 15.0	0.0 0.0	3.4 10.8
Hartanah <i>Real Estate</i>	2021 2019	19.1 9.2	31.2 21.6	30.2 20.3	0.2 0.0	5.5 14.5
Profesional, Saintifik dan Teknikal <i>Professional, Scientific and Technical</i>	2021 2019	18.8 7.8	55.4 49.5	13.8 6.0	0.0 0.3	3.6 7.3
Pentadbiran dan Khidmat Sokongan <i>Administrative and Support Service</i>	2021 2019	12.2 3.2	41.9 36.0	19.9 12.2	4.9 0.1	10.4 11
Pendidikan <i>Education</i>	2021 2019	19.4 7.7	41.4 36.5	15.2 11.1	0.0 3.3	1.1 16.5
Kesihatan Kemanusiaan dan Kerja Sosial <i>Human Health and Social Work</i>	2021 2019	37.8 30.5	40.8 34.9	19.2 13.8	0.2 1.4	4.4 8.1
Kesenian, Hiburan dan Rekreasi <i>Art, Entertainment and Recreation</i>	2021 2019	20.3 10.6	57.4 55.8	13.9 6.9	1.4 0.8	4.6 4.5
Perkhidmatan Lain <i>Other Services</i>	2021 2019	12.2 3.7	50.5 43.7	13.7 4.7	1.9 0.7	1.8 25.2

Jadual 8 : Pendapatan dan Perbelanjaan E-Dagang mengikut Sektor/ Subsektor, 2015, 2017, 2019 dan 2021

Table 8 : Income and Expenditure of E-Commerce by Sector/ Sub-sector, 2015, 2017, 2019 and 2021

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

Jadual 8 : Pendapatan dan Perbelanjaan E-Dagang mengikut Sektor/ Subsektor, 2015, 2017, 2019 dan 2021 (samb.)

Table 8 : Income and Expenditure of E-Commerce by Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sektor/ Subsektor Sector/ Sub-sector	Year Year	Pendapatan Income (RM juta) (RM million)	Perbelanjaan Expenditure (RM juta) (RM million)
Kewangan dan Insurans/Takaful <i>Financial and Insurance/Takaful</i>	2021 2019 2017 2015	131,734 45,822 16,083 9,268	17,047 4,699 2,078 1,818
Hartanah <i>Real Estate</i>	2021 2019 2017 2015	57 43 16 9	39 30 14 9
Profesional, Saintifik dan Teknikal <i>Professional, Scientific and Technical</i>	2021 2019 2017 2015	491 454 243 206	59 58 37 33
Pentadbiran dan Khidmat Sokongan <i>Administrative and Support Service</i>	2021 2019 2017 2015	2,715 3,623 1,993 1,611	758 1,086 495 181
Pendidikan <i>Education</i>	2021 2019 2017 2015	692 854 412 317	647 917 360 61
Kesihatan Kemanusiaan dan Kerja Sosial <i>Human Health and Social Work</i>	2021 2019 2017 2015	1,002 247 115 4	649 303 133 17
Kesenian, Hiburan dan Rekreasi <i>Arts, Entertainment and Recreation</i>	2021 2019 2017 2015	1,692 1,763 556 483	155 157 49 25
Perkhidmatan Lain <i>Other Services</i>	2021 2019 2017 2015	23 24 13 8	13 13 5 3

Jadual 9 : Pendapatan dan Perbelanjaan E-Dagang mengikut Negeri, 2015, 2017, 2019 dan 2021

Table 9 : Income and Expenditure of E-Commerce by State, 2015, 2017, 2019 and 2021

Negeri <i>States</i>	Year <i>Year</i>	Pendapatan <i>Income</i> (RM juta) <i>(RM million)</i>	Perbelanjaan <i>Expenditure</i> (RM juta) <i>(RM million)</i>
Jumlah <i>Total</i>	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

Jadual 9 : Pendapatan dan Perbelanjaan E-Dagang mengikut Negeri, 2015, 2017, 2019 dan 2021 (samb.)

Table 9 : Income and Expenditure of E-Commerce by State, 2015, 2017, 2019 dan 2021 (cont'd.)

Negeri <i>States</i>	Year <i>Year</i>	Pendapatan <i>Income</i> (RM juta) <i>(RM million)</i>	Perbelanjaan <i>Expenditure</i> (RM juta) <i>(RM million)</i>
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

Jadual 10 : Pendapatan E-Dagang mengikut Jenis Pasaran dan Sektor/ Subsektor, 2015, 2017, 2019 dan 2021

Table 10 : Income of E-Commerce by Type of Market and Sector/ Sub-sector, 2015, 2017, 2019 and 2021

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

Jadual 10 : Pendapatan E-Dagang mengikut Jenis Pasaran dan Sektor/ Subsektor, 2015, 2017, 2019 dan 2021 (samb.)

Table 10 : Income of E-Commerce by Type of Market and Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sektor/ Subsektor Sector/ Sub-sector	Year Year	Jumlah Total (RM Juta) (RM Million)	Tempatan Domestic (RM Juta) (RM Million)	Antarabangsa International (RM Juta) (RM Million)
Kewangan dan Insurans/Takaful <i>Financial and Insurance/Takaful</i>	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
Hartanah <i>Real Estate</i>	2021	57	53	4
	2019	43	39	5
	2017	16	14	2
	2015	9	9	0
Profesional, Saintifik dan Teknikal <i>Professional, Scientific and Technical</i>	2021	491	474	18
	2019	454	439	15
	2017	243	233	11
	2015	206	196	9
Pentadbiran dan Khidmat Sokongan <i>Administrative and Support Service</i>	2021	2,715	2,702	13
	2019	3,623	3,288	336
	2017	1,993	1,890	104
	2015	1,611	1,564	46
Pendidikan <i>Education</i>	2021	692	672	21
	2019	854	675	179
	2017	412	359	53
	2015	317	292	25
Kesihatan Kemanusiaan dan Kerja Sosial <i>Human Health and Social Work</i>	2021	1,002	992	10
	2019	247	224	23
	2017	115	107	8
	2015	4	3	0
Kesenian, Hiburan dan Rekreasi <i>Arts, Entertainment and Recreation</i>	2021	1,692	1,634	57
	2019	1,763	1,545	218
	2017	556	482	74
	2015	483	412	71
Perkhidmatan Lain <i>Other Services</i>	2021	23	22	1
	2019	24	22	2
	2017	13	12	2
	2015	8	6	1

Nota.

'0' merujuk kepada nilai kurang daripada RM500,000

Note.

'0' refers to value less than RM500,000

Jadual 11 : Pendapatan E-Dagang mengikut Jenis Pelanggan dan Sektor/ Subsektor, 2015, 2017, 2019 dan 2021

Table 11 : Income of E-Commerce by Type of Customer and Sector/ Sub-sector, 2015, 2017, 2019 and 2021

Sektor/ Subsektor Sector/ Sub-sector	Year Year	Jumlah Total	Perniagaan Kepada Perniagaan Business to Business	Perniagaan Kepada Pengguna Business to Consumer	Perniagaan Kepada Kerajaan Business to Government
		(RM Juta) (RM Million)	(RM Juta) (RM Million)	(RM Juta) (RM Million)	(RM Juta) (RM Million)
Jumlah	2021	1,037,224	713,125	308,940	15,160
<i>Total</i>	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
Pertanian	2021	898	570	324	5
<i>Agriculture</i>	2019	603	361	241	1
	2017	279	167	112	0
	2015	185	103	82	0
Perlombongan dan Pengkuarian	2021	8,658	8,642	0	16
<i>Mining and Quarrying</i>	2019	8,902	8,886	0	16
	2017	7,049	7,033	0	16
	2015	6,827	6,813	0	14
Pembuatan	2021	553,820	524,065	24,737	5,017
<i>Manufacturing</i>	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
Pembinaan	2021	873	556	42	274
<i>Construction</i>	2019	1,042	584	76	381
	2017	422	386	0	36
	2015	207	207	0	0
Perkhidmatan	2021	472,976	179,292	283,836	9,847
<i>Services</i>	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
Utiliti	2021	12,641	12465	143	33
<i>Utility</i>	2019	5,922	5,882	10	30
	2017	3,470	3,461	8	0
	2015	2	2,302	1	0
Perdagangan Borong dan Runcit	2021	217,075	94,770	116,950	5,355
<i>Wholesale and Retail Trade</i>	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
Pengangkutan dan Penyimpanan	2021	23,836	8,030	15,043	763
<i>Transportation and Storage</i>	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
Penginapan	2021	4,185	775	3210	200
<i>Accommodation</i>	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
Makanan dan Minuman	2021	8,795	708	7,962	124
<i>Food and Beverages</i>	2019	8,422	1,099	7,012	312
	2017	3,213	490	2,658	65
	2015	2,043	406	1,588	49

Jadual 11 : Pendapatan E-Dagang mengikut Jenis Pelanggan dan Sektor/ Subsektor, 2015, 2017, 2019 dan 2021 (samb.)

