



2024

Internet Usage Trends In Macao

摘要
(Executive Summary)



澳門互聯網研究學會
Macao Association for Internet Research

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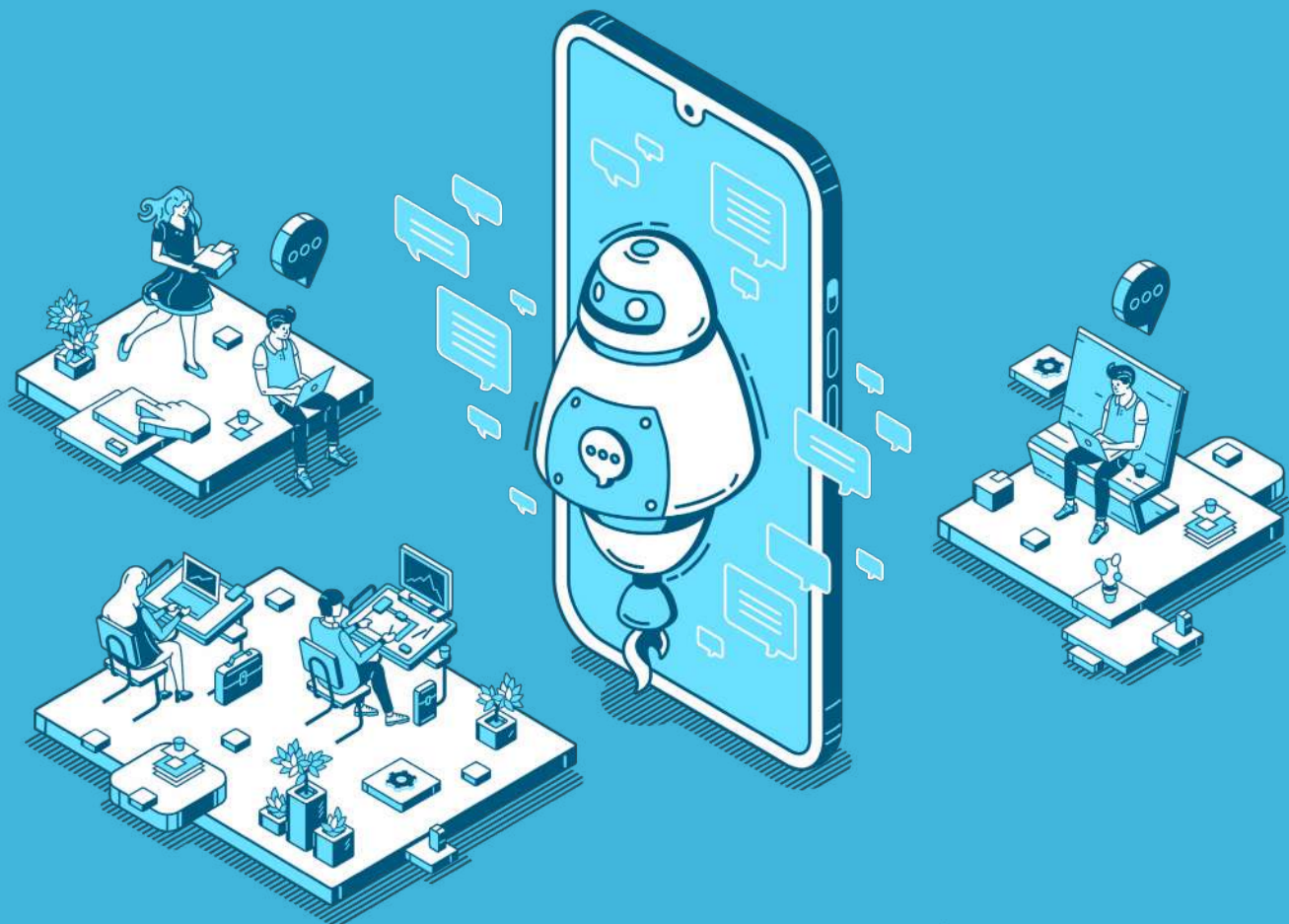
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Executive Summary



