



# The Application Status of Generative Artificial Intelligence Across Investigation and Statistics

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**Abstract.** The paper expounds the current development of Generative artificial intelligence, also known as AIGC (Artificial Intelligence Generated Content), and investigates its application status among the public by questionnaire surveys and statistical methods. Statistics show that among several types of AIGC, ChatGPT has the highest level of recognition, and article generation function is the most widely used. And only 6.4% of participants are very familiar with AIGC, but only 12.21% have never used AIGC. In addition, there are other statistical conclusions. Based on the investigation, it is concluded that the popularization of artificial intelligence should be enhanced.

**Keywords:** Artificial Intelligence, AIGC, Investigation and statistics, Application status.

## 1 Introduction

Since the launch of ChatGPT at the end of 2022, Generative Artificial Intelligence, usually referred as AIGC (Artificial Intelligence Generated Content) has received worldwide attention [1]. Different from previous artificial intelligence technologies, AIGC can automatically create content (such as images, text, and videos) based on users' personal needs [2]. AIGC, represented by ChatGPT, has not only had a great impact on the field of artificial intelligence, but also brought many challenges to various industries in society. The paper reviews the development status of AI, summarizes the main producers and characteristics of AI products, and makes an investigation and statistics on the application status of AIGC.

## 2 Basic Situation and Development of AIGC

Gpt-4 [3] launched by OpenAI in 2023 has amazing overall performance. These models are good at text understanding and have excellent performance in text classification, entity detection and question answering. Other emerging large models, such as Sora, have also brought a new perspective to the field of AIGC. Through its unique architecture and advanced multimodal processing capability [4], Sora model further widens the application field of natural language processing [5].

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Z. A. Zukarnain et al. (eds.), *Proceedings of the 2024 International Conference on Artificial Intelligence and Digital Management (ICAIDM 2024)*, Advances in Intelligent Systems Research 187, [https://doi.org/10.2991/978-94-6463-578-2\\_18](https://doi.org/10.2991/978-94-6463-578-2_18)

In technological applications, leading international companies focus on combining large model technology with text, images, audio, etc., achieving technological breakthroughs in various application scene[6]. In the field of text, large-scale model technology is mainly applied in scene such as machine translation, literary creation, and machine question answering. For example, Meta's machine translation model M2M-100 can achieve direct translation between one hundred languages[7];In the field of image and audio, Google, Microsoft, Amazon, and others have combined traditional methods with large-scale pre trained models to develop large models such as Magenta, which have improved the sound quality and fluency of synthesized speech[8].

In terms of modeling ability, major models such as "Pangu", "Wudao", and ERNIE (Baidu) are world's leading level in handling individual tasks. Huawei's "Pangu NPL" large model ranks first in the overall ranking, classification, and reading comprehension categories of the Chinese language understanding evaluation [9].

Baidu is the first to carry out research and development of AIGC in China; In March 2023, the "ERNIE Bot" language model was launched, and a number of businesses such as search, intelligent Cloudwalk, automatic driving Apollo, and XiaoDu intelligent devices were integrated with "ERNIE Bot" to improve the intelligent level of products. Alibaba has developed the "DT manuscript king" news writing system and the "Luban" intelligent design software. At present, it is developing a dialogue robot and plans to combine the large model technology with tools such as DingTalk[10].

At present, AI continues to empower the real economy, breed new tracks, innovate productivity, and open up a new side of human science and technology history[11].Table 1 shows key conditions of AIGC products from China and abroad.

**Table 1.** table of main AIGC products

Product name	Production company Time of first edition /last editon	Technological foun- dation	Main Function
Chat GPT	OpenAI , 2022.11 /2023.11	Google Transformer Neural Network Architecture, GPT-3.5 architecture	Dialogue, video script, copywriting, translation, code generation.
ERNIE Bot	Baidu , 2023.3 /2024.4	Large Model ERNIE4.0	Dialogue, content crea- tion, knowledge reason- ing.
New Bing (Copilot)	Microsoft , /2023.1	GPT-4	Provide a wide range of search news, images, videos, etc.
IFLYTEK SPARK	iFLYTEK Co.,Ltd. , 2023.5 /2024.1	Spark Desk (based on the "Transformer" neural network struc- ture)	Text generation, logical reasoning, math quizzes.
Chat GLM	Tsinghua University Technology Achievement Transformation : Zhipu AI , /2023.3	GLM architecture	Text generation, role-playing, code gener- ation.

Gemma	Google , /2024.3	Open source model Gemma 2B、Gemma 7B	Language comprehension, information retrieval, natural language processing. Speech recognition, semantic understanding, intelligent suggestions, intelligent search, automatic filling.
Notion AI	Notion , /2023.2		
Sora	OpenAI , /2024.2	Transformer	Video generation.
KimiAI	Moonshot AI , /2023.11	Kimi's billion dollar model	Chinese-English conversation, online search, and reading local files can help users answer various questions .
Skywork-MM	BEIJING KUNLUN TECH CO.,LTD , 2023.8 /2024.2	Skywork2.0 large-scale model	Intelligent Q&A, chat interaction, text generation.
Doubao	Tiktok , 2023.8	Skylark Model	Information search, text reading, image generation.
One WoodenLetter	Shanghai HuaFa Technology Co., Ltd. /2023.12		Music download, image processing, text translation.

