THE ROLE OF SOCIAL MEDIA FOR FARMERS AS A DIGITAL INNOVATION IN SIAM BANJAR ORANGE CULTIVATION

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ABSTRACT

The evolution of digital technology, particularly social media, has opened new opportunities for farmers to improve the efficiency and productivity of crop cultivation, including Siam Banjar oranges in Barito Kuala. This study aims to describe how farmers utilize social media in the digital innovation of Siam Banjar orange cultivation in Barito Kuala Regency. The research was conducted using a quantitative descriptive method, with 20 farmers from Simpang Nungki Village, Barito Kuala Regency, as respondents. The results show that 83% of farmers use WhatsApp as a digital innovation tool for Siam Banjar orange cultivation activities, while 11.4% use TikTok, and the remaining use other social media platforms. Additionally, 45% of farmers utilize social media for post-harvest management information, 38.7% seek information on market prices and sales opportunities, and 6.1% use it for climate and weather information. Farmers wish to utilize social media to learn about post-harvest processes, particularly for derivative products of Siam Banjar oranges, to diversify the products generated and enhance the economic conditions of farmers.
Keywords: Social Media, Farmers, Banjar Siam Orange, Digital Inovation.

Background

Barito Kuala Regency, South Kalimantan, is the largest producer of Siam Banjar oranges in South Kalimantan. Jeruk Siam Banjar is known for its refreshingly sweet taste. Jeruk Siam Banjar has an average total soluble solids (TSS) content of > 10 0Brix, which exceeds the minimum required for export (BSIP, 2023). The great potential in the development of Siam Banjar orange agribusiness in Barito Kuala Regency is inseparable from the role of the farmers who cultivate this plant.

In agribusiness development, digital technology has a significant impact on how farmers manage their farming operations, from the planting process to the marketing of their harvests. Social media has emerged as a platform that not only serves as a means of social interaction but also as a strategic communication medium in supporting agricultural activities. Before the digital era developed, farmers faced limitations and obstacles in accessing technical information, marketing network access, and a lack of platforms for sharing experiences among farmers, while the conventional agricultural extension system was unable to reach all farmers, especially those in remote areas optimally. In this context, social media emerges as an innovative solution that offers various new opportunities. Social media platforms such as Facebook, TikTok, WhatsApp, Instagram, and YouTube have begun to be utilized as easily accessible sources of agricultural information through smartphones. Through social media, farmers can obtain the latest information on cultivation techniques, such as the selection of superior seeds, the prices of superior seeds, proper watering techniques, as well as methods for handling pests and plant diseases up to post-harvest optimization.

Besides being a source of information, social media also serves as a space for the exchange of information and experiences among farmers. Online discussion groups formed through social

media allow farmers to share cultivation tips and tricks that they have proven successful in the field. Additionally, this interaction allows for the formation of virtual learning communities that create the transfer of agricultural knowledge among farmers. In addition, through social media, farmers can also produce educational content such as cultivation tutorial videos and experiences in dealing with pest attacks. On the marketing side, social media also plays a strategic role as a platform for promoting agricultural products. Farmers can utilize social media features such as photo and video uploads, photos, and captions to showcase the quality of agricultural products, build the brand image of agricultural products, and reach consumers in various regions without intermediaries (mediators). Digital marketing strategies impact the optimization of profits for farmers and strengthen the position of farmers in the agricultural product sales chain.

This research focuses on describing how farmers utilize social media in the context of digital innovation in Siam Banjar orange cultivation in Barito Kuala Regency, particularly in Simpang Nungki District. This research is important to examine the role of social media for Siam Banjar orange farmers in Barito Kuala Regency in the transformation of traditional agriculture towards a more efficient and sustainable modern agriculture. This study is expected to provide a comprehensive understanding of how digital technology, particularly social media, can be optimized as an instrument for empowering farmers and developing horticultural agribusiness in Indonesia, especially in South Kalimantan, which has significant potential in the agricultural sector.