Table 11 : Income of E-Commerce by Type of Customer and Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sektor/ Subsektor Sector/ Sub-sector	Year Year	Jumlah Total	Perniagaan Kepada Perniagaan Business to Business	Perniagaan Kepada Pengguna Business to Consumer	Perniagaan Kepada Kerajaan Business to Government
		(RM Juta) (RM Million)	(RM Juta) (RM Million)	(RM Juta) (RM Million)	(RM Juta) (RM Million)
Maklumat dan Komunikasi <i>Information and Communication</i>	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
Kewangan dan Insurans/Takaful <i>Financial and Insurance/Takaful</i>	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
Hartanah <i>Real Estate</i>	2021	57	23	33	0
	2019	43	25	18	0
	2017	16	11	5	0
	2015	9	4	5	0
Profesional, Saintifik dan Teknikal <i>Professional, Scientific and Technical</i>	2021	491	295	190	6
	2019	454	259	180	15
	2017	243	145	84	14
	2015	206	113	79	14
Pentadbiran dan Khidmat Sokongan <i>Administrative and Support Service</i>	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
Pendidikan <i>Education</i>	2021	692	91	580	21
	2019	854	84	729	41
	2017	412	49	351	12
	2015	317	18	297	3
Kesihatan Kemanusiaan dan Kerja Sosial <i>Human Health and Social Work</i>	2021	1,002	343	652	6
	2019	247	162	79	6
	2017	115	60	49	6
	2015	4	0	4	0
Kesenian, Hiburan dan Rekreasi <i>Arts, Entertainment and Recreation</i>	2021	1,692	226	1,417	48
	2019	1,763	368	1,339	57
	2017	556	66	481	9
	2015	483	15	468	0
Perkhidmatan Lain <i>Other Services</i>	2021	23	11	11	1
	2019	24	13	9	1
	2017	13	7	5	1
	2015	8	3	4	1

Nota.

'0' merujuk kepada nilai kurang daripada RM500,000

Note.

'0' refers to value less than RM500,000

Jadual 12 : Perbelanjaan E-Dagang mengikut Jenis Pasaran dan Sektor/ Subsektor, 2015, 2017, 2019 dan 2021

Table 12 : Expenditure of E-Commerce by Type of Market and Sector/ Sub-sector, 2015, 2017, 2019 and 2021

Sektor/ Subsektor Sector/ Sub-sector	Year Year	Jumlah Total (RM Juta) (RM Million)	Tempatan Domestic (RM Juta) (RM Million)	Antarabangsa International (RM Juta) (RM Million)
Jumlah <i>Total</i>	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
Pertanian <i>Agriculture</i>	2021	317	277	40
	2019	204	188	15
	2017	94	90	4
	2015	80	80	0
Perlombongan dan Pengkuarian <i>Mining and Quarrying</i>	2021	2,925	2,925	0
	2019	3,039	3,039	0
	2017	2,564	2,564	0
	2015	2,204	2,204	0
Pembuatan <i>Manufacturing</i>	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
Pembinaan <i>Construction</i>	2021	666	651	15
	2019	762	734	29
	2017	486	464	22
	2015	424	422	2
Perkhidmatan <i>Services</i>	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
Utiliti <i>Utility</i>	2021	2,340	2,322	18
	2019	898	891	7
	2017	459	459	0
	2015	254	254	0
Perdagangan Borong dan Runcit <i>Wholesale and Retail Trade</i>	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
Pengangkutan dan Penyimpanan <i>Transportation and Storage</i>	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
Penginapan <i>Accommodation</i>	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
Makanan dan Minuman <i>Food and Beverages</i>	2021	1,954	1,651	303
	2019	1,752	1,217	535
	2017	714	586	128
	2015	604	488	116
Maklumat dan Komunikasi <i>Information and Communication</i>	2021	26,212	26,115	98
	2019	8,766	8,289	477
	2017	4,484	4,319	164
	2015	173	90	83

Jadual 12 : Perbelanjaan E-Dagang mengikut Jenis Pasaran dan Sektor/ Subsektor, 2015, 2017, 2019 dan 2021 (samb.)

Table 12 : Expenditure of E-Commerce by Type of Market and Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sektor/ Subsektor Sector/ Sub-Sector	Year Year	Jumlah Total (RM Juta) (RM Million)	Tempatan Domestic (RM Juta) (RM Million)	Antarabangsa International (RM Juta) (RM Million)
Kewangan dan Insurans/Takaful <i>Financial and Insurance/Takaful</i>	2021	17,047	17,040	8
	2019	4,699	4,456	243
	2017	2,078	1,977	101
	2015	1,818	1,728	91
Hartanah <i>Real Estate</i>	2021	39	38	1
	2019	30	29	1
	2017	14	14	0
	2015	9	9	0
Profesional, Sainifik dan Teknikal <i>Professional, Scientific and Technical</i>	2021	59	55	5
	2019	58	53	5
	2017	37	34	3
	2015	33	31	2
Pentadbiran dan Khidmat Sokongan <i>Administrative and Support Service</i>	2021	758	634	124
	2019	1,086	804	282
	2017	495	330	165
	2015	181	165	16
Pendidikan <i>Education</i>	2021	647	599	48
	2019	917	865	52
	2017	360	329	30
	2015	61	57	4
Kesihatan Kemanusiaan dan Kerja Sosial <i>Human Health and Social Work</i>	2021	649	630	18
	2019	303	294	9
	2017	133	130	3
	2015	17	14	3
Kesenian, Hiburan dan Rekreasi <i>Arts, Entertainment and Recreation</i>	2021	155	138	17
	2019	157	136	20
	2017	49	42	7
	2015	25	20	5
Perkhidmatan Lain <i>Other Services</i>	2021	13	12	1
	2019	13	11	2
	2017	5	4	2
	2015	3	2	0

Nota.

'0' merujuk kepada nilai kurang daripada RM500,000

Note.

'0' refers to value less than RM500,000

Jadual 13 : Perbelanjaan E-Dagang mengikut Jenis Pelanggan dan Sektor/ Subsektor, 2015, 2017, 2019 dan 2021

Table 13 : Expenditure of E-Commerce by Type of Customer and Sector/ Sub-sector, 2015, 2017, 2019 and 2021

Sektor/ Subsektor Sector/ Sub-Sector	Year Year	Jumlah Total	Perniagaan Kepada Perniagaan Business to Business	Perniagaan Kepada Pengguna Business to Consumer	Perniagaan Kepada Kerajaan Business to Government
		(RM Juta) (RM Million)	(RM Juta) (RM Million)	(RM Juta) (RM Million)	(RM Juta) (RM Million)
Jumlah	2021	460,755	403,084	50,719	6,952
<i>Total</i>	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
Pertanian	2021	317	285	31	0
<i>Agriculture</i>	2019	204	191	9	4
	2017	94	92	0	2
	2015	80	71	8	1
Perlombongan dan Pengkuarian	2021	2,925	2,803	1	120
<i>Mining and Quarrying</i>	2019	3,039	2,750	0	289
	2017	2,564	2,308	0	256
	2015	2,204	2,204	0	0
Pembuatan	2021	325,166	284,786	36,383	3,997
<i>Manufacturing</i>	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
Pembinaan	2021	666	576	23	67
<i>Construction</i>	2019	762	635	55	73
	2017	486	463	0	23
	2015	424	422	1	0
Perkhidmatan	2021	131,682	114,634	14,281	2,767
<i>Services</i>	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
Utiliti	2021	2,340	2,278	57	5
<i>Utility</i>	2019	898	892	2	4
	2017	459	459	0	0
	2015	254	254	0	0
Perdagangan Borong dan Runcit	2021	67,002	56,304	8,879	1,818
<i>Wholesale and Retail Trade</i>	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
Pengangkutan dan Penyimpanan	2021	13,316	11,119	1,911	286
<i>Transportation and Storage</i>	2019	18,007	13,985	3,314	707
	2017	9,685	9,151	251	283
	2015	6,889	6,696	0	194
Penginapan	2021	1,490	993	371	126
<i>Accommodation</i>	2019	5,209	3,524	1,465	220
	2017	4,118	2,802	1,251	66
	2015	3,546	2,260	1,246	40
Makanan dan Minuman	2021	1,954	1,854	94	6
<i>Food and Beverages</i>	2019	1,752	1,683	49	19
	2017	714	669	31	14
	2015	604	576	28	0

Jadual 13 : Perbelanjaan E-Dagang mengikut Jenis Pelanggan dan Sektor/ Subsektor, 2015, 2017, 2019 dan 2021 (samb.)

