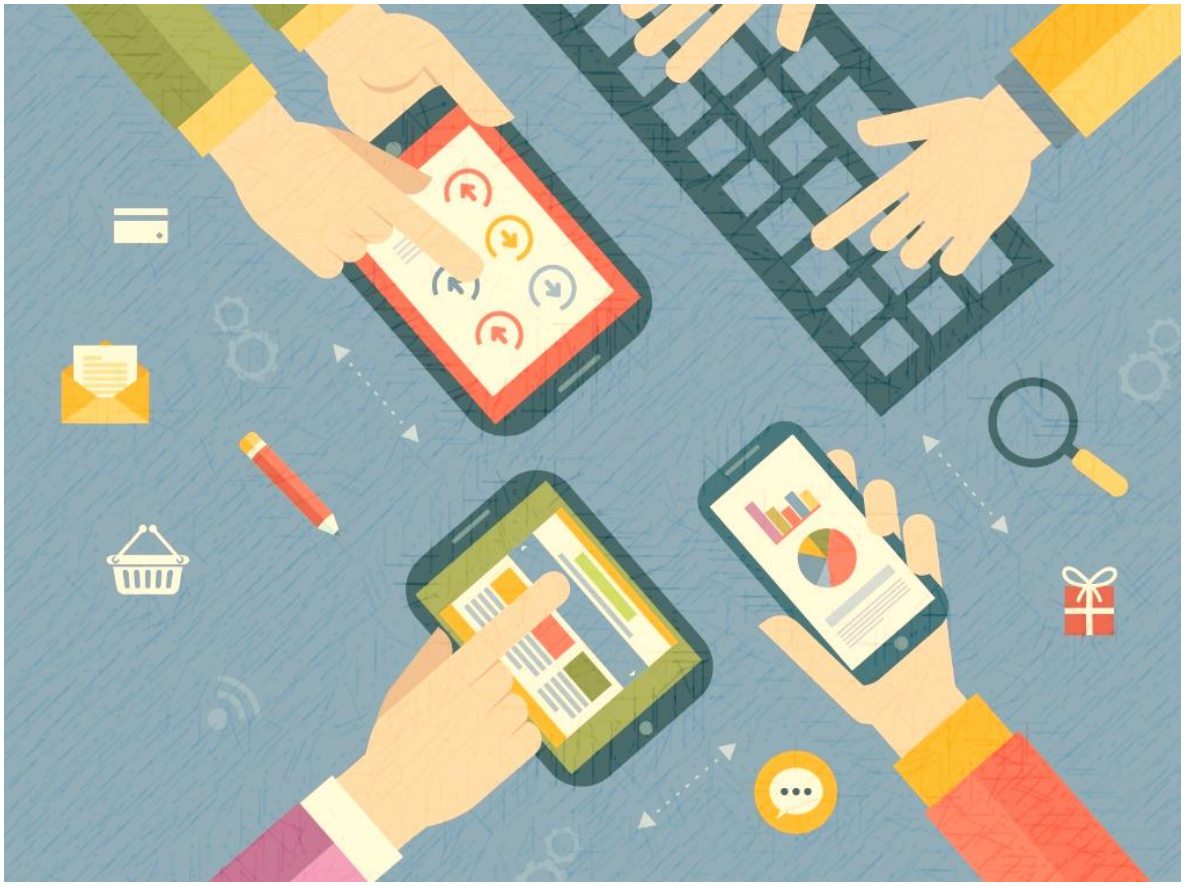

INTERNET USERS SURVEY 2017

STATISTICAL BRIEF NUMBER TWENTY-ONE

Suruhanjaya Komunikasi dan Multimedia Malaysia
Malaysian Communications and Multimedia Commission

ISSN 1823-2523

Published by:
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SECTION 1: INTRODUCTION

Survey Background and Objective

The Internet Users Survey (IUS) is a series of purpose built surveys conducted by the Malaysian Communications and Multimedia Commission (MCMC). It is part of MCMC regulatory function to monitor communications and multimedia activities and encourage development in the industry.

The main objective of IUS 2017 is to measure and understand users' behaviour and uncover opportunities present in the emerging market. These surveys highlight several scopes which involved:

1. Online activities;
2. Consumers e-commerce participation;
3. Online security and privacy;
4. Child online parental control; and
5. Demographic of Internet users and non-users.

Results from this survey would give stakeholders a better understand Internet usage environment in Malaysia, for undertaking imperative initiative towards converging communications and multimedia industry.

The definition of terminologies adopted in this survey are based on international standards and existing framework.

Methodology and Analysis

The sample population was drawn from the main user of the 43.9 million mobile-cellular subscriptions in 2016 with Mobile Station International Subscriber Directory Number (MSISDN) identical to randomly generated numbers.

The survey adopted confidence level of 95% and precision of ±2% for Internet users while ±3% for non-users. There was only one stage of sample selection as the survey adopted a simple random sample (SRS) approach. Sampling was done across mobile networks with probability proportional to size of the networks in terms of subscriptions.

The survey was canvassed and administrated using a Computer Assisted Telephone Interview system operating out of MCMC CATI Centre in Cyberjaya. Fieldwork for this survey started on 14 November 2016 and ended on 10 February 2017. The survey reached to a sample of 2,402 Internet users and 1,067 non-users.

Data quality check was administered throughout the survey fieldwork and upon its completion. Next, basic frequency count was computed to assess the results pattern. 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) and ethnicity distribution, where the current population estimates from Department of Statistics Malaysia (DOSM) serves as the auxiliary information as follows:

Table 1: Current population estimates 2016[1]

Nationality and ethnicity	Percentage distribution (%)
Malaysian	
Malay	50.9
Other Bumiputera	12.1
Chinese	21.6
Indians	6.6
Others	0.9
Non-Malaysian	7.9

Important findings are featured in the form of a report complemented by supporting charts and tables for the convenience of fellow 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 are included as supplementary data to support any discoveries.

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

[1] Source: Current population estimates 2016, Department of Statistics Malaysia (DOSM) – July 2017 revision

SECTION 2: EXECUTIVE SUMMARY

The Internet Users Survey 2017 (IUS2017) interviewed a total of 3,469 respondents (2,402 Internet users and 1,067 non-users) through Computer Assisted Telephone Interview (CATI) system. The survey sourced on selected key variables vital to the industry. The variables spanned place of access, access device, purpose of Internet access, social networking, online shopping, Internet privacy, cybercrime, parental control software and others.

The survey draws attention to the following key variables and demographics covered by the data:

- 'Lack of confidence or skills' and 'lack of interest' were the main reasons for not using the Internet. (58.1% and 46.3%).
- Smartphone was the most common device to access Internet (89.4%) Access from other mobile devices such as tablet, laptop and feature phone however declined.
- Text communication (96.3%) and visiting social networking site (89.3%) were the most common activities for Internet users as well getting information online (86.9%).
- Of those who visited social networking site, 97.3% of them owned Facebook account, followed by Instagram (56.1%).
- The consumers' e-commerce participation has increased to 48.8% compared 35.3% on previous year. The main barrier for e-commerce adoption was consumers' preference to go the physical stores, lack of confidence and skills, as well as security and privacy concern. Online bank transfer is the most common mode of payment for online shopping (63.8%), followed by ATM bank transfer (48.8%).

- It is found that online privacy is important to most Internet users (91.9%), albeit most of them did not seem to mind when it comes to sharing their personal information online such as their own photos and real name. However, the awareness on the protection of online privacy is noteworthy as 86.0% of Internet users had taken various measure to ensure their personal information online stays private.
- The take-up for parental control software was still low amongst Internet users with children (17.2%). For parents who did not use the software, they cited that they already had their own rules and limits on Internet users (69.2%), as well as never heard of such software before (59.1%).
- Men outnumbered women in the distribution of Internet users (57.4% and 42.6% respectively), although adoption rate within the gender group shows no significant difference (68.9% of men use the Internet versus 68.1% of women use the Internet).
- The mean age of users (33.0 years old) and non-users (53.9 years old) showed increment compared to 2015 (users: 32.4; non-users: 50.7).

SECTION 3: MAIN FINDINGS

Internet Users and Non-users

The survey determined that the percentage of Internet users[2] in 2016 was 76.9%. Approximately, there were 24.5 million Internet users, an increased from 24.1 million in 2015. The non-Internet users stood at 23.1%, just short of quarter of the entire population.

Non-Internet users

'Lack of confidence or skills' and 'Lack of interest' continued to be the most likely reasons for not using the Internet in 2016 (58.1% and 46.3% respectively). Similar reasons were also cited in other countries such when discussing about reasons for not using the Internet. Such instance, Korea Internet & Security Agency (KISA) reported that in 2015[3], 'Lack of interest or No need' and 'Lack of confidence, knowledge, or skills' were the top two reasons for not using the Internet in the country (79.1% and 57.5%). Moreover, Singapore's Infocomm Media Development Authority (IMDA) stated that 'Lack of knowledge/skills/confidence' and 'Not interested / No need to use' as first and third main reason for not using Internet in 2015[4].

A total of 32.7% of non-users mentioned that they just did not have enough time to use the Internet. Additionally, 32.0% attributed their unwillingness to go online to age – with 74.3% of them aged 60 and above.

[2] Includes those using the Internet from any location using any device in the last 3 months
[3] Source: KISA Survey on the Internet Usage, 2015
[4] Source: IMDA Annual Survey on Infocomm Usage in Households and by Individuals for 2015

Table 2: Reason for not using Internet, 2014 and 2016

Reason not using Internet	2014[5] (%)	2016 (%)
Lack of confidence or skills	47.4	58.1
Lack of interest	32.5	46.3
Not enough time	24.0	32.7
Senior citizen	-	32.0
Cost too high	13.6	28.1
No Internet access	14.8	26.9
No device	12.1	23.7
Concern that content is harmful	4.9	21.8
Privacy concerns	3.6	20.7
Viruses and security concerns	3.7	20.7
Others	3.0	1.3

For 28.1% of non-users, cost has halted their intention to go online, whether the cost of access to Internet service, or owning or using a device. Meanwhile, some mentioned that they did not have access to Internet connection (26.9%) or device for access (23.7%). Some non-users were concern about harmful Internet content (21.8%), their online privacy (20.7%) and exposure to Internet cybercrime (20.7%).

[5] Sample for non-user in 2014 was based on 95% confidence level and ±5% precision, while for 2016 was 95% confidence level and ±3% precision

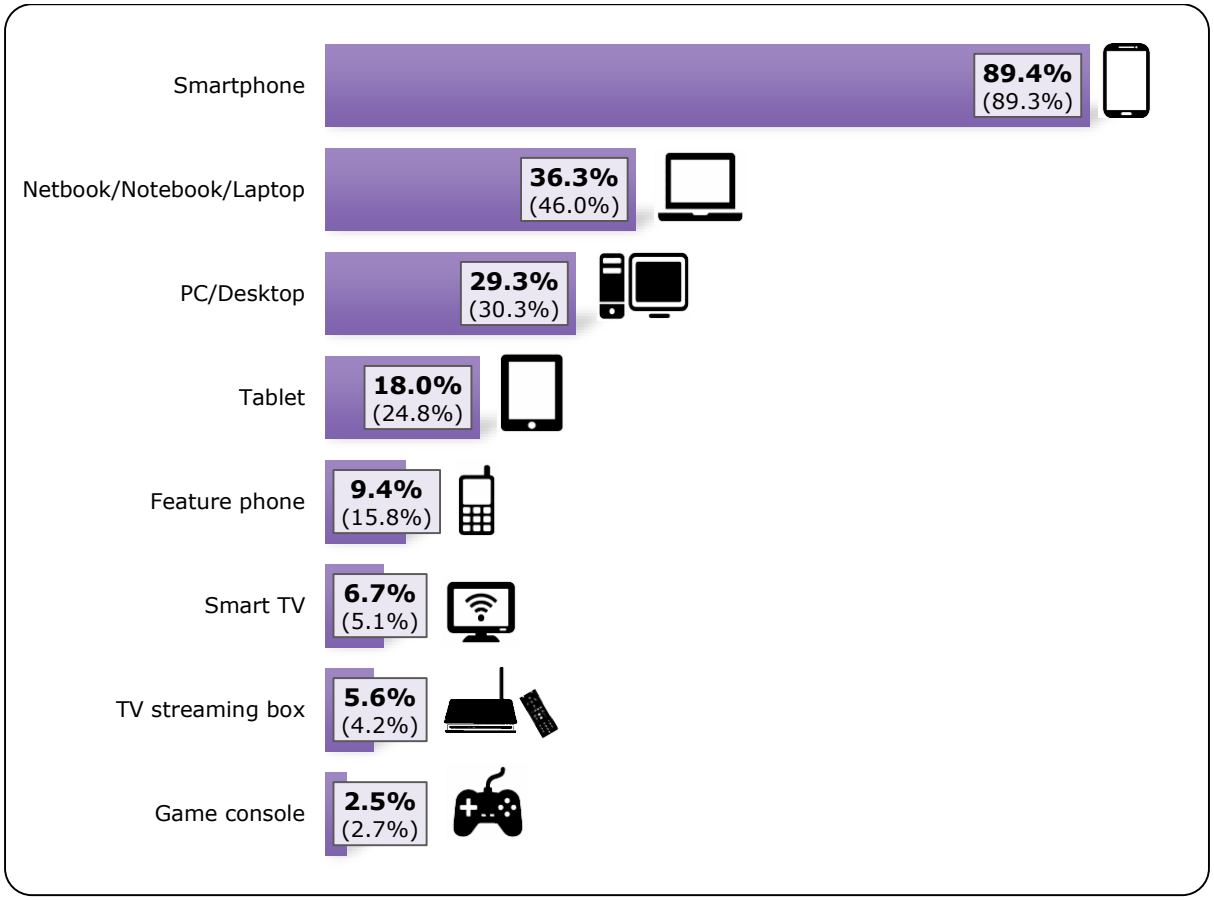
Trends and Activities

The technology environment was assessed to identify the emergence of new devices and online activities. Focus was also placed on selected online activities such as social networking, online shopping and information seeking.

Access devices

Smartphone remained the most popular means for users to access the Internet (89.4%) making the country a mobile-oriented society. Additionally, in 2016, there were 28.5 million mobile broadband subscriptions compared to 2.5 million fixed broadband subscriptions.

Figure 1: Percentage of device used by Internet users to access Internet, compared with 2015 data in parentheses



However, Internet access from other mobile devices saw a declining trend. For instance, the use of portable personal computer such as netbook, notebook and laptop to access Internet has dropped to 36.3% (2015: 46.0%), while tablet declined to 18.0% (2015: 24.8%) and feature phone to 9.4% (2015:15.8%).