Social media is a collection of websites, services, and activities that engage users through collaboration and sharing. The emergence of social media marks the starting point of a shift in focus from the initial functions of the Web due to increased participation, connection, and interactivity (Junco & Chickering, 2010). The use of social media in the agricultural sector has become an increasingly developing phenomenon in Indonesia. According to Prayoga (2017), information exchange has become one of the highlighted issues in extension activities in the fields of agriculture and fisheries, and the difficulty in accessing information has led to solutions by utilizing information technology such as social media. In addition, Suratini et al. (2021), who researched the use of social media to support agricultural extension activities, stated that social media can be an effective tool in supporting agricultural extension activities, provided there is appropriate support and training for extension workers and farmers. In line with these research findings, Elian et al. (2014) in their study found that the use of the Internet and the utilization of agricultural information by agricultural extension workers have a positive correlation with the effectiveness of extension services.

According to Sirajuddin and Kamba (2021), as information users, farmers have a positive perception of the use of ICT in extension services, especially in terms of ease of information access and time efficiency. Alif et al. (2023) state that social media can help farmers access information related to cultivation techniques suitable for tidal swamp land conditions. From a marketing perspective, Nurfathiyah et al. (2024) state that social media through social systems is a variable that has a high influence on the self-efficacy of ornamental plant farmers in using social media for e-commerce. The features available on social media based on information and communication technology enable the expansion of marketing and reach a more diverse range of consumers.

Research Methodology

This research is a quantitative descriptive study, a study that describes, investigates, and explains something being studied and draws conclusions from the observed phenomena using numbers. The activity of describing data is to depict the existing data to obtain a real

representation of the respondents, making it easier for researchers or others interested in the research results to understand (Bahriyah, 2017). This research was conducted in the village of Simpang Nungki, Barito Kuala Regency. The sampling technique used was random sampling, with a population of 200 farmers in this study. A sample of 10% was taken from the population, resulting in a sample size of 20 farmers.

Primary data was obtained through surveys and interviews, while secondary data was obtained through literature studies. Data analysis is conducted descriptively and quantitatively by measuring respondents' answers, supported by qualitative answers that are described descriptively.

Results and Discussion

The respondents among the farmers sampled in this study range in age from 17 to 65 years. 50% of the farmers are aged between 25 and 46 years. If analyzed, the farmers are in their productive age, where in terms of age, they tend to have strong physical abilities and energy, enabling them to work productively. Farmers at the research location who were sampled fall into the category of farmers cultivating Banjar Siamese rice. The data can be seen in the table below.

Table 1
Distribution of farmers' ages

Age	Total	Percentage
17-23	2	10
25-46	10	50
47-65	8	40
Total	20	100

Source: primary data after processing (2025)

Education

The education level of farmers in Simpang Nungki village is very varied, as can be seen in Table 2.

Table 2
Distribution of Education Levels

Education	Total	Percentage
Elementary School	6	30
Junior High School	10	50
High School	4	20
College	0	0
Total	20	100

Source: primary data after processing (2025)

The average education level of farmers is junior high school, with 10 people having a percentage value of 50%. The data above indicates that the farmers are at a low or moderate education level. Indirectly, education will influence the reception of new information or the process of seeking information. However, by providing information and communication technology training to farmers, it is hoped that it can help farmers in receiving new information.
Farming experience. The level of farming experience among respondents is mostly in the 1–20-year category, accounting for 60%. The distribution of farming experience can be seen in Table 3.

Table 3
Distribution of farming experience

Farming Experience	Total	Percentage
1-20	15	75
21-40	5	25
>40	0	0
Total	20	100

Source: primary data after processing (2025)

Farming experience refers to the duration of time farmers are involved in agricultural activities. The farming experience of farmers ranges from 1-20 years or 75%, while the second category is with farming experience of 21-40 years (25%). This indicates that most farmers are already familiar with the cultivation of Siamese oranges that they are farming. The farmers usually come from farming families as well, so indirectly, they have understood and become accustomed to farming and gardening.

WhatsApp as an interpersonal media among farmers.

The research results show that 65% of farmers frequently receive information about Siam Banjar oranges through messaging applications, specifically WhatsApp. In addition, extension workers utilize WhatsApp to distribute information in WhatsApp Groups, including information about cultivation, market prices, and post-harvest.

Whatsapp is a cross-platform messaging application that was introduced in 2009, allowing users to exchange messages without any cost, as it uses internet data. With WhatsApp (WA), users are facilitated in interacting through text or voice messages, and, to this day, it is equipped with a video call feature, allowing users to face-to-face with their conversation partner directly

Table 4.
Utilization of WhatsApp

No	Category	Total	Percentage
1	Very Often	13	65
2	Often	3	15
3	Ever	2	10
4	Never	2	10
	Total	25	100

Source: primary data after processing (2025)

The result of the interview with one of the extension workers, Mr. BS, revealed that extension workers now often use the WA application to socialize an agricultural program to farmers.