Major Indicators

The "Internet Usage Trends in Macao 2024" 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 the past 24 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 2024 was conducted in January 2024. 1,502 qualified Macao residents aged 6-84 were successfully interviewed. The sampling error is $\pm 2.58\%$ at the confidence level of 95%. The response rate (AAPOR-RR3) is 34% and the cooperation rate (AAPOR-CR3) is 71%. 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 Adoption Rate	93%	-	-	
	Mobile Internet Adoption Rate	91%	97%	-	
The Internet Usage Pattern	Computer Ownership	Computer	-	-	86%
		Desktop	-	-	55%
		Laptop	-	-	66%
		Tablet	-	-	69%
	Mobile Phone Ownership	Mobile phone	93%	-	-
		Smartphone	89%	-	-
	Internet Connection Devices (Top 3)	Mobile phone	90%	97%	-
		Tablet	58%	62%	-
		Laptop	55%	59%	-
	Internet Using Places (Top 3)	Home	82%	88%	-
		Workplace	24%	26%	-
		Any place	21%	23%	-
Internet Connection Methods (Top 2)	Broadband/Fiber Broadband	79%	85%	-	
	Wireless	59%	63%	-	

		Percentage of residents	Percentage of netizens	
Internet Activity	Social Communication	Overall Use Rate of Social Media	91%	99%
		WeChat	87%	94%(mobile netizens 96%)
		YouTube	76%	82%
		Facebook	62%	68%
		WhatsApp	61%	67%(mobile netizens 68%)
		Instagram	46%	50%
		Xiaohongshu	43%	47%
		TikTok	41%	44%
		Bilibili	24%	26%
		Sina Weibo	20%	22%
		Telegram	20%	22%
		TouTiao	18%	19%
		Kuaishou	11%	12%
		Snapchat	9%	10%
	LinkedIn	8%	9%	
	Forum	28%	30%	
	Audio-visual and Entertainment	Watching movies/videos	84%	91%
		Listening to music	76%	83%
		Playing online/mobile games	54%	59%
		Online reading	46%	50%
Online radio/podcast listening		36%	39%	
Live streaming		4%	4%	

			Percentage of residents	Percentage of netizens
News and Information	Reading News		73%	79%
	Making comments in social groups		68%	74%
Reposting news/comments/messages		36%	39%	
Online Services	E-government (adults)		75%	81%
	Online financing/banking		59%	64%
	Online meals ordering		59%	64%
	Online booking		53%	57%
	Online medical consultation/hospital registration		48%	52%
	Online booking of travel services		47%	51%
	Taxi-hailing		42%	46%
	Online meetings/video conferences		40%	44%

			Percentage of residents	Percentage of netizens
Online Shopping Rate			67%	73%
Online shopper: Type of goods or services (Top 3)	Skin care/daily necessities		-	59%
	Textile/clothing/shoes & socks		-	35%
Online shopper: Main platforms for online shopping (Top 3)	Food		-	23%
	Taobao/Tmall		-	79%
	Pinduoduo		-	10%
mFood, Aomi		-	9%	
Online shopper: Ratio of live streaming shopping			-	21%
Online shopper: Average monthly online spending (MOP)			-	1,383
Online payment			73%	79%
Mobile payment			72%	78%

			Percentage of residents	Percentage of netizens
Evaluating the current state of Internet Privacy and Security in Macao			54%	58%
Experienced Internet Privacy and Security issues			46%	49%
Internet Privacy and Security	Specific issues encountered	Internet fraud	29%	31%
		Device infected with virus or Trojans	19%	20%
		Account or password stolen	16%	17%
		Personal privacy violated	12%	13%