On the contrary, access through smart TV and TV streaming box inclined, albeit the little take up. A total of 6.7% of Internet users has been online via Smart TV in 2016, compared to only 1.9% in 2014. The percentage of accessing Internet using TV streaming box increased to 5.6% in 2016, from 4.2% in 2015.

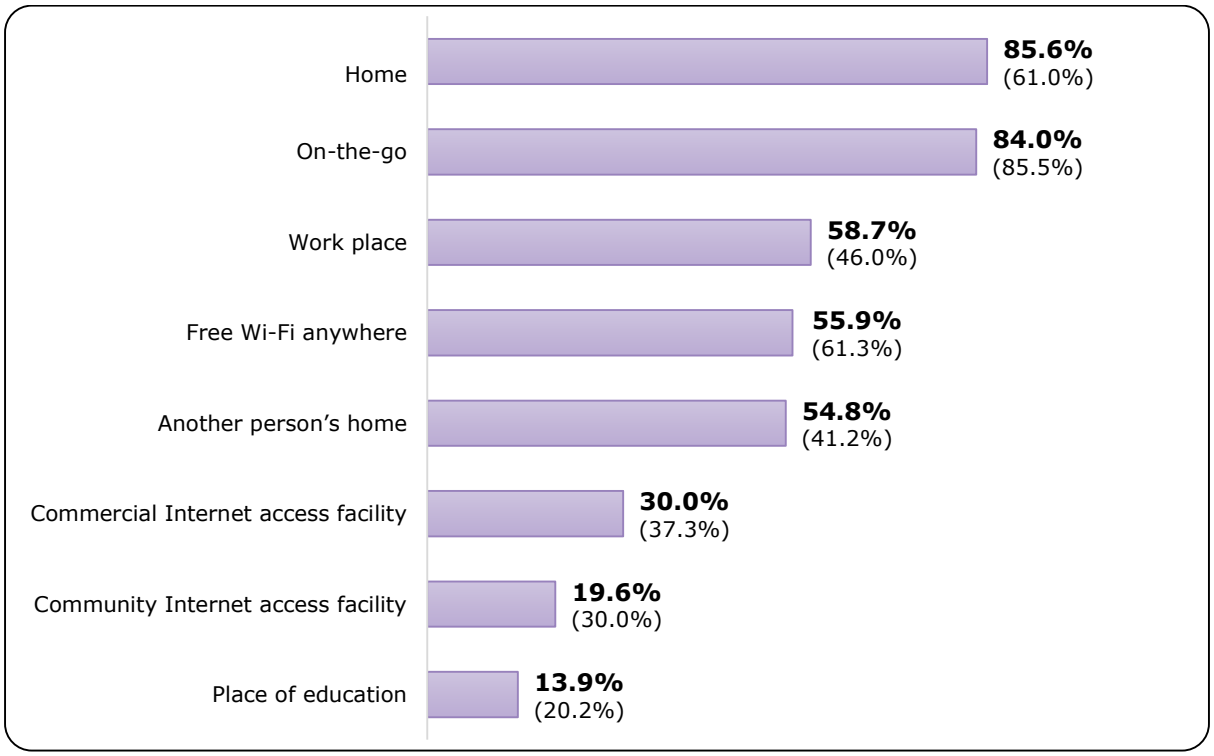
Place of access

Users' own home became the most frequent place to go online (85.6%), grew significantly from 61.0% in 2015, followed closely by usage via on-the-go at 84.0%. Accessing Internet at work place as well as another person's home has also increased to 58.7% and 54.8% respectively.

Commercial Internet centres collect a fee from its patrons to access the Internet. There were 30.0% of Internet users who frequented these places like cybercafés that provide fully networked gaming session which could be hardly set-up elsewhere.

The percentage of users visiting public Internet centres such as PI1M and public libraries also dropped to 19.6%. These facilities imposed a minimal fee or do not charge its patrons. Place of education remained the least frequent place for Internet access (13.9%).

Figure 2: Percentage of Internet users by places of access, compared with 2015 data in parentheses

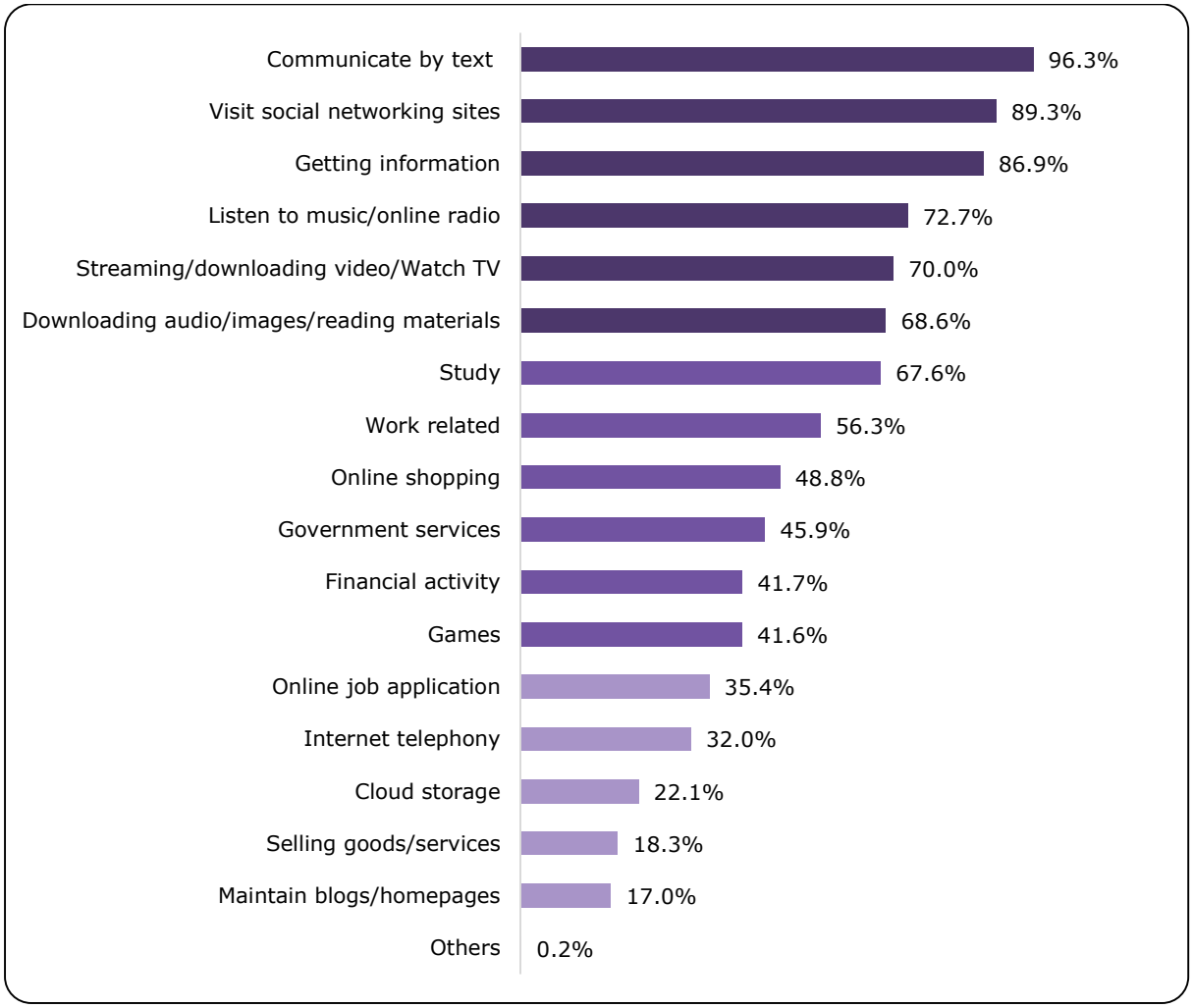


Online activities

The Internet has certainly transformed our way of getting information, socializing, entertaining ourselves and even participating in economics activity. The survey found that Internet has become a pivotal medium in social engagement and leisure activities amongst Internet users in Malaysia.

Nearly all Internet users (96.3%) used Internet for texting via over-the-top (OTT) messaging platform. The use of OTT messaging was prevalent amongst Internet users, coupled with the value-added benefits offered by the services, such as communication with anyone at any time, regardless of the geographical location and customization of messaging texts and theme, as well as the convenient of accessing the service over multiple devices. Apart from texting, visiting social networking sites were also common amongst Internet users (89.3%).

Figure 3: Percentage of Internet users by online activities



The Internet remained as an important source of information for 86.9% users. For leisure activities, listening to music or online radio was preferred by 72.7% of users, followed by downloading video and watching TV (70.0%), downloading audio, images or reading materials (68.6%) and playing computer games (41.6%).

In addition to entertainment, the Internet also provided convenience to students and teachers to have virtual group discussion, conduct research, find reference material, etc. As such, about two-third (67.6%) of Internet users used Internet for study purposes (not restricted to students who contributed to 17.1% of user base).

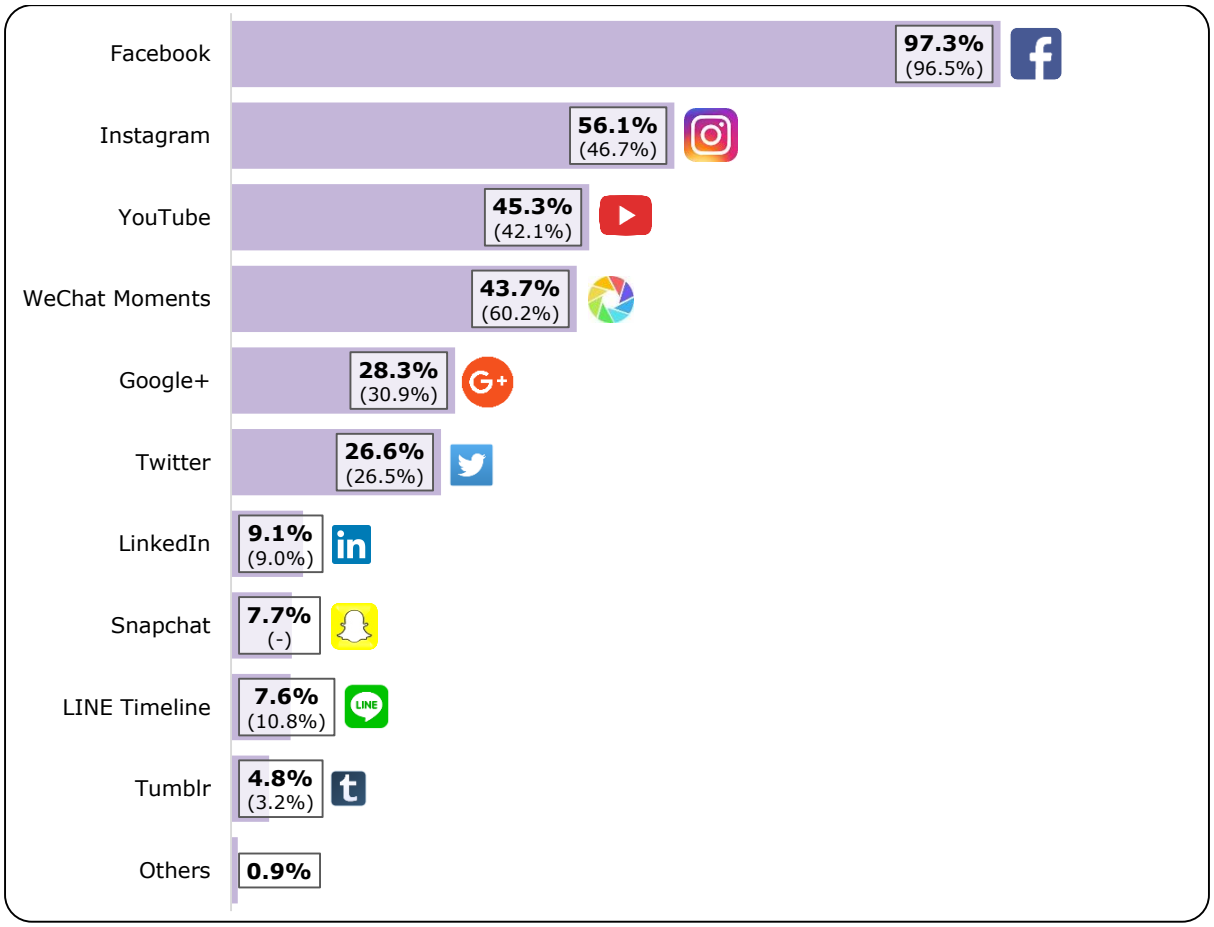
There were 45.9% users who got connected to the public services through the Internet. Meanwhile, 35.4% of Internet users found that it was

convenient to apply for jobs online. The percentage of users who did online shopping has increased to 48.8% (compared to 35.3% in previous year), while the Internet financial activities also increased, to 41.7% (from 36.2% in previous year).

Social networking

The past decade has seen a vast proliferation in the use of social media sites, be it by individuals or businesses alike. Individuals took advantage of the user-friendliness of social media sites and applications for socializing and communicating, as well as voicing out their opinion; while businesses benefited from social media with marketing and advertising opportunity.

Figure 4: Social networking account ownership as percentage of Internet users who visited social networking site, compared with 2015 data in parentheses



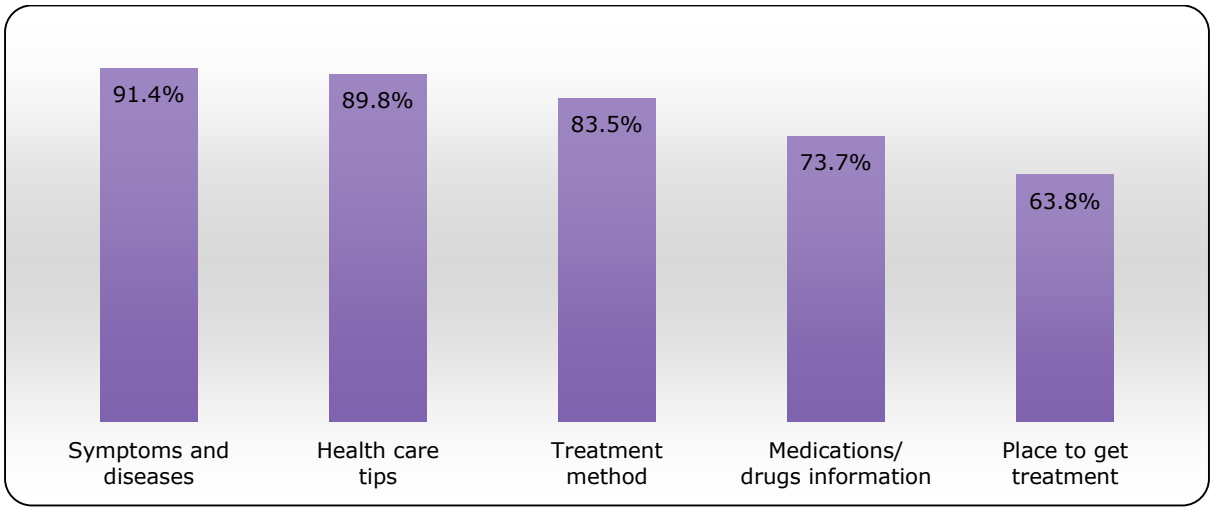
There were about 21.9 million social media users in 2016, of those 97.3% claimed that they owned a Facebook account. Ownership of Instagram account (56.1%), YouTube (45.3%), Twitter (26.6%), LinkedIn (9.1%) and Tumblr (4.8%) saw an increased as compared to previous year. On the contrary, account ownership of WeChat Moments (43.7%), Google+ (28.3%) and Line Timeline (7.6%), has decline since the previous year.

