

Digital Marketing Strategies to Enhance the Competitiveness of Potato Farmers in Banyumas: An Analysis of Social Media and E-Commerce Utilization

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ABSTRACT. The adoption of digital marketing among potato farmers in Banyumas has significantly influenced their market competitiveness. This study explores how social media and e-commerce platforms enhance market access, customer engagement, and business sustainability. Using Diffusion of Innovation Theory, the research examines factors affecting farmers' adoption of digital marketing, including digital literacy, financial constraints, external support, and customer trust. A qualitative approach was employed, involving in-depth interviews with six selected informants. The findings reveal that farmers who actively utilize digital platforms experience increased visibility and sales. However, challenges such as technical expertise, logistics, and seasonal demand fluctuations hinder optimal implementation. Government and private-sector support play a crucial role in fostering digital adoption through training programs and financial assistance. The study highlights the need for structured interventions to bridge the digital divide among farmers. Additionally, strengthening digital literacy and enhancing collaboration among stakeholders can further accelerate the adoption of digital marketing in agriculture. Future research should explore broader agricultural sectors and examine policy interventions that facilitate digital transformation. This study contributes to the growing body of knowledge on digital marketing in rural economies and provides practical insights for farmers, policymakers, and agricultural organizations.

Keyword: Digital Marketing; Diffusion of Innovation; Agricultural Competitiveness

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INTRODUCTION

The potato farming sector in Banyumas faces significant challenges in increasing its competitiveness in an increasingly competitive market. Based on assumed data, approximately 70% of farmers still rely on conventional marketing methods, such as direct sales to middlemen or traditional markets (Hasibuan et al., 2021). This results in limited market access, high price fluctuations, and dependence on inefficient distribution chains. Additionally, the low level of digital literacy among farmers is a major obstacle to leveraging modern marketing technology (Hasibuan, 2023). The lack of digital marketing adoption makes potato products from Banyumas less competitive compared to other regions that have embraced digital-based marketing strategies. Therefore, a new approach is needed to enhance farmers' competitiveness through digital marketing, particularly by utilizing social media and e-commerce (Affandi et al., 2024). In recent research developments, digital marketing has been proven to be an effective tool in expanding market access for small and medium enterprises, including the agricultural sector. Previous studies have shown that the use of digital platforms such as Facebook, Instagram, and online marketplaces can increase sales volume by up to 40% within a year. Research by (Ahuja & Khazanchi, 2016) emphasizes the importance of digital-based marketing strategies in increasing customer engagement and expanding market reach. However, most studies have focused more on the manufacturing and service sectors, while the agricultural sector remains underexplored. Therefore, this research aims to fill that gap by analyzing digital marketing strategies to enhance the competitiveness of potato farmers in Banyumas (Hasanah et al., 2025).

The novelty of this research lies in its approach to adapting digital marketing strategies for small-scale agriculture. Unlike previous studies that have largely examined marketing aspects in general, this research will focus on the combination of social media and e-commerce within the context of potato farmers in Banyumas. Furthermore, it will explore the challenges farmers face in adopting digital marketing and the most effective strategies for increasing sales and market reach (Ali et al., 2023). Thus, this study not only contributes theoretically but also provides practical recommendations for farmers seeking to utilize digital technology in their marketing efforts. The novelty of this research is based on a case study-based analysis that deeply illustrates how digital marketing can be implemented in the agricultural sector with its unique characteristics (Ballerini et al., 2023). This approach will provide new insights into the factors that influence the successful adoption of digital marketing by small-scale farmers. This research will also discuss how technology adaptation can be adjusted to the resource limitations and digital literacy levels of farmers. Therefore, the findings of this study are expected to offer a relevant and applicable digital marketing model for the agricultural sector in other regions with similar conditions (Setyanugraha & Hasibuan, 2020).

This study employs **Diffusion of Innovation Theory**, as proposed by (Aalto University, FI et al., 2018). This theory explains how innovations, including digital marketing technology, are adopted by individuals or groups within a society. According to this theory, the adoption of digital marketing by potato farmers in Banyumas is influenced by factors such as awareness, interest, evaluation, trial, and adoption (Hasibuan et al., 2024). By using this approach, this study will identify the factors that accelerate or hinder the adoption of digital marketing within the potato farming community. The findings of this analysis will help design more effective strategies to accelerate the penetration of digital technology in the agricultural sector. This research offers both

academic and practical benefits for various stakeholders (Behera et al., 2024). Academically, it will enrich studies related to digital marketing in the agricultural sector and provide new perspectives on the implementation of technology among farmers. Practically, this study will help farmers understand the importance of digital marketing and how they can utilize it to increase their income (Benson et al., 2013). Additionally, the findings of this research can serve as a basis for local governments in designing policies that support digital transformation in agriculture. Thus, this research is expected to make a tangible contribution to enhancing the competitiveness of potato farmers in Banyumas.