			Percentage of residents	Percentage of netizens
Awareness of Generative AI			60%	64%
Those who aware of Generative AI: Willingness to use Generative AI in the future			-	49%
Online shopper: Type of goods or services (Top 3)	Enhance learning/working efficiency		-	22%
	Answer everyday life questions		-	15%
	Convenient information search		-	12%
Use Rate of Generative AI			25%	27%
Those who have used Generative AI: Products or services used (Top 3)	ChatGPT		-	78%
	Poe		-	19%
	New Bing		-	5%
	ERNIE Bot		-	5%

Internet Usage Overview

- The Internet adoption rate remains at 93%, with the adoption rate for mobile Internet (91%) nearly matching the overall rate.
- The Internet adoption rate is higher than the global average and is among the top in Asia.
- The Digital Divide Index (DDI) has narrowed to almost zero, the residents of all strata have equal opportunities for Internet access.
- Leisure and entertainment are the main purposes for netizens, while the lack of knowledge and skills related to Internet use pose the greatest barrier for non-netizens to go online.

Internet Usage Characteristics

- A high percentage of households own computers, with tablet ownership higher than desktops and laptops.
- Ownership of mobile phones and smartphones among residents has steadily remained at a high level in recent years.
- Mobile phones are the primary device for netizens, and in recent years, an increasing number of netizens are also accessing the Internet through television.
- Netizens are active online during various daytime hours, with the evening being the main Internet usage period. The Internet usage rate at 9 PM has shown significant growth compared to ten years ago.

Internet Activities

- Social Communication
 - Virtually all netizens engage with social media, primarily for communication with friends.
 - Usage rates of WeChat, YouTube, Facebook, and WhatsApp are high and have remained stable in recent years.
 - WeChat has the highest usage rate, with nearly all age groups are WeChat users.
- Audio-visual and Entertainment
 - Watching videos or movies online and listening to music online are the most common audio-visual and entertainment activities for netizens.
 - Minors, young netizens, and student groups have higher rates of engaging in various online audio-visual entertainment activities.
- News and Information
 - In recent years, the rate of netizens browsing news online has remained around 80%, while the rate of making comments in social groups has stayed around 70%, and the rate of reposting news/comments/messages has been maintained at about 40%.
 - Middle-aged and young people, as well as those with higher levels of education, are more likely to engage in various information-related activities online.
- Online Services
 - The rates of netizens utilizing e-government services, online booking of travel services, taxi-hailing services, and participating in online meetings/video conferences have all shown an upward trend compared to the past.
 - Middle-aged and young people, those with higher levels of education, and employed netizens have higher rates of using various online services.
- Shopping and Transactions
 - The online shopping rate among adult netizens continues to rise to 76%, with Taobao being the main platform for online shopping, and skin care/daily necessities being the most frequently purchased items.
 - Among netizens who shop online, 20% have engaged in live streaming shopping.

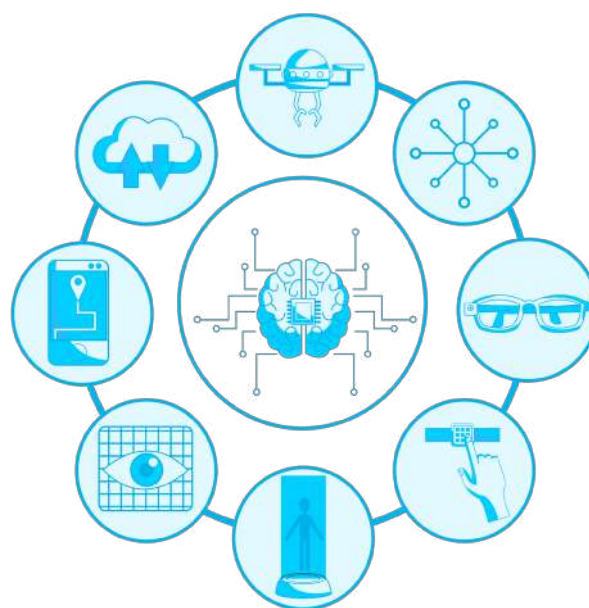
- The online payment rate among adult netizens continues to rise, reaching 83%, with mobile payment rates exceeding 80%. Mobile payment has become the primary method of payment for both online and offline shopping.

