



SURUHANJAYA KOMUNIKASI DAN MULTIMEDIA MALAYSIA
MALAYSIAN COMMUNICATIONS AND MULTIMEDIA COMMISSION

A photograph showing a group of people, mostly men in business attire, looking down at their smartphones. The image is slightly blurred, emphasizing the focus on the mobile devices.

Internet Users Survey 2020



© MALAYSIAN COMMUNICATIONS AND MULTIMEDIA COMMISSION, 2020

The information or material in this publication is protected under copyright and, except where otherwise stated, may be reproduced for non-commercial use provided it is reproduced accurately and not used in a misleading context. Where any material is reproduced, the Malaysian Communications and Multimedia Commission (MCMC), as the source of the material, must be identified and the copyright status acknowledged.

The use of any image, likeness, trade name and trademark in this publication shall not be construed as an endorsement by the MCMC of the same. As such, the inclusion of these images, likenesses, trade names and trademarks may not be used for advertising or product endorsement purposes, implied or otherwise.

Published by:

Malaysian Communications and Multimedia Commission

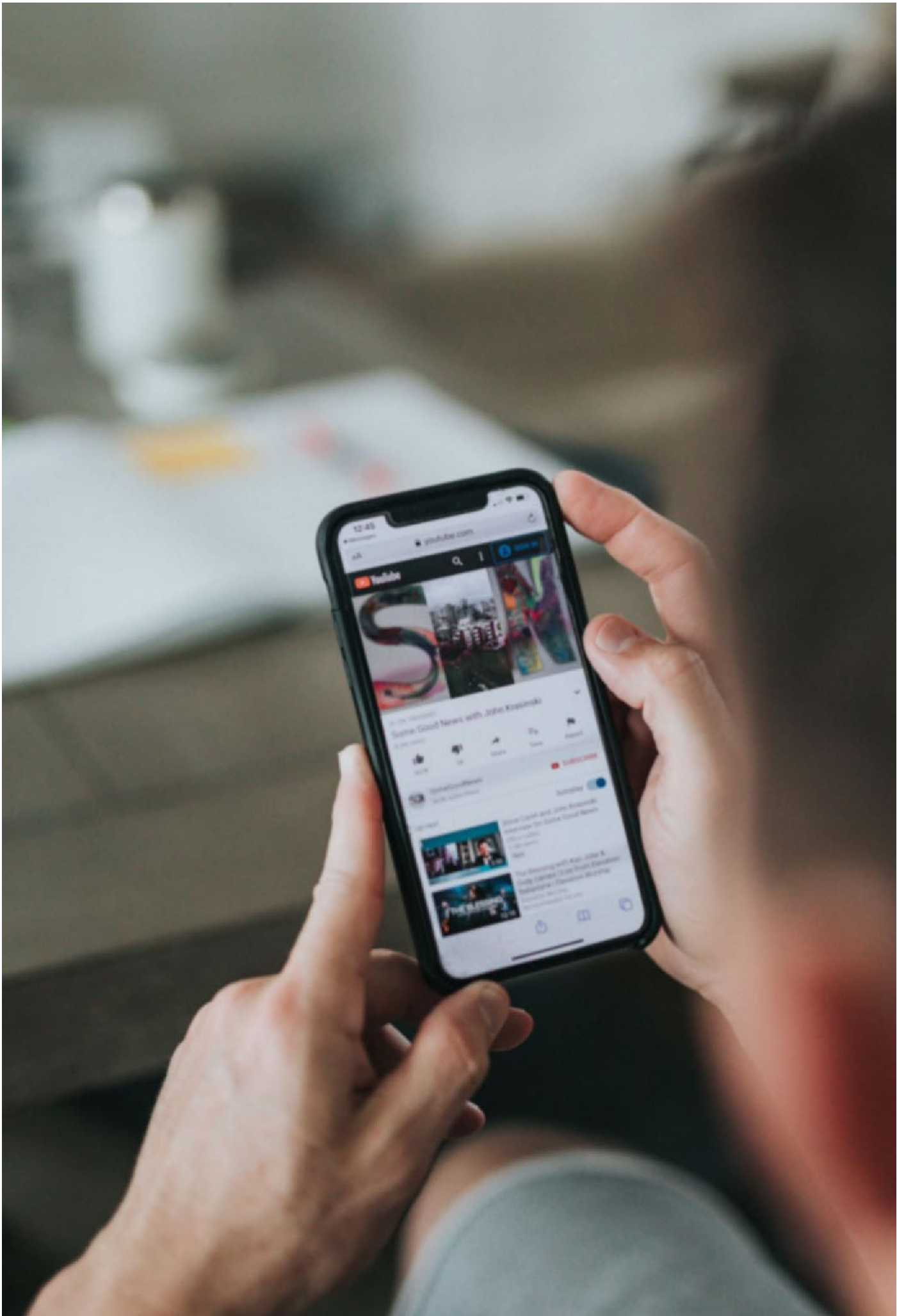
MCMC Tower 1, Jalan Impact, Cyber 6
63000 Cyberjaya, Selangor Darul Ehsan
Tel: +603 8688 8000 Fax: +603 8688 1000
Aduan MCMC: 1-800-188-030
<http://www.mcmc.gov.my>



Contents

7	Executive Summary
11	Background & Objectives
13	Methodology
16	Challenges
18	Findings
18	Internet users and non-users
25	Internet access and use
25	Years of experience with Internet use
28	Duration of daily use of Internet
32	Place to access Internet
35	Broadband access
37	Personal hotspot
39	Device to access Internet
43	Online Activities
48	Social networking and communication applications
52	Digital identity
52	User ID and password
55	Familiarity with the concept of digital identity

58	Online content sharing
61	Type of online content shared
64	Online content sharing platform
66	Purpose of online content sharing
68	Action taken before sharing content online
70	Frequency of sharing content online
72	Awareness of fake news
74	sebenarnya.my portal
77	Online security and privacy
79	Confidentiality of personal data
81	Cybercrime experienced
84	Action taken following cybercrime experienced
86	Online privacy
86	Sharing of personal information online
88	Child online safety and parental control
90	Awareness and use of parental control
92	Action taken by parents to ensure child online safety
94	Reason for not using parental control
95	Predictive Analysis
96	Predict whether someone will share content online
100	Predict likelihood of online fraud/scam
104	Predict familiarity with digital identity
108	Predict whether someone feels secure when using Internet
114	About The Respondents
114	Gender
115	Age
116	Urban-Rural Distribution
117	Employment
118	Conclusion & Recommendations
122	Appendices



Executive Summary

The Internet User Survey 2020 (“IUS 2020”) is part of a series of surveys by MCMC that started in 2012. The primary aims are to track Internet access and use, as well as to understand the evolving behaviours and trends of Internet use. The findings of IUS are crucial for policy development and industry growth as Malaysia pivots to the digital economy.

IUS 2020 was carried out during the Covid-19 pandemic; during which a significant amount of activities shifted to Internet. As society embraces technology and digital transition more readily due to the pandemic, the change in user behaviours and trends of Internet use is expected to accelerate faster.

More importantly, the findings of IUS 2020 can form early data points to assist policymakers in ascertaining the extent of access vulnerability of different groups, should key public services (for example education) transition significantly to the digital platform.

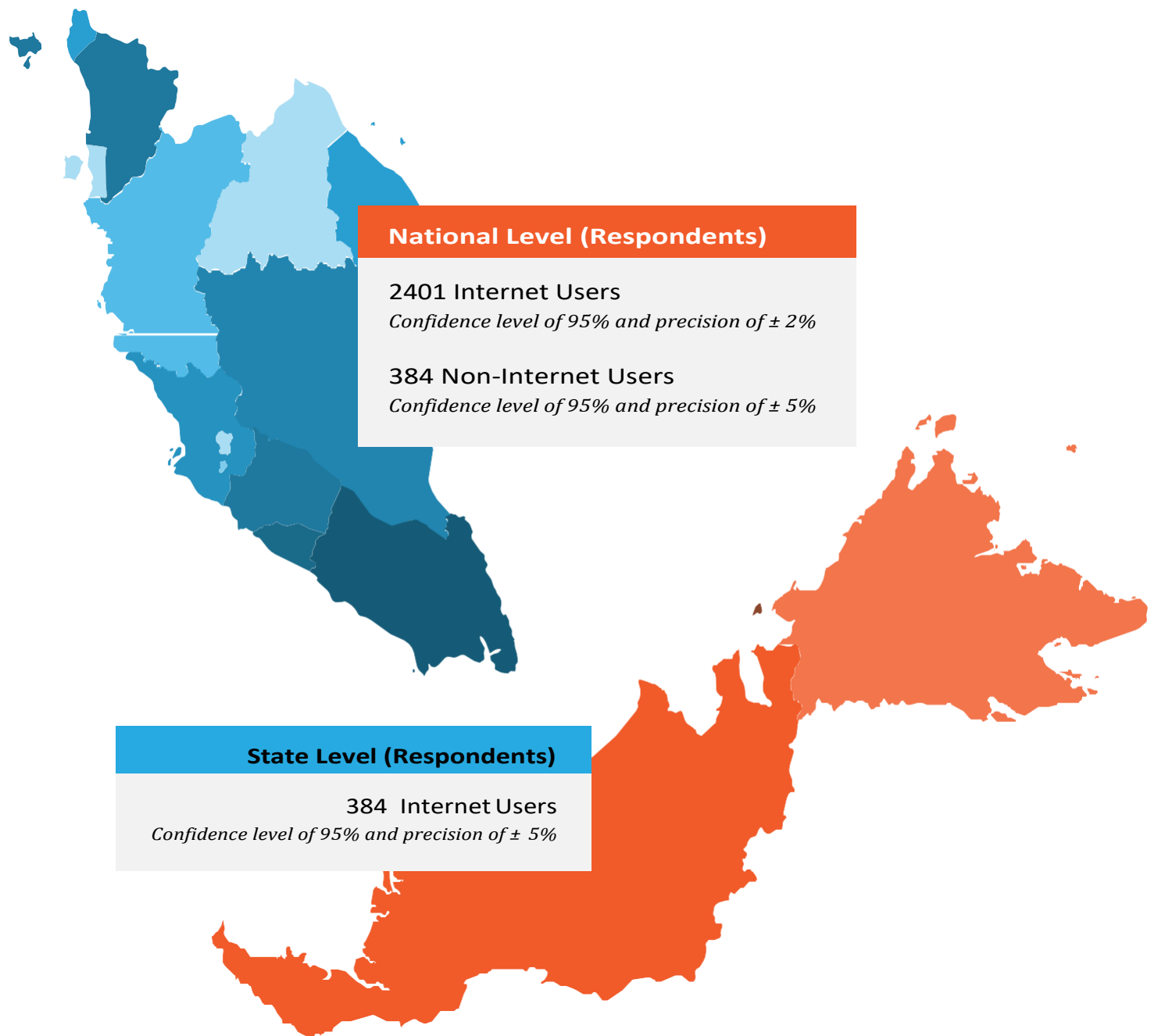
IUS 2020 reached a sample of 2,401 Internet users and 384 non-Internet users at the national level and a total of 384 Internet users for each state to meet the requirement for state-level surveys.

Respondents were selected randomly, and the interviews were carried out through telephone interview.

The survey continues to track primary metrics for Internet access and usage; which includes duration of access, access by device and different types of Internet usage. The data from IUS 2020 adds on to a running time-series from the first Internet user survey in 2012.

IUS 2020 also focuses on emerging Internet issues introduced in the previous surveys; namely online content, online child safety and online privacy/security.

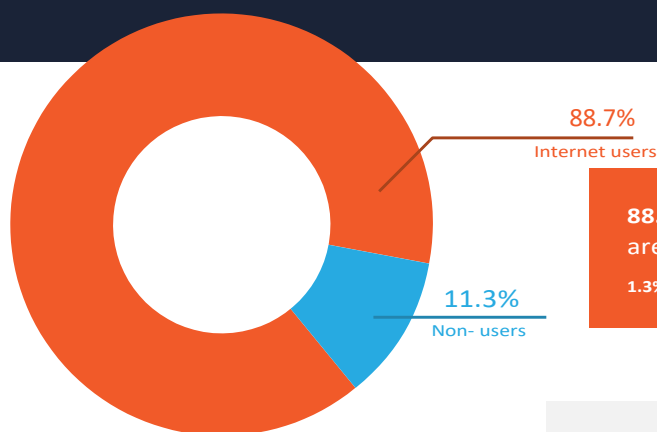
Finally, IUS 2020 added a new area of digital identity to gauge the public's familiarity and receptiveness of the concept. Digital identity is expected to become a major issue in the future as society balances between preserving online privacy and providing protection against fraud and online crimes.



IUS Theme covered



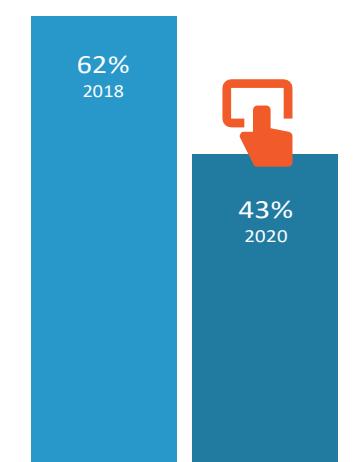
The Key Findings of IUS 2020



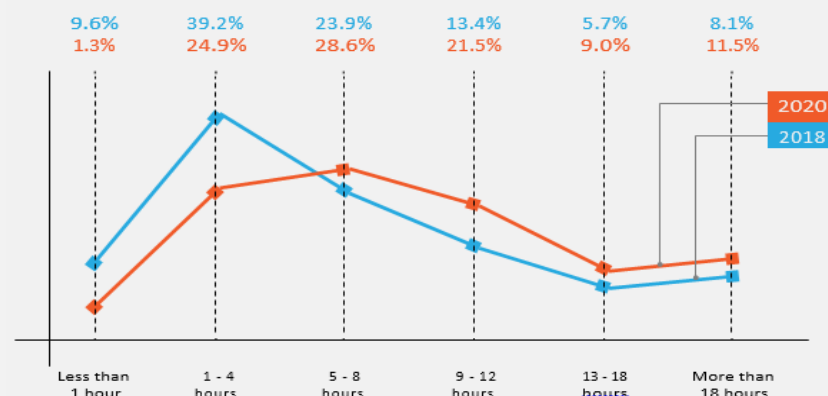
88.7% of the population are Internet user in 2020

1.3% increase from 87.4% in 2018.

Internet users have been spending more hours online in 2020 compared to 2018



There was a marked decrease of users' sharing content online, from **62% in 2018** to **43% in 2020**



62.5%



A significant portion of Internet users are unfamiliar with the concept of digital ID

Out of the **20.3%** of Internet users who were aware of **sebenarnya.my**, **59.4%** have not visited the portal

155% increase of children aged 5 to 17 using the Internet from 2016 (2016: 18.4%, 2020: 47%)

The incidents of online fraud had increased from **17.7% in 2016** to **23.6% in 2020**

Smartphones is the most popular devices to access Internet, reaching a near - saturation usage level at **98.7% in 2020**.

The awareness of parental control has also declined from **62.4% in 2018** to **53.3% in 2020**

Background & Objectives

The Internet Users Survey (IUS)

The Internet Users Survey (IUS) is a series of purpose-built surveys conducted since 2012 to monitor Internet activities and understand the trends and tendencies among users. Consequently, the surveys have provided stepping stones thus far, to gauge Malaysia's standing in Internet adoption in recent years.

MCMC worked with an independent survey house to conduct IUS 2020. The use of an independent survey house is a departure from previous years' surveys which were conducted and administered exclusively in-house by MCMC.

IUS 2020's objectives were:

1. To estimate the number and percentage of Internet users in the country
2. To study the attitudes and behaviours of users towards Internet use
3. To identify the recent trends in Internet usage

IUS 2020 gives extra highlights on behavioral trends of Internet use since 2012.

For the first time, data points collected from IUS 2020 are used to build predictive models to profile Internet users to keep abreast with the evolving nature of Internet use's sophistication in society.

Thus, IUS 2020 intends to facilitate stakeholders in assessing and comprehending better the extent of Internet usage in Malaysia. This can lead to better strategies and initiatives that are necessary to transition society to embrace digitalisation in light of the post-pandemic's new normal.

Methodology

The sample population was randomly selected from mobile-cellular users and further stratified by ethnicity, gender, age and state. The sample population was uploaded to a computer system that randomly dials respondents to meet the stratification requirements to ensure the respondents are representative of the population.

IUS 2020 was canvassed and administered through telephone interview.

Fieldwork for this survey started on 28th January 2020 until May 2020. The fieldwork took longer than anticipated due to the Movement Control Order (MCO) and Conditional Movement Control Order (CMCO) that took effect on 18th March 2020 and 4th May 2020, respectively. The survey had to be administered remotely during the MCO and CMCO periods. Apart from the longer time taken to complete the fieldwork, the remote administration of the survey did not compromise the statistical accuracy and requirements.

IUS 2020 reached a sample of 2,401¹ Internet users and 384² non-Internet users at the national level and a total of 384³ Internet users for each state to meet the requirement for state-level surveys.

1 Confidence level of 95% and precision of $\pm 2\%$

2 Confidence level of 95% and precision of $\pm 5\%$

3 Confidence level of 95% and precision of $\pm 5\%$

There was only one stage of sample selection, as the survey adopted a stratified random sample. Sampling was done with probability proportional to the strata defined in terms of ethnicity, gender, age and state.

Data quality check was administered throughout the survey fieldwork. Basic frequency count was computed to assess the results. Cross-tabulation was imposed between relevant indicators to identify significant relationships that would deduce meaningful inferences pertinent to the objectives.

The data had been weighted to match nationality (Malaysian and non-Malaysian), ethnicity, gender, age and state where the 2019 population estimates from Department of Statistics Malaysia (DOSM) serves as the auxiliary information.

Important findings are featured in this report, complemented by supporting charts and tables for the convenience of readers. Comparisons across time were established in the analysis where available. The findings on current trends were analysed and contextualised against current developments in Malaysia and around the world. Information from external sources is included as supplementary data to support any discovery.

Full results of the survey are appended in the form of percentage tables at the end.



Challenges

The Movement Control Order (MCO) and Conditional Movement Control Order (CMCO) that was effective from 18th March 2020 and 4th May 2020 respectively presented a big challenge for the fieldwork.

Since survey operation did not qualify as an essential service, the survey provider's Call Centre could not operate. Hence, the fieldwork was canvassed and administered remotely to ensure the IUS 2020 could be completed on time.

However, the remote canvassing without access to a survey center facility presented a new complication. The response rate at the beginning of MCO was remarkably lower than when the canvassing was done through a survey center facility. Most probably, this was due to the uncertainties at the beginning of MCO that influenced the public's attitude towards telephone surveys.

Public concerns that scams were on the rise compounded the already low response rate at the start of the MCO⁴.

Besides the longer time taken to complete the fieldwork, the survey had to adopt specific time slots to ensure calls were made only in the timeframe that had produced the highest response rate. While this improved the response rate, it stretched call agents' working hours into the night and weekend, well beyond the regular office hours.

Stratified random sampling also led to different response rates for different states and strata. Certain states such as Perlis and Pahang experienced below-average response rates and more call agent hours had to be dedicated to meet the stratified sampling requirement for these states.

Despite these challenges, IUS 2020 achieved a response rate of 7.3% for the national level and 9.5% for the state level.

32,920 calls were made to complete the stratified random sampling of the 2,401 respondents for the national level. In other words, we have to make 13.7 calls to get one user, compared to 6.4 calls to get one user in 2018.

4 "We would like to alert the public of these scammers on the prowl, taking advantage of Covid-19 fears with calls, SMSes and emails" – Kuala Lumpur Crime Prevention Practitioner Association; 27th March 2020 (The Star)

"Beware of scammers, IGP warns Prihatin aid recipients"; 6th April 2020 (NST)

Findings

Internet users and non-users

The survey determined that the percentage of Internet users⁵ in 2020 stood at 88.7%, a 1.3% increase from 87.4% in 2018.

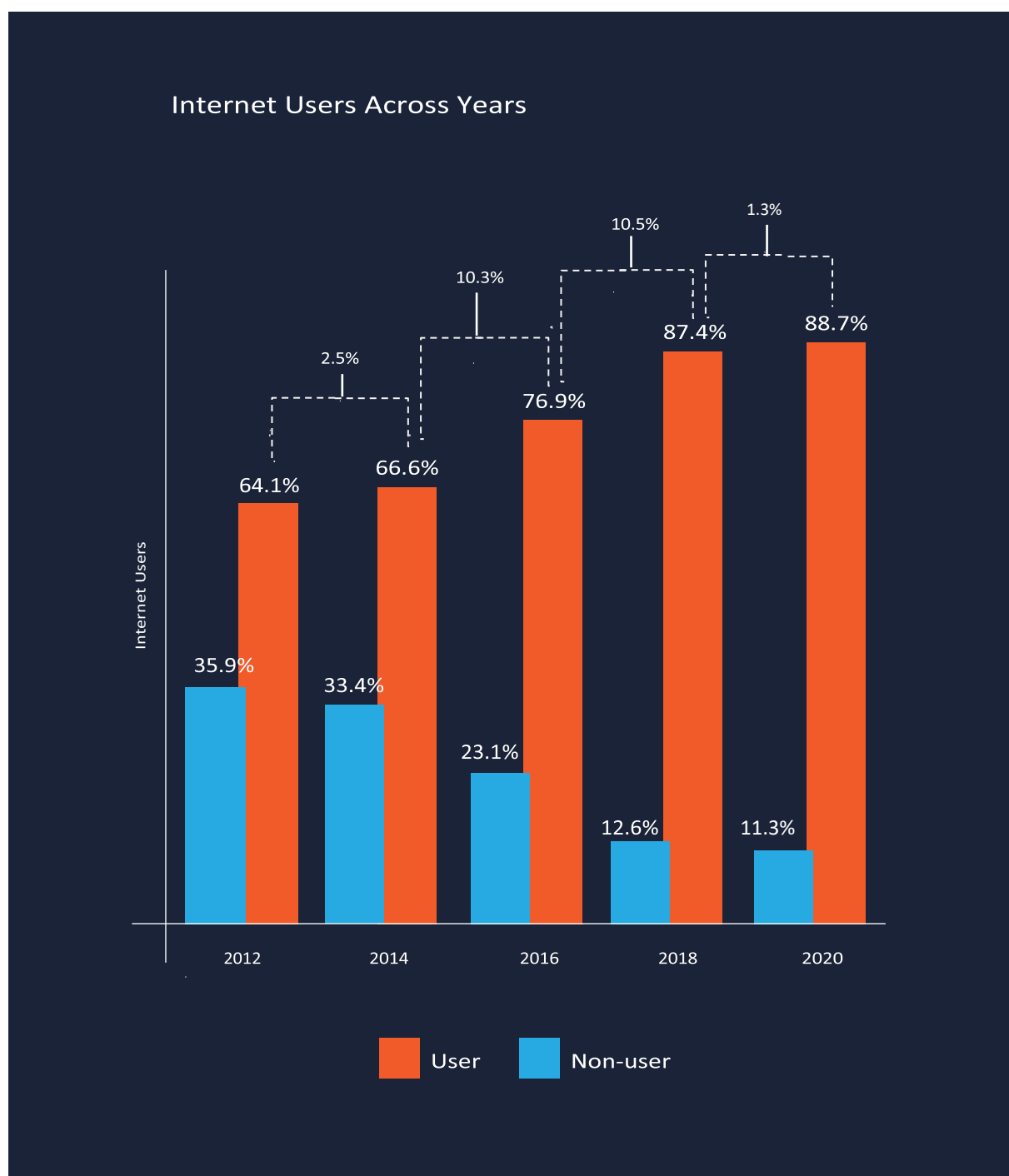
While the increase represents the slowest growth of Internet users since tracking began in 2012, the trend conforms with the global trend of slowing growth.

The International Telecommunication Union (ITU) indicates a slowdown in Internet growth as reported in the State of Broadband 2019 Annual Report commissioned by the ITU/UNESCO Broadband Commission for Sustainable Development⁶.

⁵ Internet users include those using Internet from any location using any device in the last three months.

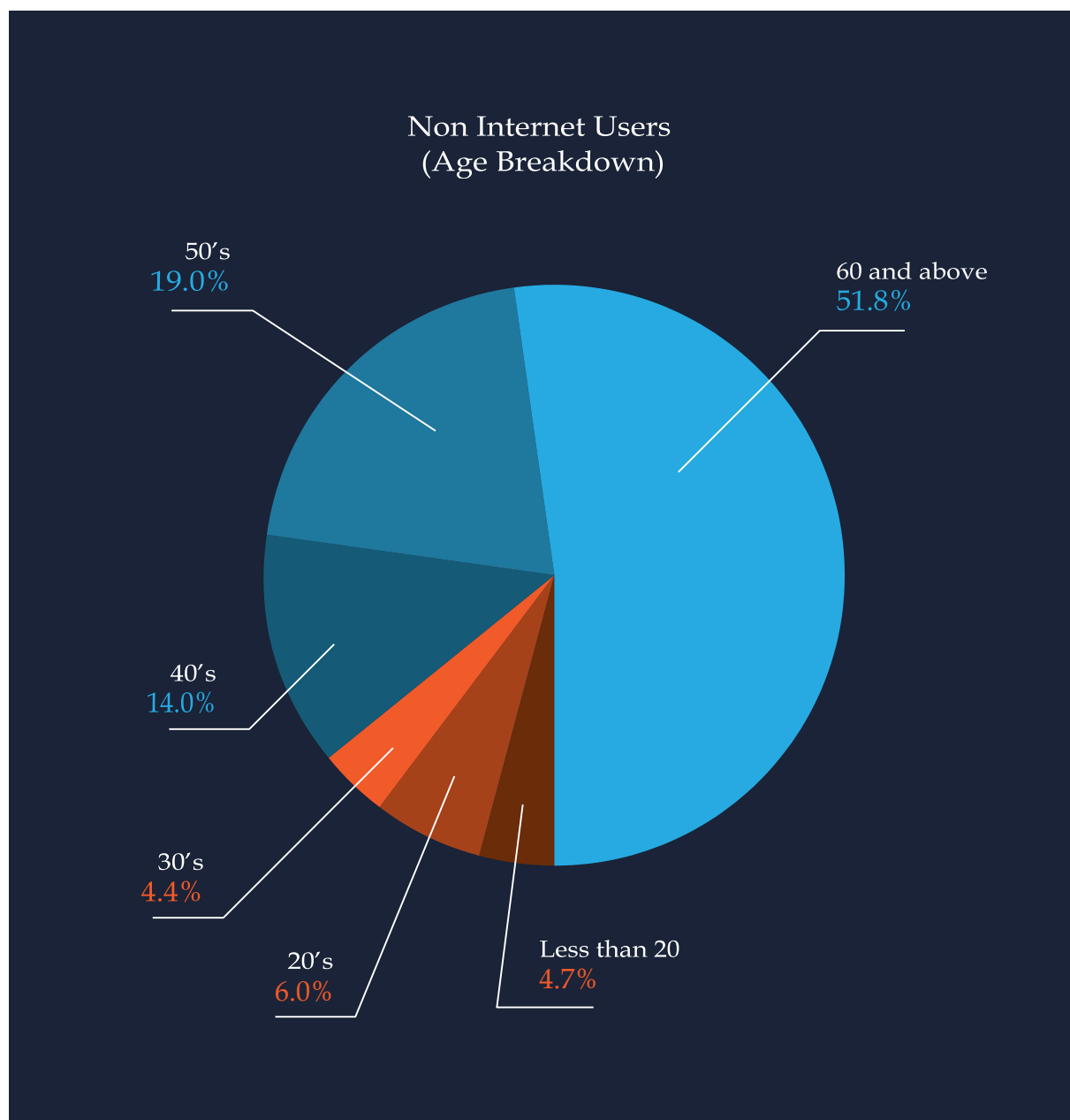
⁶ ITU 2019. "The State of Broadband 2019: Broadband as a Foundation for Sustainable Development". https://www.itu.int/dms_pub/itu-s/opb/pol/S-POL-BROADBAND.20-2019-PDF-E.pdf

Figure 1: Internet users and non-Internet users over the years

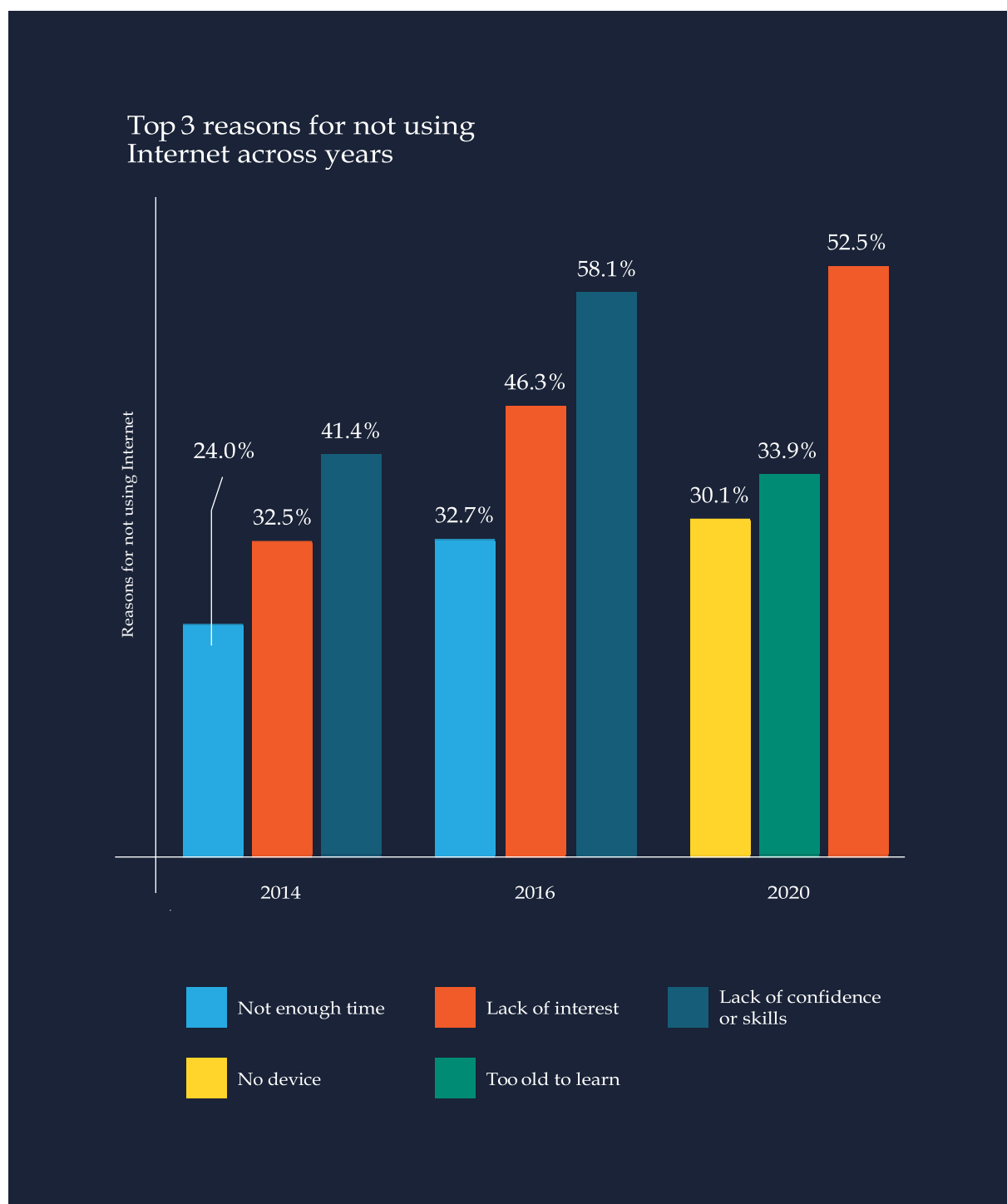


Non-Internet users declined from 12.6% in 2018 to 11.3% in 2020. Unsurprisingly, more than half of the non-Internet users are 60 and above (51.8%).