> "We, as extension workers, are greatly assisted by the advancement of this era, especially conversational social media like WhatsApp. When there is any new information from the Ministry of Agriculture or the Agricultural Office, we will inform you first through WhatsApp."

The research results from Kumar Panda et al. (2020) indicate that conversational application media significantly influences farmers in making decisions compared to other social media, especially when this application media is accompanied by face-to-face visits to farmers directly or to groups.

The use of WhatsApp as a communication medium has several drawbacks, especially in rural areas far from internet access. The main obstacle faced is the difficulty in obtaining agricultural information due to limited internet access, which can hinder smooth communication.

One of the advantages of using WhatsApp is its ability to be used routinely every day for various activities such as reading, watching, asking, discussing, searching, exploring, and receiving information related to farming. In addition, WhatsApp is also used to seek collaboration opportunities in the agricultural sector, with the information obtained through this application being highly relevant to the needs of farmers and extension workers.

However, based on interviews with farmers and extension workers, it was found that the use of WhatsApp in their activities is still limited, as it is only used once a week for reading, watching, asking, discussing, and seeking information about Siam Banjar orange cultivation.

Facebook as a medium for information on Siamese orange cultivation in Banjar

The use of Facebook as an agricultural information medium fall into the moderate category, with an average of 50% in the "ever" category. This data can be seen in the table below.

Table 5
Distribution of Facebook Usage

No	Category	Total	Percentage
1	Very Often	1	5
2	Often	8	40
3	Ever	10	50
4	Never	1	5
	Total	20	100

Source: primary data after processing (2025)

Extension workers and farmers have widely utilized the use of Facebook media to disseminate information on Siamese orange cultivation in Simpang Nungki village. The information-seeking activities certainly involve various parties.

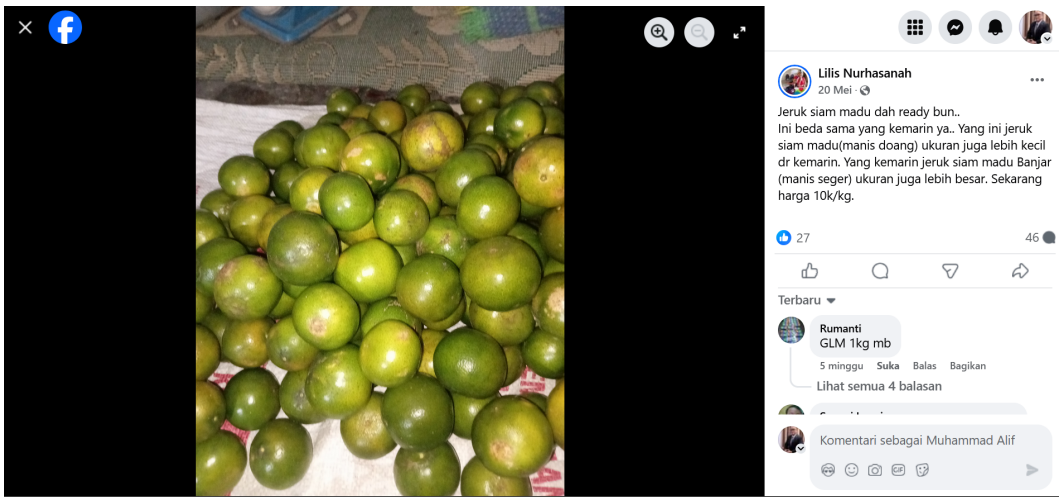
According to one of the farmers, he stated:

> “Social media like Facebook is very easy to use and does not take long to create an account. As the head of the farmer group, I often receive the latest information from the extension workers, and besides sharing it in the WhatsApp group, I also share it through my social media.”

One of the uses of Facebook that is being utilized is for the marketing of oranges, specifically the buying and selling of Siam Banjar oranges. A farmer in Simpang Nungki Village, Mr. NH, stated:

> "I have used Facebook several times to sell my oranges, or if I do not have time, I ask my child to market them. Sometimes, some people are interested in buying through this medium.”

Image 1.
Marketing Banjar Siam oranges through Facebook.



