2023
Internet Usage Trends In Macao

（Executive Summary）

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Executive Summary

Major Indicators

The "Internet Usage Trends in Macao 2023" is an annual report on Internet usage in Macao. It is a comprehensive result of the ongoing monitoring of Internet usage and the Information & Communication Technologies (ICT) environment of Macao residents over the past two decades by the Macao Internet Project (MIP).

Since 2001, the MIP has been researching the use and impact of the Internet and other ICT among Macao residents. For more than 20 years, large-scale random telephone surveys and special studies have been conducted, with data collected from a representative sample of the Macao population. The annual survey results show the statistical data and development trends of Internet usage.

The survey for the year 2022 was conducted in December 2022. 1,506 qualified Macao residents aged 6-84 were successfully interviewed. The sampling error is ±2.58% at the confidence level of 95%. The response rate (AAPOR-RR3) is 30% and the cooperation rate (AAPOR-CR3) is 67%. All survey results in this report are weighted by gender and age according to the officially released demographic data, in order to reduce sampling errors and increase the representativeness of the sample.

			Percentage of residents	Percentage of netizens	Percentage of households
The Internet use	Internet penetration rate		93%	-	-
	Mobile Internet penetration rate		91%	99%	-
The Internet usage pattern	Computer ownership rate	Computer	–	–	84%
		Desktop	–	–	58%
		Laptop	–	–	63%
		Tablet	–	–	69%
	Mobile phone ownership	Mobile phone	92%	–	–
		Smartphone	90%	–	–
	Internet connection devices (Top 3)	Mobile phone	91%	99%	-
		Tablet	60%	65%	-
		Desktop	54%	59%	-
		Laptop	54%	59%	-
	Internet using places (Top 3)	Home	85%	93%	-
		Workplace	29%	32%	-
		Any place	28%	31%	-
	Internet connection methods (Top 2)	Broadband/Fiber Broadband	70%	76%	-
		Wireless (3G/4G/5G/Wi-Fi)	68%	74%	-
	Duration of Internet use (hours / day)		4.6		

			Percentage of residents	Percentage of netizens
Internet Activity	Social Communication	Overall use rate of social media	88%	96%
		WeChat	85%	93%(mobile netizens 93%)
		YouTube	72%	78%
		Facebook	62%	68%
		WhatsApp	59%	64%(mobile netizens 64%)
		Instagram	46%	50%
		Douyin	36%	39%
		Xiaohongshu	34%	37%
		bilibili	17%	18%
		Sina Weibo	16%	17%
		Snapchat	6%	6%
		Forum	29%	31%
	News and Information	Reading News	73%	79%
		Making Comments in Social groups	56%	61%
		Reposting news / comments / messages	42%	46%

			Percentage of residents	Percentage of netizens
Internet Activity	Video and Entertainment	Watching movies / videos	80%	87%
		Listening to music	74%	80%
		Playing online / mobile games	53%	57%
		Live streaming	6%	6%
	Online Services	E-government (adults)	64%	69%
		Online financing / banking	62%	67%
		Online meals ordering	59%	64%
		Online booking	56%	61%
		Online booking of travel services	42%	45%
		Online meetings/video conferences	39%	42%
		Taxi-hailing	34%	37%

			Percentage of residents	Percentage of netizens
Shopping and Transaction (Age 12 or above)		Online shopping rate	67%	72%
	Online Shopper: Type of goods or services (Top 3)	Skin care/daily necessities	-	55%
		Textile/clothing/shoes & socks	-	43%
		Food	-	23%
	Online shopper: Main platforms for online shopping (Top 3)	Taobao/Tmall	-	85%
		Aomi	-	12%
		Facebook, Instagram and other social platforms/groups	-	10%
		Average monthly online spending (MOP)	-	1,438
		Online payment	76%	81%
		Mobile payment	70%	75%

			Percentage of residents
Metaverse (Age 12 or above)	Knowledge of the concept of "Metaverse"	Percentage of knowing the concept	49%
	Those who know the concept of "Metaverse": Real-world activities expected to be realized through "Metaverse" (top 3)	Game	20%
		Travel	15%
		Social intercourse	14%
	Those who know the concept of "Metaverse": Willingness to use "Metaverse" related products and services	Rate of being willing to use " Metaverse" related products and services	56%
	Those who know the concept of "Metaverse": Level of confidence in the successful development of "Metaverse" related industries in Macao (0-10 points)		4.5 (points)

Conclusion

3.1 The silver-haired generation is a new force on the Internet, and it is suggested that attention be paid to the Internet literacy of minors.