Figure 2: Breakdown of age for non-Internet users



Further, the survey also prompted the non-Internet users on the reason for not using the Internet. The three most cited reasons for not using Internet were *lack of interest* (52.5%), *too old to learn* (33.9%) and *no device* (30.1%).

Figure 3: Reasons for not using Internet over the years

IUS 2020 detected a sharp departure from previous years' findings of the top reasons for not using Internet.

The reason that had appeared consistently in the top three list since 2014 was *lack of interest* which had nearly doubled since 2014 (from 32.5% to 52.5%). While there is no conclusive evidence to suggest a growing phenomenon of users being put off by the Internet, this finding seems to fall in line with a general trend elsewhere as social media become more embroiled with controversial contents⁷.

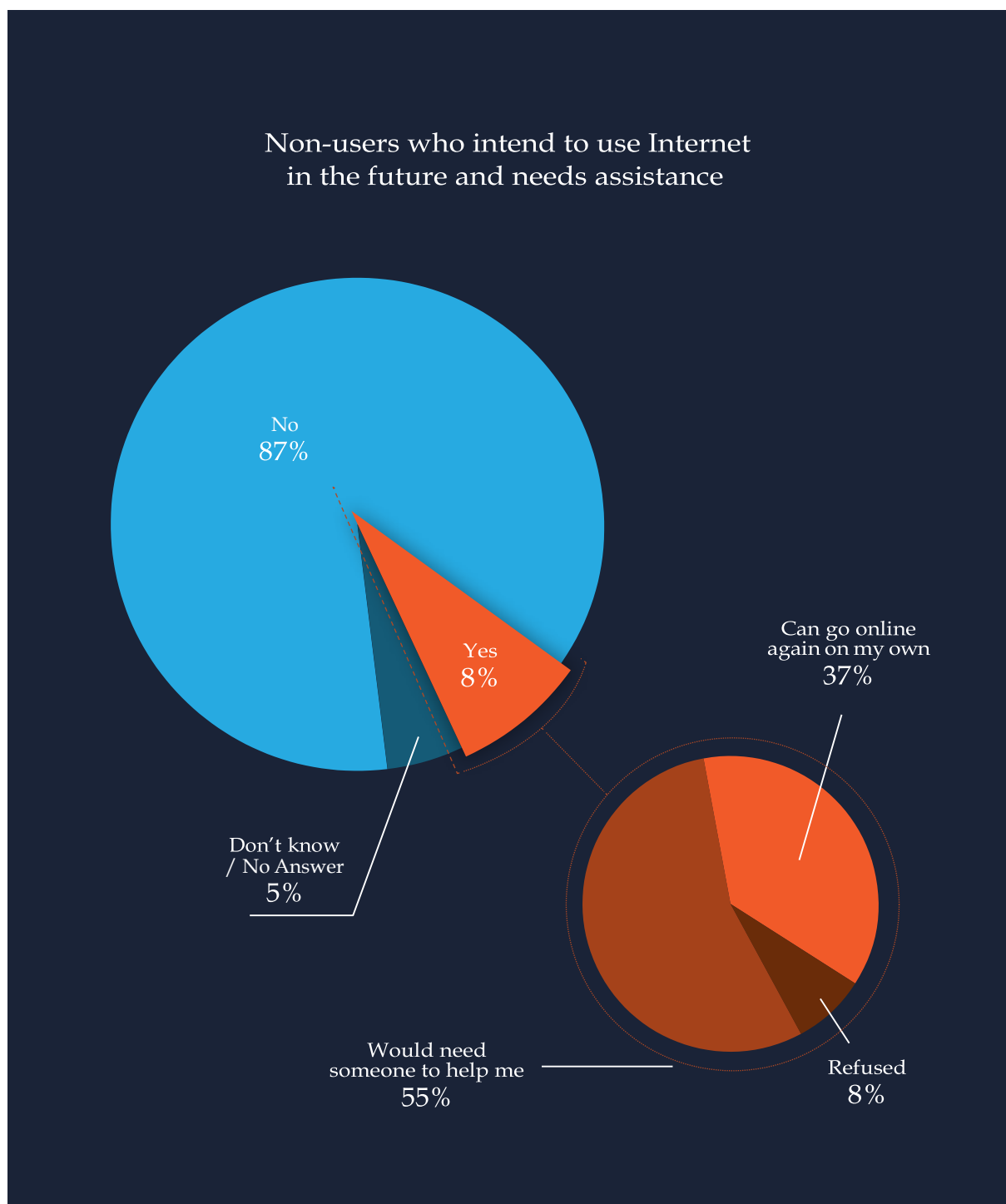
The proliferation of fake news, scams, cyber-bullying and controversial issues propagated through Internet, if not managed responsibly, is becoming a threat that can reverse years of Internet user growth.

Only a minority of non-users (8.0%) intend to use Internet again in the future, while 87.6% do not. Among those who intend to use Internet in the future, 54.9% of them would need someone to help them, 37.0% do not need any assistance.

⁷ "Declining Majority of Online Adults Say the Internet Has Been Good for Society" – Pew Research Centre; 30th April 2018

"Freedom On The Net 2019" - Freedom House, 5th November 2019

Figure 4: Non-users who intend to use Internet in the future and needs assistance





Internet Access and Use

Years of experience with Internet use

More than a quarter of users (28.2%) have been using the Internet for more than ten years as at 2020, a drop from 36.9% in 2018.

Meanwhile, there was an increase in users who have been using the Internet for five to ten years from 32.7% in 2018 to 40.1% in 2020.

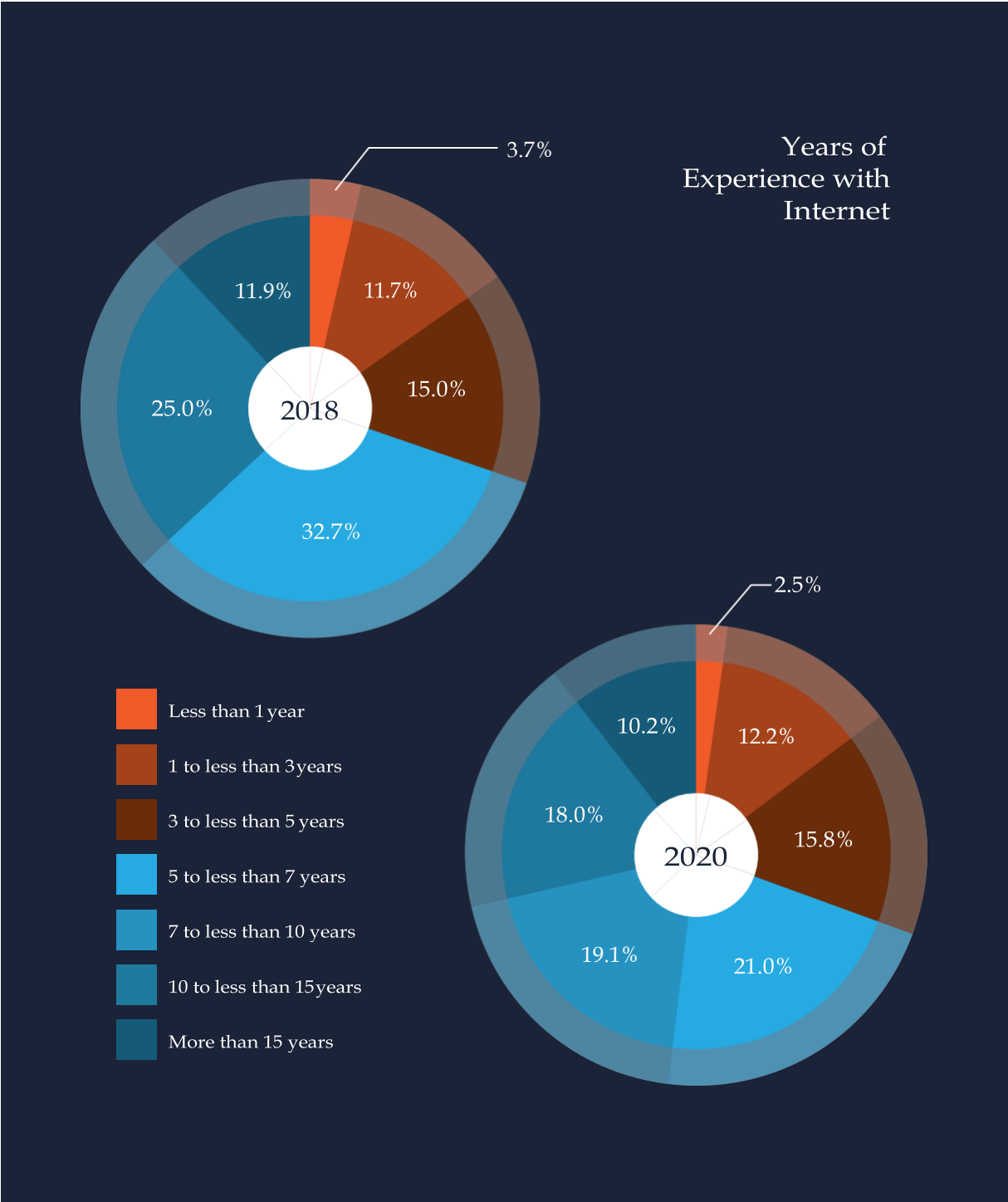
68%

—have used the
Internet for more
than 5 years

31%

—have used the
Internet for less
than 5 years

Figure 5: Years of experience in using the Internet⁸



⁸ Total percentage for IUS 2020 may not add up to 100% as those with No answers/Don't know are not included - No answers/Don't know (1.2%)

Duration of daily use of Internet

Internet users have been spending more hours online in 2020 compared to 2018.

Half of Internet users (50%) spent 5 to 12 hours a day on the Internet, an increase of 13% from 37% observed in 2018 and all mostly using the Internet for social purposes like communicating through text, communicating via voice/video and visiting social networking sites.

For the purpose of this study, the Internet users are categorized as follows.

Mild Users — 26%

Spent less than 4 hours
a day on the Internet

Regular Users — 50%

Spent 5 to 12 hours a
day on the Internet

Heavy Users — 21%

Spent more than 12 hours
a day on the Internet

	Mild	Regular	Heavy
2020	26%	50%	21%
2018	49%	37%	14%

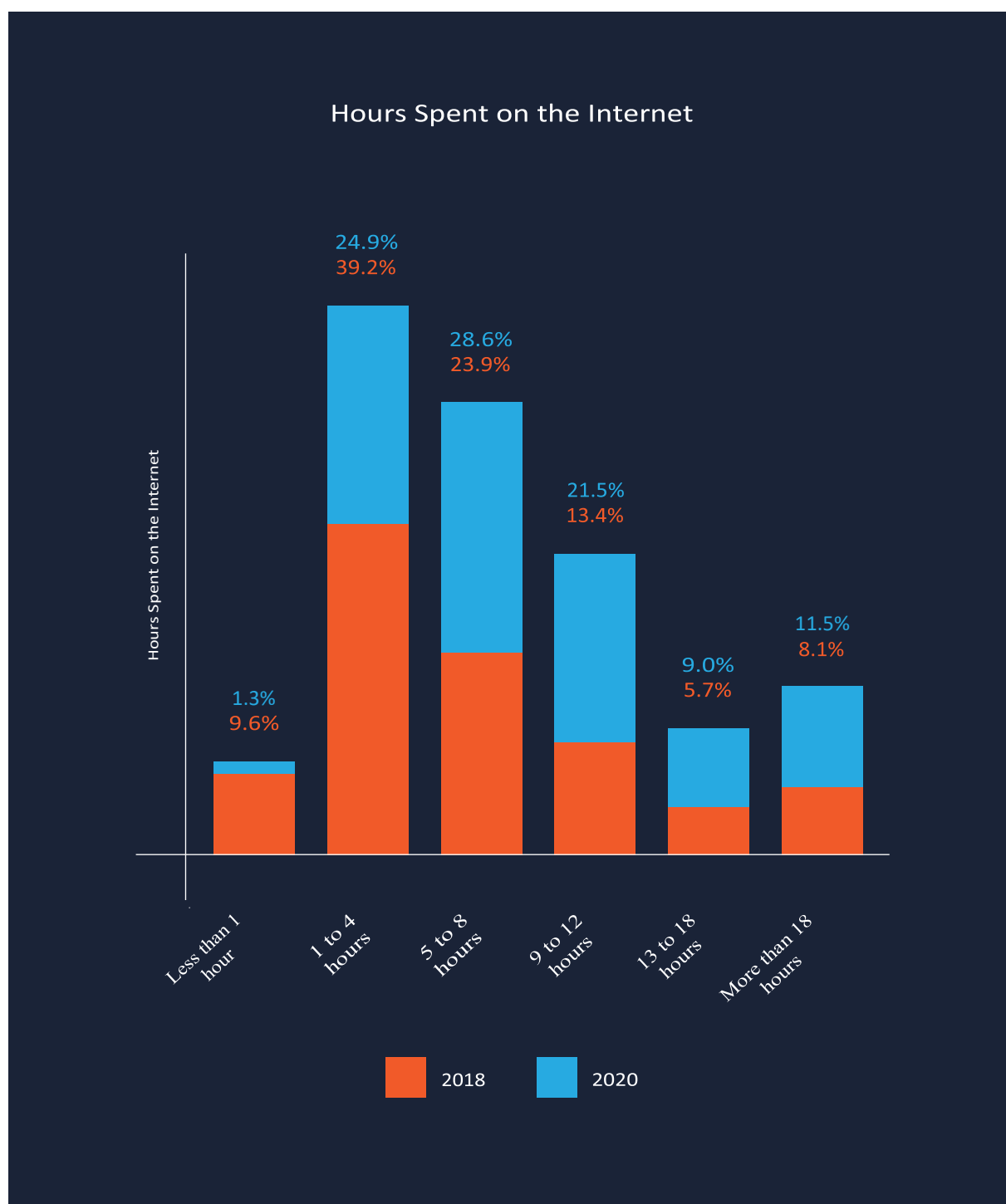
Table 1: Categorization of Internet users by the length of access

The massive jump in the hours spent on the Internet is probably due to a combination of two factors.

First, the MCO has contributed to more extended Internet use.

The survey fieldwork was canvassed during the MCO when most users rely on the Internet to work from home, access information, communicate with others and for entertainment.

Second, the broadband and data tariff has come down considerably since 2018 that more users can access the Internet longer. This may be due to extensive mobile broadband and intense competition, which significantly dropped the prices for mobile broadband packages.

Figure 6: Hours spent on the Internet⁹

⁹ Total percentage for IUS 2020 may not add up to 100% as those with No answers/Don't know are not included – No answers/Don't know (3.2%)

Place to access the Internet

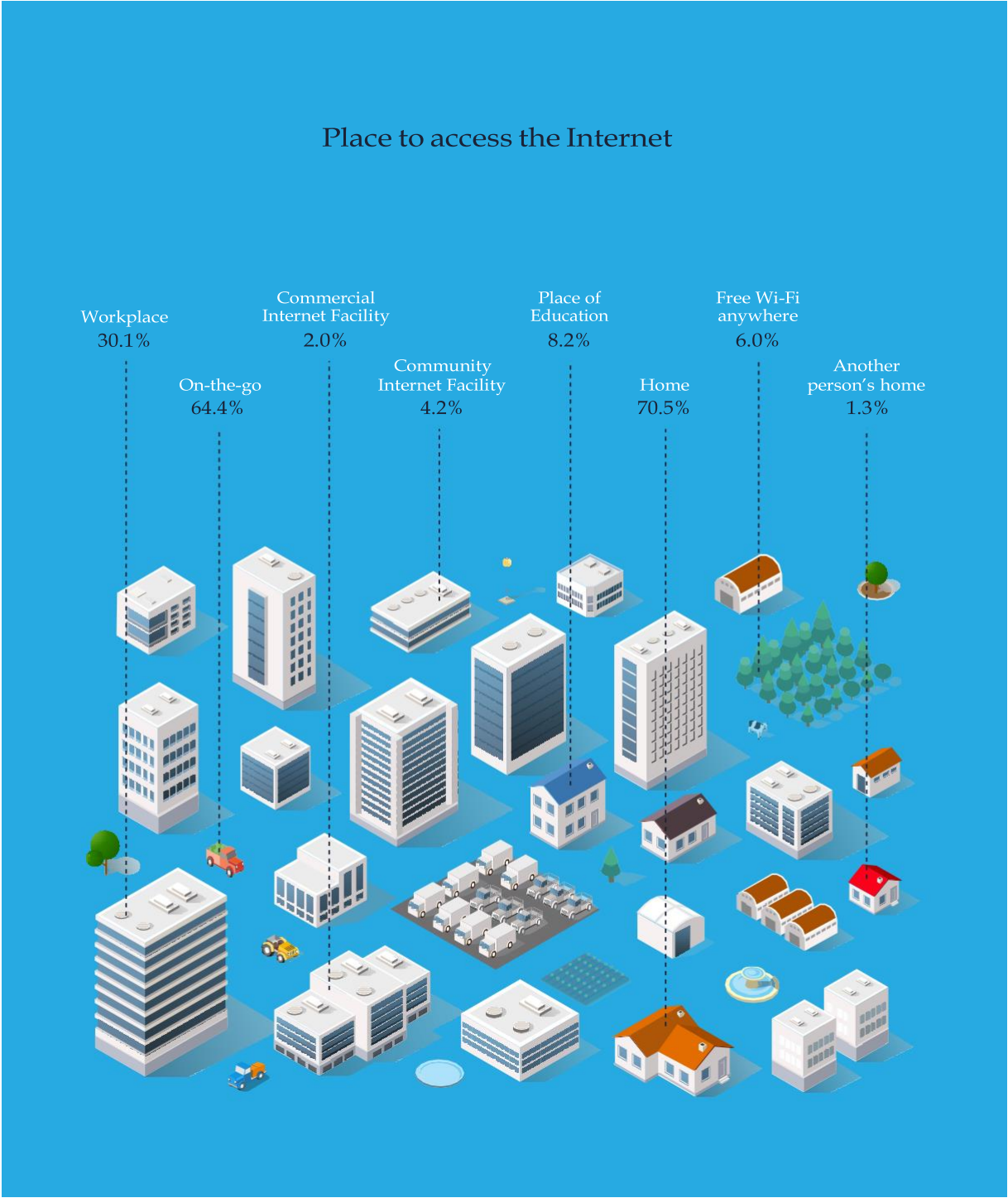
Users' own home remains the most frequent place to go online at 70.5%, followed by on-the-go (64.4%).

Accessing the Internet from another person's home (1.3%) has replaced a place of education as the least frequent place to access the Internet (8.2%).

Meanwhile, commercial Internet centres which collect a fee from its patrons to access the Internet revealed a percentage of 2.0% in 2020.

Similarly, the percentage of users accessing community access facilities and Free Wi-Fi is at single digits (4.2% and 6.0% respectively). This may be due to innovative and competitive packages of mobile broadband offered by service providers that made users prefer their own mobile Internet data plan rather than relying on free Wi-Fi.

Figure 7: Place to access the Internet



Majority of users access Internet from home (70.5%). Hence, infrastructures that enable users to access Internet from home with better quality and connectivity has become more crucial. The drop in the percentage of users who access the Internet from home and place of education is a cause for concern. In the aftermath of the Covid-19 pandemic, more education institutions conduct virtual classrooms, and the trend is set to grow further.

The availability of stable and fast Internet access from home and place of education becomes a key factor for the successful normalisation of vital public services such as education after the pandemic.

However, the survey cannot determine whether the quality of Internet access at home and place of education is an issue towards digitalisation of education.

Broadband access

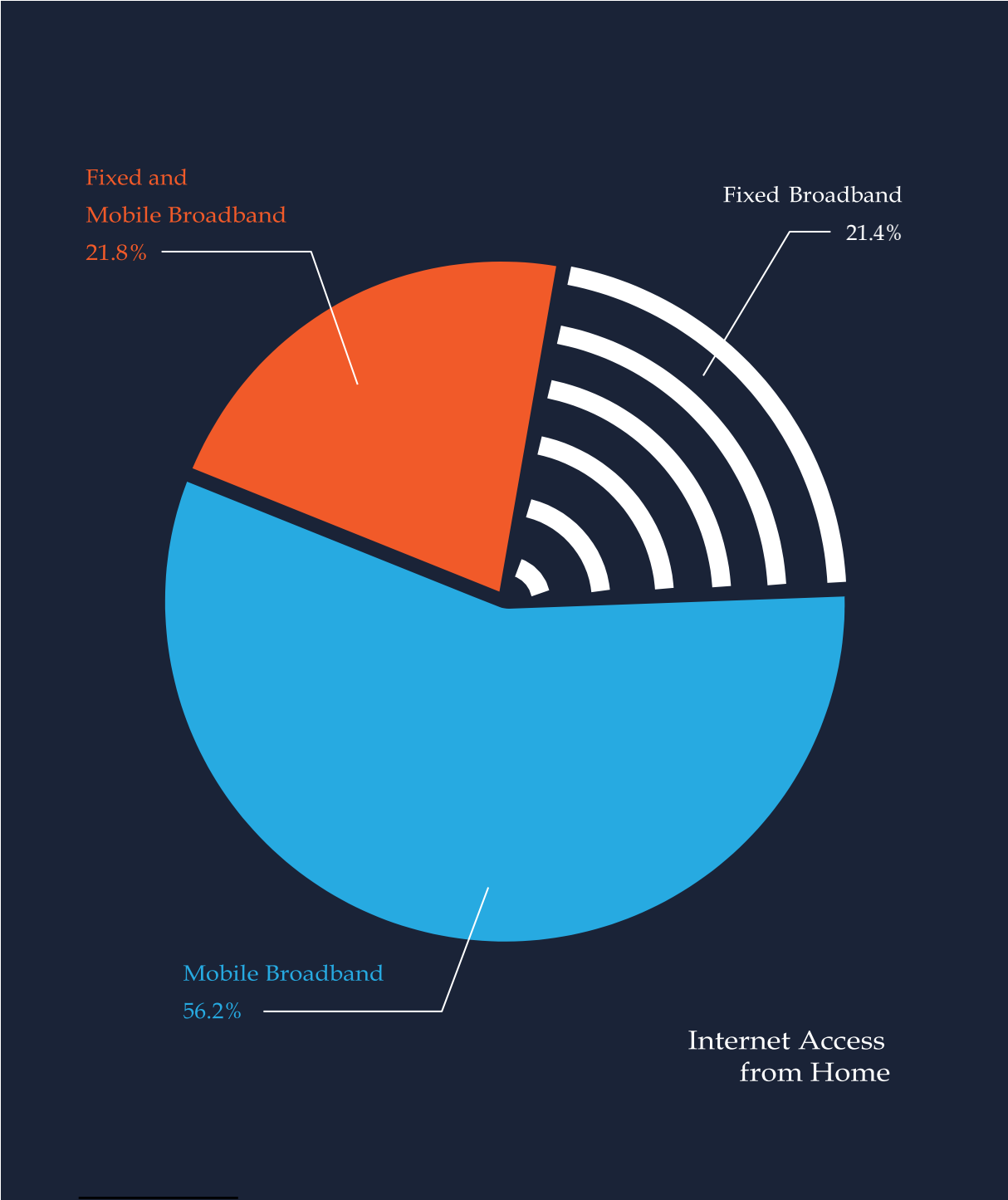
Among those who accessed the Internet from home, more than half use mobile broadband exclusively (56.2%).

The rest is split evenly between fixed broadband (21.4%) and both mobile and fixed broadband (21.8%).

This could be due to the relatively lower cost of mobile broadband compared to fixed broadband. Innovative and competitive packages of mobile broadband offered by service providers have also contributed to this.

This trend is consistent with the global trend that sees the majority of users access broadband Internet from the mobile.

Figure 8: Split of broadband access from home¹⁰



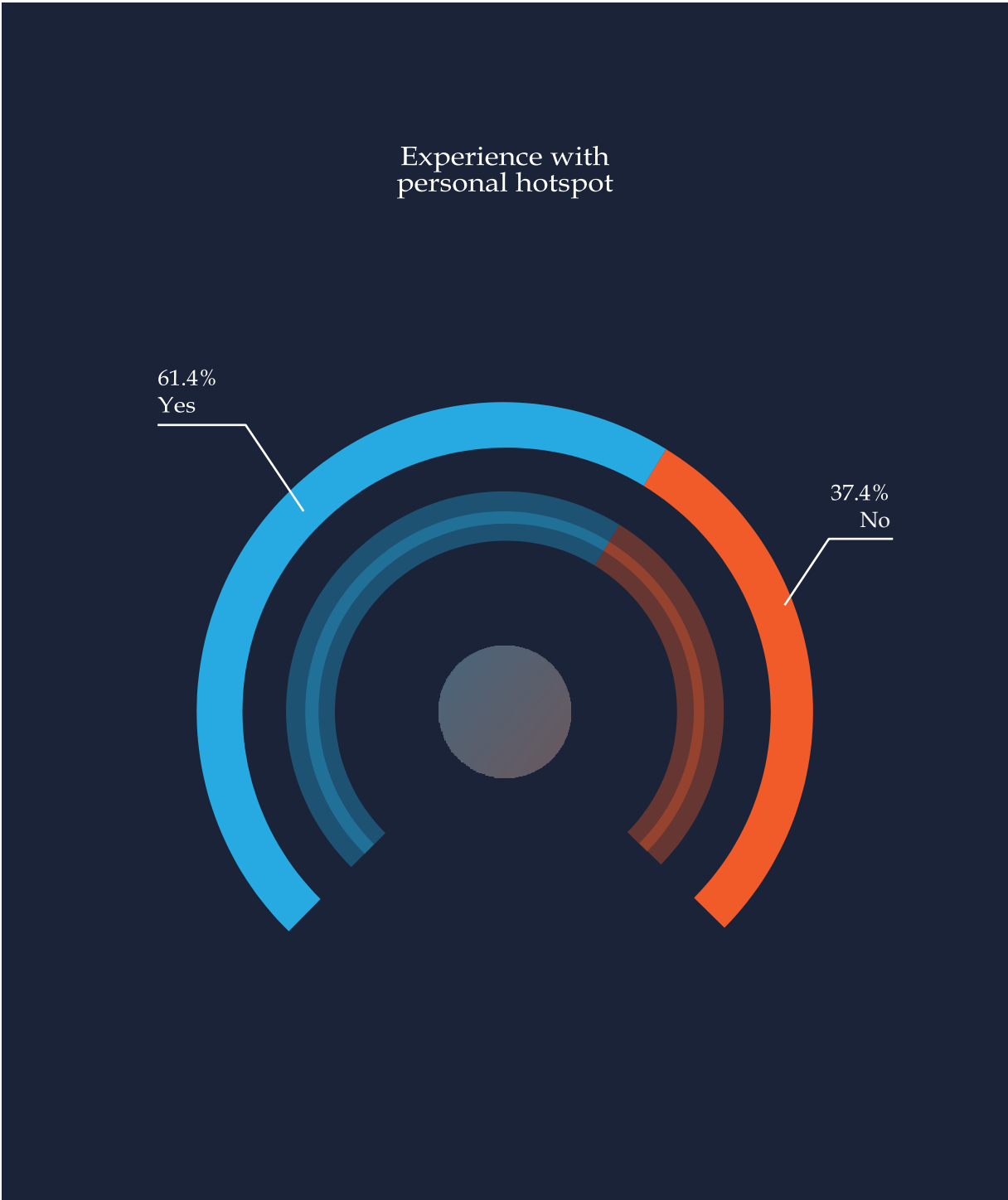
¹⁰ Total percentage for IUS 2020 may not add up to 100% as those with No answers/Don't know are not included – No answers/Don't know (0.6%)

Personal hotspot

This survey also included assessing the use of hotspot among Malaysian users which has not been done in the previous IUS. This measure is taken to foresee the future trend of hotspot usage among users in the country.

