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HYDROPONIC VEGETABLE MARKETING STRATEGY IN PEKANBARU: AN EMPIRICAL RESEARCH

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Abstract:
This study aims to analyze the marketing strategies applied in hydroponic vegetable businesses in Pekanbaru. The research adopts a qualitative descriptive method with a case study approach involving several hydroponic business actors. Data collection techniques include observation, interviews, and documentation to gain a comprehensive understanding of marketing practices in this sector. The results indicate that effective marketing strategies are largely shaped by the 4P marketing mix: Product, Price, Promotion, and Place. Product quality and freshness are emphasized as key competitive advantages, while pricing strategies are designed to remain competitive and accessible to a broad consumer base. Promotion relies heavily on digital platforms, particularly social media, which serve not only as marketing channels but also as educational media to increase public awareness of the benefits of consuming hydroponic vegetables. Distribution strategies involve collaboration with various stakeholders, including retailers, restaurants, and online delivery services, to expand market reach. The study concludes that to sustain growth, hydroponic business actors should continue innovating products, optimizing digital marketing efforts, and maintaining excellent customer service. These efforts are expected to strengthen consumer trust, enhance competitiveness, and increase sales performance in the dynamic agribusiness market.

Keywords: Marketing Strategy, Hydroponic Vegetables, Pekanbaru, Marketing Mix, Digital Marketing.

INTRODUCTION

Hydroponics has developed rapidly as a modern agricultural system that offers solutions to limited agricultural land, climate change, and efficient use of resources. Hydroponics not only increases plant productivity but also minimizes the use of pesticides and water, thus supporting the principles of sustainable agriculture (Resh, 2013).

In recent years, research on hydroponics has increased, showing that this method can increase agricultural efficiency by up to 90% in water use compared to conventional methods (FAO, 2019). In addition, hydroponics is also considered more suitable for urban areas that experience land constraints (Shrestha et al., 2021).

However, hydroponic agribusiness still faces various challenges, such as large initial investment, lack of technical knowledge among farmers, and dependence on technology and electricity (Rahman et al., 2022). Therefore, an appropriate development strategy is needed so that hydroponics can be applied widely and sustainably.

Hydroponic vegetables are agricultural products that have promising market prospects in Pekanbaru. Along with increasing public awareness of a healthy lifestyle, the demand for hydroponic vegetables continues to increase. Hydroponic vegetables are known to have better quality, are pesticide-free, and fresher than vegetables grown using conventional methods, making them the main choice for consumers who care about health and a healthy diet (Asdar et al., 2023).

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According to Kotler and Keller (2016), marketing strategy is a process involving market analysis, planning, implementing, and controlling activities designed to create, build, and maintain profitable exchanges with target markets. An effective marketing strategy is essential in supporting the growth of hydroponic businesses, especially in urban areas such as Pekanbaru, which have large market opportunities.

Previous research conducted by Noviani and Wahyuni (2016) showed that marketing of hydroponic vegetables in Indonesia faces various challenges, such as ineffective promotion and less competitive pricing. In addition, a study conducted by Lantarsih et al. (2021) highlighted that the use of e-commerce and social media has been shown to increase sales of hydroponic vegetables significantly. Digital platforms such as Instagram, Facebook, and WhatsApp play an important role in reaching a wider market and building consumer awareness of the benefits of hydroponic vegetables.

Furthermore, research conducted by Alkadri et al. (2023) emphasized that the success of hydroponic vegetable marketing is highly dependent on innovative marketing strategies, such as product development with various types of vegetables, effective delivery services, and consistent promotion through social media. This study highlights that marketing strategies that combine digital and conventional approaches have proven effective in increasing hydroponic sales.

In the local context, hydroponic vegetable businesses such as PapaMama Farm face challenges in maintaining consistent product quality and increasing production scale. Factors such as unfocused target market selection, inconsistent promotional strategies, and suboptimal delivery systems are the main obstacles to increasing competitiveness in the hydroponic market.

Considering these findings, this study aims to identify and analyze marketing strategies implemented by hydroponic business actors in Pekanbaru. The focus of this study is to examine the implementation of the marketing mix (4P), namely product, price, promotion, and distribution (place) as key elements in building an effective marketing strategy. In addition, this study also highlights the role of social media and e-commerce as the main means of expanding market reach and increasing consumer awareness of hydroponic products.