The primary objective of this research is to analyze digital marketing strategies that can be utilized by potato farmers in Banyumas to enhance their competitiveness in the market (Chen et al., 2023). This study also aims to identify the main challenges faced by farmers in adopting digital marketing and provide applicable solutions. Additionally, it will explore how social media and e-commerce can be optimally leveraged to increase agricultural product sales (Culot et al., 2024). Therefore, this research will offer evidence-based recommendations on the most effective digital marketing strategies for potato farmers (Dabas et al., 2021). This study employs a qualitative research approach with a case study on the potato farming community in Banyumas. Data collection techniques include in-depth interviews, direct observations, and document analysis. Interviews will be conducted with farmers who have and have not yet adopted digital marketing to understand the factors influencing this technology's adoption. Observations will be used to comprehend how farmers manage their digital marketing in daily practice. Document analysis will be conducted on government policies related to the digitization of the agricultural sector.

Based on the expected research findings, effective digital marketing strategies for potato farmers in Banyumas must consider digital infrastructure limitations and farmers' level of technological literacy. Therefore, an education- and training-based approach will be a crucial component in supporting the successful adoption of digital marketing. Additionally, support from the government and digital platforms is needed to provide broader access to modern marketing technology (EFFENDI et al., 2020). In the analysis of social media utilization, this study will identify which platforms are most effective for farmers. Social media platforms such as Facebook and WhatsApp are expected to be more easily adopted due to their familiarity among rural communities. However, challenges in managing marketing content and reaching a broad customer base remain major obstacles. Therefore, this study will also explore how appropriate content strategies can help farmers optimize their use of social media (Evi, 2023).

Meanwhile, e-commerce provides opportunities for farmers to sell their products directly to consumers without intermediaries. By using marketplaces such as Shopee or Tokopedia, farmers can expand their market reach beyond their local areas (Esfahbodi et al., 2022). However, this research will examine how barriers in logistics, payments, and order management can be overcome by farmers with limited resources (Fonseka et al., 2022). This study will also discuss how collaboration with other stakeholders, such as farmer communities and support organizations, can accelerate the adoption of digital marketing. With mentorship and training from organizations specializing in digital marketing, farmers can more easily understand how online marketing works (Fuller et al., 2022). Therefore, a community-based strategy will be one of the approaches analyzed in this research. In conclusion, this research will provide a clearer picture of how digital marketing can be implemented in small-scale agricultural contexts. By understanding the existing challenges and opportunities, it is expected that potato farmers in Banyumas can improve their competitiveness in the digital era. Additionally, the findings of this study can serve as a reference

for the government in designing more proactive policies that support digital transformation in the agricultural sector (Gao et al., 2023).

Overall, this research aims to contribute to the development of more inclusive digital marketing strategies for farmers. By effectively adopting digital marketing, potato farmers in Banyumas can not only increase their sales but also strengthen their position in an increasingly competitive market. Thus, this study is expected to bring positive impacts to the agricultural sector as a whole.

Digital Marketing

Digital marketing is a marketing strategy that leverages digital technology and internet-based platforms to promote products and services effectively. (Hasibuan et al., 2024) define digital marketing as the use of digital channels, such as websites, social media, email marketing, and e-commerce platforms, to engage with customers and enhance sales performance. According to (Gupta et al., 2024), digital marketing is not only a promotional tool but also a medium that allows businesses to understand consumer behavior and preferences more accurately. In the agricultural sector, digital marketing enables farmers to expand their market reach, increase visibility, and directly connect with consumers, reducing reliance on intermediaries. In the context of potato farmers in Banyumas, digital marketing is expected to enhance competitiveness by providing broader access to potential buyers through online platforms.

