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# Digital Technology Management Challenges in Marketing Local Farm Products in Developing Countries: Analysis of International Publication Findings

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**ABSTRACT**

The success of marketing all business products is closely related to how to overcome marketing obstacles. One is the use of digital tools. In other words, there are many challenges that digital marketing tools can identify and solve. For this reason, the researchers have studied data from many international publication journals that discuss the study of marketing agricultural products in various contexts. Furthermore, the researchers examine by involving a data analysis system, rigorous evaluation of the data, and extracting the digests relevant to the formulation of this study's questions. Based on the discussion of the study data, the researchers believe that our findings are valid and reliable. The researchers succeeded in identifying the challenges of marketing agricultural products in developing countries, including the crisis of human resources operating digitally, so that they are often wrong in marketing applications, are reluctant to innovate, and lack professional marketing ideas. Hopefully, the results of this digital marketing study will be helpful for many further studies.

**Keywords**: *Digital Marketing, Agricultural Products, Management Challenges*

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## INTRODUCTION

In this era of rapidly developing technology, there are many possibilities for company development, including agriculture. (Geertz, 2020; Aslan and Putra, 2020; Madri et al., 2021; Aslan et al., 2020; Aslan et al., 2020). Agricultural business professionals are more likely to come up with unique ideas or methods to market their business. For example, a digital-based marketing strategy will be discussed this time. For business people, the digital world is the most valuable asset. However, not all business people can rely on digital technology even though they are present in the digital era. (Bharadwaj et al., 2013; Putra et al., 2020). Because if they have mastered

digital, then the issue of location and time to do business is no longer a barrier to promoting business results. If the digital world is still constrained, there is a possibility that there will be problems with product promotion so that buying and selling transactions do not occur effectively even though digital technology is still an obstacle for businesses, especially the marketing of agricultural products. So, figuring out what obstacles agricultural business people face seems to be a great way to start an agricultural marketing company. Thus, entrepreneurs will not face many challenges in putting it into practice. In fact, for businesses that are still digitally illiterate, this problem will be very severe (Schoemaker et al., 2018).

In this era of rapidly developing technology, there are many possibilities for company development, including agriculture (GeeOne of the most common difficulties for entrepreneurs is marketing their business products. The digital era for some entrepreneurs is an era of confusion about how to start getting digital benefits. Westerman et al. (2014) said that joining the digital world becomes a problem for business people who are still new to digital technology. This is a common misconception because there are many channels available for digital marketing in today's world. Moreover, the digital world may still be a foreign concept for some individuals born before the digital era. (Shifman, 2013). However, it does not rule out the possibility of a solution. They are trying to enter the digital world. Everyone will start in a different place. While it may seem confusing, it is an excellent place to start if a business wants to understand it. Agricultural business professionals are more likely to come up with unique ideas or methods to market their business.

For example, a digital-based marketing strategy will be discussed this time. For business people, the digital world is the most valuable asset. However, not all business people can rely on digital technology even though they are present in the digital era. (Bharadwaj et al., 2013; Putra and Aslan, 2020). Because if they have mastered digital, then the issue of location and time to do business is no longer a barrier to promoting business results. If the digital world is still constrained, there is a possibility that there will be problems with product promotion so that buying and selling transactions do not occur effectively even though digital technology is still an obstacle for businesses, especially the marketing of agricultural products. So, figuring out what obstacles agricultural business people face seems to be a great way to start an agricultural marketing company. Thus, entrepreneurs will not face many challenges in putting it into practice. In fact, for businesses that are still digitally illiterate, this problem will be very severe (Schoemaker et., 2018).

Being digital producers, business people have to think about this from the consumer's point of view—Davidovici-Nora, (2014) how businesses do business digitally with companies, especially marketing agricultural products. The connection is indeed very challenging where businesses make payments with digital money. There are also businesses having to use social media to explore products that receive digital message reminders. Give an example of the entire process of becoming a digital agricultural producer and applying what the business learns to business. So, business people must ask customers what will be mutually beneficial if the business will start entering the digital world because the biggest problem is that every business person tries to find out digital without actually doing it (Agrawal et al., 2016). Too accustomed to conventional business, so less confident to start a business digitally. It is like talking about learning to swim but being afraid of drowning is not daring to enter the water. Learning to swim does not have to start in deep water. Once the business has a taste of the digital world, decide on a starting point and keep learning. The more businesses do

it, the more businesses will materialize, and for the most part, things will start to make sense. That is how the marketing business of agricultural products should be done (GURL, 2017).