Table 13 : Expenditure of E-Commerce by Type of Customer and Sector/ Sub-sector, 2015, 2017, 2019 and 2021 (cont'd.)

Sektor/ Subsektor Sector/ Sub-Sector	Year Year	Jumlah Total	Perniagaan Kepada Perniagaan Business to Business	Perniagaan Kepada Pengguna Business to Consumer	Perniagaan Kepada Kerajaan Business to Government
		(RM Juta) (RM Million)	(RM Juta) (RM Million)	(RM Juta) (RM Million)	(RM Juta) (RM Million)
Maklumat dan Komunikasi <i>Information and Communication</i>	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
Kewangan dan Insurans/Takaful <i>Financial and Insurance/Takaful</i>	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
Hartanah <i>Real Estate</i>	2021	39	34	4	1
	2019	30	28	2	0
	2017	14	14	0	0
	2015	9	9	0	0
Profesional, Saintifik dan Teknikal <i>Professional, Scientific and Technical</i>	2021	59	49	8	3
	2019	58	50	5	4
	2017	37	34	0	3
	2015	33	30	3	0
Pentadbiran dan Khidmat Sokongan <i>Administrative and Support Service</i>	2021	758	549	171	38
	2019	1,086	897	121	69
	2017	495	411	73	11
	2015	181	148	27	5
Pendidikan <i>Education</i>	2021	647	563	56	29
	2019	917	839	29	49
	2017	360	320	5	35
	2015	61	55	5	0
Kesihatan Kemanusiaan dan Kerja Sosial <i>Human Health and Social Work</i>	2021	649	628	16	5
	2019	303	281	11	10
	2017	133	121	3	9
	2015	17	17	0	0
Kesenian, Hiburan dan Rekreasi <i>Arts, Entertainment and Recreation</i>	2021	155	143	10	1
	2019	157	127	19	11
	2017	49	40	3	5
	2015	25	24	1	0
Perkhidmatan Lain <i>Other Services</i>	2021	13	12	1	0
	2019	13	13	1	0
	2017	5	5	1	0
	2015	3	3	0	0

Nota.

'0' merujuk kepada nilai kurang daripada RM500,000

Note.

'0' refers to value less than RM500,000

Jadual 14 : Pendapatan E-Dagang Suku Tahunan
Table 14 : Quarterly Income of E-Commerce

Tahun Year	Suku Tahun Quarter	Pendapatan Income (RM juta) (RM million)	YoY %	QoQ %
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 ^r		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 ^r		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 ^r				
	1	291,684	10.4	1.6

Nota.

'r' merujuk kepada pindaan

Note.

r refers to revision

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3

NOTA
TEKNIKAL
TECHNICAL NOTES

PENGUNAAN ICT & E-DAGANG OLEH PERTUBUHAN 2022

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1. PENDAHULUAN

Laporan ini membekalkan maklumat petunjuk ICT bagi penggunaan ICT dan e-dagang oleh pertubuhan bagi tahun rujukan 2021. Data tersebut dikumpul dan disusun daripada Survei Ekonomi Tahunan 2022.

Petunjuk ICT telah dibangunkan oleh *World Summit on the Information Society (WSIS)* dan telah dilancarkan pada Jun 2004. Tujuan senarai petunjuk ini adalah sebagai panduan/input kepada negara-negara yang menjalankan survei data ICT. Senarai petunjuk ini juga boleh membantu dalam mengeluarkan data ICT yang berkualiti dan perbandingan diperingkat antarabangsa.

Terdapat 48 petunjuk ICT di dalam 6 kumpulan seperti berikut:

- | | |
|--|---------------|
| • Infrastruktur dan akses ICT | - 10 petunjuk |
| • Penggunaan dan akses ICT oleh isi rumah dan individu | - 13 petunjuk |
| • Penggunaan ICT oleh perniagaan | - 12 petunjuk |
| • Sektor ICT (Pengeluaran) | - 2 petunjuk |
| • Perdagangan Antarabangsa bagi barangan ICT | - 2 petunjuk |
| • ICT di dalam pendidikan | - 9 petunjuk |

2. KUASA PERUNDANGAN

Survei Penggunaan ICT dan E-Dagang oleh Pertubuhan dilaksanakan di bawah **Akta Perangkaan 1965 (Disemak 1989)**. Di bawah **Seksyen 5** Akta ini, mana-mana pertubuhan yang beroperasi di Malaysia dikehendaki memberikan maklumat sebenar atau anggaran terbaik kepada Jabatan. Mengikut Akta ini, kandungan soal selidik adalah **sulit** dan hanya angka agregat diterbitkan.

3. SKOP DAN LIPUTAN

Laporan ini meliputi pertubuhan berdaftar yang terlibat dalam sektor Pertanian, Perlombongan & Pengkuarian, Pembuatan, Pembinaan dan Perkhidmatan.

Keseluruhan liputan survei terdiri daripada **1,122** industri di peringkat 5-digit mengikut Piawaian Klasifikasi Industri Malaysia (MSIC), 2008 Ver. 1.0.

Pecahan mengikut sektor adalah seperti berikut:

Sektor	Bilangan Industri
Pertanian	140
Perlombongan & Pengkuarian	56
Pembuatan	259
Pembinaan	72
Perkhidmatan	595
Jumlah	1,122

4. SUMBER RANGKA

Sumber maklumat utama rangka pertubuhan diperoleh daripada Suruhanjaya Syarikat Malaysia (SSM). Selain daripada SSM, maklumat rangka survei juga dikemaskini daripada sumber seperti Lembaga Kemajuan Perindustrian Malaysia (MIDA), Kementerian Pertanian & Industri Asas Tani, Lembaga Pembangunan Industri Pembinaan Malaysia (LPIPM), Jabatan Mineral dan Geosains Malaysia (JMG), Suruhanjaya Tenaga, pelbagai persatuan perniagaan dan perdagangan, iklan surat khabar dan laman sesawang.

Rangka dikemaskini setiap tahun untuk mengambil kira pertubuhan baru dan sebarang perubahan yang berlaku kepada pertubuhan tersebut seperti tutup, tidak beroperasi, perubahan jenis aktiviti atau alamat untuk memastikan maklumat yang terdapat dalam rangka adalah yang paling terkini.

5. JENIS AKTIVITI PERNIAGAAN

Jenis aktiviti perniagaan merujuk kepada aktiviti utama dan sekunder. Aktiviti utama merujuk kepada aktiviti yang mana pertubuhan menumpukan sebahagian besar sumbernya atau memberi sumbangan besar dari segi pendapatan. Aktiviti sekunder didefinisikan sebagai aktiviti sampingan kepada aktiviti utama. Klasifikasi industri bagi pertubuhan adalah berasaskan kepada aktiviti utama dan Piawaian Klasifikasi Industri Malaysia (MSIC), 2008 Ver. 1.0. MSIC 2008 yang diselaraskan dengan *International Standard Industrial Classification of All Economic Activities (ISIC), Rev. 4*, yang diterbitkan oleh *United Nations Statistic Division*, dengan pengubahsuaian mengikut keperluan tempatan.

6. KONSEP DAN DEFINISI

Definisi yang digunakan dalam penerbitan ini berasaskan kepada MSIC 2008 Ver. 1.0. Definisi tersebut adalah termasuk aktiviti berikut:

6.1 Pertanian

Merangkumi aktiviti penanaman, pemeliharaan dan penternakan haiwan dan pengeluaran produk haiwan, penebangan kayu balak dan tanaman lain, serta perikanan tangkapan dan akuakultur termasuk penggunaan sumber semulajadi tumbuh-tumbuhan dan haiwan.

6.1.1 **Tanaman** merujuk penanaman dan pengeluaran produk tanaman termasuk pertanian organik. Tanaman juga meliputi penanaman tanaman tidak kekal dan kekal untuk tujuan pengeluaran benih.

6.1.2 **Ternakan** merujuk kepada binatang atau unggas yang dipelihara untuk tujuan komersil atau pembiakbakaan. Pengeluaran ternakan termasuk penternakan (ladang) dan pembiakan semua haiwan serta pengeluaran daripada hasil ternakan seperti telur, susu, madu, dan sebagainya.