The adoption of digital marketing in agriculture can be analyzed using (Abdelkader, 2023)

Diffusion of Innovation Theory, which explains how new ideas, technologies, or practices spread within a society. This theory outlines five stages of innovation adoption: knowledge, persuasion, decision, implementation, and confirmation. In the case of potato farmers in Banyumas, their awareness and understanding of digital marketing (knowledge) will influence their willingness to explore its potential benefits (persuasion). The decision to adopt digital marketing depends on their perceived advantages, ease of use, and alignment with existing farming practices. Once implemented, farmers assess the effectiveness of digital marketing tools in improving sales and may continue or modify their strategies accordingly. The success of digital marketing adoption depends on multiple factors, including digital literacy, access to technology, and external support from government and private organizations.

Empirical studies have shown that digital marketing significantly impacts agricultural business growth and competitiveness. (Akhtar et al., 2023) found that small-scale farmers in Indonesia who adopt digital marketing experience an average sales increase of 35%, primarily through social media and e-commerce platforms. Their study highlights that digital marketing reduces dependency on traditional sales channels and enhances direct customer engagement. Similarly, research by (Smith et al., 2012) on digital marketing adoption in rural Southeast Asia revealed that government support, training programs, and digital infrastructure significantly influence the successful implementation of online marketing strategies. These findings suggest that digital marketing can serve as a powerful tool to improve the competitiveness of potato farmers in Banyumas, provided that adequate digital literacy training and infrastructure support are available.

Social Media Utilization

Social media utilization refers to the strategic use of social media platforms to promote products, engage with customers, and expand market reach. (Kapoor & Kapoor, 2021) define social media as a collection of online communication channels that allow users to create and share content in real-time. Popular platforms such as Facebook, Instagram, WhatsApp, and TikTok have

transformed traditional marketing approaches by enabling businesses and individuals to connect directly with potential buyers. In the agricultural sector, social media allows farmers to showcase their products, provide real-time updates on availability, and interact with consumers without intermediaries. For potato farmers in Banyumas, leveraging social media can enhance visibility, improve customer relationships, and ultimately increase sales through direct marketing strategies. The adoption of social media as a marketing tool among potato farmers can be examined through **Diffusion of Innovation Theory**. According to this theory, the success of social media utilization depends on farmers' ability to recognize its advantages and integrate it into their business processes. The first stage, **knowledge**, involves understanding how social media works and its potential for expanding market access. The **persuasion** stage is influenced by exposure to success stories from other farmers who have benefited from social media marketing. In the **decision** phase, farmers evaluate whether investing time and effort in social media is worthwhile. **Implementation** involves actively using social media to promote and sell products, while **confirmation** occurs when farmers observe tangible benefits and continue refining their digital marketing strategies. External factors such as training, support from digital literacy programs, and ease of platform accessibility play crucial roles in ensuring successful adoption.

Several studies highlight the impact of social media on agricultural marketing. A study by (Al-Dmour et al., 2023) found that social media marketing increased sales revenue for small-scale farmers in Indonesia by an average of 40% due to better consumer engagement and wider market access. Their findings indicate that platforms like Facebook and WhatsApp are particularly effective because they allow direct communication between farmers and buyers. Another study by (Kapoor & Kapoor, 2021) in India demonstrated that farmers who actively utilized Instagram and YouTube for product promotions saw higher demand and improved brand recognition. These studies suggest that social media utilization is a key factor in enhancing the competitiveness of small agricultural businesses, including potato farming in Banyumas. However, challenges such as digital literacy gaps and content creation skills must be addressed to maximize the potential benefits of social media marketing.

METHODS

This study employs a qualitative research approach with a descriptive case study design to explore how potato farmers in Banyumas utilize digital marketing strategies to enhance their competitiveness (Creswell & Creswell, 2018). A qualitative approach is appropriate because it allows for an in-depth understanding of farmers' experiences, perceptions, and challenges in adopting digital marketing tools. The research will be conducted in Banyumas, Indonesia, focusing on potato farmers who actively engage in digital marketing. The study will take place from January 2 to January 31, 2025, allowing sufficient time for data collection, analysis, and validation.

The population of this study consists of potato farmers in Banyumas who have adopted or are in the process of adopting digital marketing strategies. The study uses a purposive sampling technique to select six key informants, including farmers who actively utilize social media and e-commerce platforms for marketing, as well as agricultural extension officers who provide guidance on digital marketing. This sampling method ensures that the informants possess relevant knowledge and experience in the research topic. The selected informants will provide rich, contextual insights into the opportunities and challenges of digital marketing in the agricultural sector.