Seeking health information

As a collaborative effort between MCMC and Institute for Health Behavioral Research (IPTK) of Ministry of Health Malaysia (MOH), further questions were asked about going online for health related purposes, to gauge users' reliance on Internet for health information.

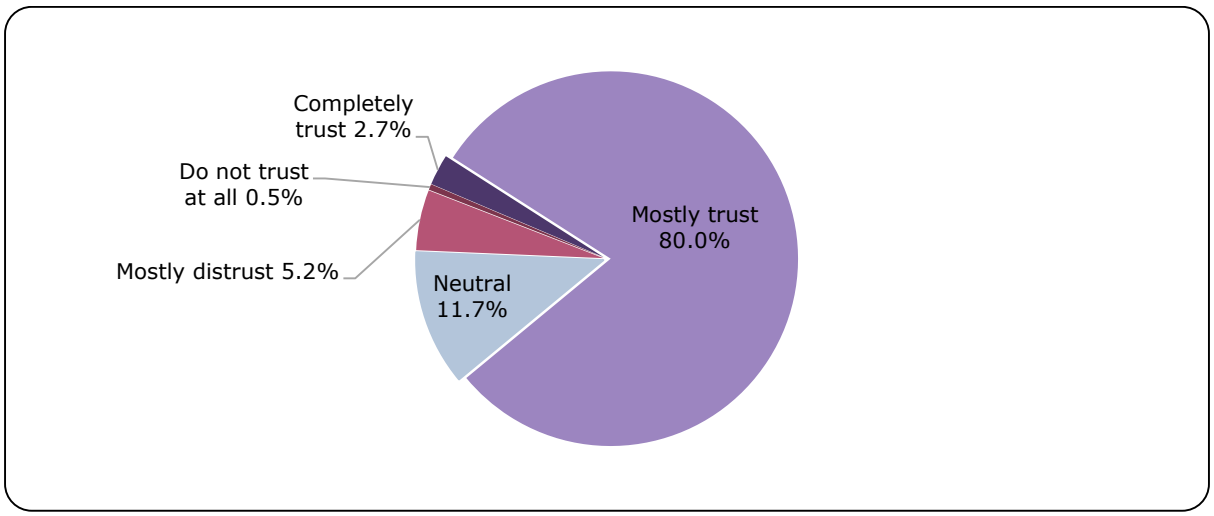
With 86.9% of users relying on the Internet to look for information, majority of them (77.2%) did look for health information online. The most common health related information that users were seeking were on 'symptoms and diseases' (91.4%), followed by 'health care tips' (89.8%) and 'treatment method' (83.5%). Over half of them were looking for 'medications/drugs information' (73.7%), as well as 'place to get treatment'.

Figure 5: Percentage of type of health information searched on the Internet



In general, it was found that 82.7% trusted the health-related information found online – regardless of the source – while only 5.7% felt otherwise. The remaining 11.7% were neutral.

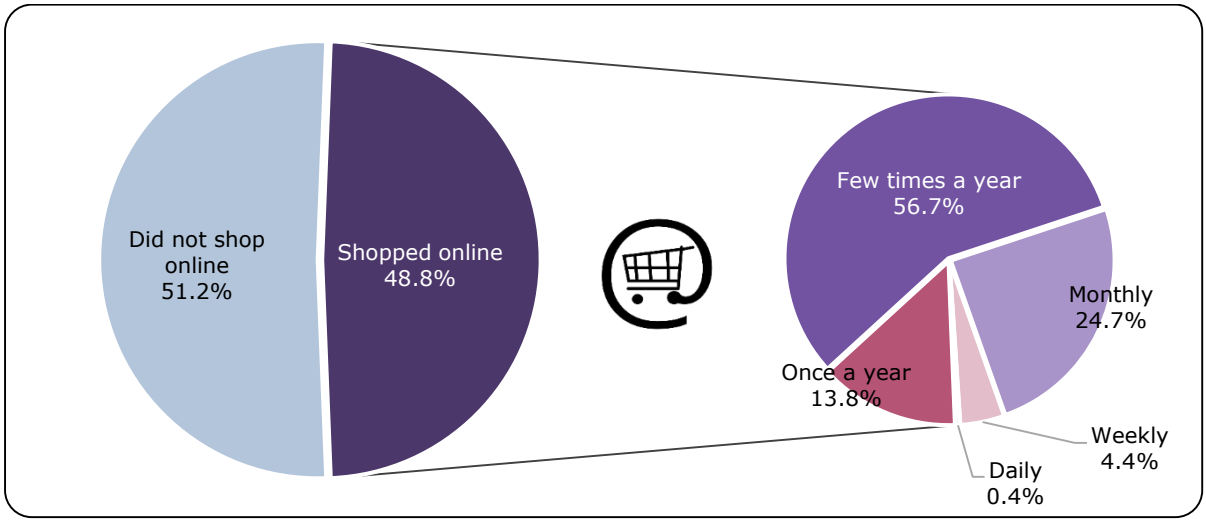
Figure 6: Percentage of trust level on health information found online



Online shopping activities

The survey revealed that more Internet users participated in online market place as consumer. In 2016, 48.8% has made purchases via online platform, as compared to only 35.3% in previous year.

Figure 7: Percentage of Internet users by online shopping activity and percentage of online shopping frequencies



Over half (56.7%) of online shoppers engaged in the activity only few times a year, followed by a quarter on monthly basis (24.7%). Only 4.8% online shop on weekly or daily basis, whilst 13.8% did shop online once a year.

The remaining 51.2% of Internet users who did not online shop were asked about their reason for not doing so. A total of 79.9% cited that they prefer to visit brick-and-mortar stores rather than going online when making purchase. Visiting physical store would enable buyers to feel the items and even try them out before spending any money on it. It is also found that 66.7% did not online shop due to lack of confidence or skills to engage in the activity.

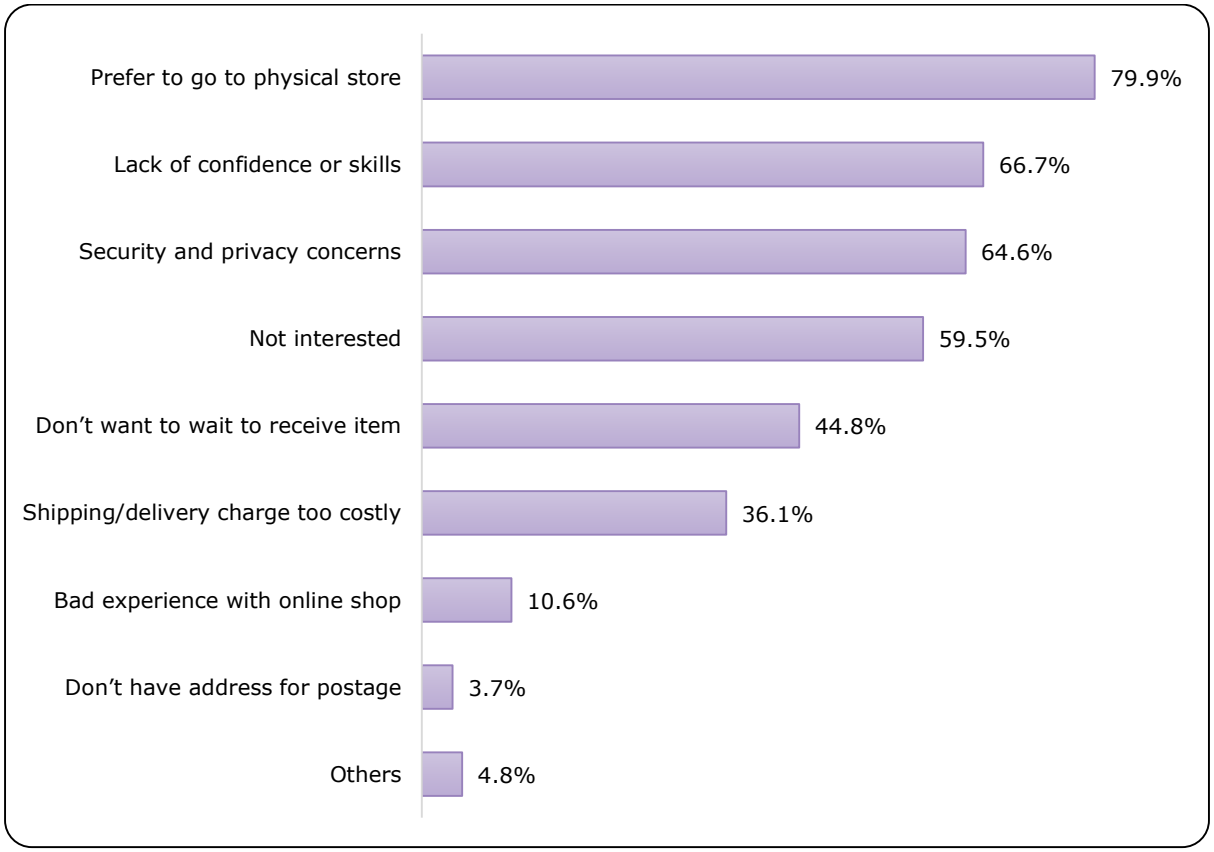
Furthermore, 64.6% of non-online shoppers were concerned about e-commerce security and privacy. They were not too keen to provide their personal information such as full name, contact number and full address to a third party. There was also concern on the vulnerability of online banking services that facilitate the online shopping transactions. On the other hand, 59.5% did not engage in online shopping merely because they did not have any interest in doing so.

Since purchasing online means that buyer might have to wait several days to receive the items, 44.8% simply did not have the patience to wait until the items get delivered. Moreover, 36.1% refused to pay for the delivery cost charged by the seller.

It is also revealed that 10.6% refused to online shop due to negative online shopping experience, either encountered by themselves or people around them. For example, being cheated by the seller, items lost during delivery, or items received did not meet expectation or as advertised online. Meanwhile, 4.8% cited various reasons such as online shopping portal is too complicated to navigate, being too young or too old and simply no time for that.

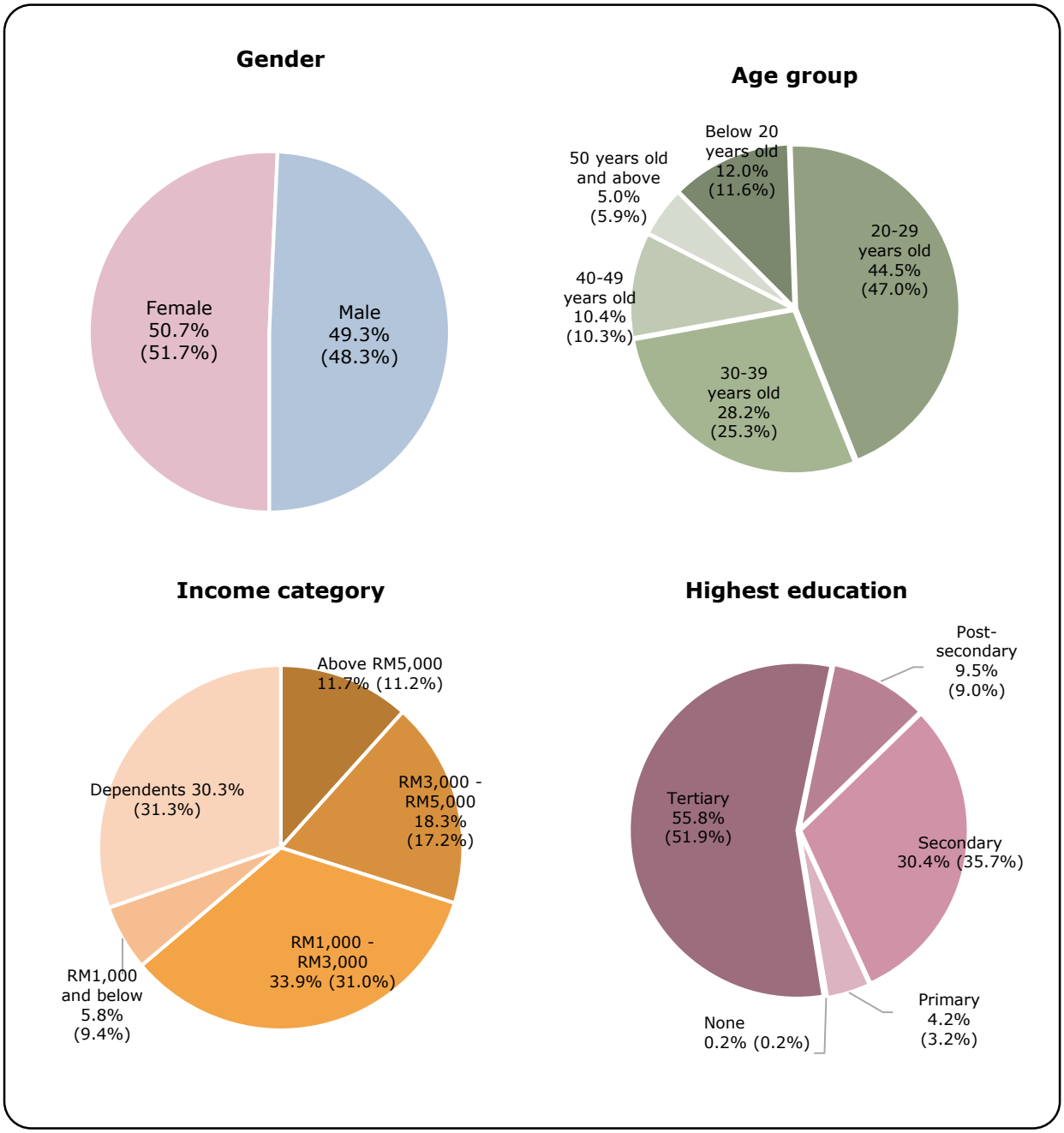
Only 3.7% stated that not having a proper address as the reason for not being an online shopper. MCMC and Pos Malaysia Berhad, through their 'Address for All' (AFA) initiative, aimed to enable comprehensive e-commerce reachability across the nation by providing complete premise addresses for those without one. Until March 2017, they have provided complete addresses for 30,000 premises in rural area in Kemaman, Hulu Terengganu, Pulau Pangkor, Pulau Langkawi, Kota Belud and Lundu.