### 3 Investigation and Statistics

In order to explore the public's use of AIGC, based on existing literature, author made a "Survey on the Current Status of Generative Artificial Intelligence Usage" and distributed it through the public online questionnaire platform. The questions include participant information such as gender, age, occupation, income, as well as familiarity with AIGC, the most commonly used types of AIGC, and the purpose of use. There are 5 fields of professional workers participated in the questionnaire, including education(including students), health care, manufacturing, finance, and Internet software, the retiree is also included in it.

Across the participants surveyed, 50.58% are male and 49.41% are female. The age distribution was as follows: 10-18 years old 2.89%, 19-30 years old 46.83%, 31-40 years old 8.67%, 41-50 years old 32.37%, and 51 years or older are 9.23%. Primary and secondary school students made up 1.72%, college students 37.93%, graduate students 4.02%, and professionals and technicians (such as lawyers, doctors, teachers) 20.69%. Government officials represented 6.32%, foreign enterprise employees 2.87%, private enterprise employees 16.09%, state-owned enterprise employees 2.87%, and others

7.47%. The fields of study/engagement included science 26.67%, engineering 41.82%, secretarial studies 1.82%, management 7.27%, finance and accounting 1.82%, media and communications 2.42%, agricultural production 1.21%, medicine 3.03%, and others 12.12%. In terms of income, 5.78% earned between 1000-3000, 10.98% between 3000-5000, 24.28% between 5000-10000, and 14.45% between 10000-20000. Another 13.87% earned over 20000 or received an annual salary, while 30.64% had no income.

## 4 Result and Discussion

### 4.1 Basic Situation of Participants Using AIGC

#### Familiarity with AIGC.

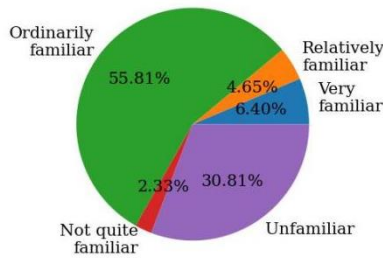


Fig. 1. Familiarity with AIGC

According to the investigation, the results in Fig.1 show that very familiar to AIGC are 6.40%, relatively familiar are 4.65%, ordinarily familiar are 55.81%, not quite familiar are 2.33%, and not familiar are 30.81%. Nearly 70% of the survey respondents indicated familiarity with AIGC.

#### Types of AIGC Commonly Used.

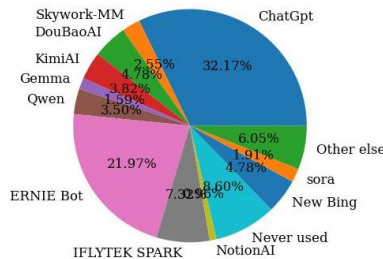
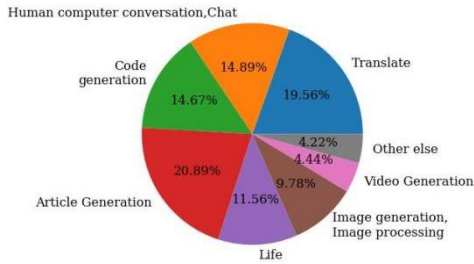


Fig. 2. Types of AIGC commonly used

ChatGPT accounts for 32.17%, ERNIE Bot 21.97%, while IFLYTEK SPARK 7.32%, New Bing 4.78%, DouBaoAI 4.78%, KimiAI 3.82%, Qwen 3.50%, Skywork-MM 2.55%, Sora 1.91%, Gemma 1.59%, NotionAI 0.96%, Other else 6.05%, never used accounts for 8.60%.The results as Fig.2.

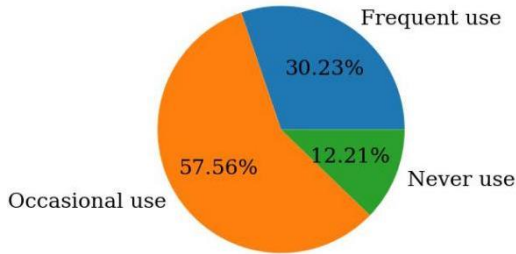
**The Purpose of using AIGC.**



**Fig. 3.** Purpose of using AIGC

As the Fig.3 shows, article generation 20.89%, translation 19.56%, human computer dialogue and chat 14.89%, code generation 14.67%, daily use 11.56%, image generation and processing 9.78%, video generation 4.44%, other 4.22%.

