

Internet Usage Trends in Macao (Abstract)

2018



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MIP members

Host: Dr. Angus Cheong

Researcher: Athena Seng, Liu Yuan, Wandy Mak, Candy Fong, Li Jing, Li Wenjun, Regina Chan, Gary Lau

Academic Advisor: Prof. Mei Wu

Designer: Binnan Fu

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Major Indicators

After consistently investigating the Internet usage and the technological environment for information and communication in Macao for 18 years, Macao Association for Internet Research completed “Internet Usage Trends in Macao 2018” to demonstrate the development and trends of Internet usage in Macao.

The survey of 2018 was conducted from 29th January – 12th February. 1,000 eligible Macao residents aged from 6 to 84 were successfully interviewed using CATI system. With the reference of demographic data from the government, the survey results have been weighted according to the gender and age. The sampling errors is $\pm 3.16\%$ at the confidence level of 95%. The response rate (AAPOR-RR3) is 40% and the cooperation rate (AAPOR-CR3) is 86%.

			2018		
			Ratio in all residents	Ratio in all netizens	Ratio in all households
The Internet use	The Internet penetration rate		84%	-	-
	The mobile Internet rate		80%	96%	-
The Internet usage pattern	Computer ownership rate(household)	Computer	-	-	84%
		Desktop	-	-	58%
		Laptop	-	-	63%
		Tablet	-	-	54%
	Mobile adoption rate	Mobile phone	91%	-	-
		Smart phone	85%	-	-
	Internet connection devices (Top 3)	Mobile phone	80%	96%	-
		Laptop	51%	62%	-
		Desktop	50%	60%	-
	Internet using places (Top 3)	Home	71%	85%	-
		Any place	32%	38%	-
		Workplace	30%	35%	-
	Internet connection methods (Top 2)	Wireless	71%	85%	-
Broadband/fiber broadband		53%	64%	-	
Internet using duration(hour/week)		22.6			
Internet activity	Social communication	WeChat	74%	88% (mobile netizens 92%)	-
		Facebook	62%	74%	-
		Forums	28%	33%	-
		Social groups	62%	74%	-
		Live streaming	12%	14%	-
	News and information	Reading News	66%	79%	-
		Reposting news / comments / messages	35%	42%	-
		Watching movies/ videos	66%	79%	-
	Commerce and shopping	Online shopping (adults)	39%	52%	-
		Online payment (adults)	41%	55%	-
		Mobile payment (adults)	14%	19%	-
		Online financing/ banking	40%	48%	-
	Online Services	E-government (adults)	37%	48%	-
Online booking		34%	40%	-	
Car-hailing		22%	27%	-	
Internet privacy	Evaluation of Internet privacy in Macao	Evaluating the Internet privacy in Macao as “safe”	33%	39%	-
		Have been through Internet privacy violation	25%	29%	-
		Have ability to protect Internet privacy	27%	32%	-
	Protection of Internet privacy	Actively protecting Internet privacy	47%	56%	-
		Making action of protecting Internet privacy	44%	53%	-
	Measures of protecting Internet privacy (Top 3)	Reducing / refusing personal information exposure	17%	21%	-
		Changing passwords frequently / enhancing passwords strength	14%	17%	-
		Encryption of personal data	9%	11%	-
	The most objectionable type of data leakage (Top 3)	Personal information	44%	52%	-
		ID number	38%	46%	-
Banking information		37%	45%	-	

The Internet Penetration Rate

- The Internet penetration rate in Macao is as high as 83.6%. The user scale maintains a steady growth and reaches 509 thousand this year. The mobile Internet rate(80.0%) is nearly equal to the Internet penetration rate.
- The Internet penetration rate in Macao residents aged over 50 has risen significantly in recent years. The Internet usage by middle-aged and elderly people has been a new trend.
- Entertainment is the main purpose for Internet using; the lack of relevant skills makes the biggest obstacle that hinders non-users from surfing the Internet.

