



Preferences of MSME actors in Digital Marketing using AI-engine

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Abstract. Preferences are dispositional states that can explain why a person chooses one option over another. They play an important role in interpreting and predicting individual behaviour, as well as guiding social interactions and forming relationships based on preference similarities. In research, preferences are relevant in a variety of contexts, including social science, public policy and marketing. Understanding consumer preferences allows businesses to tailor products to better meet market needs. Advances in technology and machine learning algorithms allow for in-depth and large-scale analysis of preferences, facilitating the personalisation of the user experience. Preference-focused research helps create a more personalised user experience, which is increasingly important in the digital marketing age where personalisation is key to attracting and retaining customers. This research aims to help MSMEs design effective advertisements based on marketers' preferences by using artificial intelligence technologies such as OpenAI ChatGPT and DALL-E.

Keywords: AI-engine · Digital marketing · Preferences..

1 First Section

1.1 A Subsection Sample

In the rapidly evolving digital age, digital marketing has become a critical tool for businesses of all sizes to reach their target markets more effectively and efficiently. Nevertheless, optimizing digital marketing strategies presents a significant challenge for micro, small and medium-sized enterprises (MSMEs). MSMEs tend to have limited resources, both financial and technical, so they need to adopt solutions that can deliver maximum impact with a relatively small investment. One of the latest innovations in digital marketing is the use of artificial intelligence (AI) engines, which offer a range of advanced capabilities to improve marketing optimisation through targeted advertising [1, 2]. AI engines can provide tools such as predictive analytics, campaign automation, content personalisation and ad optimisation that can help MSMEs achieve their marketing goals more efficiently [1, 2]. This technology not only helps manage and analyse consumer data in real time, but also enables more data-driven decision-making and more targeted marketing strategies [3].

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However, despite the huge potential of AI engines in digital marketing, the preferences and needs of MSMEs in adopting these technologies are not fully understood. Studies show that the adoption of new technologies is often influenced by factors such as cost, complexity of implementation and the level of technical support available [4]. Therefore, it is important to explore how MSMEs perceive and use AI engines in their digital marketing. This research aims to develop a prototype in the form of digital media for MSMEs to generate digital advertisements that align with their preferences and to identify marketers who are well-suited to their specific needs.

Preference is the tendency of an individual or group to choose one option over another [4]. The study of preferences is important in a wide range of disciplines, including psychology, economics, marketing and social sciences. The study of preferences helps us to understand how and why individuals make decisions, which in turn can influence various aspects of their lives, from consumer choices to public policy. In an era of globalisation and rapid technological development, the dynamics of consumer preferences are changing significantly [5]. Changes in consumers' consumption patterns, needs and wants need to be understood if companies are to develop effective marketing strategies [7]. For example, with the advent of e-commerce and social media, consumer preferences have become more dynamic and difficult to predict. It is therefore important to continuously monitor and analyse preferences so that companies can adapt quickly to these changes.

The development of digital technology in recent decades has changed the way businesses operate and interact with consumers. Digital marketing is now one of the key strategies in the modern business world [8]. By using digital channels such as websites, social media, email and search engines, companies can reach global marketers more effectively and efficiently compared to traditional marketing methods [9]. This digital transformation has changed the behaviour of consumers who rely on technology to search for information, make purchases and interact with brands [7, 6]. With the advent of technologies such as artificial intelligence (AI) and machine learning, digital marketing is getting more sophisticated, enabling greater personalisation and automation of marketing processes. Digital analytics tools provide deep insights into consumer behaviour, preferences, and market trends, allowing companies to make data-driven decisions and adjust their strategies in real-time.

Artificial Intelligence (AI) has become one of the most dynamic and promising fields in modern technology [1, 2]. In recent years, advances in machine learning algorithms, natural language processing, and neural network technologies have accelerated the development of AI and enhanced its ability to solve a wide range of complex tasks. One of the key components in the AI ecosystem is the 'AI engine', which is a platform or plug-in that enables the development, deployment, innovation, and integration of AI solutions. AI engines can be defined as infrastructure or software that supports a wide range of AI applications, from big data analytics to business process automation. These AI engines play a crucial role in providing the ability to intelligently process information, make data-driven decisions, and learn from experience to improve performance over time.