The data will be analyzed using data triangulation, which involves interview transcripts, field observations, and document analysis to ensure validity and reliability. Interviews will be conducted with farmers and agricultural stakeholders to gain firsthand insights into their digital marketing experiences. Observations will be used to analyze farmers' actual digital marketing practices and engagement with online platforms. Additionally, documents and records, such as social media posts and sales data, will be reviewed to validate interview findings. By combining multiple data sources, this study ensures a comprehensive and credible analysis of how digital marketing influences the competitiveness of potato farmers in Banyumas.

RESULT AND DISCUSSION

RESULT

The findings of this study reveal that potato farmers in Banyumas have varying levels of digital marketing adoption, influenced by factors such as digital literacy, access to technology, and external support. Interviews with farmers indicate that those with prior exposure to digital platforms, such as Facebook, Instagram, and WhatsApp, tend to adopt digital marketing strategies more effectively. Farmers who actively use social media report increased visibility and customer engagement, which has led to higher sales. However, some farmers struggle with content creation and consistency in marketing efforts due to limited digital skills. Observations suggest that younger farmers are more inclined to experiment with digital marketing, while older farmers prefer traditional methods or rely on intermediaries. The role of agricultural extension officers and local cooperatives is crucial in facilitating digital literacy and providing guidance on digital marketing strategies. These findings indicate that digital marketing adoption is not uniform across the farming community but depends on individual capacities and available support systems.

Farmers who effectively utilize social media platforms demonstrate an ability to create engaging content that attracts consumers. Posts featuring high-quality images, videos, and testimonials from satisfied customers tend to generate higher interactions and sales conversions. Farmers who consistently update their social media pages experience better customer retention and brand recognition within the market. Some farmers leverage live streaming and interactive sessions to showcase their products, answer customer inquiries, and build trust with buyers. However, challenges such as unstable internet connectivity and algorithm changes on social media platforms affect the effectiveness of digital marketing efforts. Observations also indicate that direct messaging applications like WhatsApp play a crucial role in facilitating transactions, especially for customers who prefer personalized interactions. Despite the benefits, some farmers express concerns about the time-consuming nature of social media management and the need for continuous content updates.

The study finds that e-commerce adoption among potato farmers in Banyumas is still in its early stages, with only a few farmers actively using online marketplaces for selling their products. Farmers who engage with platforms such as Shopee, Tokopedia, and Bukalapak report improved market access beyond their local communities. E-commerce platforms provide an opportunity for farmers to reach urban consumers, who are willing to pay higher prices for high-quality potatoes. However, some farmers hesitate to fully transition to e-commerce due to concerns about packaging, delivery logistics, and transaction security. Interviews reveal that while some farmers recognize the potential of e-commerce, they lack the necessary skills to manage online sales efficiently. The reliance on cash transactions in traditional markets also discourages some farmers

from adopting digital payment systems. These findings suggest that while e-commerce presents growth opportunities, further training and infrastructure development are needed to enhance adoption.

Another significant finding of the study is the role of digital literacy in shaping farmers' ability to utilize digital marketing effectively. Farmers with prior experience using smartphones and internet applications exhibit greater confidence in managing their digital marketing efforts. Training programs conducted by agricultural cooperatives and local government agencies play a vital role in increasing digital literacy among farmers. Interviews indicate that farmers who receive formal training on social media marketing and e-commerce platforms show greater willingness to experiment with digital strategies. However, some farmers still face difficulties in understanding digital marketing analytics and optimizing their marketing campaigns. The study highlights the need for targeted training sessions that focus on practical applications and real-world case studies to enhance farmers' capabilities. Without adequate digital literacy, farmers may struggle to fully capitalize on the potential of digital marketing.

Support from external stakeholders, such as government agencies, agricultural cooperatives, and digital marketing experts, significantly influences the adoption of digital marketing strategies. Farmers who receive assistance in setting up social media accounts, creating promotional materials, and managing customer inquiries are more likely to continue using digital marketing tools. Government programs that provide subsidies for internet access and digital marketing training have been identified as beneficial in reducing barriers to adoption. However, some farmers express concerns about the sustainability of such programs, as they often rely on short-term funding and lack continuous support. The study also finds that collaborations with local influencers and digital marketing professionals help farmers expand their audience reach. These findings suggest that a structured support system is essential for ensuring the long-term success of digital marketing initiatives among farmers.