6.1.3 **Perhutanan dan pembalakan** termasuk pengeluaran kayu balak untuk industri berasaskan kayu, meliputi pengekstrakan dan pengumpulan produk hutan bukan kayu yang tumbuh liar. Selain pengeluaran kayu balak, aktiviti perhutanan yang menghasilkan produk melalui proses minima seperti kayu api, kayu arang, reja kayu dan kayu balak yang digunakan dalam bentuk yang belum diproses. Aktiviti ini boleh dijalankan dalam hutan asli dan ladang hutan. Ia juga termasuk sebahagian daripada aktiviti operasi perhutanan berdasarkan bayaran atau secara kontrak.

6.1.4 **Perikanan** termasuk perikanan tangkapan dan akuakultur meliputi penggunaan sumber perikanan daripada laut, air payau atau air tawar dengan tujuan menangkap dan mengumpul ikan, krustasia, moluska dan organisma dan produk laut lain. Akuakultur ialah proses pengeluaran yang melibatkan pengkulturan atau berkebun (termasuk tuaian) organisma akuatik menggunakan teknik yang direkabentuk untuk meningkatkan pengeluaran organisma tersebut melebihi kapasiti persekitaran semulajadi.

6.2 Perlombongan dan Pengkuarian

Perlombongan dan Pengkuarian termasuk pengekstrakan mineral yang terjadi secara semulajadi seperti pepejal (batu orang dan bijih), cecair (petroleum) atau gas (gas asli). Pengekstrakan boleh dijalankan melalui pelbagai kaedah seperti perlombongan bawah tanah atau dedah, pengoperasian telaga, perlombongan dasar laut dan lain-lain.

6.2.1 **Perlombongan** adalah ditakrifkan sebagai pengekstrakan, pembersihan dan pemanfaatan mineral-mineral semulajadi, berbentuk pepejal seperti batu arang dan bijih, cecair seperti minyak mentah dan berbentuk gas seperti gas asli. Perlombongan termasuk lombong bawah tanah dan lombong permukaan, kuari dan telaga-telaga dan semua kegiatan tambahan untuk pembersihan dan pemanfaatan bijih dan mineral mentah lain seperti pemecahan, penapisan, pembasuhan, pembersihan, penggredan, pengilangan, pengapungan, peleburan, penggentelan, pengkacipan dan persiapan-persiapan lain yang diperlukan bagi menyediakan bahan-bahan ini untuk membolehkannya dipasarkan. Aktiviti perlombongan juga dikelaskan kepada kumpulan-kumpulan berdasarkan mineral utama yang dikeluarkan.

6.2.2 **Pengkuarian** ia merujuk kepada aktiviti pengekstrakan dari lombong atau kuari dan pengorekan mendapan lanar (alluvium), pemecahan batu dan penggunaan garam paya. Produk ini digunakan dengan meluas dalam sektor pembinaan (cth; pasir, batu, dll.), pembuatan bahan mentah (cth; tanah liat, gipsum, kalsium, dll.), pembuatan bahan kimia, dll.

Ia termasuk pengkuarian, pemotongan kasar bongkah batu dan batu bangunan seperti marmar, granit, batu pasir, dll., pengkuarian, pemecahan dan pemotongan batu kapur, perlombongan gipsum dan anhidrit, perlombongan kapur dan dolomit, pengekstrakan dan pengorekan pasir industri, pasir untuk pembinaan dan kerikil, memecah dan menghancurkan batu dan kerikil, pengkuarian pasir dan perlombongan tanah liat, refraktori tanah liat dan kaolin.

Ia juga termasuk perlombongan mineral kimia dan baja, pengekstrakan tanah gambut, pengekstrakan garam dan dll.

6.2.3 **Petroleum dan gas asli** merujuk kepada pengeluaran petroleum mentah, perlombongan dan pengekstrakan minyak daripada minyak batu syal dan pasir minyak dan pengeluaran gas asli dan perolehan semula cecair hidrokarbon. Ia termasuk keseluruhan aktiviti pengoperasian atau pembangunan kelengkapan lapangan minyak dan gas, termasuklah aktiviti seperti penggerudian, penyiapan dan melengkapkan telaga, operasi pengasingan, pemisahan emulsi, peralatan penyahkelodak dan penyambungan aktiviti lapangan untuk petroleum mentah dan semua aktiviti dalam penyediaan minyak dan gas sehingga ke tempat penghantaran daripada pusat pengeluaran.

Ia juga termasuk aktiviti sokongan bagi pengekstrakan petroleum dan gas seperti perkhidmatan lapangan minyak dan gas, yang dibuat berdasarkan kontrak atau yuran, eksplorasi telaga minyak dan gas dan penggerudian ujian dan aktiviti penggerekkan (*boring*).

6.3 Pembuatan

Perubahan fizikal atau kimia ke atas bahan atau komponen menjadi produk baru sama ada kerja itu dilakukan oleh jentera yang dijalankan oleh kuasa atau yang dijalankan dengan tangan, sama ada dijalankan dalam kilang atau di rumah pekerja, dan sama ada barang keluaran dijual secara borong atau runcit.

Sektor pembuatan terdiri daripada 24 bahagian iaitu:

- 6.3.1 Pembuatan produk makanan;
- 6.3.2 Pembuatan minuman;
- 6.3.3 Pembuatan produk tembakau;
- 6.3.4 Pembuatan tekstil;
- 6.3.5 Pembuatan pakaian;
- 6.3.6 Pembuatan produk kulit dan barangan berkaitan;
- 6.3.7 Pembuatan kayu dan produk kayu dan gabus kecuali perabot; pembuatan bagi artikel jerami dan bahan-bahan nyaman;

- 6.3.8 Pembuatan kertas dan produk kertas;
- 6.3.9 Percetakan dan penerbitan semula media rakaman;
- 6.3.10 Pembuatan kok dan produk petroleum bertapis;
- 6.3.11 Pembuatan kimia dan produk kimia;
- 6.3.12 Pembuatan produk farmaseutikal asas;
- 6.3.13 Pembuatan produk getah dan plastik;
- 6.3.14 Pembuatan produk galian bukan logam lain;
- 6.3.15 Pembuatan logam asas;
- 6.3.16 Pembuatan produk logam;
- 6.3.17 Pembuatan komputer, produk elektronik dan optikal;
- 6.3.18 Pembuatan kelengkapan elektrik;
- 6.3.19 Pembuatan jentera dan peralatan t.t.t.l.;
- 6.3.20 Pembuatan kenderaan bermotor, treler dan semi treler;
- 6.3.21 Pembuatan kelengkapan pengangkutan lain;
- 6.3.22 Pembuatan perabot;
- 6.3.23 Pembuatan lain; dan
- 6.3.24 Membaiki dan pemasangan jentera dan kelengkapan.

6.4 Pembinaan

Ditakrifkan sebagai pembinaan baru, pengubahsuaian, pembaikan dan perobohan. Pemasangan sebarang jenis jentera atau peralatan yang dipasang ketika pembinaan asal adalah diambil kira, demikian juga bagi pemasangan jentera atau peralatan selepas pembinaan asal tetapi memerlukan perubahan struktur bagi pemasangannya.

6.5 Perkhidmatan

Perkhidmatan adalah termasuk perkhidmatan yang berkaitan Bekalan elektrik, gas, wap & pendingin udara; Bekalan air, pembentungan, pengurusan sisa & aktiviti pemulihan; Perdagangan borong & runcit; Pengangkutan & penyimpanan; Maklumat & komunikasi; Penginapan; Makanan & minuman; Kewangan; Hartanah; Profesional, saintifik & teknikal; Pentadbiran & khidmat sokongan; Pendidikan swasta; Kesihatan swasta & kerja sosial; Kesenian, hiburan & rekreasi dan Perkhidmatan persendirian & lain-lain aktiviti.