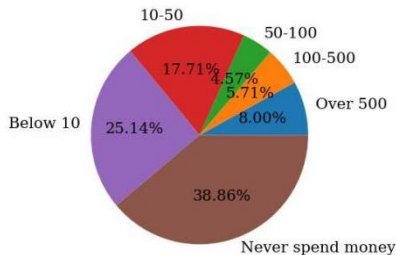
**Frequency of using AIGC.**



**Fig. 4.** Frequency of using AIGC

From Fig.4, frequently used accounts for 30.23%, occasionally used 57.56%, and never used 12.21%.

**The average Monthly Cost Spent on AIGC.**



**Fig. 5.** Average monthly cost spent on AIGC

To Fig.5, 38.86% of respondents never spend money, while spending less than 10 yuan accounts for 25.14%, spending between 10-50 yuan are 17.71%, spending be-

tween 50-100 yuan are 4.57%, spending between 100-500 yuan are 5.71%, and 8.00% spend more than 10 yuan.

### 4.2 Differences in the use of AIGC by Participants

Due to different factors, there are certain differences in the use of AIGC among the participants in the survey. This section will explore the differences in the use of AIGC due to age factors.

#### Familiarity Level.

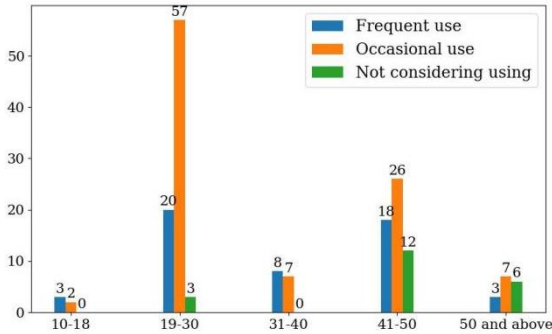


Fig. 6. Familiarity level

According to statistics, as Fig.6 shows, the majority of people are ordinarily familiar with AIGC, next is those who are unfamiliar with it; But there are also exceptions, that is, the majority of people over 50 years old are unfamiliar with it.

#### Frequency of Usage.

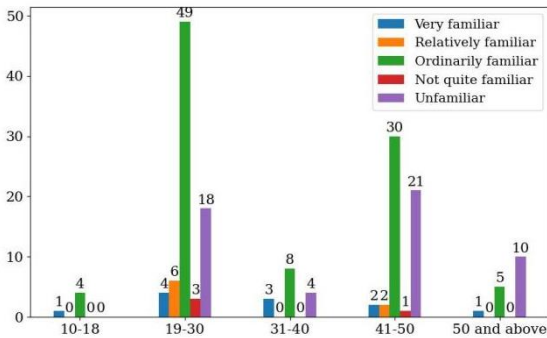
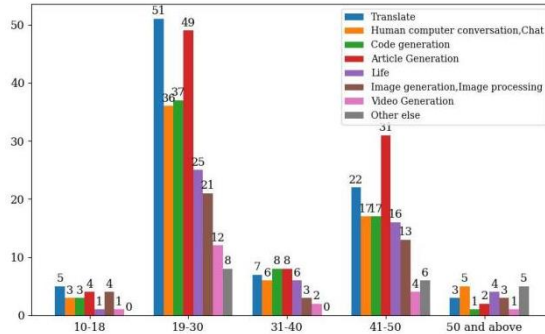


Fig. 7. Frequency of usage

According to the Fig.7, it can be found that among various groups of people, the majority occasionally use AIGC, next is frequent use. The proportion of people under the age of 18 who frequently use and occasionally use AIGC is similar, and the pro-

portion of people over the age of 50 who have never used it is second only to occasional use.

**Purpose of Usage.**



**Fig. 8.** Purpose of usage

The above figure, Fig.8 shows the purposes of using AIGC among different age groups, mainly for translation, article generation, code generation, and human-computer dialogue. Among them, those aged 19 to 30 use translation the most, followed by article generation, code generation, and human-computer dialogue; The 31-40 age group has the highest number of article generation and code generation, followed by translation and human-computer dialogue; From 41 to 50 years old, using articles becomes the top priority, followed by translation, code generation, and human-computer dialogue.

**5 Conclusion**

The survey shows that users have a high level of familiarity, frequency, and willingness to use AIGC. The most commonly used function is text generation, followed by translation, human-computer interaction, etc. It can be seen that AIGC has gradually penetrated into the learning and life of the public. Survey users aged between 10-50 have a higher level of familiarity with AIGC and a higher frequency of use, indicating that AIGC is more popular among users in this age group. However, among participant aged 51 and above, familiarity with AIGC and usage frequency is low. We should increase the popularization of AIGC among the elderly population, so that they can better improve their life.

**Acknowledgment**

At the end of the paper, thanks for everyone who helped me complete the survey, including engineers, teachers, elderly people, and children. The people who I don't even know, but they enthusiastically completed the questionnaire. Thanks again.

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