MCMC

SURUHANJAYA KOMUNIKASI DAN MULTIMEDIA MALAYSIA
MALAYSIAN COMMUNICATIONS AND MULTIMEDIA COMMISSION

HAND PHONE
USERS SURVEY
2021
(HPUS 2021)

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SECTION 1: EXECUTIVE SUMMARY

The Malaysian Communications and Multimedia Commission (MCMC) has been conducting the Hand Phone Users Survey (HPUS) since 2004. The 2021 edition of the survey (HPUS 2021) included information on smartphone and feature phone types, user access, behaviour and activities, Over-The-Top (OTT) video applications, mobile payment applications, mobile privacy management, artificial intelligence (AI) and the Internet of Things (IoT) in smartphones, and awareness of MCMC's Check Your Label (CYL) campaign and Mobile e-Waste initiative. HPUS 2021 also assesses how well users respond to notifications and information received during Movement Control Orders (MCO).

HPUS 2021 was conducted by interviewing 1,916 respondents via online survey leveraging Pusat Ekonomi Digital Keluarga Malaysia (PEDi), MCMC's social media and service providers' websites. The following are the key highlights of HPUS 2021:

- **Higher usage of smartphone indicates people are much more digitally connected** – Penetration rate for smartphone users reached an all-time high at 94.8% in 2021.

- **Smartphone users performed more communications and social activities than transaction-based** – Text messaging (82.9%), social networking (78.9%), voice calls (78.6%) and video calls (71.0%) were among the top activities performed daily while shopping (41.1%) and banking (38.9%) were among the lowest.

- **Usage of mobile payment applications was still low** – Slightly more than 40% of respondents used mobile payment apps as an alternative mode of payment. Lack of knowledge, confidence, or skill, as well as a preference for cash/card payments, were major reasons for 59.0% of smartphone users not using mobile payment apps. There is room for improvement in Malaysia in terms of creating a cashless society, as this is one of the critical success factors in transitioning to a digitalized economy.

- **Vast majority of users are aware and know how to protect themselves at least with basic protection measure, however the trust in service providers (SPs) is still low** – 77.6% used password to protect their phone, 42.2% did not use untrusted apps and 34.8% cleared browsing history when compared to only 8.7% of them who did not take any measures. Less than 30% of respondents trust service provider to keep their data confidential.

- **Awareness and usage of AI applications and ownership of IoT device are relatively low** – Level of awareness and usage on AI-enhanced applications such as route suggestions (51.0% vs 44.1%) and voice search (34.4% vs 21.7%) were relatively low. Slightly less than 15.0% of respondents own at least one wearable device, with the majority owning a smart watch. The widespread use of smart watches indicates that users are more concerned about their health status, as this device provides users with instant access to various medical information and physical activities.

- **More effort needed to promote CYL campaign and Mobile e-Waste initiative** – CYL campaign only reached 57.5% awareness level among Malaysians, while mobile e-Waste initiative was barely passed the 50% mark. Among those who were aware of these campaigns, social media and television advertisements were the primary sources of information.

- **During the pandemic, the vast majority of mobile phone users were satisfied with government news and alerts delivered via SMS** – Dissemination of news and alerts on COVID-19 updates via SMS from the government was received with overwhelming satisfaction (75.6%).

SECTION 2: INTRODUCTION

Background of survey

HPUS 2021 is a series of purpose-built survey conducted by MCMC. This is consistent with MCMC's regulatory goal of conducting market research, which is accomplished by collecting descriptive statistics on the characteristics and behaviours of hand phone users in Malaysia.

Limitations and challenges

Some limitations and challenges were encountered while conducting this survey. One of them was the difficulty in obtaining the required number of samples within the time frame due to the nature of the online survey, which contributed to the low take-up rate. The questionnaire for this survey was distributed to a total of 3,645 potential respondents. Nonetheless, only 1,916 respondents completed the survey, representing a 52.6% success rate. Since the fieldwork was conducted during the MCO, more proactive measures such as in-person interviews and physical distribution of the questionnaire could not be undertaken to increase the take up rate.

Meeting the quota for each stratification was also challenging because the survey used stratified random sampling rather than basic random sampling.

Methodology

The sample population was drawn from the stratification of population from Department of Statistics, Malaysia (DOSM). The stratification was divided into two strata: gender and age group. The stratification was considered to ensure that the sample distribution is proportionate to the population published by DOSM. The terminologies defined in this survey were based on international standards and existing frameworks.

The survey's fieldwork began on 22 April 2021 and ended on 31 August 2021. The survey was conducted using the MCMC secure online portal, and the questionnaire was distributed to respondents via links accessible from a variety of online platforms, including smartphones, Internet-enabled feature phones, desktop, laptop, and tablet computers. The fieldwork also made use of 873 Pusat Ekonomi Digital Keluarga Malaysia (PEDi) located throughout Malaysia. Following that, the completed responses were recorded into the online portal database. The survey adopted a confidence level of 92% and a precision level of 2% to reach a sample of 1,916 hand phone users.

Terms and definitions

Feature phones[1]

Feature phone has limited functionality and proprietary operating systems including Bluetooth, WAP-based phone browsers, camera, and ability to install and run Java applets and applications. This device primarily uses narrowband 2G EDGE/EDGE+ speeds for mobile data access. Several feature phones produced with 3G network connectivity.

Smartphones[2]

A mobile phone used as the user's main phone that can perform Internet-based functions and function like a computer, including having an operating system capable of downloading and running applications, including those created by third-party developers.

Data Analysis

Types of data

HPUS 2021 distinguishes between annual core data, which are covered yearly for time series analysis and trends data on topical hand phone behaviours specific to the survey period. Specific requests from internal stakeholders were considered during the process of developing the survey's questionnaire. The following table illustrates the core and trends data captured in HPUS 2021:

Table 1: Types of data

Core data	Trend Data
1. Gender	1. Smartphone and feature phone users
2. Age group	2. Access, behaviour and activities of hand phone users
3. Income group	3. Mobile payment apps and Over-The-Top (OTT) videos
4. Level of education	4. Mobile privacy management
5. Urban-rural distribution	5. Artificial Intelligence (AI) and Internet of Things (IoT) in smartphones
6. Employment	6. Check Your Label campaign
7. Ethnicity	7. Mobile e-Waste initiative
8. State of residence	8. Users experience during MCO
9. Nationality	

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[1] Source: Mobile Handset Use in Digital Financial Services (03/2017), ITU
[2] Source: International Telecommunication Union (ITU), 5th Meeting of the Expert Group on ICT Household Indicators (EGH)

Data analysis

Basic frequency count was computed to assess the results pattern. Cross-tabulation between relevant indicators was done to identify significant relationships that would deduce meaningful inferences pertinent to the objectives.

Important findings were featured in the form of a report complemented with supporting charts and tables for the convenience of readers. Time series analysis was established in demographics and socio-economic tracking whilst the findings on current trends were analysed against evolutions that took place around the world. Information from external sources was also included as supplementary data to support any findings.

The data has been weighted to match nationality (Malaysian and non-Malaysian) and ethnicity distribution, where the 2020 mid-year population estimates from DOSM serves as the auxiliary information as follows:

Table 2: Population estimates 2020

Background characteristic	Percent
Malaysian	**90.9**
Malay	*51.4*
Chinese	*20.6*
*Other Bumiputera**	*11.9*
Indian	*6.2*
Others	*0.9*
Non-Malaysian	**9.1**

Other Bumiputera includes Bumiputera Sabah/Sarawak and Orang Asli

Finally, full results of the survey were appended in the form of percentage tables at the end of the report.

SECTION 3: MAIN FINDINGS

Smartphones Users vs Feature Phone Users

This survey found that the penetration rate of smartphone users in Malaysia for 2021 was at 94.8%. Among others, affordable devices and packages, subsidies, aggressive competitions, and promotions among service providers were observed to be among driving factors for the growth. Growing use and reliance on smartphone-based applications may also contributed to the increase.

On the other hand, feature phone users were on a declining trend which stood at only 7.5% in 2021.
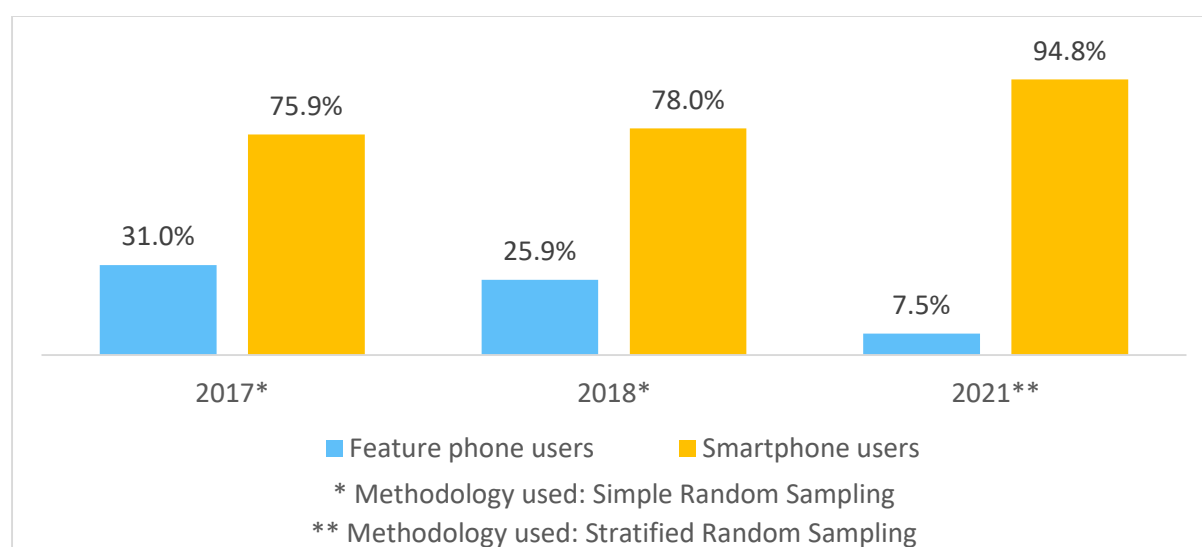

Figure 1: Percentage distribution of smartphone and feature phone users, 2017 to 2021[3]

The survey also found that the usage of smartphones among all age groups reached more than 80% in 2021. It was observed that smartphone use is highest among respondents under the age of 35, and the trend is declining in older age groups. By income group, the rate of adoption is more than 90% across all income categories indicating smartphones are more affordable for everyone. In terms of employment category, smartphone adoption is highest among employed respondents, while it is lowest among pensioners.

On the other hand, users of feature phones are most prevalent among those aged 65 years old and above (21.8%). Higher feature phone users were also observed among pensioners (11.8%) and those who resided in urban areas (10.1%).

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[3] From 2017-2021, the percentage were not mutually exclusive, whereby respondents were asked on the type of hand phone that they are using. Question: "Do you use feature phone?" and "Do you use smartphone?"
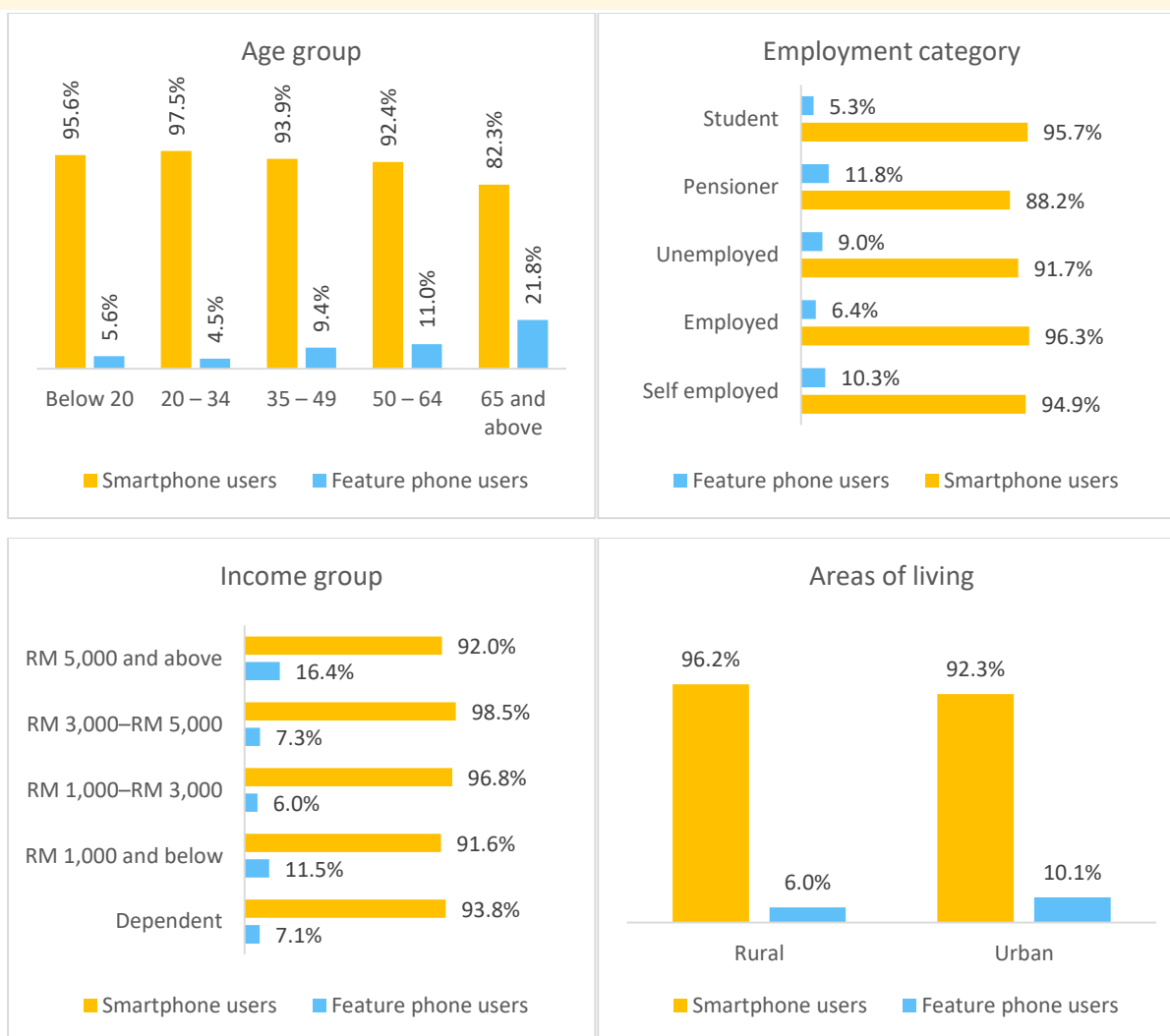
Age group

	Below 20	20 – 34	35 – 49	50 – 64	65 and above
Smartphone users	95.6%	97.5%	93.9%	92.4%	82.3%
Feature phone users	5.6%	4.5%	9.4%	11.0%	21.8%

Employment category

	Feature phone users	Smartphone users
Student	5.3%	95.7%
Pensioner	11.8%	88.2%
Unemployed	9.0%	91.7%
Employed	6.4%	96.3%
Self employed	10.3%	94.9%

Income group

	Smartphone users	Feature phone users
RM 5,000 and above	92.0%	16.4%
RM 3,000–RM 5,000	98.5%	7.3%
RM 1,000–RM 3,000	96.8%	6.0%
RM 1,000 and below	91.6%	11.5%
Dependent	93.8%	7.1%

Areas of living

	Smartphone users	Feature phone users
Rural	96.2%	6.0%
Urban	92.3%	10.1%

Figure 2: Adoption rate of smartphone and feature phone users by demographics

This survey further examined the respondents' reasons for not using smartphones[4]. Firstly, majority of feature phone users (59.7%) said that feature phones serve their needs, and this continues to be the top reason for feature phone users not using smartphones. Secondly, 17.2% of them claimed that smartphone is expensive, and thirdly, they cited unavailable or weak 4G/LTE network coverage within their residential area (15.3%).