Internet Usage

- Among the households, the owning rates of desktop, laptop and tablet are all over 50 percent. The highest owning rate goes to the laptop (63%).
- The owning rates of mobile phone and smartphone are 91% and 85% respectively. The rates remain on a steady rise.
- The Internet usage in Macao in recent years has showed a strong mobile trend. The proportion of using the Internet in public sites has increased remarkably. More and more netizens surf the Internet anywhere and anytime.
- The rate of wireless network reaches 85% this year, which makes it the prime way of Internet-connection. The usage rate of broadband or fiber broadband has declined.
- The main period of Internet use is at night. There is an obvious upward trend in day Internet usage rate, compared to ten years ago.
- The average time for Internet use is 22.6 hours per week; the daily average is over 3 hours.

Online Activities

- Social Communication
 - The usage rate of WeChat keeps growing and reaches 74% this year. The usage rate of WeChat among mobile netizens holds steady over 90 percent in recent five years. The frequency of use is also high and the average mobile netizens spend over one hour on WeChat each day. People use WeChat mainly for communication. Up to 53 percent of users follow the official accounts on WeChat.
 - The usage rate of Facebook among the residents and the netizens are 62% and 74% respectively. 57% of users use the features of Groups or Pages on Facebook. 85 percent of them would interact with each other, aside from merely browsing, including “Like”, “Share”, “Repost”, “Comment” and so on.
 - Netizens discuss issues with each other. 33 percent of them visit forums and 74 percent of them communicate with others in social groups. However, the rate of live streaming is relatively low (only 14 percent).

- News and Information
 - 79 percent of the netizens read the news online; 42 percent of them repost the news/ comments/ messages online.
 - 79% of the netizens watch videos/movies online.
- Commerce and shopping
 - The rate of online shopping and online payment among adult netizens are 52% and 55% respectively.
 - The prevailing way of online payment is still credit card/ bank card, followed by WeChat Pay and Alipay. The security issue and lack of skills are the biggest factors that hinder the usage of mobile payment by Macao residents.
 - The rate of mobile payment is relatively low (19%). However, 64 percent of adult netizens expressed a willingness to use mobile payment. It means the acceptance of mobile payment is on the high level. Besides, nowadays many netizens are worried about the security issue in mobile payment.
 - 48% of the netizens use online financing/banking services.
- Online Services
 - The rates of E-government affairs, online booking and car-hailing are successively 44%, 40% and 27%, which present an upward trend.

Internet Privacy

- The evaluation of Internet privacy in Macao
 - Only 39% of the netizens evaluated the Internet privacy in Macao as “safe”, which means a lot of netizens are worried about the security issue when surfing online.
 - 29% of the netizens think that they have been through invasion of Internet privacy. The rate has increased than in the past years. While 32% of the netizens said they can protect their privacy when using the Internet – a proportion declined than before. Among the netizens who said they cannot protect the Internet privacy, 42% indicated that their privacy has been violated.
- The protection of Internet privacy
 - 56% of the netizens think they actively protect the Internet privacy. 42% of the netizens who think they are not able to protect the Internet privacy and 40% of who do not actively protect the privacy indicated that they have ever been through privacy violation online, making relatively high proportions.
 - 53% of the netizens take actions to protect their Internet privacy. The main measure is reducing/refusing personal information exposure (21%). The most objectionable type of data leakage for the netizens is personal information (52%). It shows the netizens attach importance to the protection of personal information.
 - Netizens aged 6 to 17 seem to be relatively optimistic about their privacy online compared to the adult netizens.

Conclusion

3.1 The strong mobile trend in Internet usage

The Internet has been further developed in Macao. With a steady growth from 33% in 2001, the Internet penetration rate is high as 84% in 2018, which is above the global average of 54% and the Asian average of 48%, and is almost equal to the European average of 85%. The penetration rate of Macao takes a leading position among Asian countries and regions while the gaps remains when compared to Japan and South Korea (93% respectively). In 2018, the total number of Netizens in Macao has reached 0.51 million. All of the younger adults are netizens. The Internet penetration rate in Macao residents aged over 50 has risen significantly in recent years. It's expected that elderly groups will possibly account for the most substantial growth concerning Internet usage in the future.