Over the years, the Internet adoption rate has continued to rise from 33% in 2001 to 93% in 2022. Compared to international standards, Macao's Internet adoption rate is above the global average (69%), on par with Japan (93%), a perennial leader in Asia, and approaching that of Korea (97%).

The trend of mobile Internet use in Macao has further increased, with the mobile phone Internet adoption rate (91%) being close to the Internet adoption rate (93%), and almost all netizens access the Internet by mobile phones, which is related to the full popularity of smartphones in recent years. In terms of the popularity of mobile devices, 92% of residents own a mobile phone and 90% own a smartphone. With a high device ownership rate as a basic condition, mobile phones have become the main Internet connection device for netizens, with 99% of netizens using mobile phones to access the Internet. Since 2013, the Internet connection rate of mobile phones has surpassed that of other devices, indicating a shift from computers to mobile phones as the main Internet connection device. In addition, the overall Internet adoption rate during daytime and nighttime has increased compared to 10 years ago, with the increase in daytime hours being more obvious. The trend of mobile Internet use has increased, and netizens' access to the Internet has become less restricted by time and space, and the time and place of Internet access have become more diversified.

Among the Internet adoption rate of residents in all age groups, the Internet adoption rate of middle-aged and elderly residents has been increasing and growing significantly in recent years, with the Internet adoption rate of netizens aged 51-60 increasing by 33 percentage points from 63% in 2017 to 96%, while the Internet adoption rate of netizens aged 60 or above increasing by 44 percentage points from 28% in 2017 to 72%. Although there is still a gap between silver-haired people aged 50 or above and the young people; however, it is narrowing, and the growth of the Internet adoption rate in Macao is mainly attributed to the silver-haired people.

In addition, the Internet adoption rate of minors aged 6-17 reached 91% in 2022 and has remained stable in recent years, which is generally at a high level. Among all types of social media, underage netizens have the highest usage rate of YouTube (77%). Besides, they also have higher rates of watching movies/videos (68%), listening to music online (67%), and playing online/mobile games (72%), indicating that underage netizens' online activities are mainly related to leisure and entertainment. Moreover, 45% of the underage netizens said they had used online meetings/video conferences, perhaps it was related to their participation in online learning.

Implications for society:
Age-friendly network environment helps silver-haired people fully integrate into the Internet

The Internet adoption rate of silver-haired people aged 50 or above has been increasing in recent years and is growing fast, becoming the main force of new netizens in Macao. Nearly 30% of seniors aged 60 or above don't access the Internet, mainly because they "do not know how to use the Internet" and are "too old to use the Internet". Due to the impact of pandemic prevention measures, many elderly people need to learn to use the Internet in order to use tools such as health codes, but in the face of new technologies, the elderly may not learn as fast as the young people, so some of them have difficulties in their daily lives. In the future, it is necessary to continue to build an age-friendly Internet environment and provide courses for the elderly on the use of various devices such as mobile phones and computers to help them improve their digital skills, so as to improve their quality of life and eliminate the digital divide of Internet use in Macao.

Guiding minors to use the Internet properly

The Internet is now inseparable from minors' life, study and entertainment, and the pandemic has accelerated the progress of minors' online learning. Compared with other age groups, minor netizens lay more stress on entertainment while lacking depth and breadth of application, which require the attention of parents and the whole society. On the one hand, parents need to strengthen family education for minors, conduct in-depth communication with them concerning using online devices, time spent online, and online consumption, and in turn raise their awareness of self-discipline and self-protection as well as avoid Internet addiction, especially addiction to games and watching unhealthy videos. On the other hand, parents, schools, and society should foster cooperation to provide daily or thematic education on Internet literacy. At the same time, they should pay attention to minors' psychological health and guide them to use the Internet properly.