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[4] This part of the survey only includes respondents who used feature phone only and do not use any smartphones. 4.2% of respondents do not use smartphones (users of feature phones only)
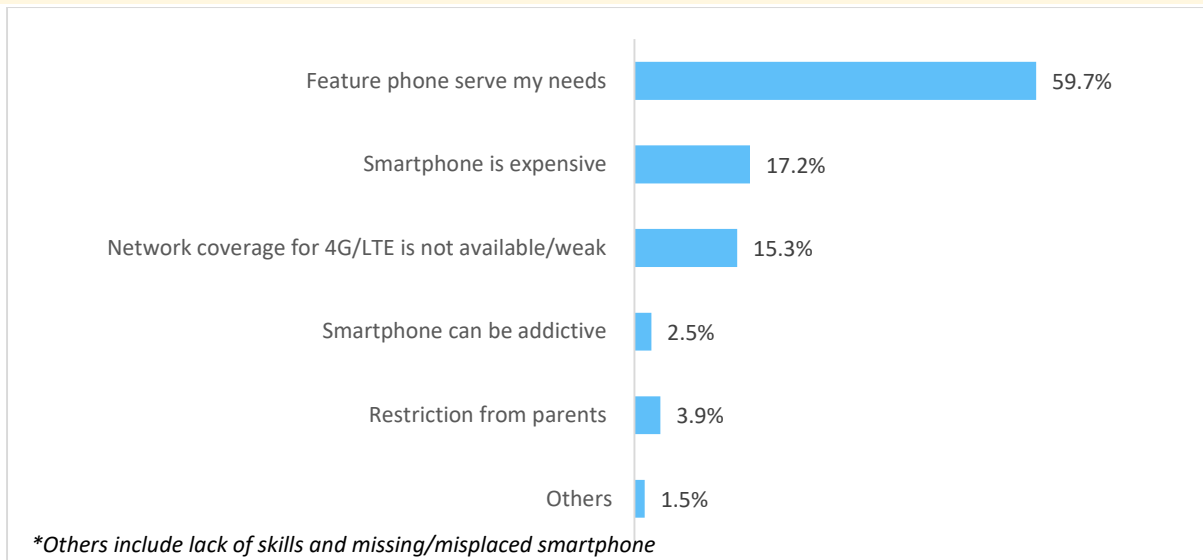
Others include lack of skills and missing/misplaced smartphone

Figure 3: Percentage distribution on reason of still using feature phone

When asked if they intended to switch from feature phones to smartphones, 51.0% of feature phone users responded in the affirmative.
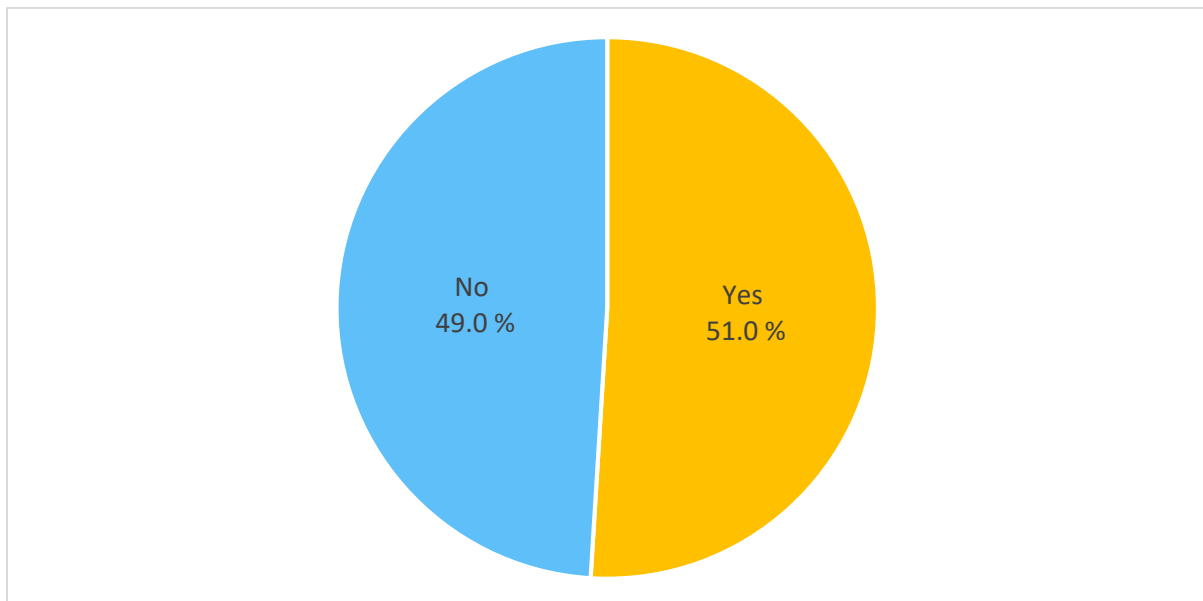

Figure 4: Willingness to migrate to smartphone

Smartphone Ownership

As compared with HPUS 2018, percentage of smartphone ownership grew significantly from 76.4% to 91.5%, an increase of 15.1%.

Figure 5: Smartphone ownership, 2018 & 2021

Similar to smartphone users, the adoption of smartphone ownership[5] was high especially among younger group and those with higher level of education.
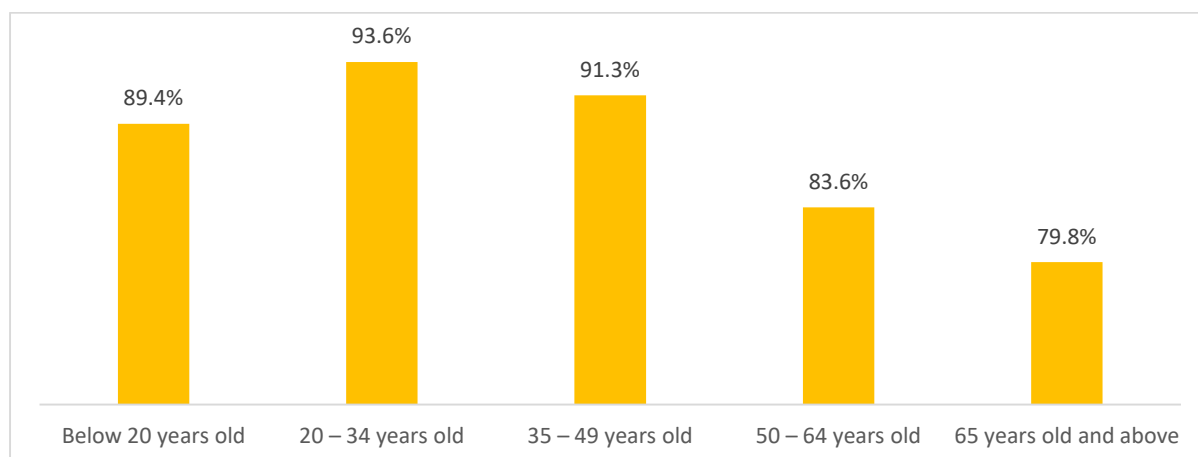

Figure 6: Adoption rate of smartphone owners by age group

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[5] Based on Measuring the Information Society Report 2016 (MISR 2016), ITU differentiates data collection on mobile-cellular use and ownership. (Use: Proportion of individuals who used a mobile cellular, Own: An individual who owns a mobile cellular if he/she has a mobile-cellular with at least one active SIM card for personal use)
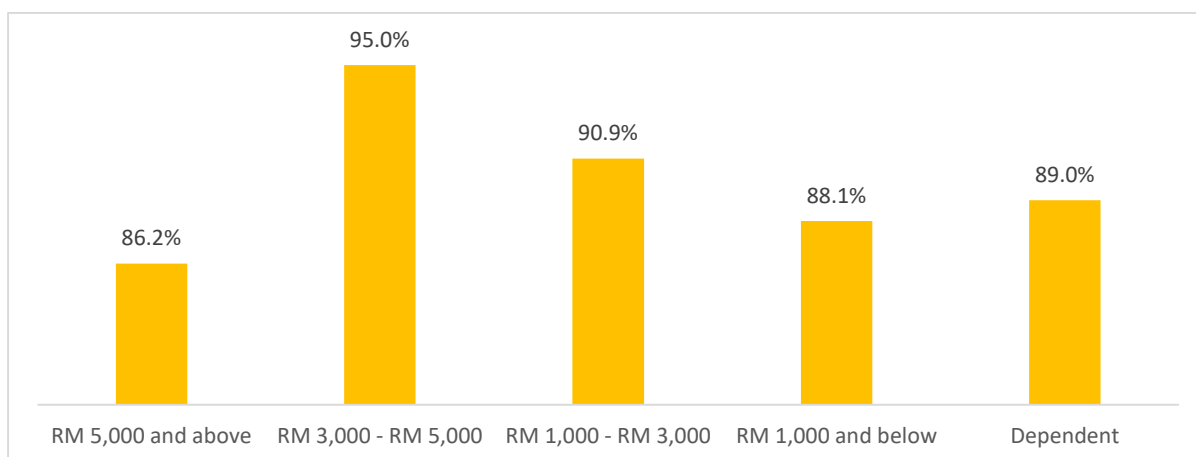
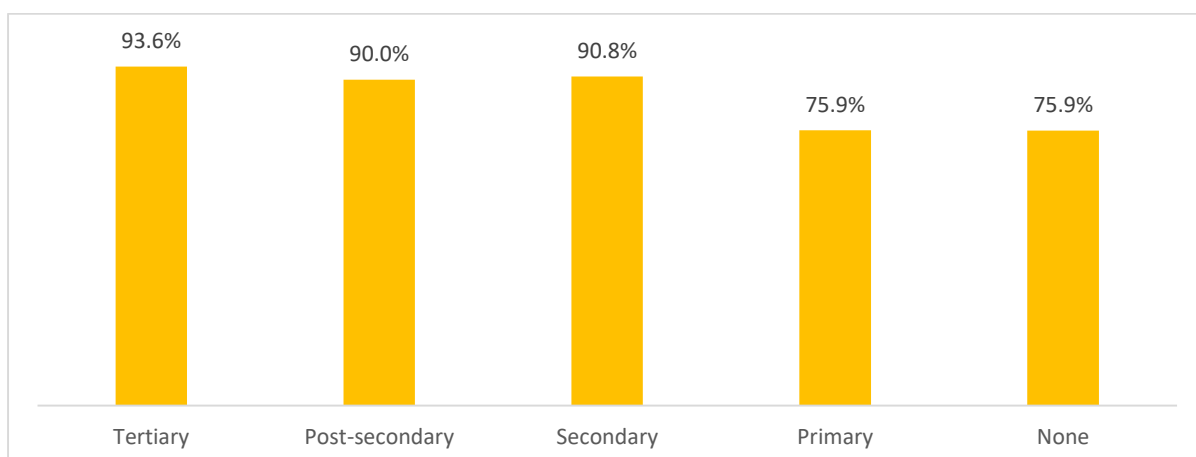*Figure 7: Adoption rate of smartphone owners by income category*

Figure 8: Adoption rate of smartphone owners by educational attainment

Internet Access by Smartphones and Feature Phones

Accessing the Internet via smartphone is becoming increasingly popular in Malaysia. Since 2012, the percentage of smartphone users who access the Internet via their smartphones has increased by 30.5%, or at a 6.3% annual growth rate. The HPUS 2021 found that 99.3% of smartphone users were using their phones to go online in 2021. In comparison, IUS 2020 found that 98.7% of Internet users used smartphones to access the Internet.

Table 3: Percentage distribution of Internet access using smartphone by users

	2012	2013	2014	2015	2017	2018	2021
Access Internet using smartphone (%)	68.8	78.5	90.1	92.4	94.8	94.6	99.3

Activities of Smartphone Users

Smartphones and their variants have become an integral part of people's daily lives. Communications, entertainment, shopping, finance, and so on are just a few of the many activities available on smartphones.

According to HPUS 2021 findings, communications remained the top activity among smartphone users, with 82.9% using this device for text messaging. Of which, 97.3% of them claimed to perform this activity at least once a day. Aside from texting, 78.9% of respondents communicated through social media with 94.4% of them doing so on daily basis. Meanwhile, 78.6% used voice calls, and 80.2% used it at least once per day.

Apart from texting, smartphone users also communicated via video calling. According to the survey, 71.0% of respondents used their smartphones for video calling. One possible explanation for the increase in video calling activities via smartphones is the availability of large amounts of data at reasonable prices. Furthermore, the availability of video calling features on various communications applications such as Apple's FaceTime, Skype, WhatsApp, WeChat, and others has encouraged more people to communicate through this channel, particularly during the lockdown period when people were looking for an alternative way to connect with one another.

In line with technology evolution, smartphones have also evolved to become the main gadget for photography and videography activities. Improvements in smartphone features such as higher pixels, greater memory space, advanced chipsets, longer battery lifespan etc. have contributed to an increase in interest of these activities. According to the survey, 74.8% of smartphone users take photos and record videos with their device. It is no surprise that the ability to edit and share photos with others almost instantly has made this activity so popular among smartphone users, particularly among young users below 24 years' old (38.9%).

Furthermore, looking for information on the Internet has become extremely easy with smartphones. A sizable majority or 73.6% of users used smartphones for searching and browsing the Internet. Almost 90.0% of them engaged in this activity on a daily basis.

Smartphones were also used for entertainment purposes. With the introduction of more advanced multimedia features, the device's size and screen, as well as the variety of digital contents, combined with an affordable data package and better broadband quality, users' entertainment experiences have been enhanced. Accordingly, watching videos or movies was the most popular (62.9%) among users followed by listening to music (54.6%) and playing games (46.3%). According to MCMC's 4Q 2021 Communications & Multimedia Facts & Figures, video streaming contributed a significant portion of mobile-broadband traffic (51.4%).[6]

Sending emails for various purposes is another way on how smartphone users communicate with 47.0% of them send and receive emails. Of which, 42.3% of them did it on daily basis. The survey also found that 32.9% of smartphone users claimed to use their device for reading various materials such as newspaper, iBook, online journal, etc.

Smartphones also served as a tool for navigation and direction finding. Applications such as Waze and Google Maps are available and supported by almost all smartphone models. As such, 48.4% of respondents claimed of using these applications on their smartphones. Of which, 17.0% of them used it on daily basis while 31.9% used it at least once a week and 42.2% used it at least once a month.

Comparing with smartphone activities above, usage of smartphones for transaction-based activities such as online shopping and banking was still relatively low. Less than 40.0% of smartphone users performed banking-related activities via smartphones such as bill payment, money transfer and checking bank account balance, and 27.7% of them did so at least once per day. Meanwhile, more than 4 out of 10 smartphone users (41.1%) claimed that they shopped using their smartphones, with 44.1% of them doing so at least once a month.

Finally, monitoring homes or business remotely via closed-circuit television (CCTV) for security reasons was the least popular activity (5.6%) found in HPUS 2021.

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[6] https://www.mcmc.gov.my/skmmgovmy/media/General/C-M-Q4_220331_BI_PDF_1.pdf
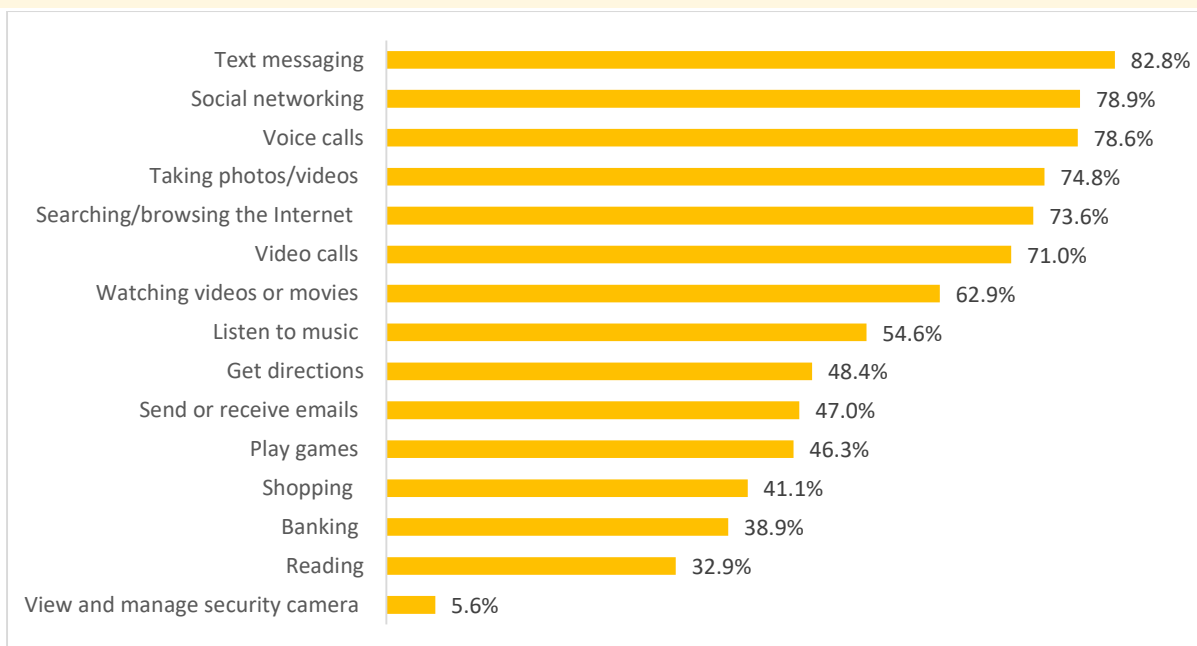
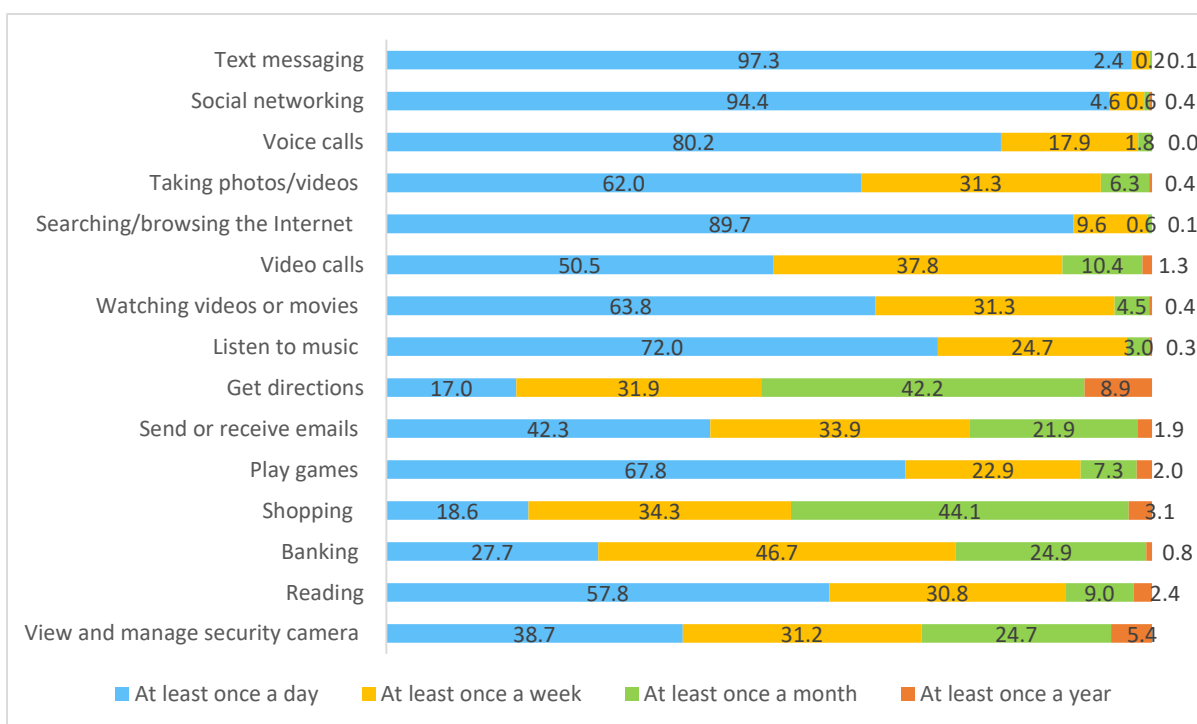*Figure 9: Percentage distribution of smartphone Internet activities by users*

Figure 10: Percentage distribution of frequency of Internet activities by smartphone users (%)