Figure 8: Reasons for not shopping online as percentage of non-online shopper



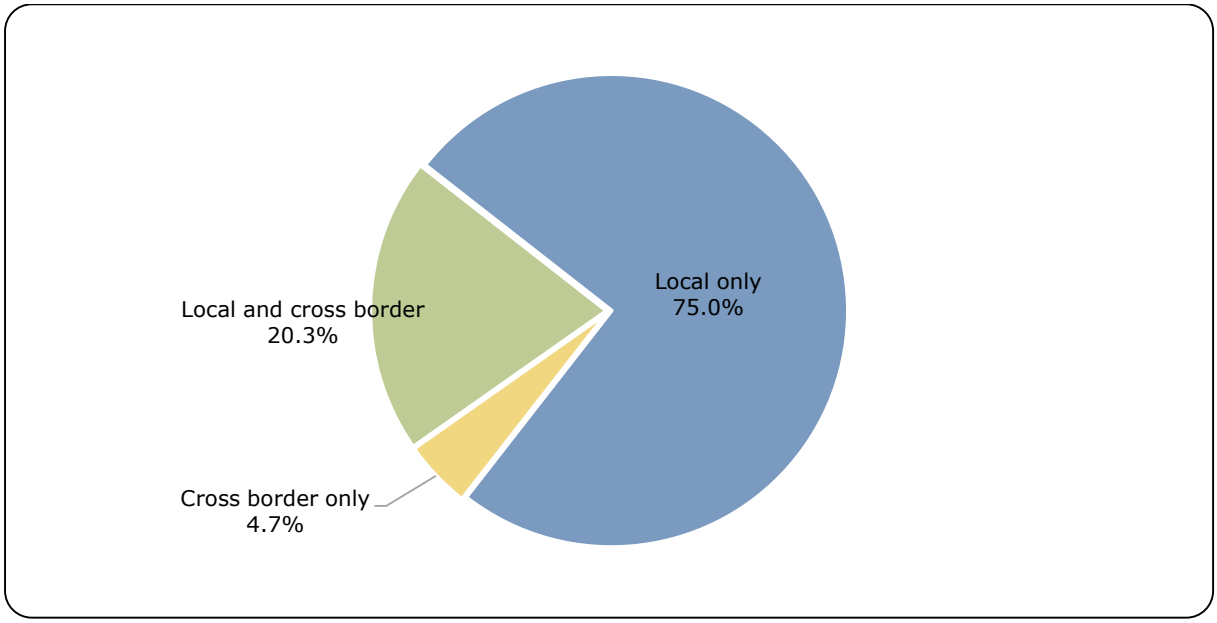
The general profile of online shoppers does not differ much from the previous year. Women and men had equal share of distribution when it comes to purchasing online (50.7% and 49.3% respectively). Youth between 20 to 39 years old were the primary age cohort for online shoppers, where they made up three-quarter of online shoppers' distribution. More than half of online shoppers completed tertiary education.

Figure 9: Percentage of online shoppers by gender, age group, income category and highest educational attainment, compared with 2015 data in parentheses



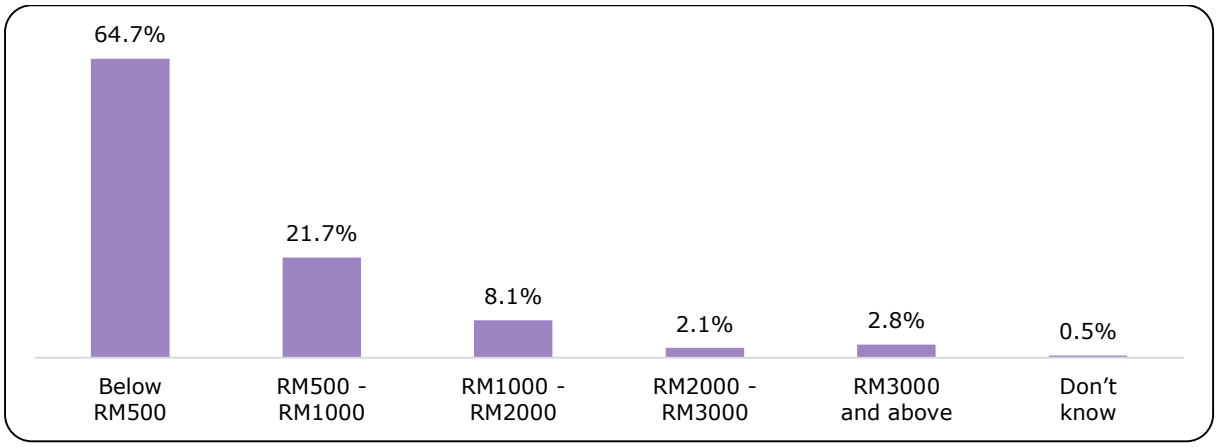
The cross-border e-commerce transaction has certainly expanding across the globe, especially with the advancement of e-banking, e-fulfilment and consumer protection. The survey found that majority of online shopper in Malaysia has purchased locally only (75.0%), while 20.3% shopped both local and cross border and the remaining 4.7% shopped cross border only.

Figure 10: Percentage of online shoppers by the location of the sellers



It was discovered that our online shoppers were mostly hesitate to spend a large amount of money over the Internet. The survey identified that 64.7% of them spent less than RM500 in a year and 21.7% spent between RM500 to RM1000. Only 13.0% has spent more than RM1000 annually on online shopping.

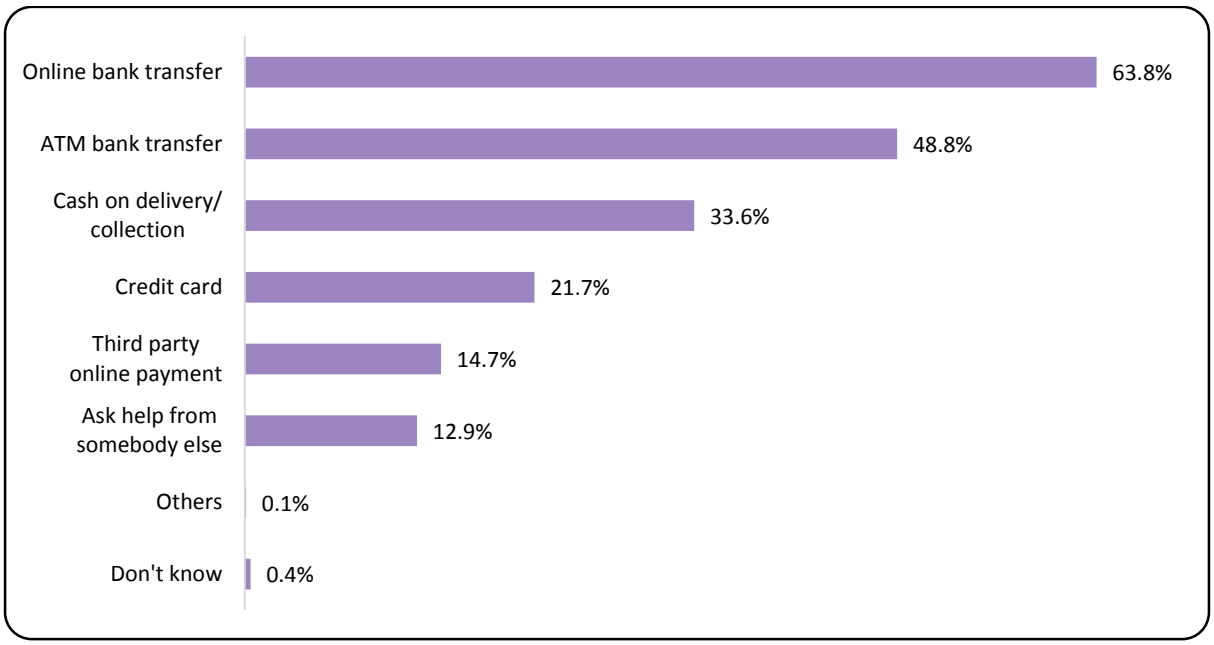
Figure 11: Percentage of online shoppers by the annual spending on online shopping



Online bank transfer was the preferred payment method for online shoppers at 63.8%, followed by 48.8% using ATM bank transfer. Cash-on-delivery/collection was favored by 33.6%, while credit card by 21.7%.

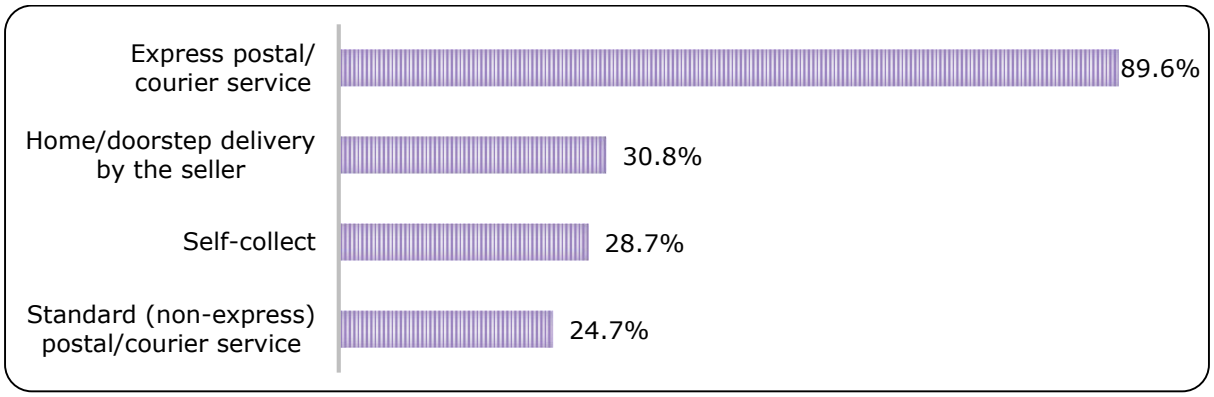
Some online shoppers utilised payment gateway services (14.7%) such as Molpay, Alipay and Paypal as a payment method, whilst 12.9% seek assistance from someone else.

Figure 12: Payment mode for items purchased online as percentage of online shoppers



With almost all online shoppers had purchased physical items online (98.7%), 89.6% of them received their items by express postal or courier services, followed by home delivery by the seller (30.8%) and self-collect (28.7%). About a quarter (24.7%) have received their items by non-express postal and courier service.

Figure 13: Method of receiving physical items purchased online

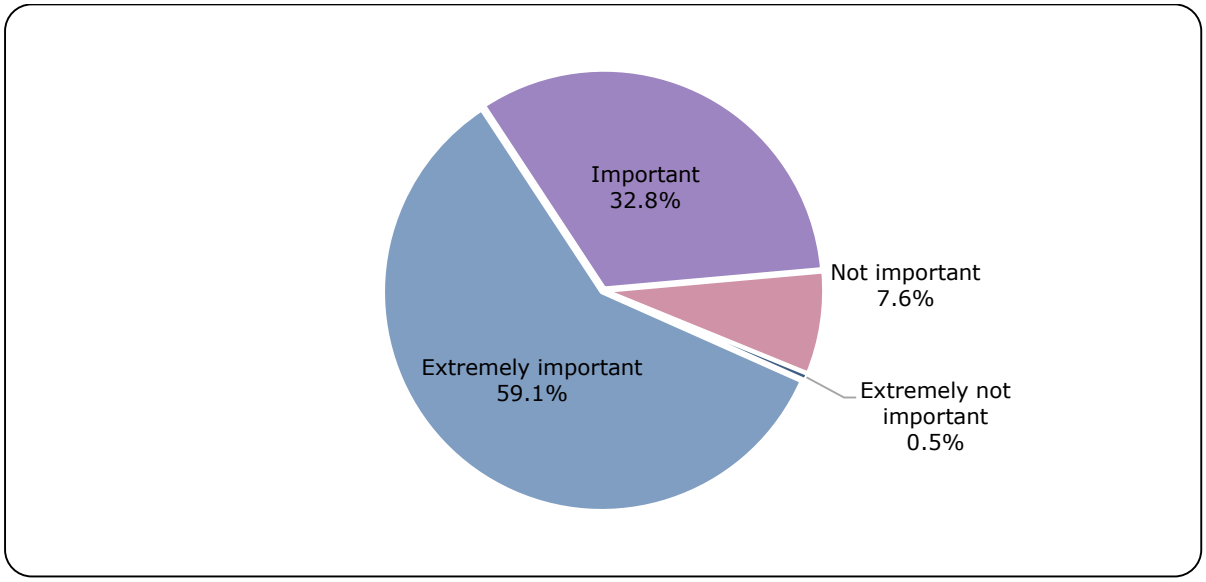


Online security and privacy

The growing number of Internet users and time spent online has led to more information exchange taking place. Eventually, more digital footprints were left behind to create online dossier of Internet users, thus risking their own online privacy.

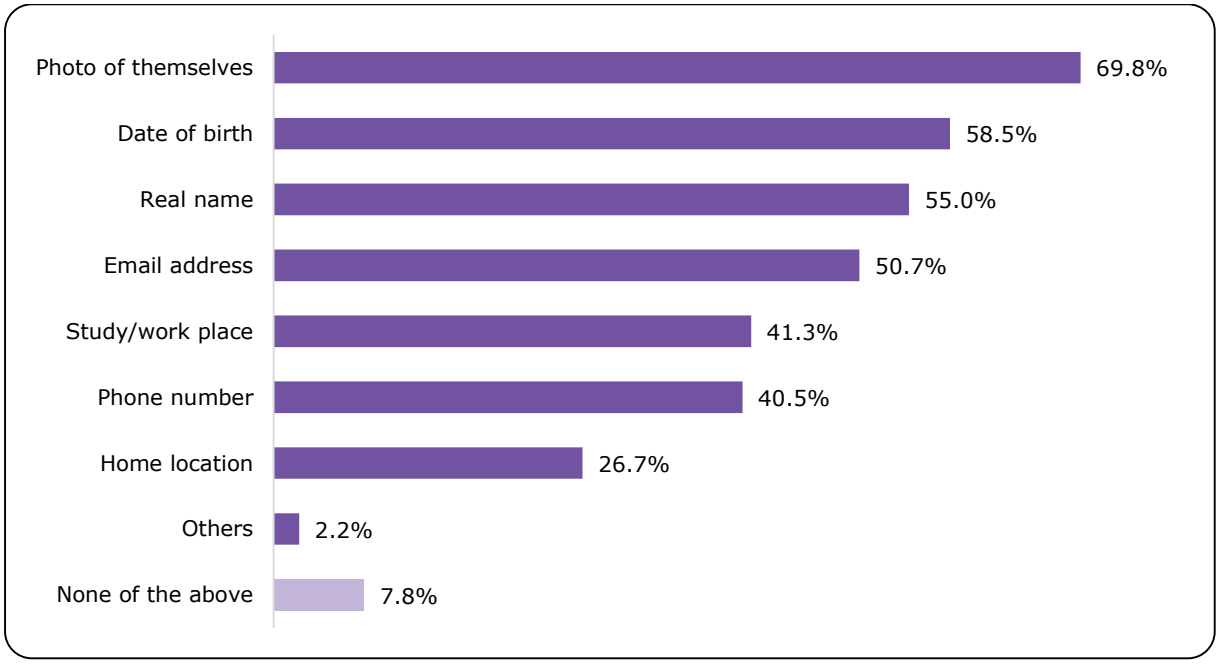
When asked about the importance of online privacy to users, 59.1% cited that their online privacy is extremely important and 32.8% thought it is important. The remaining 8.1% claimed that online privacy is not important to them.