- 6.5.1 **Bekalan elektrik, gas, wap & pendinginan udara** adalah ditakrifkan sebagai aktiviti pembekalan tenaga elektrik, gas asli, wap, air panas dan seumpamanya melalui satu infrastruktur (rangkaian) tetap bagi talian, saluran utama dan paip. Dimensi rangkaian ini tidak dapat ditentukan; juga termasuk pengagihan elektrik, gas, wap, air panas dan seumpamanya di kawasan perindustrian atau bangunan tempat kediaman. Oleh itu, seksyen ini termasuk operasi utiliti elektrik dan gas yang menjana, mengawal dan mengagih tenaga elektrik atau gas. Juga termasuk bekalan wap dan pendinginan udara.
- 6.5.2 **Bekalan air, pembentungan, pengurusan sisa & aktiviti pemulihan** meliputi aktiviti yang berkaitan dengan pengurusan sisa termasuk pungutan, perawatan dan pelupusan seperti sisa terjadual, sisa pepejal dan air sisa daripada perindustrian dan isi rumah, termasuk juga pemulihan bahan dan tapak yang tercemar. Hasil sisa daripada proses perawatan boleh dilupus atau menjadi input kepada proses pengeluaran yang lain. Aktiviti yang berkaitan dengan perawatan dan bekalan air juga dimasukkan dalam sektor ini.
- 6.5.3 **Perdagangan borong dan runcit** merangkumi perdagangan borong dan runcit, jualan dan pembaikan kenderaan bermotor & motosikal.
- 6.5.3.1 **Perdagangan borong** ditakrifkan sebagai penjualan semula (tanpa pengubahsuaian) barangan baharu dan barangan yang telah digunakan kepada peruncit, pengguna perindustrian, perdagangan, institusi atau profesional; atau kepada pemborong lain; atau menjual barangan dagangan kepada orang atau syarikat.
- 6.5.3.2 **Perdagangan runcit** merujuk kepada penjualan semula (jualan tanpa pengubahsuaian) barang baru dan terpakai kepada orang awam untuk kegunaan peribadi atau isi rumah.
- 6.5.3.3 **Kenderaan bermotor** merujuk kepada jualan secara borong dan runcit kenderaan bermotor dan motosikal, sama ada baru atau terpakai, jualan alat-alat ganti dan aksesori kenderaan, penyelenggaraan dan pembaikan kenderaan bermotor dan motosikal termasuk mencuci, mengilap serta agen komisen.

- 6.5.4 **Pengangkutan & penyimpanan** meliputi pertubuhan terlibat dalam menyediakan perkhidmatan darat, pengangkutan muatan melalui jalan raya, pengangkutan darat lain, pengangkutan air, penggudangan & aktiviti sokongan seperti pengoperasian terminal, tempat letak kereta, pengoperasian lebuh raya, pengoperasian pelabuhan, pengendalian kargo/ pemunggahan, agensi perkapalan & penghantaran serta lain-lain aktiviti sokongan perkhidmatan pengangkutan.
- 6.5.5 **Maklumat & Komunikasi** terdiri daripada aktiviti penerbitan, penerbitan wayang gambar, video & program televisyen, rakaman bunyi & penerbitan muzik, pemrograman & penyiaran, perkhidmatan telekomunikasi, pengaturcaraan komputer, perundingan & aktiviti yang berkaitan dan perkhidmatan maklumat.
- 6.5.6 **Perkhidmatan penginapan** merujuk kepada penyediaan tempat penginapan jangka pendek berbayar, sama ada dibuka kepada orang awam atau terhad kepada ahli sebuah pertubuhan tertentu. Ianya tidak termasuk penyewaan tempat tinggal berperabot jangka panjang yang dikelaskan dalam Hartanah.
- 6.5.7 **Makanan & minuman** merujuk kepada pertubuhan yang menyediakan perkhidmatan makanan dan minuman lengkap untuk penggunaan segera, sama ada di restoran tradisional, restoran layan diri atau bawa pulang, yang didirikan secara kekal atau sementara, dengan atau tanpa kemudahan tempat duduk. Hidangan yang dibekalkan untuk penggunaan segera adalah faktor yang diambil kira dan bukannya jenis kemudahan untuk menyediakan jenis hidangan tersebut.
- 6.5.8 **Perkhidmatan kewangan** adalah meliputi aktiviti perantaraan kewangan; aktiviti perkhidmatan kewangan lain dan aktiviti sokongan kepada perkhidmatan kewangan; aktiviti insurans/takaful, insurans/takaful semula dan tabungan pencen & hemat; dan aktiviti sokongan kepada insurans/ takaful dan tabungan pencen.

- 6.5.9 **Perkhidmatan hartanah** termasuk tindakan seperti pemberi pajak, agen dan/atau broker di dalam satu atau lebih daripada yang berikut: penjualan atau pembelian hartanah, penyewaan hartanah, penyediaan perkhidmatan hartanah lain seperti penilaian hartanah, pengurusan hartanah atau bertindak sebagai agen hartanah eskrow. Aktiviti dalam bahagian ini mungkin dijalankan di atas hartanah milikan sendiri atau pajakan dan mungkin berlaku atas dasar bayaran atau kontrak. Termasuk juga pembangunan struktur, berserta mengekalkan hak milik atau pajakan bagi struktur tersebut.
- 6.5.10 **Perkhidmatan profesional, saintifik & teknikal** termasuk aktiviti profesional khusus, saintifik & teknikal yang memerlukan tahap latihan yang tinggi dan menjadikan pengetahuan dan kemahiran khusus tersedia kepada pengguna. Aktiviti yang dijalankan termasuk tersedia kepada pengguna. Aktiviti yang dijalankan termasuk aktiviti guaman & perakaunan, aktiviti ibu pejabat, aktiviti perundingan pengurusan, aktiviti arkitek & kejuruteraan, ujian & analisis teknikal, penyelidikan & pembangunan saintifik, pengiklanan & penyelidikan pasaran, profesional lain, aktiviti saintifik & teknikal dan veterinar.
- 6.5.11 **Perkhidmatan pentadbiran & khidmat sokongan** termasuk pelbagai aktiviti yang menyokong operasi am perniagaan meliputi aktiviti sewaan & pajakan, aktiviti pekerjaan, agensi pengembaraan, operator pelancongan & aktiviti perkhidmatan penempahan lain, aktiviti keselamatan & penyiasatan, aktiviti perkhidmatan bangunan & lanskap dan aktiviti pengurusan pejabat, sokongan pejabat & perniagaan lain.
- 6.5.12 **Perkhidmatan pendidikan swasta** merujuk kepada pertubuhan yang berdaftar dengan Kementerian Pendidikan Malaysia dan Kementerian Pengajian Tinggi yang menyediakan perkhidmatan pelajaran akademik, vokasional dan perdagangan. Aktiviti yang diliputi dalam kumpulan ini ialah pendidikan pra sekolah & pendidikan rendah, pendidikan menengah, pendidikan tinggi, pendidikan lain dan perkhidmatan sokongan lain.

- 6.5.13 **Perkhidmatan kesihatan swasta dan kerja sosial** merujuk kepada perkhidmatan hospital, perkhidmatan perubatan dan pergigian, aktiviti kesihatan kemanusiaan lain, penjagaan di kediaman dan kerja sosial tanpa penginapan.
- 6.5.14 **Perkhidmatan kesenian, hiburan & rekreasi** merujuk kepada pelbagai aktiviti bagi memenuhi minat orang awam dalam aktiviti kebudayaan, hiburan dan rekreasi meliputi persembahan secara langsung, operasi muzium, perjudian, sukan dan rekreasi.
- 6.5.15 **Perkhidmatan persendirian & lain-lain aktiviti** termasuk aktiviti keahlian organisasi, aktiviti organisasi keahlian perniagaan, majikan & profesional, aktiviti kesatuan buruh, aktiviti keahlian organisasi lain, pembaikan komputer & barangan persendirian dan isi rumah dan aktiviti perkhidmatan seperti basuhan dan cucian kering tekstil dan produk berbulu; dandanan rambut dan penjagaan kecantikan lain; dan pengebumian dan aktiviti perkhidmatan lain.

7. DEFINISI E-DAGANG

Berdasarkan OECD, 2015, transaksi e-dagang adalah penjualan atau pembelian bagi barangan atau perkhidmatan, melalui rangkaian komputer yang telah direka untuk tujuan berkenaan. Transaksi e-dagang boleh berlaku di antara enterpris, isi rumah, individu, kerajaan dan organisasi awam atau swasta yang lain.

Barangan atau perkhidmatan yang telah dipesan melalui kaedah e-dagang, namun pembayaran atau penerimaan barangan atau perkhidmatan berkenaan boleh diterima sama ada melalui *online* atau *offline*.

Transaksi e-dagang termasuk pesanan yang dibuat di laman sesawang, *extranet* atau *electronic data interchange (EDI)*. Walau bagaimanapun, transaksi yang dibuat melalui panggilan telefon, faksimili, emel (emel yang ditaip manual) dan seumpamanya tidak dikategorikan sebagai urusan e-dagang.

