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## **Empowerment of Village Communities Through the Development of MSMEs Based on Mosquito Spray Products**

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### **ABSTRACT**

This research explores strategies for empowering village communities through the development of Micro, Small and Medium Enterprises (MSMEs) with a focus on anti-mosquito spray products. The aim of this research is to increase the economic capacity and production skills of village communities through sustainable MSME initiatives. The methods used include technical training on making anti-mosquito spray, providing equipment and raw materials, as well as marketing support to expand market reach. It is hoped that the results of this program will increase the income and welfare of village communities, as well as provide solutions to health problems caused by mosquitoes. By empowering village communities through the development of MSMEs, it is hoped that economic independence will be created and a sustainable quality of life will be improved.

*Empowerment, Development, MSMEs, Anti-Mosquito Spray.*

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## **INTRODUCTION**

The era of the industrial revolution 4.0 has reached its time. According to Professor Klaus Schwab, a famous economist from Germany who wrote in his book *The Fourth Industrial Revolution* stated that this concept has changed people's lives and work. The industrial revolution 4.0 is characterized by cyberphysical systems. This system makes it possible to collect, accumulate, and analyze digital data and not only describe what can be seen physically but can be seen in cyberspace (Kim and Park, 2017).

Currently, the industry is starting to touch the virtual world, in the form of connectivity between humans, machines and data, all of which are already everywhere, and are known as the internet of things (Tim Viva, 2018). This era directs people to live sophisticatedly and really use the internet as a medium that provides convenience. One of the changes caused by this era is the emergence of a new form of marketing, namely through digital marketing. The development of digital technology has changed marketing from MSME

entrepreneurs which was originally carried out conventionally to digital by utilizing the use of social media and the use of websites to market their products (Wardhana, 2015; Listiana et al, 2019).

This digital marketing strategy is more prospective because it allows potential customers to obtain all kinds of information about products and transact through the internet. Digital marketing is a promotional activity and market search through online digital media by utilizing various means, such as social networks and online product or service sales platforms. Digital marketing usually consists of interactive and integrated marketing that facilitates interaction between producers, market intermediaries, and potential consumers. On the one hand, digital marketing makes it easier for entrepreneurs to monitor sales results, desires, and needs of potential consumers, on the other hand, potential consumers can also search and get product information just by browsing the cyberspace, making it easier to search for alternatives both in terms of quality, price, and sales location (Purwana et al., 2017).

The community, especially those engaged in micro, small, and medium enterprises (MSMEs), can certainly expand their market reach through digital marketing. With digital marketing, communication and transactions can be carried out at any time/real time and go global or global. Seeing the number of chat-based social media users is large and increasing day by day, it opens up opportunities for MSMEs to develop their market in the palm of their smartphone hands (Pradiani, 2017).

In addition, from a financial perspective, digital marketing is very promising for increasing business profits (Setiawati and Widyartati, 2017). Based on the opportunities and benefits of digital marketing, it is seen as able to overcome or provide solutions to problems in the field of marketing faced by MSME entrepreneurs, which are generally focused on three things: (1) market and product competition problems, (2) access to market information, and (3) institutional problems supporting MSMEs.

The development of digital technology allows MSME actors to market their products online and make transactions through the online banking system as well (Wardhana, 2015). This is also supported by the ease of access to information in the era of the 4.0 revolution. The opportunities and benefits of digital marketing are not necessarily properly captured by the community, so the role of various parties is needed to initiate this utilization.

Empowerment of village communities is an important aspect of sustainable development and improvement of economic welfare in rural areas. One of the effective strategies in this empowerment is through the development

of Micro, Small, and Medium Enterprises (MSMEs) based on local products. One of the products that has great potential to be developed in village communities is mosquito repellent spray. Mosquitoes are pests that not only interfere with comfort, but can also cause various diseases such as malaria, dengue fever, and chikungunya. In many rural areas, mosquito problems are often a significant health challenge. Therefore, effective and affordable mosquito repellent spray products can provide a useful solution. The development of MSMEs based on mosquito repellent spray products not only helps overcome these health problems, but can also contribute to the economic empowerment of village communities. By utilizing local ingredients and existing skills, communities can produce and market quality mosquito repellent sprays, while creating jobs and increasing local income. In this context, it is important to understand local potential, conduct training to the community, and build an effective marketing network. With these steps, it is hoped that MSMEs based on mosquito repellent spray products can have a sustainable positive impact on the village community, both in terms of health and economy.