Majority of Internet users (61.4%) have used personal hotspot with Wi-Fi and Bluetooth. This finding is in line with the majority use of mobile broadband and nearly reflects the rate of mobile broadband use shown in the previous section. The capability of smartphones for mobile tethering also allows users to access the Internet on other devices, making the mobile broadband subscriptions the more preferred option.

Figure 9: Experience with personal hotspot¹¹



11 Total percentage for IUS 2020 may not add up to 100% as those with No answers/ Don't know are not included
– No answers/Don't know (1.1%)

Device to access the Internet

Internet users accessing through smartphones have reached a near-saturation level at 98.7% in 2020, up from 93.1% in 2018, supported by the capabilities of smartphones with their powerful connectivity, efficiency and various functionalities and applications. Meanwhile, the survey observed a decline trend in accessing the Internet for other devices.

The percentage of Internet users accessing Internet from laptop/netbook/notebook dropped to 37.9% in 2020 from 44.2% in 2018; while desktop decreased to 16.2% from 28.1% in the same period. Those who accessed the Internet using feature phones declined to 1.3% in 2020 from 8.6% in 2018.

Devices such as Smart TV, smartwatch, TV streaming box and game console have also declined.

The percentage of users accessing the Internet via Smart TV dropped from 12.3% in 2018 to 5.9% in 2020; while TV streaming box from 7.6% in 2018 to 2.9% in 2020.

Game consoles dropped from 4.7% in 2018 to 0.8% in 2020. On the other hand, smartwatch usage has also declined from 2.4% in 2018 to 0.6% in 2020. This may be due to the functionalities of smartwatch that are mostly limited to tracking daily activities, monitoring heartbeat, and providing reminders. With the implementation of MCO, these functions are rarely used considering restrictions to sports and outdoor activities.

Smartphone users have reached a near-saturation level at 98.7% in 2020

Device to Access Internet	2014	2016	2018	2020
Smartphone	74.3	89.4	93.1	98.7
Netbook / notebook / laptop	51.4	36.3	44.2	37.9
PC / desktop	35.3	29.3	28.1	16.2
Tablet	25.5	18.0	20.4	6.4
Smart TV	1.9	6.7	12.3	5.9
Feature phone	12.5	9.4	8.6	1.3
TV streaming box	-	5.6	7.6	2.9
Game console	1.2	2.5	4.7	0.8
Smartwatch	-	-	2.4	0.6

Table 2: Device used to access the Internet

One aspect that was not surveyed but has become a pertinent issue during the MCO is the number of devices available per household. As schools attempt to hold virtual classes, one persistent problem was the lack of devices available for the students to log in. If a family has two or more school-going children and there is only one smartphone available, not only the children have to compete with the parents to use the device, they also have to take turns.

It is a problem not unique to Malaysia. At the height of the pandemic, teachers in US cities pointed out that as many as four out of five students cannot join virtual classes due to a lack of stable Internet or adequate devices at home¹⁴.

IUS 2020 was not adjusted to gauge the average number of devices per household as the MCO took place right when the fieldwork was already underway.

Future surveys should establish a baseline gauge as the data will be beneficial to estimate the challenges to digitalise classrooms in the future.

¹² "Online Schooling Has A Tech Issue That No Apps Can Fix" – Nat Garun, The Verge; 29 April 2020
"As School Moves Online, Many Students Stay Logged Out" – Dana Goldstein, New York Times; 6 April 2020

Online Activities



98%

Text Communication

93%

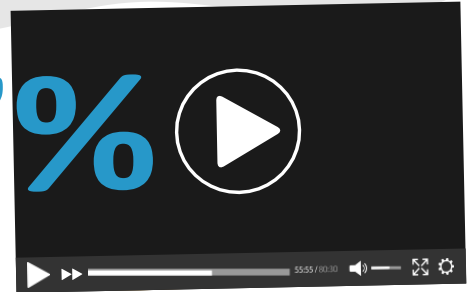
Social Media

81%

Voice/Video
Communication

87%

Videos



64%

Financial Transactions



43%

Gaming



65%

Music

68%

Online Reading



64%

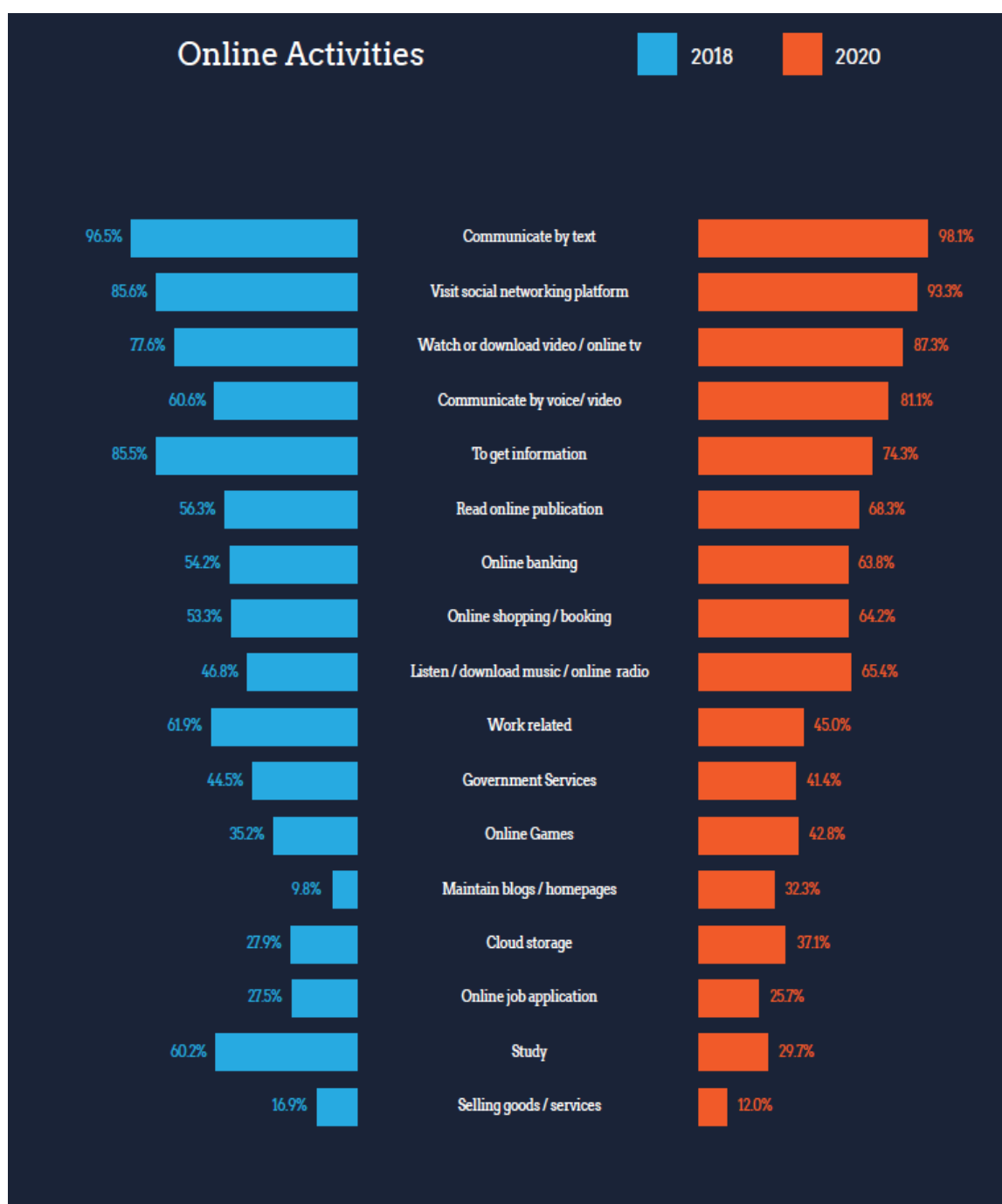
Online Shopping



Online Activities

Majority of Internet users go online for social purposes. 98.1% used the Internet to communicate by text, up from 96.5% in 2018.

Figure 10: Online activities



Social networking is the second most frequent online activity among Internet users, an increase from 85.6% in 2018 to 93.3% in 2020.

Reading online publications such as newspapers, magazines or e-books has become more popular. The survey found that the percentage of Internet users reading online publications has risen from 56.3% in 2018 to 68.3% in 2020.

Various online shopping platforms as well as e-wallets have brought convenience to Internet users. Online shoppers have increased from 53.3% in 2018 to 64.2 % in 2020. Similarly, those who conduct financial transactions online have increased from 54.2% in 2018 to 63.8% in 2020.

The Internet users who watch or download videos online is at 87.3%, an increment from 77.6% in 2018. More Internet users are able to stream video content through online platforms that offer a wide variety of shows to choose from. Furthermore, roughly two-thirds (65.4%) of Internet users listen to or download music, up from 46.8% in 2018.

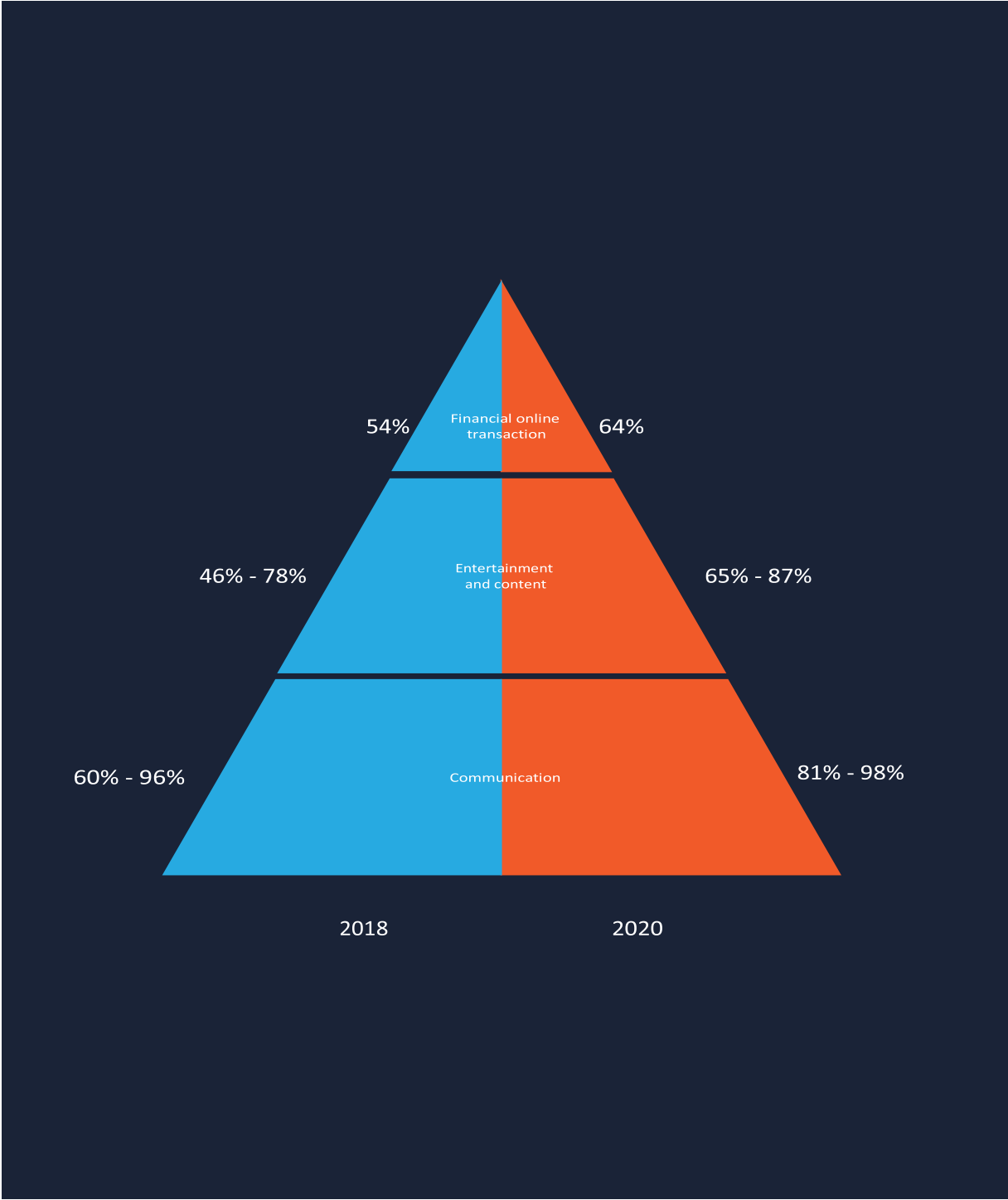
Internet users who play online games also increased from 35.2% in 2018 to 42.8% in 2020.

The split of online activities is useful to gauge the pervasiveness of the digital economy.

These activities can be analysed in the form of a pyramid; with the base representing the non-transaction-based online activities (for example, using the Internet to communicate and keeping social networks) and the summit representing transaction-based online activities (banking, online shopping, etc.).

IUS 2020 ascertains that there is a significant gap between transaction-based activities and non-transaction-based ones. The implementation of MCO has also greatly influenced the online behaviour of users throughout this study period.

Figure 11: Pyramid of transaction-based versus non-transaction-based online activities



In addition, despite having more Internet users per 1,000 population, the growth of Malaysia's digital economy lags that of Indonesia's and Vietnam's. The share of the digital economy as a percentage of the national GDP and its growth is also among the lowest and slowest respectively; compared to Indonesia, Vietnam, Thailand and Singapore¹³.

While transaction-based online activities have increased since 2018 (from mid-50s% to mid-60s%), there is room for the digital economy to grow faster to be at par with regional competitors.

¹³ e-Economy SEA 2019 by Google, Temasek, Bain & Co, p19,
https://www.blog.google/documents/47/SEA_Internet_Economy_Report_2019.pdf

Social networking and communication applications

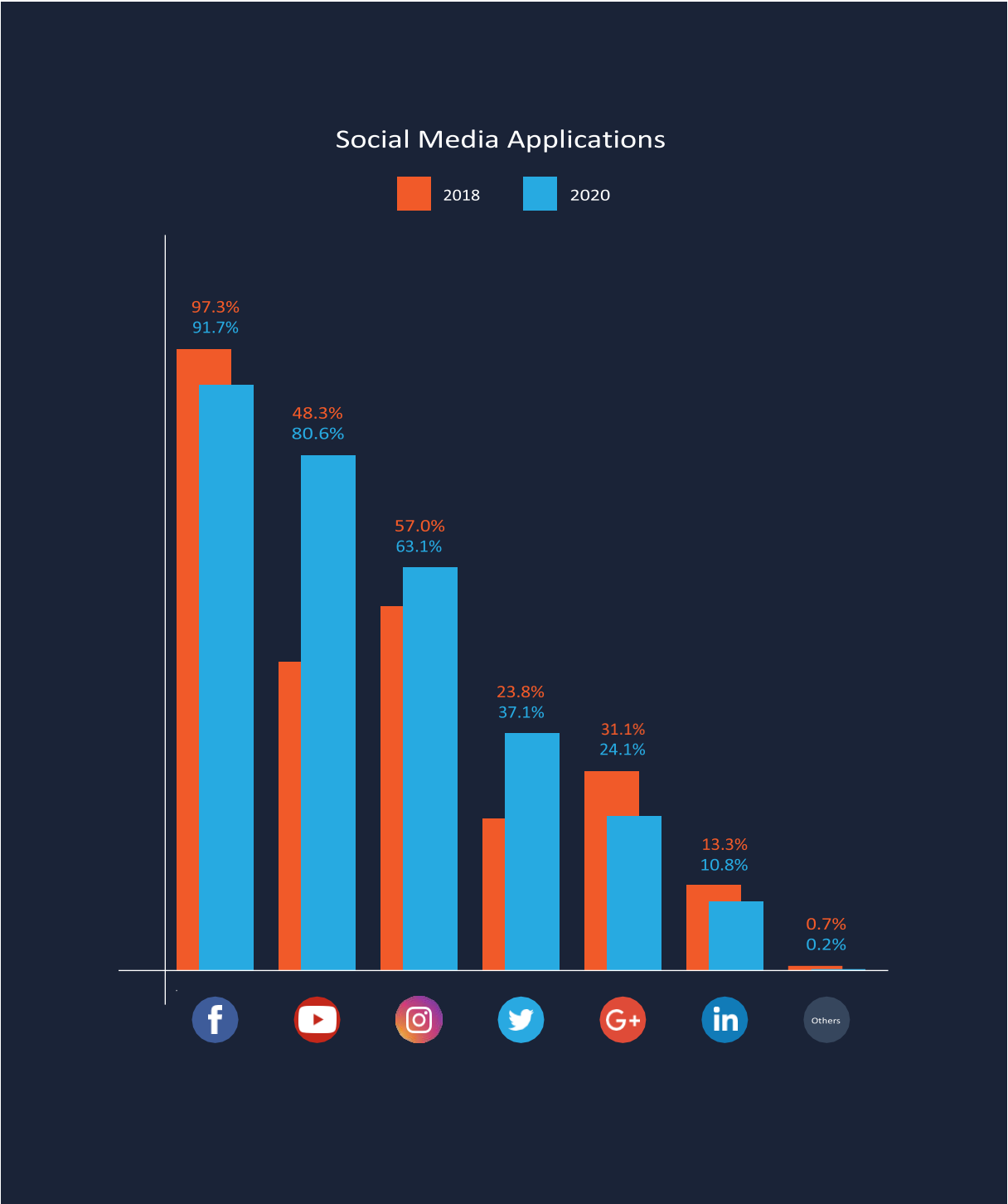
While Facebook remains the most widely used social media site in Malaysia, the percentage of Internet users using Facebook declined from 97.3% in 2018 to 91.7% in 2020.

Meanwhile, other sites such as YouTube, Instagram and Twitter have experienced an increase in their user base.

YouTube particularly has the most significant increase from 48.3% in 2018 to 80.6% in 2020.

Instagram users climbed from 57% in 2018 to 63.1% in 2020, whereas Twitter users have risen from 23.8% to 37.1% in the same period.

Figure 12: Social networking applications by popularity ranking¹⁴



14 Others include Zoom, Weibo, Netflix, Joox, Dim Sum

The trend is in line with changes in the social media landscape in the developed world.

Since 2018, there has been a decline in Facebook usage in the US. Another clear trend is the polarisation of social media users by age; younger users tend to identify more with Instagram and Snapchat¹⁵.

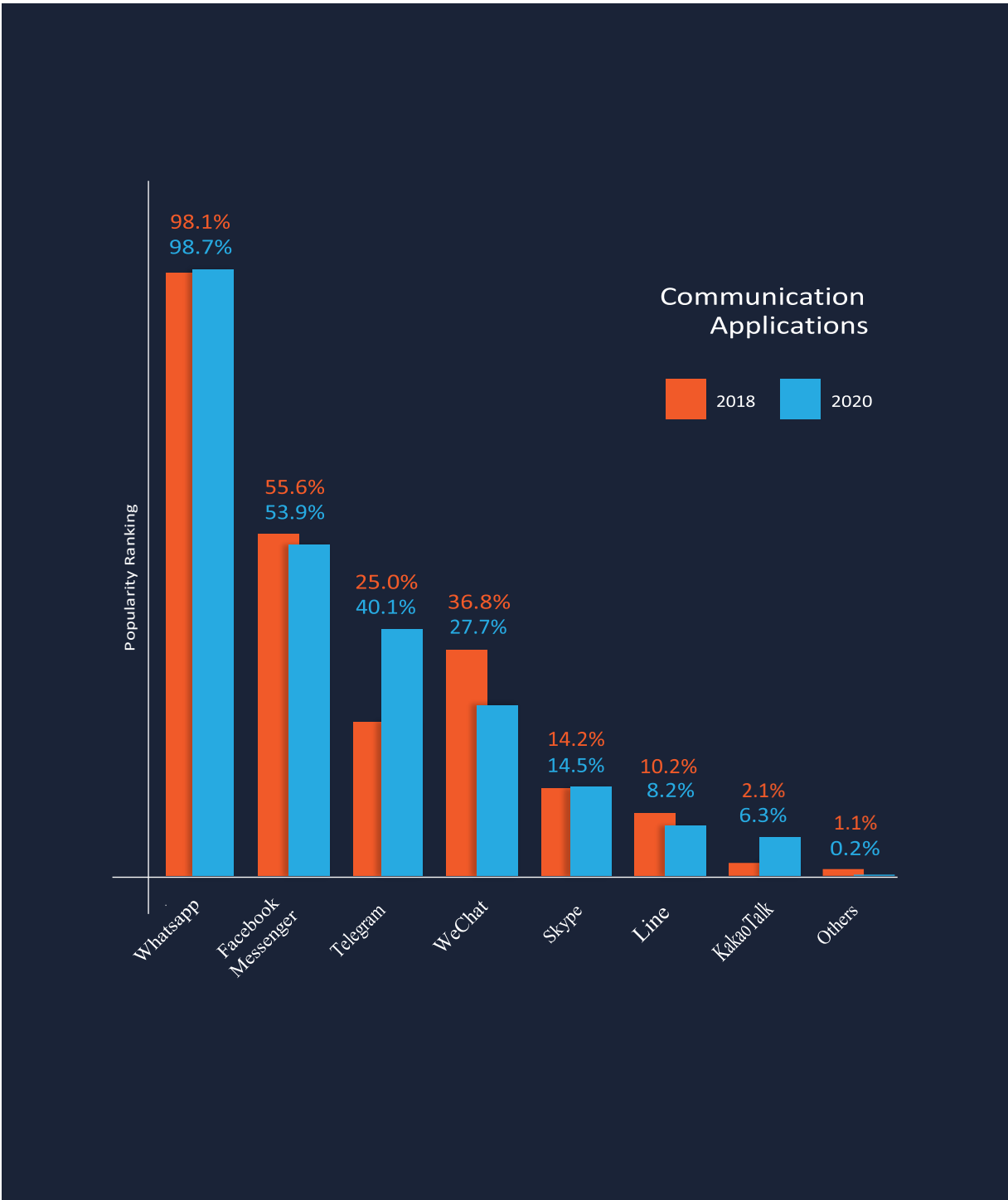
We can expect a similar trend in Malaysia in the future as the younger generation's identification with newer social media platforms will gradually dilute Facebook's top spot. For example, 88% of those who uses Instagram among the users in this study are aged 39 and below, a show that this platform is very popular among the young.

For communication applications, IUS 2020 established that Whatsapp has seen slow growth from 98.1% in 2018 to 98.7% in 2020. Meanwhile, Facebook Messenger dropped from 55.6% in 2018 to 53.9% in 2020.

One change that is worth noting is double digit growth of Telegram's users up from 25.0% in 2018 to 40.1% in 2020. Telegram's in Malaysia become a popular medium to disseminate official government information during the MCO. In addition, Telegram is also popular among parents and school goers as a medium for learning. Unlimited member groups is among feature of Telegrams which make this platform is gaining traction among the Internet users.

¹⁵ "The decline of social media: Facebook and Twitter leave us wanting" – Scott Fulton III, ZDNet; 21 January 2020

Figure 13: Communication applications by popularity ranking¹⁶



¹⁶ Others category include Zoom, Weibo

Digital Identity

The prevalence of Internet use brings about the risk associated with Internet frauds, online bullying and fake news. Nations struggle to strike the right balance between preserving online privacy and providing online safety and security from online criminal behaviours.

IUS 2020 includes a chapter on digital identity for the first time since 2012 to gauge the public's awareness and understanding of the issues.

User ID and password

Majority of Internet users were aware of the importance of Internet security.

Based on their online activities, 68.0% of Internet users did not use the same user ID and password to access their accounts. In addition, 68.7% have two or more user IDs and passwords.

Among those who have more than one user ID and password, more than half (57.1%) had trouble recalling their user IDs and passwords and had to reset them.

Figure 14: User ID and password – Same ID and password for multiple accounts usage

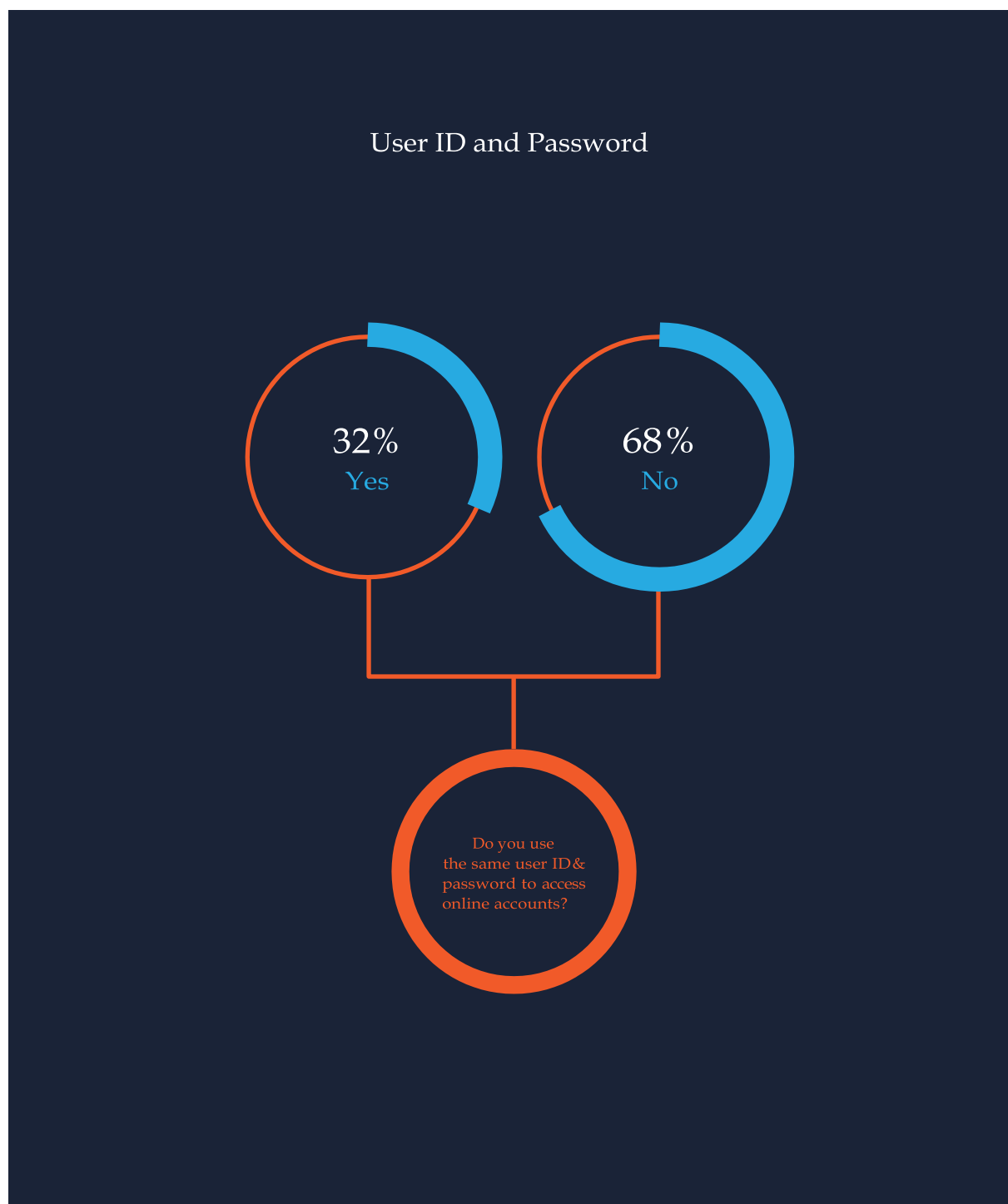
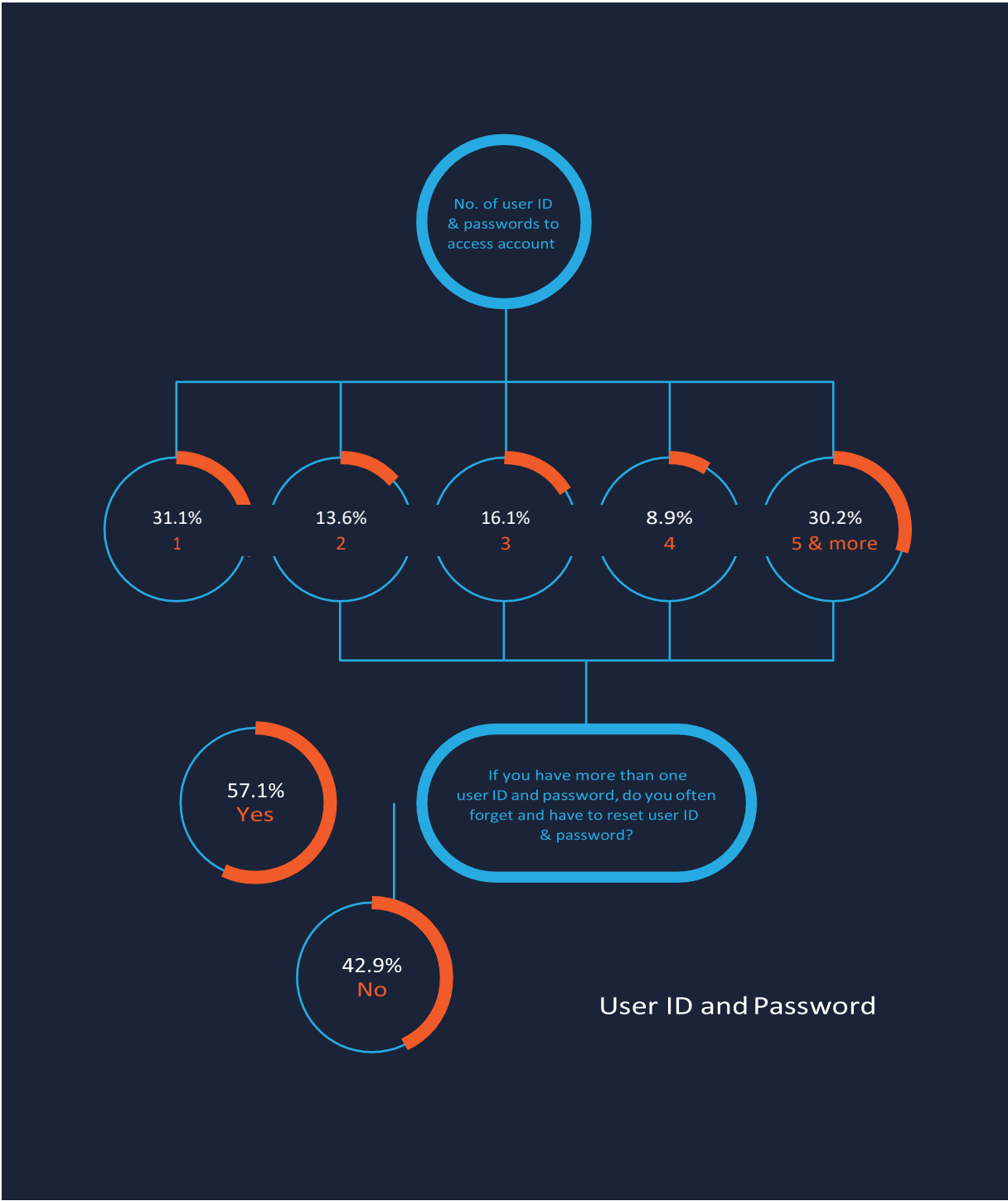