Does the question arise why business people are not sure which marketing strategy to implement? Most businesses are often paralyzed by the choices available to them. Is it necessary for the company to start publishing material on social media from existing media outlets? Maybe YouTube ads are also a good idea. It all sounded so interesting that they were unsure which approach to use and which to avoid. (Kane, 2019). Many speakers or videos encourage businesses to try different methods, which often leads to confusion. There are many methods to take advantage of digital marketing as it gets more sophisticated and mature, and companies will hear many different views because so many different individuals are successful in so many fields. However, believe it or not, deciding which approach to use is pretty straightforward. The business is unsure which strategy to use first, and that one is to put away. (Kingsnorth, 2019). Talking about marketing with the help of digital technology is a challenging story. Business people finally decide to use the five tactics when they are no longer in doubt about which approach to adopt. (Reeves & Haanaes, 2015). Businesspeople are now undecided about which tactic to use first. Some companies were excited and ready to start their digital adventure, but they ended up closing down. They know they need digital, and the businessperson has even made a list of what the business wants to do with it, but suddenly they are overwhelmed by the sheer number of options and do not know where to start. (Fry, 2013). There are several alternative approaches to solving this problem. Here are some options for businesses to consider.

Other challenges and obstacles could be that many business people cannot maintain consistency. (Allain & Laurin, 2018). Most entrepreneurs just starting in the digital realm will regularly publish material on their blogs and other social media sites. They blogged for a few weeks before stopping to do so. Moreover, it seems that something happens every time they try again, causing them to stop. Cohen and Roussel (2013) believe that strategic and marketing management is a challenging issue. It is true that running a company and maintaining a consistent marketing strategy can be difficult. This is a solution to the problem that they can use.

The case of product marketing has indeed made farmers face several problems in marketing agricultural products, such as lack of supply and poor manufacturing quality (Hazell et al., 2010). According to them, the future of farmers is also held captive by the trajectories and policies that they prioritize. On the other hand, they also have to deal with an inadequate market for their products due to prices and payment methods. In addition, there is a lack of time to collect and transport goods produced by farmers, making it difficult for collectors to collect them (Gunders, 2012). Prices of agricultural products are constantly changing due to fluctuations in supply and demand (Brunori et., 2011). The ability of farmers to sell their goods is still limited because they have little money, so the goods they produce tend to be sold at low prices.

Another factor that prevents farmers from applying technology to marketing is the lack of careful handling of each stage of management. (Khan & Bae, 2017). This is one of the causes of the low quality of the final product from the marketing step. Lack of adequate training facilities exacerbates the poor quality of human resources, resulting in improper product handling from pre-harvest to post-harvest. Farmers have difficulty planning their production, while traders have difficulty predicting demand

(Zhong et al., 2015). The ability of farmers to sell their products is still limited due to limited funds so that the goods produced are more likely to be sold at low prices. Due to changes in supply and demand, prices of agricultural products constantly fluctuate. (Musacchi & Serra, 2018). Operational management from pre-harvest to harvest has not been carried out properly, causing quality problems. It is more about cultivation processes, such as standards and grading. The mew problem, caused by the lack of training facilities in rural areas, is not supported. (Guo & Li, 2018).

Therefore, a study of the need to understand why technology-based marketing strategies are needed for farmers to increase profits through effective marketing methods and strategies following the current era. (Musacchi & Serra, 2018). So, this study aims to be very important in studying marketing strategies to build awareness of business people, especially farmers. In simple terms, consumers of agricultural food goods will prefer products with agricultural products that they already know, let alone have previous experience. Mesterházy et al., (2020). In other words, consumers believe in previous experiences, namely methods that are easy and beneficial to both parties. With this digital-based marketing study, consumers will know more fully all the information possessed by agricultural products that consumers expect. Therefore, Colasanti et al. (2010) said that researchers are highly expected to provide a complete understanding of the reasons and opinions of farmers and the challenges they have when they want to market their products with the advantages and disadvantages.