Behaviour of Hand Phone Users

A few questions were asked about users' behaviour to determine their reliance on devices. According to the findings, about 4 out of 10 hand phone users checked their phone frequently (every 30 minutes or less), even without notification (42.1%).
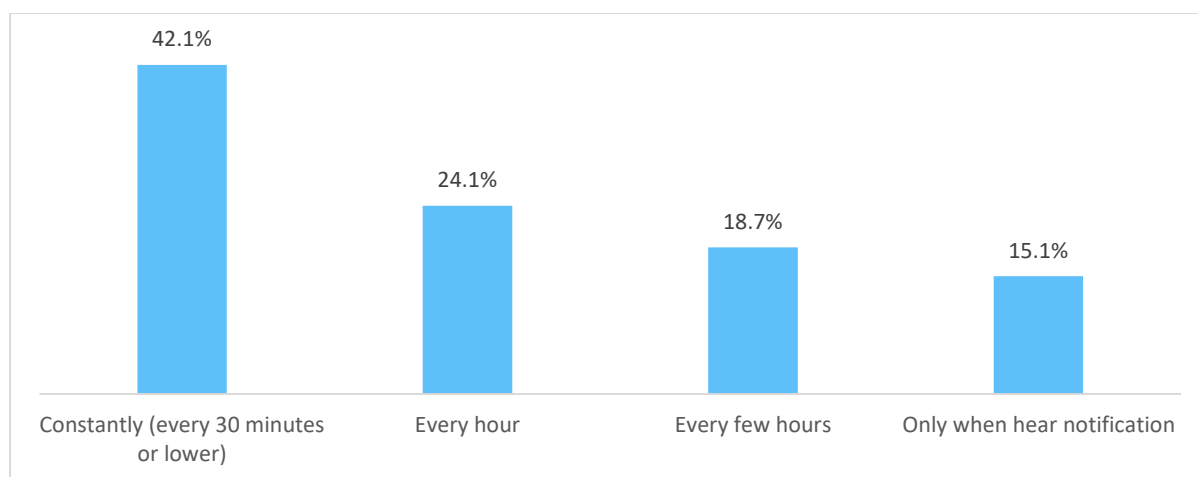

Figure 11: Frequency to check phone in a day

More than three quarters of hand phone users (82.4%) claimed that they checked their hand phones before going to bed or in the middle of the night. Among others, more than half of hand phone users (53.2%) claimed they used their hand phones in public area while usage of hand phones on public transportation was at 41.6%. Furthermore, the survey discovered that a small number of users admitted to using their hand phones while driving and in prohibited areas, such as gas stations.
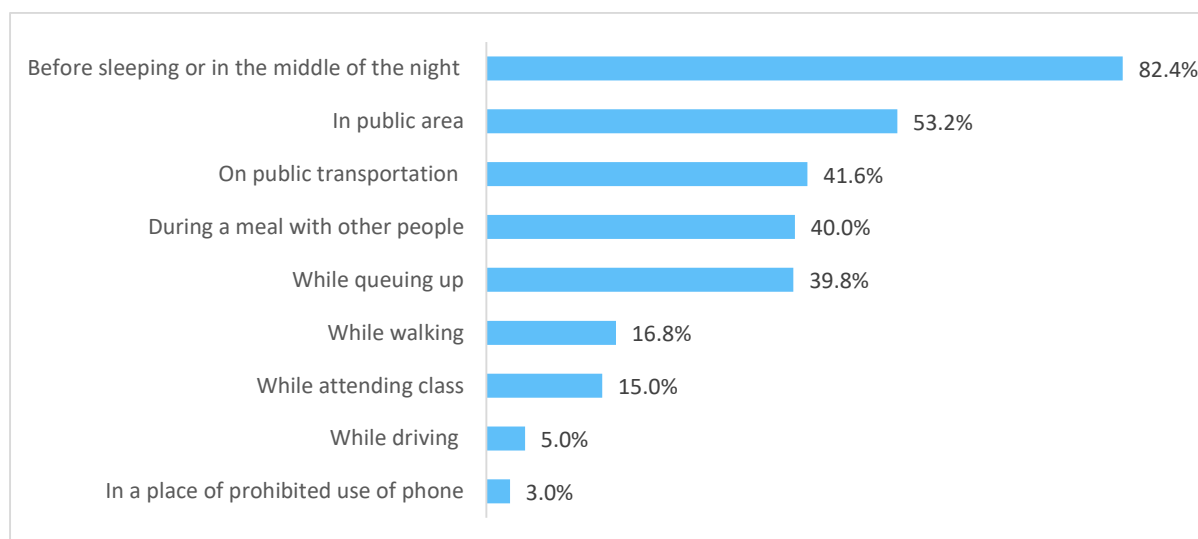

Figure 12: Use of hand phones

The survey also inquired about the first thing smartphone users did when they woke up (excluding turning off alarm). The majority of respondents (54.2%) said the first thing they did after waking up was check the time, followed by mobile messaging apps (35.6%). Meanwhile, 8.6% visited their social networking apps and 1.1% checked their emails. The remaining smartphone users (0.4%) engaged in other activities such as gaming, reading news, listening to music, and checking battery status.
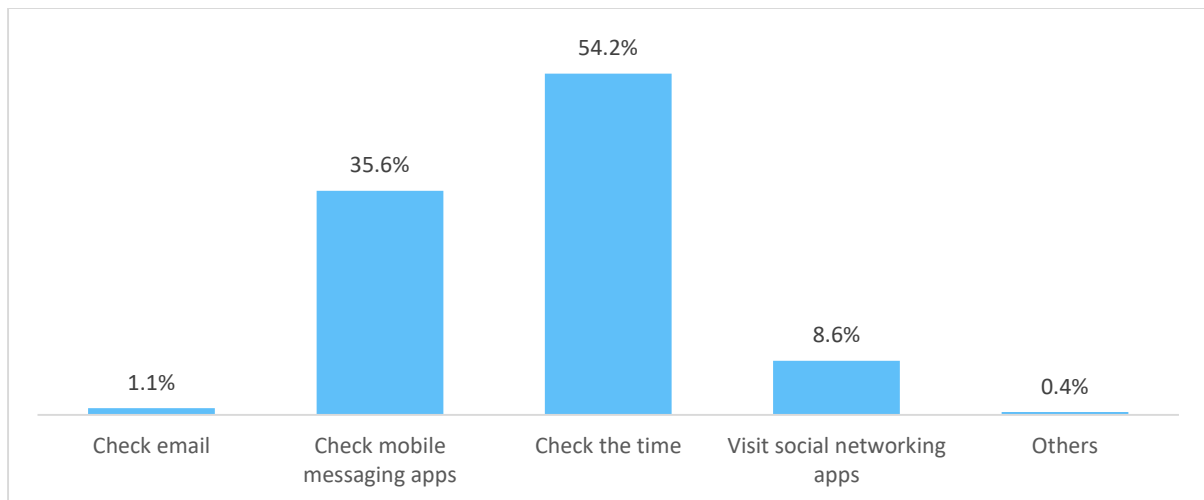

Figure 13: The first thing smartphone users did after waking up

Mobile Payment Applications & OTT Video

The growth of e-Commerce has reshaped financial transactions around the world. In Malaysia, the introduction of mobile payments has been consistently growing, with more providers stepping into the industry and offering consumers the convenience of paying with their phones.

The survey found that 41.0% of respondents used mobile payment applications as an alternative to the conventional payment method.
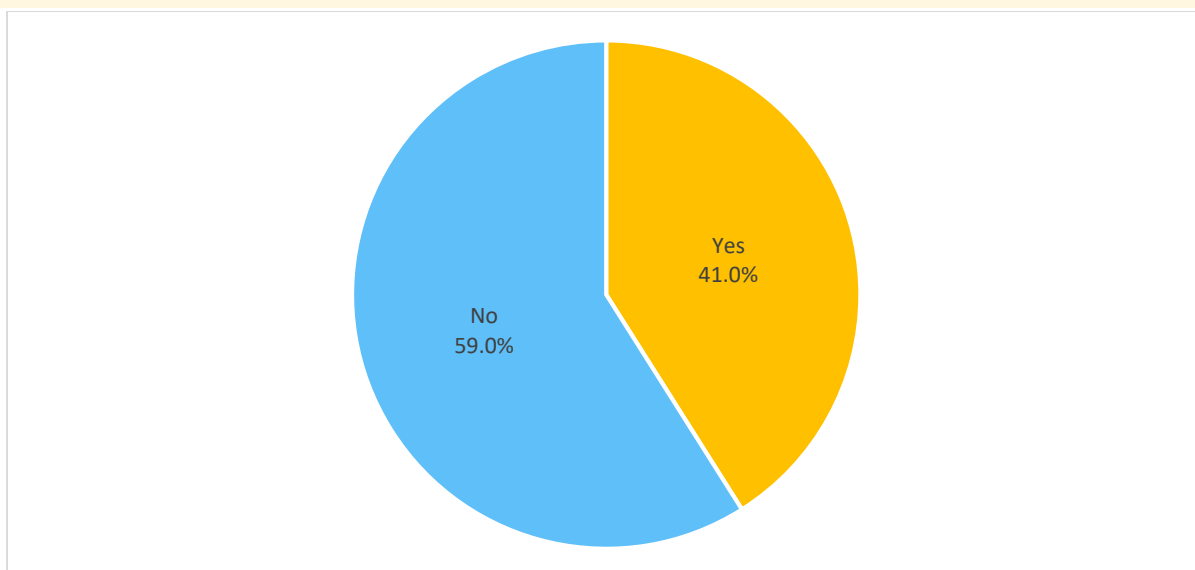
Figure 14: Usage of mobile payment apps

Despite of benefits and ease of use provided by mobile payment systems, adoption of these services was still considered relatively low in Malaysia. Lack of knowledge, confidence, or skill, as well as a preference for cash/card payments, were major reasons for 59% of smartphone users not using mobile payment apps. Moving forward, there is room for improvement in building a cashless society in Malaysia, as this is one of the critical success factors in transitioning to a digitalized economy.

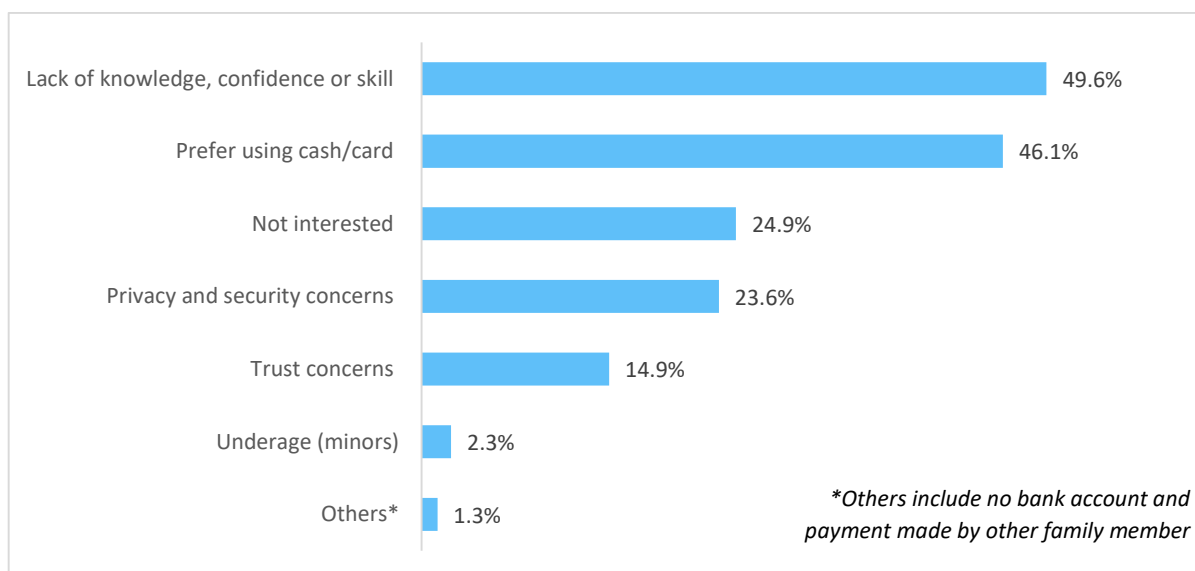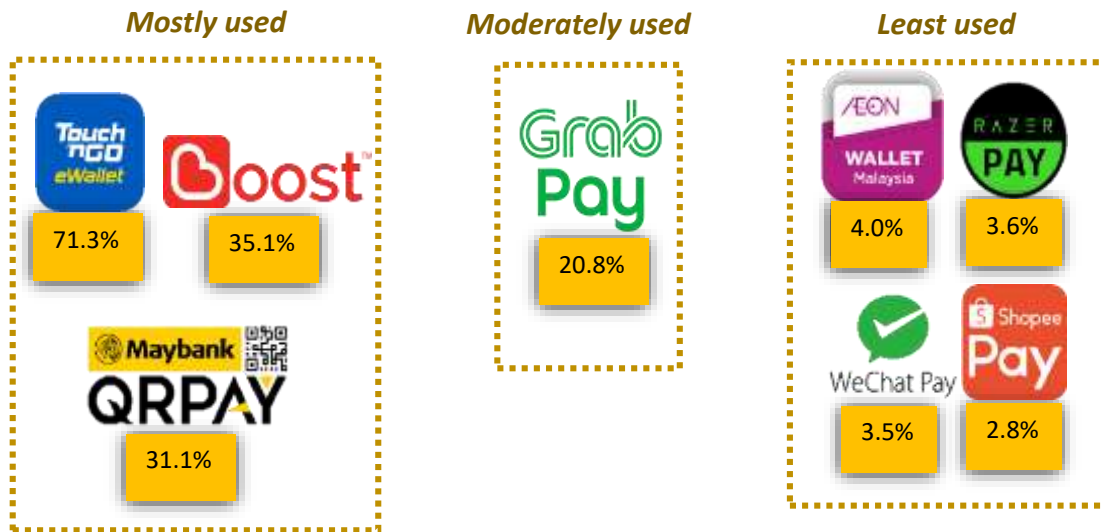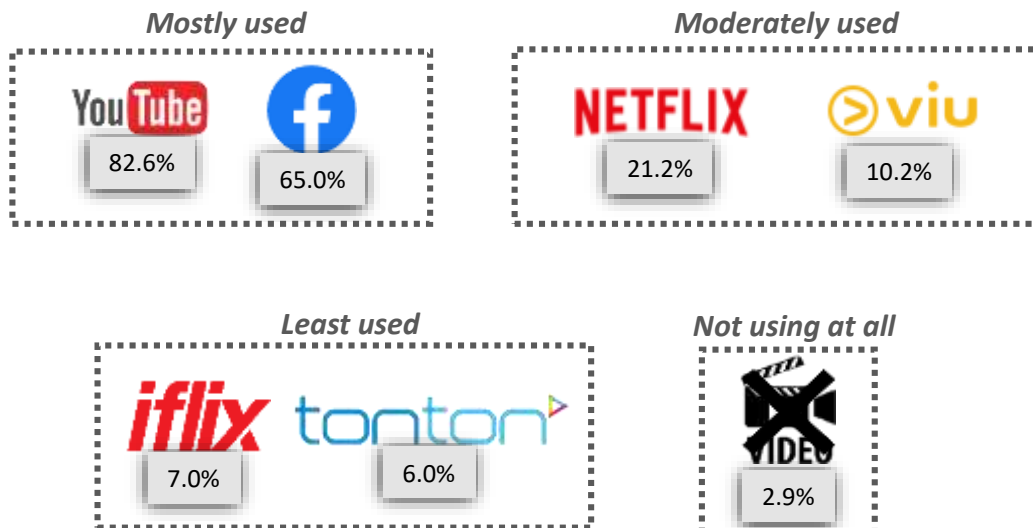*Figure 15: Reason not using mobile payment apps*

Among the 41.0% of the respondents who used mobile payment apps, the most popular apps were Touch 'n Go e-Wallet (71.3%), Boost (35.1%) and Maybank QRPay (31.1%). GrabPay was used moderately at 20.8%, while the rest of the mobile payment apps were used the least, including AEON Wallet (4.0%), Razer Pay (3.6%), WeChat Pay (3.5%), and Shopee Pay (2.8%).

Mostly used

Touch nGo eWallet — 71.3%
Boost — 35.1%
Maybank QRPAY — 31.1%

Moderately used

GrabPay — 20.8%

Least used

AEON WALLET Malaysia — 4.0%
RAZER PAY — 3.6%
WeChat Pay — 3.5%
Shopee Pay — 2.8%

Respondents were also asked on their usage of Over-The-Top (OTT) video applications. YouTube (82.6%) and Facebook (65.0%) were the top applications that respondents used for watching videos. Meanwhile, Netflix (21.2%) and viu (10.2%) were moderately used, while iFlix (7.0%) and tonton (6.0%) were the least used. There were also 2.9% of respondents who did not use any OTT video applications at all.

Mostly used

YouTube — 82.6%
Facebook — 65.0%

Moderately used

NETFLIX — 21.2%
viu — 10.2%

Least used

iflix — 7.0%
tonton — 6.0%

Not using at all

VIDEO — 2.9%

Mobile Privacy Management

The survey also put an effort to understand concerns among respondents regarding breaching of personal information in the event of lost or stolen phone. It was found that more than two out of every ten smartphone users (27.8%) had lost their device. Of these, 40.5% lost their phone due to theft, 35.3% misplaced their phone, and the remaining 24.2% did not recall the reason for phone loss.