Internet Privacy and Security

- Nearly 60% of netizens evaluate the current state of Internet privacy and security in Macao as safe, a similar proportion to the past.
- Nearly half of netizens report having experienced Internet privacy and security issues, with the most common issue being Internet fraud, followed by device infected with viruses or Trojans, account or password stolen, and personal privacy violated.

Generative AI

- Over 60% of netizens are aware of Generative AI, and nearly 30% have used it, with both awareness and usage rates higher than in 2023.
- Younger and student groups have higher usage rates.
- ChatGPT is the most commonly used Generative AI by netizens, followed by Poe.
- The frequency of using Generative AI among netizens is mainly once or a few times per month.
- Nearly half of netizens are willing to use Generative AI in the future, with the rate of willing to use higher than in 2023.
- Netizens most expect Generative AI to enhance learning/working efficiency.



Conclusion

3.1 Macao Internet Application being Popularized; Attention Needed for Internet Literacy Cultivation

In the development process of Macao's Internet application, a trend of high popularity and rapid development can be observed. The Internet adoption rate of Macao residents has increased from 33% in 2001 to 93% in 2024, with Internet adoption rates have remained above 90% in the past five years, fluctuating between 91% and 93%. Globally, Macao's Internet adoption rate is significantly higher than the global average (66%), and the gap with leading Asian countries like South Korea (97%) and Singapore (96%) is also gradually narrowing. Furthermore, the Digital Divide Index in Internet adoption has narrowed to near zero, with people from different strata having equal opportunities to access the internet. Macao residents have maintained a mobile-oriented Internet usage pattern over the past decade. In terms of mobile devices, residents have high ownership rates of mobile phones (93%) and smartphones (89%), making mobile phones the primary device for Internet access. Since 2013, the rate of Internet usage via mobile phones has surpassed that of computers and other devices. The rate of residents accessing the Internet via mobile phones (91%) is almost on par with the overall Internet adoption rate (93%), with nearly all netizens using mobile phones for Internet access. The prevalence of mobile Internet access has diversified the time and places for Internet usage among users, with Internet activities observed during various time periods during the day, peaking in the evening. Netizens' constraints of time and space have gradually weakened.

Netizens engage in a variety of online activities with diverse purposes. Survey results also reflect different preferences for online activities, social media usage habits, and online shopping habits among netizens of different age groups. Among all age groups, special

attention should be given to the Internet usage of middle-aged and elderly people and minors. Their usage of the Internet and Internet literacy present distinct characteristics and trends. The Internet adoption rate among middle-aged and elderly people has shown a noticeable upward trend in recent years, possibly due to the widespread adoption and convenience of digital lifestyles. The Internet adoption rate for residents aged 51-60 has increased from 63% in 2017 to 96%, while residents aged 60 and above have seen an increase from 28% in 2017 to 70%. Although there remains a gap in Internet adoption rates between the 50+ age group and younger people, this gap has gradually narrowed.

On the other hand, the Internet adoption rate for minors aged 6-17 reached 91% in 2024 and has remained stable in recent years. Minors predominantly engage in various leisure and entertainment activities online. The rates of minors browsing online videos/movies (95%), listening to music online (85%), and playing online/mobile games (88%) are all relatively high. The usage rate of TikTok on social media (52%) is also higher than other age groups, indicating their focus on leisure and entertainment activities online. Our association, MAIR has consistently paid attention to the Internet literacy of minors in Macao, conducting research studies on their Internet usage characteristics, online activity preferences, information consumption, etc. The research results show that minors aged 12-17 have relatively higher scores in Internet skills and Internet ethics, while self-management scores are relatively lower. For minors in the age group of 6-11, Internet safety scores are relatively lower, indicating the need for improvement in Internet safety and self-protection aspects.