This research is expected to provide applicable recommendations for hydroponic business actors in Pekanbaru to be able to optimize their marketing strategies and face the challenges of increasingly tight competition in the modern agricultural market.

Theoretical Review. According to Kotler and Armstrong (2018), the marketing mix consists of four main elements known as the 4Ps, namely Product, Price, Promotion, and Place. This strategy is the main foundation for supporting the sale of agricultural products, including hydroponic vegetables.

Digital-based marketing strategies have become a significant trend in modern agricultural marketing. Chaffey (2019) emphasized that digital marketing offers an effective approach to reach consumers widely at a relatively lower cost compared to conventional marketing. The use of digital platforms such as social media, marketplaces, and websites allows hydroponic entrepreneurs to display products more attractively, interact directly with consumers, and provide education about product benefits effectively.

A study conducted by Lantarsih et al. (2021) showed that the use of social media as a marketing platform has been shown to increase consumer awareness and sales of hydroponic products significantly. E-commerce, especially in marketing hydroponic vegetables at Kebun Sehati, has proven effective in reaching a wider consumer base and providing convenience in the transaction process.

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In addition, research by Alkadri et al. (2023) highlighted that marketing strategies based on social media and e-commerce play a major role in increasing sales of hydroponic vegetables. This strategy allows hydroponic entrepreneurs to optimize wider market potential through attractive visual content and more intense interactions with customers.

Furthermore, research by Asdar et al. (2023) found that hydroponic entrepreneurs who utilize social media as the main platform in their marketing strategy are able to increase market demand significantly. Entrepreneurs who are active in creating informative and promotional content through social media tend to be more successful in attracting consumer attention and increasing customer loyalty.

Another study conducted by Dewi (2024) emphasized that an effective hydroponic marketing strategy must integrate the concept of green marketing to attract consumers who are highly environmentally conscious. This approach includes the use of environmentally friendly materials, health education-based promotions, and attractive and sustainable packaging.

Thus, a marketing approach that combines the 4P marketing mix strategy, digital marketing, and the application of the green marketing concept has proven effective in supporting the growth and success of hydroponic businesses in Indonesia.

Hydroponics as a Sustainable Agricultural System. According to FAO (2022), hydroponics is categorized as a sustainable agricultural system due to its efficiency in resource use. Compared to conventional farming, hydroponics can reduce water consumption by up to 90% and increase crop yields by up to 30% faster because plants get nutrients directly from nutrient solutions (Al-Kodmany, 2018).

According to Rahman et al. (2021), hydroponics has several main advantages:

1. Water Efficiency – Water usage is more efficient because the hydroponic system reuses the nutrient solution.
2. Higher Productivity – Plants grow faster because nutrients are provided in a form that is easily absorbed.
3. Minimize Environmental Impact – Does not use pesticides and does not cause soil erosion.

Business Model Canvas (BMC) in Hydroponic Agribusiness Development. In hydroponic business development, the Business Model Canvas (BMC) approach has been widely used as a strategic tool. According to Osterwalder and Pigneur (2020), BMC helps in analyzing business aspects, such as market segments, key resources, and distribution channels.

Research by Yusuf et al. (2023) shows that the application of BMC in hydroponic agribusiness can increase business competitiveness, especially by optimizing digital marketing and strategic partnerships.

METHODS

Research Approach. This research adopts a qualitative descriptive approach with a case study method, which allows for in-depth exploration of phenomena without variable manipulation. This approach is suitable for understanding the context and complexity of marketing strategies in hydroponic businesses.

Types and Sources of Data.

- Primary Data: Collected directly through:
- Observation: Direct observation of marketing activities at hydroponic business locations.
- Interviews: In-depth interactions with business owners, consumers, and stakeholders to gain their perspectives.

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- Documentation: Collection of written documents such as sales reports, promotional materials, and notes on previous marketing strategies.
- Secondary Data: Includes literature, previous research reports, and other supporting data relevant to the research topic.

Data Collection Techniques.