Source: Facebook @lilis Nurhasanah

The farmers' ability to utilize social media makes it easier for them to acquire new knowledge. The presence of social media also facilitates communication and socialization, as well as providing convenience for farmers in considering alternatives in decision-making.
One of the advantages of using Facebook is its ability to be utilized daily in various activities, such as reading, watching, asking, discussing, searching, exploring, and receiving information related to farming. Facebook also allows farmers to seek collaboration opportunities in the agricultural sector. The information obtained through Facebook is highly relevant to the needs of farmers and extension workers.

The use of YouTube in the cultivation of Siam Banjar oranges.
The use of YouTube for the cultivation of Banjar Siam oranges falls into the moderate or occasional category at 50%. From the interviews, the average users of this media are young people who are indeed cultivating Siam oranges.

Table 6
Distribution of YouTube usage

No	Category	Total	Percentage
1	Very Often	0	0
2	Often	2	10
3	Ever	10	50
4	Never	8	0,08
	Total	20	100

Source: primary data after processing (2025)

Farmers who often utilize YouTube for information on Siamese Banajr orange cultivation amount to 50%. Positive video content using YouTube can be accessed anywhere. YouTube can serve as an alternative medium, given the limitations of print or electronic media provided by BPP or extension agencies. YouTube can also be used as a tutorial medium as an alternative in the face of the decreasing organization of agricultural training. YouTube is a popular video-sharing service

where users can upload, search, watch videos, engage in discussions/Q&A about videos, and share video clips for free.

According to Mr. MA, one of the farmers stated that:

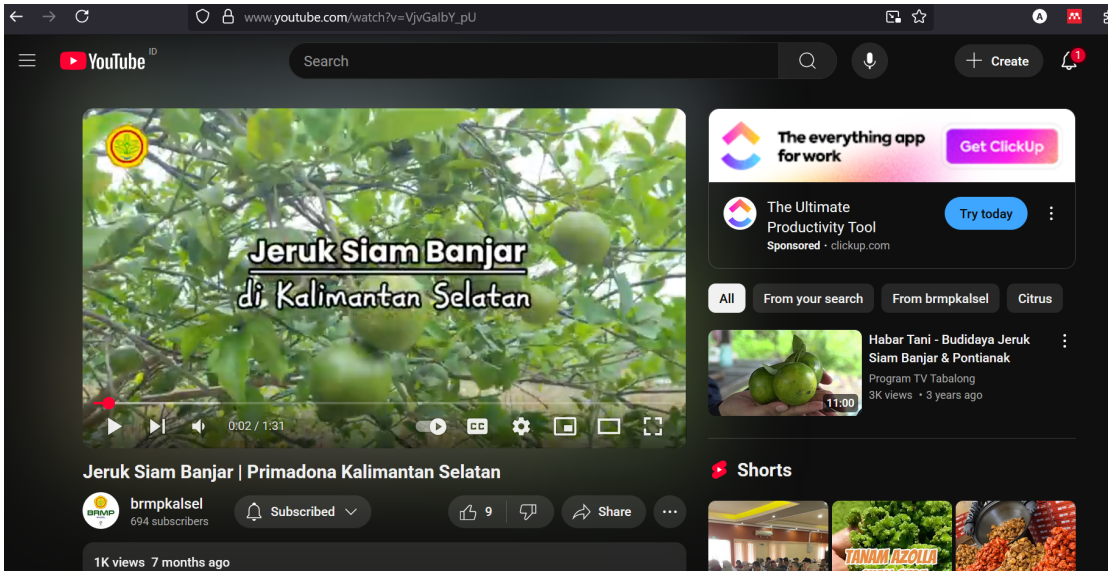
> "I often watch videos about agriculture, usually from the YouTube channel @brmpkalsel, where I get a lot of information related to fertilizers, the latest technological innovations, waste management, Siam orange cultivation, and various other agricultural practices."

Mrs. DS also added that:

> "In my opinion, YouTube is very important." If I only rely on written information, it does not feel very clear. I have to read it multiple times to understand it. YouTube is very helpful for me, especially since I am lazy about reading and prefer watching videos.