MSMEs play an important role in the economy, especially in creating jobs and driving local economic growth. The government often provides support and various policies to encourage the development of MSMEs. MSMEs are divided into three categories based on certain criteria, such as number of employees, turnover, and asset value, namely: Micro, Small, and Medium Enterprises.

Using AI-engine for digital branding has become one of the strategies to strengthen brand identity and visibility in the digital era. With its capabilities in big data analysis and natural language processing, AI-engine enables companies to better understand the behaviour and preferences of market participants. It can identify market trends, optimise advertising campaigns and create more relevant and personalised content. This capability of AI-engine is used in the development of a digital marketing application for preference-based MSME products. Fig. 1 is a flowchart of the development of a digital brand prototype for MSME products called "Pesona UMKM". The prototype was built by utilising AI-engines, namely ChatGPT and DALL-E. ChatGPT is used to generate text, while DALL-E is used to generate images that match the preferences of the users, both MSME actors and marketers.

1. Input product detail.

Fill in MSME product details such as product name product name, productdescription, product photos and etc (Fig. 2).

2. AI-generate options.

There are 3 Generate menus using AI, namely Generate Text (Fig. 3), Gen-erate Image (Fig. 4) and Generate Tag (Fig. 5).

3. Generate text.

Input a description of the text you want to generate. The text will be gen-erated by the ChatGPT engine. The generated result will be stored in the database.