Figure 15: User ID and password – User ID and password ownership

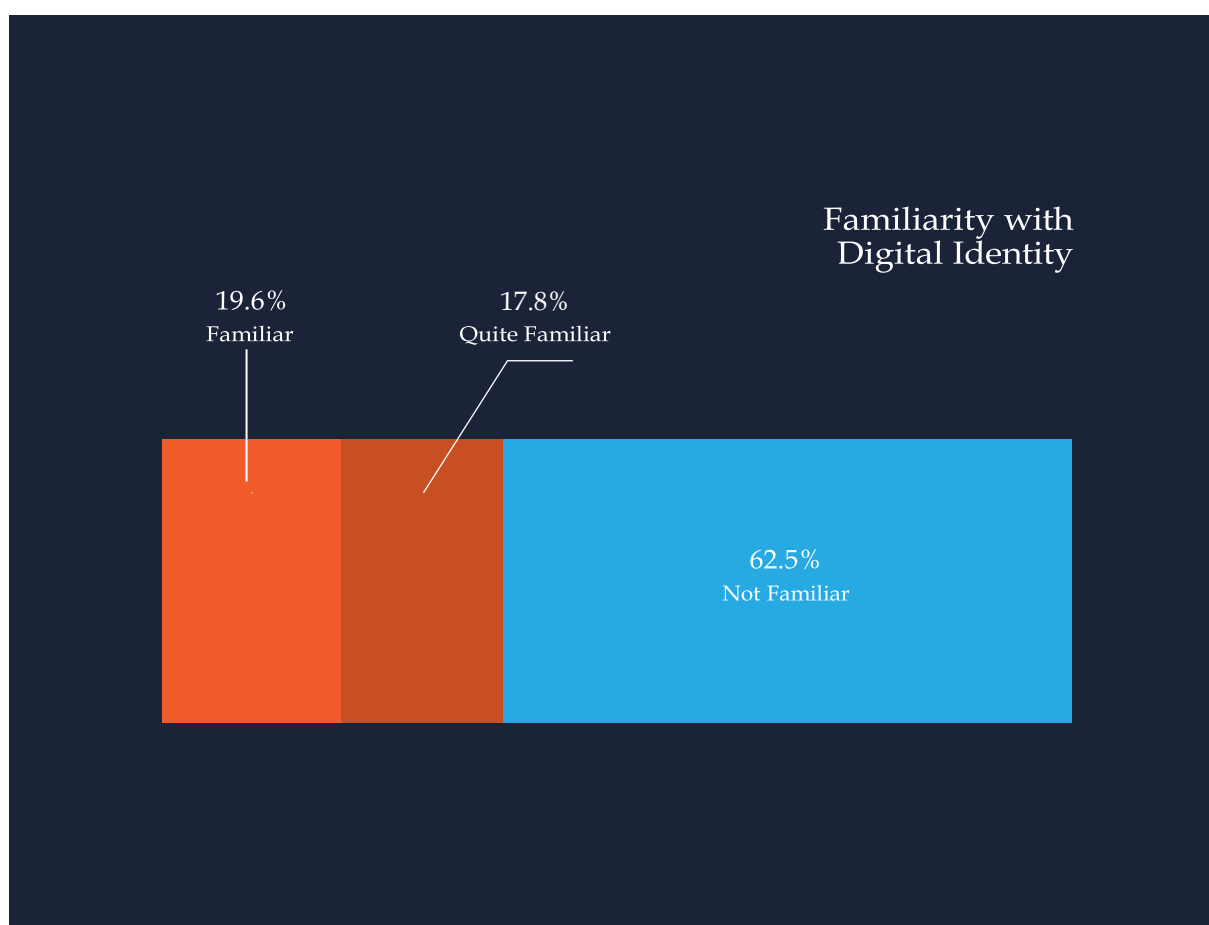


Familiarity with the concept of digital identity

When asked about their familiarity with digital identity, a staggering 62.5% of Internet users were not familiar with this concept.

On the other hand, 19.6% were familiar, while 17.8% were quite familiar.

Figure 16: Familiarity with digital identity ¹⁷



¹⁷ Total percentage for IUS 2020 may not add up to 100% as those with No answer are not included – No answer (0.1%)

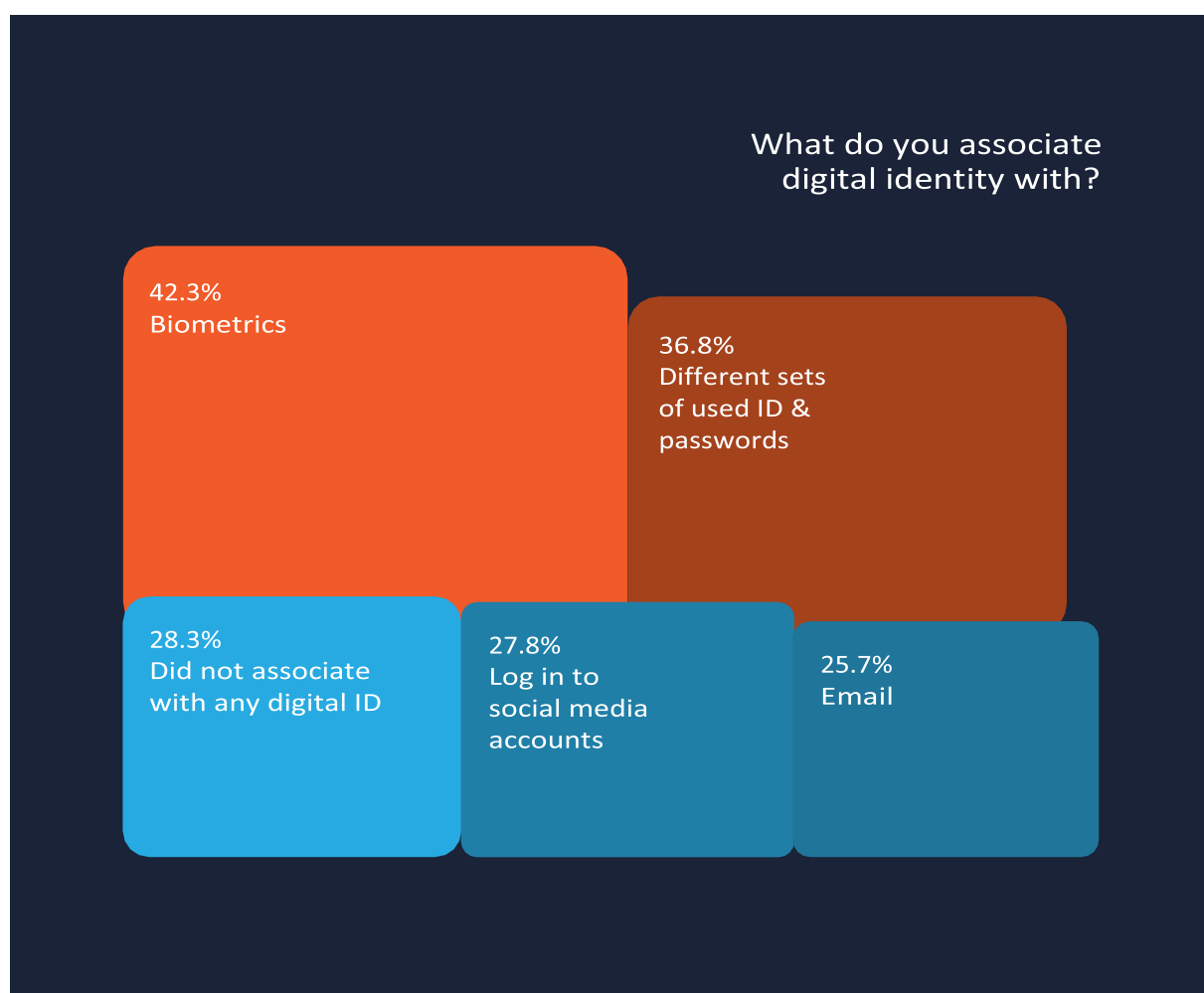
Most of them associated digital identity with biometrics (42.3%), followed by 36.8% who associated it with different sets of user IDs and passwords.

A little over a quarter of the users related digital identity with both logging in to social media accounts (27.8%) and email (25.7%).

Only a minority of Internet users (28.3%) did not associate a digital identity with those mentioned above.

This suggests that while most of them said that they were not familiar with digital identity, they had some understanding of the term.

Figure 17: Association with digital identity





Online Content Sharing

The prevalence of social media had made the Internet as one of the platform for accessing information. The Internet have changed how Internet users consume news and information online.

The ease of sharing and frequency of social media access by users have become driving factors for these platforms to bring traffic to news sites and other digital sources of information.

The latest data from Reuters Institute shows that the most accessed sources of news in Malaysia are Internet-based (86.0% access online news and 70.0% access news from social media) compared to traditional sources of news (50.0% and 30.0% access news from TV and print respectively)¹⁸.

¹⁸ Reuters Institute's Digital News Report 2018, p99, https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2020-06/DNR_2020_FINAL.pdf

Online content sharing has become a crucial issue as cases of fake news, cyberbullying and content-related online criminal activities are on the rise around the world. A study done by Ipsos revealed an increasing number of parents reporting cyberbullying experienced by their children since 2018¹⁹.

IUS 2020 probed Internet users' online content sharing behaviours in more depth as compared to previous years' surveys.

¹⁹ Cyberbullying facts and statistics for 2020 - <https://www.comparitech.com/internet-providers/cyberbullying-statistics/>

43% (62%)

Have shared content
online (compared to
62% in 2018)

53% (38%)

Have not shared
content online
(compared to 38%
in 2018)

There was a marked decreased of users' sharing content online from 62% in 2018 to 43% in 2020, probably due to increase of public awareness on the danger of sharing false information.

Type of online content shared

News (66.9%) and public service announcements (60.9%) are the most shared online contents. There is a slight increase in percentage of news shared online from 63.9% in 2018. These findings are in line with Reuters Institute's findings that online news has become the most dominant source of news²⁰.

This increase may also be due to the MCO that coincided with the survey fieldwork. Internet users rely heavily on updates of Covid-19 cases given by the authorities online to find out official instructions on daily activities.

Entertainment and humorous contents are also among those most shared with up to 56.1% of the Internet users doing so.

Other types of online contents saw less sharing in 2020, especially political and education contents.

Only 17.2% shared contents related to political issues in 2020, compared to 32.1% in 2018. A point worth noting is 2018 was the year of a general election; so, it is expected that the sharing of political contents would have spiked.

²⁰ Reuters Institute's Digital News Report 2018, p99, https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2020-06/DNR_2020_FINAL.pdf

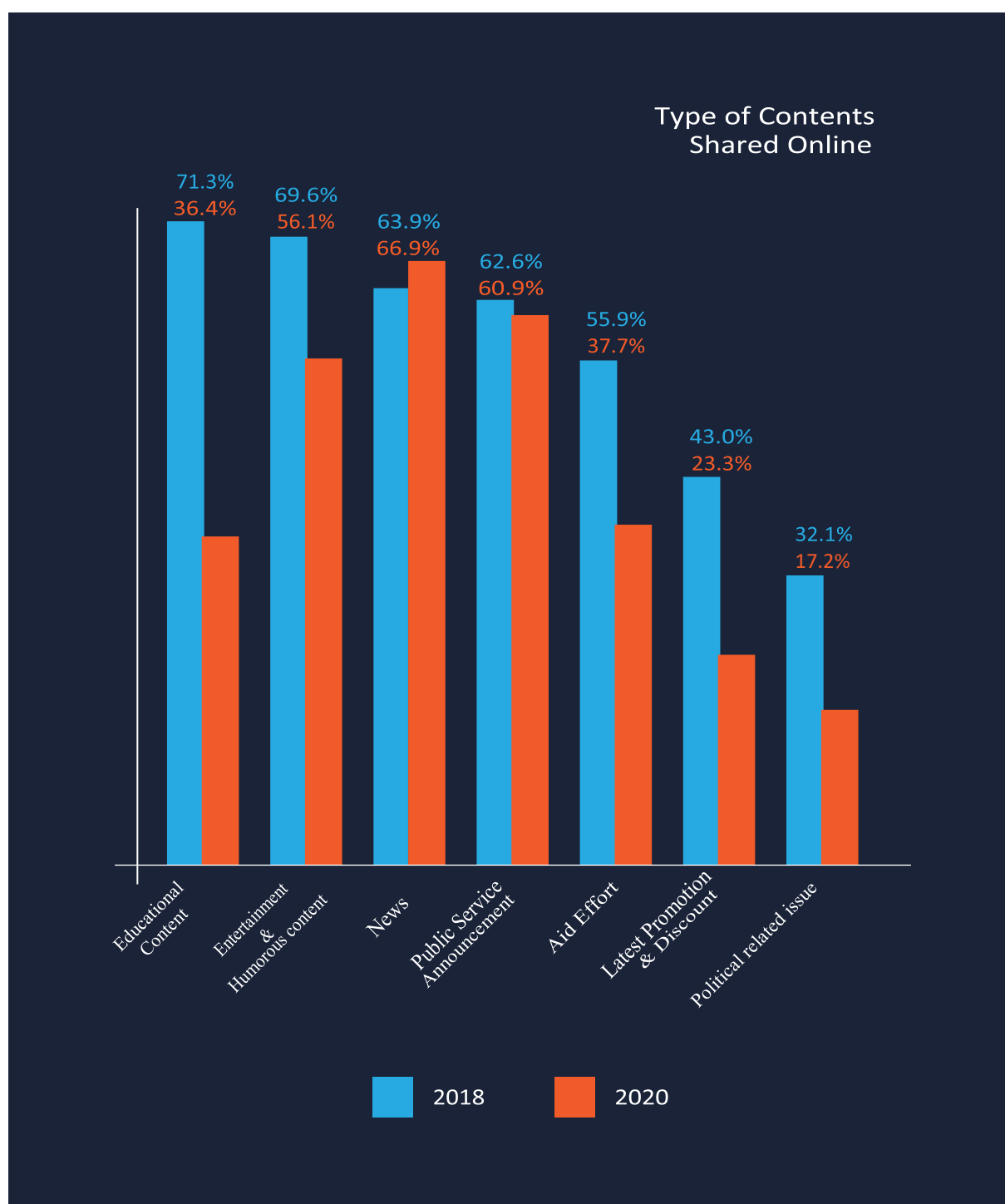
Surprisingly, educational contents sharing also saw a significant drop in 2020. Only 36.4% of Internet users shared educational content in 2020; almost half of the sharing in 2018.

The equally significant decrease in sharing of the latest promotion and discount and aid effort seems to correlate with the heightening concerns of fake news and online frauds²¹.

IUS 2020 indicates that Internet users become more alert and careful to share online contents that carry the risk of misleading the public or furthering online scams.

²¹ More than 90% jump in cyber crime complaints during MCO — Zahidi - <https://www.theedgemarkets.com/article/more-90-jump-cyber-crime-complaints-during-mco-%E2%80%94-zahidi>

Figure 18: Types of contents shared online



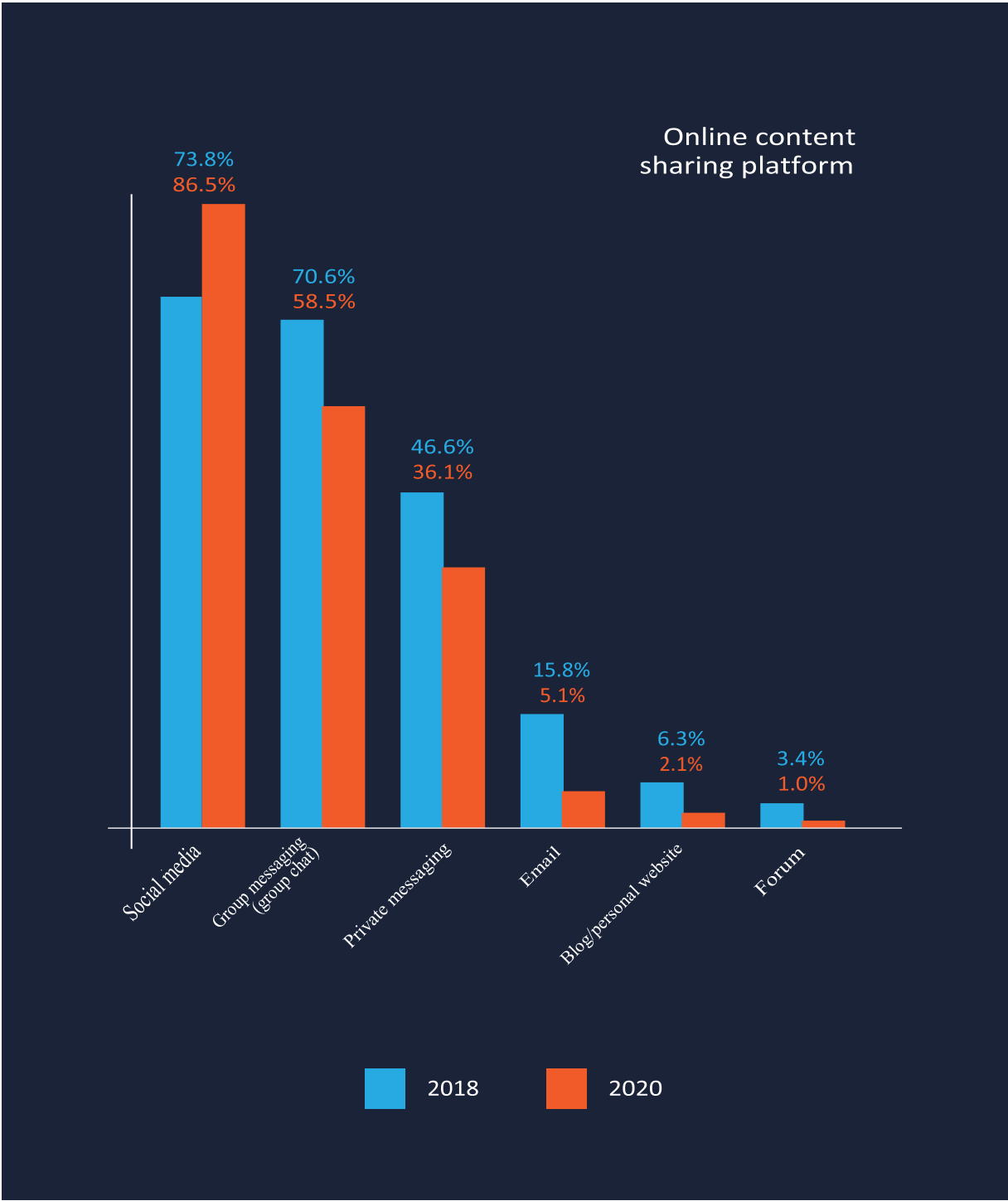
Online content sharing platform

As much as 86.5% of Internet users share contents online through social media, an increase from 73.8% in 2018 at the expense of all other platforms. Ease of sharing functions through social media that require minimal effort using “share” button would most likely be the reason why social media is preferred by Internet users.

While the diminishing significance of emails and blogs are expected, IUS 2020 established that sharing through messaging platforms had also gradually decreased. This may be due to the limitations on forwarding messaging imposed by some private messaging services²².

²² Keeping WhatsApp Personal and Private – Whatsapp is now introducing a limit so that messages with double arrows can only be forwarded to one chat at a time as an effort to constrain virality on its platform.

Figure 19: Online content sharing platforms



Purpose of online content sharing

While the ranking of reasonings for sharing contents online did not change from 2018 to 2020; the drop in the percentage of Internet users who associated with each reason is more glaring.

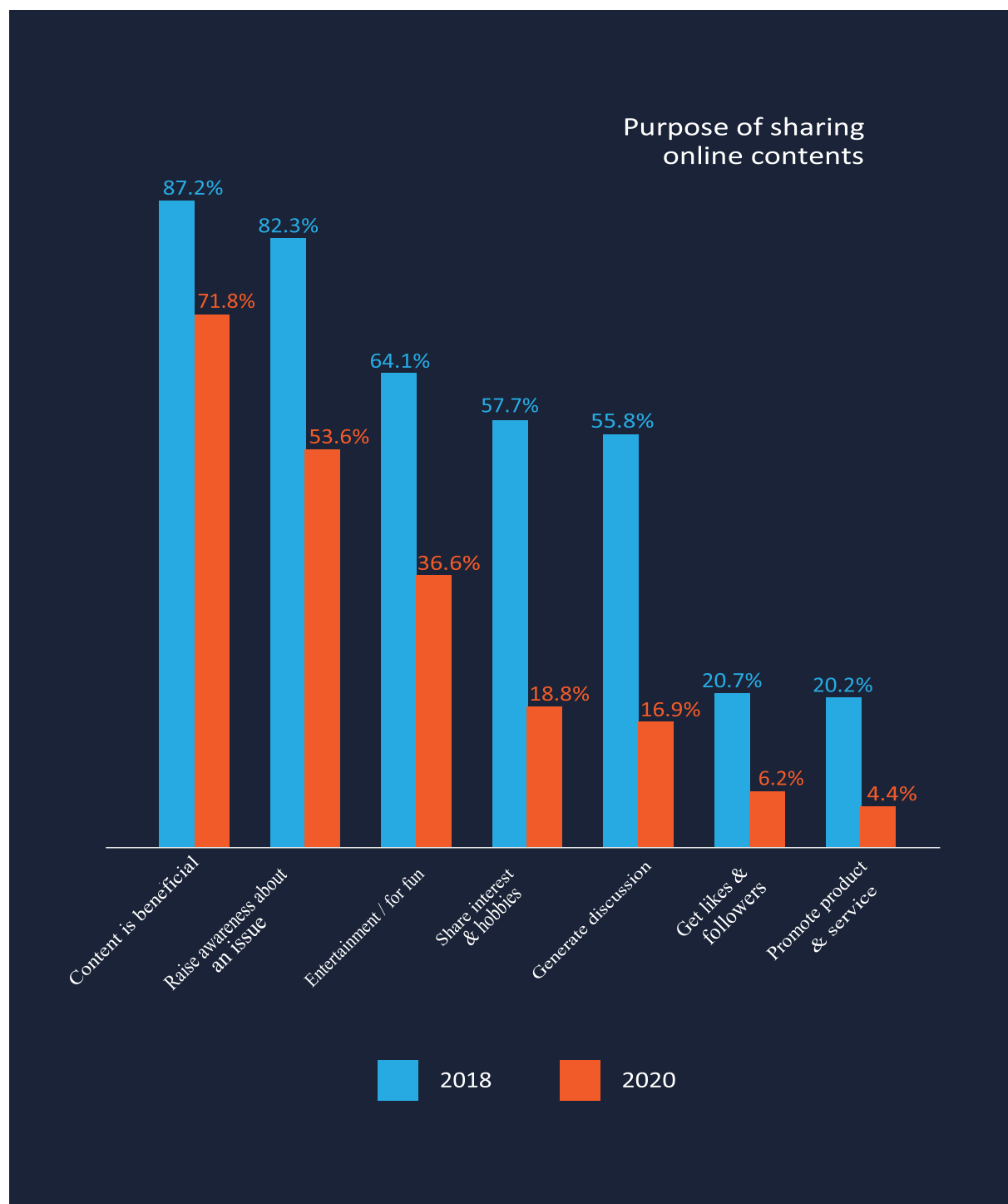
Most Internet users shared online contents because the contents were beneficial, or they wanted to raise awareness about an issue, or only for entertainment purpose.

However, only 71.8% of Internet users shared contents because they were beneficial in 2020 compared to 87.2% in 2018. The drop is even more significant for sharing of contents to raise awareness: only 53.6% shared contents for this purpose compared to 82.3% in 2018.

This finding seems to support the general hypothesis that Internet users have grown wearier with the type of contents available online.

**71.8% shared contents
because they were
beneficial & 53.6% to
raise awareness**

Figure 20: Purpose of sharing contents online



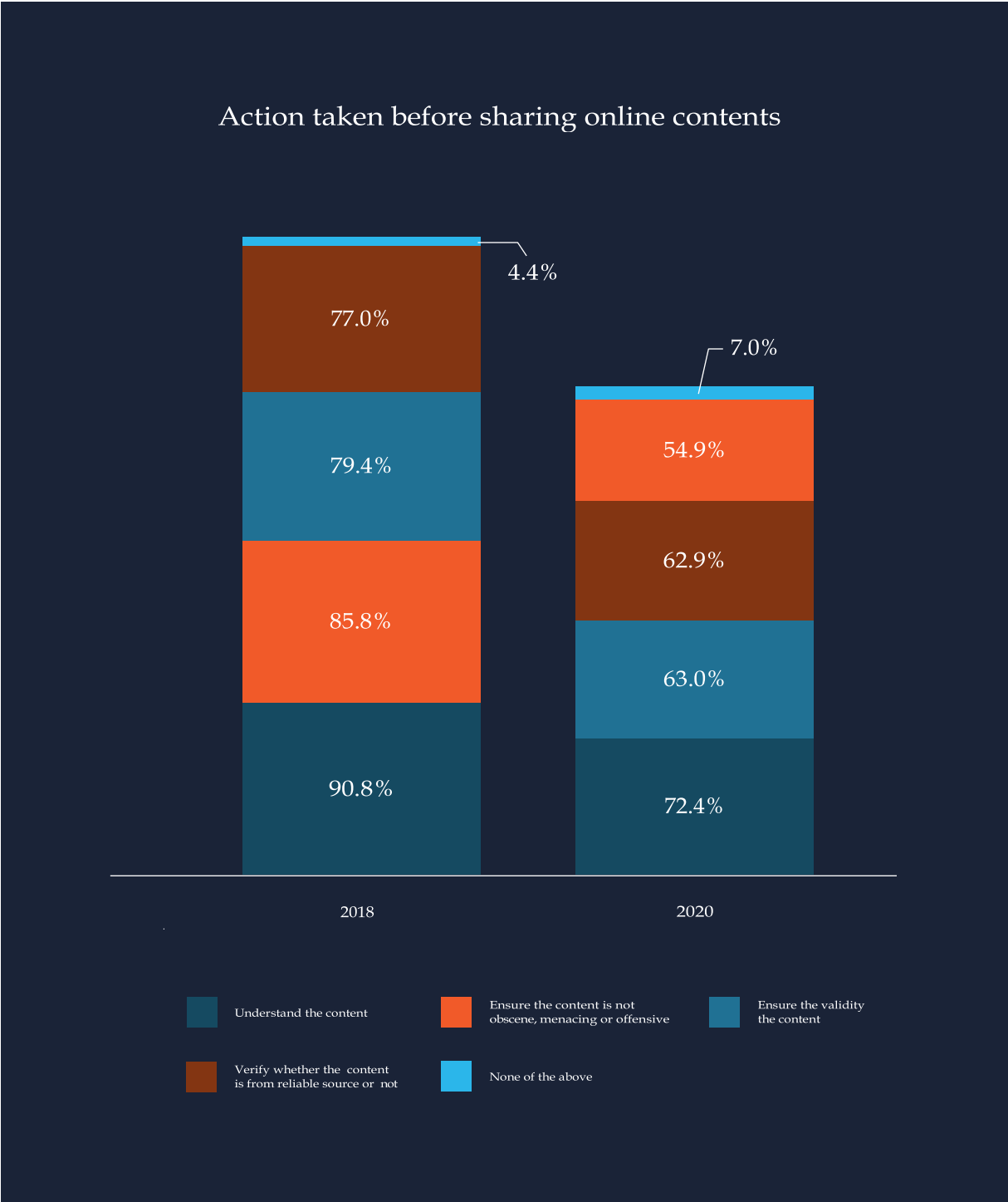
Action taken before sharing content online

IUS 2020 detected a change in Internet users' behaviour before sharing content online that supports further the hypothesis that concerns over the harm of Internet contents are on the rise.

In terms of the actions taken before sharing contents online, checking the validity and the source of contents were the second and third most taken actions by respondents in 2020; compared to the last survey (they ranked third and fourth respectively in 2018).

While this is an encouraging sign, the percentage of Internet users who took appropriate actions before sharing online contents had also increased. There were fewer Internet users who ensured they understood a content, verified the content and checked its source before sharing in 2020 compared to in 2018.