Image 2

How to Cultivate Siam Banjar Oranges through YouTube



Source: youtube @brmpkalsel

In the current era of information and communication, changes in the way we interact force every party involved in various jobs to be able to adapt. Farmers, for example, need an extension worker to be a source of information on agricultural issues. However, the role of extension workers is now increasingly supported by the presence of social media, such as YouTube, which has become an inseparable part of daily life for the community, including farmers. With better internet access, farmers increasingly need the latest information.

The extension materials delivered usually cover various topics such as technical information, social engineering, economic management, and environmental sustainability. Along with the development of information technology, agricultural extension workers are required to be more creative in delivering extension materials so that they are easier to understand and accept.

The use of YouTube allows farmers to read, watch, ask questions, discuss, search, explore, and receive information related to farming every day. Additionally, YouTube also facilitates the search for collaboration opportunities in the agricultural sector. The information accessed through YouTube is highly relevant and meets the needs of farmers and extension workers.

The use of Instagram in agricultural extension.

Instagram is a social networking platform that allows its users to take photos, edit them, apply digital filters, and upload them. In addition, Instagram also provides various features, such as

comment sections and the DM (Direct Message) feature that allows users to exchange messages with each other.

However, the use of Instagram as an extension media in the agricultural sector is relatively low. The number of farmers who have ever utilized Instagram as a medium is not very high, with an average of only about 55% of farmers having used this platform.

The results of Kurnia et al. (2018) show that there is a strong and significant relationship between the use of Instagram social media and media literacy skills (technical skills, critical understanding, and communicative skills).

Table 7
Distribution of Instagram usage

No	Category	Total	Percentage
1	Very Often	0	0
2	Often	2	10
3	Ever	11	55
4	Never	7	35
	Total	20	100

Source: primary data after processing (2025)

Research by Suratini et al. (2021) concluded that the utilization of social media platforms YouTube and Instagram falls into the moderate category. From the research, farmers and extension workers are trying to optimize these media in activities such as seeking information or disseminating this information.

Mr. NH, an extension worker in Barito Kuala Regency, stated that:

> "As extension workers, we strive to ensure that farmers can receive all the information we have conveyed, including through social media such as YouTube and Instagram." Not only to know but also to apply that information in extension activities, especially in Siam orange cultivation.

Instagram provides easy access to information, and the information accessed is certainly very much in line with the needs of extension workers and farmers. The quality of that information can enhance the skills and capacities of the farmers and extension workers themselves. Mr. HI, a farmer in Simpang Nungki Village, stated:

> “Indeed, if you look at how often I open Instagram, I do it quite often, but more for entertainment. If only the extension workers or the agricultural department created a special Instagram account to provide agricultural information in the Barito Kuala area, it would definitely be very beneficial, especially about the cultivation of Siam Banjar oranges, particularly post-harvest, sir.

Field observations show that farmers use the Instagram social media platform relatively little, although interviews with the farmers reveal that they are very aware of the benefits of using this media. The ability of extension workers to utilize Instagram is felt to be very lacking, especially among older farmers, who still need guidance to be able to use Instagram as a form of digital innovation, particularly in the post-harvest section.

Figure 3.
Utilization of Instagram media

Source: Instagram @jeruksiambanjar.bdj

According to the research by Helen and Rusdi (2019), it is stated that the influence of Instagram social media has an impact on its followers. Instagram can be utilized daily for reading, watching, asking, discussing, searching, exploring, and receiving agricultural information. Daily utilizing Instagram to seek agricultural collaboration opportunities, the information accessed through Instagram is very suitable for the needs of extension workers and farmers.