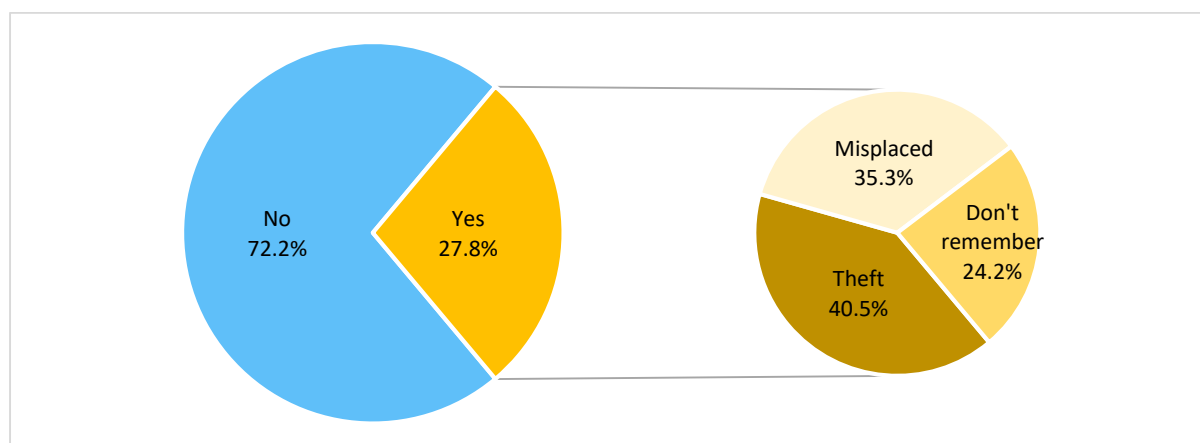*Figure 16: Lost hand phone experience - Reason phone loss*

Accordingly, the survey also inquired about their actions after losing their hand phones, with more than half (55.5%) claiming that they did not remember what they did after losing their devices. Meanwhile, 14.7% filed a police report and 12.9% contacted service providers to track their phones.
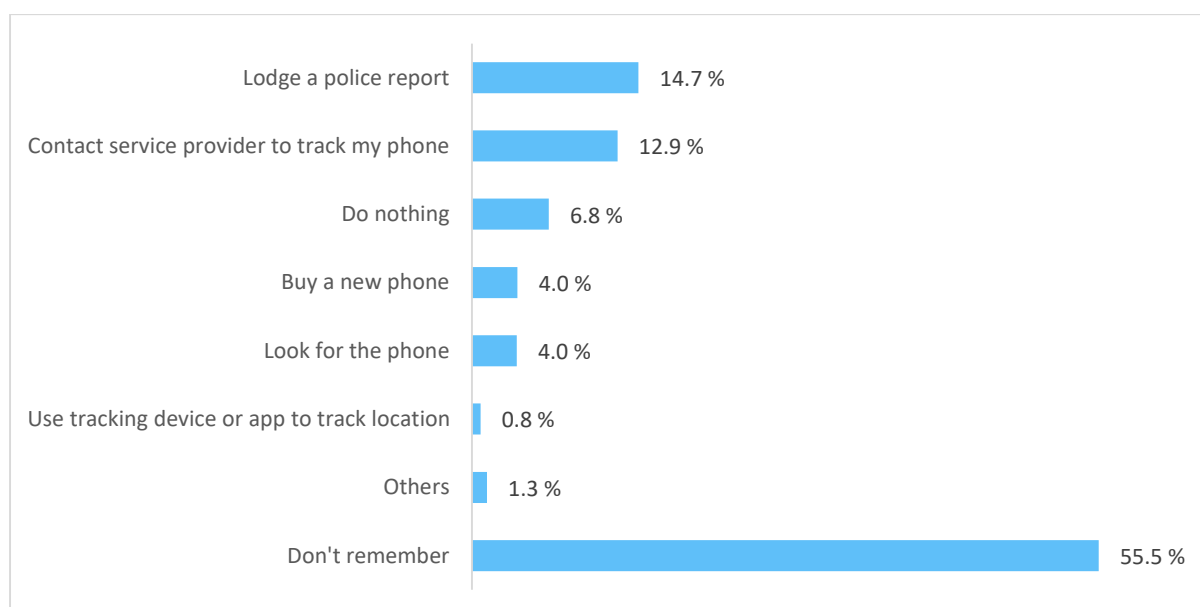

Figure 17: Action taken after losing hand phone (%)

When asked about the main concerns of losing their phones, the top two concerns were leaking of personal photo (72.8%) and misuse of identity (70.4%). More than 6 out of 10 hand phone users (65.6%) were concerned about losing contacts, while 59.0% were concerned about their financial information being stolen.
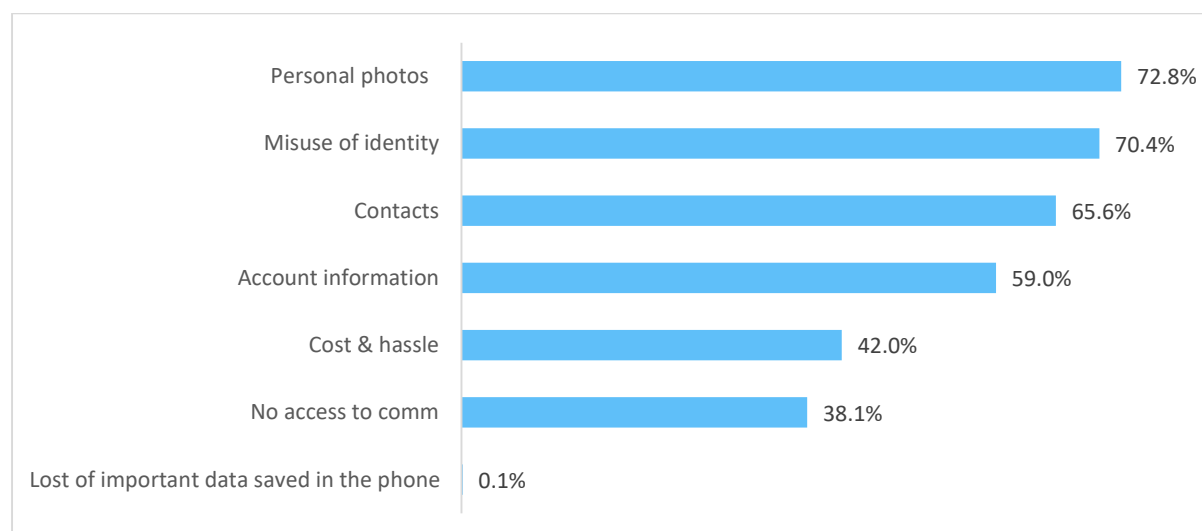
Figure 18: Mobile privacy concern

Furthermore, the survey gauged smartphone users on precautionary steps taken to protect their personal data. According to the survey, the vast majority of users are aware and know how to protect themselves, at least with basic security measures. The majority of users (77.6%) were diligent in protecting their smartphones with passwords. Apart from that, the top actions taken to protect their data privacy were not using untrusted apps/websites (42.2%) and frequently clearing their browsing/search history (34.8%).

Figure 19: Measures taken to protect personal data

The survey also inquired about hand phone users' level of trust in the confidentiality of their personal data kept by their service provider. The percentage of hand phone users who trusted their service providers to keep 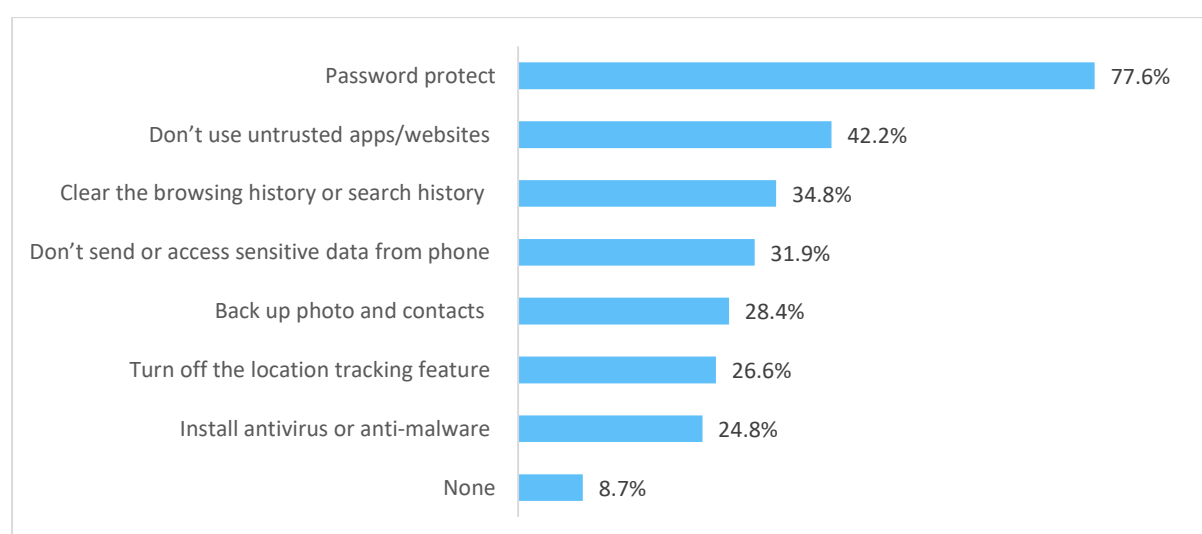their data private was at 27.2%. More than one in ten users (12.3%) did not trust service providers with their personal information. Meanwhile, 60.4% were unsure about the confidentiality of their data kept by service providers.
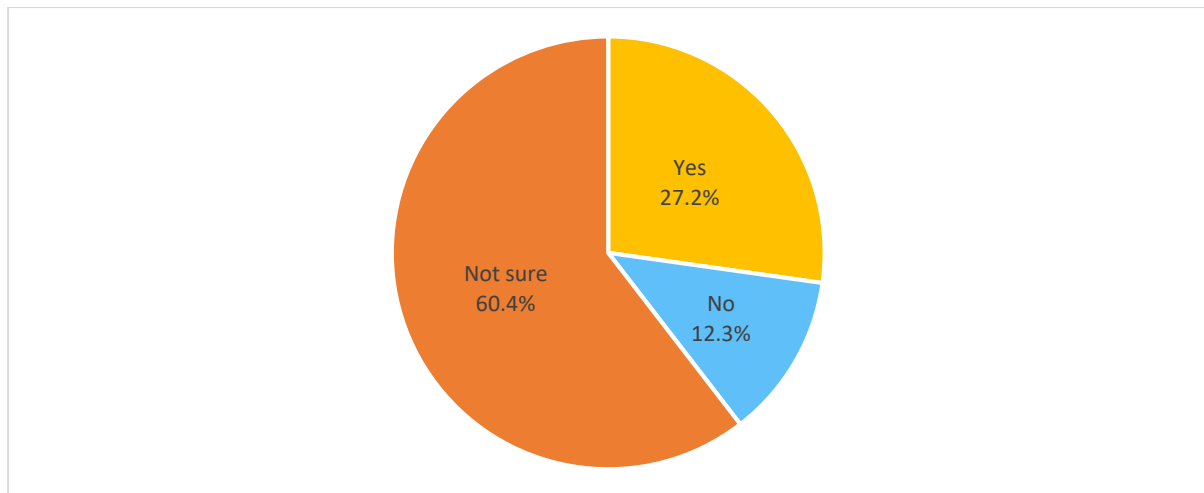

Figure 20: Trust on service provider to keep data confidential

Artificial Intelligence (AI) and Internet of Things (IoT)

Artificial intelligence (AI) has finally made its way into our smartphones in recent years. AI capabilities on smartphones include route suggestion, translation apps, predictive text, and voice search, among others. This section assesses the awareness and use of AI applications, wearable devices, and the Internet of Things (IoT) in smart home applications.

According to the survey, the route suggestion was the AI application that the majority of respondents (51.0%) were aware of. This application was used by 44.1% of the respondents. Route suggestion apps like Waze and Google Maps assist users in finding the best route to their destination by avoiding tolls, finding shortcuts, detecting blockages, and so on. The second most popular AI application among smartphone users was voice recognition, which 34.4% of them were aware of and 21.7% claimed to be using. Voice recognition is a smartphone feature that allows users to search for information by saying it aloud rather than typing it.

Translation apps were the third most popular AI-enhanced application, with 33.0% of smartphone users aware of them and 27.5% claiming to use them.
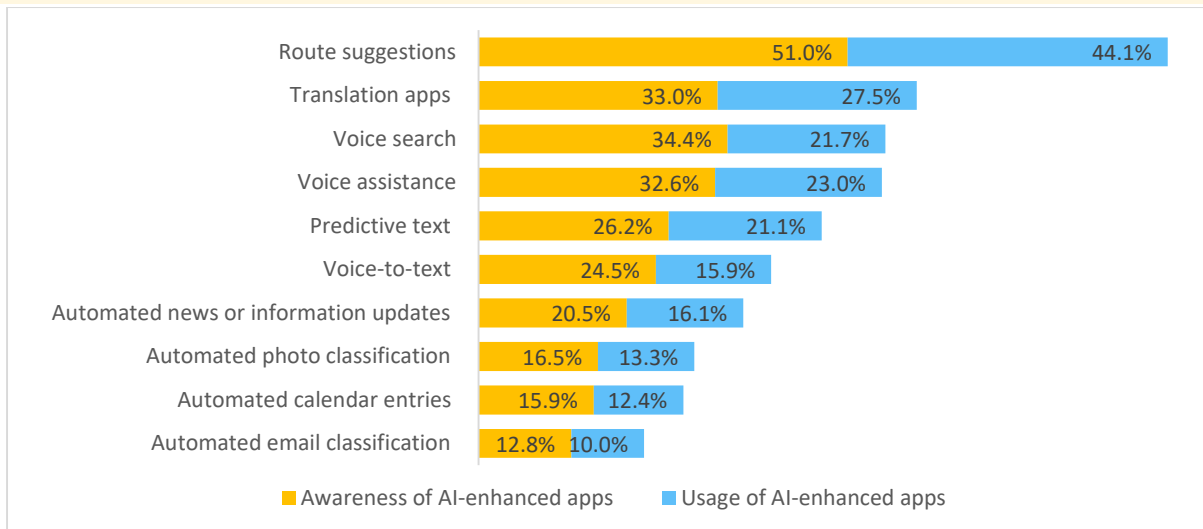
Figure 21: Percentage distribution of awareness and usage of AI-enhanced applications

Since 2015, wearable device market has been growing and Asia Pacific has recorded the second biggest wearable devices sales after North America[7]. According to the survey, the ownership of at least one wearable device among Malaysian smartphone users has increased from 10.6% in 2018 to 14.4% in 2021.
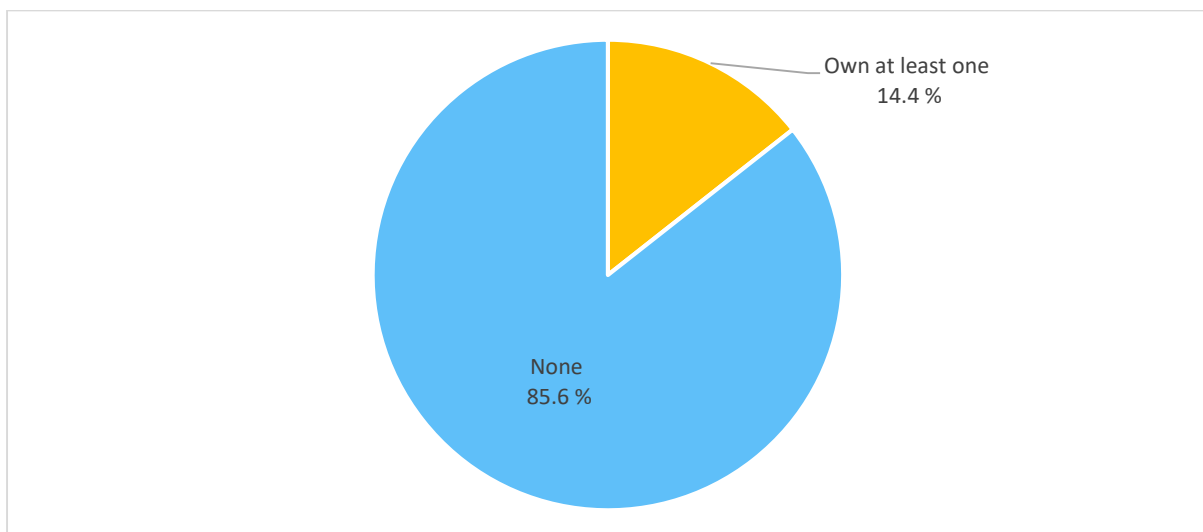
Figure 22: Percentage distribution of wearable device ownership

Of this, 67.7% of wearable device owners owned smart watches while 47.2% owned fitness bands. With affordable pricing and multiple functions, it was no surprise that smart watch and fitness band were leading the pack. The widespread use of smart watches indicates that users are more concerned about their health status, as this device provides users with instant access to various medical

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[7]   Wearables   sales   worldwide   by   region   2015-2021 | Statistic.   (2017).   Retrieved   from
https://www.statista.com/statistics/490231/wearable-devices-worldwide-by-region/

information and physical activities. Only 5.0% of wearable device owners had Virtual Reality (VR) headsets which are mainly used for gaming while 5.1% of them owned smart glasses.

Figure 23: Percentage distribution of wearable device ownership by type of device

Between 1998 and the early 2000s, the first modern Smart Home technology products became available to consumers[8]. Smart home technology allows users to control and monitor their connected home devices remotely from their smartphones or other networked devices. HPUS 2021 studied the level of importance of several smart home applications available in the market.
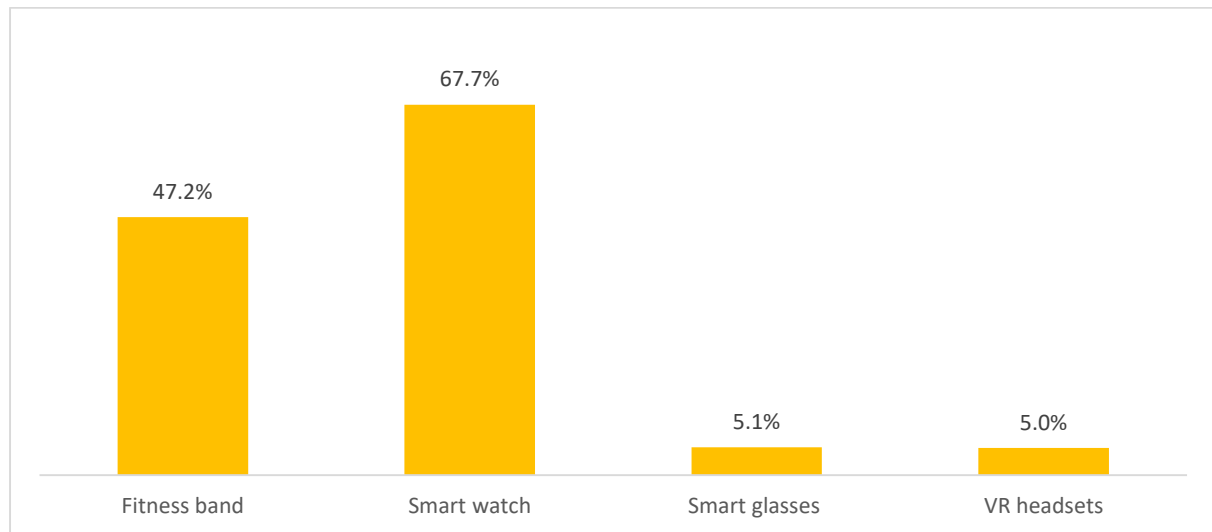
This survey examines public perception of the importance of using the Internet of Things (IoT) in 5 elements of the smart home concept. These include security, energy efficiency, atmosphere, entertainment and convenience[9].