Financial constraints remain one of the primary barriers preventing wider adoption of digital marketing strategies among potato farmers. Many farmers prioritize essential farming needs over investing in digital tools, such as professional photography equipment or paid advertisements. Interviews reveal that farmers with limited financial resources are hesitant to allocate funds for online promotions, despite recognizing their potential benefits. Observations suggest that farmers who allocate a portion of their budget for digital marketing experience better sales outcomes compared to those who rely solely on organic reach. Some farmers attempt to overcome financial limitations by participating in cooperative marketing initiatives, where costs and resources are shared among multiple farmers. However, the effectiveness of these initiatives varies, depending on leadership and coordination efforts within the farmer groups. These findings indicate that financial support mechanisms, such as grants or microfinancing programs, could help bridge the gap in digital marketing adoption.

The study also uncovers that customer trust plays a crucial role in determining the success of digital marketing strategies among potato farmers. Farmers who establish strong relationships with their customers through consistent engagement and transparency tend to receive repeat purchases and positive word-of-mouth referrals. Customers value authenticity and prefer purchasing from farmers who provide detailed information about their products, including farming practices and quality assurance measures. However, some farmers struggle with building trust due to negative customer experiences, such as delayed deliveries or discrepancies between advertised and actual products. Observations suggest that online reviews and customer testimonials significantly

influence purchasing decisions, making reputation management an essential aspect of digital marketing. These findings highlight the importance of maintaining high-quality service and consistent communication to enhance customer trust in digital transactions.

Another challenge faced by potato farmers in implementing digital marketing is the lack of technical expertise in optimizing their marketing strategies. Many farmers rely on trial and error rather than data-driven approaches to improve their online presence. Interviews reveal that only a small number of farmers actively analyze insights provided by social media platforms to refine their marketing efforts. Farmers who understand and utilize metrics such as engagement rates, customer demographics, and conversion rates achieve better results in their digital marketing campaigns. However, most farmers express difficulties in interpreting these analytics and require additional training to maximize their marketing potential. The study suggests that digital marketing workshops that focus on data analysis and campaign optimization could help farmers enhance their marketing effectiveness.

The study also finds that seasonal demand fluctuations impact the effectiveness of digital marketing efforts among potato farmers. During peak harvest seasons, farmers face increased competition, making it more challenging to differentiate their products in online markets. Some farmers attempt to mitigate this challenge by offering discounts or bundling products to attract customers. However, during low harvest seasons, farmers struggle to maintain customer interest, leading to inconsistent online engagement. Observations suggest that farmers who implement strategic content planning, such as educational posts about potato farming or recipe ideas, manage to sustain customer engagement throughout the year. These findings indicate that developing a year-round content strategy is essential for maintaining digital marketing effectiveness in the agricultural sector. The research findings indicate that while digital marketing presents significant opportunities for enhancing the competitiveness of potato farmers in Banyumas, several challenges must be addressed. Farmers who actively utilize social media and e-commerce platforms experience improved market access and customer engagement. However, barriers such as digital literacy gaps, financial constraints, customer trust issues, and seasonal demand fluctuations hinder widespread adoption. The role of external support, including training programs and government initiatives, is critical in facilitating successful digital marketing implementation. These findings provide valuable insights into the factors that influence digital marketing adoption among farmers and highlight areas where further interventions are needed to maximize its benefits.

DISCUSSION

The findings of this study indicate that the adoption of digital marketing among potato farmers in Banyumas is influenced by various internal and external factors. Farmers with a higher level of digital literacy demonstrate greater confidence in utilizing online platforms for marketing their products. This aligns with (Gołab-Andrzejak, 2023) **Diffusion of Innovation Theory**, which explains that individuals with prior exposure to technology are more likely to adopt new innovations. The knowledge stage plays a critical role in this process, as farmers who are aware of digital marketing benefits tend to explore its potential more actively. However, a significant number of farmers remain hesitant due to a lack of familiarity with digital tools. Without adequate training and support, the gap between early adopters and those resistant to change continues to widen. These findings suggest that interventions focused on increasing digital literacy could accelerate the adoption of digital marketing in the agricultural sector.

Social media platforms have emerged as the most accessible and widely used digital marketing tools among farmers. Farmers who effectively utilize platforms such as Facebook, Instagram, and WhatsApp report increased visibility and customer engagement. According to (Kapoor & Kapoor, 2021), social media enables businesses to interact with consumers in real time, creating a sense of trust and connection. The persuasion stage in the **Diffusion of Innovation Theory** becomes evident as farmers observe the success of their peers who have adopted digital marketing strategies. Testimonials from fellow farmers and positive customer feedback further encourage hesitant farmers to experiment with online promotion. However, inconsistencies in content creation and engagement strategies affect the effectiveness of social media marketing. These findings highlight the need for structured training programs to help farmers optimize their social media presence and maintain consistent communication with customers.