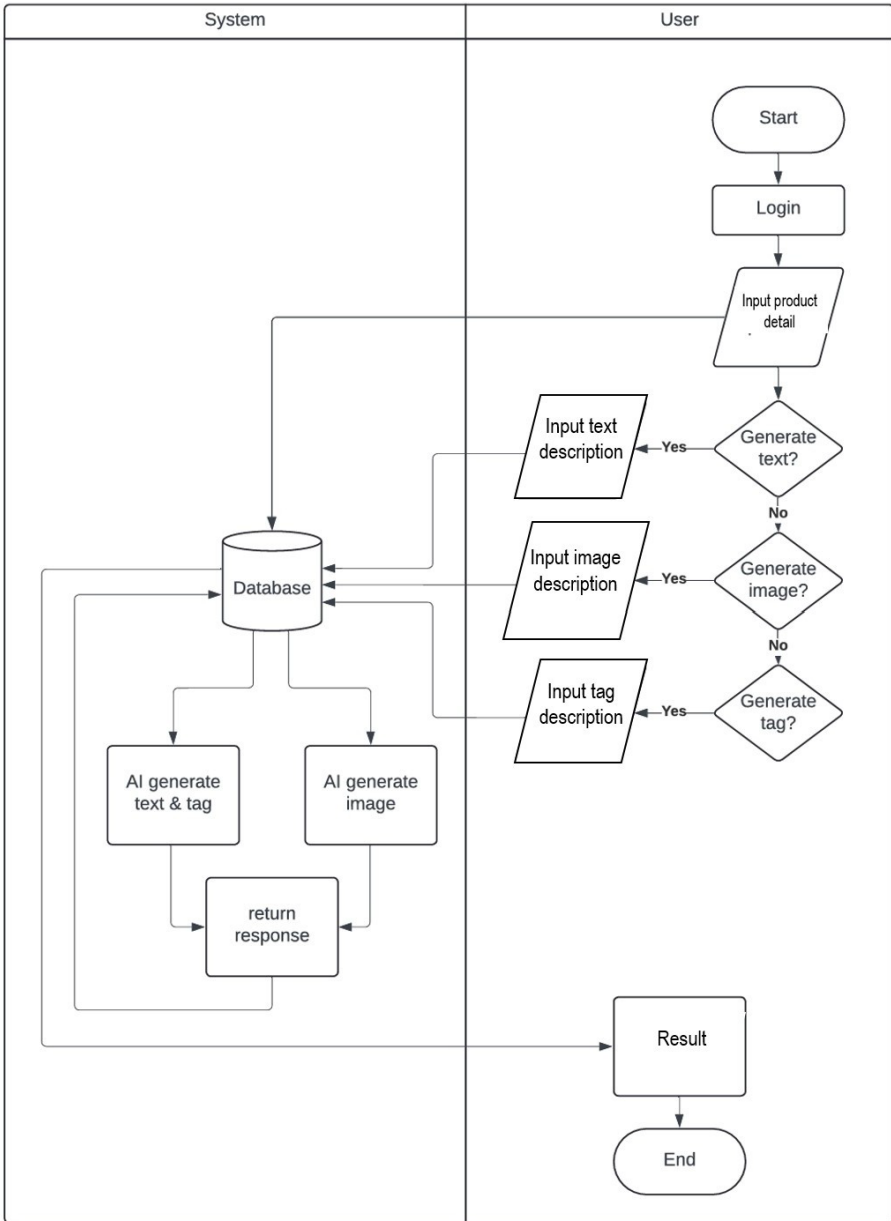


Fig. 1. Flowchart of "Pesona UMKM" prototype.

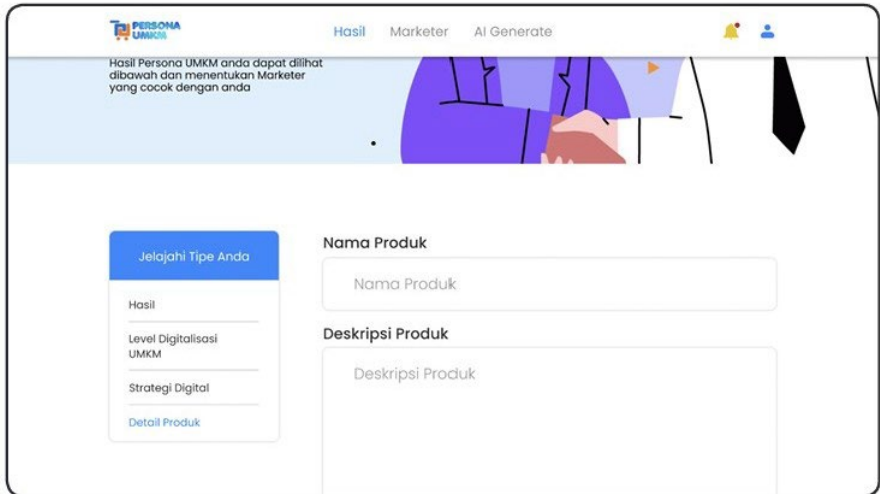


Fig. 2. Input product detail.

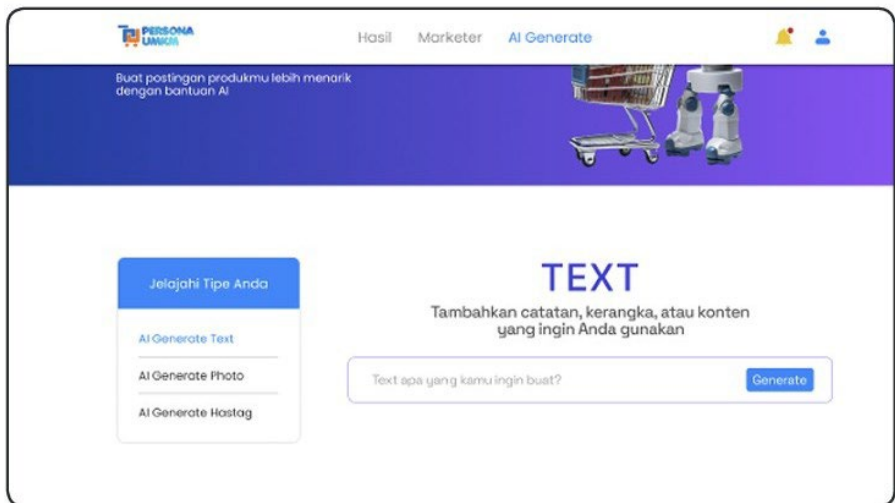


Fig. 3. Input text key for generate.