First element of Smart Home application measured in this survey is home surveillance for security purposes i.e. to help reduce the risk of theft and break-in. The importance of security is paramount in this concept. More than 6 out of 10 respondents (66.7%) agreed that home surveillance was an important application for Smart Homes.

The second and third categories were home control, which includes a variety of useful applications such as controlling room temperature based on individual presence, controlling blinds based on the amount of sunlight, and so on. Thus, users will be able to optimise their energy consumption. Home control can also provide comfort and create a cosy atmosphere in our home. More than 3 out of 10

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[8] Hendricks, D. (2014). The History of Smart Homes. Retrieved from https://www.iotevolutionworld.com/m2m/articles/376816-history-smart-homes.htm
[9] Carlson, T. (2016). The 5 Elements of Smart Homes. Retrieved from http://www.modernsmarthome.com/the-5-elements-of-smart-homes/

(32.6%) respondents felt that home control was an essential element of smart home application (24.3% important and 8.3% extremely important).

The fourth category is home entertainment systems, which can display updated information as well as suggest media content consumption based on individual behaviour. Almost half of all respondents (44.7%) agreed that a home entertainment system was an important component of a smart home.

Finally, home appliances are being transformed into smarter versions that can be connected and controlled by smartphones, such as refrigerators, coffee machines and washing machines. In terms of this application, 31.0% of respondents felt that having these smart home appliances was important.
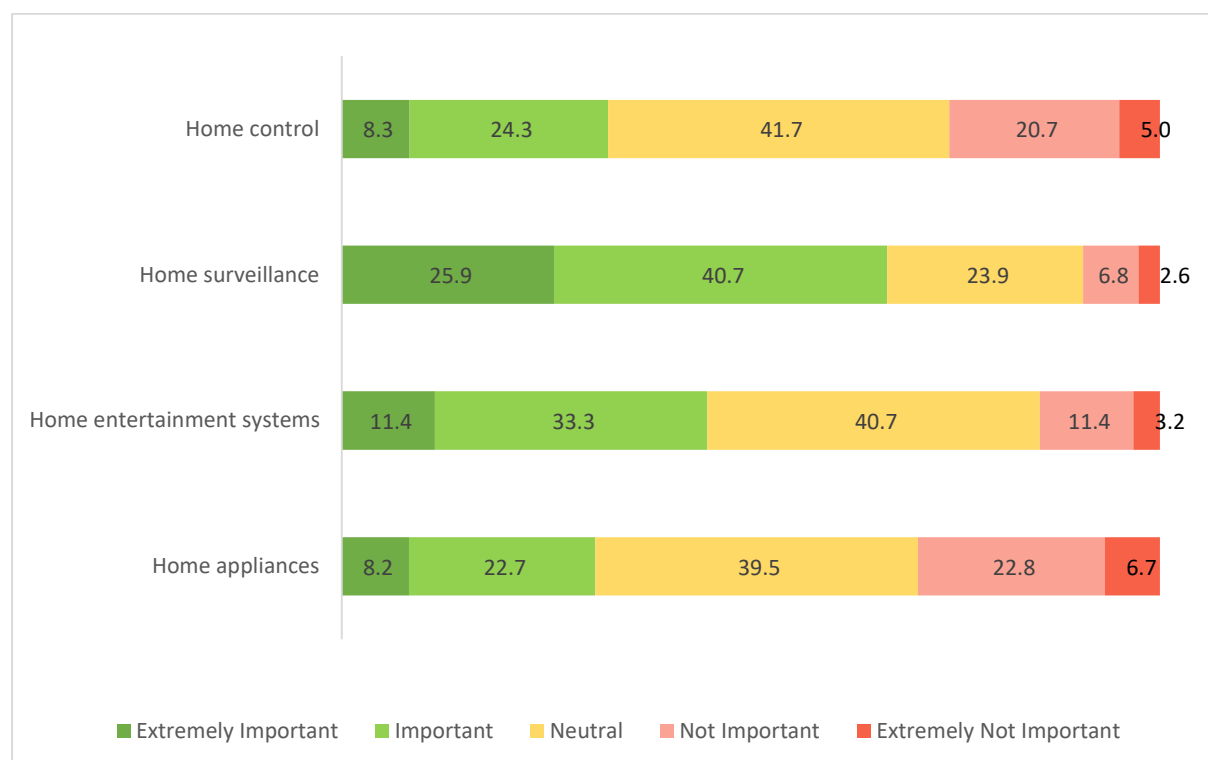

Figure 24: Percentage distribution of Smart Home applications' level of importance

Check Your Label (CYL) Campaign

The amount of counterfeit goods and fake products has increased in tandem with the globalisation of e-commerce. This is a concerning issue because many incidents involving counterfeit devices have resulted in consumer harm. Therefore, it is critical to ensure that the consumer purchased genuine and certified communication equipment bearing the MCMC label. Communication devices that do not bear the MCMC label are unsafe to customers, reduce the quality of service provided by communication service providers, cause frequency interference to communication services, and may be counterfeit or cloned.

MCMC had taken a proactive action to raise public awareness on the importance of purchasing communication devices with a valid MCMC label by launching Check Your Label (CYL) campaign. This consumer awareness campaign has been in place since 2015 and is promoted across a variety of platforms. The campaign emphasises the importance of purchasing communication devices that bear a valid MCMC label. The campaign also aims to educate consumers on how to use the Check Your Label mobile application or a website to verify the validity of an MCMC label.

In this section of the survey, a few questions were asked to determine the level of awareness of the MCMC label among hand phone users. According to the findings, 83.5% of hand phone users were aware of the MCMC label on any communication device. The survey also found that majority of hand phone users (72.2%) were aware of the requirement for an MCMC label on any communication device.
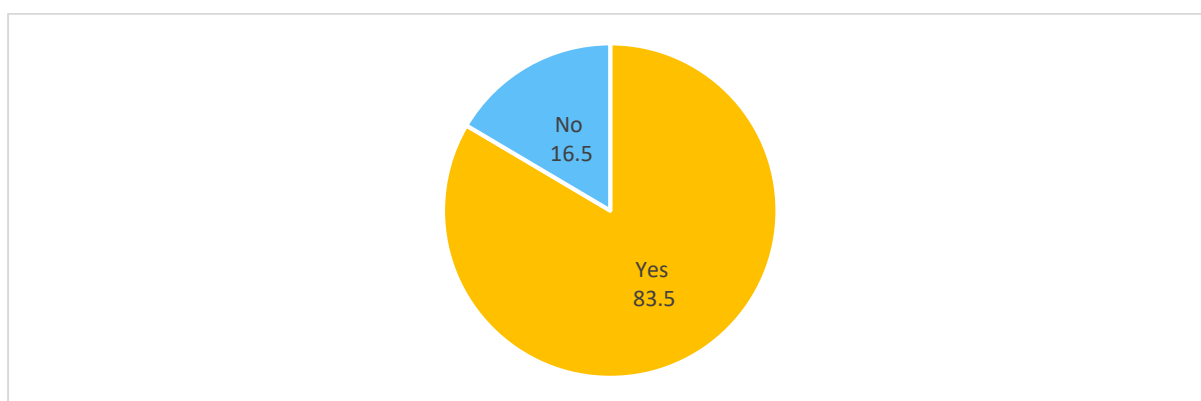
Figure 25: Awareness on MCMC label on any communication equipment (%)
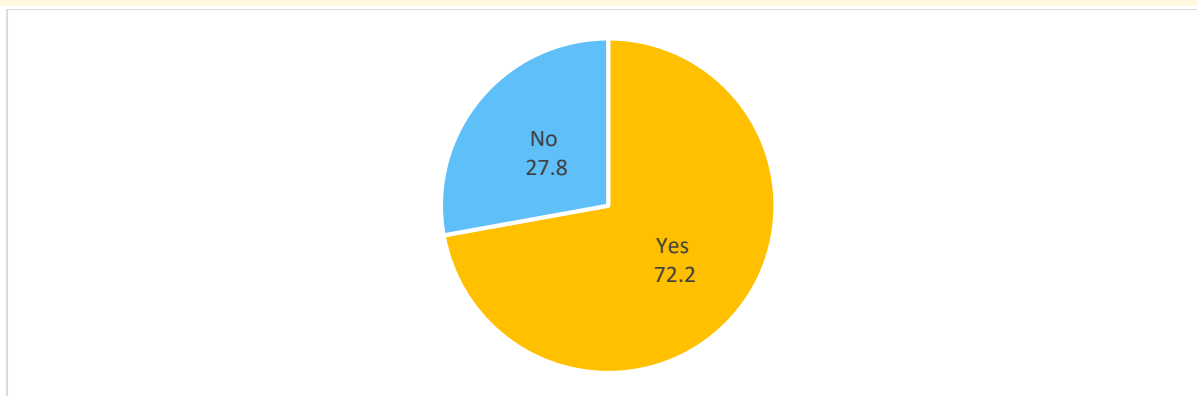
Figure 26: Awareness on requirement for MCMC label on any communication equipment (%)

Furthermore, the survey found that 57.5% of respondents were aware of the MCMC's CYL campaign. Among those who were aware of CYL, the most common source was social media, specifically Facebook, Instagram, and YouTube (59.0%). The second most popular source of information on the campaign was promotion via television advertisements. This was followed by radio advertisements (22.6%) and friend and family recommendations (21.7%).
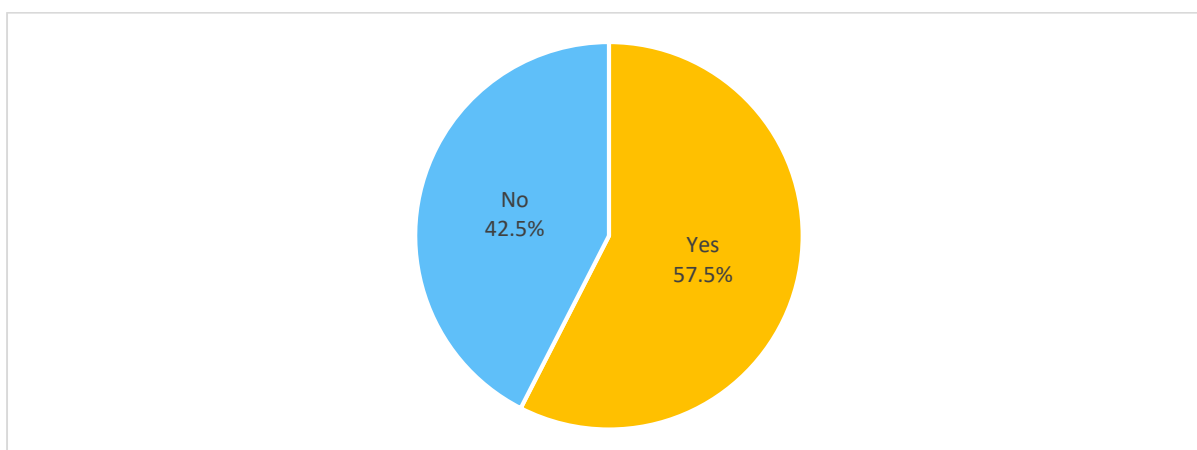
Figure 27: Awareness on Check Your Label campaign
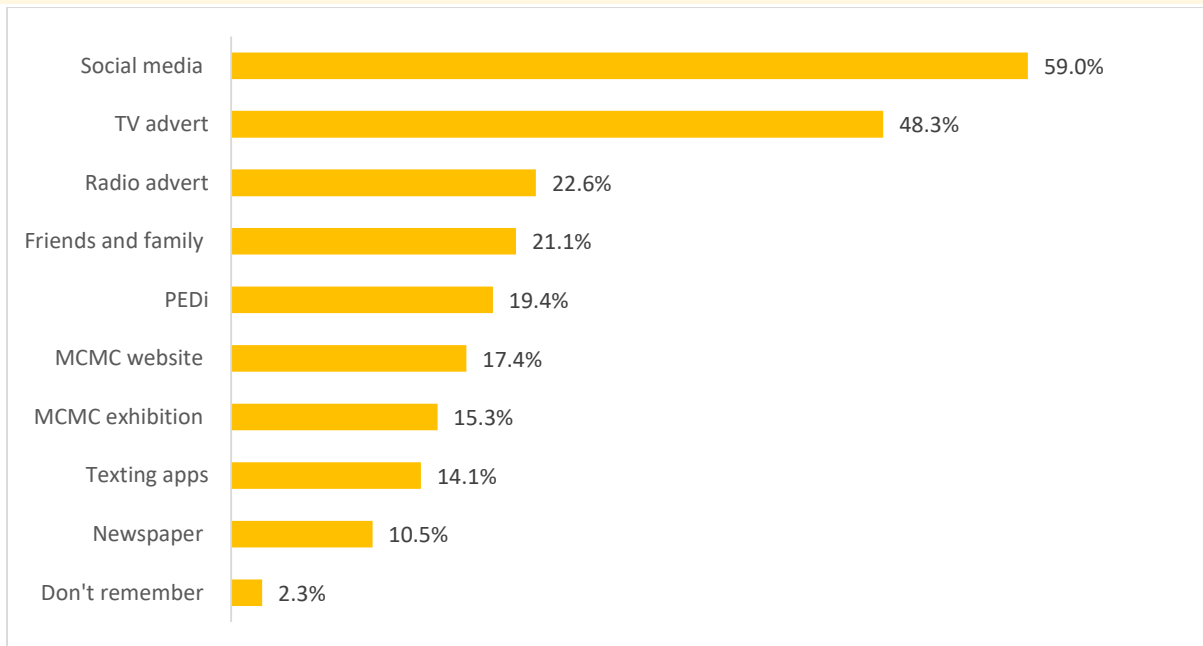
Figure 28: Source of awareness on Check Your Label campaign

Survey findings also revealed that only 37.7% of respondents visited the CYL website to confirm the legitimacy of the MCMC label. Meanwhile, 62.3% of hand phone users who were aware of the CYL programme had not visited the CYL website.
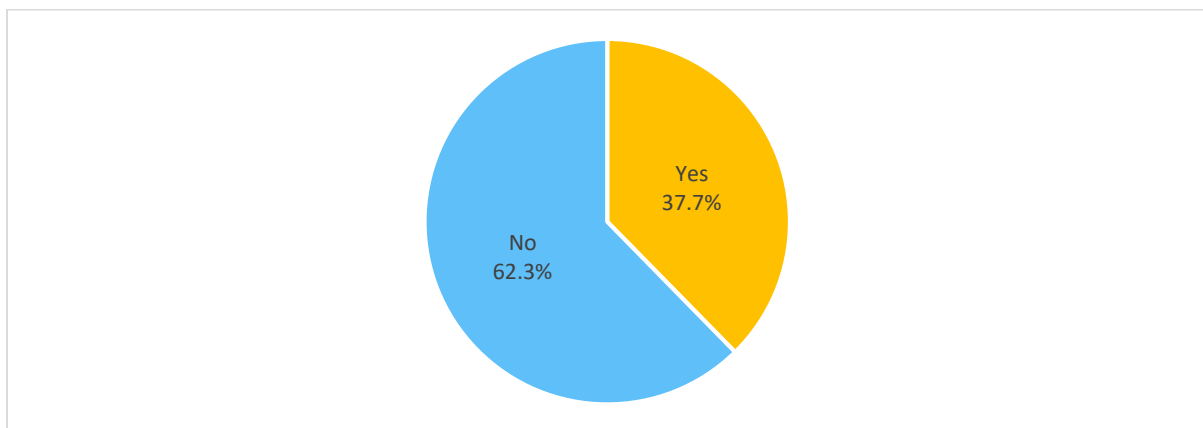
Figure 29: Visited Check Your Label portal

Mobile e-Waste Initiative

The goal of this initiative is to educate the public about the environmentally safe disposal and recycling of end-of-life (EOL), unused, or unwanted mobile devices in order to instil the 3R's (Reduce, Reuse, Recycle) culture in Malaysia.