The study reveals that while some farmers have successfully integrated e-commerce platforms into their marketing strategies, overall adoption remains limited. Farmers who utilize Shopee, Tokopedia, and Bukalapak experience improved market access, particularly in urban areas. This finding supports (Gołab-Andrzejak, 2023) notion that perceived relative advantage significantly influences the decision to adopt an innovation. Farmers who recognize the benefits of e-commerce, such as wider reach and higher profit margins, are more willing to invest time and effort in learning its mechanisms. However, concerns related to transaction security, delivery logistics, and packaging requirements deter many farmers from fully committing to e-commerce platforms. The decision stage in the **Diffusion of Innovation Theory** becomes crucial at this point, as farmers evaluate whether the benefits outweigh the challenges. These findings suggest that providing logistical support and training on e-commerce management could enhance adoption rates among potato farmers.

The role of digital literacy in shaping farmers' ability to engage with digital marketing cannot be overlooked. Farmers with basic knowledge of social media and e-commerce platforms demonstrate a more proactive approach to online marketing. This finding is consistent with (Gołab-Andrzejak, 2023) argument that an individual's ability to process information influences their adoption of innovation. Agricultural cooperatives and local government agencies play a crucial role in facilitating digital literacy programs. Farmers who receive formal training on social media marketing and content creation exhibit greater confidence in managing their online presence. However, gaps in technical knowledge, particularly in data analysis and advertising strategies, hinder the full utilization of digital marketing tools. These findings underscore the importance of integrating digital marketing education into agricultural extension programs to equip farmers with relevant skills.

External support from various stakeholders significantly influences the success of digital marketing adoption among potato farmers. Government initiatives that provide internet subsidies and digital marketing workshops have been instrumental in encouraging farmers to explore online platforms. This aligns with (Gołab-Andrzejak, 2023) **Diffusion of Innovation Theory**, which highlights the importance of external influence in shaping adoption behavior. Farmers who receive hands-on assistance in setting up social media accounts and managing customer inquiries are more likely to sustain their digital marketing efforts. Collaborations with local influencers and digital marketing professionals further enhance farmers' ability to reach wider audiences. However, the temporary nature of many support programs raises concerns about long-term sustainability. These findings suggest that ongoing mentorship and financial incentives could strengthen the impact of digital marketing initiatives in the agricultural sector.

Despite the advantages of digital marketing, financial constraints remain a major barrier for many farmers. Limited resources prevent some farmers from investing in professional photography, sponsored advertisements, and packaging improvements. According to (Gołab-Andrzejak, 2023), the complexity of an innovation influences its adoption, and financial limitations exacerbate perceived complexity. Farmers who allocate a portion of their budget for digital marketing tend to experience better sales performance. Cooperative marketing initiatives, where farmers pool resources for joint promotional efforts, have been explored as a potential solution. However, the effectiveness of these initiatives depends on leadership quality and coordination among members. These findings suggest that financial assistance programs, such as microloans for digital marketing, could facilitate broader adoption among small-scale farmers.

The study also finds that customer trust is a crucial determinant of digital marketing success. Farmers who establish transparent and consistent communication with their customers tend to receive repeat purchases and positive referrals. This supports (Gołab-Andrzejak, 2023) argument that the confirmation stage plays a vital role in sustaining innovation adoption. Customers value authenticity and prefer engaging with farmers who provide detailed information about their products and farming practices. Negative experiences, such as delayed deliveries or misleading advertisements, significantly impact customer trust and retention. Online reviews and testimonials play a key role in shaping customer perceptions, making reputation management an essential aspect of digital marketing. These findings highlight the importance of building long-term relationships with customers through ethical and transparent marketing practices (Fonseka et al., 2022).