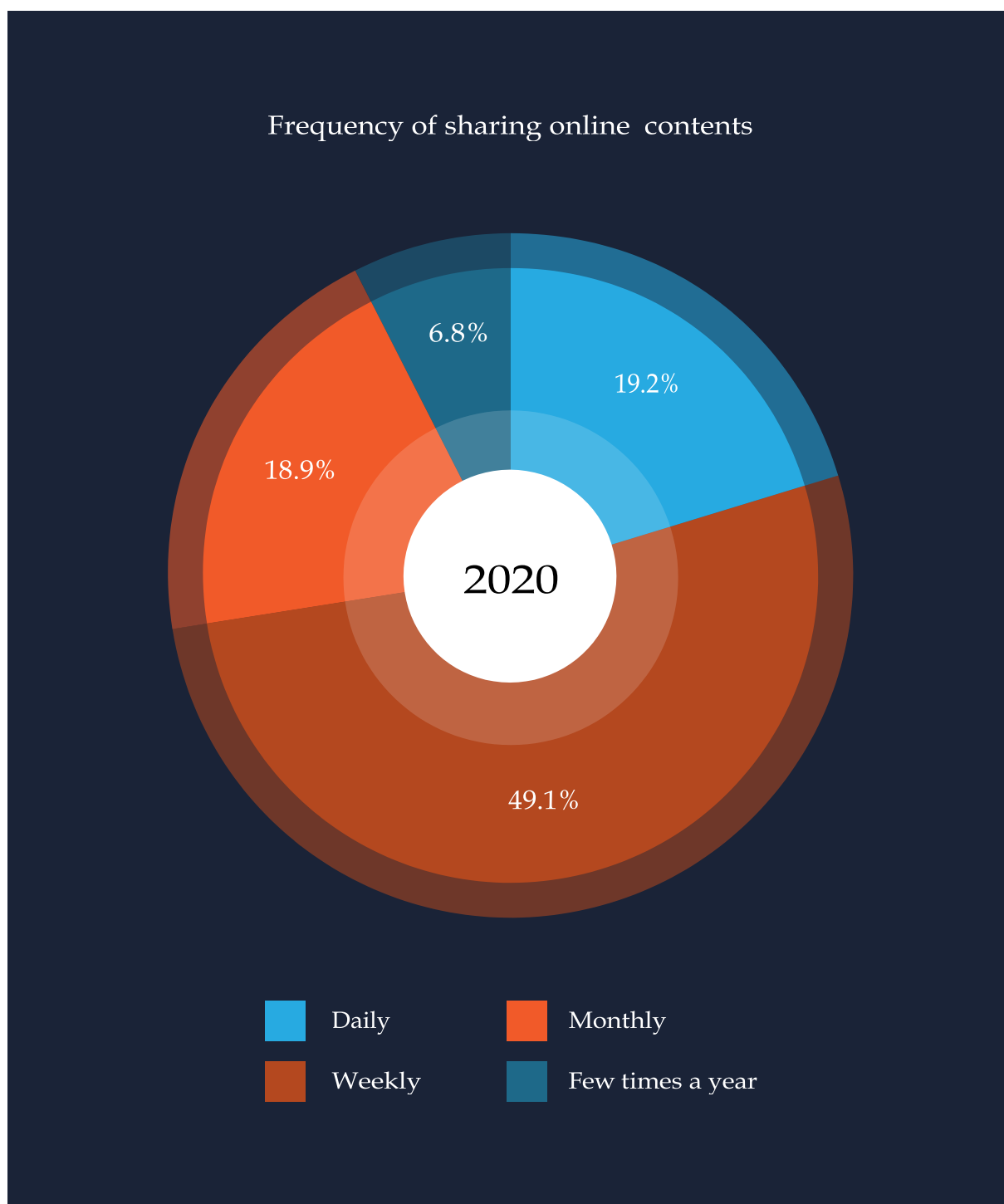
Figure 21: Actions taken before sharing content online



Frequency of sharing content online

Most Internet users (49.1%) share contents online weekly. Only 19.2% of Internet users share contents daily.

On a positive note, 78.9% of Internet users only share content online after reading it through, providing a glimpse of the general awareness of sharing contents responsibly among users.

²³Figure 22: Frequency of sharing contents online

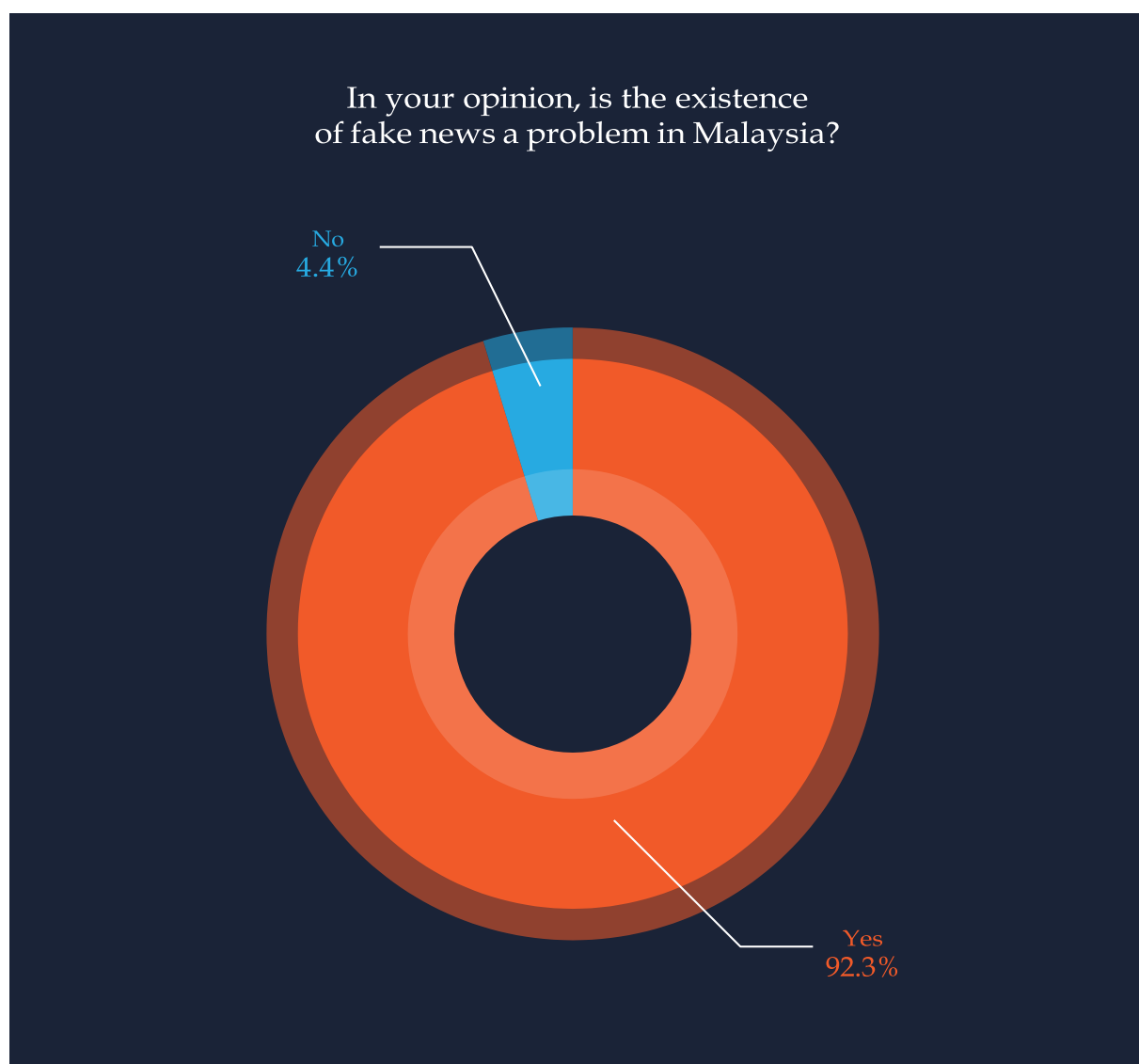
²³ Total percentage for IUS 2020 may not add up to 100% as those with Don't know/Refused/No answer are not included – 4.2%

Awareness of fake news

The majority of Internet users (91.3%) are aware and understand the issues surrounding fake news.

Correspondingly,
92.3% of them
consider fake news
as a problem.

²⁴ Figure 23: Internet users who consider fake news a problem



This finding confirms the growing awareness and concerns over fake news and related harm it caused to society in Malaysia, especially midst the Covid-19 pandemic²⁵.

²⁴ Total percentage for IUS 2020 may not add up to 100% as those with Don't know/Not sure are not included – Don't know/Not sure (3.3%)

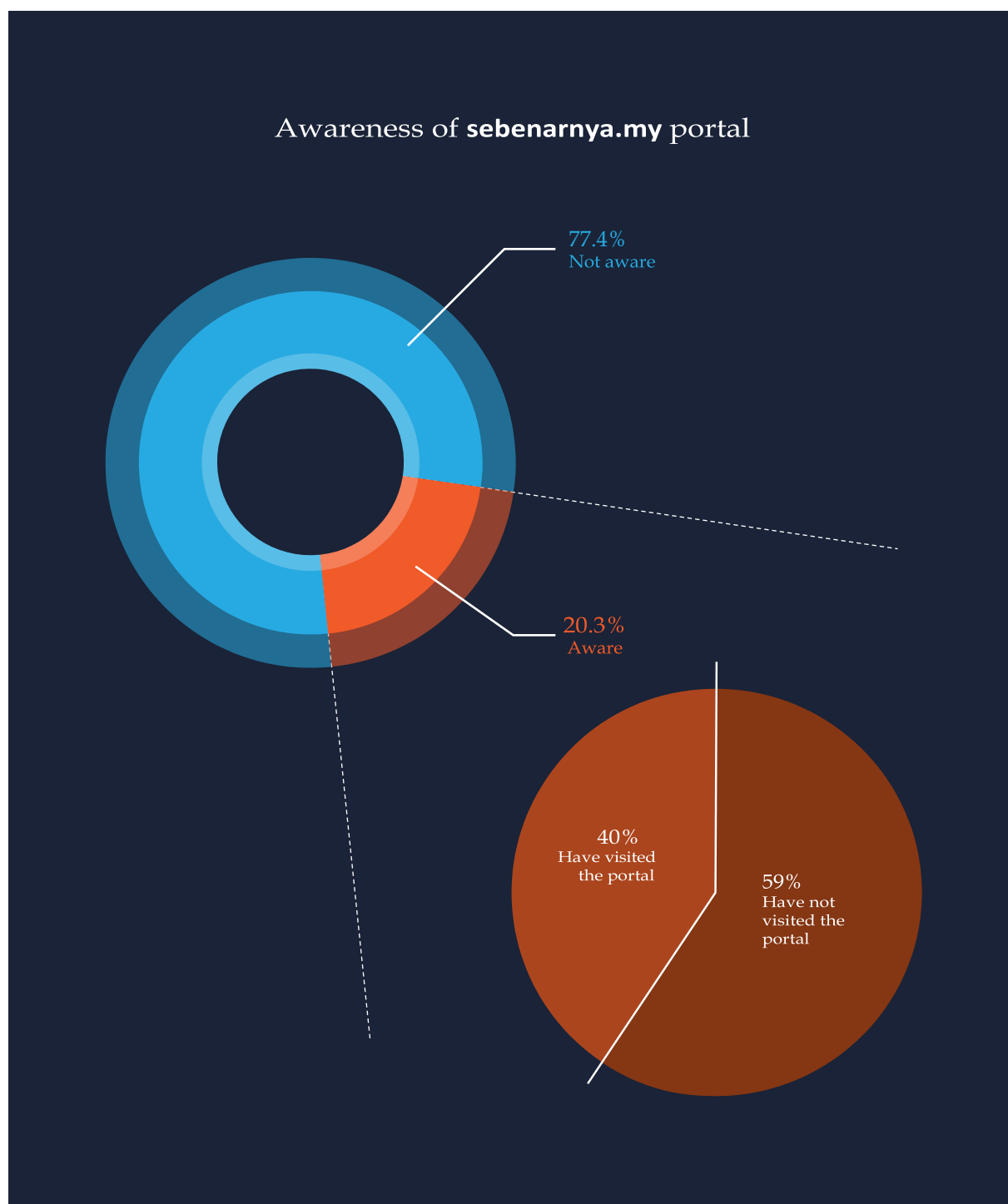
²⁵ Covid-19: Public awareness on the dangers of spreading fake news increases - <http://english.astroawani.com/malaysia-news/covid-19-public-awareness-dangers-spreading-fake-news-increases-245663>

sebenarnya.my portal

MCMC operates ***sebenarnya.my*** portal to combat the spread of fake news. This survey shows that the level of awareness of the existence of the ***sebenarnya.my*** portal is still low among the public. Only 20.4% of the Internet users are aware of the existence of this portal.

Out of the 20.3% who were aware, 59.4% have not visited the portal.

⁶⁷ Figure 24: Awareness on **sebenarnya.my** portal



26 Total percentage for IUS 2020 may not add up to 100% as those with *Don't know/Not sure/No answer* are not included –
 Awareness on **sebenarnya.my**: *Don't know/No answer* (2.3%)
 Visited **sebenarnya.my**: *Don't know/Not sure* (0.9%)



Online Security & Privacy

As more activities and transactions are digitalised, the risk of a data breach has risen in proportion. Globally, there was a 54.0% increase in a reported data breach in the first six months of 2019 compared to the same period in the previous year²⁷.

Based on the ITU 's Global Cybersecurity Index 2018, Malaysia ranked eighth in terms of nation with the highest level of commitment to cybersecurity²⁸.

IUS 2020 delved deeper into the issue of online security and privacy in tandem with the societal change in attitude towards data protection and privacy.

²⁷ "2019 data breaches: 4 billion records breached so far" - Dan Rafter, NortonLifeLock Inc, us.norton.com

²⁸ ITU's Global Cybersecurity Index 2018

47%

feels secured when
using the Internet

23%

feels neutral when
using the Internet

17%

do not feel
secured when using
the Internet³⁷

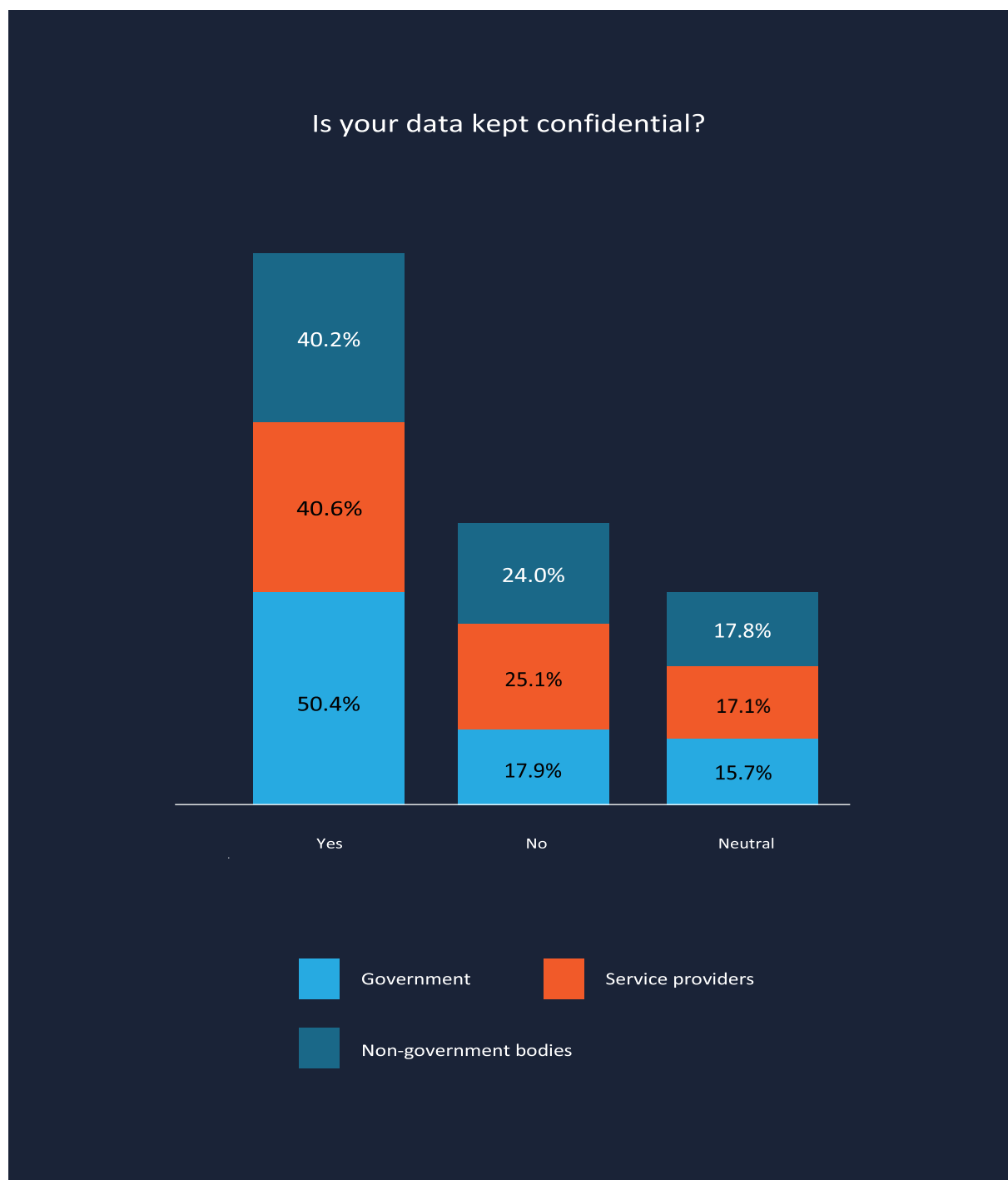
29 Remaining percentages: Very secured (3.7%), Not very secured (0.9%), Don't know/Refused (8.6%)

Confidentiality of personal data

Internet users felt government bodies generally protect the confidentiality of their personal information better than service providers and non-government organisations did.

Slightly more than half (50.4%) of Internet users feel government bodies keep their data confidential. A lesser number of respondents think the same with service providers and non-government organisations, with a percentage of 40.6% and 40.2% accordingly.

While it is reassuring that Internet users rate the government as the trustworthy in keeping users data confidential, there is room for improvement to push the confidence level higher.

³⁰ Figure 25: Is your data kept confidential?

³⁰ Total percentage for IUS 2020 may not add up to 100% as those with Don't know/Refused are not included – Government (16.0%), Service providers (17.2%), Non-government bodies (18.0%)

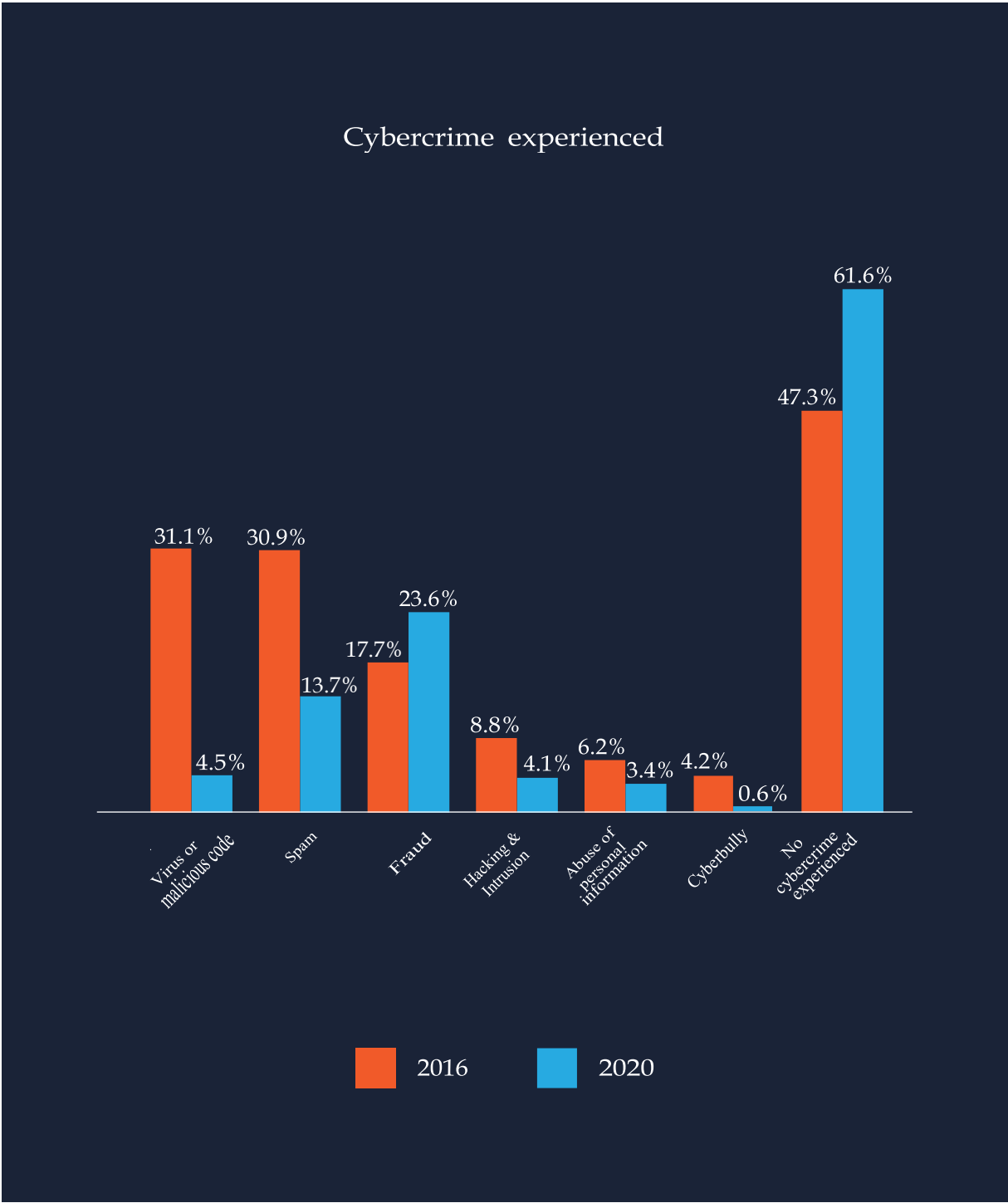
Cybercrime experienced

The IUS 2020 also gauged cybercrimes experienced by Internet users. These include virus or malicious code, spam, fraud, hacking and intrusion and abuse of personal information. Except for online fraud, all other cybercrimes had shown a steep decrease since 2016.

Virus or malicious code decreased from 31.1% to 4.5%; spam decreased from 30.9% to 13.7%; hacking and intrusion decreased from 8.8% to 4.1%, abuse of personal information decreased from 6.2% to 3.4% and cyberbully down significantly from 4.2% to 0.6% in the same period.

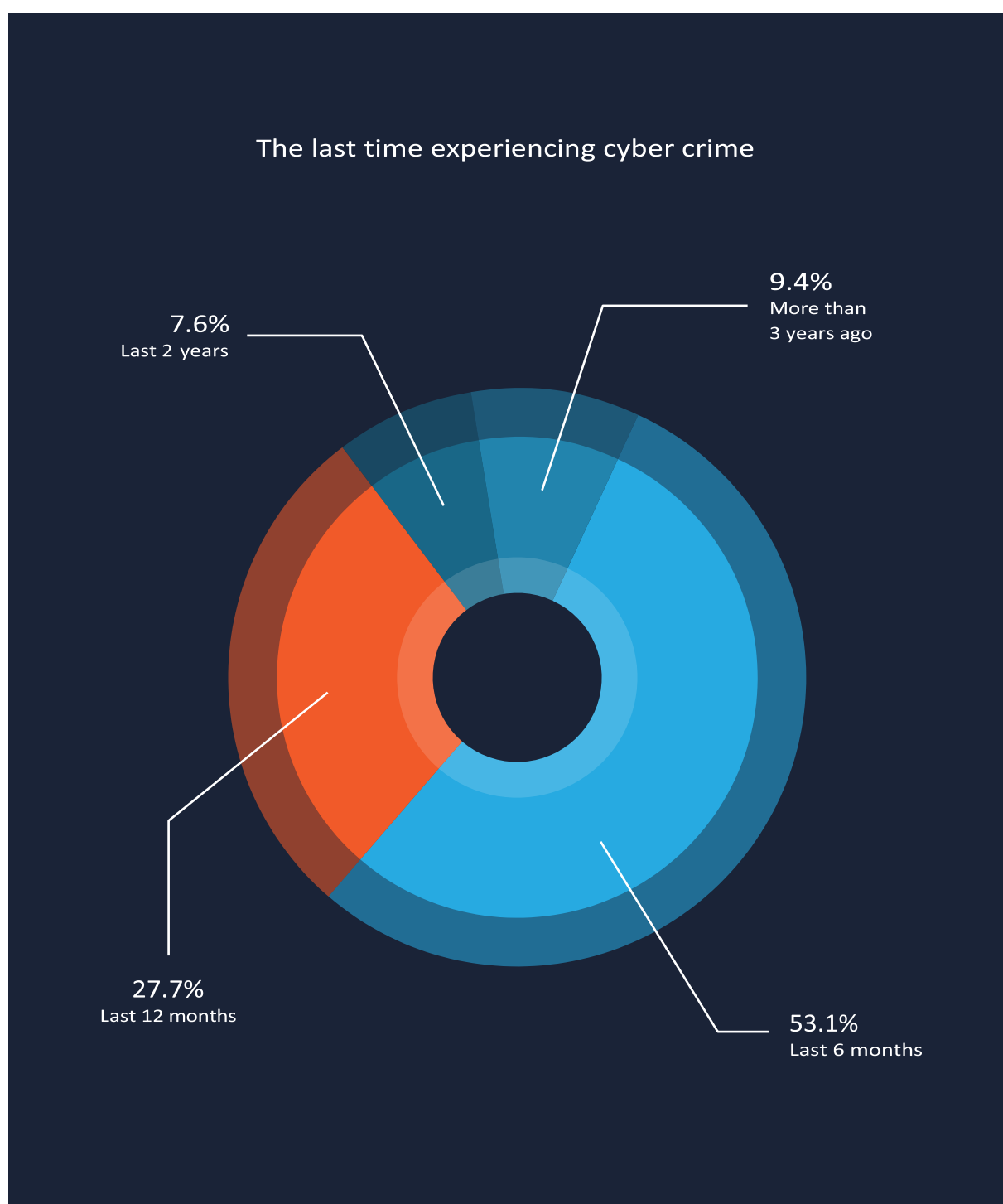
More encouragingly, 61.6% of Internet users did not encounter any cybercrime in 2020; up from 47.3% in 2016.

Figure 26: Cybercrimes experienced



Among users who had experienced cybercrime, 53.1% had an experience over the last six months. On the other hand, 44.7% had encountered a cybercrime in the previous twelve months or more.

Figure 27: The last time experiencing cybercrime³¹



³¹ Total percentage for IUS 2020 may not add up to 100% as those with Don't know/Refused are not included – Don't know/Refused (2.2%)

Action taken following cybercrime experienced

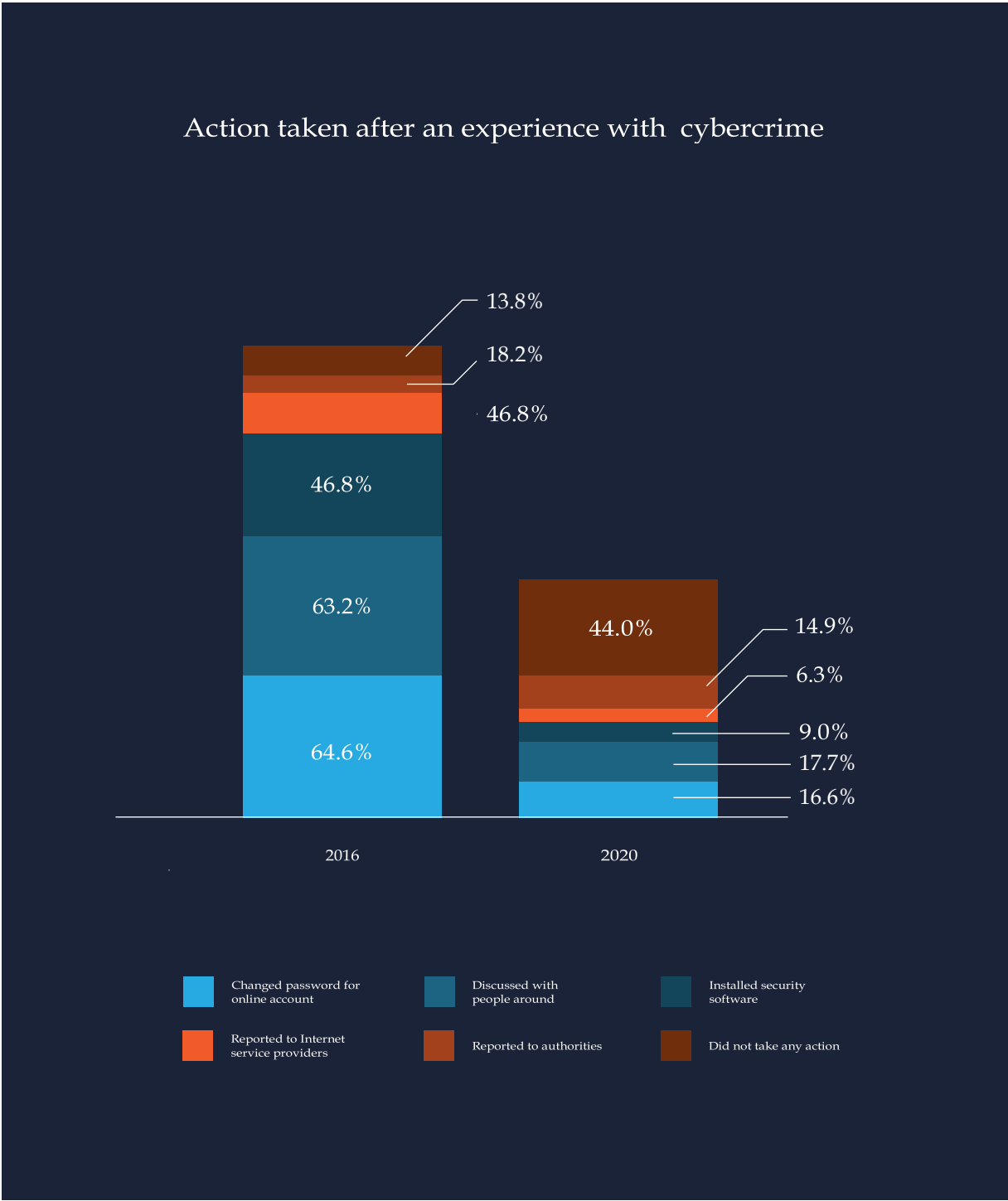
There was significantly less system- or software-related remedies taken by Internet users in 2020 in the aftermath of experiencing cybercrime.