Figure 14: Percentage of Internet users by the importance of online privacy



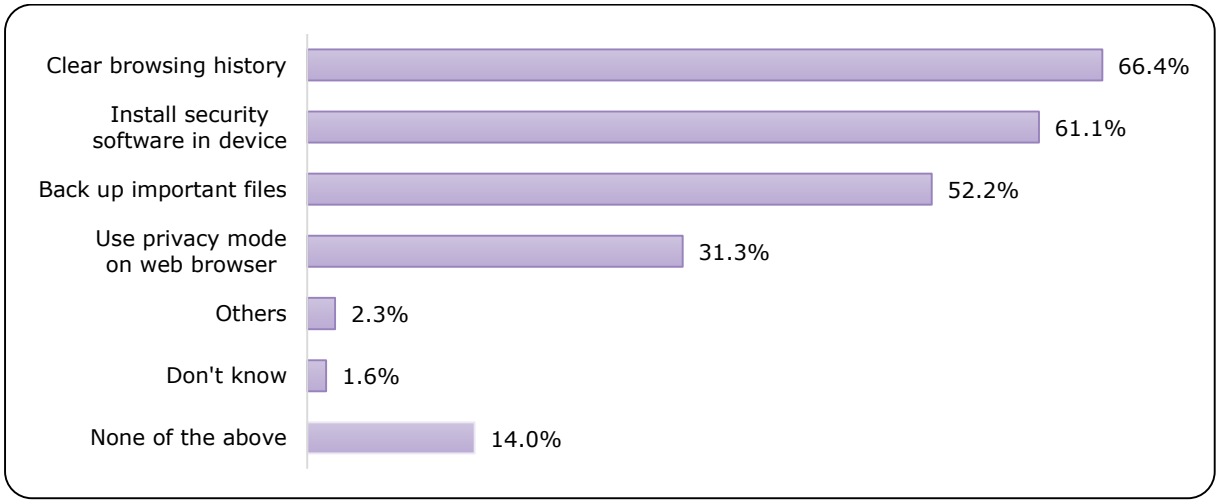
Interestingly, majority of Internet users disclosed that they have shared their personal information online such as, photo of themselves (69.8%), date of birth (58.5%), real name (55.0%) and email address (50.7%). Apart from that, 41.3% has shared their study and/or workplace and even phone number (40.5%) and home location (26.7%). Other information such as relationship status and family photos also have been shared by 2% of Internet users. On the other hand, 7.8% of Internet users claimed that they did not share personal information online.

Figure 15: Personal information shared online by the percentage of Internet users



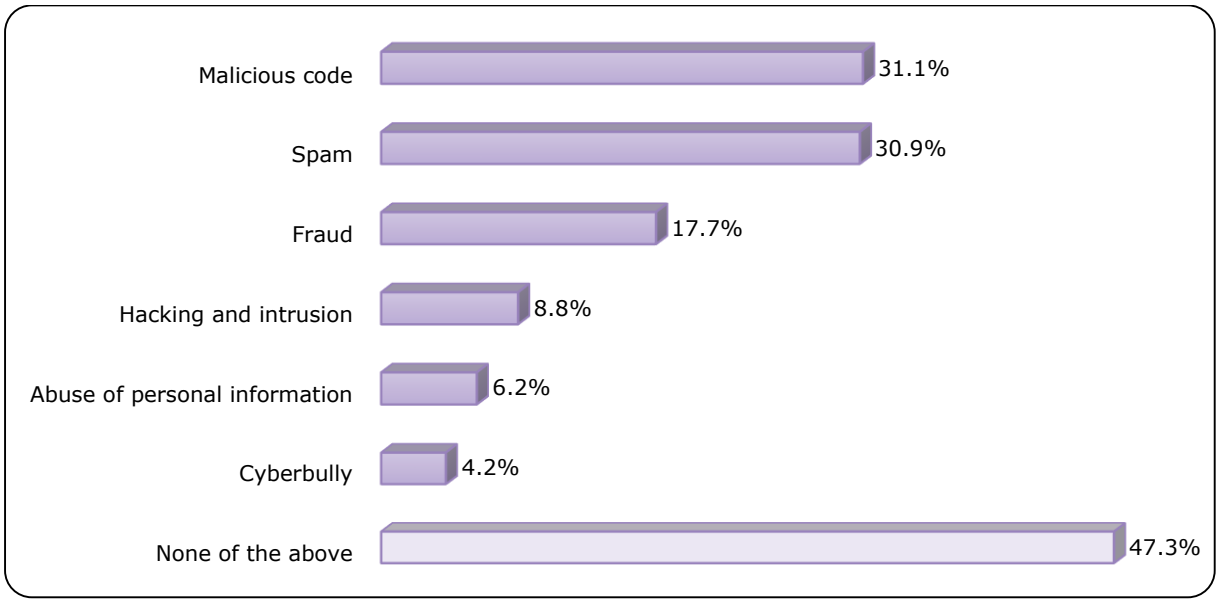
While only 14.0% of Internet users admitted that they had not taken any measure to protect their online privacy, the remaining 86.0% did so in various ways. More than half of Internet users cleared their browser history (66.4%), installed security software in devices (61.1%) and backed up their important files to a protected system (52.2%). Only 31.3% used privacy mode when on web browser and 2.3% on other measures such as changed password regularly.

Figure 16: Action taken to protect personal information online by the percentage of Internet users



The survey further identified cybercrime experienced by Internet users. Malicious code and spam are the most common incidents encountered by Internet users (31.1% and 30.9% respectively), followed by fraud (17.7%). Only a minority of Internet users were victims of hacking and intrusion (8.8%), abuse of personal information (6.2%) and cyberbully (4.2%). It is also found that 47.3% of Internet users never experienced any cybercrime. Of those who were victims of cybercrime, only 12.0% further suffered financial loss due to the incidents.

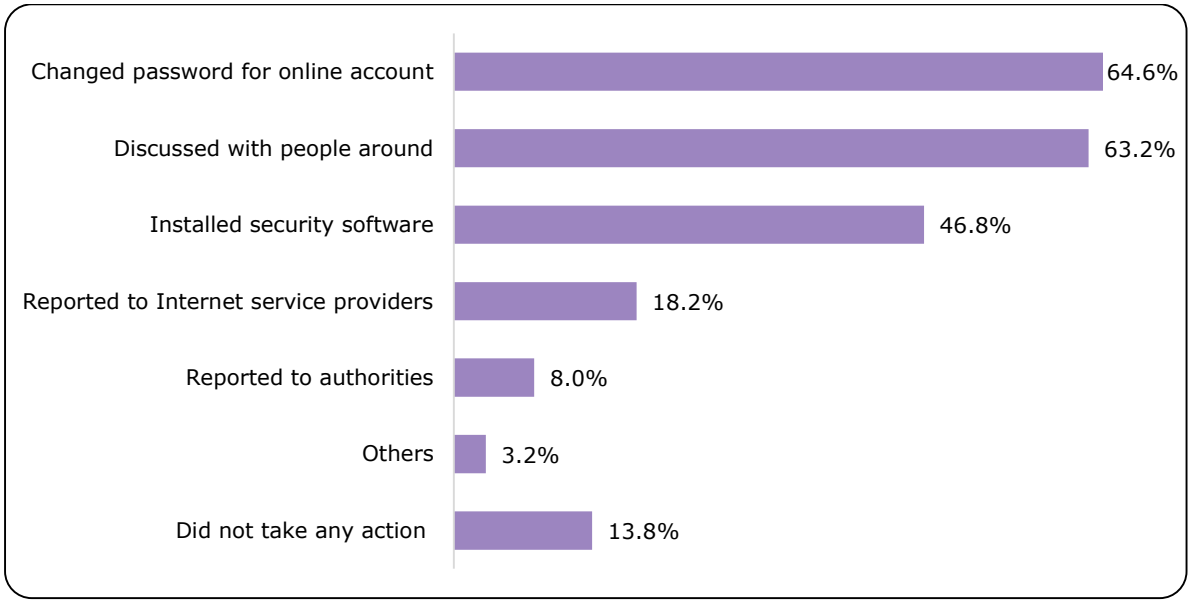
Figure 17: Cybercrime experienced as percentage of Internet users



The survey further prompted on how respondents reacted to the incidents experienced. Of those who ever experienced cybercrime, 64.6% changed their online account password and 63.2% discussed with people around them about the incidents. Furthermore, 46.8% installed security software following the incidents and 18.2% reported the incidents to their Internet service providers.

Only 8.0% of them reported to authorities such as MCMC, Malaysian Computer Emergency Response Team (MyCERT) and Royal Malaysia Police (PDRM).

Figure 18: Action taken following cybercrime experienced percentage of Internet users



Child online safety and parental control

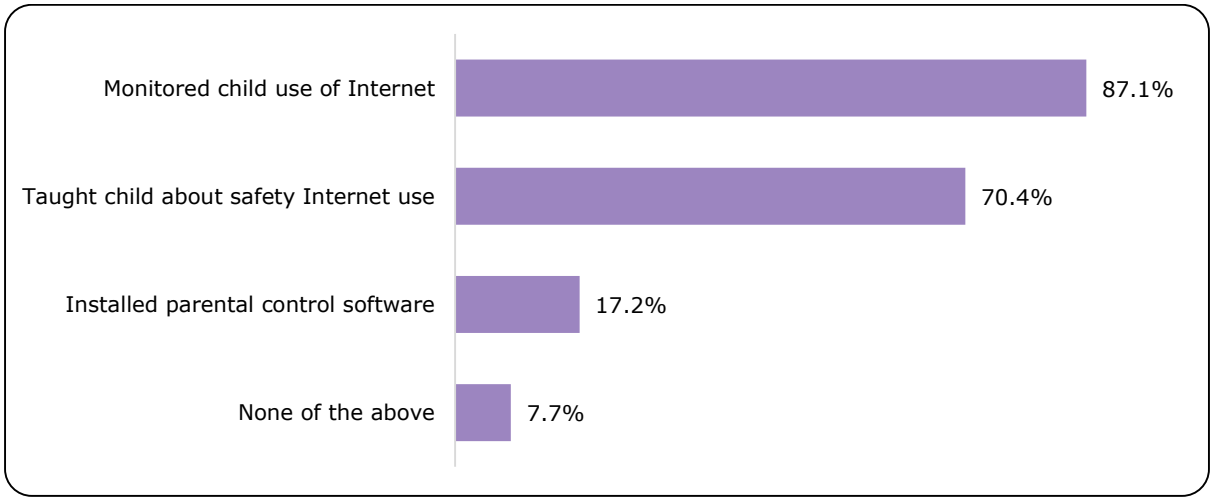
In a society where Internet has profoundly influenced our lifestyle, digital literacy has become an important part of today's children's development. The survey found that 83.2% of children[6] aged 5 to 17 were Internet users. The use of smartphone for online activities amongst the children was omnipresent where 93.0% of them accessed the Internet from the device. Text communication, social networking, getting information and watching videos were the top online activities for children.

However, Internet has certainly pose many concern to parents such as, exposure to inappropriate contents, cyberbully, communicating with strangers and online scam. They are now challenged on how to monitor their children's online behaviour and ensure safety in the cyberspace. Hence, this part of the survey intended to explore parents' attitude on their

[6] For the purpose of this survey, a child is defined as those aged 5 to 17 years old. Caution is required in the use of this statistics, as it is not representative of the children population in the country.

children online safety. 18.4% of Internet users were a parent[7] with child/children aged 5 to 17 years old that also accessed Internet.

Figure 19: Action taken to ensure child online safety, as percentage of parents amongst Internet users



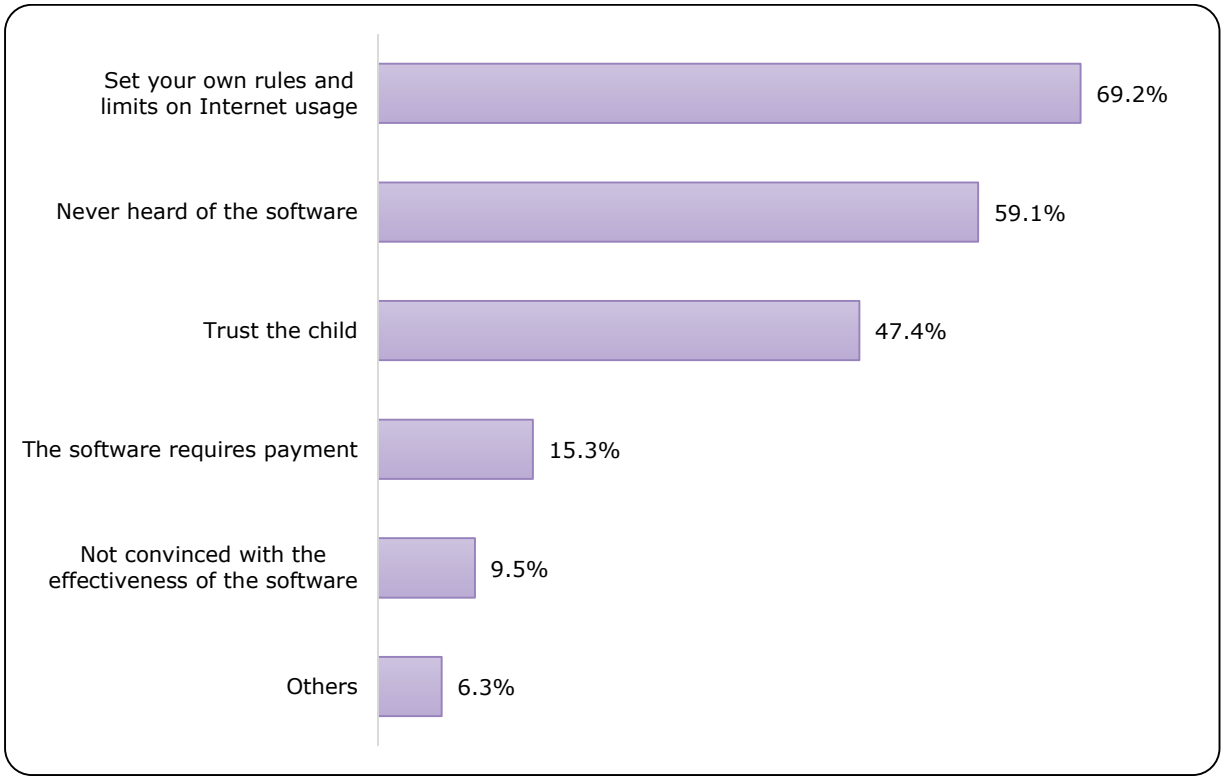
When asked about action they had taken to ensure their child is safe when using the Internet, nine out of ten parents responded that they monitored their child use of Internet (87.1%) such as staying nearby their child during online activities and checking the child social network account and browsing history. Educating their child about safety Internet use is also common practice among parents (70.4%). Only 17.2% parents installed parental control software in device used by their child.