## **RESEARCH METHODE**

This study applies a qualitative descriptive method by describing relevant research results regarding creative economic opportunities from mosquito spray product innovation. The qualitative descriptive method will present data systematically from sentences that are easy to understand (Rawi et al., 2019). This data collection technique is a literature study followed by a discussion of creative economy opportunities through the online FGD (Focus Group Discussion) method. Then provide conclusions from the results of the analysis qualitatively according to the data obtained. The process of developing mosquito spray product innovations includes the collection of lemongrass stems, the separation of ingredients with a set wet level. The separation or distillation method is carried out with a heating mantle, and continued with steam by paying attention to the time and temperature that has been set. Furthermore, the process of making an essential oil formula mixed with ethanol as much as 96% ad 10 mL, and continued with filtration. The final stage is product quality testing by including pH tests, and repellent/mosquito repellent tests (Taufik and Khatimah, 2023).

## **RESULT AND DISCUSSION**

The presence of mosquitoes in the environment can carry viruses and even dengue fever. Therefore, the innovation of mosquito repellent spray products made from lemongrass leaves can overcome these problems and become a

creative economy opportunity. Spray products made from lemongrass leaves (*Cymbopogon Citratus*) are effective products to prevent mosquito bites. This is evidenced by the presence of geraniol and citronella content that is able to prevent the spread of mosquitoes (Suratun and Wahyudi, 2019; Kuncoro and Hasibuan, 2020). The use of lemongrass leaf (*Cymbopogon citratus*) has compounds that affect the effectiveness of mosquito repellent, including alpha-pinene, limonene, citronella-al, citronella-ol, acetate, germacrene D., beta, geraniol, and ethanol (Agustina and Jamilah, 2021). Then the results of the mosquito repellent test in the F4 formula had an average concentration of 87.20%, and were also influenced by the high concentration of oil to determine long-term effectiveness (Kuncoro and Hasibuan)

Mosquito repellent products made from lemongrass leaves (*Cymbopogon Citratus*) are effective products to prevent mosquito bites. Actually, creative economy actors have produced products to prevent mosquito bites in the form of mosquito repellents, and lotions. The development of this product is a creative economy opportunity because it focuses on creating products or updating products according to creativity which is a pioneer for the global economy (Syahbudi and Muhammad, 2021). The existence of these products is a form of utilization owned by an area, where the plant is easily available in the surrounding environment.

In fact, the lemongrass plant (*Cymbopogon Citratus*) has been used as an anti-mosquito plant through a development training program to produce mosquito repellent products in the form of aromatherapy, therapeutic candles, oils, and even sprays. This is a new breakthrough as a creative economy opportunity based on the need to overcome the problem of mosquito bites that carry viruses and dengue (Malihah and Achiria, 2019; Dipahayu and Annurijati, 2022).

### **Village Community Empowerment**

Village community empowerment is a process that aims to increase the capacity and capabilities of village communities so that they can effectively manage and utilize their resources to improve their well-being. This process involves increasing knowledge, skills, and access to resources and opportunities. The main goal of empowerment is for village communities to become more independent, be able to make better decisions, and actively participate in economic and social development in their communities.

### **MSMEs (Micro, Small, and Medium Enterprises)**

MSMEs are a type of business that is categorized based on scale and size, which usually includes micro, small, and medium enterprises. MSMEs play an important role in the local economy because they often create jobs and utilize

local resources. MSMEs are a business or productive business that is run by individuals, groups, households, or small business entities that meet the standards as micro businesses. So, it can be concluded that this MSME is a business managed by people from the middle to lower class. In this context, MSMEs focus on the production of mosquito repellent spray products as an effort to increase the income and welfare of the village community.

The MSME Criteria are as follows:

1. Micro business is a business managed by a small family or individual (individual) with limited resources.
2. Small business is an independent business, not a branch or other subsidiary managed individually or a business entity. Although the scope is wider than that of micro businesses, it still focuses on the local/regional market.
3. Medium enterprises are called medium enterprises with a market reach that is certainly wider than the previous two criteria because it covers national and international markets.

