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## **Use of AI in Communication and Dissemination Statistics**

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### **Abstract**

The development of Artificial Intelligence (AI) has been very fast and extraordinary in recent years. Various practical applications can be used by people in everyday life. AI has succeeded in replacing many human jobs and producing more effective and efficient output. AI has entered various sectors such as transportation, medical, legal, and even the world of statistics. Statistics Indonesia (BPS) sees AI as a big potential in making statistics production better and more efficient, especially in this case in the field of statistical dissemination and communication. AI tools such as Chat GPT can interact directly with humans in discussing ideas, making various drafts for dissemination, and many other assistances. In the context of statistical dissemination, AI can assist in conveying statistical information in a more understandable and attractive way for the public. This allows the general public to better access and understand statistics, and enables better decision making based on accurate and relevant statistical evidence. This paper will explain how to use several AI tools in the dissemination and communication of statistics. However, it should be remembered that the development of AI also raises ethical questions and challenges that deserve further discussion. But overall, AI advances can also be leveraged to help work in the field of communications and statistics dissemination.

**Keywords:** *Artificial Intelligence, Dissemination, Communication*

**topics:** **“Innovation in Communication” for Session 3**

## Introduction

In recent years we have seen how the internet has changed our behavior in communicating compared to several tens or even hundreds of years ago. Whether we realize it or not, we are entering a new phase in communicating and conveying certain messages to other people. We continue to discuss how to communicate effective and efficient statistics to the public using the internet and social media to build statistical literacy in society and create a data driven society. We as the National Statistical Office (NSO) continue to be required to adapt and adjust to the unstoppable changes of the times. We haven't finished discussing to understand how we can use social media algorithms to communicate statistics, now we have to enter the era of Artificial Intelligence.

Artificial Intelligence is a challenge for the National Statistical Office to adapt to technological developments. Before we discuss the use of Artificial Intelligence, let's first understand the concept of Artificial Intelligence. According to Leave et al (1992), Intelligence comes from the Latin word "Intelligo" which means "I understand". So Intelligence can be interpreted as the ability to understand and take action. In Goldberg (1989) several experts provide a definition of AI. According to H. A Simon, artificial intelligence/AI is a lesson for computers to do things better than humans. According to Knight and Reach, AI is a part of computer science that understands efforts to create computers that are like what humans can do or even better than that.

According to Jamaaluddin and Sulistyowati (2021), AI has several dimensions, namely Acting Humanly, Thinking Humanly, Thinking Rationally, Acting Rationally. Acting Humanly means that the AI is created in such a way as to act like a human. The ability of computers to carry out thought processes like humans is manifested by a programming language that can carry out thought processes like humans. AI in the 'Think Rationally' dimension means that humans create their own intelligence into computers. AI also centers or focuses on the intelligent behavior of a device or is also known as a tool that has rationality that works differently from ordinary computers. This can be done if a computer has the ability to perceive the environment, can adapt to changes in the existing environment so that it can carry out operations in accordance with the desired goals.

Based on Jamaaluddin (2021), the history and development of Artificial Intelligence over time can be seen in the following table:

| No | Tahun | Deskripsi                                                                                   |
|----|-------|---------------------------------------------------------------------------------------------|
| 1  | 1206  | The first humanoid robot by Al-Jazari                                                       |
| 2  | 1796  | Water pouring dolls from Japan are called Katakuri                                          |
| 3  | 1941  | The first electronic computer                                                               |
| 4  | 1949  | The first stored program computer                                                           |
| 5  | 1956  | The Birth of Artificial Intelligence at the Dartmouth Conference                            |
| 6  | 1958  | The LISP language was created                                                               |
| 7  | 1963  | American defense department intensive research                                              |
| 8  | 1970  | The first expert system was widely introduced                                               |
| 9  | 1972  | The prolog language was created                                                             |
| 10 | 1986  | AI-based devices sold for around \$425 million                                              |
| 11 | 1994  | Fauzzy Neuro based AC for sale                                                              |
| 12 | 2010  | The artificial intelligence system for the BOEING 900-ER commercial aircraft is widely used |
| 13 | 2011  | service robot for restaurants has been successfully created in Indonesia                    |
| 14 | 2012  | Fuzzy and Self Learning based computer troubleshooting expert system                        |
| 15 | 2012  | An immune system for spam detection was created                                             |

AI is designed to help every part of our work be faster and more targeted. AI can be used from a technical or non-technical side. We can use AI tools that are available for free on the internet or for a fee, or we can create our own AI algorithms for statistical purposes, especially communication and statistical dissemination.

Until now, the development of AI has become unstoppable. AI is present in all aspects of our lives from transportation, social media algorithms, film application platforms, e-commerce, to one of the areas we are focusing on this time, namely communication and statistical dissemination. AI has great potential in the world of copywriting.