Among parents who did not use parental control software, more than half of them stated that they already set their own rules and limits on Internet usage for the child to adhere (69.2%), as well as never heard of such software before (59.1%). Nearly half claimed that they trust their child enough (47.4%) hence the software is unnecessary, while 15.3% cited that the software requires payment thus hindering them from using it. A small

[7] For the purpose of this survey, a parent is defined as Internet users with child/children aged 5 to 17 years old that also accessed Internet. Sample for parents in this survey was based on confidence level of 95% and precision of ±5%. For parents with more than one child aged 5 to 17 that accessed Internet, they were asked to consider the child that celebrated the most recent birthday when answering the question.

number of parents were not convinced that the software is truly effective in protecting their child online (9.5%).

Figure 20: Reasons for not using parental control software, as percentage of parents amongst Internet users that did not use it



Demographics and Socio-economics of Internet Users

Table 3 below summarized the general profile of Internet users in 2016.

Table 3: Internet users' general demographics distribution, 2015 and 2016

Characteristic	2015 (%)	2016 (%)
Gender		
Female	40.6	42.6
Male	59.4	57.4
Broad Age Group		
Below 20	15.5	13.0
20-34	52.2	53.6
35-49	23.8	24.7
50-64	7.8	7.5
65 and above	0.6	1.2
Region[8]		
Northern	20.2	17.8
Central	33.6	37.3
Southern	13.6	14.5
East Coast	16.4	12.3
Sabah, Sarawak and W.P. Labuan	16.2	18.1
Strata		
Urban	62.1	67.2
Rural	37.9	32.8
Educational Level[9]		
Tertiary	31.4	36.6
Post-secondary	8.4	9.3
Secondary	48.4	39.5
Primary	10.7	14.0
None	1.1	0.5
Monthly income category		
Above RM5,000	7.1	8.7
RM3,000 - RM5,000	11.8	13.7
RM1,000 - RM3,000	33.2	36.2
RM1,000 and below	15.5	11.1
Dependent	32.4	30.3

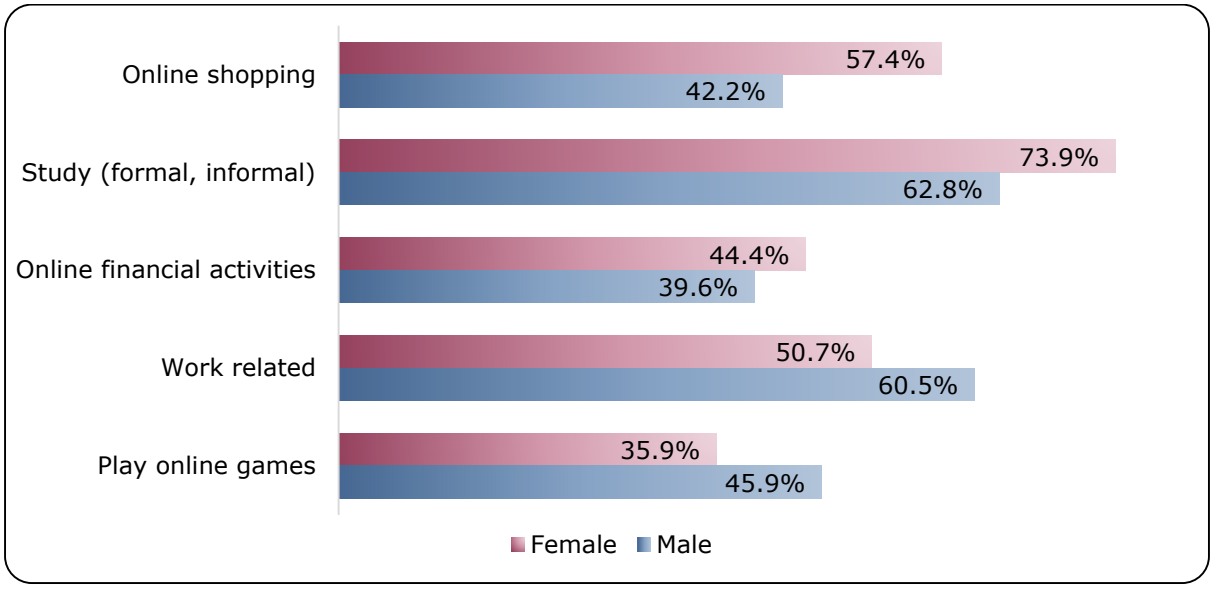
[8] Northern Region includes Kedah, Perak, Perlis and Pulau Pinang; Central Region includes Negeri Sembilan, Selangor, W.P. Kuala Lumpur and W.P. Putrajaya; Southern Region includes Johor and Melaka; East Coast Region includes Kelantan, Pahang and Terengganu

[9] Tertiary education includes degree or higher and advanced diploma; Post-secondary includes STPM, STAM, Certificate/UEC-Senior Middle Three; Secondary includes SPM, SPVM, Sijil 4 Thanawi, SMA, PT3, PMR, UEC-Junior Middle.

Gender

At 57.4%, men outnumbered women (42.6%) in the distribution of Internet users, as men have a greater share in the overall national population. Malaysia, however, has no significant Internet user gender gap[10] (1.1%)[11], as compared to world and other countries. The International Telecommunication Union (ITU) estimated that the world Internet user gender gap was 12.2% in 2016, 2.8% for developed countries, 16.8% for developing countries and 16.9% for entire Asia & Pacific.

Figure 21: Percentage adoption of various online activities by gender



Generally, women and men were equally likely to use Internet for various online activities, with exception of the following:

- Women were more likely to shop online at 57.4% than men (42.2%);

[10] The gender gap is the difference between the Internet user penetration rate for males and females in relation to the Internet user penetration for males, expressed as a percentage. (Source: ITU Measuring of Information Society Report (MISR) 2016)

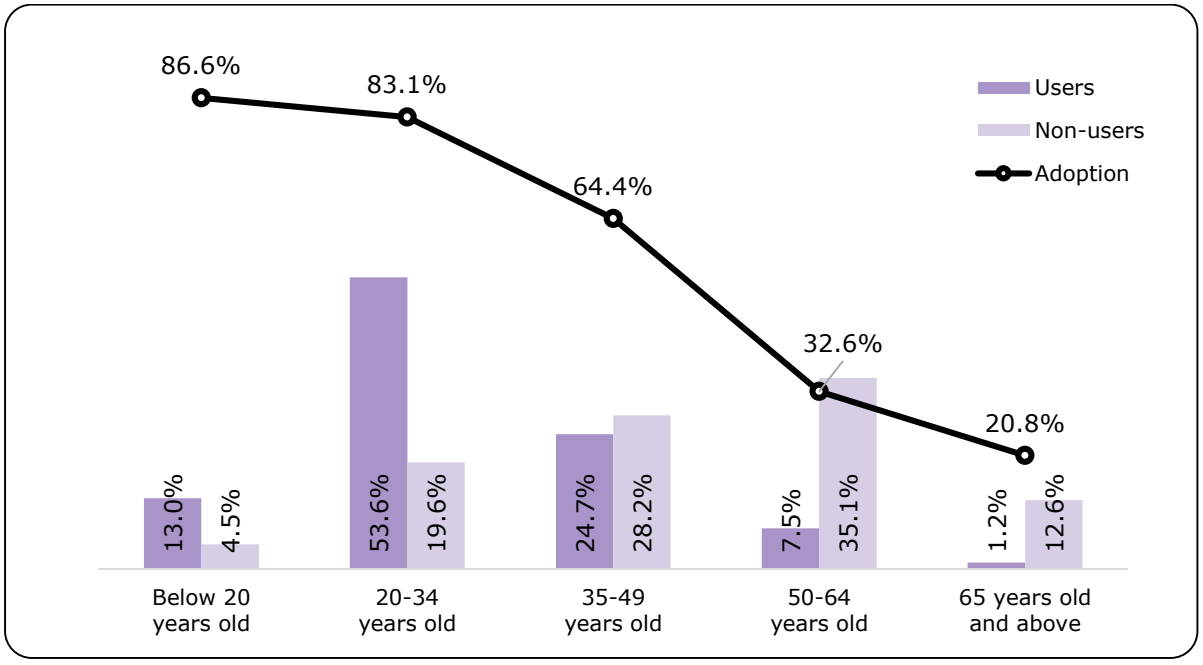
[11] Malaysia Internet user penetration rate (or adoption rate) for males is 68.9% while females is 68.1%, in 2016.

- Women used Internet for study purposes more than men (73.9% and 62.8% respectively);
- Women were more engaged in online financial activities (such as Internet banking) at 44.4%, while only 39.6% of men were involved in the activities;
- Men were more likely to use Internet for work (60.5%) compared to women (50.7%); and
- The share of men Internet users who played online games was 45.9% and only 35.9% for women.

Age group

The average age of Internet users in 2016 increased to 33.0 years, compared to 32.4 in 2015, showing that higher age group are joining the online community. The adoption rate however was negatively correlated with age.

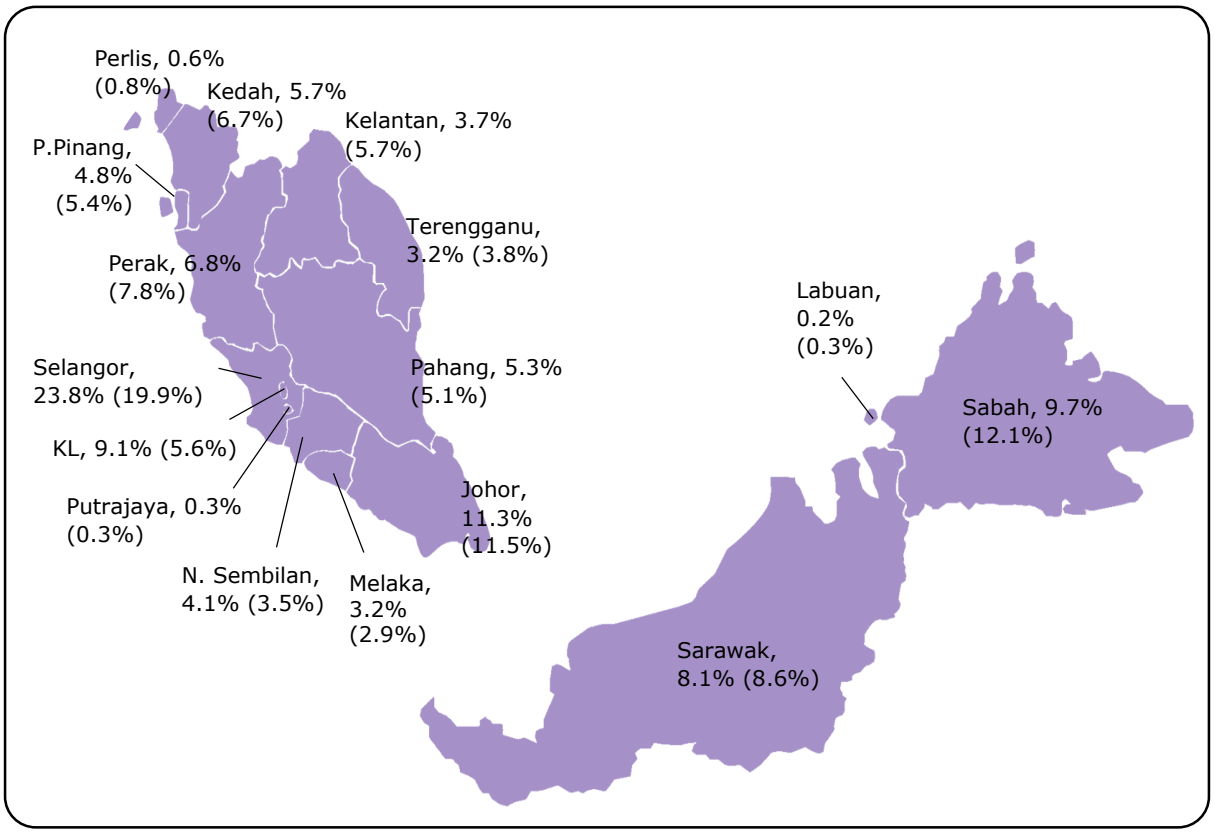
Figure 22: Percentage distribution of Internet users and non-users by age group (bar chart) and adoption rate of Internet by age group (line graph)



States and residence

Connectivity is available nationwide with equal opportunity for all inhabitants to access Internet. The distribution of Internet users is proportionate to the population distribution across the country.

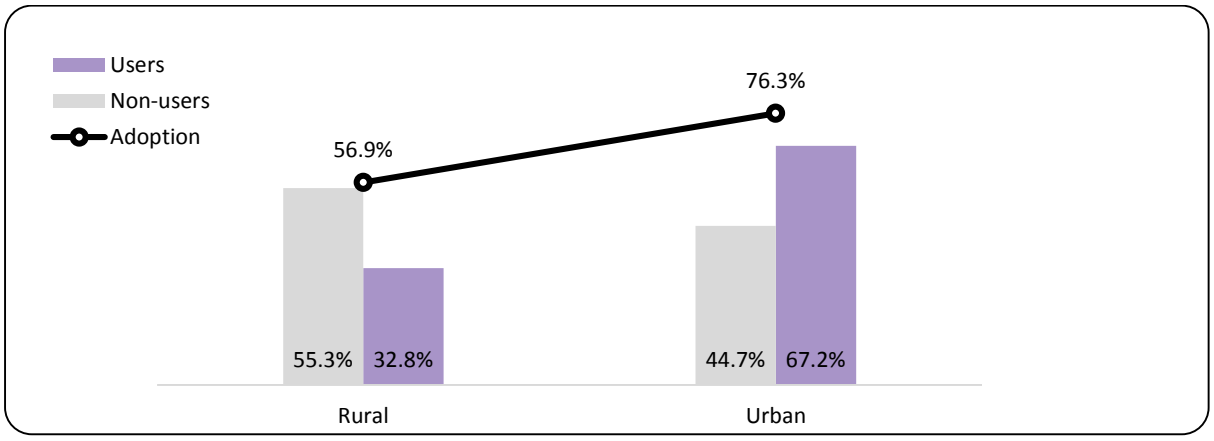
Figure 23: Percentage distribution of Internet users by state of residence, compared with national current population estimates[12] in parentheses



Over three-fifth of Internet users reside in urban area (67.2%), whereas 32.8% in rural area. There was also a significant divide in terms of Internet adoption between urban and rural residents. While 76.3% of residents of urban areas had accessed Internet, only 56.9% of those in rural area accessed Internet.