Implications for Society, Education, and Government:

Advancing Internet Application to Foster Socio-Economic Innovative Development

The widespread use of the Internet in Macao has permeated various aspects of residents' lives. In the future, leveraging this widespread adoption to further apply it in various fields can promote economic development, social progress, and improvements in livelihood. For instance, promoting the development of Macao's digital economy by encouraging businesses and organizations to utilize the Internet and Big Data technology to enhance productivity and innovation capabilities. Additionally, further advancing Smart City construction by utilizing technologies such as the Internet of Things, Big Data, and Artificial Intelligence to enhance city management and service levels, improving residents' quality of life. Furthermore, promoting government departments and businesses to provide more online services, strengthening digital infrastructure, and improving efficiency and service quality to facilitate residents in handling affairs.

Promoting Digital Inclusion and Enhancing Network Infrastructure Continuously

The Internet adoption rate among middle-aged and elderly people aged 50 and above has been steadily increasing in recent years at a faster pace. However, currently, 30% of individuals aged 60 and above do not access the Internet, mainly due to reasons such as "lack of Internet knowledge/skills" and "old age". For this demographic, society can strengthen digital skills training for them by offering courses on the use of mobile phones, computers, and other devices. Furthermore, digital inclusion should be promoted. Means like establishing an aging-friendly Internet environment, further improving Internet infrastructure to ensure that residents can access the Internet smoothly as well as promoting network interaction and communication among individuals of different ages and backgrounds would help make the Internet an important tool for promoting social inclusion.



Focusing on Cultivating Internet Literacy Among Minors and Guiding Reasonable Internet Use

The lives, learning, and entertainment of minors are already closely intertwined with the Internet. Through the rational use of the Internet, convenience can be brought to learning and life. Presently, Internet usage among minors focuses on leisure and entertainment activities. In the future, minors should proactively enhance their Internet literacy, learn and master relevant knowledge and skills related to the Internet, and arrange their Internet usage time reasonably to better utilize the Internet for their lives and learning. Furthermore, schools, families, and society should guide minors to use the Internet healthily. Schools can incorporate Internet literacy into the curriculum to cultivate students' Internet-related knowledge and skills. Parents need to strengthen family education for minors to prevent excessive Internet addiction. Society should promote and encourage a healthy Internet culture, guiding minors to use the Internet in a reasonable and healthy manner.

3.2 Internet Application Deepens into Daily Life, User Experience Requires Attention

The Internet provides Macao residents with abundant pathways for information access, social interaction, and leisure entertainment. Various offline services are currently accelerating their transition to online, providing residents with a more convenient user experience. Among numerous online services, the rate of netizens utilizing online financing/banking services has increased by 16 percentage points from 2018 (48%) to 64%; the rate of utilizing appointment services has risen by 17 percentage points from 2018 (40%) to 57%; the rate of using taxi-hailing services has increased by 19 percentage points from 2018 (27%) to 46%; the rate of using online food ordering has increased by 17 percentage points from 47% in 2020 to 64%; over 40% of netizens have engaged in online medical consultation/hospital registration (52%), booking of travel services (51%), and conducting meetings/video conferences (44%). Furthermore, the vast majority of adult netizens have used e-government services, with the usage rate increasing from 43% in 2017 to 81% in 2024. The usage rates of various online services have shown varying degrees of growth, indicating that various Internet applications have deeply integrated into residents' daily lives, underscoring the increasing significance of user experience in various online services.

In addition, online shopping has become increasingly prevalent among Macao residents and has become an essential shopping channel for consumers. Data shows that the online shopping rate among adult netizens has continuously grown from 15% in 2006 to 76% in 2024, highlighting the ubiquity of current online shopping behavior. Among online shopping platforms, Taobao/Tmall is the most popular platform (79%), while online shoppers also use other platforms, with approximately 10% for each respectively; platforms including Pinduoduo, mFood, and Aomi. As a new emerging online shopping model, live streaming e-commerce has also been tried by some Macao netizens. Among online shoppers, 21% have shopped through "online live shopping channels". There are differences in the usage rate of online live shopping among netizens of different genders and age groups, with higher rates among females, middle-aged and young adults.