3.2 The widespread use of social media makes it an important platform for opinion expression.

Socializing is one of the most important activities of netizens. 96% of netizens use at least one type of social media. Among all types of social media, WeChat has the highest usage of 85% among residents, and 93% among mobile netizens, which indicates almost all of the mobile netizens use it.

Compared to WeChat, other social platforms such as YouTube and Facebook are also popular, with 72% of residents (78% of netizens) using YouTube and 62% (68% of netizens) using Facebook. 64% of mobile netizens use WhatsApp and 50% of netizens use Instagram, with usage rates at or above 50%. Among different groups, the use of YouTube, Instagram, bilibili and Snapchat by netizens aged 18-34 and students is relatively high compared to other groups, while the use of WeChat by netizens aged 55 or above (92%) is much higher than that of other social applications, indicating that elderly netizens tend to use WeChat as the main channel for social interaction.

The high usage rate of social media platforms has an important relationship with the activeness of netizens in expressing opinions. After choosing a social platform, netizens will discuss a wide range of issues on the Internet, generating a variety of online opinions. Data shows that 61% of netizens post comments/discuss with others in social groups and 31% use forums. Online social platforms have become an important channel for expressing public opinion, and the importance and representativeness of online public opinion is increasing.

Implications for the government and the business sector:
Timely grasp of online public opinion to enhance scientific governance, business decisions and manage crises efficiently

With the development of the Internet (including the growth of the netizen population and the expansion of website functions), the threshold for netizens to express their opinions on public affairs and corporate brand operations, and to participate in politics has been further lowered. Online public opinions have become more active, and netizens can gather into a group with voice and action power through the Internet. Therefore, governments and enterprises should pay attention to online public opinion and use scientific methods to grasp public opinion and market conditions quickly and timely. For government departments, understanding online public opinion can help them listen to a wider range of opinions to achieve scientific governance and manage crises. For businesses, grasping online public opinion related to enterprises can help them make appropriate business decisions and manage effectively in the face of corporate operation and brand crises.

3.3 The pandemic accelerates the shift from offline services to online, and video conferences help enhance working online and education.

The Internet has become an important social, work, study, and entertainment tool for residents as some of them need to work and study at home and go out less frequently due to the outbreak of the COVID-19 pandemic in early 2020. In 2022, the average time netizens spent on the Internet reached 4.6 hours per day, the highest ever. In addition, the highest percentage of netizens' online purpose is "leisure and entertainment" (54%), and among various online activities, the percentages of netizens watching movies or videos online (87%), listening to music online (80%) and playing online/mobile games (57%) are relatively high, indicating that the Internet has become an important channel for leisure and entertainment during the pandemic

The Internet provides an increasing number of services, and the shift of various offline services to online during the pandemic has accelerated, making it possible for residents to access services without leaving their homes. Among various services, the proportion of netizens using online financial/banking services increased by 11 percentage points from 56% in 2016 to 67%; the proportion of those using online booking services increased by 46 percentage points from 15% in 2016 to 61%; the proportion of those using taxi-hailing services increased by 32 percentage points from 5% in 2016 to 37%; the proportion of those ordering meals online increased by 17 percentage points from 47% in 2020 to 64%; 45% of netizens booked travel services online (45%). After the pandemic outbreak, work-from-home and online education are more common, and video conference is widely used. 42% of netizens use online meetings/ video conferences, with relatively high usage rates among students (59%) and employed people (54%). The percentage of netizens using various services online has increased to varying degrees, resulting in a further demand for various organizations or platforms to open up their online services.

Moreover, the percentage of adult netizens using e-government online has increased by 26 percentage points from 43% in 2017 to 69%. The average satisfaction rating of adult netizens who have used e-government is 6.9 points (0-10 points), with a rating above the middle level of 5 points, indicating that adult netizens are rather satisfied with e-government in Macao, but there is still room for further improvement in the future.

Implications for society and the government:
The pandemic has accelerated the development of online services, and relevant parties should further improve user experience

Due to the pandemic, many offline activities by consumers, such as travel, dining together and business trips have been reduced, but online activities are on the rise. With the steady increase in Internet adoption among Macao residents, the Internet is gradually covering different groups in society, and with the high penetration rate of mobile phones on the Internet, various types of services have gradually shifted online in recent years, with the usage rate of e-government steadily rising every year.