### **Types of MSMEs**

Along with the development of the times and increasingly sophisticated technology, many kinds of MSME businesses have begun to emerge. That's why, to make it easier for MSME actors in Indonesia, until now the productive business has been divided into 5 types of businesses, namely:

- 1) Culinary Business
- 2) Fashion Business
- 3) Beauty Business
- 4) Agribusiness
- 5) Pharmaceutical business

Anti-mosquito spray products are a type of product designed to repel or kill mosquitoes. These products usually contain active ingredients that can reduce the risk of mosquito bites and diseases carried by mosquitoes, such as dengue fever or malaria. This product not only provides health protection for the community but also has market potential that can be used by MSMEs as a source of income.

Empowerment of village communities through the development of MSMEs based on mosquito repellent spray products is a strategic process in which village communities are given training, support, and access to resources to produce and market mosquito repellent spray products. It aims to improve the skills and capacity of village communities in managing their own businesses, while improving community health and well-being by reducing the risk of mosquito-borne diseases.

This is also influenced by the potential of human resources who have the potential to produce these products by procuring assistance and supporting creative economic opportunities. The activity carried out the processing of lemongrass extract into mosquito repellent herbs carried out from the socialization process and manufacturing assistance to help the economy through mosquito repellent product innovation (Permatasari and Afida, 2023). Then activities carried out in a similar way from the development of lemongrass-based mosquito repellent spray products provide access to creative economic opportunities because they are related to creativity and product innovation from pre-existing products (Melviani et al., 2023; Siagin et al., 2023). Therefore, this product innovation provides certainty for the creative economy/MSMEs, and this product maintains health or environmental aspects because it is environmentally friendly.



**Figure 1.**  
**Anti-Mosquito Spray Design**

The opportunity for the creative economy of this product is very large because it is economically supported by knowledge capital to manage lemongrass plants into mosquito repellent spray products which are carried out by socialization/training/mentoring, innovation and creativity in the creation of mosquito repellent products, and provide a social impact on both creative economy actors/MSMEs/consumers regarding the quality of life for health from mosquito spray protection. At the same time, it has a big impact on the economy which affects the total gross domestic product, and the expansion of employment if carried out optimally/sustainability. Especially the continuous treatment of market surveys on the demand for mosquito repellent spray products in circulation.

The empowerment carried out in this study is the use of e-commerce as the development of Micro, Small, and Medium Enterprises (MSMEs) with a focus on mosquito repellent spray products, as well as to increase capacity. The

results of this program are expected to increase the income and welfare of the village community, as well as provide solutions to health problems caused by mosquitoes. By empowering village communities through the development of MSMEs, it is hoped that economic independence will be created and a sustainable quality of life will be improved.

E-commerce (short for electronic commerce) is the process of buying and selling products or services over the internet. In e-commerce, transactions are carried out electronically through websites, apps, or other online platforms. It includes different types of trade, from the sale of physical goods, such as clothing and electronics, to digital services, such as music streaming or the provision of financial services.

The advantages or disadvantages of using e-commerce are:

- 1) Customers can shop at any time.
- 2) Transactions can be made from anywhere without the need to visit a physical store.

Customers can access a wide range of products from various sellers around the world. Both sellers and buyers can save on operational and shipping costs.

## CONCLUSION

The conclusion of empowering village communities through the development of MSMEs based on mosquito repellent spray products is as follows:

1. This program can improve the economic welfare of the village community by creating new business opportunities and increasing income through the production and marketing of mosquito repellent spray.
2. Village communities acquire new skills in terms of production, packaging, and marketing of products, which can be applied in other ventures in the future.
3. Mosquito repellent spray products have the potential to reduce the risk of diseases caused by mosquito bites, such as malaria and dengue fever, thus having a positive impact on public health.
4. The project encourages collaboration within the community, promotes solidarity, and builds an entrepreneurial spirit at the local level.
5. With training and support, MSMEs can improve product quality and competitiveness in the market, both local and regional.
6. Overall, empowerment through the development of product-based MSMEs

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