## METHOD

The method took in completing this research was that started from understanding the identification of digital technology management challenges in the marketing of local agricultural products in developing countries through an analysis of the findings of international publications. The first step is to search for data electronically based on Google Scholar, which supports this study. The researchers searched literature related to the above theme in several high-impact journals between 2010 and 2021. The researchers are very dependent on secondary data, considering that this study was carried out in the era of the implementation of public restriction policies as a result of efforts to respond to the Covid-19 pandemic, which has no sign of when it will end. To answer the question of this study, the researchers involve a data review analysis study with a descriptive qualitative data approach which includes the data coding process, in-depth analysis, data evaluation before concluding phenomenology. All stages of the method and process of data analysis follow the guidelines for the study whose design is based on this study. (Hariyanti & Wirapraja, 2018).

## RESULT AND DISCUSSION

In this part, the researchers presents information on the results of a systematic review of several international publications that have successfully studied the variables of digital application technology and the challenges faced by farmer entrepreneurs when they market their agricultural products. So, the result of the first review is that review one article using a systematic literature analysis to summarize the results of studies in agri-food e-commerce and suggest several future research lines. (Esposito dkk., 2020). As a consequence, the number of publications has increased overall, suggesting that research on e-commerce applications has piqued the interest of academics from many nations and disciplines. They think that more emphasis should be given to the regional growth of e-commerce or trade marketing based on digital technology and its effect in emerging nations like Indonesia.

The following finding concerns mobile phones and the Internet, which significantly affect virtually every aspect of the economy, including agricultural marketing. In this instance, digital technology assists small and large-scale farmers who already have market access by removing information barriers, expanding knowledge via innovative ways of extension services, and enhancing agricultural supply chain management. (Deichmann dkk., 2016). Although there are many promising instances of positive impacts on rural living, they are not always elevated to the level they should be—barriers following the difficulties they currently face.

Moon et al., (2012) consider Korea as one of the most technologically advanced countries in the world. Agriculture has played an essential role in bridging the digital divide between rural and urban areas due to the growth of informatization. Current consumer concerns about food safety have helped reintroduce agricultural information technology into the national agenda. The findings provide researchers with several recommendations to investigate the digital divide and identify how it affects farmers, villages, managers, and the economy.

According to Sarker et al., (2019), big data is a critical tool for modernizing the agriculture sector. This study aims to determine how important big data technology's contribution to digital agriculture is in terms of long-term agricultural management. This may help farmers increase production while also enhancing quality in the field. Factors to consider include financial investment, a lack of expertise, and context-specific technology.

According to John Ritchie, distributed ledger technology in agriculture for Big Data presents both challenges and opportunities. Two real-world examples of utilizing distributed ledger technology to address current farm data problems in cotton are sustainability metrics and resource monitoring of cotton lint quality data from ginners down to subfield sites. (Griffin dkk., 2021). According to Ritchie Farm, data management problems can be addressed utilizing distributed ledger systems, which have been available for decades. He argues that it may lead to better yield monitoring, sustainability, and supply chain collaboration. Rapid population expansion raises the need for more food, fiber, energy, and water. The most important restriction is the expense of buying gear, equipment, software, and an internet connection. Approximately 95% of farmers desire to learn more about new technology to enhance their land's agricultural growth. Eighty-four percent of farmers polled indicated they utilize at least one digital technology in their production system, with the degree of complexity varying. (Bolfe dkk., 2020). According to Peterie et al., (2020) agriculture is critical to ensuring food security and long-term sustainability for every country. Farmers often face problems such as lack of financing and limited distribution methods to reach consumers. The long-term viability of agriculture can be enhanced by developing new services such as financial technology (FinTech) and digital markets. Agricultural business processes can be made more sustainable by using digital markets with Fintech.

Furthermore, Singh et al. (2017) say that agriculture is a large sector of their economy. Agriculture accounts for about 17% of G.D.P. Agriculture is also the main occupation of nearly 60% of Indian citizens. Despite the presence of many Indians, the country's agriculture is outdated in many ways. Research and development have become necessary to keep farmers informed about relevant new technologies and information, mainly how agricultural products can be sold at high prices and can be reached by potential domestic and foreign consumers.