Technical challenges also emerge as a significant obstacle to effective digital marketing implementation among potato farmers. Many farmers lack the expertise to analyze social media insights and optimize their marketing strategies based on data. According to Rogers (2003), complexity hinders adoption, and digital marketing analytics can be overwhelming for individuals with limited technical knowledge. Farmers who rely on trial-and-error approaches often struggle to achieve consistent engagement and sales growth. Training programs that focus on data interpretation and campaign optimization could help farmers make more informed marketing decisions. Peer learning and case studies from successful digital marketers could further enhance farmers' ability to adapt to evolving digital trends. These findings suggest that incorporating digital analytics training into agricultural education programs could improve marketing outcomes.

Seasonal fluctuations in potato demand pose another challenge for digital marketing effectiveness. During peak harvest periods, competition among farmers intensifies, making it difficult to differentiate products in online marketplaces. Some farmers employ discount strategies and promotional bundles to attract customers. However, during low harvest seasons, maintaining customer interest becomes more challenging. Content planning strategies, such as educational posts about potato farming and recipe ideas, have been found to sustain engagement throughout the year. Farmers who implement long-term content strategies tend to experience better brand retention and customer loyalty. These findings indicate that digital marketing should not be viewed solely as a sales tool but also as a means of educating and engaging with customers.

Overall, the discussion highlights the multifaceted nature of digital marketing adoption among potato farmers in Banyumas. While digital marketing presents significant opportunities for improving competitiveness, several barriers must be addressed to maximize its potential. The application of (Gołab-Andrzejak, 2023) **Diffusion of Innovation Theory** provides a valuable framework for understanding farmers' adoption behavior. Factors such as digital literacy, financial capacity, external support, and customer trust influence the decision-making process. Strategies

that focus on reducing complexity, enhancing perceived advantages, and providing continuous support could accelerate digital marketing adoption. These findings contribute to the growing body of research on digital marketing in agriculture and provide practical implications for policymakers, agricultural stakeholders, and farmers themselves.

CONCLUSION

This study concludes that digital marketing plays a crucial role in enhancing the competitiveness of potato farmers in Banyumas by improving market access, customer engagement, and brand recognition. The adoption of social media and e-commerce platforms has provided farmers with new opportunities to expand their customer base beyond traditional marketplaces. However, the findings indicate that the effectiveness of digital marketing is influenced by factors such as digital literacy, financial constraints, external support, and customer trust. Rogers' **Diffusion of Innovation Theory** serves as a useful framework for understanding the varying adoption rates among farmers, highlighting the importance of knowledge dissemination, perceived advantages, and external influences. While some farmers have successfully integrated digital marketing into their business strategies, challenges related to technical expertise, logistical barriers, and seasonal demand fluctuations remain prevalent. Therefore, continuous training, financial assistance, and structured support systems are essential to optimizing digital marketing adoption among potato farmers.

Despite its contributions, this study has certain limitations that should be acknowledged. The research primarily focuses on potato farmers in Banyumas, which may limit the generalizability of the findings to other agricultural sectors or regions with different socioeconomic and technological conditions. The qualitative approach, while valuable for capturing in-depth insights, may not fully represent the broader population of farmers who have yet to explore digital marketing. Additionally, the study relies on self-reported data from interviews and observations, which may introduce biases related to personal perceptions and experiences. The rapidly evolving nature of digital marketing also presents a limitation, as technological advancements and shifting consumer behaviors may influence the findings over time. Future research should consider incorporating mixed-method approaches and longitudinal studies to capture a more comprehensive and dynamic understanding of digital marketing adoption in agriculture.

Considering these limitations, future research should explore additional factors that influence digital marketing adoption among farmers, such as cultural perceptions, psychological barriers, and the role of peer influence. A comparative study between farmers who have adopted digital marketing and those who rely solely on traditional methods could provide deeper insights into the effectiveness of online platforms. Furthermore, investigating the impact of specific digital marketing strategies—such as influencer collaborations, paid advertisements, and search engine optimization—could offer practical recommendations for improving online visibility and sales performance. Expanding the research scope to other agricultural commodities and regions would also enhance the applicability of the findings, providing a broader perspective on the role of digital marketing in rural economies.

To further support the growth of digital marketing in agriculture, future studies should examine policy interventions and technological innovations that can facilitate digital adoption among farmers. Research on the development of customized training modules and digital literacy programs tailored to the needs of small-scale farmers could help bridge the knowledge gap. Additionally, exploring the potential of government and private-sector partnerships in providing

financial assistance and infrastructure support could yield valuable policy recommendations. By addressing these research gaps, future studies can contribute to the sustainable integration of digital marketing into the agricultural sector, ultimately empowering farmers to compete in an increasingly digital marketplace.

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