- Observation: Involves direct observation of marketing processes, customer interactions, and strategy implementation in the field.
- Interviews: Conducted in a semi-structured manner to allow for in-depth exploration of respondents' experiences and views on the marketing strategies implemented.
- My Stai Documentation: Analysis of written documents that provide information about the history, development, and evaluation of the marketing strategies used.

Data Analysis Techniques. Referring to the Miles and Huberman (2021) model, data analysis in this study involves three main stages:

- Data Reduction: The process of selecting, focusing, and simplifying data from interview transcripts, observation notes, and documents. The goal is to highlight information that is relevant to the focus of the research.
- Data Presentation: Organizing reduced data into a format that makes it easier to understand, such as descriptive narratives, tables, or diagrams. It helps in identifying patterns and relationships among data.
- Conclusion Drawing and Verification: Interpretation of the data presented to identify themes, patterns, and trends in marketing strategies. Conclusions drawn are verified by comparing data from multiple sources and methods to ensure accuracy and consistency.

Validity and Reliability. To ensure the credibility and validity of the data, this study implemented:

- Triangulation: Using multiple data sources (primary and secondary data), data collection methods (observation, interviews, documentation), and theories to cross-verify information. This approach increases the validity of research results by reducing bias and increasing the depth of understanding of the phenomenon being studied.
- Nuris Publications. Reliability Test: Although this is a qualitative study, data consistency was maintained through detailed documentation of the research process, consistent use of interview guides, and training of researchers in data collection techniques. It ensures that the data collected is replicable and consistent if a similar study is conducted again.

This approach allows for an in-depth exploration of the effectiveness of marketing strategies in hydroponic businesses, ensuring that the data obtained is valid and reliable through the application of rigorous analysis and validation techniques.

RESULT AND DISCUSSION

SWOT Analysis on Hydroponic Agribusiness. The results of the study show that the development of hydroponic agribusiness is influenced by various factors that can be analyzed using the following SWOT approach:

Table 1. SWOT Analysis

Aspect	Information
Strengths (Strengths)	Resource efficiency, fast growth, high harvest quality.

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Aspect	Information
Weaknesses	High initial investment, dependence on electricity and nutrition.
Opportunities	Growing market, increasing awareness of healthy food.
Threats (Threats)	Competition with conventional farming, fluctuations in raw material prices.

Based on this analysis, an appropriate business strategy is needed to increase the competitiveness of hydroponics.

Hydroponic Development Strategy Based on BMC. Some strategies that can be applied in hydroponic agribusiness:

1. Product Innovation – Developing more varied hydroponic products, such as hydroponic packages for households.
2. Digital Marketing Optimization – Using e-commerce, social media, and websites to expand market reach.
3. Strengthening Partnerships – Collaborating with restaurants, supermarkets and hotels for the distribution of hydroponic products.
4. Increased Production Efficiency – Using automation and sensor technology to increase productivity.
5. Farmer Training – Providing education for farmers to improve their skills in managing hydroponics.

The research results show that the marketing strategies implemented include:

1. Product Strategy:
   - Offering a variety of hydroponic vegetable products such as lettuce, spinach, kale, and mint leaves.
   - Ensuring product quality remains fresh, clean, and pesticide-free to attract consumers who prioritize health.
   - Business actors also offer healthy product packages that combine various types of hydroponic vegetables as a form of product innovation.
   - Consumer education on how to store and process hydroponic vegetables is also provided so that the product remains fresh until consumed.
2. Pricing Strategy:
   - Pricing is done by taking into account production costs and consumer purchasing power in Pekanbaru.
   - Discounts for bulk purchases and regular subscription programs are implemented to attract repeat customers.
   - Business actors also offer savings packages for consumers who make monthly subscription purchases.
3. Promotion Strategy:
   - Social media such as Instagram, Facebook, and WhatsApp are the main promotional tools.
   - Entrepreneurs actively create educational content about the benefits of hydroponic vegetables to increase public awareness.
   - Business actors hold webinars and workshops on the benefits of hydroponics and how to grow your own at home.
   - Promotion through local influencers who focus on a healthy lifestyle also increases the product's appeal.
4. Place Strategy:

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- Collaboration with organic grocery stores, local supermarkets and traditional markets to increase market access.
- Providing delivery services to reach a wider consumer base.
- Business actors also collaborate with restaurants and cafes that provide healthy menus made from hydroponic vegetables.