In the future, all sectors of society and government departments should continue to understand the needs of users, consider further accelerating the development of online services, increase the level of convenience of service use, make full use of social media such as WeChat, Facebook, etc., and use them as the entrance and exit of various services on the mobile end. They can also establish a real-time feedback and evaluation mechanism for users online to enhance interaction with service users and further improve user experience.

Implications for education:
Integration of online and offline teaching, with intelligent teaching helps improving the efficiency of teaching after the pandemic

In the post-pandemic era, with the relaxation of pandemic measures and the recovery of economic activities, offline activities may recover, and some enterprises and schools may resume their traditional modes of office work and teaching. Schools and educational institutions should consider applying Internet tools flexibly, implementing a hybrid (offline + online) mode for some courses, improving teaching efficiency through intelligent teaching, and allowing students to learn anytime and anywhere through computers, mobile phones, and other devices, so that students can benefit from the convenience and have a better learning experience.

3.4 Online shopping becomes the new norm after the pandemic, and mobile payment accelerates its popularity.

With the continuous development of the Internet, the trend of online shopping is increasingly prevalent among netizens. From 2015 to 2018, about half of adult netizens shopped online, and in 2019 and 2020, the percentage of adult netizens who have shopped online exceeded 60%, and in 2022 it reached 72%, the highest ever. The percentage of elderly netizens aged 55 or above who shopped online also reached 40%, a significant increase compared to 2020 (26%), indicating that online shopping is gradually becoming more popular in Macao. The pandemic that has lasted for several years has caused residents to reduce offline socializing and spending, which may have led to an increase in the proportion of online shopping to some extent, and has allowed people who had not used e-commerce services in the past to try online shopping. The main online shopping platform for netizens is Taobao, with a much higher usage rate than other shopping platforms. The rate of netizens of different ages, education levels, and identities showed significant differences in online shopping. The online shopping group is primarily the young and the highly educated.

In addition, although online shopping has become a habit, residents in Macao also rely on brick-and-mortar stores for shopping due to their unique convenience. More than 90% of netizens aged 12 or above shopped in brick-and-mortar stores, but 40% of them said they would compare prices online before shopping in brick-and-mortar stores, indicating that online shopping has not only provided residents with more choices concerning shopping channels, but also influenced their specific shopping behavior, and their consumption pattern has now shifted to a combination of online and offline channels, making shopping more convenient than before.

Macao has been committed to promoting the development of mobile payment as a way to promote the development of e-commerce. Data shows that 75% of netizens who shop in brick-and-mortar stores pay by mobile phone, and the percentage of adult netizens using mobile payment in Macao has increased from 20% in 2018 to 75% in 2022, indicating a significant increase in usage. In addition, the willingness of netizens to use mobile payment in the future has also increased, with the percentage of those willing to use mobile payment rising from 64% in 2018 to 84% in 2022, which is closer to the current usage rate (75%), though still slightly lower. One of the major reasons hindering the development of mobile payment is security concern. The percentage of those who are worried about the data security of mobile payment has dropped significantly (42%) compared to the past, which shows that mobile payment has gradually become popular in Macao, and there is still potential for development in Macao in the future.

Implications for the government and the business sector:
Adjustment in business strategies to develop online business, introduction of data management concepts, and improvements in corporate competitiveness and consumer experience

The pandemic has accelerated the trend of online shopping in Macao, making the operation of brick-and-mortar stores more challenging. For enterprises, it is better to change their business mindset, adjust their business strategies, develop online business and improve digital marketing operations, as well as to increase the exposure and conversion rate of their products through promotion in various e-commerce platforms.

The government, on the one hand, should support and encourage Macao's enterprises to develop their online business and provide assistance concerning cross-border business, especially in the integration into the development of the Greater Bay Area and in enlarging their business client base. On the other hand, it should also emphasize and promote the development of local enterprises' advantages in e-commerce, and improve the level of digital transformation and upgrading. By introducing data management concepts, such as data mining and customer analysis on internal and external data of enterprises, it does not only help local enterprises to enhance their competitiveness, cultivate and attract more professionals to develop their career in Macao, but also improves consumers' service experience, thus achieving an all-win situation.