[12] Source: Current population estimates 2016, DOSM – July 2017 revision

Figure 24: Percentage distribution of Internet users and non-users by strata (bar chart) and adoption rate of Internet by strata (line graph)

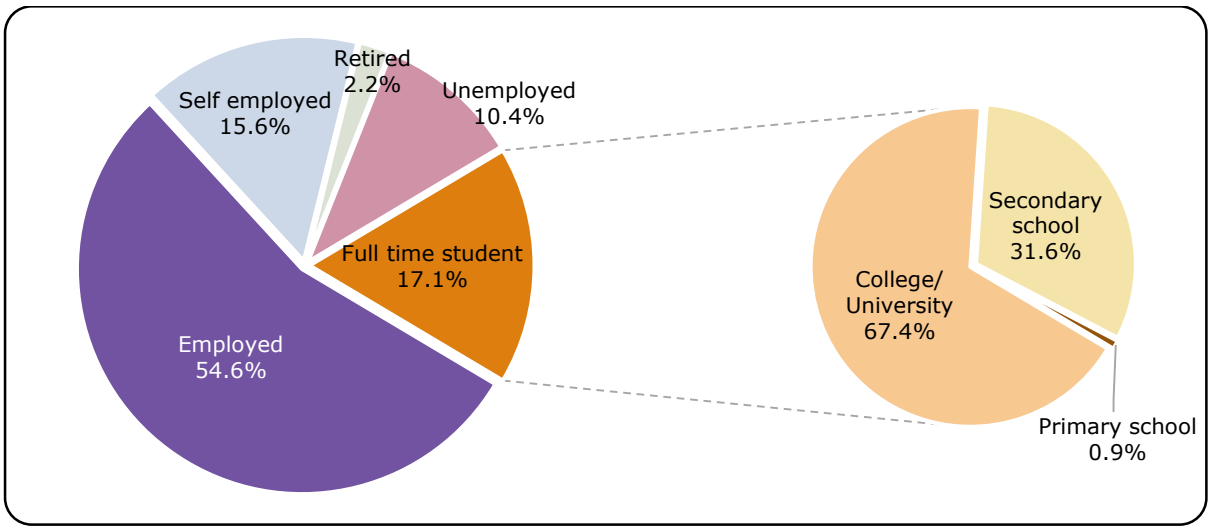


Employment and educational attainment

Three quarters of Internet users are employed, including self-employed (70.2%), followed by full-time students at 17.1%.

Of those who are full-time students, 67.4% currently enrolled in college/university and 31.6% in secondary school, while less than 1.0% in primary school.

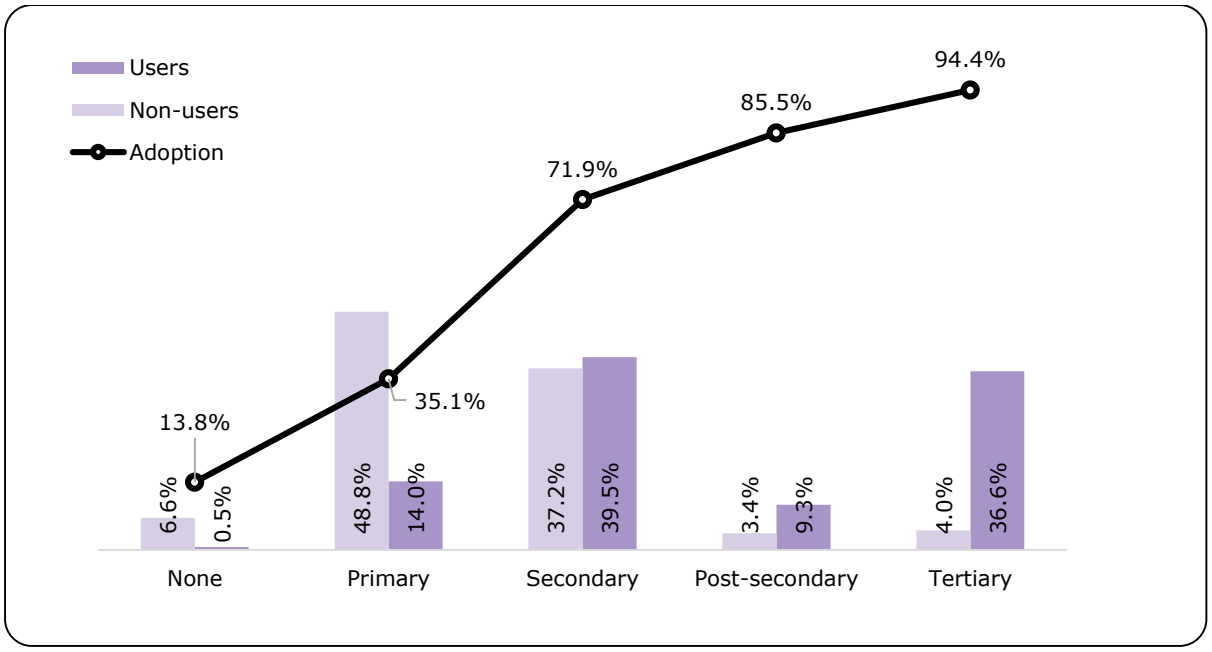
Figure 25 : Percentage distribution of Internet users by employment status



The Internet adoption rate increased as level of education attainment increases. While the Internet take-up was almost ubiquitous for college/university degree holders (94.4%), only 35.1% of those with primary education went online. Moreover, only 13.8% of those with no formal education used Internet.

Similar disposition can be observed in countries around the world, however, the disparities in Internet usage across educational attainment were more pronounce in developing countries than develop countries, as reported by ITU[13].

Figure 26: Percentage distribution of Internet users and non-users by highest educational attainment (bar chart) and adoption rate of Internet by highest educational attainment (line graph)

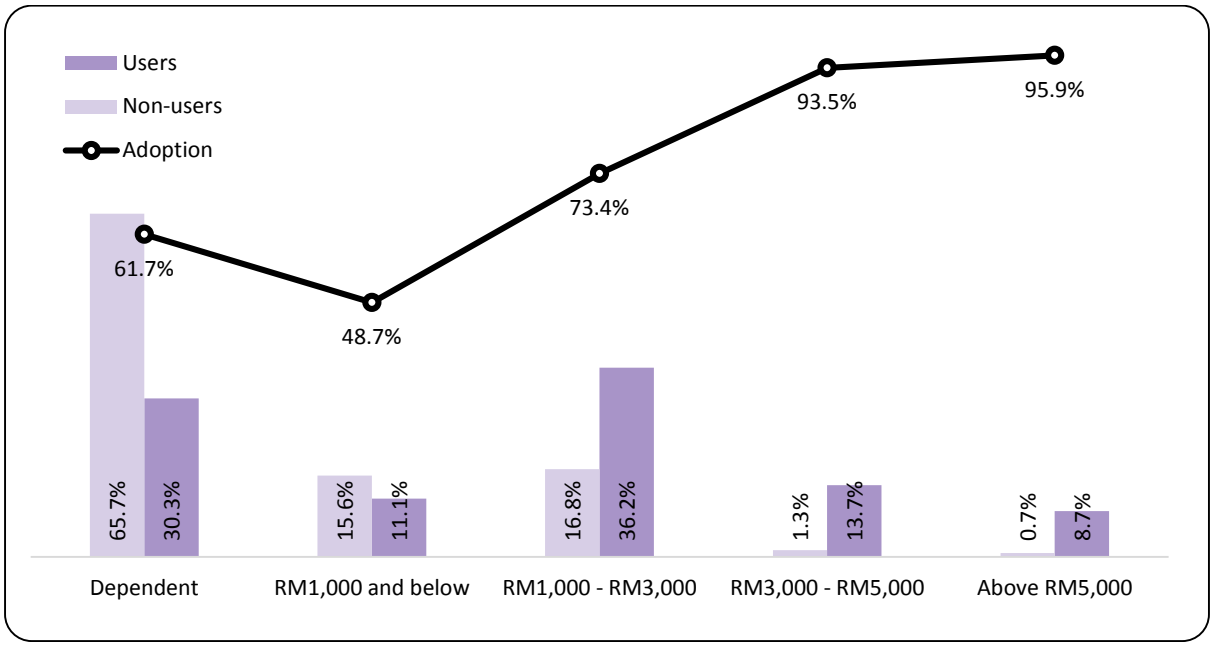


Income category

Respondents from all income categories had a fair share of opportunity to go online. Adoption rate among respondents with monthly income 'RM1,000 and below' was at 48.7%.

[13] Source: ITU MISR 2016

Figure 27: Percentage distribution of Internet users and non-users by income category (bar chart) and adoption rate of Internet by income category (line graph)



The last two years saw an increase in the percentage of Internet users with income above RM3,000 (2014: 17.2%, 2016: 22.4%), reflecting a positive growth of Malaysians' income. Moreover, DOSM also reported that the median monthly income for Malaysian has increased to RM5,228 in 2016, from RM4,585 in 2014[14].

[14] Source: DOSM Report of Household Income and Basic Amenities Survey 2016

SECTION 4: CONCLUSION

High adoption of smartphones amongst Internet users provide the convenience and interactivity for digital economy to prosper. However, the concern on security and privacy continue to prevail which will be the main hindrance for users to perform e-commerce activities.

Awareness to report cybercrime incidents to relevant authorities amongst victims was relatively low. Thus, public need to be aware that their report is important to curb cybercrime and promote trust and confidence.

Although most Internet users continue to share their personal information online, they acknowledged that online privacy is important, thus various preventive measures were taken to ensure their personal information online stays private. Nevertheless, continuous advocacy is still necessary for a more secured and reliable Internet environment. In addition, most parents are yet to take advantage of parental control software to assist them in keeping their children safe online, with half of them cited that they never heard of such tools.

Generally, users trust the information sought online pertaining to health as reliable. The outcome of the survey will assist Institute for Health Behavioural Research of Ministry of Health for further study to identify the contributing factors for the trust, in order to provide an appropriate platform for disseminating health-related information for Internet users.

Both women and men had equal access to Internet, where the national Internet user gender gap is marginal, which is on par with developed countries. This equality supports the United Nations' Sustainable Development Goal (SDG) number 5 which is to "achieve gender equality and empower all girls and women".

Going forward, a demand and supply survey on e-commerce will be commissioned in the future to capture key statistics on e-commerce, which includes, volume and value of purchases and fulfilment activities.

SECTION 5: TABLES

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

While the MCMC takes 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.

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. However, these estimates may be aggregated with others until an RSE of less than 25% is obtained.

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.

For comparison, past data are appended together where available.

Percentages may not add up to 100 because of rounding.

Internet users

Estimated number of Internet users in Malaysia	
	(million)
2014	20.1
2015	24.1
2016	24.5

Percentage of Internet users and non-users						
	2014 (%)	**RSE**	**2015 (%)**	**RSE**	**2016 (%)**	**RSE**
Users	66.6	1.2	77.6	1.0	76.9	1.0
Non-users	33.4	2.4	22.4	3.3	23.1	3.3

Device to access Internet						
	2014 (%)	**RSE**	**2015 (%)**	**RSE**	**2016 (%)**	**RSE**
Smartphone	74.3	1.2	89.3	0.7	89.4	0.7
Netbook/Notebook/ Laptop	51.4	2.0	46.0	2.2	36.3	2.7
PC/Desktop	35.3	2.8	30.3	3.1	29.3	3.2
Tablet	25.5	3.5	24.8	3.6	18.0	4.4
Feature phone	12.5	5.4	15.8	4.7	9.4	6.3
Smart TV	1.9	14.6	5.1	8.8	6.7	7.6
TV streaming box	-	-	4.2	9.7	5.6	8.4
Game console	1.2	18.5	2.7	12.3	2.5	12.6

Multiple responses

Place to access Internet						
	2014 (%)	RSE	2015 (%)	RSE	2016 (%)	RSE
Home	73.0	1.2	61.0	1.6	85.6	0.8
On-the-go	65.1	1.5	85.5	0.8	84.0	0.9
Work place	46.6	2.2	46.0	2.2	58.7	1.7
Free Wi-Fi anywhere	50.6	2.0	61.3	1.6	55.9	1.8
Another person's home	32.1	3.0	41.2	2.4	54.8	1.9
Commercial Internet access facility	29.3	3.2	37.3	2.6	30.0	3.1
Community Internet access facility	19.4	4.2	30.0	3.1	19.6	4.1
Place of education	17.2	4.5	20.2	4.1	13.9	5.1

Multiple responses

Online activities		
	2016 (%)	RSE
Communicate by text	96.3	0.4
Visit social networking sites	89.3	0.7
For getting information	86.9	0.8
Listen to music or online radio	72.7	1.2
Streaming or downloading video/Watch TV	70.0	1.3
Downloading audio, images, or reading materials	68.6	1.4
Study (formal, informal)	67.6	1.4
Work related	56.3	1.8
Online shopping	48.8	2.1
Government services	45.9	2.2
Financial activity (Internet banking, stock trading)	41.7	2.4
Games	41.6	2.4
Online job application	35.4	2.8
Internet telephony	32.0	3.0
Cloud storage	22.1	3.8
Selling goods/services	18.3	4.3
Maintain blogs/homepages	17.0	4.5
Others	0.2*	50.0

Multiple responses

Social networking account ownership as percentage of Internet users who visited social networking sites		
	2016 (%)	RSE
Facebook	97.3	0.4
Instagram	56.1	1.9
YouTube	45.3	2.4
WeChat Moments	43.7	2.4
Google+	28.3	3.4
Twitter	26.6	3.6
LinkedIn	9.1	6.8
Snapchat	7.7	7.5
LINE Timeline	7.6	7.6
Tumblr	4.8	9.6
Others	0.9	22.8

Multiple responses

Looking for health-related information online, among Internet users that use Internet for getting information		
	2016 (%)	RSE
Yes	77.2	1.2
No	22.8	4.0

Type of health-related information seek online		
	2016 (%)	RSE
Symptoms and diseases	91.4	0.8
Health care tips	89.8	0.8
Treatment method	83.5	1.1
Medications/drugs information	73.7	1.5
Place to get treatment	63.8	1.9
Others	0.4*	37.7