- (i) **Pendapatan e-dagang** bermaksud jumlah pendapatan yang diperolehi oleh pertubuhan daripada transaksi e-dagang. Pendapatan untuk pertubuhan perdagangan borong dan runcit merujuk kepada nilai jualan barangan dan pekhidmatan. Nilai jualan bermaksud nilai semua barang di mana hak milik atau hak mutlak untuk penggunaan telah dipindahkan kepada orang lain dengan tujuan barang itu akan dibeli akhirnya.
- (ii) **Perbelanjaan e-dagang** bermaksud jumlah perbelanjaan bagi pertubuhan yang mempunyai transaksi e-dagang.
- (iii) **E-dagang mengikut jenis pasaran**
 - (a) **Tempatan** bermaksud urusan pendapatan/ perbelanjaan e-dagang yang melibatkan transaksi dalam negara Malaysia.
 - (b) **Antarabangsa** bermaksud urusan pendapatan/ perbelanjaan e-dagang yang melibatkan transaksi luar negara.
- (iv) **E-dagang mengikut kategori pelanggan**
 - (a) **Perniagaan lain**

Perniagaan ke Perniagaan (B2B) adalah transaksi e-dagang antara perniagaan yang menjual/ membeli produk atau perkhidmatan kepada/ daripada perniagaan lain. Sebagai contoh, pengeluar boleh menjual kepada pemborong atau pemborong boleh menjual kepada peruncit.
 - (b) **Pengguna individu**

Perniagaan kepada Pengguna (B2C) merupakan transaksi e-dagang di antara perniagaan dan pengguna, sama ada jualan, pembelian atau perkhidmatan. Sebagai contoh perniagaan menjual produk pakaian kepada pengguna (pendapatan) atau perniagaan memberikan kupon diskaun kepada pengguna melalui platform e-dagang (perbelanjaan).
 - (c) **Kerajaan dan organisasi bukan perniagaan lain**

Perniagaan kepada Kerajaan (B2G) adalah model perniagaan yang merujuk kepada perniagaan yang menjual/ membayar bagi produk, perkhidmatan atau

maklumat pihak kerajaan atau agensi kerajaan. Rangkaian atau model B2G menyediakan cara bagi perniagaan untuk membida projek atau produk kerajaan yang mungkin dibeli atau diperlukan oleh kerajaan untuk organisasi mereka. Ini boleh merangkumi organisasi sektor awam yang mencadangkan tawaran. Kegiatan B2G semakin dilakukan melalui internet melalui penawaran *real-time*. B2G juga dirujuk sebagai pemasaran sektor awam.

8. DEFINISI ICT

Berdasarkan OECD, 2015:

(i) **Komputer**

Termasuk komputer peribadi, komputer mudah alih (cth. komputer riba), tablet dan peranti mudah alih yang lain seperti *telefon pintar.

(ii) **Intranet**

Merujuk kepada rangkaian komunikasi dalaman menggunakan protokol internet dan membolehkan komunikasi dalam organisasi.

(iii) **Extranet**

Merujuk kepada rangkaian tertutup yang menggunakan protokol internet dengan selamat dalam perkongsian maklumat perniagaan dengan pembekal, vendor, pelanggan atau rakan kongsi perniagaan lain. Ia juga boleh menjadi sebahagian daripada laman web peribadi perniagaan, yang mana rakan perniagaan boleh melayari selepas disahkan dalam halaman log masuk.

(iv) **Rangkaian Kawasan Setempat (LAN)**

Rangkaian yang menghubungkan komputer dan peranti yang berkaitan di dalam kawasan setempat seperti bangunan persendirian, jabatan atau tapak; ia juga mungkin tanpa wayar.

(v) **Rangkaian Kawasan Setempat Tanpa Wayar (WLAN)**

Rangkaian kawasan setempat yang menggunakan gelombang radio frekuensi tinggi dan bukannya wayar untuk berkomunikasi antara peranti yang dibolehkan oleh rangkaian. WLAN membolehkan pengguna bergerak di sekitar kawasan kecil dalam radius 20 hingga 91 meter.

Nota.

* Malaysia termasuk telefon pintar

(vi) **Rangkaian Kawasan Luas (WAN)**

Rangkaian yang menghubungkan komputer dan peranti yang berkaitan dalam kawasan geografi yang luas, seperti rantau atau negara.

(vii) **Jalur lebar tetap**

Merujuk kepada teknologi dengan kelajuan sekurang-kurangnya 256 kbit/s dalam satu atau kedua-dua arah. Ia terdiri daripada jalur lebar tetap berwayar dan jalur lebar tetap tanpa wayar.

Akses internet melalui jalur lebar tetap berwayar yang paling banyak digunakan untuk menghantar/ menerima maklumat adalah melalui kabel/ gentian optik (ADSL, SDSL, VDSL), teknologi fiber optik/ teknologi kabel.

(viii) **Jalur lebar mudah alih**

Merujuk kepada teknologi pada kelajuan tidak kurang daripada 256 kbit/s dalam satu atau kedua-dua arah. Ia meliputi teknologi seperti 3G/ LTE/ 4G, UMTS, CDMA2000 dan teknologi masa hadapan termasuk kedua-dua langganan data standard dan khusus. Kebiasaannya digunakan untuk peranti mudah alih (cth.: komputer riba, tablet, modem tanpa wayar USB, telefon pintar dan peranti mudah alih lain).

Sambungan jalur lebar mudah alih ke internet merujuk kepada akses melalui *WIFI hotspot (tethering)* dan bukannya melalui *router* (cth. USB *dongle/ modem/ surfstick* seperti *YES dongle* dsb.).

(ix) **Laman sesawang**

Laman web adalah koleksi sumber web rangkaian yang berkaitan seperti laman sesawang, kandungan multimedia yang biasanya dikenal pasti dengan nama domain umum dan diterbitkan oleh sekurang-kurangnya satu pelayan sesawang. Laman sesawang boleh diakses menerusi rangkaian *Internet Protocol (IP)* awam seperti Internet atau rangkaian kawasan setempat peribadi (LAN) oleh URL yang mengenal pasti tapak tersebut. Sebuah laman sesawang boleh menjadi laman sesawang peribadi, laman sesawang korporat untuk sebuah syarikat, laman sesawang kerajaan, laman sesawang organisasi dan sebagainya.

(x) **Media sosial**

Merujuk kepada mereka yang mempunyai profil pengguna, akaun atau lesen pengguna bergantung kepada keperluan dan jenis media sosial. Jenis media sosial adalah rangkaian sosial (cth. *Facebook* dan *Instagram*), *Enterprise blogs* dan *microblogs Enterprise* (cth. *Twitter*) dan laman sesawang perkongsian kandungan multimedia (cth. *YouTube*).

(xi) **Internet mudah alih dan teknologi**

Internet mudah alih dan teknologi adalah produk yang tidak dapat dielakkan dalam pembangunan internet PC. Ia menggabungkan komunikasi mudah alih dan internet menjadi satu. Ini adalah istilah umum untuk aktiviti di mana teknologi, platform, model perniagaan dan aplikasi internet digabungkan dengan teknologi komunikasi mudah alih (cth. peralatan *mobile IT*, peralatan *Global Positioning System (GPS)*, *wireless debit/credit card payment terminals*).

(xii) **Pengkomputeran awan**

Pengkomputeran awan merujuk kepada perkhidmatan ICT yang digunakan melalui internet untuk mengakses perisian, kuasa pengkomputeran, kapasiti penyimpanan, dll. (cth. *HUAWEI Cloud Server*, *AVM Cloud*).

(xiii) **Analitik data**

Analitik data ialah satu proses atau upaya pengolahan data menjadi sebuah informasi baru agar ciri-ciri data tersebut menjadi lebih mudah difahami dan berguna untuk penyelesaian suatu permasalahan khususnya yang berhubung dengan kajian (cth. *Tableau*, *Big Data Analytics*, *Mobile Business Intelligence*).

(xiv) **Perisian Pengurusan**

Perisian pengurusan ialah perisian aplikasi yang membantu pengguna semasa melakukan aktiviti pengurusan (cth. *Enterprise Resource Planning*, dll.).

(xv) **Platform kolaborasi dalam talian**

Merujuk kepada perkongsian ekonomi (cth. *Lazada*, *Shopee*, *Grab* dll.).

9. TAHUN SURVEI

Tahun survei adalah merujuk kepada tahun pelaksanaan survei.

10. TAHUN RUJUKAN

Tahun rujukan bagi survei ini adalah tahun takwim 2021. Pertubuhan yang mempunyai tahun kewangan yang berbeza daripada tahun takwim diminta menyediakan laporan mengikut tahun perakaunan atau kewangan yang meliputi sebahagian besar daripada tahun rujukan.