The Internet usage in Macao in recent years has showed a strong mobile trend, which means increasing numbers of Macao residents are accessing the Internet from their mobile devices. The mobile Internet rate of 80% is close to the general Internet penetration rate (84%). Almost all Netizens surf online via mobile phones. Nowadays, the mobile adoption in Macao is 91%; up to 85 percent of Macao residents own and use smartphones, maintaining a large proportion. Mobile phone has become the most primary device of Internet access. The Internet rate of mobile has exceeded other devices in 2013. The Internet use has seen a fundamental shift from desktop computers to mobile devices. Moreover, the usage rate of other mobile devices such as laptops and tablets has also risen. Due to the development of TV Internet technology, the TV Internet rate has remarkably grown to 24%.

In the aspect of Internet-connection method, the rate of wireless network has grown from 29% in 2008 to 85% in 2018 while the usage rate of broadband or fiber broadband has declined from 90% in 2008 to 64% this year. The shift is not only due to adjustment in mobile internet charges and monthly fee, but is also related to site options for Internet access and users' expenditure on network flow. In addition, the site options for Internet access is no longer limited to home or other indoor locations. According to the report, 38 percent of Macao people use the Internet anywhere and anytime, the percentage being on the rise. Regarding the usage period, there is an overall upward trend in both day and night internet usage rate compared to that in 2008, especially the former. With the growing trend concerning mobile internet usage, the usage pattern of netizens as well as the periods in a day which they use the internet might be influenced subsequently.

The insight to residents: Encouraging more elders to learn surfing the net thus gaining benefits from information sharing and service

The Internet has become an important part of the daily life of Macao residents; it does not only provide a platform of information and communication, but is also a powerful tool for multi-use including social participation, interpersonal interaction, entertainment and commercial shopping. The survey shows that about 60% of the elders aged 60 and over do not surf the internet, although the Internet penetration rate in Macao people aged over 50 has risen significantly. The elders who don't use the Internet cannot enjoy the convenience of service and information brought about by the net. Therefore, the Internet should be introduced to more elders. The popularization of mobile phone and availability of Wi-Fi almost everywhere lead to the strong mobile trend in Internet usage. Given that, it's reasonable to teach the elders to use the Internet with mobile phones, so that they could use the internet more willingly and conveniently.

The insight to society: The mobile trends of Internet usage will enhance the development of smart city

With the popularization of the Internet, especially the mobile Internet, as well as the comprehensive use of smart phones, the applications related to smart city such as online payment, Smart government and Smart traffic possibly reach every aspect of Macao including society, economy and daily life. Therefore, it has great significance for further developing smart city in Macao.

3.2 Mainly dominated by social communication and information collection

The main purposes for internet use by Macao people are successively “entertainment”(54%), “obtaining information”(44%), “social communication”(40%), “reading news”(30%) and “online community”(18%), the main internet activities being social communication and information collection. The most common tools for social network are WeChat and Facebook. Besides, the netizens in Macao also obtain information and express opinions via other channels: 79 percent of the netizens read the news online; 74 percent communicate with others in social groups while 42 percent repost the news/ comments/ messages online; 33 percent of them visit forums. In addition, the rate of watching video/movie online among the Macao netizens is as high as 79%.

Nowadays, the internet has offered more new services to the users. A number of services have developed from offline into online. Among the adult netizens in Macao, the proportions of E-government affairs, online booking and car-hailing are successively 48%, 40% and 27%. It shows that the usage rate of E-government affairs has increased steadily and a large growth has taken place in the usage rate in both online booking and car-hailing. These growths are due to the launching of corresponding services by banks and hospitals in recent years. It is predicted that an increasing number of netizens would more frequently enjoy these conveniences that the Internet brings.