## AI for Copywriting

### 1. Introducing Chat GPT

OpenAI released a chatbot on November 30, 2022 called ChatGPT. ChatGPT has become a hot topic of conversation throughout the world, both among AI researchers and lay people of all ages and levels of education. Mijwil et al (2023) explained that ChatGPT is an AI chatbot platform that utilizes natural language processing (NLP) and machine learning algorithms to enable human users to communicate with machines, thereby changing the way humans interact with machines. The written results of ChatGPT answers look well structured, have good sentence coherence, have good accuracy, and are able to remember previous conversations. If we can create the right prop, ChatGPT is able to create scientific articles and books in a much shorter time than when humans create them.

ChatGPT has become a topic of conversation for many people in the world, especially in the world of education. Positive and negative reactions continue to emerge giving rise to various policies in the world of education. The Los Angeles Unified School District blocked access to the OpenAI ChatGPT website on the networks and devices of schools in their area on December 12 2022. The New York City Department of Education at the end of December 2022 also blocked ChatGPT access for schools in their area (Rosenzweig -Ziff, 2023). In their research, Setiawan & Luthfiyani (2023) tried to use ChatGPT to create scientific writing with a certain prompt. In their experiment they produced a piece of writing totaling 693 words which could still be developed further. The total time required to complete this experiment was only seven minutes including time to document the results of ChatGPT processing but not including time to formulate a good and effective prompt at the beginning. According to them, ChatGPT can be used to produce quite scientific writing with prompts formulated at the beginning using good and effective techniques.

The development of ChatGPT is not only in the world of education but also in the world of marketing. Rivas, P & Zhao, L (2023) in their research found that ChatGPT has great potential in the world of product marketing by automating work, providing good understanding, and has great potential in increasing customer engagement. They also explained that ChatGPT can help marketers create content faster and with the same quality as humans. This can help marketers conduct more efficient research in understanding consumer vocabulary, perceptions and attitudes towards products and campaigns. In this case we must realize that the products of the National Statistical Office are data and statistics. GPT chat has great potential to be used to market statistical data to the public. Automation in GPT chat can reduce processing time in creating the various persuasive conversations we need to increase public interest in statistical data.

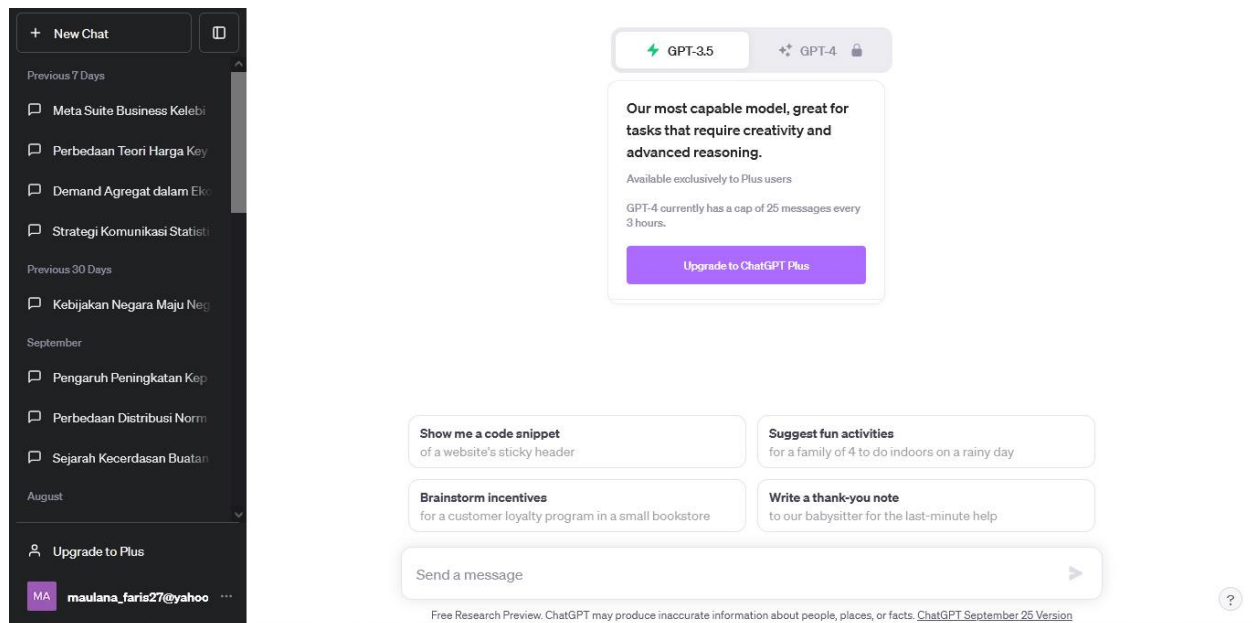
But beyond all its capabilities, ChatGPT also has potential problems that we must be aware of and mitigate. In their research, Rivas, P & Zhao, L (2023) explained that ChatGPT's ability to collect and analyze large amounts of personal data raises privacy concerns and its potential to

generate bias requires testing. ChatGPT users should prioritize transparency, bias mitigation, privacy protection, risk assessment, accountability, continuous monitoring, and ethical decision making in ChatGPT-based marketing. Therefore, NSO needs to create a mitigation to avoid the risks that may occur in using ChatGPT for both ethical and bias issues.