A few questions were asked about how long people used feature phones and smartphones before switching to a new one. Survey findings showed that the retention rate for feature phone users in using their phone before switching to a new one is slightly higher than smartphone users.
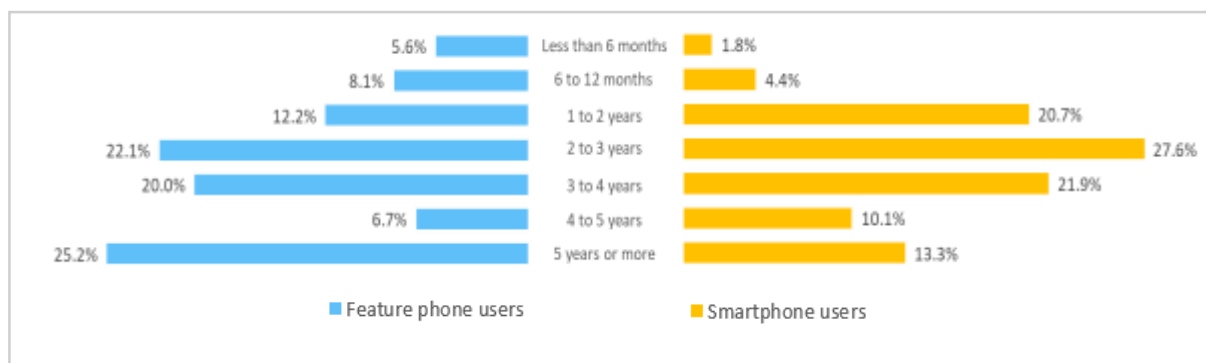
Figure 30: Length of time using Feature phone and Smartphone before changing to a new one

Additional questions were asked regarding the treatment of used hand phones. According to a survey, 56.1% of hand phone users preferred to keep their old phones. Meanwhile, 20.8% of hand phone users recycle their old phones along with other electrical waste, and 20.0% sell their phones before upgrading to a new one. In addition, 16.0% of those who owned a used phone donated or gave it as a gift to others, while 7.2% of hand phone users discarded it with other regular waste. Only 1.5% of hand phone users threw their phones in e-Waste bins, such as those found in PEDis. Aside from that, 6.4% of hand phone users did not remember what they did with their used hand phone, and 5.8% had never had a used hand phone as they only had one hand phone.
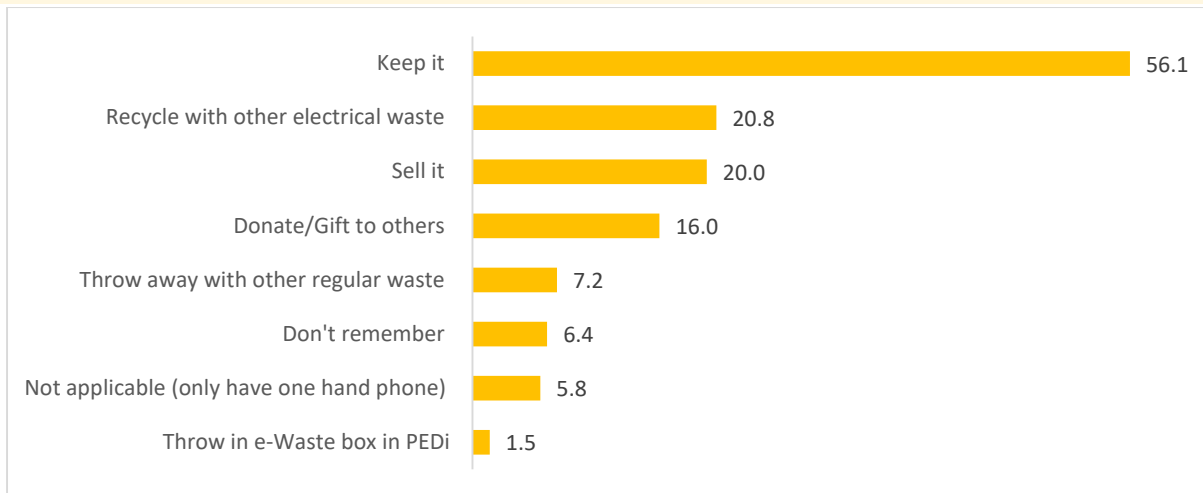
Figure 31: Treatment of used hand phone (%)

The survey also inquired about awareness on toxic materials in hand phones. According to the survey, 74.5% of those polled were aware, while 25.5% were not.
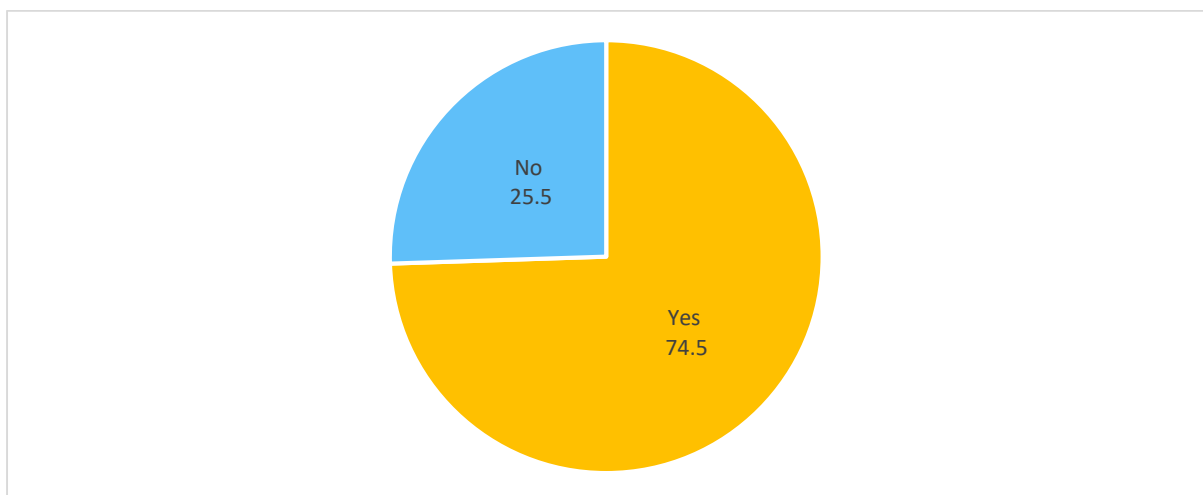
Figure 32: Awareness on toxic materials in hand phone (%)

The survey further prompted on the awareness about e-Waste initiative. It was found that 50.8% of respondents were aware about e-Waste initiative and 49.2% of respondents were not aware.
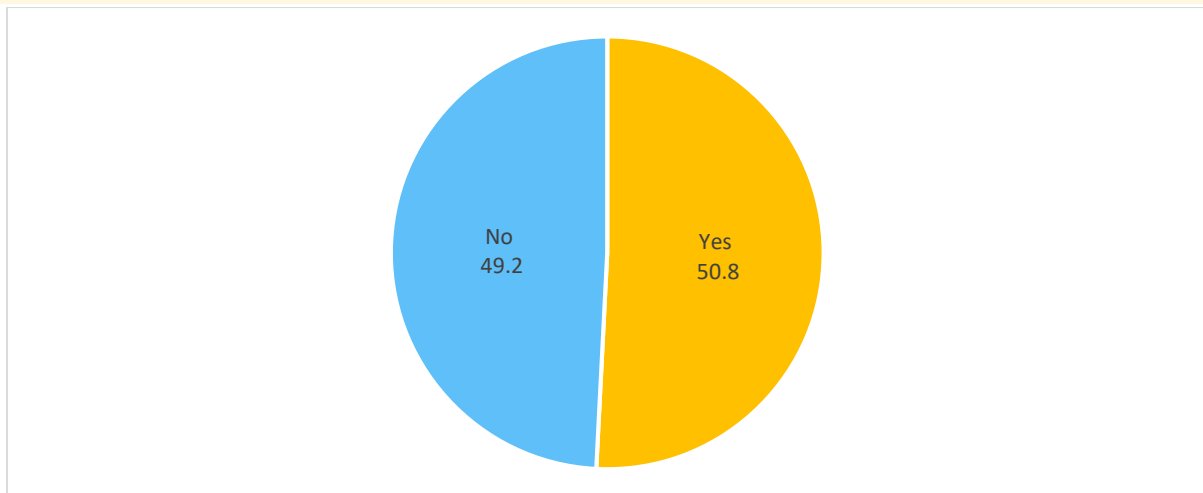
Figure 33: Awareness about e-Waste initiative (%)

From the survey, the majority of respondents (26.2%) were aware of e-Waste initiatives through social media and television advertisements (17.4%). PEDIs also contributed to the initiative's awareness, which was 15.0%, while word of mouth from friends and family was 11.9%.
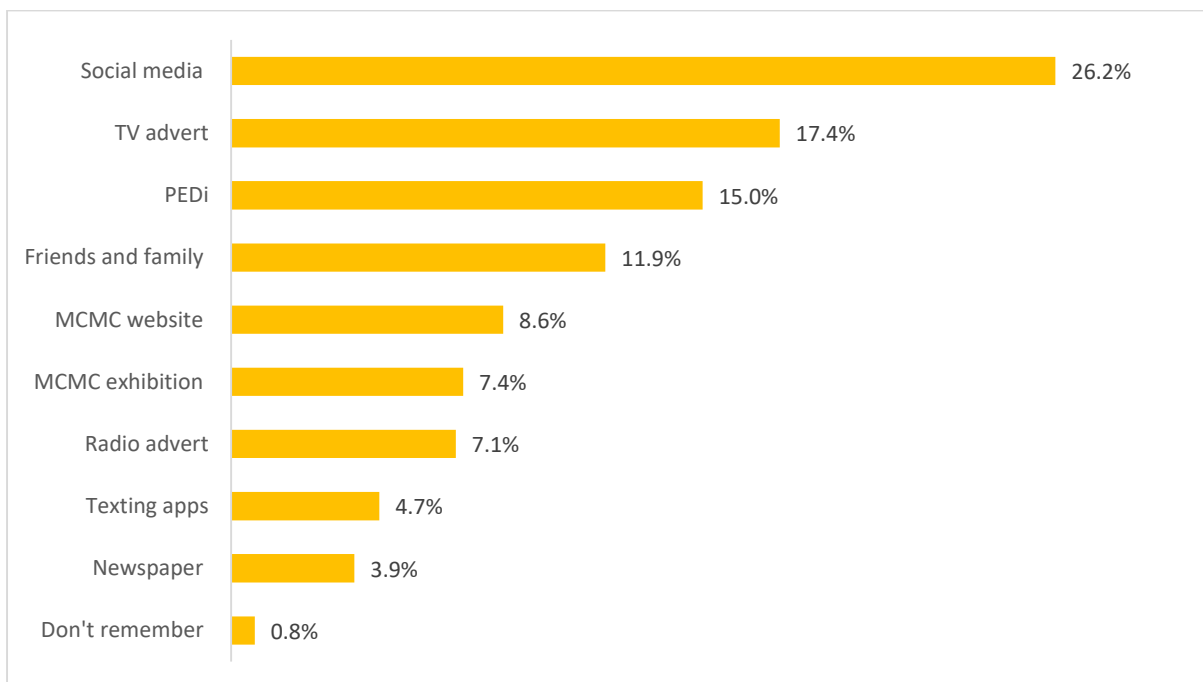
Figure 34: Source of awareness about e-Waste initiative

The survey also found that only 30.4% of hand phone users had visited e-Waste portal, while 69.6% did not have any experience in visiting the portal.
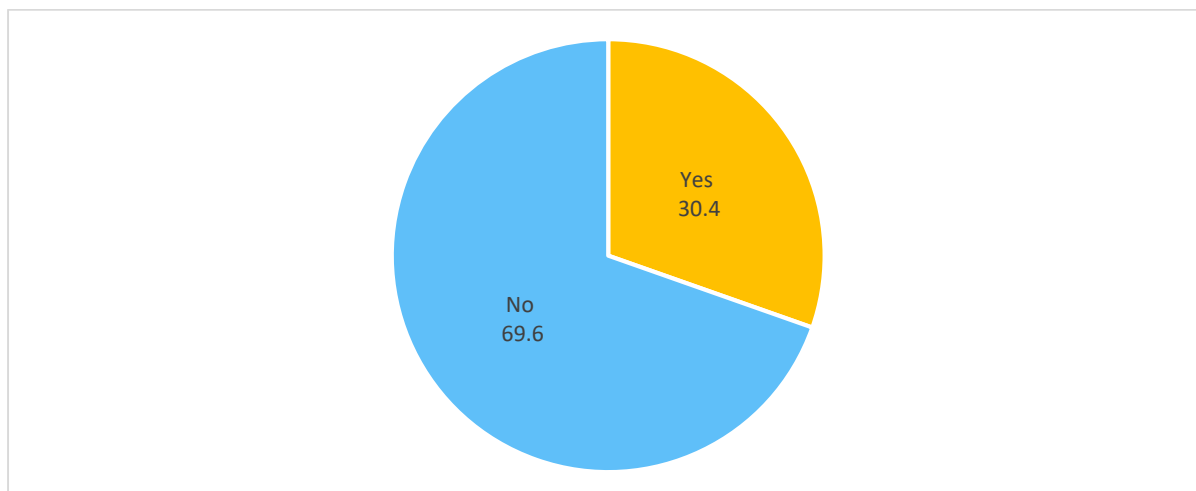
Figure 35: Visit e-Waste portal (%)

Experience during Movement Control Order (MCO)

The world was hit by the COVID-19 pandemic in early 2020. One of the consequences of the pandemic has been a fear among Malaysians of contracting this highly contagious and potentially fatal disease. One way to avoid this is to stay at home and stay up to date on COVID-19 updates and developments. This HPUS series included a new set of questions designed to assess respondents' experiences receiving information about COVID-19 via their mobile phones.

Majority of respondents received news and development of COVID-19 from social media apps (76.6%) as well as news channels on television (73.7%). Other than that, they also received COVID-19 updates and development from text messaging apps (56.9%) such as WhatsApp and Telegram.
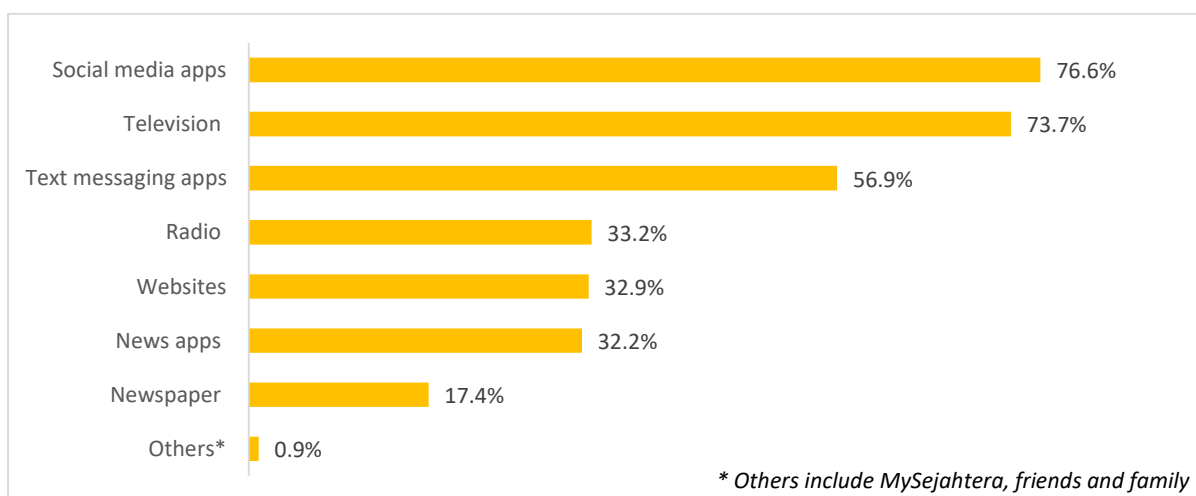
Figure 36: Source of COVID-19 updates and development

Respondents were asked about their MCO activities that included using their hand phones. A slight majority (63.6%) used personal conference calls to communicate with their loved ones. 37.2% of respondents used their smartphones to conduct online or remote study, while 30.2% used their smartphones to work from home. Only 15.6% of respondents did not engage in any of the aforementioned activities during MCO.
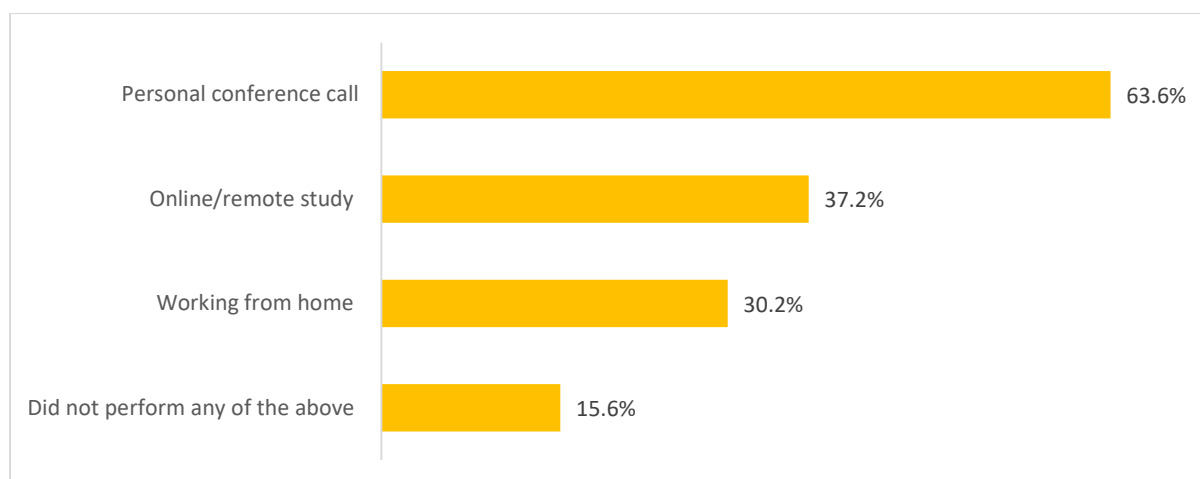
Figure 37: Activities performed during MCO

Those who participated in any of the above activities were asked if they had any problems accessing the Internet while participating in those activities during MCO. As a result, the survey found that a large majority of respondents (63.6%) reported experiencing these issues during the period.
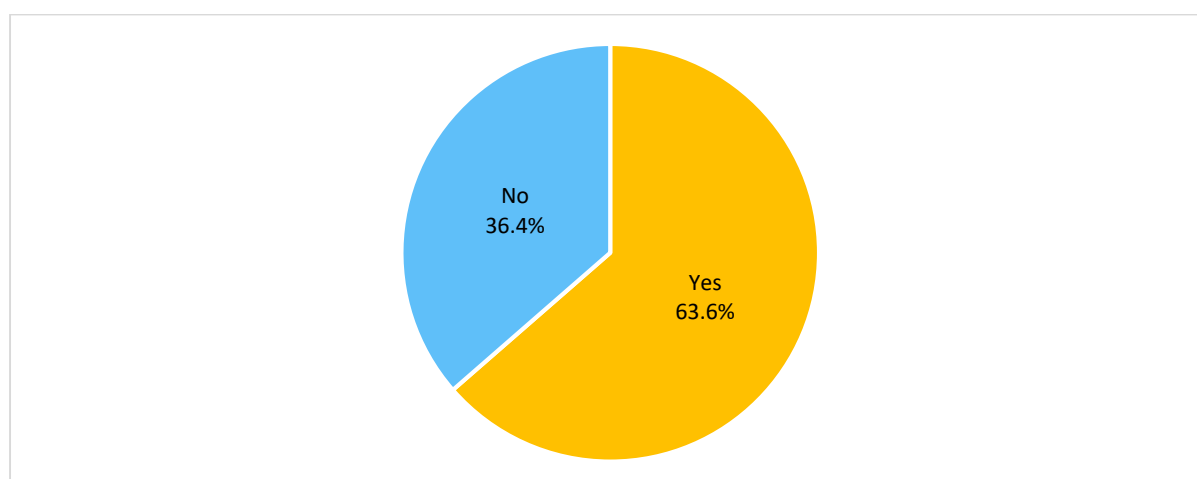
Figure 38: Experienced Internet problems when performing activities during MCO