Similarly, in early 2018, dairy, livestock, and crop producers in Wisconsin were polled by Drewry and Doermann (2012). The goal of this study was to look into how people use the Internet and other digital technologies, as well as how they use digital technology installed on farms, how satisfied they are with the Internet and mobile services, what barriers they face in adopting new technology, and how they differ between groups. Gender (female), agricultural income, land area (hectare and number of animals), and education level were significantly and positively related to internet access and use. Data can help agricultural producers make data-driven choices and promote innovation by providing insight into rural broadband requirements.

Behera et al., (2015) noted that India is the world's second-largest fruit and vegetable grower. Everyone has the right to information, according to the R.T.I. Act of 2005. This article aims to emphasize the significance of information and communication technology (I.C.T.) in enhancing retail marketing operations in agricultural regions of the Indian economy. It also discusses some success stories and models to justify the importance of I.C.T. in agriculture retail marketing.

Nezamova and Olentsova, (2020) observe that the current market environment is very volatile. Therefore, marketers need to adjust the market to changing market conditions appropriately. In his country, there has been a downward trend in food production since the 1990s. Russian agricultural producers find it challenging to compete with international farmers because their subsidies are much smaller. Inadequate development of food market infrastructure and the lack of use of contemporary marketing technologies have a detrimental impact. So here, the market domination factor is very dominant in order to win market share. Namely, marketers must adopt digital technology so that agricultural products in their country can be easily marketed wherever consumers want (Saura, 2020).

The development of blockchain technology in agriculture and the distribution chain of agricultural products, according to Kamilaris et al., (2019) enables dispersed untrusted parties to conduct financial transactions without the need of middlemen such as banks. The effect of digital blockchain technology on agriculture and the supply chain of agricultural product wholesalers is examined in this article. Because the technology can evaluate the consequences, problems, and potential obstacles, this technology represents a breakthrough in agricultural businesses, and marketing efforts are getting simpler. These findings indicate that there are still many barriers and challenges that prevent the wider adoption of technology among farmers and product marketing systems. Technical elements, education, laws, and regulatory frameworks are part of the technology problem that must receive collective attention, especially the agribusiness entrepreneurs. (Oktaviana, 2016).

Kuznetsova et al., (2019) investigated human resource development as a means of ensuring agriculture's national resilience in the digital age. Due to significant technological advancements in society in emerging nations, the digital economy has quickly acquired prominence across different data sources and media. The issue of food security for the region's population is solved via suitable scientific-technical implementation in the sector and the employment of technology and tactics in domestic and global agriculture. The main takeaway from their results is that although technology is rapidly evolving, enough human resources, particularly in marketing, remain a problem in agriculture. (Hunsberger, 2017). The findings from an agricultural project in rural northern Ghana on the marketing of agricultural products and the need for mobile-based information and communication technology solutions show a perfect trend. A voice-based prototype enables medium to large-scale farmers in rural areas to

place agribusiness advertisements on the Internet. This prototype was assessed based on its usefulness and feasibility, as well as its financial viability.

The last review of Tireuov et al. (2018), interested in studying Kazakhstan's entry into the global grain market, is related to the shift in the country's trade shift from interregional to the interstate. Increasing the efficiency of grain use necessitates a significant reduction in grain consumption across all consumption channels, including seeds, flours and cereals, and forages. Under current circumstances, the stable operation of the grain market should be based on a mix of market processes, state regulatory instruments, and targeted assistance to its constituents. So the solution is the involvement of digital technology so that marketing can increasingly overcome all the obstacles and challenges when the market has to move to markets between countries. (Bondarenko., 2020).

The researhers conclude that the core findings were aimed at gaining a critical understanding of the challenges faced by farmer businesses in marketing agricultural products using digital technology. Overall, the findings have confirmed that our findings have answered questions and accepted our assumption that companies engaged in the agricultural sector have indeed faced new challenges since digital applications have penetrated the agricultural world, especially the marketing sector both within and outside the country. (Ferrera & Kessedjian, 2019). The answer is why our study is vital because digital-assisted marketing can support farmers in deciding which products are excellent and easy for consumers to find. Marketing using digital technology also helps consumers understand and reach farm produce when they need it at the right price. When marketing is done correctly in a business method, producers and consumers will get a mutual benefit. (Shankar dkk., 2011).