Input text key for generate.

4. Generate image

Input a description of the image you want to be generated. The image is generated using the DALL-E engine and stored in the database.

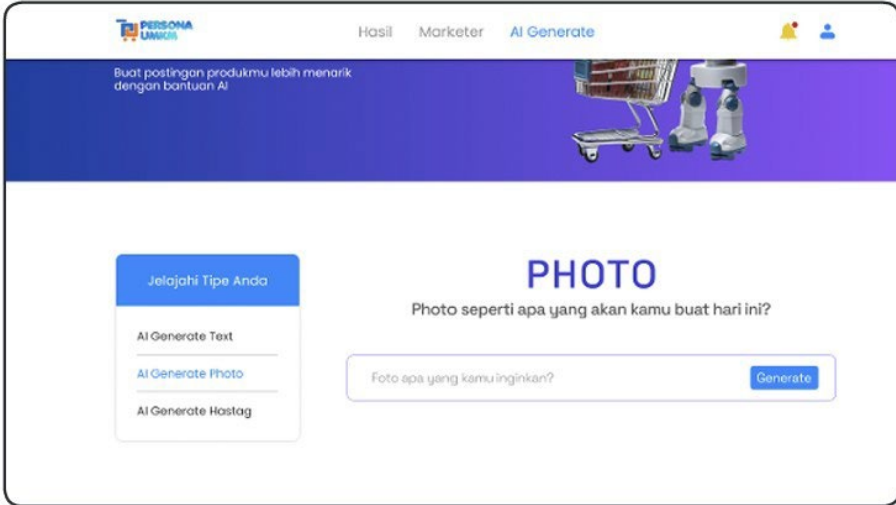


Fig. 4. Input photo

5. Input Tag

Input a description of the tag you want to generate. The tag will be generated by the ChatGPT engine. The generated result will be stored in the database.

2 Result

The final result is stored in the database. In the user interface, these generated results become more relevant to the user's preferences (Fig. 5).

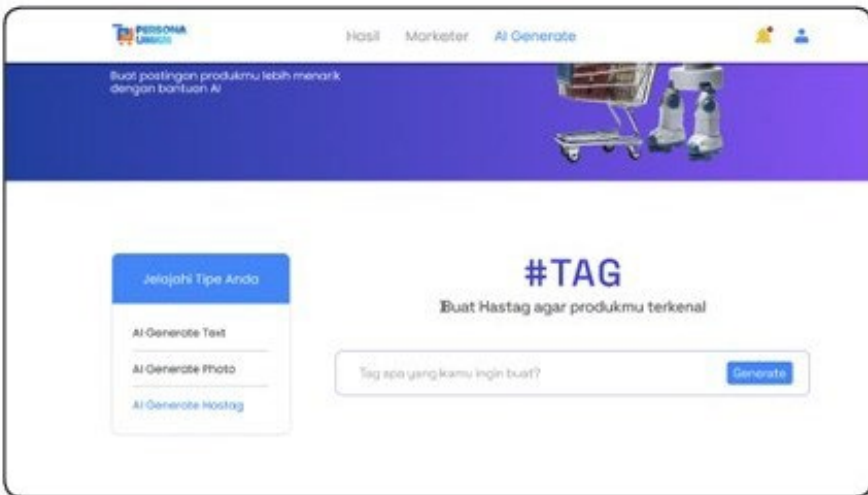


Fig. 5. Input hastag.

Fig. 6. Result

3 Conclusion

Using the AI engine can help optimise the creation of content that follows trends, keeping it relevant and up to date. With hashtags embedded in the content, making it easier for users searching for related topics to find the content. found by users searching for related topics.

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