Those who were having Internet problems were then asked about the causes of their problems. The vast majority of them (79.7%) blamed it on Internet speed. Other factors that contributed to the problems included Internet coverage (66.1%) and data quota (60.6%).
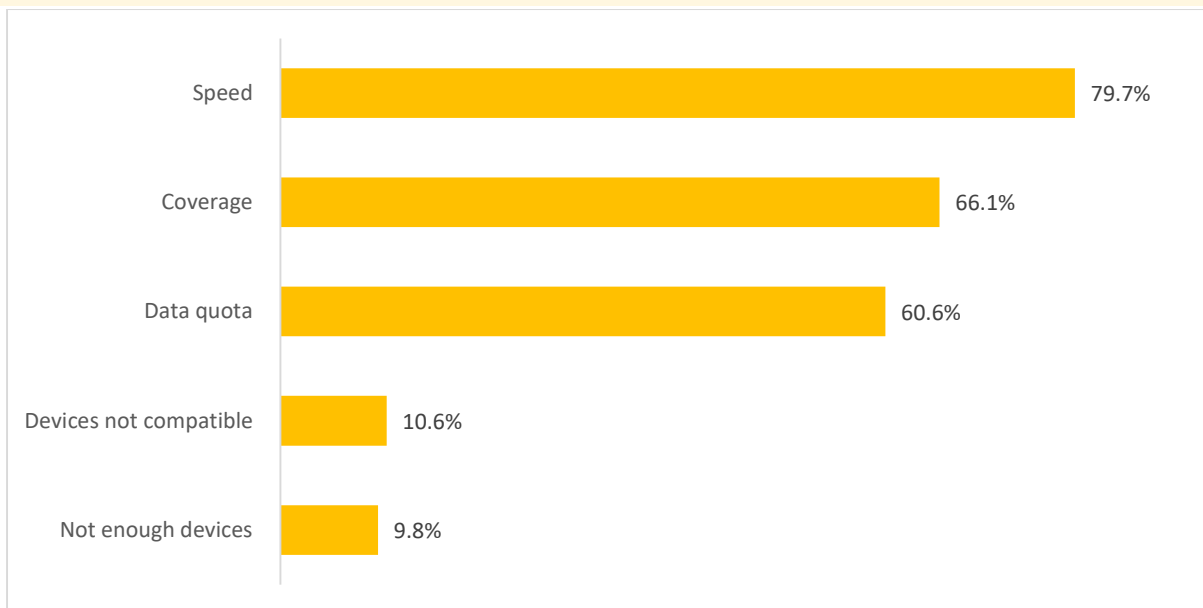
Figure 39: Reason for Internet problems when performing activities during MCO

When asked what they would do if they received news about COVID-19 on their phones before sharing it with others, 62.4% said they would first understand the content before sharing it, while 59.5% would verify the reliability of the source, followed by 59.1% ensuring the validity of the content. Another 19.2% would check to make sure the content is not offensive before sharing it. Nonetheless, 7.9% would do none of the above and would immediately share the news.
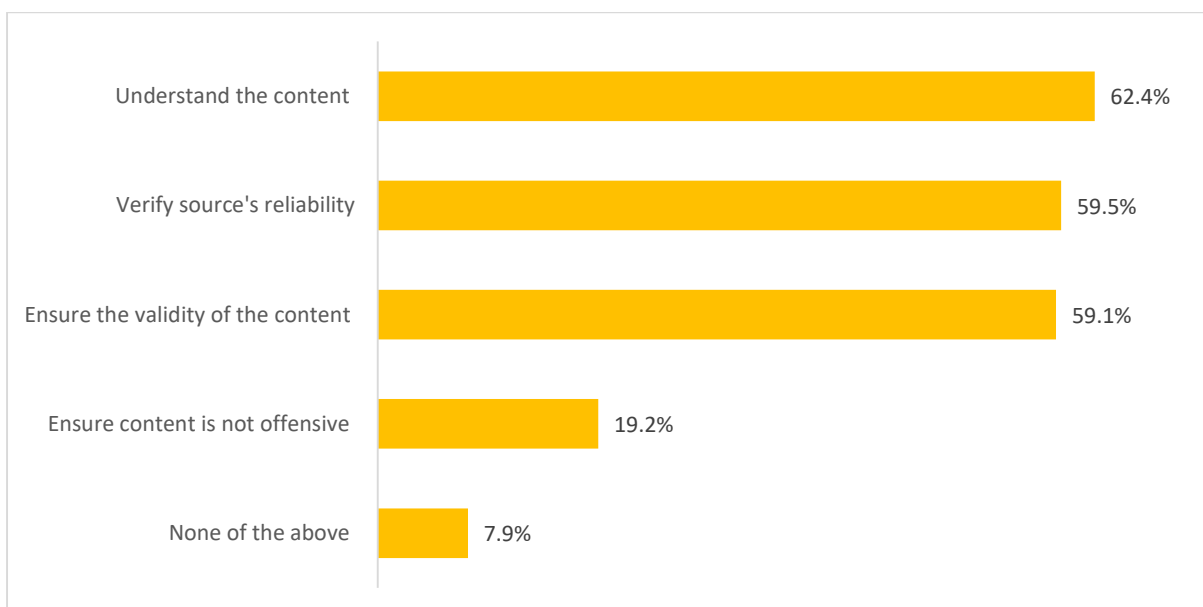
Figure 40: Actions taken when receiving news about COVID-19 on hand phone

During the MCO, the Malaysian government took an active step to inform people about the updates and development of COVID-19 in Malaysia by sending information via SMS. This survey asked respondents how satisfied they were with SMS alerts. The overwhelming majority of respondents (75.6%) were satisfied with the SMS alerts, with only 0.7% dissatisfied and the rest neutral (23.6%).
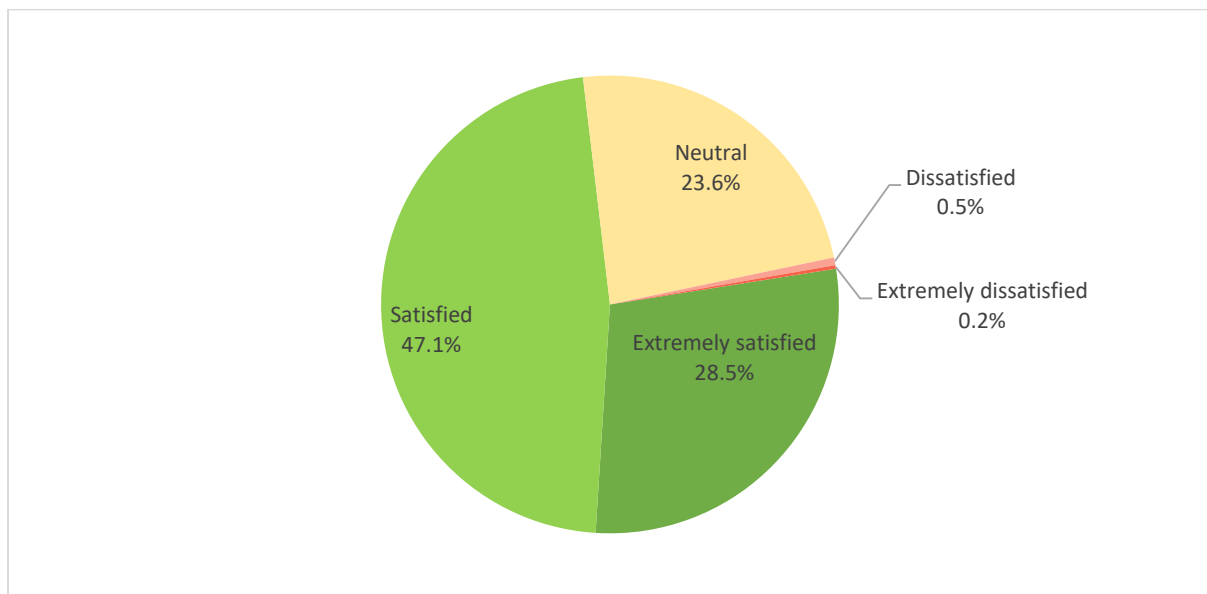
Figure 41: Satisfaction with SMS news and alerts regarding COVID-19 from the government

SECTION 4: DEMOGRAPHICS OF RESPONDENTS

This section provides an overview of hand phone users' demographic characteristics and socioeconomic profile. There are five (5) demographic variables discussed in this section, namely gender, age group, residence, income and education level.

Table 4: Percentage distribution of hand phone users by basic characteristics

Background characteristic	Percent (%)
Gender	
Male	53.2
Female	46.8
Broad Age Group	
Below 20 years old	30.3
20 – 34 years old	28.2
35 – 49 years old	24.2
50 – 64 years old	14.2
65 years old and above	3.1
Residence	
Urban	35.1
Rural	64.9
Income	
Less than RM 1,000	10.6
RM 1,000 - RM 3,000	31.6
RM 3,000 - RM 5,000	8.1
RM 5,000 and above	2.9
Dependent	46.7
Educational Level*	
Tertiary	29.0
Post-secondary	6.4
Secondary	53.5
Primary	6.1
None	5.0

*Individuals with formal education only. **Tertiary**: Diploma, advanced diploma, degree and higher; **Post-Secondary**: STPM/STAM/Certificate; **Secondary**: SPM/SPVM, PT3/PMR and lower secondary; **Primary**: Primary school.*

Gender
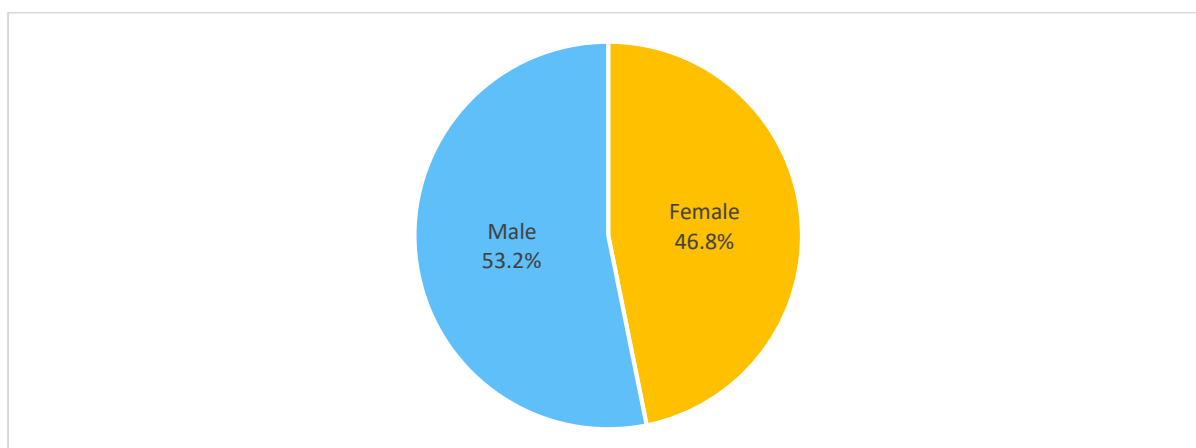
Figure 42: Percentage distribution by gender

Results shown that male users have outnumbered female users. Males made up 53.2%, while females account for 46.8%, a ratio of 1.14. Hand phone usage by gender has recorded a stable trend throughout the year.

Table 5: Percentage distribution of hand phone users by gender

Gender	2012	2013	2014	2015	2016	2017	2018	2021
Male (%)	56.5	57.6	56.9	56.9	56.9	58.9	58.4	53.2
Female (%)	43.5	42.4	43.1	43.1	43.1	41.1	41.6	46.8
Ratio	1.30	1.36	1.32	1.32	1.32	1.43	1.40	1.14

Age Group

The HPUS 2021 results reflect the demographic profile of late teenagers aged 15 to 19, with 25.6% of hand phone users. The 40-44 age group came in second with 9.9%, followed by the 20-24 and 25-29 age groups with 9.7% each. On the other hand, the remaining 45.0 percent of respondents represented the other age groups.
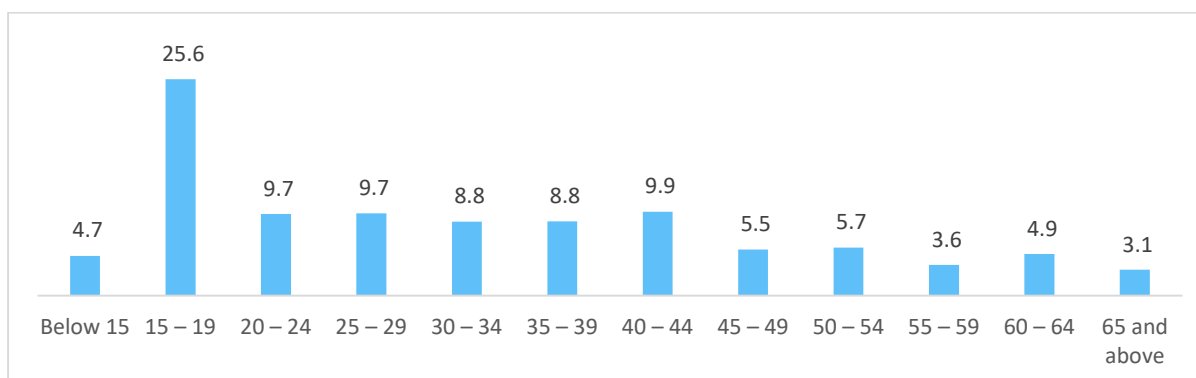
Figure 43: Percentage distribution of hand phone users by age category (%)

Distribution of Urban-Rural

The survey discovered a significant disparity in hand phone users between urban and rural areas. In 2021, the urban-to-rural phone user ratio is 0.54 to 1.
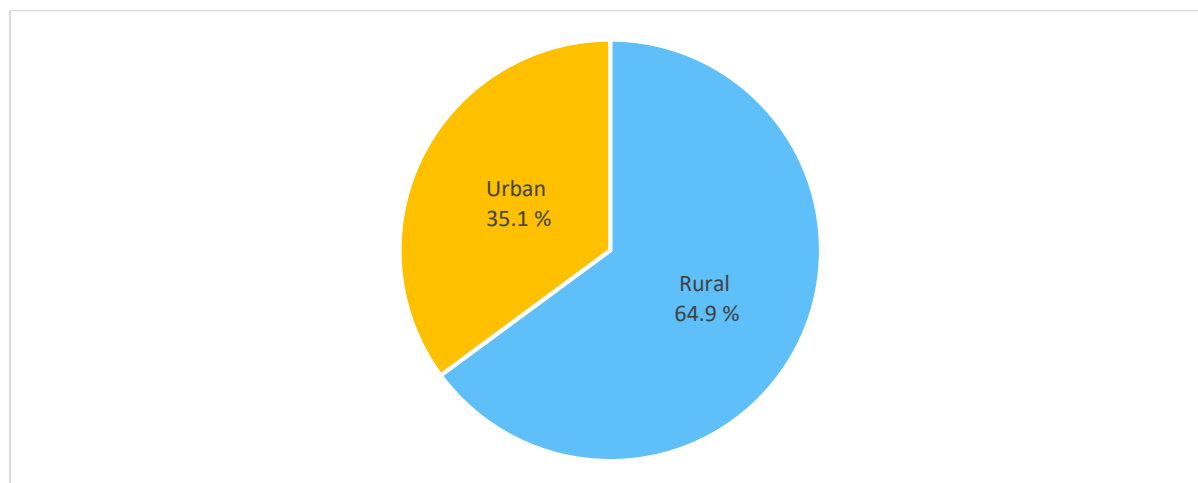
Figure 44: Percentage distribution of hand phone users by urban-rural dissection

Average Monthly Income Category

In 2021, there were 46.7% more hand phone users in the dependent income category than in 2018. (31.5%). In fact, compared to 2018, the dependent category had become the majority of hand phone users surveyed in 2021. It is also worth noting that the percentage of hand phone users with an average monthly income of more than RM 3,000 has dropped to 11.0% from 18.9% in 2018.

Table 6: Percentage distribution of hand phone users by monthly income (%)

Income Category	2015	2016	2017	2018	2021
Less than RM 1,000	19.8	15.2	12.9	9.9	10.6
RM 1,000 - RM 3,000	34.9	32.6	39.3	39.7	31.6
RM 3,000 - RM 5,000	8.6	10.2	11.3	12.0	8.1
RM 5,000 and above	3.8	6.8	6.4	6.9	2.9
Dependent	32.9	35.2	29.9	31.5	46.7

Note: Income range includes lower boundary and dependents are those with no recurrent income.

SECTION 5: CONCLUSION

People are more connected than ever before, thanks to technological advancements, especially now that information can be retrieved at their fingertips. According to the survey, smartphone users have grown to the point where almost everyone has used the device at some point in their lives. This has been made possible by more affordable smartphone prices in the market ranging from mid-range to high-end smartphones.

Adoption of smartphones has been boosted further by a plethora of mobile applications, which have made smartphone users' lives so much more convenient, as users can now easily perform their daily activities seamlessly using their smartphones, indicating a greater reliance on these devices. The evolution of AI and IoT technologies has further improved user experiences in performing these activities.

Although Malaysia is moving toward a cashless society, as outlined in MyDigital, the country's digital economy blueprint, digital payments via mobile payment applications are still relatively low. As a result, several challenges and issues concerning awareness, privacy, trust, security, and infrastructure need to be addressed effectively in order for Malaysia to compete and reap the boundless benefits that the digital economy has to offer.

As the regulator for the telecommunications industry in Malaysia, MCMC plays an important role in ensuring that more people are aware of various regulatory requirements, such as when purchasing communication devices, which must have a valid MCMC label to prevent them from purchasing illegal and counterfeit items in the market. Green initiatives, such as the advocated mobile e-Waste initiative, need to reach more people as the awareness level is still low. Consequently, more promotional campaigns and marketing initiatives are needed to increase public awareness.

Finally, the unprecedented global catastrophe caused by the COVID-19 pandemic has actually increased the use of smartphones, which include many useful AI applications that have improved the lives of many users. Now, people are more reliant on smartphones than ever before. Thus, it is critical to safeguard public safety when using smartphones to avoid dangers such as exposure to potential scammers or identity theft. This action must be taken seriously in order to create a more secure environment for smartphone users.