This tallies with an earlier finding that software-related cybercrime (such as malicious code or hacking) has decreased significantly since 2016, leaving online fraud as the main cybercrime encountered by Internet users.

However, 44.0% of Internet users did not take any action despite being a victim of a cybercrime.

The survey did not gauge the reason Internet users did not take any actions upon their experience with cybercrime. Hence, further study should be included to understand this behaviour.

Figure 28: Actions taken after experiencing cybercrime



Online privacy

The attitude towards online privacy has not changed much since 2016.

The majority of Internet users take online privacy seriously. A majority of 60.9% consider it as extremely important, compared to 59.1% in 2016. Likewise, 36.4% of Internet users think online privacy was important, up from 32.8% in 2016.

Sharing of personal information online

Out of the Internet users, only 30.6% shared personal information online, while 67.6% did not.

There has not been a discernible change in the trend of personal information shared online.

The type of the topmost information shared (for example photos, date of birth and real name) seems to correlate with an increase in social media use since 2016.

Surprisingly, most Internet users (at 80.3%) shared their real name online. This was a significant increase from a figure of 55.0% in 2016.

Additionally, 76.7% of Internet users shared photos of themselves online in 2020 (compared to 69.8% in 2016). This was followed with the sharing of date of birth at 65.2% (2016: 58.5%).



Child Online Safety & Parental Control

The worldwide lockdown due to the pandemic had caused the time children spent online to skyrocket. 48.0% of children in the USA were spending more than six hours per day online, an increase of 500% from before the crisis³². In February 2020, a report by the Association of Play Industries found that in less than a decade there has been a 50% increase in children's discretionary screen time³³.

The same phenomenon also takes place in Malaysia. Experts have expressed concerns that children spent most of their waking hours in front of gadgets, that was exacerbated further by the MCO³⁴.

The sudden and drastic increase of online time adds on to the issues of child online safety which has always posed a significant risk to parents, even before the pandemic.

IUS 2020 established that the number of children age five to seventeen years old who use the Internet has grown by 155% from 2016.

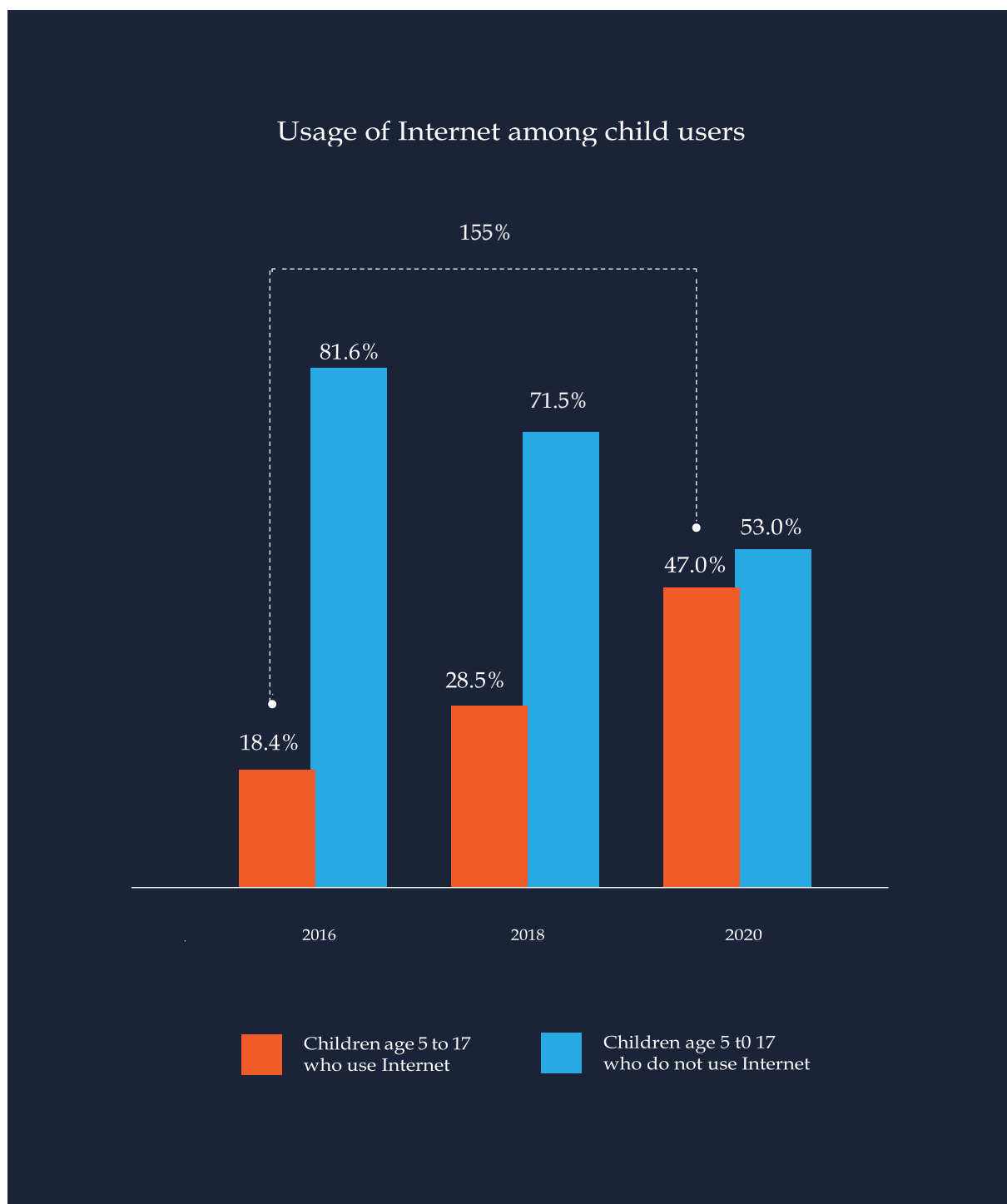
Of the children who access the Internet own, 56.3% a device themselves³⁵.

32 "ParentsTogether surveys show most parents feel the risk of increased screen time and want Congress and Big Tech to do more to keep kids safe" – Parents Together Foundation; 23rd April 2020

33 "COVID19: 7 ways to keep children safe online"- ITU

34 "Control children's screen time during MCO to maintain good eye health" – BERNAMA; 20th April 2020

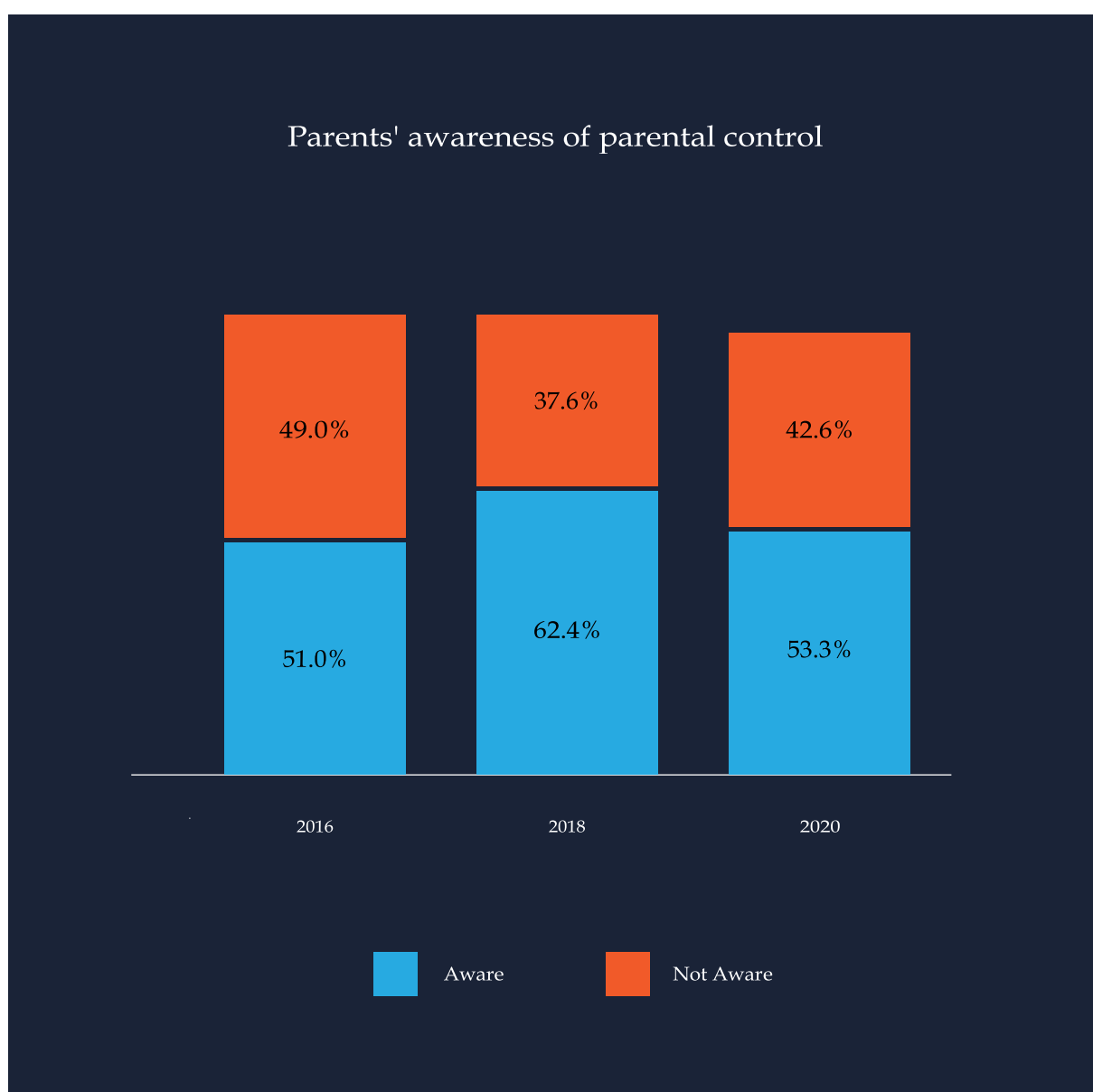
35 Parents were asked, by referring to a child with the most recent birthday, whether the child owns a device or not – IUS 2020

Figure 29: Usage of Internet among children

Awareness and use of parental control

Despite the 155% increase in the number of children using the Internet, parents' awareness of parental control decreased from the 2018 (62.4%) to 53.4%. In 2020, only 34.4% of parents use parental control to safeguard their children on the Internet.

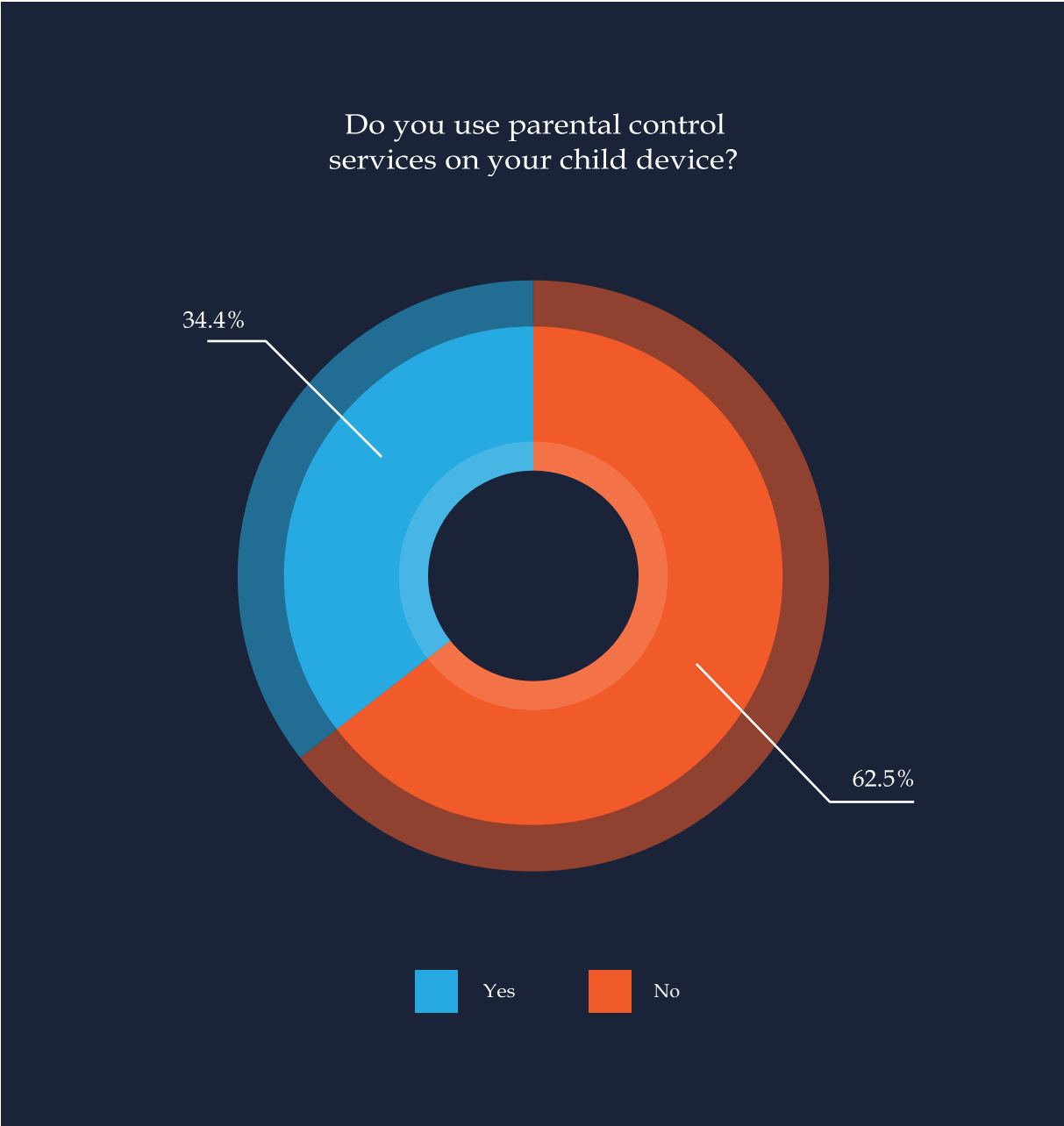
³⁶ Figure 30: Awareness of parental control among parents



³⁶ Total percentage for IUS 2020 may not add up to 100% as those with Don't know/Refused are not included – Don't know/Refused (4.1%)

In 2020, only 34.4% of parents use parental control to safeguard their children on the Internet.

³⁷ Figure 31: Usage of parental control among parents



³⁷ Total percentage for IUS 2020 may not add up to 100% as those with Don't know/Refused are not included – Don't know/Refused (3.1%)

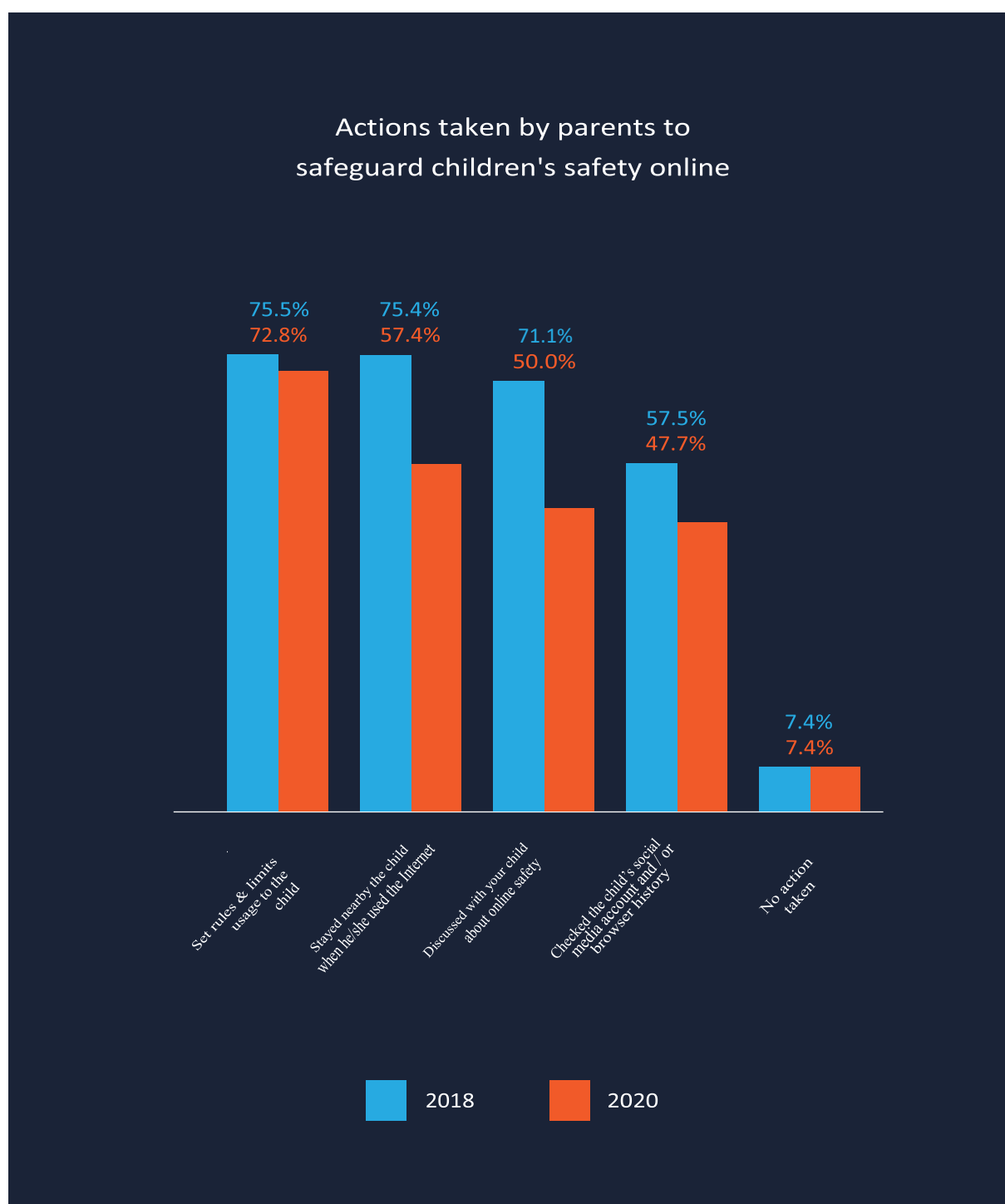
Action taken by parents to ensure online child safety

One cause for concern was the level of identification with specific actions that parents took to safeguard children's safety online.

When given a series of online safety actions that they identified with, on average fewer parents could name specific steps they took in 2020; compared to the results of 2018.

The most common step that parents took was to set rules and limits the usage of the Internet. The top four most common actions identified by parents were non-system related: apart from setting rules on Internet usage (72.8%), parents either stayed nearby the child (57.4%); or discussed with the child user about online safety (50.0%) or resorted to checking child user's social media accounts (47.7%).

Figure 32: Actions taken to safeguard children's safety online



Reason for not using parental control

A significant number of parents are not familiar with parental control.

The percentage of parents in 2020 who said they never heard of parental control is 49.6%. Though this is lower than 2016's 59.1%, it is still relatively high in a society where Internet usage is 88.7%.

As much as 45.5% of parents prefer to set their rules on Internet usage rather than using parental control.

Predictive Analysis

IUS 2020 is the first survey that incorporates predictive analysis to understand user behaviours in more depth.

We use logistic regression³⁸ to understand how different traits of users influence an outcome, such as whether an Internet user shares content online.

There are four models that we have considered in this report and they are the following:

1. Predict likelihood of sharing content online
2. Predict likelihood of encountering online fraud/scam
3. Predict likelihood of being familiar with digital identity
4. Predict likelihood of feeling secure when using Internet

³⁸ Logistic regression is a statistical technique used when the outcome is a dichotomy (only two possible outcomes, e.g. 1 or 0, Yes or No).

Predict whether someone will share content online

Model Evaluation

An accurate model is important for us to gain insights about user behaviour. In order to better assess the performance of our model, we need to evaluate our model on a dataset that it has not seen before. Hence, we split our dataset at random into 80% (sample size = 4,616)³⁹ and 20% (sample size = 1,152). The 80% is used to train our model while the other 20% is used to test our model. The results can be shown in a classification table.

		Actual	
		0 (will not share content online)	1 (will share content online)
Prediction	0 (will not share content online)	435	155
	1 (will share content online)	265	297

Table 3: Outcome of the model to predict whether a user will share content online

³⁹ Sample size adjusted to meet predictive analysis requirement.

The metrics associated with the classification table are:

Accuracy	True positive rate	True negative rate
63.5% ¹	65.7% ²	62.1% ³

1 Model correctly classified 63.5% of overall cases. $(435+297)/(435+265+155+297)=63.5\%$

2 Model correctly classified 65.7% of Internet users who will share content online. $297/(155+297)=65.7\%$

3 Model correctly classified 62.1% of those who will not share content online. $435/(435+265)=62.1\%$

Table 4: Statistical metrics

With an accuracy of 63.5%, the model performs better than random chance (50%).

Variables

A total of 17 variables were used in our model. Detailed description of the variables can be found in the Appendix as Table 15. The most critical variables are whether the Internet user visits social networking sites, household size, whether the Internet user shops online, whether the Internet user has used personal hotspot and years of experience with Internet use.

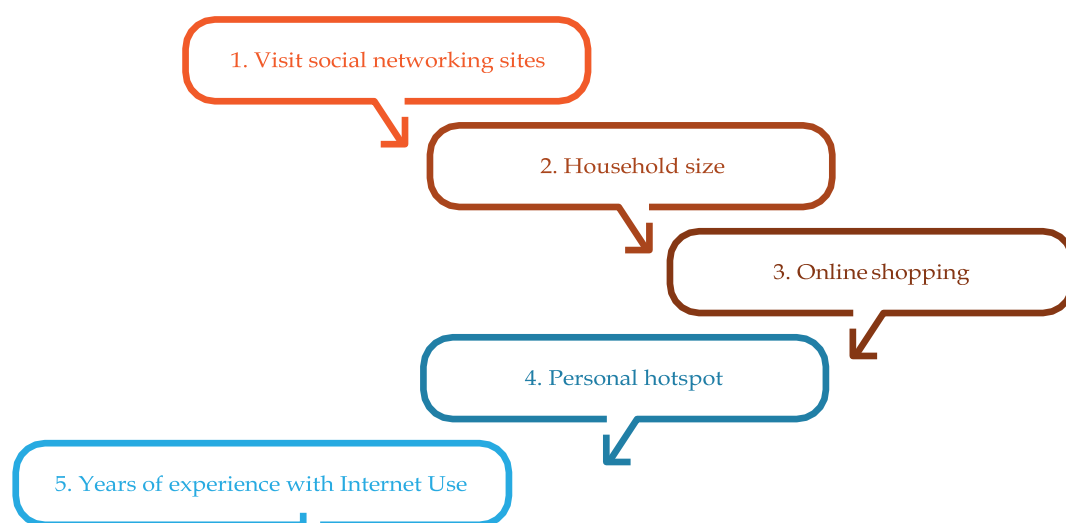
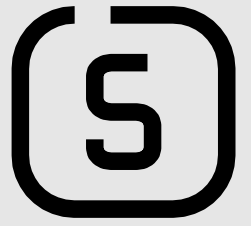


Figure 33: Critical variables that influence one's sharing of online content

Top 5 critical variables



157%

Those who use Internet to visit social networking sites are 157% more likely to share content online.

68%

Internet users living in a household size of six are 68% more likely to share content online than someone who lives alone.

59%

Those who use Internet to do online shopping are 59% more likely to share content online.

48%

Those who use personal hotspot are 48% more likely to share content online.

48%

Those who have three to less than five years of experience using Internet are 48% more likely to share content online than those who have less than three years of experience.

Example

Based on the example below and the results of the model listed in Appendix Table 16, we can predict the probability of the respondent to share content online. The probability of sharing content online for the below user is 32%.

Variable	Characteristics
Gender	Female
Age	55 and above
Ethnicity	Malay
Urban-Rural	Rural
Region	Central
Household size	1
Education	Degree or higher
Employment	Employed
Income	Above RM5,000
Hotspot	No
Years of experience with Internet use	Less than 3 years
Duration of daily use of the Internet	Less than 4 hours
Home	Yes
On-the-go	Yes
Visit social networking sites	Yes
Online banking	Yes
Online shopping	Yes

Table 5: Example of characteristics of a user

Predict likelihood of online fraud/scam

Model Evaluation

We split our dataset at random into 80% (sample size = 4,740)⁴⁰ and 20% (sample size = 1,184). The 80% is used to train our model while the other 20% is used to test our model. The results can be shown in a classification table.

		Actual	
		0 (will not encounter online fraud/scam)	1 (will encounter online fraud/scam)
Prediction	0 (will not encounter online fraud/scam)	517	119
	1 (will encounter online fraud/scam)	323	225

Table 6: Outcome of the model to predict whether a user will encounter online fraud/scam

⁴⁰ Sample size adjusted to meet predictive analysis requirement.

The metrics associated with the classification table are:

Accuracy	True positive rate	True negative rate
62.7% ¹	65.4% ²	61.6% ³

1 Model correctly classified 62.7% of overall cases. $(517+225)/(517+323+119+225)=62.7\%$

2 Model correctly classified 65.4% of those who will encounter online fraud/scam. $225/(119+225)=65.4\%$

3 Model correctly classified 61.6% of those who will not encounter online fraud/scam. $517/(517+323)=61.6\%$

Table 7: Statistical metrics

With an accuracy of 62.7%, the model performs better than random chance (50%).

Variables

A total of 17 variables were used in our model. Detailed description of the variables can be found in the Appendix as Table 15. The top five most critical variables are Internet access from home, Internet access on-the-go, whether the user shops online, age and ethnicity.

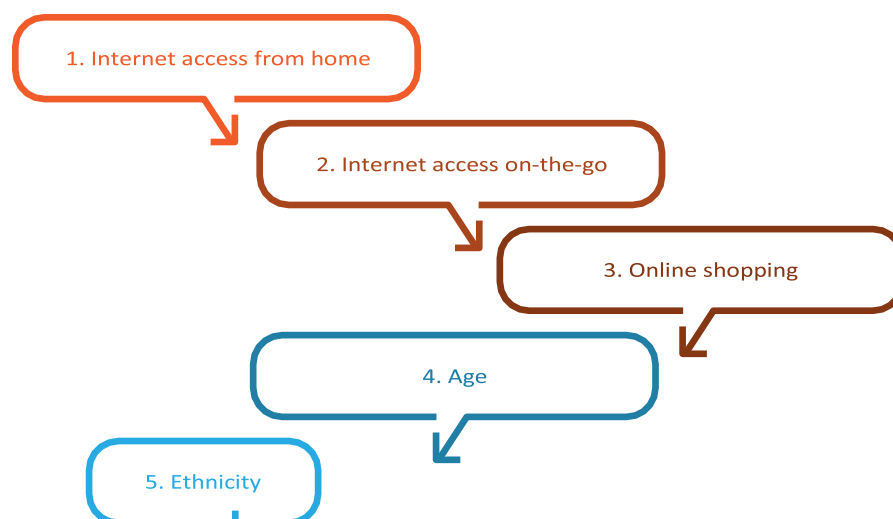


Figure 34: Critical variables that influence likelihood of encountering online fraud/scam

Top 5 critical variables



111%

Those who access Internet from home are 111% more likely to encounter online fraud/scam.

110%

Those who access Internet on-the-go are 110% more likely to encounter online fraud/scam.

69%

Those who use Internet to do online shopping are 69% more likely to encounter online fraud/scam.

59%

Young Internet users aged below 25 are 59% less likely to encounter online fraud/scam than older Internet users aged 55 and above.

42%

Internet users who are Chinese or Indian are 42% less likely to encounter online fraud/scam than those who are Malay.

Example

Based on the example below and the results of the model listed in Appendix Table 17, we can predict the probability of the respondent to encounter online scam. The probability of encountering online scam for the below user is 37%.

Variable	Characteristics
Gender	Female
Age	55 and above
Ethnicity	Malay
Urban-Rural	Rural
Region	Central
Household size	1
Education	Degree or higher
Employment	Employed
Income	Above RM5,000
Hotspot	No
Years of experience with Internet use	Less than 3 years
Duration of daily use of the Internet	Less than 4 hours
Home	Yes
On-the-go	Yes
Visit social networking sites	Yes
Online banking	Yes
Online shopping	Yes

Table 8: Example of characteristics of a user

Predict familiarity with digital identity

Model Evaluation

We split our dataset at random into 80% (sample size = 4,737)⁴¹ and 20% (sample size = 1,183). The 80% is used to train our model while the other 20% is used to test our model. The results can be shown in a classification table.