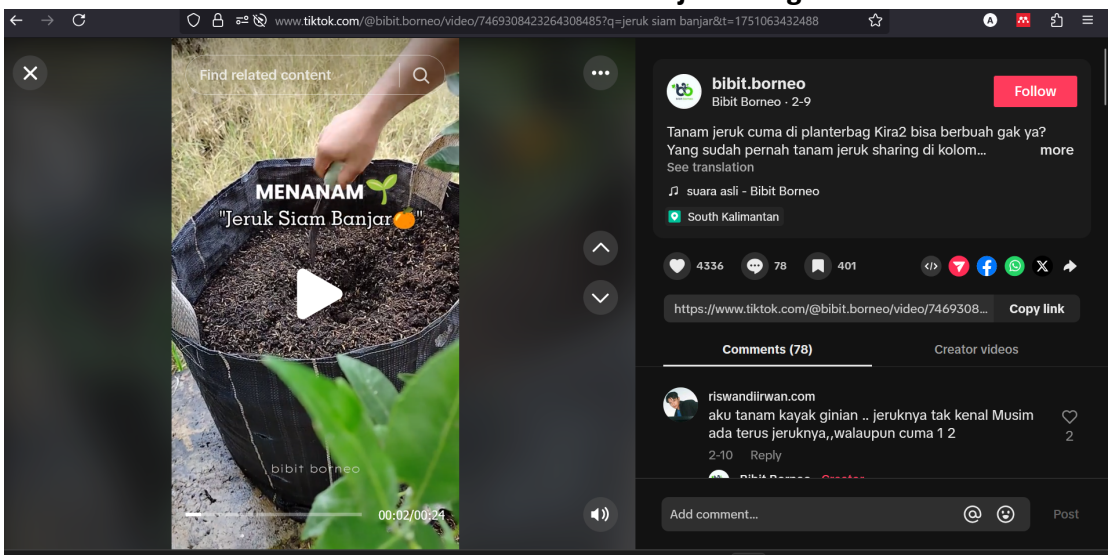
TikTok as information on Siam Banjar orange cultivation

Tiktok is one of the social media that is popular with users in Indonesia. Tiktok is a social media that allows users to create, watch, and share short videos. The following is a description of data on the use of Tiktok by farmers.

No	Category	Total	Percentage
1	Very Often	0	0
2	Often	2	10
3	Ever	10	50
4	Never	8	40
	Total	20	100

Source: primary data after processing (2025)

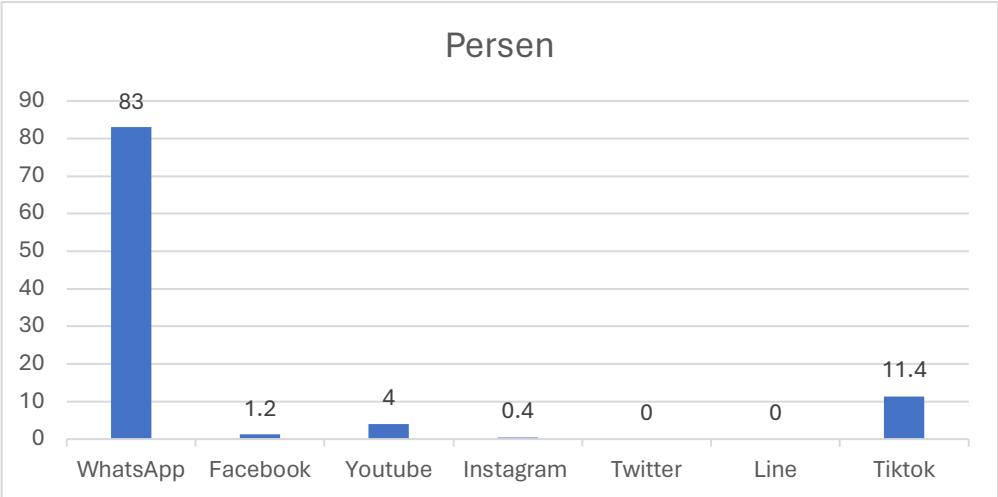
Image 4
Tiktok Cultivation of Siam Banjar Oranges



Source: Tiktok @bibit.borneo

Based on the data above, 50% of respondents of Banjar Siamese Orange farmers use Tiktok social media as a source of information and to increase knowledge through Siam Banjar Orange cultivation content.

Image 5
Media platform used for searching AUTP information



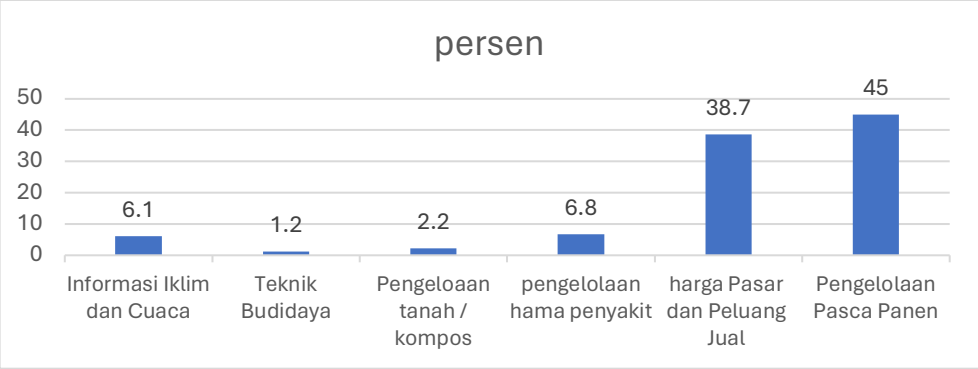
Source: primary data after processing (2025)