SECTION 6: TABLES

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

While the MCMC takes every precaution 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 only a sample of the population is canvassed. The relative sampling error (RSE) of an estimate is typically expressed as a percentage of that estimate.

In general, small estimates are subject to high RSEs. As a guide, only estimates with RSEs of 25% or less are considered reliable for routine use. Estimates with RSEs greater than 25% but less than or equal to 50% are denoted with an asterisk in these tables and should be used with caution; estimates with RSEs greater than 50% are denoted with two asterisks and are considered too unreliable for routine use. However, these estimates can be combined with others to achieve an RSE of less than 25%.

Confidence intervals for very small estimates should be based on the binomial distribution rather than the normal approximation to the binomial. As an alternative, the method of Korn and Graubard, 1998 may also be used.

Percentages may not add up to 100 because of rounding.

Table 1

Types of users	2017		2018		2021	
	Percent	RSE	Percent	RSE	Percent	RSE
Use feature phone	31.0	3.0	25.9	3.5	7.5	8.0
Use smartphone	75.9	1.1	78.0	1.1	94.8	0.5

Table 2

Smartphone phone users by age group	Percent	RSE
Below 20 years old	95.6	0.9
20 – 34 years old	97.5	0.7
35 – 49 years old	93.9	1.2
50 – 64 years old	92.4	1.7
65 years old and above	82.3	6.1

Table 3

Smartphone phone users by employment category	Percent	RSE
Employed	96.3	0.8
Self employed	94.9	1.2
Pensioner	88.2	4.5
Student	95.7	0.9
Unemployed	91.7	1.7

Table 4

Smartphone phone users by income category	Percent	RSE
Less than RM 1,000	91.6	2.1
RM 1,000 - RM 3,000	96.8	0.7
RM 3,000 - RM 5,000	98.5	1.0
RM 5,000 and above	92.0	4.0
Dependent	93.8	0.9

Table 5

Smartphone phone users by areas of living	Percent	RSE
Rural	96.2	0.6
Urban	92.3	1.1

Table 6

Feature phone users by age group	Percent	RSE
Below 20 years old	5.6	17.1
20 – 34 years old	4.5	19.7
35 – 49 years old	9.4	14.4
50 – 64 years old	11.0	17.2
65 years old and above	21.8	24.7

Table 7

Feature phone users by employment category	Percent	RSE
Employed	6.4	15.2
Self employed	10.3	15.1
Pensioner	11.8	33.9
Student	5.3	18.5
Unemployed	9.0	18.1

Table 8

Feature phone users by income category	Percent	RSE
Less than RM 1,000	11.5	19.5
RM 1,000 - RM 3,000	6.0	16.1
RM 3,000 - RM 5,000	7.3	28.6
RM 5,000 and above	16.4	30.2
Dependent	7.1	12.1

Table 9

Feature phone users by areas of living	Percent	RSE
Rural	6.0	11.2
Urban	10.1	11.5

Table 10

Reason for still using feature phone	2018		2021	
	Percent	RSE	Percent	RSE
Feature phone serve my needs	81.8	2.1	59.7	6.2
Smartphone is expensive	24.7	7.6	17.2	16.6
Network coverage for 4G/LTE is not available/weak	9.8	13.2	15.3	17.8
Restriction from parents	1.0	43.5*	2.5	47.4
Smartphone can be addictive	7.2	15.6	3.9	37.8
Lack of skills	6.4	16.6	1.5	60.9
Others	2.2	29.2*		

Table 11

Intention to change to smartphone	Percent	RSE
Yes	51.0	8.2
No	49.0	8.5

Table 12

Types of hand phone owners	2018		2021	
	Percent	RSE	Percent	RSE
Own smartphone	76.4	1.1	89.9	0.8
Own feature phone	25.0	3.5	7.0	8.3

Table 13

Smartphone owners by age group	Percent	RSE
Below 20 years old	89.4	1.4
20 - 34 years old	93.6	1.1
35 - 49 years old	91.3	1.4
50 - 64 years old	83.6	2.7
65 years old and above	79.8	6.6

Table 14

Smartphone phone owners by income category	Percent	RSE
Less than RM 1,000	88.1	2.6
RM 1,000 - RM 3,000	90.9	1.3
RM 3,000 - RM 5,000	95.0	1.8
RM 5,000 and above	86.2	5.3
Dependent	89.0	1.2

Table 15

Smartphone phone owners by educational attainment	Percent	RSE
Tertiary	93.6	1.1
Post-secondary	90.0	3.0
Secondary	90.8	1.0
Primary	75.9	5.2
Others	75.9	5.8
None	93.6	1.1

Table 16

Using hand phone to access Internet	Percent	RSE
Access Internet using feature phone	57.7	7.1
Access Internet using smartphone	99.3	0.2

Table 17

Feature phone enabled 3G	Percent	RSE
Yes	73.0	5.1
No	27.0	13.7

Table 18

Activities conducted on smartphones	2018		2021	
	Percent	RSE	Percent	RSE
Text Messaging and Voice Note	98.1	0.3	82.8	1.0
Voice calls	95.4	0.5	78.6	1.2
Video calls	69.3	1.6	71.0	1.5
Send or receive emails	64.1	1.8	47.0	2.4
Social networking	88.6	0.9	78.9	1.2
Searching/browsing the Internet	85.1	1.0	73.6	1.4
Banking	42.8	2.7	38.9	2.9
Shopping	40.9	2.9	41.1	2.7
Watching videos or movies	82.7	1.1	62.9	1.8
Play games	56.4	2.1	46.3	2.5
Listen to music	71.9	1.5	54.6	2.1
Reading	52.3	2.3	32.9	3.3
Get directions	74.8	1.4	48.4	2.4
View and manage security camera	8.9	7.6	5.6	9.4
Taking photos/videos	92.8	0.7	74.8	1.3

Table 19

Frequency to check phone in a day	Percent	RSE
Constantly (Every 30 minutes or lower)	42.1	2.7
Every hour	24.1	4.1
Every few hours	18.7	4.8
Only when hear notifications	15.1	5.4

Table 20

Use hand phone while...	Percent	RSE
While driving	5.0	10.0
While attending class/college	15.0	5.4
During a meal with others (family, friends, etc.)	40.0	2.8
On public transportation	41.6	2.7
In a place of where use of phone is prohibited (e.g.: petrol kiosk)	3.0	12.9
While queuing (e.g.: queuing at the ATM machine)	39.8	2.8
While walking (e.g.: crossing the roads)	16.8	5.1
Public area (e.g.: hospital, cinema)	53.2	2.1
Before sleeping or in the middle of the night	82.4	1.1

Table 21

The first thing to do after waking up	Percent	RSE
Check email	1.1	22.6
Check mobile messaging app (e.g.: WhatsApp, WeChat, LINE, etc.)	35.6	3.2
Check the time	54.2	2.2
Visit social networking app (e.g.: Facebook, Instagram, Twitter, etc.)	8.6	7.6
Others*	0.4	35.5

Others includes play games, check notifications, read news, listen to music and check battery

Table 22

Used mobile payment apps	Percent	RSE
Yes	41.0	2.8
No	59.0	2.0

Table 23

Reason not using mobile payment apps	Percent	RSE
Lack of knowledge, confidence or skill	49.6	3.1
Prefer using cash/card	46.1	3.3
Not interested	24.9	5.3
Privacy and security concerns	23.6	5.5
Trust concerns	14.9	7.3
Underage (minors)	2.3	19.7
Others*	1.3	27.1

Others include no bank account, payment made by other family member and no experience

Table 24

Mobile payment applications used	Percent	RSE
Touch 'n Go eWallet	71.3	2.3
Boost	35.1	5.0
Maybank QRPay	31.1	5.5
GrabPay	20.8	7.1
Aeon Wallet	4.0	18.0
Razer Pay	3.6	18.8
WeChat Pay	3.5	19.2
ShopeePay	2.8	21.8
FavePay	2.0	25.7
Sarawak Pay	1.7	28.0
AliPay	1.2	33.6
Others*	4.2	17.5

Others include SamsungPay, Setel, foodpanda Pay and BigPay

Table 25

Mobile payment applications used	Percent	RSE
YouTube	82.6	1.1
Facebook	65.0	1.7
Netflix	21.2	4.5
Viu	10.2	7.0
iFlix	7.0	8.5
Tonton	6.0	9.3
Not watching	2.9	13.5
Others*	6.4	8.9

Others include Instagram, Tik Tok, Telegram, Unifi TV app, Disney+, etc.

Table 26

Lost hand phone experience	Percent	RSE
Yes	27.8	3.7
No	72.2	1.4

Table 27

Reason for losing phone	Percent	RSE
Misplaced	35.3	5.9
Theft	40.5	5.3
Do not remember	24.2	7.7

Table 28

Action taken when losing phone	Percent	RSE
Lodge a police report	14.7	10.4
Contact service provider to track my phone	12.9	11.3
Do nothing	6.8	16.0
Buy a new phone	4.0	21.2
Look for the phone	4.0	21.3
Use tracking device or app to track location	0.8	49.6
Others	1.3	37.2
Do not remember	55.5	3.9

Table 29

Mobile privacy concerns	Percent	RSE
Personal photos	72.8	1.4
Misuse of identity	70.4	1.5
Contacts	65.6	1.7
Account information	59.0	1.9
Cost & hassle	42.0	2.7
No access to communication	38.1	2.9
Loss of important data saved in the phone	0.1	64.0

Table 30

Measures taken to protect personal data	Percent	RSE
Password protect	77.6	1.2
Do not use untrusted apps/websites	42.2	2.7
Clear the browsing history or search history	34.8	3.1
Do not send or access sensitive data from phone	31.9	3.3
Back up photo and contacts	28.4	3.6
Turn off the location tracking feature	26.6	3.8
Install antivirus or anti-malware	24.8	4.0
None	8.7	7.4

Table 31

Trust on service provider to keep data confidential	Percent	RSE
Yes	27.2	3.7
No	12.3	6.1
Not sure	60.4	1.8

Table 32

Awareness of AI-enhanced applications	Percent	RSE
Predictive text (suggested words appear before you type)	26.2	3.8
Route suggestions (e.g.: Waze, Google Maps, etc.)	51.0	2.2
Voice assistance (e.g.: Siri, Google Assistant, Amazon Alexa, etc.)	32.6	3.3
Voice search (searching info with your voice, without typing)	34.4	3.2
Automated news or information updates	20.5	4.5
Translation apps	33.0	3.3
Voice-to-text	24.5	4.0
Automated email classification	12.8	6.0
Automated calendar entries	15.9	5.3
Automated photo classification	16.5	5.1
None of the above	24.3	4.0

Table 33

Awareness of AI-enhanced applications	Percent	RSE
Predictive text (suggested words appear before you type)	21.1	4.4
Route suggestions (e.g.: Waze, Google Maps, etc.)	44.1	2.6
Voice assistance (e.g.: Siri, Google Assistant, Amazon Alexa, etc.)	23.0	4.2
Voice search (searching info with your voice, without typing)	21.7	4.3
Automated news or information updates	16.1	5.2
Translation apps	27.5	3.7
Voice-to-text	15.9	5.3
Automated email classification	10.0	6.8
Automated calendar entries	12.4	6.1
Automated photo classification	13.3	5.8
None of the above	31.0	3.4

Table 34

Ownership of wearable device	Percent	RSE
Own at least one	14.4	5.6
None	85.6	0.9

Table 35

Trust on service provider to keep data confidential	Percent	RSE
Fitness band	47.2	6.1
Smart watch	67.7	3.9
Smart glasses	5.1	25.4
VR headsets	5.0	25.8

Table 36

Importance of Smart Home applications - Home control	Percent	RSE
Extremely Important	7.5	8.2
Important	23.4	4.2
Neutral	42.2	2.7
Not Important	21.4	4.5
Extremely Not Important	5.4	9.8

Table 37

Importance of Smart Home applications - Home surveillance	Percent	RSE
Extremely Important	24.7	4.1
Important	40.6	2.8
Neutral	24.8	4.1
Not Important	7.0	8.6
Extremely Not Important	2.9	13.5

Table 38

Importance of Smart Home applications - Home entertainment	Percent	RSE
Extremely Important	10.9	6.7
Important	32.7	3.4
Neutral	41.1	2.8
Not Important	11.8	6.4
Extremely Not Important	3.4	12.5

Table 39

Importance of Smart Home applications - Home appliances	Percent	RSE
Extremely Important	8.0	8.0
Important	22.0	4.4
Neutral	40.3	2.9
Not Important	23.3	4.3
Extremely Not Important	6.5	8.9

Table 40

Awareness on MCMC label on any communication equipment	Percent	RSE
Yes	83.5	1.0
No	16.5	5.1

Table 41

Awareness on requirement for MCMC label	Percent	RSE
Yes	72.2	1.4
No	27.8	3.7

Table 42

Awareness on Check Your Label campaign	Percent	RSE
Yes	57.5	2.0
No	42.5	2.7

Table 43

Source of awareness on Check Your Label campaign	Percent	RSE
Social media	59.0	2.5
TV advert	48.3	3.1
Radio advert	22.6	5.6
Friends and family	21.1	5.8
PEDi	19.4	6.1
MCMC website	17.4	6.6
MCMC exhibition	15.3	7.1
Texting apps	14.1	7.4
Newspaper	10.5	8.8
Do not remember	2.3	19.6

Table 44

Visited Check Your Label portal	Percent	RSE
Yes	37.7	3.9
No	62.3	2.3

Table 45

Awareness on Check Your Label mobile application	Percent	RSE
Yes	62.3	2.3
No	37.7	3.9

Table 46

Used Check Your Label mobile application	Percent	RSE
Yes	53.4	3.6
No	46.6	4.1

Table 47

Length of time using feature phone before changing to a new one	Percent	RSE
Less than 6 months	5.6	34.3
6 to 12 months	8.1	28.1
1 to 2 years	12.2	22.4
2 to 3 years	22.1	15.7
3 to 4 years	20.0	16.7
4 to 5 years	6.7	31.1
5 years or more	25.2	14.4

Table 48

Length of time using smartphone before changing to a new one	Percent	RSE
Less than 6 months	1.8	17.3
6 to 12 months	4.4	10.9
1 to 2 years	20.7	4.6
2 to 3 years	27.6	3.8
3 to 4 years	21.9	4.4
4 to 5 years	10.1	7.0
5 years or more	13.3	6.0

Table 49

Treatment of used hand phone	Percent	RSE
Throw away with other regular waste	7.2	8.2
Keep it	56.1	2.0
Recycle with other electrical waste	20.8	4.5
Sell it	20.0	4.6
Donate/Gift to others	16.0	5.2
Throw in e-Waste box in PIK	1.5	18.7
Do not remember	6.4	8.8
Not applicable (only have one hand phone)	5.8	9.2

Table 50

Awareness on toxic materials in hand phone	Percent	RSE
Yes	74.5	1.3
No	25.5	3.9

Table 51

Awareness about e-Waste initiative	Percent	RSE
Yes	50.8	2.2
No	49.2	2.3

Table 52

Source of awareness about e-Waste initiative	Percent	RSE
Newspaper	3.9	11.3
MCMC website	8.6	7.4
Social media	26.2	3.8
SMS/messaging apps (e.g.: WhatsApp, Telegram, etc.)	4.7	10.3
Radio advertisement	7.1	8.2
TV advertisement	17.4	5.0
Friends and family	11.9	6.2
MCMC exhibition	7.4	8.1
Digital Economy Center (PEDi)	15.0	5.4
Do not remember	0.8	26.3

Table 53

Visited e-Waste portal	Percent	RSE
Yes	30.4	4.9
No	69.6	2.1

Table 54

Source of COVID-19 updates and development	Percent	RSE
Browsing online for websites with COVID-19 tracker	32.9	3.3
News apps	32.2	3.3
Social media apps (Facebook, Instagram, etc.)	76.6	1.3
Radio	33.2	3.2
Television	73.7	1.4
Newspaper	17.4	5.0
Text messaging apps (WhatsApp, Telegram, etc.)	56.9	2.0
Others*	0.9	23.4

Others include MySejahtera, friends and family

Table 55

Activities performed during MCO	Percent	RSE
Working from home	30.2	3.5
Online/remote study	37.2	3.0
Personal conference call	63.6	1.7
Did not perform any of the above	15.6	5.3

Table 56

Experienced Internet problems during MCO	Percent	RSE
Yes	63.6	1.9
No	36.4	3.3

Table 57

Actions taken when received COVID-19 news on hand phone	Percent	RSE
Understand the content	62.4	1.8
Ensure content is not offensive	19.2	4.7
Ensure the validity of the content	59.1	1.9
Verify whether the content is from reliable source or not	59.5	1.9
None of the above	7.9	7.8

Table 58

Verifying content validity regarding COVID-19 news	Percent	RSE
Sebenarnya.my	32.9	3.0
Official websites	63.7	1.6
Social media	0.7	24.6
Refer to authorities, friends or family	2.9	12.2
Mainstream news outlets	2.4	13.5
MySejahtera	0.1	55.9

Table 59

Satisfaction with SMS from government on COVID-19	Percent	RSE
Extremely satisfied	28.5	3.6
Satisfied	47.1	2.4
Neutral	23.6	4.1
Dissatisfied	0.5	30.8
Extremely dissatisfied	0.2	46.1

LIST OF TABLES AND FIGURES

Tables

Figures

LIST OF ABBREVIATIONS

DOSM	Department of Statistics Malaysia
EDGE	Enhanced Data for Global Evolution
IoT	Internet of Things
ITU	International Telecommunication Union
IUS	Internet Users Survey
MCMC	Malaysian Communications and Multimedia Commission
MCO	Movement Control Order
MISR	Measuring of Information Society Report
RSE	Relative Sampling Error
SMS	Short Message Services

MCMC STATISTICAL PUBLICATIONS	*POCKET BOOK OF STATISTICS* 57
	Communications & Multimedia: Pocket Book of Statistics, a 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)
CONTACTS	Please contact the MCMC Statistics & Data Intelligence Department if you have any queries regarding statistics published by MCMC via **statistics@mcmc.gov.my**.