There are various types of questions that we can ask on ChatGPT. According to Spanidis (2023), we can ask types of questions such as asking for general knowledge, seeking an explanation, getting an opinion, asking for a recommendation, asking for assistance, seeking definition, asking for a comparison, asking for prediction, seeking advice, and asking for fun fact.

Following are the steps for using ChatGPT:

- a. First, we need to go to <https://chat.openai.com>
- b. Then, you need to Sign Up or Login if you already have the account
- c. Start typing a question or prompt in the text box provided in the bottom
- d. Click the Enter key to send the message and receive a response from OpenAI's language model
- e. Continue to engage in conversation with OpenAI by typing in follow-up questions or prompts in the text box and receiving the model's responses.



Picture 1 ChatGPT initial display

## 2. Copywriting

Copywriting is currently an important key in communicating a product to the public. According to Nurtiar (2020), Copywriting is an activity of writing marketing texts for a particular product or information. Copywriting consists of two words, namely copy and writing. Copy is

marketing text that we usually see in advertisements, while writing is a writing activity. According to Prayoga (2015), copywriting is any form of writing in any media that aims to promote a product. Nurtiar (2020) explains that 'copy' generally consists of a title, subheading, body copy, call to action, and tagline.

The aim of copywriting is to persuade the target consumer or audience to take action in accordance with the goals to be achieved from a particular advertisement or campaign. The function of copywriting itself is to attract attention, convince and influence the public in achieving company targets, branding, education, or compiling newsletters. Copywriting activities can use various media, such as traditional media or digital media.

There are various types of copywriting frameworks that can be used to create good quality content. According to Spanidis (2023) there are various copywriting frameworks that are popularly used in campaigning for something, including AIDA, Problem-Solution. Unique Selling Proposition (USP), Features-Benefits-Advantages, Storytelling, Emotional Appeal, Value Proposition, and Direct Responses.

### 3. ChatGPT for Copywriting

Based on our previous discussion, we can use ChatGPT in copywriting activities to promote NSO's statistical activities and products to the public. Spanidis (2023) explains the various benefits that can be obtained from using ChatGPT for copywriting. Among them:

- a. **Time-saving** : ChatGPT can save you a lot of time, as it provides you with a starting point for your copy and helps you to quickly generate ideas for your content.
- b. **Consistency** : ChatGPT can help you maintain consistency in your copywriting style and tone, which is especially useful if you're working on a large project or have multiple writers contributing to the same piece.
- c. **Inspiration** : ChatGPT can provide you with fresh ideas and inspiration for your copy, helping you to think outside the box and come up with creative solutions to your writing challenges.
- d. **Efficiency** : ChatGPT can help you to work more efficiently, allowing you to generate copy quickly and effectively without sacrificing quality.
- e. **Versatility** : ChatGPT can be used for a wide range of copywriting purposes, from product descriptions and social media posts to email newsletters and website copy, making it versatile tool for writers of all kinds.

#### 3.1. ChatGPT Prompts

Spanidis (2023) explains that ChatGPT prompts work by entering command text into the language model which then produces text as output. The generated text is based on the vast

knowledge base that the model has been trained on, as well as the patterns and relationships it has learned between words and phrases. By understanding ChatGPT prompts and language model, you copywriters and other marketing professionals can leverage this technology to its full potential and take their content creation to the next level.

According to Spanidis (2023), writing effective ChatGPT prompts is the key to success in getting the best answer output. Structure is incredibly important in written speech for ChatGPT to understand and produce the best output when used for copywriting. The model has been trained on huge datasets, but it still requires clear and well-structured input to produce accurate meaningful output. When we make a prompt, it is very important to consider the structure of the language, including the use of clear and concise sentences, proper grammar and spelling, and appropriate punctuation. This will really help the model in understanding the context in which it will be created to produce high-quality output that is right on target.