11. KAEDAH PENGUMPULAN DATA

Survei ini secara umumnya dijalankan dengan menggunakan tiga (3) kaedah pengumpulan data seperti berikut:

- (i) **Kaedah atas talian melalui portal e-AES:** Kaedah ini mensasarkan responden yang telah menggunakan kaedah ini bagi survei rutin terdahulu.
- (ii) **Kaedah kutipan data melalui e-mel/ pos/ faks/ telefon:** Kaedah ini mensasarkan responden yang pernah terlibat dengan survei rutin terdahulu. Responden diberi tempoh satu bulan untuk melengkapkan dan mengembalikan borang soal selidik tersebut kepada DOSM.
- (iii) **Kaedah kutipan data secara bersemuka:** Kerja luar operasi di lapangan dijalankan untuk mendapatkan maklum balas daripada pertubuhan yang belum memberi jawapan dari kedua-dua kaedah di atas dan kaedah ini mensasarkan pertubuhan yang tidak pernah terlibat dengan survei rutin DOSM.

12. PENERBITAN DAN SEMAKAN DATA

Penerbitan ini memberikan semakan anggaran pendapatan e-dagang bagi tahun 2021 hingga Suku Tahun Pertama 2023. Semakan adalah berdasarkan data terkini survei tahunan dan akaun syarikat bagi tahun 2021. Bagi tahun terkini 2022 hingga Suku Tahun Pertama 2023 anggaran adalah berdasarkan kepada sumber data suku tahunan.

13. REKA BENTUK PENSAMPELAN

Reka bentuk pensampelan bagi survei ini adalah pensampelan rawak strata satu peringkat. Kategori industri dua (2), tiga (3), empat (4) dan lima (5) digit MSIC di peringkat negeri telah diklasifikasikan sebagai strata manakala pertubuhan sebagai unit pensampelan.

Setiap strata (industri) telah dibentuk kepada empat substrata untuk memastikan sampel yang diagihkan mengambil kira ciri-ciri ekonomi industri tersebut. Substrata utama bersifat heterogen diliputi secara liputan penuh. Manakala, substrata selainnya bersifat homogen disampelkan.

Substrata utama meliputi pertubuhan kategori besar yang mempunyai jumlah hasil yang signifikan dalam industri liputan manakala bagi substrata kedua hingga keempat berdasarkan kategori perusahaan kecil dan sederhana (PMKS).

14. SAIZ SAMPEL

Statistik utama yang digunakan untuk penganggaran saiz sampel adalah jumlah hasil. Formula yang digunakan dalam penganggaran saiz sampel bagi strata adalah seperti berikut:

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

di mana;

- n = Saiz sampel
- N_i = Saiz populasi bagi strata i
- S_i^2 = Varian bagi strata i
- V = Varian sasaran

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

di mana;

- $\hat{Y}_i$ = Jumlah hasil bagi strata i
- RSE = Ralat piawai relatif
- Z = Nilai aras keyakinan

Sampel akan diagihkan kepada substrata dalam industri liputan dengan menggunakan kaedah Neyman Allocation seperti berikut:

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

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

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

di mana;

$$n_{hi} = \text{Saiz sampel bagi substrata } h \text{ dalam strata } i$$

$$N_h = \text{Saiz populasi bagi substrata } h$$

$$S_h = \text{Sisihan piawai bagi substrata } h$$

$$n_i = \text{Saiz sampel bagi strata } i$$

$$h = \text{Substrata}$$

$$i = \text{Strata}$$

Saiz sampel optimum bagi survei ini adalah **109,506** pertubuhan. Pertubuhan kategori besar diliputi sepenuhnya, manakala pertubuhan bagi substrata kedua hingga keempat dipilih secara rawak mengikut kaedah pensampelan bersistematik.

15. WAJARAN

Analisis berwajaran disediakan menggunakan wajaran bagi memastikan sampel yang dipilih dapat menggambarkan populasi survei. Wajaran yang diperlukan adalah wajaran di peringkat reka bentuk pensampelan dan wajaran tiada respons.

Wajaran reka bentuk pensampelan pada substrata h adalah seperti berikut :

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

di mana;

N_h = Bilangan populasi bagi substrata h ; dan

n_h = Bilangan sampel bagi substrata h

Wajaran tiada respons pada substrata h adalah seperti berikut:

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

di mana;

n'_h = Bilangan sampel respons bagi substrata h

n_h = Bilangan sampel bagi substrata h

Kaedah pengiraan wajaran reka bentuk pensampelan selepas survei (*adjusted weight*) pada substrata h adalah seperti berikut:

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

di mana;

W_h = Wajaran reka bentuk pensampelan pada substrata h

NRW_h = Wajaran tiada respon pada substrata h

16. PENGIRAAN PERATUS PENGGUNAAN ICT

(i) Peratus penggunaan komputer

$$= \frac{\text{Bilangan pertubuhan yang menggunakan komputer}}{\text{Jumlah pertubuhan yang beroperasi}} \times 100$$

(ii) Peratus penggunaan internet

$$= \frac{\text{Bilangan pertubuhan yang menggunakan internet}}{\text{Jumlah pertubuhan yang beroperasi}} \times 100$$

(iii) Peratus pemilikan *web presence*

$$= \frac{\text{Bilangan pertubuhan yang menggunakan } web \text{ presence}}{\text{Jumlah pertubuhan yang beroperasi}} \times 100$$

(iv) Peratus penggunaan komputer dalam perniagaan mengikut negeri

$$= \frac{\text{Bilangan pertubuhan yang menggunakan komputer mengikut negeri}}{\text{Jumlah pertubuhan yang beroperasi mengikut negeri}} \times 100$$

(v) Peratus penggunaan internet mengikut negeri

$$= \frac{\text{Bilangan pertubuhan yang menggunakan internet mengikut negeri}}{\text{Jumlah pertubuhan yang beroperasi mengikut negeri}} \times 100$$

(vi) Peratus pemilikan *web presence* mengikut negeri

$$= \frac{\text{Bilangan pertubuhan yang mempunyai } web \text{ presence mengikut negeri}}{\text{Jumlah pertubuhan yang beroperasi mengikut negeri}} \times 100$$

(vii) Peratus laman web kepunyaan sendiri

$$= \frac{\text{Bilangan pertubuhan yang mempunyai laman web kepunyaan sendiri}}{\text{Jumlah pertubuhan yang mempunyai } web \text{ presence}} \times 100$$

(viii) Peratus laman web di entiti lain

$$= \frac{\text{Bilangan pertubuhan yang mempunyai laman web di entiti lain}}{\text{Jumlah pertubuhan yang mempunyai } web \text{ presence}} \times 100$$

(ix) Peratus media sosial

$$= \frac{\text{Bilangan pertubuhan yang mempunyai media sosial}}{\text{Jumlah pertubuhan yang menggunakan } web\ presence} \times 100$$

(x) Peratus intranet

$$= \frac{\text{Bilangan pertubuhan yang mempunyai intranet}}{\text{Jumlah pertubuhan yang menggunakan internet}} \times 100$$

(xi) Peratus extranet

$$= \frac{\text{Bilangan pertubuhan yang mempunyai extranet}}{\text{Jumlah pertubuhan yang menggunakan internet}} \times 100$$

(xii) Peratus rangkaian kawasan setempat (LAN)

$$= \frac{\text{Bilangan pertubuhan yang mempunyai LAN}}{\text{Jumlah pertubuhan yang menggunakan internet}} \times 100$$

(xiii) Peratus rangkaian kawasan setempat tanpa wayar (WLAN)

$$= \frac{\text{Bilangan pertubuhan yang mempunyai WLAN}}{\text{Jumlah pertubuhan yang menggunakan internet}} \times 100$$

(xiv) Peratus rangkaian kawasan luas (WAN)

$$= \frac{\text{Bilangan pertubuhan yang mempunyai WAN}}{\text{Jumlah pertubuhan yang menggunakan internet}} \times 100$$

(xv) Peratus rangkaian komputer lain

$$= \frac{\text{Bilangan pertubuhan yang mempunyai rangkaian infrastruktur lain}}{\text{Jumlah pertubuhan yang menggunakan internet}} \times 100$$

(xvi) Peratus penggunaan jalur lebar tetap

$$= \frac{\text{Bilangan pertubuhan yang mempunyai jalur lebar tetap}}{\text{Jumlah pertubuhan yang menggunakan internet}} \times 100$$

(xvii) Peratus penggunaan jalur lebar mudah alih

$$= \frac{\text{Bilangan pertubuhan yang mempunyai jalur lebar mudah alih}}{\text{Jumlah pertubuhan yang menggunakan internet}} \times 100$$

(xviii) Peratus penggunaan menghantar atau menerima emel

$$= \frac{\text{Bilangan pertubuhan yang menghantar atau menerima emel}}{\text{Jumlah pertubuhan yang menggunakan internet}} \times 100$$

(xix) Peratus penggunaan telefon melalui internet

$$= \frac{\text{Bilangan pertubuhan yang menggunakan telefon melalui internet}}{\text{Jumlah pertubuhan yang menggunakan internet}} \times 100$$