The insight to the government: “E-government affairs” more connected to the mobile trend

With the strong mobile trend in Macao Internet usage, the mobile has become the most common tool for Internet-surfing. Nowadays the rate of mobile Internet usage almost equals that of Internet usage. The previous surveys also show that mobiles have become a main tool for information collection as well as an indispensable item in daily life. It is confirmed that the netizens are gradually embracing all kinds of Internet services, of which the use of E-government affairs has seen a steady growth. Therefore, it's necessary for the government to connect its affairs to the mobile trend. With the extensive application of big data technology, the enterprises and the public would enjoy government services more conveniently, while the administrative cost of the government will be reduced and the level of engagement and satisfaction of the public will be raised.

The insight to the enterprises: Online and offline combined, “the Internet+”reshaping the business mode

With the increasingly prevalent combination of online and offline mode, more digital platforms including websites and APPs make active connection with offline services more extensively and with growing scale. The mode of “the Internet+”, essentially the online transformation and upgrading of the traditional business, will have a strong impact on many industries. Nowadays, a lot of netizens in Macao do shopping, finance and have education on the Internet, which reveals an accelerating process of online transformation from traditional offline business. To conform to the development tendency, more enterprises need to reshape their business modes to provide new and innovative services.

3.3 The significant channel of information obtainment and opinion expression

The use rate of WeChat has been raised steadily over the years, from 46% in 2013 to 74% in 2018. Nowadays WeChat is very popular in Macao. The penetration rate of WeChat among mobile netizens is 92%. The average mobile netizens spend over one hour on WeChat each day; over 85 percent of the mobile netizens access the app at least once a day. This translates to the high popularity and user viscosity of WeChat in Macao. Apart from the social function, WeChat is also used for information collection. Up to 53 percent of users follow the official accounts on WeChat; 28 percent of users follow the official accounts of Macao government departments. Among them, the account with most followers is the official account of Education and Youth Affairs Bureau, DSEJ (26%), followed by the official account of The Official Provisional Municipal Council of Macau, IACM (13%).

In addition to WeChat, Facebook is also a popular social media channel which enjoys a penetration rate of 62 percent among Macao residents. And 74% of the netizens use Facebook. 57% of users use the features of Groups or Pages on Facebook. 85 percent of them would interact with each other, aside from merely browsing. The most commonly used functions of Facebook are successively "Like or other emoji"(69%), "Click to visit"(65%), "Share/Repost"(48%) and "Comment/Reply"(41%). Compared to the official accounts of WeChat which focus more on one-way information transmission, Facebook is obviously of greater interactions.

The internet provides not only a tool for communication or information but also a vital platform where users make extensive discussions and express their opinions about public affairs. As the result, the public opinions online are definitely worth attention.

The insight to the government: The public opinion online matters

With the development of the Internet, including the growing number of users and the expansion of website functions, the public opinion online has been formed and strengthened. The Internet has become the most frequently-used platform for opinion expression, with netizens expressing their views in forums, Facebook Groups/Pages, online petitions and giving replies on websites as well as commenting on news. As a result, the government needs to pay attention to public opinions on the Internet. On the other hand, it is necessary for the government to develop scientific methods and strategies in mining public opinion online.

The insight to the society: Social media has a strong function in spreading information; the official accounts and chatting groups being useful tools of publicity

Social media such as Facebook or the official accounts on WeChat exhibit a strong function in spreading information by grouping people of the same kind together. This is especially true for WeChat, which owns a large user scale and diverse interactive multi-function, regarded as the powerful tool for information dissemination and marketing. Meanwhile, the official accounts should also be used properly and creatively by all sectors of society to make a better role in sharing information, making interaction and providing other services. Besides, the administrator of official accounts on WeChat can understand more about the characteristics and behaviors of their users by targeted management and analysis, which would contribute to the information push service with higher accuracy.