		Actual	
		0 (not familiar with digital identity)	1 (familiar with digital identity)
Prediction	0 (not familiar with digital identity)	455	158
	1 (familiar with digital identity)	215	355

Table 9: Outcome of the model to predict familiarity with digital identity

⁴¹ Sample size adjusted to meet predictive analysis requirement.

The metrics associated with the classification table are:

Accuracy	True positive rate	True negative rate
68.5% ¹	69.2% ²	67.9% ³

1 Model correctly classified 68.5% of overall cases. $(455+355)/(455+215+158+355)=68.5\%$

2 Model correctly classified 69.2% of those who are familiar with digital identity. $355/(158+355)=69.2\%$

3 Model correctly predicts 67.91% of those who are not familiar with digital identity. $455/(455+215)=67.9\%$

Table 10: Statistical metrics

With an accuracy of 68.5%, the model performs better than random chance (50%).

Variables

A total of 17 variables were used in our model. Detailed description of the variables can be found in the Appendix as Table 15. The top five most critical variables are Internet access on-the-go, duration of daily use of Internet, age, region and online banking.

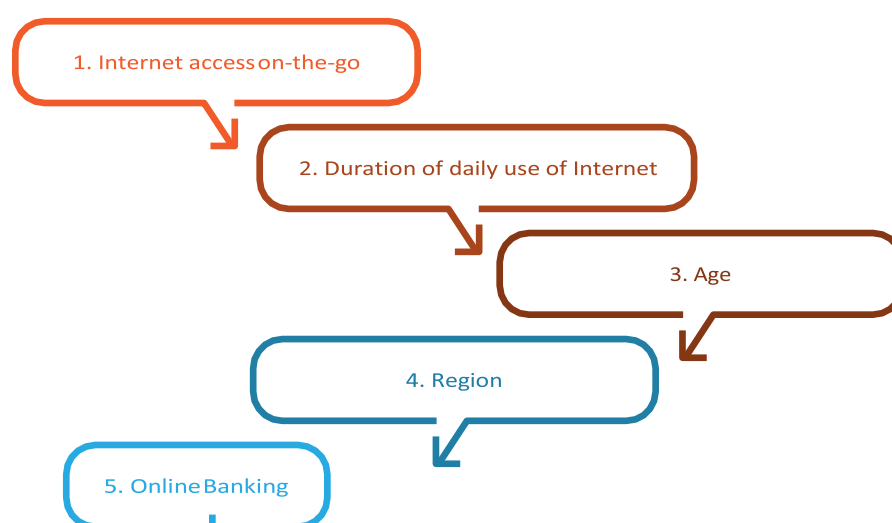
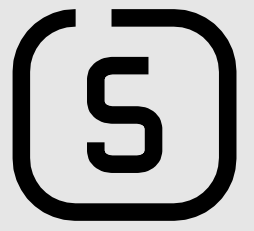


Figure 35: Critical variables that influence familiarity with digital identity

Top 5 critical variables



139%

Those who access Internet on-the-go are 139% more likely to be familiar with digital identity.

128%

Those who spent more than 18 hours online are 128% more likely to be familiar with digital identity than those who spent less than four hours.

100%

Young Internet users aged below 25 are 100% more likely to be familiar with digital identity than older Internet users aged 55 and above.

96%

Internet users in East Malaysia (Sarawak, Labuan, Sabah) are 96% more likely to be familiar with digital identity those in the Central region (Selangor, Kuala Lumpur, Putrajaya, Negeri Sembilan).

95%

Those who use Internet to do online banking are 95% more likely to be familiar with digital identity.

Example

Based on the example below and the results of the model listed in Appendix Table 18, we can predict the probability of the respondent being familiar with digital identity. The probability of being familiar with digital identity for the below user is 64%.

Variable	Characteristics
Gender	Female
Age	55 and above
Ethnicity	Malay
Urban-Rural	Rural
Region	Central
Household size	1
Education	Degree or higher
Employment	Employed
Income	Above RM5,000
Hotspot	No
Years of experience with Internet use	Less than 3 years
Duration of daily use of the Internet	Less than 4 hours
Home	Yes
On-the-go	Yes
Visit social networking sites	Yes
Online banking	Yes
Online shopping	Yes

Table 11: Example of characteristics of a user

Predict whether someone feels secure when using Internet

Model Evaluation

We split our dataset at random into 80% (sample size = 4,262)⁴² and 20% (sample size = 1,064). The 80% is used to train our model while the other 20% is used to test our model. The results can be shown in a classification table.

		Actual	
		0 (not secure)	1 (secure)
Prediction	0 (not secure)	253	243
	1 (secure)	180	388

Table 12: Outcome of the model to predict whether someone feels secure when using Internet

⁴² Sample size adjusted to meet predictive analysis requirement.

The metrics associated with the classification table are:

Accuracy	True positive rate	True negative rate
60.2% ¹	61.5% ²	58.4% ³

1 Model correctly classified 60.2% of overall cases. $(253+388)/(253+180+243+388)=60.2\%$

2 Model correctly classified 61.5% of those who feel secure online. $388/(243+388)=61.5\%$

3 Model correctly classified 58.4% of those who do not feel secure online. $253/(253+180)=58.4\%$

Table 13: Statistical metrics

With an accuracy of 60.2%, the model performs better than random chance (50%).

Variables

A total of 17 variables were used in our model. Detailed description of the variables can be found in the Appendix as Table 15. The top five most critical variables are Internet access from home, ethnicity, Internet access on-the-go, the use of personal hotspot and years of experience with Internet use.

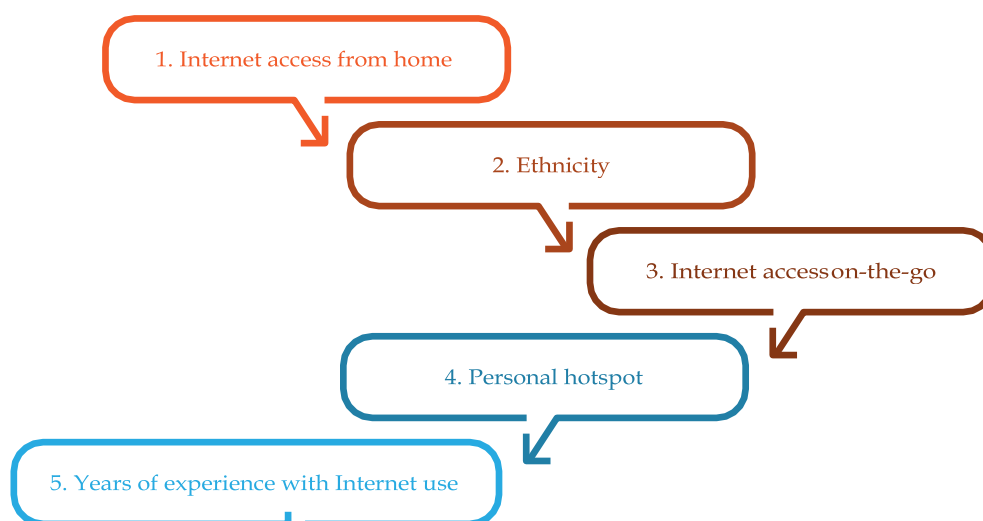
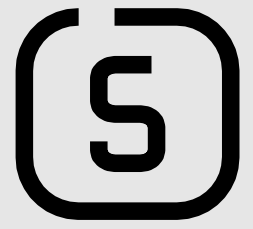


Figure 36: Critical variables that influence likelihood of feeling secure when using Internet

Top 5 critical variables



56%

Those who access Internet from home are 56% less likely to feel secure online.

50%

Internet users who are Indian are 50% more likely to feel secure online than those who are Malay.

45%

Those who access Internet on-the-go are 45% less likely to feel secure online.

45%

Those who use personal hotspot are 45% more likely to feel secure when using Internet.

35%

Those who have more than 15 years of experience using Internet are 35% less likely to feel secure online than those who have less than three years of experience.

Example

Based on the example below and the results of the model listed in Appendix Table 19, we can predict the probability of the respondent feeling secure when using the Internet. The probability of feeling secure when using the Internet for the below user is 60%.

Variable	Characteristics
Gender	Female
Age	55 and above
Ethnicity	Malay
Urban-Rural	Rural
Region	Central
Household size	1
Education	Degree or higher
Employment	Employed
Income	Above RM5,000
Hotspot	No
Years of experience with Internet use	Less than 3 years
Duration of daily use of the Internet	Less than 4 hours
Home	Yes
On-the-go	Yes
Visit social networking sites	Yes
Online banking	Yes
Online shopping	Yes

Table 14: Example of characteristics of a user

The predictive analyses introduced here are examples of data science applications that policymakers and agencies can explore to match implementation strategies (of programs, campaigns, messaging) with the targeted groups.



About The Respondent

Gender

IUS 2020's results show a convergence of gender ratio of Internet users closer to the population's gender ratio.

The gender ratio of Internet users was 1.2, and this mirrors the latest population's gender ratio of 1.1⁴³ closely.

	2014	2016	2018	2020
Female (%)	41.7	42.6	41.0	45.7
Male (%)	58.3	57.4	59.0	54.3

⁴³ Department of Statistics Malaysia (DOSM) – 12th May 2020 release

Age

Internet users were mainly comprised of adults in their 20’s and 30’s, where they accounted for 46.0% and 21.2%, respectively.

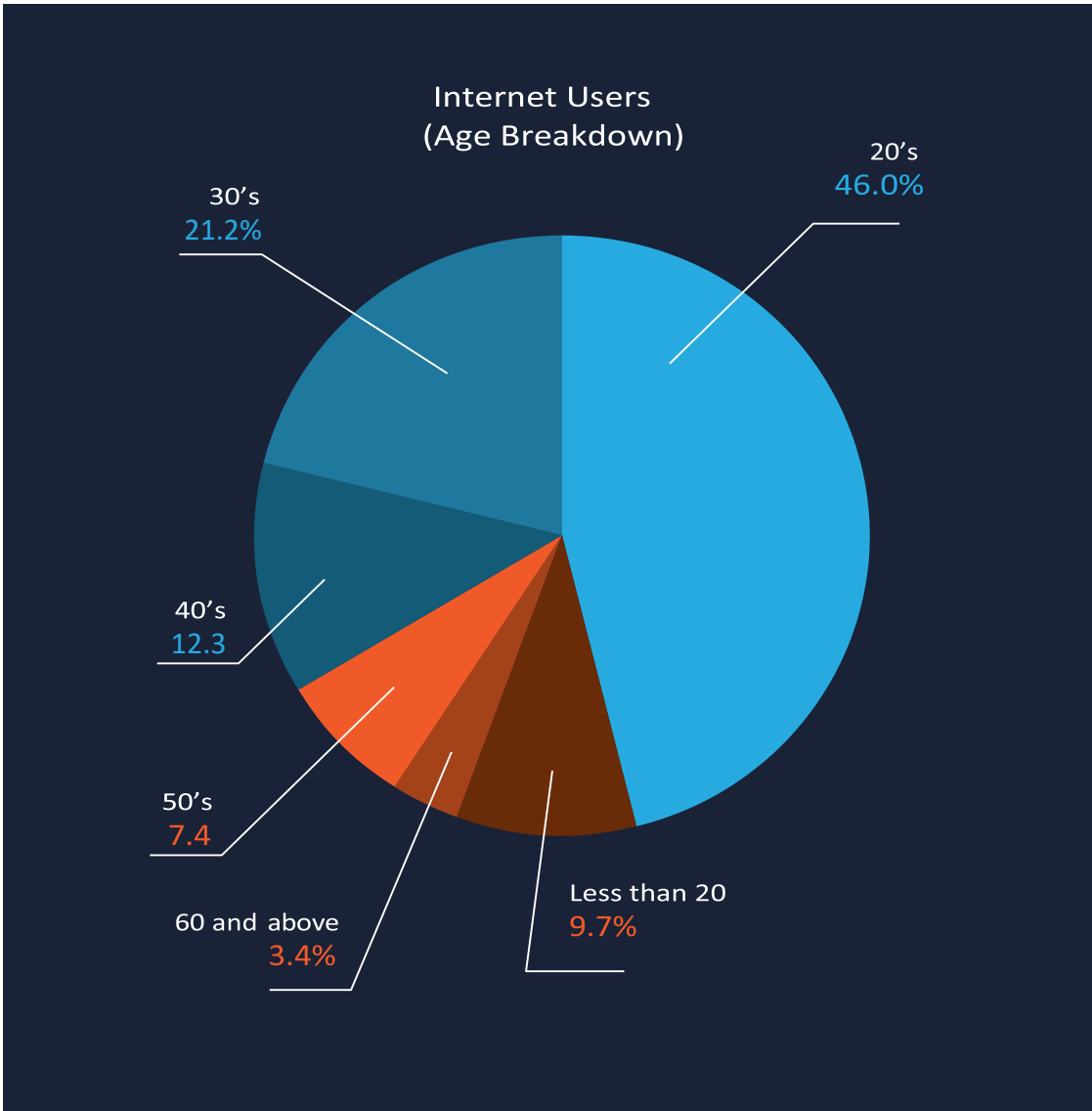


Figure 37: Distribution of Internet Users by Age category

Urban-rural distribution

The split of urban-rural Internet users sampled was reflective of the urban-rural population split of 76.4% and 77.2% of the population living in urban areas in 2018 and 2020 respectively⁴⁴.

	2014 (%)	2016 (%)	2018 (%)	2020 (%)
Urban	67.2	67.2	70.0	75.6
Rural	32.8	32.8	30.0	24.4

⁴⁴ Malaysia: Urbanization from 2008 to 2018 - H. Plecher; 29th January 2020, statista.com and DOSM's "Urbanisation and Urban Growth in Malaysia" by Muhamad Fadzil Ismail

Employment

The sampled population for IUS 2020 has had a higher representation from full-time students (from 12.1% in 2018 to 20.5% in 2020) at the expense of self-employed respondents (dropped from 18.7% in 2018 to 11.7% in 2020). Other employments showed almost similar representation from 2016 to 2018.

	2016 (%)	2018 (%)	2020 (%)
Self employed	15.6	18.7	11.7
Employed	54.6	51.8	53.8
Unemployed	10.4	12.0	11.6
Full time student	17.1	12.1	20.5
Retired	2.2	5.5	2.3

Conclusion

The percentage of Internet users has shown a slowdown in growth from 87.4% in 2018 to 88.7% in 2020. This finding is not unique in Malaysia and is part of the global trend of declining Internet access growth.

IUS 2020 ascertains that there is a gap between transaction-based activities and non-transaction based activities where majority of Internet users used Internet for social purposes (i.e. communicate by text, voice/video, visit social networking sites, etc). The trends coincides with MCO when most users rely on the Internet to access information, communicate with others and etc.

The emergence of fake news regarding Covid-19 during the MCO has brought attention to the problem of fake news⁴⁵. It is encouraging to note that majority of Internet users are aware of fake news and had taken various actions before sharing content online, such as understanding the content and verifying the source of the content.

⁴⁵ Source: <https://www.thestar.com.my/news/nation/2020/04/14/don039t-spread-fake-news-as-it-will-causepanic-and-unrest-among-the-public-says-ccid-chief>

More than half (62.5%) of Internet users surveyed were not familiar with the concept of digital identity. Advocacy and awareness programmes should be organised nationwide to ensure successful implementation of the National Digital ID. The National Digital ID will not only benefit the public by making it easier and more secure to carry out various transactions, but it will also facilitate the delivery of government initiatives.

The predictive analyses in this report are example of data science applications which can be further explore to match implementation strategies (of programs, campaigns, messaging) with the targeted groups.

With more children getting exposed to the Internet at an early age, parents must be vigilant in ensuring their child navigates online safely. IUS 2020 has found that parents' awareness of parental control remained low. Hence, more needs to be done to raise awareness about parental control.

Recommendations

IUS 2020 coincided with the most global crisis ever recorded in the last fifty years. Never before a crisis had been so intertwined and far-reaching than the Covid-19 pandemic had been to the health, safety, economy and livelihood of the global population. For the first time since World War II, citizens around the world share the same problem: how to alter the way they carry on their lives radically to survive the pandemic.

The answer lies with the rapid digitalisation of day-to-day activities, from children going to schools, workforce working from home and contactless transactions. Internet and communication coverage has become more critical than ever.

Access to the Internet is no longer a privilege; it has increasingly become a basic necessity without which a child is denied a primary education.

As nations around the world scramble to contain the pandemic and adapt to the new normal, Malaysia is fortunate that its level of Internet infrastructure is comparable to developed countries.

However, the critical determinants to Malaysia's pathway towards a sustainable higher quality of life in the new normal extend beyond providing Internet coverage to the population.

There are three areas which will depend heavily on digitalisation:

1. Transforming the existing manual economy before the pandemic into the digitalised economy that incorporates requirements for remote working and digitalised workforce
2. Upskilling the workforce and the economy towards e-economy to move away from low-value activities into innovating and creating Internet-based and digital application products that have become necessities in the new normal
3. Scaling up the digitalisation of essential services such as education, health and government services

The digitalisation of daily and economic activities moves the emphasis from basic Internet penetration to the quality of Internet and communication services.

Another crucial aspect is the possible discrimination of essential services or exclusion from digitalised economic activities due to lack of Internet access; either due to inadequate coverage or speed; or lack of devices.

IUS 2020 observed that Malaysia is on the right trajectory to do well in the new normal post Covid-19 pandemic given the competitive Internet and communication infrastructure built over the years.

Appendix: Tables

Caution is required in the use of the estimates tabulated below.

While we have taken every care to minimise non-sampling errors, which cannot be quantified, the estimates presented are also subject to sampling error, which is a measure of the chance variation that occurs because a sample and not the entire population is canvassed. The sampling error of an estimate is usually expressed as a percentage of that estimate to give the relative sampling error (RSE) of that estimate. The estimates are weighted and the RSE takes into account the effect of weighting.

In general, estimates that are small are subject to high RSEs. As a guide, only estimates with RSEs of 25% or less are considered reliable for general use. Estimates with RSEs greater than 25% but less than or equal to 50% are denoted with one asterisk (*) in these tables and should be used with caution; while estimates with RSEs greater than 50% are denoted by two asterisks (**) and are considered too unreliable for general use.

For comparison, past data are appended together where available.

Percentages may not add up to 100 because of rounding.

Internet Users

Percentage of Internet users								
	2014 (%)	RSE	2016 (%)	RSE	2018 (%)	RSE	2020 (%)	RSE
Users	66.6	1.2	76.9	1.0	87.4	0.5	88.7	0.7
Non-users	33.4	2.4	23.1	3.3	12.6	3.7	11.3	5.7

Years of experience with Internet use				
	2018 (%)	RSE	2020 (%)	RSE
Less than 1 year	3.7	7.8	2.5	12.4
1 to less than 3 years	11.7	4.2	12.2	5.3
3 to less than 5 years	15.0	3.6	15.8	4.6
5 to less than 7 years	32.7	2.2	21.0	3.8
7 to less than 10 years			19.1	4.1
10 to less than 15 years	25.0	2.6	18.0	4.2
More than 15 years	11.9	4.1	10.2	5.9
Don't know/Refused/ No answer	-	-	1.2	18.2

Duration of daily use of Internet				
	2018 (%)	RSE	2020 (%)	RSE
Less than 1 hour	9.6	4.7	1.3	17.1
1 to 4 hours	39.2	1.9	24.9	3.4
5 to 8 hours	23.9	2.7	28.6	3.1
9 to 12 hours	13.4	3.9	21.5	3.8
13 to 18 hours	5.7	6.2	9.0	6.3
More than 18 hours	8.1	5.1	11.5	5.5
Don't know/Refused/ No answer	-	-	3.2	11.0

Place to access Internet								
	2014 (%)	RSE	2016 (%)	RSE	2018 (%)	RSE	2020 (%)	RSE
Home	73.0	1.2	85.6	0.8	88.6	0.5	70.5	1.3
On-the-go	65.1	1.5	84.0	0.9	68.1	1.0	64.4	1.5
Work place	46.6	2.2	58.7	1.7	56.4	1.3	30.1	3.0
Another person's home	32.1	3.0	54.8	1.9	38.7	1.9	1.3	17.1
Free Wi-Fi anywhere	50.6	2.0	55.9	1.8	36.3	2.0	6.0	7.9
Commercial Internet access facility	29.3	3.2	30.0	3.1	26.0	2.6	2.0	14.0
Community Internet access facility	19.4	4.2	19.6	4.1	18.2	3.2	4.2	9.5
Place of education	17.2	4.5	13.9	5.1	12.0	4.1	8.2	6.6

Multiple responses

Internet access from home		
	2020 (%)	RSE
Fixed broadband	21.4	4.5
Mobile broadband	56.2	2.1
Fixed broadband and mobile broadband	21.8	4.5
Don't know / Refused / No answer	0.6*	30.8

Have you ever used personal hotspot with Wi-Fi, Bluetooth/USB?		
	2020 (%)	RSE
Yes	61.4	1.6
No	37.4	2.6
Don't know / Refused / No answer	1.1	18.4

Device to access Internet								
	2014 (%)	RSE	2016 (%)	RSE	2018 (%)	RSE	2020 (%)	RSE
Smartphone	74.3	1.2	89.4	0.7	93.1	0.4	98.7	0.2
Netbook / Notebook / Laptop	51.4	2.0	36.3	2.7	44.2	1.7	37.9	2.5
PC/Desktop	35.3	2.8	29.3	3.2	28.1	2.4	16.2	4.5
Tablet	25.5	3.5	18.0	4.4	20.4	3.0	6.4	7.6
Smart TV	1.9	14.6	6.7	7.6	12.3	4.1	5.9	7.9
Feature phone	12.5	5.4	9.4	6.3	8.6	5.0	1.3	17.2
TV streaming box	-	-	5.6	8.4	7.6	5.3	2.9	11.5
Game console	1.2	18.5	2.5	12.6	4.7	6.8	0.8	22.1
Smartwatch	-	-	-	-	2.4	9.8	0.6	24.8

Multiple responses

Online activities						
	2016 (%)	RSE	2018 (%)	RSE	2020 (%)	RSE
Communicate by text	96.3	0.4	96.5	0.3	98.1	0.3
Visit social networking platform	89.3	0.7	85.6	0.6	93.3	0.5
Watch or download video/online TV	70.0	1.3	77.6	0.8	87.3	0.8
Communicate by voice/video	32.0	3.0	60.6	1.2	81.1	1.0
To get information	86.9	0.8	85.5	0.6	74.3	1.2
Read online publication	-	-	56.3	1.3	68.2	1.4
Online banking	41.7	2.4	54.2	1.4	63.8	1.5
Online shopping / booking	48.8	2.1	53.3	1.4	64.2	1.5
Listen or download music /online radio	-	-	46.8	1.6	65.4	1.4
Work related	56.3	1.8	61.9	1.2	45.0	2.2
Government services	45.9	2.2	44.5	1.7	41.4	2.4
Online games	41.6	2.4	35.2	2.1	42.8	2.3
Maintain blogs / homepages	17.0	4.5	9.8	4.6	32.3	2.9
Cloud storage	22.1	3.8	27.9	2.4	37.1	2.6
Online job application	35.4	2.8	27.5	2.5	25.7	3.4
Study	67.6	1.4	60.2	1.2	29.7	3.1
Selling goods / services	18.3	4.3	16.9	3.4	12.0	5.4

Multiple responses

Social networking account ownership, as percentage of social networking users

	2016 (%)	RSE	2018 (%)	RSE	2020 (%)	RSE
Facebook	97.3	0.4	97.3	0.3	91.7	0.6
YouTube	45.3	2.4	48.3	1.7	80.6	1.0
Instagram	56.1	1.9	57.0	1.4	63.1	1.5
Twitter	26.6	3.6	23.8	2.9	37.1	2.6
LinkedIn	9.1	6.8	13.3	4.2	10.8	5.7
Google+	28.3	3.4	31.1	2.4	24.1	3.5
Others	0.9	22.8	0.7	19.9	0.2**	40.1
None	-	-	-	-	1.3	17.3

Multiple responses

Communication apps account ownership, as percentage of communication app users

	2018 (%)	RSE	2020 (%)	RSE
WhatsApp	98.1	0.2	98.7	0.2
Facebook Messenger	55.6	1.4	53.9	1.8
Telegram	25.0	2.7	40.1	2.4
WeChat	36.8	2.0	27.7	3.2
Skype	14.2	3.8	14.5	4.8
Line	10.2	4.6	8.2	6.6
KakaoTalk	2.1	10.5	6.3	7.6
Others	1.1	14.5	0.1**	55.9
None	-	-	0.2**	42.7

Multiple responses

Based on your Internet online activities, do you use the same user ID and password to access account?

	2020 (%)	RSE
Yes	32.0	2.9
No	68.0	1.4
No answer	0.1**	62.2

Number of user ID and password

	2020 (%)	RSE
1	31.1	3.0
2	13.6	5.0
3	16.1	4.5
4	8.9	6.3
5 and above	30.2	3.0
No answer	0.2*	44.6

If you have more than one user ID and password, do you often forget and have to reset user ID and password?

	2020 (%)	RSE
Yes	57.1	2.1
No	42.9	2.8

Are you familiar with the concept of digital identity?

	2020 (%)	RSE
Familiar	19.6	4.0
Quite familiar	17.8	4.3
Not familiar	62.5	1.5
No answer	0.1**	55.3

What do you associate digital identity with?

	2020 (%)	RSE
Different sets of user ID and password	36.8	2.6
Log in to social media accounts	27.8	3.2
Email	25.7	3.4
Biometrics	42.3	2.3
None of the above	28.3	3.2

Multiple response

Online content sharing among Internet users

	2018 (%)	RSE	2020 (%)	RSE
Have shared content online	61.8	1.2	42.9	2.3
Did not share content online	38.2	1.9	53.3	1.9
Don't know/Refused	-	-	3.8	10.0

Type of online content shared

	2018 (%)	RSE	2020 (%)	RSE
Educational content	71.3	1.2	36.4	4.0
Entertainment and humorous content	69.6	1.3	56.1	2.7
News	63.9	1.5	66.9	2.1
Public service announcement	62.6	1.5	60.9	2.4
Aid effort	55.9	1.7	37.7	3.9
Latest promotion and discount	43.0	2.2	23.3	5.5
Political related issue	32.1	2.8	17.2	6.6
Others	-	-	3.8	15.3

Multiple responses

Online content sharing platform				
	2018 (%)	RSE	2020 (%)	RSE
Social media	73.8	1.2	86.5	1.2
Group messaging (group chat)	70.6	1.2	58.5	2.5
Private messaging	46.6	2.1	36.1	4.0
Email	15.8	4.5	5.1	13.1
Blog/personal website	6.3	7.5	2.1	20.8
Forum	3.4	10.4	1.0*	30.7
Others	0.3*	37.7	-	-

Multiple responses

Purpose of online content sharing				
	2018 (%)	RSE	2020 (%)	RSE
Content is beneficial	87.2	0.7	71.8	1.9
Raise awareness about an issue	82.3	0.9	53.6	2.8
Entertain/for fun	64.1	1.4	36.6	4.0
Share interests and hobbies	57.7	1.7	18.8	6.3
Generate discussion	55.8	1.7	16.9	6.7
Get likes and followers	20.7	3.8	6.2	11.8
Promote product and service	20.2	3.8	4.4	14.2
Others	0.4*	31.6	0.2**	64.2

Multiple responses

Actions taken before sharing content online				
	2018 (%)	RSE	2020 (%)	RSE
Understand the content	90.8	0.6	72.4	1.9
Ensure the content is not obscene, menacing or offensive	85.8	0.8	54.9	2.7
Ensure the validity of the content	79.4	1.0	63.0	2.3
Verify whether the content is from reliable source or not	77.0	1.1	62.9	2.3
None of the above	4.4	9.0	7.0	11.0

Multiple responses

Frequency of sharing content online

	2020 (%)	RSE
Daily	19.2	6.2
Weekly	49.1	3.1
Monthly	18.9	6.3
Few times a year	6.8	11.2
Once a year	0.0	-
None	1.9	21.8
Don't know / Refused / No answer	4.2	14.5

Quickness of sharing content online

	2020 (%)	RSE
After I read through the contents	78.9	1.6
After I skimmed through the contents	13.6	7.6
Immediately after reading the headlines	5.8	12.2
Don't know/Refused	1.8*	22.3

Do you know what is fake news?

	2020 (%)	RSE
Yes	91.3	0.9
No	4.9	13.3
Don't know/Not sure	3.7	15.3

In your opinion, is the existence of fake news a problem in Malaysia?

	2020 (%)	RSE
Yes	92.3	0.9
No	4.4	14.1
Don't know/Not sure	3.3	16.4

Awareness of Sebenarnya.my portal

	2020 (%)	RSE
Yes	20.3	6.0
No	77.4	1.6
Don't know/Refused	2.3	19.6

Visited Sebenarnya.my portal (For those who were aware of Sebenarnya.my portal)

	2020 (%)	RSE
Yes	39.8	8.2
No	59.4	5.5
Don't know / Not sure	0.9**	70.9

In general, how secure do you feel when using the Internet?

	2020 (%)	RSE
Very secured	3.7	10.2
Secured	46.8	2.1
Neutral	23.3	3.6
Not secured	16.9	4.4
Not very secured	0.9	21.0
Don't know/Refused	8.6	6.5

In general, do you think your personal data is kept confidential by the following organisations?