Multiple responses

Trust level on health-related information found online		
	2016 (%)	RSE
Completely trust	2.7	15.0
Mostly trust	80.0	1.2
Neutral	11.7	6.9
Mostly distrust	5.2	10.6
Do not trust at all	0.5*	35.3

Reason for not online shopping		
	2016 (%)	RSE
Prefer to go to physical store	79.9	1.4
Lack of confidence or skills	66.7	2.0
Security and privacy concerns	64.6	2.1
Not interested	59.5	2.3
Don’t want to wait to receive item	44.8	3.2
Shipping/delivery charge too costly	36.1	3.8
Bad experience with online shop	10.6	8.3
Don’t have address for postage	3.7	14.6
Others	4.8	12.7

Multiple responses

Online shopping: Frequency		
	2016 (%)	RSE
Daily	0.4*	44.6
Weekly	4.4	13.7
Monthly	24.7	5.1
Few times a year	56.7	2.6
Once a year	13.8	7.3

Online shopping: Frequency		
	2016 (%)	RSE
Local	95.0	0.7
Foreign	24.9	5.1

Multiple responses

Online shopping: Annual spending		
	2016 (%)	RSE
RM3000 and above	2.8	17.2
RM2000 - RM3000	2.1	19.8
RM1000 - RM2000	8.1	9.8
RM500 - RM1000	21.7	5.6
Below RM500	64.7	2.2
Don’t know	0.5*	40.7

Online shopping: Payment mode		
	2016 (%)	RSE
Online bank transfer	63.8	2.2
ATM bank transfer	48.8	3.0
Cash on delivery/collection	33.6	4.1
Credit card	21.7	5.6
Third party online payment/Payment gateway	14.7	7.0
Ask help from somebody else	12.9	7.6
Others	0.1**	99.9
Don't know	0.4*	44.6

Multiple responses

Online shopping: Method of receiving physical items purchased online		
	2016 (%)	RSE
Express postal/courier service	89.6	1.0
Home/doorstep delivery by the seller	30.8	4.4
Self-collect	28.7	4.6
Standard (non-express) postal/courier service	24.7	5.1

Multiple responses

Online privacy importance		
	2016 (%)	RSE
Extremely important	59.1	1.7
Important	32.8	2.9
Not important	7.6	7.1
Extremely not important	0.5	28.8*

Personal information shared online		
	2016 (%)	RSE
Photo of themselves	69.8	1.3
Date of birth	58.5	1.7
Real name	55.0	1.8
Email address	50.7	2.0
Study/work place	41.3	2.4
Phone number	40.5	2.5
Home location	26.7	3.4
Others	2.2	13.6
None of the above	7.8	7.0

Multiple responses

Protection of online personal information		
	2016 (%)	RSE
Clear browsing history	66.4	1.5
Install security software in device	61.1	1.6
Back up important files	52.2	2.0
Use privacy mode on web browser	31.3	3.0
Others	2.3	13.2
None of the above	14.0	5.1
Don't know	1.6	16.1

Multiple responses

Cybercrime experienced		
	2016 (%)	RSE
Virus or malicious code	31.1	3.0
Spam	30.9	3.1
Fraud	17.7	4.4
Hacking and intrusion	8.8	6.6
Abuse of personal information	6.2	8.0
Cyberbully	4.2	9.8
None of the above	47.3	2.2

Multiple responses

Action taken following cybercrime experienced		
	2016 (%)	RSE
Changed password for online account	64.6	2.1
Discussed with people around	63.2	2.1
Installed security software	46.8	3.0
Reported to Internet service providers	18.2	6.0
Reported to authorities	8.0	9.5
Others	3.2	15.6
Did not take any action	13.8	7.0

Multiple responses

Financial loss due to cybercrime experienced		
	2016 (%)	RSE
Yes	12.0	7.6
No	88.0	1.0

Parents among Internet users with child/children aged 5 to 17 using Internet		
	2016 (%)	RSE
Yes	18.4	4.3
No	81.6	1.0

Action taken to ensure child online safety		
	2016 (%)	RSE
Monitored child use of Internet	87.1	1.8
Educated your child about safety Internet use	70.4	3.1
Installed parental control software	17.2	10.4
None of the above	7.7	16.5

Multiple responses

Reasons for not using parental control software		
	2016 (%)	RSE
Set your own rules and limits on Internet usage	69.2	3.5
Never heard of the software	59.1	4.3
Trust the child	47.4	5.5
The software requires payment	15.3	12.3
Not convinced with the effectiveness of the software	9.5	16.1
Others	6.3	20.2

Multiple responses

Internet user: State of residence						
	2014 (%)	RSE	2015 (%)	RSE	2016 (%)	RSE
Johor	11.7	5.6	10.8	5.9	11.3	5.7
Kedah	5.2	8.7	6.8	7.6	5.7	8.3
Kelantan	5.2	8.7	5.7	8.3	3.7	10.4
Melaka	4.2	9.8	2.8	12.0	3.2	11.2
Negeri Sembilan	4.0	10.1	3.3	11.0	4.1	9.9
Pahang	5.3	8.6	5.3	8.6	5.3	8.6
Perak	7.1	7.4	8.1	6.9	6.8	7.6
Perlis	0.5	27.7	0.9	21.7	0.6*	25.6
Pulau Pinang	4.8	9.1	4.4	9.5	4.8	9.1
Sabah	7.6	7.1	9.1	6.4	9.7	6.2
Sarawak	6.4	7.8	6.7	7.6	8.1	6.9
Selangor	23.6	3.7	20.9	4.0	23.8	3.7
Terengganu	3.8	10.3	5.4	8.6	3.2	11.2
W.P. Kuala Lumpur	9.8	6.2	9.0	6.5	9.1	6.5
W.P. Labuan	0.3*	37.7	0.4*	31.6	0.2*	43.1
W.P. Putrajaya	0.5*	28.8	0.3*	35.3	0.3*	35.4

Internet user: Gender						
	2014 (%)	RSE	2015 (%)	RSE	2016 (%)	RSE
Female	41.7	2.4	40.6	2.5	42.6	2.4
Male	58.3	1.7	59.4	1.7	57.4	1.8

Internet user: Age group						
	2014 (%)	RSE	2015 (%)	RSE	2016 (%)	RSE
Below 15	1.6	15.9	0.9	21.7	0.4*	32.7
15 - 19	13.9	5.1	14.6	4.9	12.6	5.4
20 - 24	24.2	3.6	22.0	3.8	21.4	3.9
25 - 29	19.3	4.2	16.2	4.6	16.7	4.6
30 - 34	13.1	5.3	14.0	5.1	15.4	4.8
35 - 39	8.7	6.6	10.6	5.9	10.5	6.0
40 - 44	7.3	7.3	7.6	7.1	8.0	6.9
45 - 49	4.6	9.3	5.7	8.3	6.2	7.9
50 - 54	7.3	7.3	4.8	9.1	3.7	10.5
55 - 59			1.8	14.9	2.4	13.0
60 - 64			1.2	18.5	1.4	17.3
65 and above			0.6	25.7	1.2	18.7

Internet user: Urban-rural distribution						
	2014 (%)	RSE	2015 (%)	RSE	2016 (%)	RSE
Urban	67.2	1.4	62.1	1.6	67.2	1.4
Rural	32.8	2.9	37.9	2.6	32.8	2.9

Internet user: Educational attainment						
	2014 (%)	RSE	2015 (%)	RSE	2016 (%)	RSE
Degree or higher (include Advanced Diploma)	15.5	4.8	15.9	4.7	19.8	4.1
Diploma	17.0	4.5	15.5	4.8	16.9	4.5
STPM/STAM/ Certificate/UEC-Senior Middle Three	9.2	6.4	8.4	6.7	9.3	6.4
SPM/SPVM	36.4	2.7	38.0	2.6	31.7	3.0
Sijil 4 Thanawi/ SMA	0.3*	35.3	0.5*	27.7	0.2*	47.0
PT3/PMR/UEC-Junior Middle Three	8.2	6.8	9.9	6.2	7.6	7.1
Secondary school	7.7	7.1	5.7	8.3	9.5	6.3
Primary school	5.0	8.9	5.0	8.9	4.5	9.4
None	0.7	24.2	1.1	19.5	0.5	27.7

Internet user: Employment		
	2016 (%)	RSE
Self employed	15.6	4.7
Employed	54.6	1.9
Unemployed	10.4	6.0
A full-time student	17.1	4.5
Retired	2.2	13.6

Internet user: Current full time students educational status		
	2016 (%)	RSE
College/University	67.4	3.4
Secondary school	31.6	7.3
Primary school	0.9**	52.2

Internet user: Monthly income category						
	2014 (%)	RSE	2015 (%)	RSE	2016 (%)	RSE
Above RM5,000	4.9	9.1	7.1	7.4	8.7	6.7
RM3,000 - RM5,000	12.3	5.5	11.8	5.6	13.7	5.2
RM1,000 - RM3,000	39.0	2.6	33.2	2.9	36.2	2.7
RM1,000 and below	13.9	5.1	15.5	4.8	11.1	5.8
Dependent	29.9	3.2	32.4	3.0	30.3	3.1

Non-Internet users

Reason for not using Internet				
	2014 (%)	RSE	2016 (%)	RSE
Lack of confidence or skills	47.4	3.0	58.1	2.6
Lack of interest	32.5	4.1	46.3	3.3
Not enough time	24.0	5.1	32.7	4.4
Senior citizen	-	-	32.0	4.5
Cost too high	13.6	7.3	28.1	4.9
No Internet access	14.8	6.9	26.9	5.0
No device	12.1	7.8	23.7	5.5
Concern that content is harmful	4.9	12.7	21.8	5.8
Privacy concerns	3.6	15.0	20.7	6.0
Viruses and security concerns	3.7	14.8	20.7	6.0
Others	3.0	16.4	1.3*	26.6

Non-Internet user: State of residence						
	2014 (%)	RSE	2015 (%)	RSE	2016 (%)	RSE
Johor	11.0	8.2	10.9	14.6	12.5	8.1
Kedah	6.0	11.4	7.0	18.6	7.7	10.6
Kelantan	6.2	11.2	9.1	16.1	7.7	10.6
Melaka	2.7	17.4	0.5**	70.5	3.1	17.0
Negeri Sembilan	3.7	14.8	3.4*	27.3	3.1	17.1
Pahang	5.0	12.6	5.5	21.2	4.7	13.7
Perak	8.7	9.3	8.8	16.4	9.9	9.2
Perlis	0.8*	31.5	0.8**	57.5	0.9*	31.9
Pulau Pinang	4.3	13.6	4.9	22.4	5.9	12.2
Sabah	15.0	6.9	11.7	14.0	8.8	9.9
Sarawak	8.1	9.7	9.1	16.1	8.2	10.2
Selangor	17.3	6.3	17.1	11.2	17.4	6.7
Terengganu	3.3	15.5	2.9*	29.7	3.8	15.4
W.P. Kuala Lumpur	7.1	10.5	7.8	17.5	5.7	12.4
W.P. Labuan	0.1**	100.0	0.3**	99.9	0.3**	56.9
W.P. Putrajaya	0.1**	100.0	0.3**	99.9	0.1**	99.9

Non-Internet user: Gender				
	2014 (%)	RSE	2016 (%)	RSE
Female	43.5	3.3	45.1	2.3
Male	56.5	2.5	54.9	1.8

Non-Internet user: Age group						
	2014 (%)	RSE	2015 (%)	RSE	2016 (%)	RSE
Below 15	1.1	27.6	0.0	-	0.3**	52.7
15 - 19	6.3	11.1	4.4	23.7	4.2	14.6
20 - 24	8.2	9.7	5.7	20.7	5.1	13.3
25 - 29	10.5	8.4	7.3	18.2	6.1	12.1
30 - 34	10.0	8.7	7.0	18.6	8.4	10.1
35 - 39	10.2	8.6	12.0	13.8	8.4	10.1
40 - 44	11.1	8.2	13.0	13.2	9.1	9.7
45 - 49	10.7	8.3	12.0	13.8	10.7	8.9
50 - 54	32.0	4.2	11.5	14.2	11.8	8.4
55 - 59			9.4	15.9	11.0	8.7
60 - 64			7.6	17.9	12.3	8.2
65 and above			10.2	15.2	12.6	8.1

Non-Internet user: Urban-rural distribution				
	2014 (%)	RSE	2016 (%)	RSE
Urban	43.7	3.4	44.7	3.4
Rural	56.3	2.6	55.3	2.8

Non-Internet user: Educational attainment				
	2014 (%)	RSE	2016 (%)	RSE
Degree or higher (include Advanced Diploma)	0.7*	33.2	1.3*	27.0
Diploma	1.4	24.1	2.7	18.4
STPM/STAM/Certificate/UEC-Senior Middle Three	3.6	15.0	3.4	16.3
SPM/SPVM	27.1	4.7	24.1	5.4
Sijil 4 Thanawi /SMA	0.2**	57.7	0.2**	78.8
PT3/PMR/UEC-Junior Middle Three	11.6	7.9	12.9	7.9
Secondary school	17.1	6.3	16.1	7.0
Primary school	32.0	4.2	32.8	4.4
None	6.1	11.3	6.5	11.6

Non-Internet user: Employment		
	2016 (%)	RSE
Self employed	20.2	6.1
Employed	33.1	4.4
Unemployed	30.6	4.6
A full-time student	3.5	16.1
Retired	12.6	8.1

Non-Internet user: Current full time students educational status		
	2016 (%)	RSE
College/University	3.1**	90.1
Secondary school	60.7	13.0
Primary school	36.7	21.3

Non-Internet user: Monthly income category				
	2014 (%)	RSE	2016 (%)	RSE
Above RM5,000	0.8*	33.2	0.7*	29.6
RM3,000 - RM5,000	3.0	16.7	1.3	22.1
RM1,000 - RM3,000	32.0	4.2	16.8	5.6
RM1,000 and below	30.8	4.4	15.6	5.8
Dependent	33.5	4.1	65.7	1.8

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LIST OF ABBREVIATIONS

AFA	Address for All
CATI	Computer Assisted Telephone Interview
DOSM	Department of Statistics Malaysia
IMDA	Infocomm Media Development Authority Singapore
IPTK	Institute for Health Behavioral Research
ITU	International Telecommunication Union
IUS	Internet Users Survey
KISA	Korea Internet & Security Agency
MCMC	Malaysian Communications and Multimedia Commission
MISR	Measuring of Information Society Report
MOH	Ministry of Health Malaysia
MSISDN	Mobile Station International Subscriber Directory Number
MyCERT	Malaysian Computer Emergency Response Team
PDRM	Royal Malaysia Police
RSE	Relative sampling error

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