3.5 Residents have little knowledge of the "Metaverse" and the younger generation is more willing to try it.

"Metaverse" is one of the major trends and directions in the future development of technology in the world. This year's survey takes "Metaverse" as a special topic to understand Macao residents' knowledge of and expectations for "Metaverse". The survey shows that there is still room for Macao residents to increase their knowledge of the emerging concept of "Metaverse". 51% of the residents aged 12 or above do not know about the concept of "Metaverse", 35% know about it but have only heard of it, 13% know about it and have followed related news, and only 1% know about it and work in related industries. Residents who know more of the concept of "Metaverse" are the young and the highly educated.

Among the residents who know the concept of "Metaverse", the activities they hope to realize through "Metaverse" are mainly games (20%), travel (15%), and social activities (14%), indicating that residents expect to apply "Metaverse" more in leisure and entertainment, and social activities. In addition, 56% of the residents were willing to use "Metaverse"-related products and services (strongly willing: 7%, relatively willing: 49%), with a high percentage of residents aged 12-17 (89%) and students (82%) saying they were willing to use related products and services. This indicates that although the residents are not familiar with the "Metaverse", the younger generation is interested and willing to try it out.

While some residents are looking forward to using "Metaverse"-related products and services, their confidence in the successful development of Metaverse-related industries in Macao is rated 4.5 points (0-10 points), which is lower than the average level of 5 points, indicating that residents may still be doubtful and uncertain about the development of "Metaverse"-related industries in Macao.
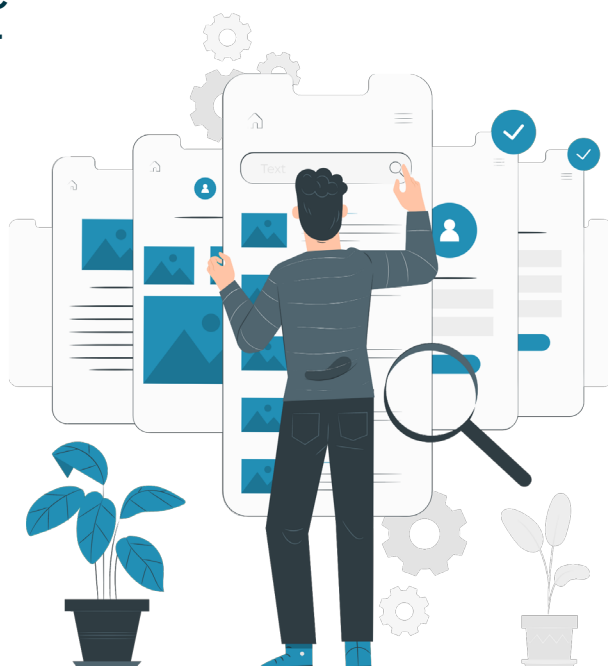
Implications for Macao′s economic development and government affairs: Increasing promotion and commercial applications, and continuous promotion in Smart City construction

In recent years, the Macao SAR Government has indicated that it will vigorously promote the cooperation between industry, academia and research on "Metaverse", and support Macao's science and technology enterprises to participate in the development of the Metaverse industry in the Guangdong-Macao In-Depth Cooperation Zone in Hengqin. To the government, the development of "Metaverse" industry is an important strategy for the future. On the one hand, it is rather necessary to increase the community's knowledge of "Metaverse", and to publicize and explain to residents the reasons and importance of developing "Metaverse" in Macao, so that the public can have a broader and deeper understanding of "Metaverse". On the other hand, greater promotion of commercial applications is needed to create opportunities for local enterprises to participate in the "Metaverse" and boost economic growth in Macao. In addition, the development of "Metaverse" requires mature digital processing technology, communication technology and a well-equipped communication infrastructure. Thus, Macao should continue to optimize the infrastructure of Smart City and further promote the development of digital economy, develop more convenient "Metaverse" application scenarios, and create a Smart City environment for the benefit of all.