The Internet has also influenced residents' offline shopping behavior. Among netizens who shop in physical stores, 36% indicate that they compare prices online before making a purchase, and 85% use mobile payments during transactions. Mobile payment, as a convenient payment method, has become increasingly popular in Macao. The rate of adult netizens using mobile payments has risen from 20% in 2018 to 81% in 2024, and the willingness to use mobile payments has increased from 64% in 2018 to 89% in 2024, showing a substantial increase in both usage and willingness to use mobile payments.



Implications for Society, Government and Business Sector:

Online Services Create Business Opportunities, Need Further Enhance of User Experience

With the continuous development of Internet technology, residents are increasingly relying on the convenience brought by the Internet. The shift from offline services to online has become a clear trend. This transformation not only improves service efficiency but also expands service coverage, enabling residents to access the required services more conveniently. It also creates new business opportunities and development space for various industries.

To meet the growing demand for online services, society, government departments, and business sectors can consider further accelerating the development of online services. The government and society can increase support and encouragement for small and medium-sized enterprises and entrepreneurs to develop new Internet applications and services, promoting the diversification of Macao's economy and enhancing Macao's competitiveness in digital transformation. Companies can leverage technologies such as Big Data, Generative AI, and adopt a Data Management mindset to integrate and comprehensively analyze internal and external data. This optimization can enhance their products and internal processes, understand user needs, and meet user demands with greater timeliness, creativity, and flexibility to improve user experience and increase business competitiveness.

Moreover, the increasing prevalence of online shopping and mobile payments highlights the need for businesses to continuously optimize user experience of online shopping. They can provide a richer selection of products, a more convenient payment process, and more efficient logistics services to meet consumer needs.

3.3 Social Media Adoption Approaching Full Utilization, Leveraging Social Intelligence to Understand Public Opinion and Sentiment

Social media is highly popular in Macao, with up to 91% of residents using at least one social media platform, and the usage rate among netizens reaching 99%, close to full utilization, indicating that social media is a significant online activity for daily life. Among various social platforms, WeChat is the most popular, with a usage rate of 87% among residents and even higher at 96% among mobile netizens, with near-universal adoption across all age groups, making WeChat the most widely used social app among Macao netizens.

In addition to WeChat, other social media platforms such as YouTube, Facebook, and WhatsApp also have high usage rates. 76% of residents (82% of netizens) use YouTube, 62% of residents (68% of netizens) use Facebook, and 61% of residents (68% of mobile netizens) use WhatsApp. Usage rates for YouTube exceed 60% across various demographic groups, with higher rates among individuals under 55 and those with higher education levels. Facebook and WhatsApp have higher usage rates among adults aged 18-54, individuals with higher education levels, and employed individuals, while their usage rates are lower among minors and those with lower education levels. Notably, the usage rates for Instagram (50%), Xiaohongshu (47%), and TikTok (44%) are all above 40% among netizens, with Instagram and Xiaohongshu being relatively popular among young netizens under the age of 35 and student netizens. Furthermore, female netizens have higher usage rates for Xiaohongshu (54%) and Sina Weibo (27%) compared to male netizens (Xiaohongshu: 39%, Sina Weibo: 16%), while the usage rate differences for other social media platforms are relatively small, indicating varying usage preferences for these two social media platforms among different genders.

The primary purposes for which netizens use social media include communication with friends (41%), watching live streams/videos (35%), accessing information other than news (24%), reading news (19%), and following updates from friends and family (17%). Additionally, 74% of netizens comment/discuss in social groups, indicating that besides social functions, accessing information and expressing opinions are essential functions of social media.