Finding a digital-based marketing system for agricultural products that connects them with customers is significant. According to Özcabı et al., (2015), digital marketing applications will expand marketing and will always help in handling unlimited market demand so that this method can allow greater profits for both producers and consumers of agricultural products. Therefore, a study that raises a more effective and efficient marketing system for agricultural products is digital technology. In this case, Heang and Khan, (2015) believe in the role of the Internet in marketing even in underdeveloped countries.

The findings of this study are aimed at obtaining additional information about marketing strategies based on digital applications, which include expanding promotional networks to build introductions to agricultural production brands in countries that previously still relied on non-digital marketing methods. Thus, consumers who are spread throughout the country and even abroad will prefer agricultural products familiar to them on trademarks that they have known or trusted before. With the marketing of this technology, consumers will be more familiar with trademarks, including information on what products are from brands that have gone international with all their advantages and disadvantages.So that the development of the agricultural industry can continue to be possible, in addition, the findings of a severe study examining the effectiveness of digital in marketing agricultural products will also help the development of the Agro-based farming industry and encourage the pace of economic development of the productive farming sector (Williams & Chinn, 2010). Practice the most potent business tactics. Since it is a straightforward platform to use, most businesses start posting on social media. Start with something that business people are very good at if they cannot get started with other hands-on methods other than digital that need to be learned and applied. (Khaledian & Miller,

2020). Put the customers' needs first. What would provide the most outstanding results for the customers? This is another area where the business may significantly influence the company because the business will start a digital procedure that the customers will love. Business people who are not confident are confused about what to post. (Bauman, 2013). This is a significant challenge for companies that have decided to embark on their digital transformation. They started by using social media and blogging, but then nothing happened. They soon found no idea what material to publish despite their desire to get involved in digital marketing. Knowing good content is very important in digital marketing because it connects digitally with customers. (Kaur, 2017).

However, believe it or not, Kotler et al. (2019) argue that business people who already have many marketing materials and applications for their business products say the marketing of agricultural products. Also, the answer that businesses can implement is to stop obsessing over what material to publish. Start writing about how businesses help customers with goods. Businesses need to be able to answer any questions that might help the customer. Start publishing anything that will benefit customers and see the business as the perfect agent. (Safko, 2010).

Therefore, with this finding, more similar studies will discuss the potential applications of digital technology in the farming industry with different goals and contexts in the future. Considering that since digital has entered all sectors of life, it demands that more studies must be carried out to seek efficiency and productivity in every human work because it will be very wrong if technology is ignored while humans continue to live and work in an advanced and atomic era. (Fajrillah dkk., 2020).

The findings from digital-based marketing studies on agricultural products in developing countries are digital marketing techniques that have not been carried out; namely, digitally, products can be marketed to all regions with free access because digital trends have become global to access all consumers. On the other hand, digital marketing methods are also very cost-effective compared to conventional methods. Another impact, for example, digital marketing can continue to be freely accessible without time and place limits. Another advantage also show that digital marketing operations are very flexible and inexpensive.

## CONCLUSION

The findings provide valid and reliable answers to the research questions. The conclusion is that we identify the challenges of marketing agricultural products with the help of digital technology in developing countries, including the crisis of human resources who operate businesses digitally, so that they are often wrong in marketing applications, are reluctant to innovate, and lack professional marketing ideas. The researchers summarize all the results from the study of several successful international journal publications discussing the themes of challenges for farming business people in marketing matters both within and outside the country. It is hoped that the findings of our study will become a reference for subsequent studies in answering the problem of marketing efforts for agricultural products and with digital marketing mainstay.

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**AUTHOR CONTRIBUTION STATEMENT**

The first author carried out the method design. The second and subsequent authors prepared the required data collection. While the analysis and interpretation of our results are carried out together, the conclusion is often drawn by the first author.

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