According to Spanidis (2023), there are several things we must pay attention to when creating prompts, including:

- a. Be specific and clear about the task
- b. Provide relevant background information
- c. Keep prompts short and concise
- d. Use specific keywords
- e. Provide examples of desired output
- f. Train the model for specific use cases
- g. Review and edit the generated text

#### 3.1.1. Tone

When communicating every day, whether we realize it or not, we definitely encounter various people who communicate using different tones according to the context and appearance. We use a different tone when talking to fellow experts than when we talk to lay people. We also use different tones when communicating with children or adults. Tone influences how the message is conveyed according to the target recipient of the information we convey. According to Spanidis (2023), the tone refers to the writer's attitude towards the subject or audience, and can greatly impact the effectiveness of the writing. There are various types of tones that we can use in copywriting, including conversational, persuasive, informative, inspirational, sarcastic, humorous, professional and emotional tones. The right tone will depend on the type of writing, the target audience, and the goals, and objectives of the writing.

#### 3.1.2. Style

According to Spanidis (2023) Style refers to the way the writing is presented, including elements such as sentence structure, word choice, and tone. Some styles that are often used in

copywriting include Casual, Formal, Creative, Technical, Informative, and Poetic. We must choose a style according to the audience we are targeting to receive statistical information.

### 3.1.3. Template Parameters

As we discussed previously, we need the right prompts to get the right output. Spanidis (2023) designed template prompts that we can use for copywriting in statistical dissemination and communication. These prompts must have at least the following elements:

- a. **Purpose of the copy:** Be clear about the purpose of the copy you want ChatGPT to produce. Is it for a marketing campaign, social media post, email newsletter, or something else?
- b. **Target audience:** Who is the target audience for the copy? Try to be specific and provide any relevant details that could help ChatGPT understand the audience better.
- c. **Tone and style:** What tone and style do you want the copy to have? Is it serious or humorous? Formal or informal? Providing this information can help ChatGPT understand the context and create appropriate copy.
- d. **Keywords:** Provide any keywords or phrases that you want ChatGPT to include in the copy. This can help ensure that the copy is focused and on topic.
- e. **Length:** Indicate the desired length of the copy, whether it's a specific word count or a general guideline.
- f. **Additional instructions:** If there are any specific instructions or requirements for the copy, be sure to include them in the prompt. This can include things like including a call to action or incorporating specific branding.
- g. **Emoji Usage:** If you would like emojis to be included, specify the level of usage as well. Some audiences may be receptive to more emoji usage than others.

### 3.2. Exercise

Based on the template prompts that we discussed previously, now we will try to use this template to create copywriting to promote NSO statistical products.

Prompts example:

Please make marketing campaign for a new data publication book product called "big data for smart people". it is a book that have a lot of information from big data.

- **purpose:** create a marketing campaign to promote a new data publication book product
- **target audience:** women 25-40 who are interested in data science
- **tone and style:** friendly and informative, with a focus on the product's benefits
- **keywords:** data, smart, important, book



- **length:** 500-700 words
- **additional instructions:** emphasized the product's unique selling points

Result from ChatGPT :

ChatGPT

## "Big Data for Smart People" - Your Essential Guide to Data Unleashed

Are you ready to dive into the world of big data and unlock its immense potential? We're excited to introduce "Big Data for Smart People," a comprehensive book filled with invaluable insights, designed specifically for women aged 25-40 who are passionate about data science. Join us on an exciting journey to harness the power of data with confidence and intelligence.

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At "Big Data for Smart People," we understand that data isn't just numbers and statistics; it's a gateway to innovation, informed decision-making, and meaningful progress. Our book isn't just another publication; it's your key to making data smart, important, and accessible.

### Why Choose "Big Data for Smart People"?

Our book offers a host of unique selling points:

1. **Comprehensive Data Insights:** "Big Data for Smart People" provides a holistic view of big data, transforming complex concepts into easy-to-understand insights. You don't need a Ph.D. in data science to appreciate the wealth of knowledge inside.
2. **User-Friendly:** This book is designed with you in mind, offering a friendly and informative style that makes data science concepts approachable and enjoyable.
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By immersing yourself in our book, you'll reap a wide range of benefits that will empower your data science journey:

- **Data Literacy:** Gain a deep understanding of the world of big data, allowing you to communicate effectively and make informed decisions.
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- **Career Advancement:** Equip yourself with knowledge that can open doors to new career opportunities and advancements.
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## **Conclusion**

ChatGPT is a tool that has great potential to be used in the world of statistical dissemination and communication. A data driven society will only be built in communities that have high statistical literacy, while high statistical literacy can only be built with intense statistical dissemination and communication from NSO to the community. We must acknowledge the energy, time and costs that we may incur to maintain statistical communication to the public on an ongoing basis. We can use ChatGPT to answer all these challenges, especially in copywriting. Work becomes more effective and takes less time. We need to understand how ChatGPT works and how to get proper and effective output. However, NSOs must also understand the risks that may arise as a result of using ChatGPT, both from an ethical perspective and errors in making conclusions and decisions.

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