3.4 Mobile payment remains to be further popularized

Mobile payment is not popularized yet in Macao with a relatively small user scale. Among adult netizens in Macao, the penetration rate of mobile payment is less than 20 percent. However, the level of understanding and acceptance of mobile payment is rather high. It is quite common that they know about mobile payment used in physical stores but they have never used it. 64 percent of adult netizens expressed a willingness to use mobile payment, which indicates mobile payment has its great development potential in Macao. Besides, all sites related to daily life are the most expected usage scenario of mobile payment. Security issue is one of the biggest obstacles that keeps Macao residents from using mobile payment. 52 percent of adult netizens think the relevant security policy in Macao needs improvement; a doubtlessly large

proportion of adult netizens (77 percent) are worried about the security issue of mobile payment. Nowadays, the most commonly used methods of mobile payment are WeChat Pay and Alipay. Despite high penetration rates, the two payment tools face trust deficiency among Macao netizens. It seems that Macao netizens put more trust in Macau Pay and E-Banking. Apart from the security issue that people worry about, the binding of bank cards and policy barrier in currency exchange are also the factors crippling the development of mobile payment in Macao.

**The insight to the government and enterprises:
The popularization of mobile payment needs strengthening perception and eliminating the scruples in security issue**

Relevant departments should actively promote mobile payment, have positive cooperation with online payment platforms and offline physical stores which broaden the range of mobile payment as well as increasing people’s knowledge of it. On the other hand, more efforts should be made in improving security policy of mobile payment to guarantee the safety of personal data and assets as well as to dispel people’s scruples about mobile payment. In this way, mobile payment could gain its further development in Macao.



3.5 Netizens are worried about the network privacy

Only 39% of the users evaluated the Internet privacy in Macao as “safe” while 48% regard it as “unsafe”. It means the rate of users who are worried about the Internet privacy in Macao is relatively high. In addition, 29% of the Netizens think that they have been through violation of Internet privacy, with an increase seen as compared to that in 2016(26%). While 32% of the Netizens said they can protect their privacy when using the Internet – a proportion declined when compared to the figure in 2016(45%).

In term of privacy protection, 56% of the netizens in Macao think that they actively protect the Internet privacy, an obvious decrease compared to 2016(72%). It shows the awareness of protecting Internet privacy has diminished. The main measure is reducing / refusing personal information exposure, accounting for 21%; 52 percent of Netizens acknowledge that the most objectionable type of data leakage for the Netizens is personal information. 42% of the users who think they are not able to protect the Internet privacy and 40% of

who do not actively protect the privacy indicated that they have ever been through privacy violation online. It suggests that the action of protecting Internet privacy might be helpful.

It's worth noting that teenage Netizens aged 6 to 17 seem to be relatively optimistic about their privacy online. 59 percent of the teenager users think the Internet privacy in Macao is “safe”, much higher than the rate in adult users; only 14% of teenager Netizens said they have been through privacy violation online, a proportion lower than the adult users; 42 % of teenage Netizens think they can protect their privacy when surfing online. The survey reveals that teenage Netizens are optimistic about their privacy protection online. This is due to their lack of awareness about the severe situation of Internet privacy violation; on the other hand, it's also because they do not frequently need to fill in their personal information online as much as the adult users do. Therefore, the educational efforts should be made so as to raise teenage users' awareness of protecting the Internet privacy.

The insight to residents and the government: Strengthen teenagers' awareness of protecting the Internet privacy

As mentioned above, teenage users aged 6 to 17 have an optimistic attitude toward the Internet privacy in Macao. Thus, parents, schools and the government should pay attention to this and work together in propaganda and guidance of the Internet privacy, so that teenagers have an idea of the basic methods concerning protection of Internet privacy. Within the European Union and the U.S., the limitations are set for teenagers in using social media and e-mails to guarantee their privacy security online. With drawing upon the experience and modes of other regions or countries, the government needs to inspect the relevant laws of Macao.

The insight to residents and the government: To protect Internet data and user privacy

With the development of Internet technology, the personal data and information are potentially grabbed even without users' notice, which might lead to data leakage and abuse. A while ago, the data leakage of social media has drawn great global concerns about the supervision and regulation of protecting data and privacy online. The relative departments should strengthen the laws and enhance technology supervision to guarantee the security of the Internet data and privacy. In addition, the Netizens should pay more attention to protecting personal information. For example, when browsing the websites or downloading the software, users should read the privacy policy carefully.



www.macaointernetproject.net

WeChat: macaointernetproject



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