Implications for Government and Business: Leveraging Social Intelligence to Understand Public Opinion and Sentiment

The Internet has made it easier for netizens to express opinions on public affairs and social issues, with social media becoming an essential means for public participation in governance and advancing social progress. The generated public opinion on social media has characteristics such as fast spread, wide influence, and easily shifting focus, providing a powerful reference for the government, organizations, and the business sector in policy-making and decision-making, while also presenting challenges in terms of response. In recent years, Generative AI has been rapidly evolving with extensive applications in Social Intelligence. Generative AI can analyze real-time data from social media, swiftly identify different hot topics, quantify the sentiment trends, and provide users with immediate feedback. It can also recognize comments on the Internet with positive or negative sentiments, aiding users in better understanding the emotional tendencies of netizens towards issues or products. Leveraging Social Intelligence enables timely grasp public opinion and sentiment, which is of great reference value when formulating policies, launching new products, or executing public relations strategies.

Enhancing Localized Services to Mitigate the Impact of Fake Information

In the current era where almost everyone is online, social media can facilitate the provision of localized services and the dissemination of information more easily. The government and the business sector can utilize widely-covered and high-usage social media platforms like WeChat to offer more functions closely related to daily life, and utilize social media as a channel for attracting traffic. For instance, they can leverage emerging social media platforms with rapidly increasing usage rates such as Xiaohongshu and TikTok for targeted promotions and information dissemination to specific target groups, increasing the exposure of activities and information to better serve the daily lives of Macao residents.

Furthermore, considering the user demand for accessing information and news through social media, and the prevalence of fake information on social media platforms, the government, organizations, and the business sector need to monitor various social media platforms for information related to themselves, identify the presence of fake information, providing accurate and timely information through official and media accounts, and using social media as a channel for communication with the public or customers, increasing influence, and reducing the spread and impact of fake information. This maximizes the positive impact of social media while minimizing negative influences.

3.4 Increasing Concerns for Internet Privacy and Security, Continued Focus Needed on Related Promotion and Education

With the continuous advancement of technology and the widespread digitization of life, the extensive use of the Internet has brought about concerns regarding Internet privacy and security, which are increasingly attracting attention. Data shows that in 2024, 58% of netizens rated Macao's current Internet privacy status as secure, an increase from 39% in 2018. The rate of positive evaluations regarding security has remained around 60% in recent years, indicating that the majority of netizens have a favorable view of Macao's Internet privacy status. Different demographic groups have varying opinions on Internet privacy and security, with younger individuals and students showing higher confidence in Internet security, while elderly people, housewives/househusbands, and retirees express more concerns.

However, nearly half of netizens have reported experiencing Internet privacy and security issues. The most common problem is Internet fraud, followed by device infection with viruses or Trojans, account or password stolen, and violation of personal privacy. Middle-aged and young adults, highly educated individuals, and employed individuals have relatively higher rates of encountering various types of Internet privacy and security issues. This may be related to their more frequent Internet use and higher level of awareness. The results indicate that while the public has a certain level of awareness and concern about Internet privacy and security, there are still many challenges to address.

Implications for Society, Government and Education Sector: Enhancing Internet Security Education, Improving Related Laws and Regulations

With the continuous development of Internet technology, Internet security risks are becoming increasingly diverse and concealed, making Internet privacy and security issues more complex and severe. To address these concerns, on the one hand, Netizens need to improve their understanding of Internet security, strengthen the protection of their own privacy, regularly learn about Internet security knowledge, understand common Internet fraud methods and risks to improve their Internet security literacy and vigilance. On the other hand, the government and society need to strengthen cooperation and enhance Internet security knowledge promotion and education activities through various channels. Particular attention should be paid to groups with lower Internet security awareness to help them identify Internet risks. Finally, the government can improve related Internet security laws and regulations, strengthen data security and privacy protection measures, and establish a sound data protection system to ensure the security and privacy of public and business data. For example, by cracking down on cybercrime, establishing an emergency response system, and promptly detecting, intervening, and handling network security incidents online, the risk of Internet use for netizens can be reduced.