The data above shows that WhatsApp users are the highest, with 83% of farmers using WhatsApp as a medium to obtain information about the cultivation of Siam Banjar oranges up to post-harvest and marketing. The research findings of Singh Nain et al. (2019) indicate that applications like WhatsApp are very beneficial for the transformative changes of farmers, as this application accelerates the innovation processes of farmers and institutions. This conversational social media technology can solve many obstacles, both related to information dissemination to

the public and related to the production process in maintaining precise agricultural management, marketing sectors, and so on (Hashem et al., 2021).

In this study, the media forum is limited to the media access utilized by farmers to obtain information through social media channels. Social media is viewed based on platforms commonly used for seeking information, which includes WhatsApp (WA), Facebook (FB), YouTube, Instagram (IG), Twitter, Line, and TikTok (Das and Pradip 2021). The platform most frequently used by farmers to seek information related to the utilization of Siam Banjar orange cultivation is WhatsApp (WA). Most farmers consistently utilize WhatsApp (WA) to search for information regarding the use of home gardens, as evidenced by farmers accessing information via WA daily (Alif et al., 2022). This is in line with Humaidi's (2020) research findings that WA is the most visited social media platform. The high utilization of WhatsApp by female farmers is largely due to their participation in both internal and external groups. Based on the use of media forums through WhatsApp groups.

Image 6
The type of agricultural information on the utilization of Siam Banjar orange cultivation needed by farmers.



Source: primary data after processing (2025)

The data above shows that the majority of farmers want information on post-harvest management in the cultivation of Siam Banjar oranges, amounting to 45%. Derivative products of Siam Banjar oranges can be made into various types of products, such as jelly candies, syrup, fruit juice, jam, and other products. Processed products from Siam Banjar oranges can be made in various forms, such as the research by Nur Analita et al. (2022), which states that one of the derivative products of Siam Banjar oranges is bar soap.

The market price and sales opportunities for Banjar Siam oranges are in second place, at 38.7%. Through platforms like Facebook, Instagram, and WhatsApp, Banjar Siam orange farmers can easily monitor price fluctuations in both local and national markets. Real-time price information allows farmers to determine the right time to sell their harvest, maximize profits, and avoid selling when prices are plummeting (Putra et al., 2023). In addition, social media also opens opportunities for farmers to reach a wider market, including buyers outside their area, which was previously difficult to access. (Indraningsih 2018; Santo 2020). By using e-commerce platforms or leveraging buy-and-sell groups, Banjar Siam orange farmers can market their products directly to consumers or distributors, reducing intermediaries that can diminish profit margins (Solihin et al., 2023).

The use of social media for climate and weather information plays a very important role for farmers, especially in facing the increasingly uncertain challenges of climate change. Social media enables farmers to access quick, real-time, and easily accessible information about weather conditions and climate predictions that can affect their agricultural yields. Through platforms like Instagram, TikTok, Facebook, and WhatsApp, farmers can receive real-time weather updates, including early warnings about heavy rain, drought, or other natural disasters (Alif et al., 2023). With this information, farmers can plan their agricultural activities more accurately, such as planting, fertilizing, and harvesting, thereby minimizing losses caused by unpredictable weather. The results of Sakir's (2025) research state that social media is very suitable for farmers, especially in environmental conservation related to climate change and ecosystems, both socially and economically.

Conclusion

The role of social media for farmers as a digital innovation in the cultivation of Banjar Siam oranges has significant potential to increase productivity and open broader market opportunities. Social media serves to obtain agricultural information, exchange experiences, and expand market networks through digital marketing. Social media also becomes a primary source of information in post-harvest management, especially regarding the by-products of Banjar Siam oranges that can be processed into various products. Through digital literacy training and online community-based mentoring, farmers can manage and market Banjar Siam orange yields more efficiently. This not only improves the welfare of farmers but also plays a role in strengthening local food security and promoting sustainable economic development.

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