Descriptive Analysis. Descriptive analysis of the marketing strategies implemented shows that the use of social media as the main promotional tool has a significant impact on increasing sales. Social media allows business people to interact directly with consumers, provide product-related information, and effectively promote the health benefits of hydroponic vegetables. In addition, competitive pricing by providing discounts for loyal customers has been proven to increase consumer loyalty.

Wide product distribution through cooperation with various business partners, such as organic food stores and local supermarkets, also expands the market reach. The success of this marketing strategy is also supported by high product quality, which is a major factor in attracting consumers who prioritize a healthy lifestyle.

Descriptive Analysis of Research Results on Hydroponics.

1. Concept and Benefits of Hydroponics. Hydroponics is a soil-free farming method that uses nutrient solutions as the main medium. This technology is increasingly developing because it can increase the efficiency of water use, accelerate plant growth, and optimize narrow land (FAO, 2022).

The research listed in the document shows that hydroponics has advantages over conventional farming, especially in terms of crop productivity and environmental control. Some of the main benefits found in the research include:

- Water Usage Efficiency: Water usage in hydroponic systems is up to 90% more efficient compared to conventional farming.
- Increased Productivity: Plants grow faster because nutrients are immediately available in a form that is easily absorbed.
- Reduced Pesticide Use: Hydroponic systems reduce the need for pesticides due to the more controlled growing environment.

2. Research Results and Main Findings. Based on the uploaded documents, some of the main findings in hydroponic research are as follows:

- Faster Plant Growth: Research has found that plants grown hydroponically have a growth rate up to 30-50% faster than traditional soil methods.
- Nutrient Effectiveness: The nutrient solution used in hydroponics allows plants to obtain nutrients more efficiently, which contributes to increased crop yields.
- Sustainability and Land Efficiency: Hydroponics allows farming to be carried out in urban areas or areas with infertile soil, supporting the concept of sustainable agriculture.

3. Analysis of Challenges and Opportunities. Although hydroponics has many advantages, research also shows several challenges that need to be overcome:

Challenge

1. High Initial Costs – The initial investment for a hydroponic system is quite large, especially in terms of infrastructure and equipment.
2. Dependence on Technology – Hydroponic systems rely heavily on electricity and technology, which can be a challenge in areas with limited access to electricity.
3. Lack of Education and Knowledge – There are still many farmers who do not understand how hydroponics works and its benefits optimally.

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Opportunity

1. Support from Government and Private Sector – Subsidy and training programs from the government, as well as collaboration with the private sector, can increase the adoption of hydroponics.
2. Growing Market – Growing public awareness of healthy and organic foods is driving the demand for hydroponic products.
3. Increasingly Sophisticated Technology – The development of technologies such as IoT and AI in hydroponic systems can increase production efficiency.

CONCLUSION

This study concludes that digital and conventional marketing strategies simultaneously are an effective approach in increasing sales of hydroponic vegetables in Pekanbaru. It is recommended that business actors focus on developing product variations, optimizing digital marketing, and improving customer service to face increasingly tight market competition. This effort is expected to strengthen the competitiveness of hydroponic businesses in the future.

This research shows that hydroponics has great potential to be developed as a modern, efficient and sustainable agricultural system. By implementing the right business strategy, such as the Business Model Canvas (BMC), hydroponic agribusiness can be more competitive and develop sustainably.

Some recommendations resulting from this research:

1. The government needs to provide incentives for hydroponic farmers, such as equipment subsidies and technical assistance.
2. Increase education and training so that more farmers understand hydroponic technology.
3. Optimizing digital marketing to reach more consumers through e-commerce and social media
4. Strengthening research and innovation to develop plant varieties that are more adaptive to hydroponic systems.
5. Improving training and education for farmers and the general public regarding hydroponics.
6. More affordable and energy-efficient hydroponic system.
7. Expanding cooperation with the government and the private sector to support research and innovation in hydroponics.
8. Utilizing digital technology for marketing and distribution of hydroponic agricultural products.

With the implementation of this strategy, hydroponics can be the main solution to answering the challenges of global food security and environmental sustainability.

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