3.5 Gradual Growth of Awareness and Usage of Generative AI, with Tremendous Potential for Practical Applications

Since the launch of ChatGPT by OpenAI in late 2022, Generative AI has achieved groundbreaking development, and the AI boom has swept the world, becoming one of the key directions of current global technological development. Macao netizens' understanding of the emerging concept of Generative AI is gradually deepening, with the percentage of those who are aware of Generative AI increasing from 50% in 2023 to 64% in 2024. However, the usage rate still has room for improvement, with less than 30% of netizens having used Generative AI (27%). The groups with high levels of Generative AI awareness and usage generally exhibit the characteristics of being young and highly educated.

Among netizens who have used Generative AI, the most commonly used is ChatGPT (78%), followed by Poe (19%). It can be seen that ChatGPT is currently the most popular AI tool in Macao and has a clear leading position. The frequency of Generative AI usage among netizens is the highest for once or several times a month (32%), followed by once or several times a week (23%) and once every few months (21%), indicating that although some netizens have used Generative AI, the frequency of use is relatively low.

Implications for Economic Development and Government:

Actively Exploring Generative AI Applications to Facilitate Industry Development, Strengthen Education and Training in Related Technologies

Generative AI has become an extension of the human brain, helping humans interact with the world better. Proficiency in AI applications will become an essential skill in the future. Looking ahead, the application of Generative AI can bring new technological development opportunities to Macao. At present, Generative AI has been applied in various fields and tasks, such as report writing, language translation, news summarization and broadcasting, game and animation production, automated customer service, educational assistance, and various other scenarios. Many enterprises worldwide have integrated Generative AI with their products or services to optimize operations, providing efficient and convenient solutions to help businesses and their customers save time and improve efficiency.

Among netizens who are aware of Generative AI, the most anticipated applications are "improving learning/work efficiency" (22%), "answering everyday life questions" (15%), and "convenient information search" (12%), indicating that netizens' expectations for its application are concentrated in the fields of learning and work. In addition, nearly half of the netizens who are aware of Generative AI expressed their willingness (49%, very willing: 18%, relatively willing: 31%) to use Generative AI products or services in the future, an increase from 33% in 2023. The willingness of young people and students is higher, indicating that netizens' willingness to use Generative AI is gradually increasing, and the younger generation has a stronger interest and willingness to try new things.

However, sufficient caution is still needed when applying Generative AI in specific scenarios. Generative AI relies on a large amount of data for training, and the results it generates may be affected by issues such as data bias, prejudice, and inaccurate semantic understanding, leading to AI distorting facts. This phenomenon is commonly known as "AI Hallucination". To address this problem, the industry incorporates human judgment, combining and complementing Artificial Intelligence (AI) with Human Intelligence (HI). Human intelligence plays an important role in critical decision-making processes. Therefore, on the one hand, the public needs to maintain curiosity about new technologies, understand the basic principles of Generative AI, and apply it reasonably to help solve problems and improve efficiency in life and work. On the other hand, it is also necessary to be cautious about AI-generated content; people should not blindly accept the information generated by the model, and should learn to evaluate its accuracy and rationality.

In the future, the government, academia, and enterprises can work together to strengthen the exploration and application of Generative AI. On the one hand, through education and publicity activities, the public's understanding of Generative AI can be improved. On the other hand, relevant training and resources can be provided to increase the number of talents and application capabilities in Macao in this field, promoting the cognition and usage of Generative AI in Macao. Enterprises in society and related industries can actively explore the application potential of Generative AI and enhance residents' willingness to experience and try the technology by showcasing successful applications of Generative AI in different fields. Through joint efforts, Macao can better promote the development of Generative AI, helping innovation and progress in various industries, and providing residents with more convenient and efficient ways of learning, working, and living, bringing more possibilities and changes to Macao's future.