(xx) Peratus penggunaan menghantar informasi atau pesanan dengan segera

$$= \frac{\text{Bilangan pertubuhan yang menghantar informasi atau pesanan segera}}{\text{Jumlah pertubuhan yang menggunakan internet}} \times 100$$

(xxi) Peratus penggunaan mendapatkan maklumat barangan atau perkhidmatan

$$= \frac{\text{Bilangan pertubuhan yang mendapatkan maklumat barangan atau perkhidmatan}}{\text{Jumlah pertubuhan yang menggunakan internet}} \times 100$$

(xxii) Peratus penggunaan mendapatkan maklumat dari organisasi kerajaan

$$= \frac{\text{Bilangan pertubuhan yang mendapatkan maklumat dari organisasi kerajaan}}{\text{Jumlah pertubuhan yang menggunakan internet}} \times 100$$

(xxiii) Peratus penggunaan berhubung dengan organisasi kerajaan

$$= \frac{\text{Bilangan pertubuhan yang berhubung dengan organisasi kerajaan}}{\text{Jumlah pertubuhan yang menggunakan internet}} \times 100$$

(xxiv) Peratus penggunaan perbankan internet

$$= \frac{\text{Bilangan pertubuhan yang menggunakan perbankan internet}}{\text{Jumlah pertubuhan yang menggunakan internet}} \times 100$$

(xxv) Peratus penggunaan mengakses perkhidmatan kewangan yang lain

$$= \frac{\text{Bilangan pertubuhan yang mengakses perkhidmatan kewangan lain}}{\text{Jumlah pertubuhan yang menggunakan internet}} \times 100$$

(xxvi) Peratus penggunaan penyediaan perkhidmatan pelanggan

$$= \frac{\text{Bilangan pertubuhan yang menyediakan perkhidmatan pelanggan}}{\text{Jumlah pertubuhan yang menggunakan internet}} \times 100$$

(xxvii) Peratus penggunaan penghantaran produk secara atas talian

$$= \frac{\text{Bilangan pertubuhan yang menghantar produk secara atas talian}}{\text{Jumlah pertubuhan yang menggunakan internet}} \times 100$$

(xviii) Peratus penggunaan pemberitahuan jawatan kosong dalaman atau luaran

$$= \frac{\text{Bilangan pertubuhan yang memberitahu jawatan kosong dalaman atau luaran}}{\text{Jumlah pertubuhan yang menggunakan internet}} \times 100$$

(xxix) Peratus penggunaan untuk latihan kakitangan (aplikasi e-pembelajaran)

$$= \frac{\text{Bilangan pertubuhan yang membuat latihan kakitangan aplikasi e – pembelajaran}}{\text{Jumlah pertubuhan yang menggunakan internet}} \times 100$$

(xxx) Peratus penggunaan untuk lain-lain

$$= \frac{\text{Bilangan pertubuhan yang menggunakan internet untuk lain – lain tujuan}}{\text{Jumlah pertubuhan yang menggunakan internet}} \times 100$$

17. UNIT PELAPORAN

Unit pelaporan bagi survei ini ialah pertubuhan. Sesebuah pertubuhan secara ideal ditakrifkan sebagai “satu unit ekonomi yang bergiat di bawah satu hak milik atau penguasaan tunggal, iaitu di bawah satu entiti yang sah. Ia menjalankan satu jenis subsektor ekonomi utama di satu tempat/lokasi fizikal”. Setiap pertubuhan diberikan klasifikasi industri berdasarkan aktiviti utamanya dan bukannya mengikut aktiviti syarikat induk.

Setiap cawangan daripada organisasi yang mempunyai beberapa cawangan di lokasi yang berbeza dari segi konsep dianggap sebagai pertubuhan yang berlainan. Pertubuhan berkenaan diminta memberikan penyata yang berasingan bagi setiap kegiatannya dari segi nilai. Walau bagaimanapun, dari segi praktis akaun biasanya disediakan secara berpusat kerana kesukaran untuk memperoleh data yang berasingan bagi setiap unit atau cawanga, entiti atau ‘*enterprise*’ ini akan dianggap sebagai satu unit pelaporan dan dibenarkan mengemukakan soal selidik yang menggabungkan semua unit atau cawangannya.

18. PEMBUNDARAN

Jumlah bagi komponen mungkin berbeza dengan jumlah besar dalam jadual penerbitan disebabkan oleh pembundaran angka.

19. KADAR PERTUMBUHAN TAHUNAN

Pengiraan kadar pertumbuhan tahunan (r) adalah berdasarkan formula berikut:

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

Penyelesaian bagi r ,

$$r = \left[e^{\frac{1}{t} \ln \left(\frac{y_t}{y_0} \right)} - 1 \right] \times 100$$

di mana,

y_t = Nilai pada tahun semasa

y_0 = Nilai pada tahun sebelum

t = Bilangan tahun, $y_t - y_0$

r = Kadar pertumbuhan tahunan

20. SIMBOL DAN SINGKATAN

-	:	Tiada
&	:	dan
%	:	peratus
b	:	bilion
dll.	:	dan lain-lain
RM	:	Ringgit Malaysia
ISIC	:	<i>International Standard Industrial Classification</i>
MSIC	:	<i>Malaysian Standard Industry Classification</i>
ST	:	Suku Tahun
QoQ	:	Perubahan peratus suku tahun ke suku tahun
YoY	:	Perubahan peratus tahun ke tahun
W.P.	:	Wilayah Persekutuan

TECHNICAL NOTES

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 Board, 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 limestone, 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

- 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 &

- 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** refers 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.

Note.

** Malaysia including smartphone*

(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.

(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 organization 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 First 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:

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

where;

n = Sample size

N_i = Population size for stratum i

S_i^2 = Variance for stratum i

V = Desired variance

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

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:

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

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:

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

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:

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

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

$$= \frac{\text{Number of establishment used computer}}{\text{Number of establishment operating}} \times 100$$

(ii) Percentage of internet usage

$$= \frac{\text{Number of establishment used internet}}{\text{Number of establishment operating}} \times 100$$

(iii) Percentage of businesses having web presence

$$= \frac{\text{Number of establishment have web presence}}{\text{Number of establishment operating}} \times 100$$

(iv) Percentage of computer usage by state

$$= \frac{\text{Number of establishment used computer by state}}{\text{Number of establishment operating by state}} \times 100$$

(v) Percentage of internet usage by state

$$= \frac{\text{Number of establishment used internet by state}}{\text{Number of establishment operating by state}} \times 100$$

(vi) Percentage of businesses having web presence by state

$$= \frac{\text{Number of establishment having web presence by state}}{\text{Number of establishment operating by state}} \times 100$$

(vii) Percentage of owned website

$$\frac{\text{Number of establishment with owned website}}{\text{Number of establishment operating having web presence}} \times 100$$

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

$$= \frac{\text{Number of establishment with web presence on another entity's website}}{\text{Number of establishment operating having web presence}} \times 100$$

(ix) Percentage of social media

$$= \frac{\text{Number of establishment with social media}}{\text{Number of establishment operating having web presence}} \times 100$$

(x) Percentage of intranet

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

(xi) Percentage of extranet

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

(xii) Percentage of Local Area Network (LAN)

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

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

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

(xiv) Percentage of Wide Area Network (WAN)

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

(xv) Percentage of others area network (Others)

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

(xvi) Percentage of Fixed broadband

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

(xvii) Percentage of Mobile broadband

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

(xviii) Percentage of sending or receiving email

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

(xix) Percentage of telephoning over the internet

$$= \frac{\text{Number of establishment used telephoning over the internet}}{\text{Number of establishment operating using internet}} \times 100$$

(xx) Percentage of posting information or instant messaging

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

(xxi) Percentage of getting information about goods or services

$$= \frac{\text{Number of establishment getting information about goods or services}}{\text{Number of establishment operating using internet}} \times 100$$

(xxii) Percentage of getting information from government organisations

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

(xxiii) Percentage of interacting with government organisations

$$= \frac{\text{Number of establishment interacting with government organisations}}{\text{Number of establishment operating using internet}} \times 100$$

(xxiv) Percentage of internet banking

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

(xxv) Percentage of accessing other financial services

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

(xxvi) Percentage of providing customer service

$$= \frac{\text{Number of establishment providing customer service}}{\text{Number of establishment operating using internet}} \times 100$$

(xxvii) Percentage of delivering products online

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

(xxviii) Percentage of internal or external recruitment

$$= \frac{\text{Number of establishment used internal or external recruitment}}{\text{Number of establishment operating using internet}} \times 100$$

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

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

(xxx) Percentage of used for others

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

18. 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.

19. 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_0 = 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

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