	2020 (%)							
	Yes	RSE	No	RSE	Neutral	RSE	Don't know / Refused	RSE
Government	50.4	2.1	17.9	4.4	15.7	4.8	16.0	4.8
Service providers	40.6	2.5	25.1	3.6	17.1	4.6	17.2	4.5
Non-government bodies	40.2	2.5	24.0	3.7	17.8	4.5	18.0	4.4

Cybercrime experienced				
	2016 (%)	RSE	2020 (%)	RSE
Virus or malicious code	31.1	3.0	4.5	9.2
Spam	30.9	3.1	13.7	5.0
Fraud	17.7	4.4	23.6	3.6
Hacking and intrusion	8.8	6.6	4.1	9.6
Abuse of personal information	6.2	8.0	3.4	10.6
Cyberbully	4.2	9.8	0.6*	26.4
None of the above	47.3	2.2	61.6	1.6
Don't know/Refused/No answer	-	-	5.2	8.5

Multiple responses

When was the last time you experienced a cybercrime?		
	2020 (%)	RSE
Last 6 months	53.1	3.2
Last 12 months	27.7	5.6
Last 2 years	7.6	12.0
More than 3 years ago	9.4	10.7
Don't know/Refused	2.2	23.1

Actions taken following cybercrime experienced				
	2016 (%)	RSE	2020 (%)	RSE
Changed password for online account	64.6	2.1	16.6	7.7
Discussed with people around	63.2	2.1	17.7	7.4
Installed security software	46.8	3.0	9.0	11.0
Reported to Internet service providers	18.2	6.0	6.3	13.3
Reported to authorities	8.0	9.5	14.9	8.2
Others	3.2	15.6	4.7	15.5
Did not take any action	13.8	7.0	44.0	3.9

Multiple responses

How important do you value online privacy?				
	2016 (%)	RSE	2020 (%)	RSE
Extremely important	59.1	1.7	60.9	2.8
Important	32.8	2.9	36.4	4.5
Neutral	-	-	1.4*	28.7
Not important	7.6	7.1	0.5*	48.4
Extremely not important	0.5*	28.8	-	-
Don't know/Refused	-	-	0.8*	38.6

Multiple responses

Sharing of personal information online		
	2020 (%)	RSE
Yes	30.6	5.2
No	67.6	2.4
Don't know/Refused	1.8*	25.4

Type of personal information shared online				
	2016 (%)	RSE	2020 (%)	RSE
Photo of themselves	69.8	1.3	76.7	3.4
Date of birth	58.5	1.7	65.2	4.5
Real name	55.0	1.8	80.3	3.1
Email address	50.7	2.0	58.6	5.2
Study/work place	41.3	2.4	47.4	6.6
Phone number	40.5	2.5	54.5	5.7
Home location	26.7	3.4	39.0	7.8
Others	2.2	13.6	7.4*	22.0
None of the above	7.8	7.0	0.8**	69.6

Multiple responses

May I know if you are a parent?

	2020 (%)	RSE
Yes	41.1	2.4
No	57.7	1.7
Refused	1.2	18.2

Number of children aged 5 to 17 that used Internet

	2020 (%)	RSE
0	52.5	2.9
1	22.4	5.8
2	12.4	8.2
3	8.6	10.1
4	1.7	23.4
5 and above	1.4*	25.8
Refused	1.0*	31.3

Parents among Internet users with child/children aged 5 to 17 that used Internet

	2016 (%)	RSE	2018 (%)	RSE	2020 (%)	RSE
Yes	18.4	4.3	28.5	2.5	52.5	2.9
No	81.6	1.0	71.5	1.0	46.5	3.3
Refused	-	-	-	-	1.0	31.3

Referring to your child that just had the most recent birthday, does your child have his/her own device to access Internet?

	2020 (%)	RSE
Yes	56.3	4.0
No	41.2	5.4
Don't know/Refused	2.5*	28.5

Parents awareness on parental control

	2016 (%)	RSE	2018 (%)	RSE	2020 (%)	RSE
Yes	51.0	4.7	62.4	2.3	53.3	4.2
No	49.0	4.8	37.6	3.8	42.6	5.3
Don't know/Refused	-	-	-	-	4.1	22.0

Referring to your child that just had the most recent birthday,
do you use parental control services on your child device?

	2020 (%)	RSE
Yes	34.4	8.6
No	62.5	4.8
Don't know/Refused	3.1*	34.5

Experience when using parental control

	2020 (%)					
	Agree	RSE	Disagree	RSE	Don't know /Refused	RSE
User friendly	38.7	7.8	2.1*	42.2	59.2	5.2
Effective in assisting you to monitor your child's use of the Internet	40.4	7.5	1.7*	47.1	57.9	5.3
Available at affordable price	27.0	10.2	3.1*	34.6	69.9	4.1

Actions taken by parents to ensure child online safety				
	2018 (%)	RSE	2020 (%)	RSE
Set rules and limits of Internet usage to the child	75.5	1.7	72.8	3.8
Stayed nearby the child when he/she used the Internet	75.4	1.7	57.4	5.3
Discussed with your child about online safety	71.1	1.9	50.0	6.2
Checked the child's social media account and/or browser history	57.5	2.6	47.7	6.5
Used parental control service in child's device	12.2	8.0	-	-
None	7.4	10.5	7.4	21.9

Multiple responses

Reasons for not using parental control				
	2016 (%)	RSE	2020 (%)	RSE
Set your own rules and limits on Internet usage	69.2	3.5	45.5	7.3
Never heard of parental control service	59.1	4.3	49.6	6.7
Trust the child	47.4	5.5	13.9	16.5
The service requires payment	15.3	12.3	2.1*	45.4
Not convinced with the effectiveness of the service	9.5	16.1	14**	56.2
Others	6.3	20.2	0.7**	77.7

Multiple responses

Nationality				
	2014 (%)	RSE	2020 (%)	RSE
Malaysian	92.1	2.1	91.5	0.6
Non-Malaysian	7.9	7.0	8.5	6.5

Ethnicity				
	2014 (%)	RSE	2020 (%)	RSE
Malay	67.0	1.5	58.3	1.8
Bumiputra Sabah/Sarawak	8.2	7.1	12.3	5.5
Orang Asli	0.0**	100.0	0.2**	49.3
Chinese	17.8	4.6	22.4	3.9
Indian	6.2	8.2	5.9	8.3
Others	0.7	24.9	1.0	20.7

State of residence						
	2014 (%)	RSE	2016 (%)	RSE	2020 (%)	RSE
Johor	11.7	5.6	11.3	5.7	11.5	5.5
Kedah	5.2	8.7	5.7	8.3	6.5	7.5
Kelantan	5.2	8.7	3.7	10.4	5.2	8.5
Melaka	4.2	9.8	3.2	11.2	2.8	11.7
Negeri Sembilan	4.0	10.1	4.1	9.9	3.3	10.7
Pahang	5.3	8.6	5.3	8.6	5.0	8.6
Perak	7.1	7.4	6.8	7.6	8.0	6.7
Perlis	0.5*	27.7	0.6*	25.6	0.8	22.7
Pulau Pinang	4.8	9.1	4.8	9.1	5.6	8.2
Sabah	7.6	7.1	9.7	6.2	11.0	5.6
Sarawak	6.4	7.8	8.1	6.9	8.6	6.5
Selangor	23.6	3.7	23.8	3.7	21.5	3.8
Terengganu	3.8	10.3	3.2	11.2	4.1	9.6
W.P. Kuala Lumpur	9.8	6.2	9.1	6.5	5.6	8.1
W.P. Labuan	0.3*	37.7	0.2*	43.1	0.4*	33.3
W.P. Putrajaya	0.5*	28.8	0.3*	35.4	0.3*	33.6

Gender								
	2014 (%)	RSE	2016 (%)	RSE	2018 (%)	RSE	2020 (%)	RSE
Female	41.7	2.4	42.6	2.4	41.0	1.8	45.7	2.2
Male	58.3	1.7	57.4	1.8	59.0	1.3	54.3	1.8

Age group								
	2014 (%)	RSE	2016 (%)	RSE	2018 (%)	RSE	2020 (%)	RSE
Below 15	1.6	15.9	0.4*	32.7	0.5	21.3	0.4*	31.4
15 - 19	13.9	5.1	12.6	5.4	7.6	5.3	9.3	6.2
20 - 24	24.2	3.6	21.4	3.9	15.6	3.5	34.1	2.8
25 - 29	19.3	4.2	16.7	4.6	14.3	3.7	11.8	5.4
30 - 34	13.1	5.3	15.4	4.8	15.3	3.6	11.7	5.4
35 - 39	8.7	6.6	10.5	6.0	10.6	4.4	9.5	6.1
40 - 44	7.3	7.3	8.0	6.9	10.8	4.4	6.4	7.6
45 - 49	4.6	9.3	6.2	7.9	7.1	5.5	5.9	7.9
50 - 54	7.3	7.3	3.7	10.5	6.7	5.7	4.5	9.1
55 - 59			2.4	13.0	4.9	6.7	2.9	11.5
60 - 64			1.4	17.3	3.7	7.8	1.4	16.6
65 and above			1.2	18.7	2.8	9.0	2.0	13.8

Urban-rural distribution								
	2014 (%)	RSE	2016 (%)	RSE	2018 (%)	RSE	2020 (%)	RSE
Urban	67.2	1.4	67.2	1.4	70.0	1.0	75.6	1.1
Rural	32.8	2.9	32.8	2.9	30.0	2.3	24.4	3.5

Household size				
	2014 (%)	RSE	2020 (%)	RSE
1	2.7	13.2	7.3	7.1
2	8.5	7.3	8.4	6.5
3	16.7	5.0	13.1	5.1
4	20.3	4.4	21.0	3.8
5	20.5	4.4	20.4	3.9
6	13.5	5.6	12.3	5.3
7	7.4	7.9	7.0	7.2
8	10.5	6.5	4.5	9.2
9			1.7	14.9
10 and above			4.3	9.3

Highest level of education

	2014 (%)	RSE	2016 (%)	RSE	2018 (%)	RSE	2020 (%)	RSE
Degree or higher (include Advanced Diploma)	15.5	4.8	19.8	4.1	26.1	2.6	23.4	3.6
Diploma	17.0	4.5	16.9	4.5	18.5	3.2	22.3	3.7
STPM/STAM/Certificate/ UEC-Senior Middle Three	9.2	6.4	9.3	6.4	7.0	5.5	6.3	7.7
SPM/SPVM	36.4	2.7	31.7	3.0	30.3	2.3	30.9	3.0
Sijil 4 Thanawi /SMA	0.3*	35.3	0.2*	47.0	0.1*	50.0	0.7	22.9
PT3/PMR/UEC-Junior Middle Three	8.2	6.8	7.6	7.1	5.7	6.2	3.7	10.1
Secondary school	7.7	7.1	9.5	6.3	6.1	6.0	6.4	7.6
Primary school	5.0	8.9	4.5	9.4	5.3	6.4	2.4	12.6
Others	-	-	-	-	-	-	0.6*	25.2
None	0.7	24.2	0.5*	27.7	1.0	14.8	2.3	13.0
Refused/No answer	-	-	-	-	-	-	1.0*	20.0

Employment

	2016 (%)	RSE	2018 (%)	RSE	2020 (%)	RSE
Self employed	15.6	4.7	18.7	3.2	11.7	5.5
Employed	54.6	1.9	51.8	1.5	53.8	1.8
Unemployed	10.4	6.0	12.0	4.1	11.6	5.5
Full time student	17.1	4.5	12.1	4.1	20.5	3.9
Retired	2.2	13.6	5.5	6.3	2.3	12.9
Refused	-	-	-	-	0.1**	52.2

Monthly income category

	2014 (%)	RSE	2016 (%)	RSE	2020 (%)	RSE
RM1,000 and below	19.8	5.1	15.9	5.8	34.1	2.8
RM1,001 - RM3,000	55.6	2.6	51.9	2.7	37.1	2.6
RM3,001 - RM5,000	17.5	5.5	19.7	5.2	11.5	5.5
Above RM5,000	7.0	9.1	12.5	6.7	7.4	7.0
Refused	-	-	-	-	10.0	5.9

Appendix

Table 15: Variable description

Variable	Description
Gender	Gender of an Internet user. Values include: Male, Female
Age	Age group of an Internet user. Values include: below 25, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55 and above
Ethnicity	Ethnicity of an Internet user. Values include: Malay, Bumiputra Sabah/Sarawak, Chinese, Indian, Others/Foreigner
Urban-Rural	Urban-rural classification of Internet user's place of residence.
Region	Region of an Internet user's state of residence. Values include: Central (Selangor, Kuala Lumpur, Putrajaya, Negeri Sembilan), North (Perlis, Kedah, Pulau Pinang, Perak), East Coast (Kelantan, Terengganu, Pahang), South (Melaka, Johor), East (Sarawak, Labuan, Sabah)
Household size	Number of people living with Internet user, inclusive of the Internet user. Values include: 1, 2, 3, 4, 5, 6, 7, 8 and more

Variable	Description
Education	Highest education level attained by Internet user. Values include: Degree or higher, Diploma, Preuniversity, Secondary, Primary/None/Others/Refused
Employment	Employment status of Internet user. Values include: Employed, Self employed, Unemployed, Retired, Full time student
Income	Monthly income category of Internet user. Values include: RM1,000 and below, RM1,001 – RM3,000, RM3,001 – RM5,000, Above RM5,000, Refused
Hotspot	Status of whether the Internet user has ever used personal hotspot. Values include: Yes, No
Years of experience with Internet use	Years of experience with Internet use. Values include: less than 3 years, 3 to less than 5 years, 5 to less than 7 years, 7 to less than 10 years, 10 to less than 15 years, More than 15 years
Duration of daily use of Internet	Duration of daily use of Internet in hours. Values include: less than 4 hours, 5 to 8 hours, 9 to 12 hours, 13 to 18 hours, more than 18 hours
Home	Whether Internet user accesses Internet from home. Values include: Yes and No
On-the-go	Whether Internet user accesses Internet on-the-go. Values include: Yes and No

Variable	Description
Visit social networking sites	Whether Internet user visits social networking sites. Values include: Yes and No
Online banking	Whether Internet user does online banking. Values include: Yes and No
Online shopping	Whether Internet user does online shopping. Values include: Yes and No

Table 16: Predict likelihood of sharing content online

Sample size = 5768

Independent variables	Coefficient	Odds Ratio
Intercept	-2.8217***	0.0595***
Gender		
Male (compared to female)	-0.0771	0.9258
Age		
Below 25 (compared to 55 and above)	-0.0763	0.9265
25-29 (compared to 55 and above)	0.1055	1.1113
30-34 (compared to 55 and above)	-0.1159	0.8906
35-39 (compared to 55 and above)	-0.0406	0.9602
40-44 (compared to 55 and above)	-0.011	0.9891
45-49 (compared to 55 and above)	0.1354	1.145
50-54 (compared to 55 and above)	0.172	1.1877
Ethnicity		
Bumiputra Sabah/Sarawak (compared to Malay)	0.088	1.092
Chinese (compared to Malay)	-0.499***	0.6071***
Indian (compared to Malay)	-0.1188	0.888
Others/Foreigner (compared to Malay)	0.1109	1.1173
Urban-Rural		
Urban (compared to Rural)	0.1078	1.1138

Region	Coefficient	Odds Ratio
North (compared to Central)	0.1134	1.1201
South (compared to Central)	0.1507	1.1627
East Coast (compared to Central)	0.2563**	1.2921**
East (compared to Central)	0.0883	1.0923
Household size		
2 (compared to 1)	0.5179**	1.6784**
3 (compared to 1)	0.4865**	1.6267**
4 (compared to 1)	0.456**	1.5777**
5 (compared to 1)	0.3303**	1.3914*
6 (compared to 1)	0.5173***	1.6775**
7 (compared to 1)	0.5129**	1.6702**
8 and more (compared to 1)	0.2499	1.2839
Education		
Diploma (compared to Degree or higher)	0.0836	1.0872
Pre-university (compared to Degree or higher)	0.1438	1.1546
Secondary (compared to Degree or higher)	-0.0974	0.9072
Primary/None/Others/Refused (compared to Degree or higher)	-0.5985***	0.5496***
Employment		
Self-employed (compared to Employed)	0.0694	1.0718
Unemployed (compared to Employed)	-0.1556	0.8559
Retired (compared to Employed)	0.2184	1.2441
Full-time student (compared to Employed)	0.2896	1.3359

Income	Coefficient	Odds Ratio
RM1,000 and below (compared to Above RM5,000)	-0.2324	0.7926
RM1,001 – RM3,000 (compared to Above RM5,000)	-0.3201**	0.7261**
RM3,001 – RM5,000 (compared to Above RM5,000)	-0.0976	0.907
Refused (compared to Above RM5,000)	-0.7157***	0.4889***
Years of experience with Internet use		
3 to less than 5 years (compared to Less than 3 years)	0.3891**	1.4757**
5 to less than 7 years (compared to Less than 3 years)	0.3635**	1.4384**
7 to less than 10 years (compared to Less than 3 years)	0.3021*	1.3527*
10 to less than 15 years (compared to Less than 3 years)	-0.1098	0.896
More than 15 years (compared to Less than 3 years)	0.0088	1.0088
Duration of daily use of Internet		
5 to 8 hours (compared to Less than 4 hours)	0.103	1.1085
9 to 12 hours (compared to Less than 4 hours)	0.2797**	1.3228**
13 to 18 hours (compared to Less than 4 hours)	0.249*	1.2827*
More than 18 hours (compared to Less than 4 hours)	0.2091	1.2326
Home		
Yes (compared to No)	0.2343***	1.2641***

On-the-go	Coefficient	Odds Ratio
Yes (compared to No)	0.1524*	1.1646*
Hotspot		
Yes (compared to No)	0.3923***	1.4804***
Visit social networking sites		
Yes (compared to No)	0.9444***	2.5712***
Online banking		
Yes (compared to No)	0.2648*	1.3031*
Online shopping		
Yes (compared to No)	0.464***	1.5904***

* Significant **Very significant ***Extremely significant

Table 17: Predict likelihood of encountering online fraud/scam

Sample size = 5924

Independent variables	Coefficient	Odds Ratio
Intercept	-2.6901***	0.0679***
Gender		
Male (compared to female)	0.2426***	1.2746***
Age		
Below 25 (compared to 55 and above)	-0.8879***	0.4115***
25-29 (compared to 55 and above)	-0.7456***	0.4744***
30-34 (compared to 55 and above)	-0.6731***	0.5101***
35-39 (compared to 55 and above)	-0.4205**	0.6567**
40-44 (compared to 55 and above)	-0.4024**	0.6687**
45-49 (compared to 55 and above)	-0.2511	0.778
50-54 (compared to 55 and above)	-0.1738	0.8405
Ethnicity		
Bumiputra Sabah/Sarawak (compared to Malay)	0.0783	1.0814
Chinese (compared to Malay)	-0.545***	0.5799***
Indian (compared to Malay)	-0.5483***	0.5779***
Others/Foreigner (compared to Malay)	-1.0854***	0.3378***
Urban-Rural		
Urban (compared to Rural)	0.0592	1.061

Region	Coefficient	Odds Ratio
North (compared to Central)	-0.063	0.939
South (compared to Central)	0.0965	1.1013
East Coast (compared to Central)	0.0742	1.077
East (compared to Central)	-0.0798	0.9233
Household size		
2 (compared to 1)	0.1117	1.1182
3 (compared to 1)	0.2051	1.2277
4 (compared to 1)	-0.0632	0.9388
5 (compared to 1)	0.0912	1.0955
6 (compared to 1)	0.1962	1.2168
7 (compared to 1)	0.3425	1.4084
8 and more (compared to 1)	0.1971	1.2178
Education		
Diploma (compared to Degree or higher)	0.2287**	1.2569**
Pre-university (compared to Degree or higher)	-0.1415	0.868
Secondary (compared to Degree or higher)	-0.1826*	0.8331*
Primary/None/Others/Refused (compared to Degree or higher)	-0.4758**	0.6214**
Employment		
Self-employed (compared to Employed)	0.0568	1.0585
Unemployed (compared to Employed)	0.1841	1.2021
Retired (compared to Employed)	0.1801	1.1973
Full-time student (compared to Employed)	0.2004	1.2219

Income	Coefficient	Odds Ratio
RM1,000 and below (compared to Above RM5,000)	-0.135	0.8737
RM1,001 – RM3,000 (compared to Above RM5,000)	0.1102	1.1165
RM3,001 – RM5,000 (compared to Above RM5,000)	0.1821	1.1997
Refused (compared to Above RM5,000)	-0.5148***	0.5976***
Years of experience with Internet use		
3 to less than 5 years (compared to Less than 3 years)	0.21	1.2336
5 to less than 7 years (compared to Less than 3 years)	0.2654	1.304
7 to less than 10 years (compared to Less than 3 years)	0.3142*	1.3692*
10 to less than 15 years (compared to Less than 3 years)	0.3005*	1.3506*
More than 15 years (compared to Less than 3 years)	0.3515*	1.4212*
Duration of daily use of Internet		
5 to 8 hours (compared to Less than 4 hours)	0.0884	1.0925
9 to 12 hours (compared to Less than 4 hours)	0.287**	1.3324**
13 to 18 hours (compared to Less than 4 hours)	0.226	1.2536
More than 18 hours (compared to Less than 4 hours)	0.3046**	1.356**
Home		
Yes (compared to No)	0.7444***	2.1051***

On-the-go	Coefficient	Odds Ratio
Yes (compared to No)	0.744***	2.1044***
Hotspot		
Yes (compared to No)	0.256***	1.2918***
Visit social networking sites		
Yes (compared to No)	-0.0623	0.9396
Online banking		
Yes (compared to No)	0.203	1.2251
Online shopping		
Yes (compared to No)	0.5243***	1.6893***

* Significant **Very significant ***Extremely significant

Table 18: Predict familiarity with digital identity

Sample size = 5920

Independent variables	Coefficient	Odds Ratio
Intercept	-1.8539***	0.1566***
Gender		
Male (compared to female)	0.0213	1.0215
Age		
Below 25 (compared to 55 and above)	0.6935***	2.0007***
25-29 (compared to 55 and above)	0.4181**	1.519**
30-34 (compared to 55 and above)	0.3204*	1.3777*
35-39 (compared to 55 and above)	0.4284**	1.5348**
40-44 (compared to 55 and above)	0.4492**	1.567**
45-49 (compared to 55 and above)	0.4182**	1.5192**
50-54 (compared to 55 and above)	0.2547	1.2901
Ethnicity		
Bumiputra Sabah/Sarawak (compared to Malay)	-0.1681	0.8453
Chinese (compared to Malay)	-0.1308	0.8774
Indian (compared to Malay)	0.0556	1.0571
Others/Foreigner (compared to Malay)	-0.7226**	0.4855**
Urban-Rural		
Urban (compared to Rural)	0.0368	1.0375

Region	Coefficient	Odds Ratio
North (compared to Central)	0.2534**	1.2883**
South (compared to Central)	0.0731	1.0758
East Coast (compared to Central)	0.2973**	1.3463**
East (compared to Central)	0.6754***	1.9649***
Household size		
2 (compared to 1)	0.1297	1.1385
3 (compared to 1)	-0.0497	0.9515
4 (compared to 1)	-0.4324**	0.6489**
5 (compared to 1)	-0.3464*	0.7072*
6 (compared to 1)	-0.4392**	0.6445**
7 (compared to 1)	-0.2571	0.7733
8 and more (compared to 1)	-0.3818*	0.6826*
Education		
Diploma (compared to Degree or higher)	-0.1053	0.9
Pre-university (compared to Degree or higher)	-0.457**	0.6332**
Secondary (compared to Degree or higher)	-0.5046***	0.6038***
Primary/None/Others/Refused (compared to Degree or higher)	0.0267	1.0271
Employment		
Self-employed (compared to Employed)	-0.0061	0.9939
Unemployed (compared to Employed)	-0.1523	0.8588
Retired (compared to Employed)	0.3482	1.4166
Full-time student (compared to Employed)	0.5496***	1.7326***

Income	Coefficient	Odds Ratio
RM1,000 and below (compared to Above RM5,000)	-0.5324***	0.5872***
RM1,001 – RM3,000 (compared to Above RM5,000)	-0.5906***	0.554***
RM3,001 – RM5,000 (compared to Above RM5,000)	0.0839	1.0876
Refused (compared to Above RM5,000)	-0.8918***	0.4099***
Years of experience with Internet use		
3 to less than 5 years (compared to Less than 3 years)	-0.0495	0.9517
5 to less than 7 years (compared to Less than 3 years)	-0.1934	0.8242
7 to less than 10 years (compared to Less than 3 years)	-0.1521	0.8589
10 to less than 15 years (compared to Less than 3 years)	-0.0847	0.9188
More than 15 years (compared to Less than 3 years)	0.3387*	1.4031*
Duration of daily use of Internet		
5 to 8 hours (compared to Less than 4 hours)	-0.0198	0.9804
9 to 12 hours (compared to Less than 4 hours)	0.2843**	1.3289**
13 to 18 hours (compared to Less than 4 hours)	0.3746**	1.4544**
More than 18 hours (compared to Less than 4 hours)	0.8237***	2.279***
Home		
Yes (compared to No)	0.4903***	1.6328***

On-the-go	Coefficient	Odds Ratio
Yes (compared to No)	0.8716***	2.3908***
Hotspot		
Yes (compared to No)	-0.0749	0.9279
Visit social networking sites		
Yes (compared to No)	0.2389	1.2698
Online banking		
Yes (compared to No)	0.6665***	1.9475***
Online shopping		
Yes (compared to No)	0.1523	1.1646

* Significant **Very significant ***Extremely significant

Table 19: Predict likelihood of feeling secure when using Internet

Sample size = 5326

Independent variables	Coefficient	Odds Ratio
Intercept	1.3652***	3.9164***
Gender		
Male (compared to female)	0.0594	1.0612
Age		
Below 25 (compared to 55 and above)	-0.1628	0.8497
25-29 (compared to 55 and above)	-0.1413	0.8682
30-34 (compared to 55 and above)	-0.0236	0.9766
35-39 (compared to 55 and above)	-0.1323	0.8761
40-44 (compared to 55 and above)	-0.0243	0.976
45-49 (compared to 55 and above)	-0.058	0.9437
50-54 (compared to 55 and above)	-0.1437	0.8662
Ethnicity		
Bumiputra Sabah/Sarawak (compared to Malay)	-0.07	0.9324
Chinese (compared to Malay)	-0.0898	0.9141
Indian (compared to Malay)	0.4021**	1.495**
Others/Foreigner (compared to Malay)	0.3289	1.3894
Urban-Rural		
Urban (compared to Rural)	-0.0516	0.9497

Region	Coefficient	Odds Ratio
North (compared to Central)	-0.0651	0.937
South (compared to Central)	0.0641	1.0662
East Coast (compared to Central)	0.0875	1.0915
East (compared to Central)	-0.2294	0.795
Household size		
2 (compared to 1)	-0.286	0.7512
3 (compared to 1)	-0.0947	0.9097
4 (compared to 1)	-0.1631	0.8495
5 (compared to 1)	-0.1869	0.8295
6 (compared to 1)	-0.2746	0.7599
7 (compared to 1)	-0.4905**	0.6123**
8 and more (compared to 1)	-0.4858**	0.6152**
Education		
Diploma (compared to Degree or higher)	0.1639	1.1781
Pre-university (compared to Degree or higher)	0.2187	1.2444
Secondary (compared to Degree or higher)	0.3618***	1.4359***
Primary/None/Others/Refused (compared to Degree or higher)	0.1045	1.1101
Employment		
Self-employed (compared to Employed)	0.0052	1.0053
Unemployed (compared to Employed)	0.0846	1.0883
Retired (compared to Employed)	0.3033	1.3543
Full-time student (compared to Employed)	0.3331*	1.3953*

Income	Coefficient	Odds Ratio
RM1,000 and below (compared to Above RM5,000)	-0.5232***	0.5926***
RM1,001 – RM3,000 (compared to Above RM5,000)	-0.2025	0.8167
RM3,001 – RM5,000 (compared to Above RM5,000)	-0.2877	0.75
Refused (compared to Above RM5,000)	-0.3767**	0.6861**
Years of experience with Internet use		
3 to less than 5 years (compared to Less than 3 years)	-0.1611	0.8512
5 to less than 7 years (compared to Less than 3 years)	-0.0586	0.9431
7 to less than 10 years (compared to Less than 3 years)	-0.08	0.9231
10 to less than 15 years (compared to Less than 3 years)	-0.1228	0.8844
More than 15 years (compared to Less than 3 years)	-0.4361**	0.6466**
Duration of daily use of Internet		
5 to 8 hours (compared to Less than 4 hours)	-0.0776	0.9254
9 to 12 hours (compared to Less than 4 hours)	-0.0594	0.9423
13 to 18 hours (compared to Less than 4 hours)	0.1083	1.1144
More than 18 hours (compared to Less than 4 hours)	-0.2716*	0.7622*
Home		
Yes (compared to No)	-0.8217***	0.4397***

On-the-go	Coefficient	Odds Ratio
Yes (compared to No)	-0.5913***	0.5536***
Hotspot		
Yes (compared to No)	0.369***	1.4462***
Visit social networking sites		
Yes (compared to No)	0.3543**	1.4251**
Online banking		
Yes (compared to No)	0.244*	0.244*
Online shopping		
Yes (compared to No)	-0.1525	0.8585

* Significant **Very significant ***Extremely significant

MCMC Statistical
Publications

Pocket Book of Statistics

Communications & Multimedia: Pocket Book of Statistics, a half yearly statistical bulletin of the Communications & Multimedia industry (ISSN: 2180-4656),

Postal & Courier Services: Pocket Book of Statistics, a yearly statistical bulletin of the Postal & Courier industry (ISSN: 2231-9913)

Statistical Brief

The Statistical Brief series is issued by the MCMC to disseminate survey findings. These reports are aimed at the general to intermediate user audience (ISSN:1823-2523)

Contact

Please contact MCMC Statistics and Data Intelligence Department if you have any queries regarding statistics published by MCMC at statistics@mcmc.gov.my.